

**Town of Yacolt
Council Meeting Agenda
Monday, April 11, 2022
7:00 PM
Town Hall**

Call to Order

Flag Salute

Roll Call

Late Changes to the Agenda

Approve Minutes of Previous Meeting(s)

- [1.](#) DRAFT Minutes from 3-14-22 Council Meeting

Citizen Communication

Anyone requesting to speak to the Council regarding items not on the agenda may come forward at this time. Comments are limited to 3 minutes. Thank you.

Executive Session

- [2.](#) Executive Session

Unfinished Business

- [3.](#) Jorgensen 2022 Timber Harvest Public Hearing, Council Review, And Decision
- [4.](#) RR Ave/Hoag Subdivision Public Hearing, Council Review, and Decision
- [5.](#) North Clark Little League Field Use Agreement Extension
- [6.](#) Hardin Property Auction Results
- [7.](#) Spruce Ave Short Plat Final Update

New Business

- [8.](#) Recycling Presentation
- [9.](#) Extend Engineering Contract
- [10.](#) ARPA Funding Choice
- [11.](#) Alternative to National Night Out

Town Clerk's Report

Public Works Department Report

Attorney's Comments

Citizen Communication

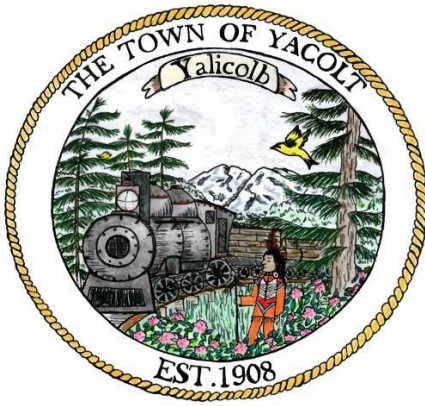
Anyone requesting to speak to the Council regarding items not on the agenda may come forward at this time. Comments are limited to 3 minutes. Thank you.

Council's Comments

Mayor's Comments

Approve to Pay Bills on Behalf of the Town

Adjourn



Town of Yacolt

Town Council Meeting Minutes

Monday, March 14, 2022
7:00 PM
Town Hall / Virtual / Telephonic

Call to Order

7:00 PM

Flag Salute

Roll Call

Council Members Present: Amy Boget, Michelle Dawson, Ronald Homola, Marina Viray

Council Member Absent: Joshua Beck

Also present: Mayor Katelyn Listek, Town Attorney David Ridenour, Public Works Director Terry Gardner, Clerk Stephanie Fields

Council Member Boget noted that Council Member Beck had emailed asking to be excused, and she made a motion to excuse him.

Motion: Boget 2nd: Dawson

Aye: Boget, Dawson, Homola, Viray **Nay:** 0 **Absent:** Beck

Motion Carried

Late Changes to the Agenda

None

Approve Minutes of 2-14-22 Meeting

Motion to approve minutes from February 14th meeting

Motion: Homola 2nd: Boget

Aye: Boget, Dawson, Homola, Viray **Nay:** 0 **Absent:** Beck

Motion Carried

Citizen Communication

None

Unfinished Business

North Clark Little League Field Use Agreement

When it was brought up that we renew NCLL's Field Use Agreement for another 10 years, some discussion ensued. Public Works Director Gardner suggested a shorter contract term. He referred to an issue we have with too many keys being checked out and currently unaccounted for. Clerk Fields mentioned that NCLL agreed to put a real-estate-type lockbox on the main gate and asked if the other gates really even need padlocks. Gardner said lockboxes would be a good solution, but we do need to get the rest of the keys back, and ensure that we have keys to all locks at the ballfield except the NCLL's storage and concession stand buildings. NCLL and KWRL would each only need a couple of keys, and they should return the remaining keys to the Town. Also, the Fire Dep't. needs to keep their keys, as well as PUD and Brad's Septic. When all discussion was said and done, they started to vote on it, then Councilmembers Homola and Boget suggested that we push this vote out to the next meeting in order to allow NCLL to bring their extra keys in, and all agreed.

Hardin Estate Update

Attorney Ridenour stated that the Town may want to enter a bid on this property in order to protect its financial interest in the estate. He said we could use the amount owed to us from the estate as credit toward the purchase, and perhaps add in some additional money to that amount. It would be an investment in the security of our judgement award.

YMC CH. 12.05 Revisions

The Clerk brought up that she has had numerous calls and emails regarding park regulations, particularly regarding dogs off-leash and motor-bikes. She asked Council if they wanted to address any of the issues and refine new rules before she drafted the revision to the Code/Ordinances, or at least update some signs to be posted. Council felt like the rules were addressed well enough, but agreed that we will need to post updated signs displaying park rules, and referencing the Code.

Spruce Ave. Short Plat Update

Clerk Fields announced that the Spruce Avenue Short Plat was within days of having their Certificates of Occupancy issued; the Short Plat recorded today, we're just waiting on the County to assign Parcel numbers. We have a Stormwater Maintenance Agreement in place for the run-off pond on the property, which will provide easements and will protect the Town's interests in the future.

New Business

Backroads Liquor License Application

Mike Casetta and Matthew Siese from Backroads talked about their plans for Backroads, including remodeling and creating a family-friendly pizzeria side which can be opened up after 9pm to create a larger bar area. They talked about their menu and hours, and said they are aiming to be open about April 15th. They have applied for a liquor license and asked Council to approve for the Mayor to send a letter of support on their behalf to the Liquor Control Board. Motion was made to approve the letter in support of Backroads' liquor license.

Motion: Boget **2nd:** Dawson

Aye: Boget, Dawson, Viray **Abstain:** Homola **Absent:** Beck

Motion Carried

Clark Public Utilities Water Supply Presentation

Russ Knutson and John Roth from Clark PUD talked in detail about plans PUD has to bring water to Yacolt from the well on Kelly Hill. They explained in-depth the eventual need for the nitrate level in the water in our valley to be diluted with an influx of new water, while assuring us that the nitrate level is far from unsafe right now. They also said that 2 of the 4 wells in Town are not functional because they are pumping sand. Doug Quinn from PUD added that although they are *introducing* this plan right now, they must make their plans 10-15 years ahead, so this project is something they will likely not be starting until several years from now. Russ said they are looking to get one or more grants to help fund the project, and they will be seeking a letter from the Town in support of the project by about next October. He also mentioned that none of this will result in an increase in water use rates.

Silver Star Service Agreement

The Mayor asked for Council's permission to sign a service agreement for Silver Star Telecom to hook us up with fiber optic service in the park area near the Library. Silver Star offered to do this with a \$0 hook-up fee, since they will be installing fiber optic very close to that site anyway; so all we'd have is the monthly service fee of \$80. This is something we've been needing to have done anyway, in order to set up our security cameras in that area. Motion was made to allow this.

Motion: Viray

2nd: Homola

Aye: Boget, Dawson, Homola, Viray

Nay: 0

Absent: Beck

Motion Carried

Railroad Ave and Hoag St Subdivision

Council was informed about the proposed subdivision at Railroad Avenue and Hoag Street. It will be a 47-home Subdivision, built by AHO Construction. Very little discussion took place, as the formal Public Hearing will be at the next meeting, on April 11th. However, Council was asked to think about a different name for the street on the plans which is labeled as "Bumpski Circle". Discussion only.

Jorgensen 2022 Timber Harvest

Council was informed about a timber harvest which Jorgensen Timber applied for. This will be on the forested area south of the Town Park, going south to near Yacolt Creek, and east to Parcel Ave. Very little discussion was had, as the Public Hearing for this project will also take place at the April 11th Council meeting. Discussion only.

Public Records Request Impacts

The Town Attorney, David Ridenour, reviewed how public records requests to the Town have increased in number and complexity over recent years. The Town's staff and consultants have had to devote far more time than expected to make sure that the Town's responses are complete, while ensuring that exempt or confidential records are properly disclosed but withheld. The Town's strategy has been to make extraordinary efforts to work through the bigger and more challenging projects, even delaying other important work when possible. The Town hoped that this unexpected workload would ease over time, and that the time and effort spent responding to records requests would return to normal. But over the last year or so, staff is realizing that this unusually high workload is showing no sign of slowing down.

Put simply, public records requests are placing extraordinary demands on a system that is very small, and naturally struggles to quickly address unexpected large projects. Since the workload is not slowing down, staff recognizes that the Town's planning should adapt so that future needs will be met. The Town Clerk concurred, as she is the main person who has to assemble all of the records and respond to all the requests. The Mayor, Town Clerk and Town Attorney are working to develop options for the Council so that it may prepare for a future of public records requests that continue to grow in number and complexity.

Town Clerk's Report

- She hopes to be able to have YMC 12.05 updates in time for the April Council meeting.
- She took classes the 1st week of March in preparation for our Annual Report, which is due May 27th, and is currently doing a short training series on ARPA Funds reporting. Our first ARPA Report is due April 29.
- We have a source for this year's hanging flower baskets, and they will be only \$25 each. We will need about 40 of them. If anyone would like to donate, they should contact the Clerk.
- All the Easter Eggs have been stuffed and made ready for the Easter Egg Hunt on April 16th, but we still need Easter baskets, both for the kids' prizes and for the Basket Auction. Anyone wishing to donate Easter Baskets, please contact the Clerk.

Public Works Department Report

- Director Terry Gardner had a meeting with Waste Connections. They will be making a presentation at our next Council Meeting regarding going to every-other-week recycling pickup.
- They have sorted out how they are going to make water more available at the Ball Fields.
- He had the inmate crew last week, and they did a lot of vegetation clean-up around Town.
- Councilmember Dawson remarked that she saw a happy post on social media, grateful that the blackberries had been cut back near their home.

Attorney's Comments

None

Citizen Communication

One resident said she doesn't see very much wildlife (squirrels, rabbits, etc.) in the vicinity of her home here in Yacolt. She finds that concerning. Others commented that they do have lots of squirrels, raccoons, and the like near their homes in Town.

Council's Comments

- Viray – Attended a Mosquito Control Board meeting on Feb. 15th. They have bought a new building, hired a new administrative assistant, and are testing a new drone program in Ridgefield. As of that meeting date, they had only trapped one mosquito this year.
- Boget – has been asked by a resident if the Town is planning to repair any of the parakeet houses around Town that are in disrepair.



Town of Yacolt Agenda Request

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: David Ridenour

Group Name:

Address:

Phone: (360) 991-7659

Email Address: david@davidridenourlaw.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Executive Session

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Attend the Executive Session

Proposed Motion: none

Summary/ Background: Pursuant to RCW 42.30.110(1)(i), the Council will discuss litigation and potential litigation with the Town's Attorneys. Members of the public attending by telephone or computer may remain logged in to the meeting if you wish, or you may reconnect using the same log-in information before the public meeting reconvenes.

Staff Contact(s): Stephanie Fields, Town Clerk
Katelyn Listek, Mayor
(360) 686-3922



Town of Yacolt Request for Council Action

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Mayor Listek

Group Name:

Address: 202 W. Cushman
Yacolt, WA 98675

Phone: 360-686-3922

Email Address: mayorlistek@townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Jorgensen 2022 Timber Harvest Public Hearing, Council Review and Decision

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Consider all info presented at the Public Hearing regarding Jorgensen's proposed Timber Harvest; discuss any questions or concerns you may have. Decide whether or not to approve Jorgensen's application to harvest the timber on their land within Yacolt Town limits.

Proposed Motion: "I move that we allow (or don't allow) Jorgensen Timber to harvest the timber as proposed on parcels #64520000, 66300000, and 64521000 (with the following conditions_____)."

Summary/ Background: The parcels listed above are zoned residential per our Growth Management Plan. Jorgensen Timber has owned the land and trees for many years, and it is now time to harvest their mature crop. Attached are SEPA Checklist, SEPA Determination of Non-Significance, and maps of the area to be harvested.

Staff Contact(s): Clerk Stephanie Fields

Mayor Katelyn Listek

clerk@townofyacolt.com

mayorlistek@townofyacolt.com

(360) 686-3922

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:
Jorgensen Timber LLC. Forest Practice Permit

2. Name of applicant:
Jorgensen Timber LLC.

3. Address and phone number of applicant and contact person:

Applicant and Contact person:
Jorgensen Timber LLC attn.: Jerad Spogen
P.O. Box 1503
Chehalis, WA 98532
360-748-7080

4. Date checklist prepared:

11/23/2021

5. Agency requesting checklist:

Town of Yacolt

6. Proposed timing or schedule (including phasing, if applicable):

Timber harvest timing to continue from February 2021. Current phase schedule not yet determined.

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

The site will become a development project at an undetermined time after harvest activities are complete.

The forest practices permit application is separate from future development proposals and is being submitted separately.

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

No other determinations have been prepared as part of this proposal.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No other applications will be applied for beyond the Class IV-G forest practices permit. Future development projects will be submitted separately with a separate SEPA checklist, if required.

10. List any government approvals or permits that will be needed for your proposal, if known.

None known

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The proposal is for timber harvest of 9 acres on three taxlots.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The site is located on tax lot: 64521000, 64520000, and 66300000 described as parts of NW1/4 Sec 02, T04N, R03E

B. Environmental Elements [\[HELP\]](#)

1. Earth [\[help\]](#)

a. General description of the site:

(circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

The site is 15% or less.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The site has Yacolt loam YaA where timber will be harvested.

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

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Filling and grading associated with landing construction will occur as part of the timber operation. The size of graded areas will be less than an acre.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. Erosion could occur in regards to clearing. Best Management Practices will be implemented on site to prevent erosion during the timber harvest operation, as required by code.

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

There will not be any impervious surfaces created as part of the timber harvest.

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

Best Management Practices to prevent erosion may include rock , straw mulch and grass seeding disturbed areas in order to help stabilize soils.

2. **Air** [\[help\]](#)

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Exhaust emissions from timber harvesting equipment will occur. Dust associated with timber harvest may occur.

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

No.

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

Operation timing could reduce impacts from dust on site.

3. **Water** [\[help\]](#)

a. Surface Water: [\[help\]](#)

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

Yacolt creek is adjacent to the site.

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

Yes, project work will occur adjacent to Yacolt creek. Yacolt creek will have the DNR required buffer. The buffer excludes harvest within the inner zone area and allows for harvest within the outer zone area. The distance of the inner zone is 105 feet no harvest and the outer zone extends an additional 35 feet, where 20 leave trees per acre are retained. The total riparian buffer is 140 feet.

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

None

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

No.

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

No.

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

No.

b. Ground Water: [\[help\]](#)

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

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

NO WASTE MATERIAL WILL BE DISCHARGED TO THE GROUND FROM TIMBER HARVESTING.

c. Water runoff (including stormwater):

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

Stormwater runoff during timber harvest will be filtered into the forest floor.

2) Could waste materials enter ground or surface waters? If so, generally describe. No waste materials will enter surface streams or wetlands from the site.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The timber harvest should not alter drainage patterns in the vicinity of the site.

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

The harvest activities will implement the BMP's mentioned above.

4. **Plants** [help]

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

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- Orchards, vineyards or other permanent crops.
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

b. What kind and amount of vegetation will be removed or altered?
Approximately 20 Acres of timber will be harvested.

c. List threatened and endangered species known to be on or near the site.
None Known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
None proposed

e. List all noxious weeds and invasive species known to be on or near the site.
None Known.

5. **Animals** [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

- birds: **hawk**, heron, eagle, **songbirds**, other:
- mammals: **deer**, bear, elk, beaver, other:
- fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.
None Known.

c. Is the site part of a migration route? If so, explain.
This site is located within the Pacific Flyway.

d. Proposed measures to preserve or enhance wildlife, if any:
NONE PROPOSED

e. List any invasive animal species known to be on or near the site.

None Known

6. Energy and Natural Resources [\[help\]](#)

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

No energy will be required on site as part or at the completion of the proposed timber harvest.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The timber harvest could potentially improve the use of solar energy.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None proposed

7. Environmental Health [\[help\]](#)

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

No.

1) Describe any known or possible contamination at the site from present or past uses.
There is no known or possible contamination from present or past uses.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
No hazardous conditions exist within the site or vicinity.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.
No toxic or hazardous chemicals will be stored, used or produced during the timber harvest operation.

4) Describe special emergency services that might be required.
None required.

5) Proposed measures to reduce or control environmental health hazards, if any:
None proposed

b. Noise

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

None.

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

During daylight hours there will be noise levels consistent with timber harvest operations.

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

Harvest activity will occur during daylight hours only to reduce the impacts of noise to surrounding properties

8. Land and Shoreline Use [\[help\]](#)

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The land is currently vacant.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? The 20 Acre site is a working forest and will not require reforestation as part of the class IV-General forest practices permit. The 20 acre site will be converted from forest land as part of this permit. This site is within the Urban Growth Area and is in violation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Field review of the site has not identified any cultural resources.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

No known resources exist on site, No measures proposed.

14. Transportation [\[help\]](#)

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

There are several streets and highways allowing access to the site. They include West Humphrey St, West Wilson St., West Bumpski St, S parcel Ave and West Hoag St. Access for the timber harvest activity may occur from any of these streets to accommodate pedestrian and vehicle traffic.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

C-Tran provides transit from the corner of W Yacolt Rd and Railroad Avenue.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The completed project would not add or eliminate any parking spaces.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

THE PROPOSAL TO HARVEST TIMBER WILL NOT REQUIRE ANY NEW ROADS OR IMPROVE ANY EXISTING ROADS, STREETS, PEDESTRIAN BICYCLE OR STATE TRANSPORTATION FACILITIES.

- e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

- f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

No additional trips will be generated at the time of timber harvest completion.

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

- h. Proposed measures to reduce or control transportation impacts, if any:

Timber harvest activities and associated hauling will occur on the streets listed above. The traffic pattern that interferes with public use the least will be utilized.

15. Public Services [\[help\]](#)

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No.

- b. Proposed measures to reduce or control direct impacts on public services, if any.

None proposed.

16. Utilities [\[help\]](#)

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

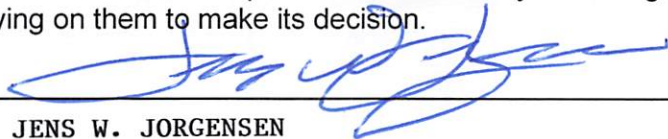
No utilities are provided to the area of the project site where timber harvesting will occur, nor will they be required.

- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

None proposed.

C. Signature [HELP]

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

Signature: 

Name of signee JENS W. JORGENSEN

Position and Agency/Organization MANAGER, JORGENSEN TIMBER LLC

Date Submitted: 11/24/21

D. Supplemental sheet for nonproject actions [HELP]

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

- 1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

- 2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

**STATE ENVIRONMENTAL POLICY ACT (SEPA)
DETERMINATION OF NON-SIGNIFICANCE**

CASE NO: **2022 JORGENSEN TIMBER HARVEST**

APPLICANT: **JORGENSEN TIMBER LLC**

Project Description: **Applicant proposes to log subject properties under a Class IV-G Forest Practices permit to be issued by the Washington State Department of Natural Resources.**

Location: **South of W Humphrey Street, west of S Parcel Ave, and north of Yacolt Creek**

Parcels: **64521-000, 64520-000, 66300-000**

Legal Description: **NW ¼ Sec 02, T04N, R03E.
12.82 ACRES**

SEPA Determination: **Determination of Non-significance (DNS)**

Comment Deadline: **April 11th, 2022** (comments should be delivered to the town hall office at 202 W. Cushman, Yacolt, WA, 98675 no later than 4:00 pm)

As lead agency under the State Environmental Policy Act (SEPA) Rules [Chapter 197-11, Washington Administrative Code (WAC)], the Town of Yacolt must determine if there are possible significant adverse environmental impacts associated with this proposal. The options include the following:

- **DS = Determination of Significance** (The impacts cannot be mitigated through conditions of approval and, therefore, requiring the preparation of an Environmental Impact Statement (EIS);
- **MDNS = Mitigated Determination of Non-Significance** (The impacts can be addressed through conditions of approval), or;
- **DNS = Determination of Non-Significance** (The impacts can be addressed by applying the Town Code).

Determination:

Determination of Non-Significance (DNS). The Town of Yacolt, as lead agency for review of this proposal, has determined that this proposal does not have a probable significant adverse impact on the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030 (2) (e). This decision was made after review of a completed environmental checklist and land use application documents as they apply to the Town's Municipal Code and adopted standards.

Date of Publication and Comment Period:

Publication date of this DNS is **March 23rd, 2022 and** is issued under WAC 197-11- 960. The lead agency will not act on this proposal until the close of the 14-day comment period, which ends on **April 11th, 2022.**

SEPA Appeal Process:

A final decision on this proposal will not be made until after the comment period described above. An **appeal** of any aspect of this decision, including the SEPA determination and any required mitigation, must be filed with the Town of Yacolt within fourteen (14) calendar days from the date the notice of that final decision is mailed to parties of record. The appeal must be in writing and should contain the following information:

1. The case number designated by the Town and the name of the applicant.
2. The name and signature of each person or group (petitioners) and a Statement showing that each petitioner is entitled to file an appeal as described in ESHB 1724 Section 415. If multiple parties file a single petition for review, the petition shall designate one party as the contact representative with the Town Clerk/Treasurer. All contact with the group regarding the petition, including notice, shall be with this contact person.
3. A brief statement describing why the SEPA determination is in error.
4. Mail or deliver appeals to the following address:

Appeal to the Town Council
Town of Yacolt
202 W. Cushman St.
P.O. Box 160
Yacolt, WA 98675

Staff Contact Person: Stephanie Fields (360) 686-3922

Responsible Official: Mayor Katie Listek
Town of Yacolt
202 W. Cushman St.
Yacolt, WA 98675





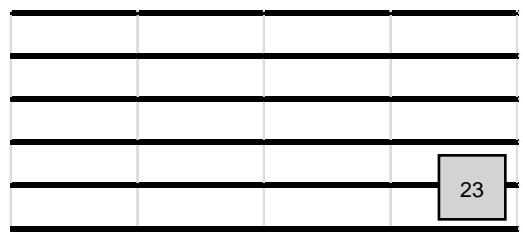
T4-0N R3-0E S02

T4-0N R3-0E S02

Date: 3/9/2022

1 inch = 191 feet

Legend
JorgensenProjectArea
Activity
 Harvest
 RMZ





Activity Area

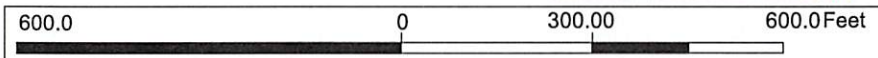


Legend

- Taxlots
- Priority Habitats and Species - Only
- All Roads**
 - Interstate
 - State Route
 - Arterial
 - Forest Arterial
 - Minor Collector
 - Forest Collector
 - Private or Other
- Cities Boundaries
- Urban Growth Boundaries

Notes:

1: 3,600



WGS_1984_Web_Mercator_Auxiliary_Sphere
Clark County, WA. GIS - <http://gis.clark.wa.gov>

This map was generated by Clark County's "MapsOnline" website. Clark County does not warrant the accuracy, reliability or timeliness of any information on this map, and shall not be held liable for losses caused by using this information.



Town of Yacolt Request for Council Action

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Mayor Listek

Group Name:

Address: 202 W. Cushman
Yacolt, WA 98675

Phone: 360-686-3922

Email Address: mayorlistek@townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Railroad Ave and Hoag St Subdivision Public Hearing, Council Review and Decision

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Consider the information presented at the Public Hearing, discussing any questions or concerns you may have. After the Hearing, decide whether or not to allow the subdivision on the property discussed.

Proposed Motion: " I move that we allow (or don't allow) AHO Construction to subdivide the 19+ acre parcel #64522000 at Railroad Ave and Hoag Street into a 47-lot subdivision for the future construction of 47 single-family homes (with the following conditions:_____)."

Summary/ Background: AHO Construction, along with AKS Engineering and Forestry, has applied for approval to subdivide a recently logged property at RR Ave and Hoag St. The property is already zoned R1-12.5, per our existing Growth Management Plan, so it is already zoned for housing to be built on lots of at least 12,500 s/f each. Attached are our Town Engineer's Staff Report, along with numerous submissions from AKS pertaining to Zoning, Land Use, Stormwater Mitigation, Soil Testing for Septic Systems, etc., as well as comments submitted by the Clark County Fire Marshal, SWCAA and the WA Dep't. of Ecology.

Staff Contact(s): Clerk Stephanie Fields

Mayor Katelyn Listek

clerk@townofyacolt.com

mayorlistek@townofyacolt.com

(360) 686-3922



Town of Yacolt

202 W. Cushman Street
PO Box 160
Yacolt, WA 98675
(360) 686-3922

Staff Report

Project Name: Railroad Avenue Subdivision

Meeting Date: April 11, 2022

Proposal: The applicant is seeking approval to subdivide 19.01 acres into a 47-lot subdivision (Railroad Avenue Subdivision) for the future construction of 47 single-family detached homes.

Location: South of W Hoag St, between S Railroad Ave and S Parcel Ave

Owner: Jorgensen Timber LLC

Applicant: Houston Aho/AHO Construction I, Inc.

Applicant's Rep: Seth Halling/AKS Engineering & Forestry, LLC

Staff:
Katie Listek, Mayor
Terry Gardner, Public Works Director
Stephanie Fields, Clerk
Devin Jackson, Town Engineer (Consultant, Jackson Civil)
David Ridenour, Town Attorney

Recommendation: Approved subject to Conditions

Town of Yacolt Community Development Director's initials: _____

Date issued:

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I. BACKGROUND

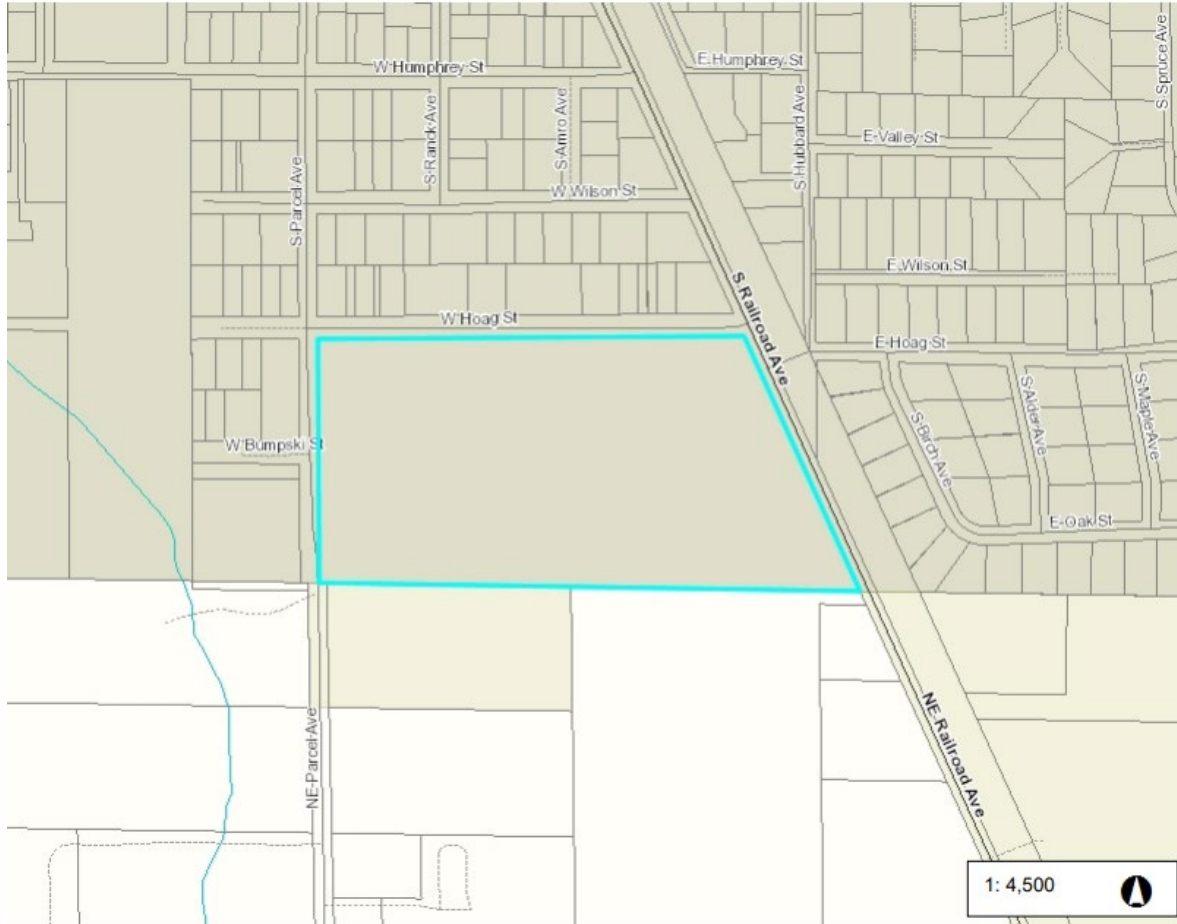
A. General Site Information

Size of Site: 19.01 acres
Existing Vegetation: Shrubs, and grass.
Existing Structures: None
Adjacent Land Uses: The properties to the south are undeveloped and underdeveloped single-family residential. The properties to the west are undeveloped and a fire station. The properties to the north are developed with single-family residential. The properties to the east are developed with a railroad.
Adjacent Zoning: Single-Family Residential (R1-12.5) the North and East. Public facilities and Single-Family Residential (R1-12.5) to the west. Unincorporated Clark County and UGA to the south.
Topography: The site is generally flat.
Wetlands: None
Flood Plain: The northwest corner of the site as being in the Floodway Fringe.
Shoreline Jurisdiction: None
Access Roads: The site is served by S Railroad Avenue along its east boundary, W Hoag Street along its north boundary, and S Parcel Avenue along its west boundary. Access to the development will be gained from all three streets.

B. Land Use Processing

<i>Application Submitted:</i>	<i>28 Day Counter Technical Complete</i>
<i>Decision on a Development Proposal:</i>	<i>120 Day for Review</i>

Figure 1. Location



Parcel Information

Property Identification Number: 64522000

Property Location Address

no situs address available

Property Owner

JORGENSEN TIMBER LLC

Owner Mailing Address

PO BOX 1503
CHEHALIS WA, 98532

II. DOCUMENTS REVIEWED

The documents reviewed and considered in connection with this staff report include the following:

- A. Land use Narrative
- B. Environmental SEPA checklist
- C. Preliminary plan set
- D. Stormwater technical information report
- E. General documents (i.e., legal description, owner consent, and permit application documents etc.)

III. AUTHORITY

The authority for this review is described in YMC 18.25 (Single-Family Residential Districts); YMC 13.10 (Stormwater Management and Facility Maintenance); YMC 13.25 (Public Works Construction Standards); YMC 16.05-16.10 (SEPA); and the Town of Yacolt Comprehensive Growth Management Plan 2003-2023 (as updated). The Application appears to comply with YMC 16.20-16.45, (Critical Areas). The public hearing will be conducted in accordance with rules of procedure adopted by the Yacolt Town Council. The final decision on the Application will be made by the Yacolt Town Council.

IV. APPLICABLE REGULATIONS/ANALYSIS

A. YACOLT MUNICIPAL CODE

Title 13 PUBLIC SERVICES

13.05 Water Main Installation

13.05.070 Town standards – Approval.

All construction shall be done in accordance with the town of Yacolt's standard water line details and drawing Nos. W1 and W2. All plans will be approved by town's engineer.

FINDING: The narrative and preliminary utility and street plan show this application proposes to connect to the existing water mains on S Railroad Avenue, W Hoag Street, and S Parcel Avenue to provide service to the development and fire hydrants on site. The standard is met.

13.10 Stormwater Management and Facility Maintenance

13.10.010 Stormwater management plan

The town council of Yacolt, Washington, does hereby adopt the town of Yacolt stormwater management plan.

13.10.080 Maintenance required

All stormwater facilities shall be maintained in accordance with this article and the Stormwater Management Manual. Systematic, routine preventive maintenance is preferred.

13.10.110 Compliance

Property owners are responsible for the maintenance, operation or repair of stormwater drainage systems and BMPs. Property owners shall maintain, operate and repair these facilities in compliance with the requirements of this article and the Stormwater Management Manual.

FINDING: According to the land use narrative, the stormwater runoff from on-site impervious surfaces will be collected on site and conveyed to a stormwater wet pond for temporary storage, treatment and detention.

13.20 Fire Hydrants

13.20.030 Fire hydrants required.

All buildings constructed within the town of Yacolt shall be served by fire hydrants installed in accordance with the requirements of this chapter. In addition, presently existing fire hydrants which do not conform with the requirements and standards of this chapter when placed, shall be replaced with hydrants which do conform to the standards and requirements of this chapter. All fire hydrants shall be served by a municipal or quasi-municipal water system, or as otherwise approved by the fire chief. All hydrants shall be subject to testing, inspection and approval by the fire department.

13.20.050 Buildings open to the public

Public buildings, buildings available for public use, or buildings open to the public by invitation classified under the UBC within occupancy groups A, B, C, or D shall conform to the requirements and standards contained in this chapter for buildings or structures in commercial, industrial, and apartment use district zones.

13.20.060 Installation requirements

The installation of all fire hydrants shall be in accordance with sound engineering practices. In addition, the following requirements shall apply to all building construction projects:

- A. Two copies of detailed plans or drawings, accurately indicating the location of all valves and fire hydrants to be installed shall be submitted to the fire chief prior to the commencement of any construction.*
- B. All fire hydrants must be approved by the appropriate water authority prior to installation.*
- C. All construction of the fire hydrant installation and its attendant water system connection shall conform to the design standards and specifications promulgated by the appropriate water authority.*
- D. Fire hydrant installations shall be adequately protected against vehicular damage, in accordance with standards and specifications promulgated by the appropriate water authority.*
- E. An auxiliary gate valve shall be installed at the main line tee to permit the repair and replacement of the hydrant without disruption of water service.*
- F. All hydrants shall stand plumb, be set to the finished grade with the lowest outlet of the hydrant no less than 18 inches above grade and have no less than 36 inches in diameter of clear area about the hydrant for the clearance of hydrant wrenches on both outlets and on the control valve.*

- G. *The pumper port shall face the street. Where the street cannot be clearly defined or recognized, the port shall face the most likely route of approach and location of the fire truck while pumping, all as determined by the fire chief.*
- H. *The lead from the service main to the hydrant shall be no less than six inches in diameter. Any hydrant leads over 50 feet in length from water main in hydrant shall be no less than eight inches in diameter.*
- I. *All hydrants newly installed in single-family residential areas shall be supplied by not less than eight-inch mains and shall be capable of delivering 1,000 gpm fire flow over and above average maximum demands at the farthest point of the installation. Hydrant leads up to 50 feet long may be six inches in diameter.*
- J. *All hydrants shall have at least five-inch minimum valve opening, O-ring, stem seal, two two-and-one-half-inch national standard thread hose nozzles, one four-and-one-half inch steamer nozzle with national standard threads, and six-inch mechanical joint shoe connection. In addition, all hydrants shall meet AWWA standards for public hydrants.*
- K. *All pipe shall meet relevant AWWA standards.*
- L. *The maximum distance between fire hydrants in single-family use district zones shall be 700 feet.*
- M. *The maximum distance between fire hydrants in commercial, industrial, and apartment (including duplex) use district zones shall be 400 feet.*
- N. *Lateral spacing of fire hydrants shall be approved by the fire chief and predicated on hydrants being located at street intersections.*
- O. *The appropriate water authority and the fire department shall be notified in writing of the date the fire hydrant installation and its attendant water connection system will be available for use.*
- P. *The fire chief shall be notified when all newly installed hydrants or mains are placed in service.*

13.20.110 Issuance of building permits.

No building permit shall be issued until plans required under this chapter have been submitted and approved in accordance with the provisions contained in this chapter. No building shall be occupied until hydrants and mains are placed in service.

FINDING: The proposal includes four new fire hydrants in the development site. The four hydrants are proposed at the intersections of or near the intersections of W Oak St/S Ranck Ave, W Oak St/S Railroad Ave, S Amro Ave/W Bumpski Cir, and S Ranck Ave/W Hoag St. These four fire hydrants are located ±700 feet apart. The standard is met.

Title 15 BUILDINGS AND CONSTRUCTION

15.10 Flood Damage Prevention

15.15.030 General provisions

- A. *Lands to Which This Chapter Applies. This chapter shall apply to all areas of special flood hazards within the jurisdiction of Yacolt.*
- B. *Basis for Establishing the Areas of Special Flood Hazard. The areas of special flood hazard are identified by the Federal Insurance Administration in a scientific and engineering titled "The Flood Insurance Study for Clark County, Washington and Incorporated Areas," dated September 5, 2012, and any revisions thereto, with an accompanying Flood Insurance Rate Map (FIRM),*

and any revisions thereto, are hereby adopted by reference and declared to be a part of this chapter. The Flood Insurance Study and the FIRM are on file at the Town of Yacolt, 202 W. Cushman St., Yacolt, WA. The best available information for flood hazard area identification as outlined in YMC 15.15.040(B)(2) shall be the basis for regulation until a new FIRM is issued that incorporates data utilized under YMC 15.15.040(B)(2).

- C. Interpretation. In the interpretation and application of this chapter, all provisions shall be:
 - 1. Considered as minimum requirements;
 - 2. Liberally construed in favor of the governing body; and
 - 3. Deemed neither to limit nor repeal any other powers granted under state statutes.*
- D. Warning and Disclaimer of Liability. The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the town of Yacolt, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administration decision lawfully made hereunder.*
- E. Severability. If any section, clause, sentence, or phrase of this chapter is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this chapter.*

15.15.030 General provisions

A. Establishment of Development Permit

- 1. Development Permit Required. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in YMC 15.15.030. The permit shall be for all structures including manufactured homes, as set forth in the definitions and for all development including fill and other activities, also as set forth in the definitions.*
- 2. Application for Development Permit. Application for a development permit shall be made on forms furnished by the clerk or public works director of the town of Yacolt and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:
 - a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures recorded on a current elevation certificate (FEMA Form 81-31) with Section B completed by the local official.*
 - b. Elevation in relation to mean sea level to which any structure has been floodproofed.*
 - c. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet floodproofing criteria in YMC 15.15.050.*
 - d. Description of the extent to which a watercourse will be altered or relocated as a result of the proposed development.**

B. Designation of Local Administrator. The clerk or public works director is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions.

- 1. Permit Review.*

- a. *Review all development permits to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies from which prior approval is required.*
 - b. *Review all development permits to determine that the permit requirements of this chapter have been satisfied.*
 - c. *Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions in YMC 15.15.050 are met.*
2. *Use of Other Base Flood Data in Zone A. When base flood elevation data has not been provided in Zone A in accordance with YMC 15.15.030(B), Basis for Establishing the Areas of Special Flood Hazard, the clerk or public works director shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer YMC 15.15.050(B), specific standards and floodways.*
 3. *Information to Be Obtained and Maintained.*
 - a. *Where base flood elevation data is provided through the Flood Insurance Study, FIRM or required as in subsection (B)(2) of this section (Use of Other Base Flood Data (in Zone A)), obtain and record the actual (as built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement. Recorded on a current elevation certificate (FEMA Form 81-31) with Section B completed by the local official.*
 - b. *For all new substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in this section:*
 - i. *Obtain and record the elevation (in relation to sea level) to which the structure was floodproofed.*
 - ii. *Maintain the floodproofing certifications required in this section.*
 - iii. *Maintain for public inspection all records pertaining to the provisions of this chapter.*
 4. *Alteration of Watercourses.*
 - a. *Notify adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.*
 - b. *Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.*
 5. *Interpretation of FIRM Boundaries. Make interpretations where needed, as to exact location of the boundaries of the area of special flood hazards (e.g., where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation. Such appeals shall be granted consistent with the standards of Section 60.6 of the rules and regulations of the National Flood Insurance Program.*

15.15.050 Provisions for flood hazard reduction

A. General Standards. In all areas of special flood hazards, the following standards are required:

1. *Anchoring*
 - a. *All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.*

- b. *All manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.*
- 2. *Construction Materials and Methods*
 - a. *All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.*
 - b. *All new construction and substantial improvements shall be constructed with methods and practices that minimize flood damage.*
 - c. *Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding. Locating such equipment below the base flood elevation may cause annual flood insurance premiums to be increased.*
- 3. *Utilities*
 - a. *All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems;*
 - b. *Water wells shall be located on high ground that is not in the floodway;*
 - c. *New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;*
 - d. *On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.*
- 4. *Subdivision Proposals*
 - a. *All subdivision proposals shall be consistent with the need to minimize flood damage;*
 - b. *All subdivision proposals shall have public utilities and facilities, such as sewer, gas, electrical, and wastewater systems located and constructed to minimize or eliminate flood damage;*
 - c. *All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage;*
 - d. *Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or five acres, whichever is less.*
- 5. *Review Building Permits. Where elevation data is not available either through the Flood Insurance Study, FIRM or from another authoritative source (YMC 15.15.040), applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.*
- B. *Specific Standards. In all areas of special flood hazards where base flood elevation data has been provided as set forth in YMC 15.15.030(B), Basis for Establishing the Areas of Special Flood Hazard, or YMC 15.15.040(B)(2), Use of Other Base Flood Data (in Zone A).*
 - 1. *Residential Construction*
 - a. *New construction and substantial improvement of any residential structure shall have the lowest floor, including the basement, elevated two feet or more above base flood elevation (BFE).*

increase the water surface elevation of the base flood more than one foot at any point within the community.

FINDING: According to Clark County GIS maps, the northwest corner of the site as Floodway Fringe, but outside the Flood Area. The proposal narrative indicates the project is allowed to fill and construct within the area. This application proposes to construct a stormwater facility, streets, utilities, and portions of Lots 5 through 8 within the Floodway Fringe. The proposed improvements within the Floodway Fringe will meet the requirements of this section. This standard is met.

Title 16 ENVIRONMENT

16.05 State Environmental Policy Act (SEPA)

16.05.110 Environmental checklist

- A. A completed environmental checklist (or a copy), in the form provided in WAC 197-11-960, shall be filed at the same time as an application for a permit, license, certificate, or other approval not specifically exempted in this chapter; provided, a checklist is not needed if the town and applicant agree an EIS is required, or if SEPA compliance has been completed, or if SEPA compliance has been initiated by another agency. The town shall use the environmental checklist to determine the lead agency and, if the town is the lead agency, to determine the responsible official for making the threshold determination.*
- B. For private proposals, the town will require the applicant to complete the environmental checklist, and shall provide assistance as the town determines necessary. For town proposals, the department initiating the proposal shall complete the environmental checklist for that proposal.*
- C. The town may require that it, and not the private applicant, will complete all or part of the environmental checklist for a private proposal, if either of the following occurs:
 - 1. The town has technical information on a question or questions that is unavailable to the private applicant; or*
 - 2. The applicant has provided inaccurate information on previous proposals or on proposals currently under consideration.**

FINDING: The application package included a SEPA checklist. The standard is met.

16.25 Critical Aquifer Recharge Areas (CARAs)

16.25.030 Administration

A. Permit Requirements

- 1. To receive a CARA permit required by YMC 16.25.020, the applicant must demonstrate, through a Level 1 site evaluation report, how they will integrate necessary and appropriate best management practices (BMP) to prevent degradation of groundwater. The applicant must also meet existing local, state, and federal laws and regulations.*
- 2. If an applicant wants to avoid implementation of BMPs, they must submit a Level 2 site evaluation report and develop and implement a monitoring program that:
 - a. Demonstrates how the applicant will prevent degradation to groundwater. The applicant must also meet existing local, state, and federal laws and regulations; and**

- b. Includes quarterly reporting to the public works department. The public works department will evaluate the monitoring program and may require periodic changes based on the monitoring results, new technology, and/or BMPs.*
- B. Level 1 Site Evaluation Report/Approval Criteria*
 - 1. For all proposed activities to be located in a critical aquifer recharge area, the site evaluation report shall include a Level 1 assessment by an engineer as defined in YMC 16.20.260.*
 - 2. The report will identify how the applicant will follow the requirements of the Dangerous Waste Regulations, Chapter 173-303 WAC, in the event hazardous material is released onto the ground or into groundwater.*
 - 3. The report will be reviewed by the public works department in the same process as the primary development permit. If approved, the applicant will receive a CARA permit allowing the activity on the subject property.*
 - 4. The public works department may waive the requirement for an engineer. This would be done when the site conditions or project mitigations have been, or can be, adequately addressed in the site evaluation report.*

FINDING: Based on the Clark County GIS maps, the proposal location occurs within a Category I CARA. The land use narrative indicates, the proposed residential subdivision is an exempt activity per YMC 16.25.010.D.2.b; therefore, a CARA Permit is not required.

16.35 Frequently Flooded Areas

16.35.030 Administration

C. Flood Hazard Permit.

- 1. A flood hazard permit must be obtained before construction or development begins within any special flood hazard area. The review shall be for all structures and development as defined in YMC 18.10.010 and this chapter.*
- 2. For land divisions, a flood hazard permit will be issued as part of the land division review process. The following information is required:*
 - a. Floodplain and floodway limits;*
 - b. Finished grading;*
 - c. Building envelopes; and*
 - d. Hydrologic and hydraulic calculations used to determine the impact of the proposed development on base flood elevation. Where base flood elevation data is not available from the flood insurance study, FIRMs, or from another authoritative source, it shall be provided by the applicant for subdivisions and other proposed development which contain at least 50 lots or five acres, whichever is less. This documentation shall be prepared by an engineer as defined in YMC 16.20.260.*
- 3. For building permits, a flood hazard review will be done as part of the building permit review process. The following information is required:*
 - a. Floodplain and floodway limits;*
 - b. Finished grading;*
 - c. Building envelopes; and*
 - d. Hydrologic and hydraulic calculations used to determine the impact of the proposed development on base flood elevation. Where base flood elevation data is not available from the flood insurance study, FIRMs, or from another authoritative source, the applicant shall assure that proposed construction will be reasonably safe from flooding. The test of reasonableness shall be a*

judgment of the responsible official who shall consider historical data, high water marks, and photographs of past flooding, where available. This documentation shall be prepared by a licensed professional engineer registered in the state of Washington. Failure to elevate the lowest floor at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.

4. *Application for a flood hazard permit shall be made to the responsible official on a form furnished by the responsible official.*
5. *The application shall include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question, and existing or proposed structures, fill, storage of materials, and drainage facilities. Specifically, the following information is required:*
 - a. *Elevation, in relation to mean sea level as determined by the National Geodetic Vertical Datum (NGVD) of 1988, of the lowest floor (including basement) of all structures;*
 - b. *Elevation, in relation to NGVD of 1988, to which any structure has been floodproofed;*
 - c. *Certification by a licensed engineer, as defined in YMC 16.20.260, that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in YMC 16.35.020(B)(2)(b);*
 - d. *Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development; and*
 - e. *Hydrologic and hydraulic calculations used to determine the impact of the proposed development on base flood elevation. If hydraulic modeling software is utilized for these calculations, all electronic files shall be submitted prior to flood hazard permit approval.*
6. *Responsibilities of the Responsible Official. The responsible official will:*
 - a. *Review all proposed developments with respect to the flood insurance study and accompanying maps and zoning district boundaries;*
 - b. *Make interpretations where needed as to the exact location of special flood hazard area boundaries;*
 - c. *When base flood elevation data has not been provided in accordance with this subsection C shall obtain, review and reasonably utilize any base flood elevation and floodway data available from an agency of federal or state government, or other sources, in order to enforce the provisions of this chapter;*
 - d. *Review all proposals to determine that the requirements of this chapter have been satisfied;*
 - e. *Review all proposals to determine that all necessary permits have been obtained from those federal, state or local governmental agencies from which prior approval is required; and*
 - f. *Issue a flood hazard permit with any conditions necessary to ensure that the development meets the requirements of this chapter.*
7. *Elevation Certificates Required. Elevation certificates are required to verify elevations of structures and aboveground equipment, and shall be submitted prior to receiving an inspection for footing, framing and certificate of occupancy. Elevation certificates shall be prepared by a licensed professional surveyor registered in the state of Washington.*

FINDING: The development site is outside the flood area, but the northwest corner of the site is within a floodway fringe. The land use narrative indicates the proposed improvements result

in a reduction of 15,700 cubic yards of soil in the mapped Floodway Fringe; therefore, the project is not increasing the flood elevation. The applicant submitted a geotechnical memo depicting a trench drain methodology to account for high groundwater in the area.

CONDITION OF APPROVAL: Prior to engineering approval, the applicant shall submit a final plan and report that accounts for the high ground water and flooding issues in the proposed pond location. The applicant shall apply and receive a flood hazard permit as part of the land division review process per YMC 16.35.030.C.2.

16.40 Priority Habitat Areas

16.40.050 Habitat permit applications

A. *The applicant shall provide the following information in support of a habitat permit application:*

1. *Name, address, and contact information for the applicant;*
2. *Location, address/parcel number of the proposed site;*
3. *Description of existing conditions, information, natural and manmade features on the site;*
4. *Description and mapping of proposed activities and how this would change existing conditions on the site;*
5. *Where required by state law, a completed environmental checklist pursuant to the State Environmental Policy Act (SEPA) shall also be submitted unless categorically exempted by the SEPA Rules; and*
6. *Report(s) or other assistance from a biologist, botanist, ecologist, or other similarly qualified or trained professional are encouraged and may be required by the responsible official.*

B. *Permit Authority and Timelines*

1. *An approval granted under this chapter shall remain valid until proposed activities are undertaken and completed. An approved permit not acted upon shall be valid for two years, and upon showing of good cause, may be extended for an additional 12 months.*
2. *Approval for habitat area activities as part of other town development approvals shall be valid for a time period specified by the other permit(s) involved.*

FINDING: Based on the Clark County GIS maps, an off-site 200-foot Riparian Habitat Area for Yacolt Creek on the south end of W Bumpski Street. This application proposes to install a stormwater pipe and outfall just west of W Bumpski Street's terminus, within the Riparian Habitat Area. The standard does apply.

CONDITION OF APPROVAL: Prior to engineering approval, the applicant shall perform a critical areas assessment of the proposed outfall for Town review and approval.

16.45 Wetlands

16.45.040 Wetland permits

C. *Wetland Permit – Applications*

1. *Applications for wetland permits shall be made to the town on forms furnished by the town. The town shall process a wetland permit application as a request for land use approval pursuant to existing land use review procedures.*
2. *Wetlands permit applications shall include:*
 - a. *Wetland delineations and required buffer width;*

- b. *A site plan for the proposed activity overlaid on an aerial photograph at a scale no smaller than one inch equals 400 feet showing the location, width, depth, and length of all existing and proposed structures, roads, stormwater management facilities, sewage treatment, and installations within the wetland and its buffer;*
- c. *The exact sites and specifications for all regulated activities including the amounts and methods; and*
- d. *A proposed preliminary mitigation plan meeting the requirements of this chapter.*

D. Wetland Permit – Approval

- 1. *The town shall issue final approval of the wetland permit authorizing commencement of the activity permitted thereby upon:*
 - a. *Submittal and approval of a final mitigation plan;*
 - b. *Installation and approval of the required field markings; and*
 - c. *The recording of a conservation covenant.*
- 2. *Conditions. An approval of a wetland permit shall incorporate the following conditions:*
 - a. *Posting of a cash performance bond or other security acceptable to the town in an amount and with surety and conditions sufficient to fulfill the initial (first year) requirements of the required final plan and mitigation plan, and to secure compliance with other conditions and limitations set forth in the permit.*
 - i. *The town shall release the performance bond upon determining that all initial (first year) activities, including any required compensatory mitigation, have been completed in accordance with the terms and conditions of the permit and the requirements of this chapter.*
 - ii. *Upon forfeiture of a performance bond, the proceeds thereof shall be utilized either to correct deficiencies which resulted in forfeiture or, if such correction is deemed by the town to be impractical or ineffective, to enhance other wetlands in the same watershed.*
 - b. *Posting of a cash maintenance bond or other security acceptable to the town in an amount and with surety and conditions sufficient to fulfill the requirements of the required final plan and mitigation plan and to secure compliance with other conditions and limitations set forth in the permit for the duration (beyond one year) of the required monitoring and maintenance time period.*
 - i. *The town shall release the maintenance bond at the end of the approved monitoring and maintenance time period upon determining that all activities, including any required compensatory mitigation, have been completed in accordance with the terms and conditions of the permit and the requirements of this chapter.*
 - ii. *Upon forfeiture of a performance or maintenance bond, the proceeds thereof shall be utilized either to correct deficiencies which resulted in forfeiture or, if such correction is deemed by the town to be impractical or ineffective, to enhance other wetlands in the same watershed.*

E. Programmatic Permits for Routine Maintenance and Operations of Utilities and Public Facilities. *The responsible official may issue programmatic wetland permits for routine maintenance and operations of utilities and public facilities within wetlands and wetland buffers, and for wetland enhancement programs. It is not the intent of the programmatic permit process to deny or unreasonably restrict a public agency or utility’s ability to provide*

services to the public. Programmatic permits only authorize activities specifically identified in and limited to the permit approval and conditions.

1. *Application Submittal Requirements. Unless waived by the responsible official with specific findings in the approval document in accordance with YMC 16.45.030(J)(1) and (J)(2), applications for programmatic wetland permits shall include a programmatic permit plan that includes the following:*
 - a. *A discussion of the purpose and need for the permit;*
 - b. *A description of the scope of activities in wetlands and wetland buffers;*
 - c. *Identification of the geographical area to be covered by the permit;*
 - d. *The range of functions and values of wetlands potentially affected by the permit;*
 - e. *Specific measures and performance standards to be taken to avoid, minimize and mitigate impacts on wetland functions and values including:*
 - i. *Procedures for identification of wetlands and wetland buffers;*
 - ii. *Maintenance practices proposed to be used;*
 - iii. *Restoration measures;*
 - iv. *Mitigation measures and assurances;*
 - v. *Annual reporting to the responsible official that documents compliance with permit conditions and proposes any additional measures or adjustments to the approved programmatic permit plan;*
 - vi. *Reporting to the responsible official any specific wetland or wetland buffer degradations resulting from maintenance activities when the degradation occurs or within a timely manner;*
 - vii. *Responding to any public works department requests for information about specific work or projects;*
 - viii. *Procedures for reporting and/or addressing activities outside the scope of the approved permit; and*
 - ix. *Training all employees, contractors and individuals under the supervision of the applicant who are involved in permitted work.*
3. *Approval Conditions. Approval of a programmatic wetland permit shall incorporate at least the following as conditions:*
 - a. *The approved programmatic permit plan;*
 - b. *Annual reporting requirements; and*
 - c. *A provision stating the duration of the permit.*

F. Emergency Wetland Permit

2. *Prior to issuing an emergency wetland permit, the mayor or his or her designee shall issue a finding that extraordinary circumstances exist and that the potential threat to public health, safety, or welfare from the emergency situation is clearly significant and substantial.*
3. *Conditions. Any emergency permit granted shall incorporate, to the greatest extent practicable and feasible but not inconsistent with the emergency situation, the standards and criteria required for nonemergency activities under this chapter and shall:*
 - a. *Be limited in duration to the time required to complete the authorized emergency activity, not to exceed 90 days; and*
 - b. *Require, within this 90-day period, the restoration of any wetland altered as a result of the emergency activity, except that if more than 90 days from the issuance of the emergency permit is required to complete restoration, the emergency permit may be extended to complete the restoration. If the*

restoration takes more than one year to complete, or if it is a forested system, then mitigation for temporal loss may be required.

FINDING: No wetland presence is noted within the development site. The proposed stormwater outfall to Yacolt Creek may encroach on critical areas. See finding and condition for section 16.40.050.

Title 18 ZONING

18.25 Single-Family Residential Districts

Article I. Single-Family Residential – R1-12.5, R-10

18.25.020 Permitted uses

The following uses are permitted:

- A. Single-family detached dwellings, including manufactured homes as defined in Ordinance 356.*
- B. Public parks and recreational facilities.*
- C. Accessory uses and structures normal to a residential environment, including detached garages.*
- D. Cemeteries, and mausoleums, crematories, columbaria and mortuaries within cemeteries; provided, that no mortuary or crematorium is within 100 feet of a boundary street, or where no street borders the cemetery within 200 feet of a lot in a residential district.*
- E. Family day care centers.*

FINDING: The proposal site is in the R1-12.5 zone and the applicant is proposing the construction of a single-family subdivision. This standard is met.

18.25.040 Height regulations

No building or structure with the exception of storage sheds shall be hereafter erected, enlarged or structurally altered to exceed 35 feet in height. No storage sheds shall be hereafter erected, enlarged or structurally altered to exceed 10 feet in height. The height of storage sheds shall be measured at the peak of the roof.

18.25.050 Lot requirements

The minimum lot requirements shall be one of those set out in Table 4A for this district classification, as designated on the zoning map.

Table 4A

<i>Classification</i>	<i>Minimum Lot Area (sq. ft.)</i>	<i>Average Lot Width (feet)</i>	<i>Average Lot Depth (feet)</i>	<i>SETBACK</i>			
				<i>Front Yard (feet)</i>	<i>Side Yard (feet)</i>	<i>Opposite Side Yard (feet)</i>	<i>Rear Yard (feet)</i>
<i>R1-10</i>	<i>10,000</i>	<i>60</i>	<i>90</i>	<i>25</i>	<i>5</i>	<i>5</i>	<i>25</i>
<i>R1-12.5</i>	<i>12,500*</i>	<i>80</i>	<i>90</i>	<i>25</i>	<i>5</i>	<i>5</i>	<i>25</i>

The minimum street side yard shall be 15 feet.

** The minimum lot size will be established using Method 2, in the building lot size of 12,500, provided there are no soil concerns that would result in the change of the minimum building lot size.*

18.25.060 Lot coverage

Maximum lot coverage by building and structures shall not exceed 50 percent. Carports are excluded from this provision; provided, that the total coverage limitation is not exceeded by more than 10 percent as a result of these exceptions.

FINDING: According to the land use narrative, the height, lot requirements, and lot coverage will be reviewed and approved during the building permit process. This standard applies.

CONDITION OF APPROVAL: Prior to engineering approval, architectural and site design plans satisfying all parts of YMC Section 18.25. Site Planning and Architectural Design Guidelines shall be submitted and approved by the Town.

18.25.085 Local health officer authority

The local health officer shall have final authority to approve, approve with conditions, or deny any development application in single-family residential R1-12.5, R1-10 zoning districts. No building or development permit may be issued by the town except in compliance with the conditions described in a recommendation for approval from the local health officer, who shall determine the minimum lot size, minimum land area, lot coverage criteria, dwelling density, soil condition standards, or such other standards and requirements as the local health officer is authorized by law or regulation to determine, as such law or regulation is now enacted or may hereafter be amended.

FINDING: According to the land use narrative, A Development Review Application was submitted to Clark County Public Health (CCPH) on October 26, 2021 and a CCPH Review Letter is included with this application. The development's septic systems will be permitted by CCPH with the construction of each residence. This standard is met.

18.70 Parking, Access and Circulation

18.70.020 Calculation of parking requirements

A site plan for a given use or uses shall show that at least the number of parking spaces required by Table 11A will be provided consistent with this chapter.

- A. Where Table 11A requires a certain number of parking spaces based on the area of a building, the area shall be the gross floor area within the exterior walls of the structure, excluding the area of a building that encloses parking or loading spaces.*
- B. Where more than one use occupies a given structure or parcel of land or where a given business includes a combination of uses, the minimum required number of parking spaces shall be the sum of the requirements for each use, except to the extent the uses comply with the requirements of this chapter for shared parking.*
- C. Where a building may be used for more than one purpose, and the applicant does not limit the permitted uses in the building, parking spaces shall be provided based on the possible use(s) that require the most parking spaces.*
- D. Where Table 11A does not list the parking requirements for a proposed use, the town council shall determine the minimum parking requirements for the use, based on requirements in Table 11A for other similar uses, if any, or on substantial evidence of parking needs for similar uses in other, similar locations.*
- E. Up to 30 percent of required parking spaces and all parking spaces in excess of minimum requirements may comply with the standards for compact cars in Table 11B.*

- F. All parking areas shall comply with applicable local, state and federal standards regarding parking for disabled persons.
- G. The town council may reduce the required number of parking spaces to less than that required in Table 11A if the town finds that a lesser number of off-street parking spaces will be enough to fulfill all parking needs of the use or development, based on substantial evidence in the applications, such as an adequate survey or parking demand at similar uses under similar conditions. The number of parking spaces for disabled persons may not be reduced under this section.

Table 11A

USE	MINIMUM NUMBER OF PARKING SPACES
A. Residential	
1. 1-, 2- and 3-unit family dwellings	2 spaces/dwelling unit. Single-family and duplex parking may be tandem (one car behind the other).
2. Multifamily dwelling containing 4 or more dwelling units	1 1/2 spaces/dwelling unit
3. Apartment, hotel, rooming or boarding house	1 1/2 spaces/guest accommodation
4. Residential care facility	1 space/7 residents served under age of 12 1 space/5 residents served ages 12 – 17 1 space/4 residents served ages 18 years or older
5. Retirement housing facilities	1 space/each 3 units
B. Commercial residential	
1. Hotel	1 space/bedroom
2. Motel	1 space/bedroom
3. Clubs/lodges	Spaces to meet the combined requirements of the uses being conducted, such as hotel, restaurant, auditorium, etc.
C. Institutions	
1. Welfare or correctional institutions	1 space/3 beds for patients or inmates
2. Convalescent hospital, nursing home, sanitarium, rest home, home for the aged	1 space/3 beds for patients or residents
3. Hospital	2 spaces/bed
D. Places of assembly	
1. Church	1 space/4 seats, or 8 feet of bench length in the main auditorium
2. Library, reading room, museum, art gallery	1 space/400 square feet of floor area
3. Preschool, nursery, kindergarten, mini-day care center or commercial day care center	2 spaces/teacher or employee
4. Elementary or junior high school	1 space/4 seats, or 8 feet of bench length in auditorium or assembly room, whichever is greater

5. High school	1 space/employee, plus 1 space/each 6 students, or 1 space/4 seats, or 8 feet of bench length in the auditorium, whichever is greater
6. College, commercial school for adults	1 space/3 seats in classroom
7. Other auditoriums, meeting rooms	1 space/4 seats, or 8 feet of bench length
E. Commercial amusements	
1. Stadium, arena, theater	1 space/4 seats, or 8 feet of bench length
2. Bowling alley	5 spaces/lane
3. Dance hall, skating rink	1 space/150 square feet of floor area
F. Commercial	
1. Retail store except supermarkets and stores selling bulky merchandise and grocery stores, 1,500 square feet gross floor area or less	1 space/350 square feet of floor area
2. Commercial retail, 1,501 square feet or more	1 space/350 square feet of floor area
3. Service or repair shops	1 space/200 square feet of floor area
4. Retail stores and outlets selling furniture, automobiles or other bulky merchandise where the operator can show the bulky merchandise occupies the major area of the building	1 space/600 square feet of floor area
5. Bank, office (except medical and dental)	1 space/400 square feet of floor area
6. Medical and dental office or clinic	1 space/200 square feet of floor area
7. Eating or drinking establishments	1 space/200 square feet of floor area
8. Mortuaries	1 space/4 seats or 8 feet of bench length
G. Industrial	
1. Manufacturing establishment	1 space/500 square feet
2. Storage warehouse, wholesale establishment, rail or trucking freight terminal	1 space/2,000 square feet of floor area

FINDING: Based on Table 11A, each single-family lot within the development is required to have a minimum of 2 parking spaces. The land use narrative indicates the development's future homes will have a minimum of four parking spaces per lot/dwelling (2-car garage and driveway). This standard is met.

18.75 Landscaping and Screening

18.75.030 Landscaping and screening approval standards – Generally

- A. A landscaping plan shall contain landscaping and screening consistent with the applicable design standards, based on Table 12A and other applicable provisions of this chapter.
- B. The applicant may provide landscaping and screening that exceeds the standards in this chapter; provided:
 1. A fence or wall (or combination of a berm and fence or wall) may not exceed a height of six feet above the finished grade at the base of the fence or wall (or at the base of a berm, if combined with one) unless the approval authority finds additional

height is necessary to mitigate potential adverse effects of the proposed use or other uses in the vicinity; and

- 2. Landscaping and screening shall not obstruct sight distances at intersections as provided in Chapter 18.70 YMC.*
- C. The town council may approve use of existing vegetation to fulfill landscaping and screening requirements of this chapter if that existing landscaping provides at least an equivalent level of screening as the standard required for the development in question.*
- D. As a condition of approval of a conditional use, the town may require an applicant to provide landscaping and screening that differs from the standards in Table 12A where necessary to comply with the other applicable approval standards for the use or development.*
- E. Landscaped areas required for stormwater management purposes may be used to satisfy the landscaping requirements of this chapter, even though those areas may be inundated by surface water.*
- F. Required landscaping and screening shall be located on the perimeter of a lot or parcel. Required landscaping and screening shall not be located on a public right-of-way or private street easement, unless authorized under another ordinance.*

FINDING: Based on the Clark County GIS maps, the surrounding properties are zoned single-family; therefore, no landscaping or screening is required along the site boundaries. This standard does not apply.

18.80 Fences

18.80.010 Permit and other pre-installation requirements

- A. A fence installation permit is required prior to installing any fence, wall or hedge. The application for said permit shall include a site and construction plan, including a list of the materials to be used. The public works supervisor will inspect the site for project placement and the mayor will grant final approval on the fence installation permit.*
- B. A survey is required, at the applicant's expense, prior to the installation of any fence, wall or hedge that abuts town property if the applicant and town officials disagree on the location of the fence, wall or hedge.*
- C. A utility locate is required prior to the installation of all fences and walls.*

18.80.020 Standards

- A. Any fence, wall or hedge shall not exceed six feet in height.*
- B. Fences or walls may be constructed of wood, masonry, wire, or grown as hedges. All construction is to be done in such a manner as to leave no sharp or protruding edges, barbs, or projections. Hedges must be kept trimmed to or below the maximum allowed height and trimmed back to the inner edge of the town right-of-way. Electric fences, fences containing barbed wire, and fences containing pallets shall be prohibited within the limits of the town.*
- C. Any fence or wall shall be installed inside or at the property line.*

FINDING: The proposal does not include fences. This standard is not applied.

CONDITION OF APPROVAL: No fences shall be installed without a fence installation permit issued by the Town of Yacolt. Fences area, size and location shall be in accordance with YMC 18.80.

18.85 Signs

18.85.040 Sign permits

- A. *Sign Permits Required. Sign permits shall be required for all permanent signs exceeding 16 square feet. Permit applications shall include description of all proposed signs, as prescribed by the town. Sign permits are required for all signs which are authorized under this chapter. The sign permit shall only be issued if it complies with all of the applicable provisions of this chapter and the building code. One sign permit application may include all signs proposed for the premises. In addition, a temporary sign permit may include all temporary signs proposed within one year.*

FINDING: No signs are proposed at this time. The standard does not apply.

B. YACOLT ENGINEERING STANDARD

Chapter I – General Design Requirements

1.03 Permits

Permits, approvals, or agreements are required by the Town, and sometimes other jurisdictions, prior to initiating any construction or demolition work elements described within these Standards.

The majority of work covered under these Standards will require multiple permit authority review and approvals. Several types of permits and approvals require prior approval from the authority before a building or other substantial permit can be issued. Any questions regarding information about permits, approvals, and agreements should be directed to the Town Clerk or Clark County as applicable.

The following general categories describe the major permits, approvals, and agreements:

A. Environmental Review

For most projects, including clearing and grading activity, an Environmental Checklist must be completed by the applicant and submitted along with plans, specifications, and other information when approval or permits are being requested for a project. Clark County conducts the Environmental Review and makes a SEPA Threshold Determination for the Town.

B. Construction Permits

- 1. Clearing and Grading Permit:** *A Clearing and Grading Permit is required for all significant land alterations, including plats. A Clearing and Grading Permit is typically issued in conjunction with other permits.*
- 2. Building Permit:** *A Building Permit is required for all construction work including alteration, repairs and demolition. Demolition Permits for structures greater than four thousand square feet (4,000 sq. ft.) require the submittal of an Environmental Checklist.*
- 3. Right-of-Way Permit:** *A Right-of-Way Permit is required for any work within the street right-of-way which is not covered by other permits and agreements. Such work may include utilities work, land closures, driveways, curbs, sidewalks, and*

haul routes. Permission to temporarily close a street or portion thereof for construction activities or special events is obtained through the Right-of-Way Permit.

4. *Utilities Work: Permits, service requests, and applications are required for water and sewer-related items, including side sewers, fire hydrant use permits and water meters.*

C. Approvals and Other Permits

There are several other permits or approvals which may be required and referred to in these Standards: Developer Extension Agreements; plat and short plat approvals; and Certificate of Occupancy.

In addition, there are several other Town approvals (land use) which may have been obtained prior to the above listed permits and which may affect the Standards as contained in this document.

FINDING: The proposal includes SEPA Environmental Checklist and other permit requirement documents for Town to review. The standard is applied.

CONDITION OF APPROVAL: Prior to construction, applicant shall obtain and have in their possession all necessary permits to perform work.

1.04 Submittal Requirements

A. General

1. *Submittal requirements consist of design plans, grading plans (where required), erosion control plans (where required), drainage calculations, and other information as required. Letters of transmittal shall accompany all submittals.*
2. *The Standard Specifications are hereby adopted and incorporated as part of this document by reference except as modified herein.*

B. Design Plan Format

1. *The plans shall be submitted on 24 x 36-inch sheets.*
2. *Vicinity Maps shall be located on the first sheet of all plans and shall show the location of the project in respect to the nearest major street intersection.*
3. *A north arrow shall be shown on each plan view sheet of the plans and adjacent to any other drawing which is not oriented the same as other drawings on the sheet.*
4. *Site Development Plans shall be organized as follows:*
 - a. *Title sheet to include project name, vicinity map, name and mailing address of developer/owner and engineering firm, general notes, notice to excavators, index, and space for town approval stamp (5 x 5-inch) in the lower right quadrant.*
 - b. *Composite utility plan: include existing public and private utilities, and proposed public improvements.*
 - c. *Sanitary sewer and water, including fire hydrant locations.*
 - d. *Street and storm sewer, showing existing and finished contours at 2-foot intervals.*

- e. *Grading and erosion control plan with maximum contour intervals of 2 feet. Contours shall extend offsite a minimum of 50 feet. This sheet shall also note the source of information, date of field work, and location of original document.*
 - f. *Approved preliminary plat (if it is a subdivision).*
 - g. *Landscape plan including sidewalks, bikeways, retaining walls, irrigation, and lighting.*
5. *Details - All Town Standard Drawings and details shall be full size.*
 6. *The scale shall be 1-inch = 2 feet, 3 feet, 4 feet, 5 feet, or 10 feet vertically and shall be 1-inch = 10 feet, 20 feet, 30 feet, 40 feet, or 50 feet horizontally for all drawings except structural details. Scale shall be shown with north arrow and within a title block.*
 7. *Letter size shall not be smaller than 0.10 of an inch high.*
 8. *The location and elevation of a National Geodetic Survey, United States Geological Survey, Clark County, or Town of Yacolt bench mark shall be shown. No other datum shall be used without permission of the Town Engineer. Temporary control bench marks and elevations shall also be shown on the plans.*
 9. *A title block shall appear on each sheet of the plan set and shall be placed in the lower right-hand corner of the sheet, across the bottom edge of the sheet, or across the right-hand edge of the sheet. The title block shall include the names of the project, the engineering firm, the owner, the sheet title, and the sheet number.*
 10. *The seal of the registered Washington Professional Engineer responsible for preparation of the plans shall appear on each sheet.*
 11. *The description and date of all revisions to the plans shall be shown on each sheet affected, and shall be approved and dated by the registered Professional Engineer of record as evidenced by an original signature or initial.*
 12. *Through use of standard drafting symbols, indicate the location and direction of view for all sections.*
 13. *The following statement shall appear on the cover sheet of all plans at a location immediately above or below the developer engineer's professional stamp: "I hereby certify that these plans, and related design, were prepared in strict conformance with the Town of Yacolt's Engineering Standards for Public Works Construction".*
- C. *Plan View*
- Plan views shall show the following:*
- *Right-of-Way, property, tract, and easement lines (existing and proposed).*
 - *Subdivision name, lot numbers, street names, and other identifying labels. Subdivision and street names are subject to the approval of the Mayor, Fire Marshal's Office, and the County Surveyor.*
 - *Location and stationing of existing and proposed street center lines and curb faces.*
 - *Horizontal alignment and curve data of street center lines and curb returns.*
 - *Existing underground utilities and trees over 6 inches in diameter within the construction limits.*

- *Location of existing buildings, wells, septic tanks, drain fields, fuel tanks, and any other buried structures. An AL TA survey shall be required for at least 100 feet surrounding any of the above items to remain.*
- *Location, stationing, and size of all mains and service lines for storm drainage, sanitary sewer and water. Location of all fire hydrants. Stationing shall be located in relationship to the street stationing at all manholes or other key locations.*
- *Match lines with sheet number references.*
- *Provisions for cross-connection control must be clearly shown on the plans, including any retro-fitting of existing water service connections and existing auxiliary water supplies, conversions to Town of Yacolt water service that are required as a condition of development approval, upgrading of existing service connections by replacement of same, and any other cross connection control required by state and local rules and codes.*
- *Street stationing to be noted at a minimum of 100-foot intervals.*
- *Top of curb elevations along curb returns at quarter-delta's, and at 100-foot stations.*
- *Location of the low points of street grades and curb returns.*
- *Sidewalk locations. This shall include ramps, transitions in location or width, and relationship with driveways.*
- *Crown lines along portions of streets transitional from one typical section to another.*
- *Center line stationing of all intersecting streets.*
- *Location and description of existing survey monuments, including but not limited to: section corners, quarter corners, donation land claim comers, and Town bench marks.*
- *Location of proposed street intersection monument boxes.*
- *FEMA designated 100-year flood plains and flood ways, or areas of flooding during a 100-year storm event.*
- *Wetland areas and storm water quality undisturbed corridors (buffer strips).*
- *Legend.*
- *Developer's name, address and phone number.*
- *Any additional information that the Town deems necessary.*

E. Site Grading Plan

The Town of Yacolt requires a site grading plan as part of the Application for any development that involves the excavation or fill of greater than fifty (50) cubic yards of material. Grading contours (existing & proposed) shall be at no more than 2-foot intervals, and shall extend off-site a minimum of 50 feet. This sheet shall also note source of information, date of field work, and location of original document.

All soil disturbing construction activity must adhere to the requirements of Chapter 2. A detailed erosion control plan shall be shown in conjunction with the site grading plan.

F. Drainage Calculations

Drainage calculations shall be presented in a clear, concise and complete manner. These calculations shall address all runoff into the drainage system; areas contributing flow to each inlet must be computed separately and each inlet with contributing area shall be designated and shown on an accompanying contour map work sheet.

Initial time of concentration calculation with assumptions listed and charts or nomographs used shall be included with drainage calculations.

G. Other Requirements

Other information to be shown on the construction drawings or the other submittals include;

- *The design assumptions for each street (ex: traffic coefficient, R-value).*
- *The design elements such as:*
 1. *Street classification;*
 2. *Design speed;*
 3. *Superelevation;*
 4. *Average Daily Traffic (ADT) or Design Hourly Volume (DHV).*
- *Structural construction plans and the necessary calculations shall be submitted for proposed structures (ex: walls, box culverts, bridges).*
- *Any additional information that the Town Engineer deems necessary to review the plans and assure compliance with design standards.*

FINDING: The proposal includes design plans, drainage calculations, geotechnical report and other information as required. However, the proposal does not provide grading plans and erosion control plans; therefore, this standard is not met.

CONDITION OF APPROVAL: Prior to engineering approval, the final civil plans shall meet the requirement of YES chapter I section 1.04.

Chapter 2 – Land Alteration

2A Policies

2A.03 Preservation of Existing Vegetation

- A. *Existing vegetation shall be preserved whenever possible.*
- B. *In general, preservation of existing vegetation in order to control erosion and to preserve an area's character and quality of the environment shall be considered during the Land Alteration design review process. All excavations and fills in the proximity of trees and shrubs shall be kept outside the dripline of said trees and shrubs.*

2A.04 Temporary Erosion/Sedimentation Control

Erosion control during construction shall be required per the recommendations of the Puget Sound Manual.

2A.05 Permanent Erosion Control and Vegetation Restoration

- A. *Permanent erosion control shall be required per the Puget Sound Manual.*
- B. *Vegetation shall be restored on those areas of the site disturbed by the land alteration activity which are not covered by permanent impervious surface improvements (e.g. buildings, parking lots, etc.) at the earliest possible time consistent with appropriate planting times. The soil shall be stabilized prior to vegetation restoration since vegetation alone cannot provide an effective erosion control cover and prevent soil slippage on a soil that is not stable due to its texture, structure, water movement or excessive slope.*

- C. *In no case will the period between the land alteration operation and final and complete restorative, or permanent erosion control, vegetation planting for a given project or project phase be longer than one year. Said planting shall restore the vegetation on site to a condition equal to or better than the precleared condition to the maximum extent possible. Temporary erosion and sedimentation control measures shall be maintained in full operating condition for all areas to be restored until said restoration is complete and the site fully stabilized.*

FINDING: The proposal does not include a SWPPP and Erosion Control Plan, so this standard is not met. Based on the land use narrative, the NPDES permit will be submitted during final engineering or grading review to the Department of Ecology. The SWPPP will provide appropriate stormwater BMP's for site stabilization. All restoration, permanent erosion control, and vegetation planting will be completed in accordance with this section.

CONDITION OF APPROVAL: Prior to engineering approval, an erosion control plan compliant with chapter 2A of the Town of Yacolt's Engineering Standard shall be submitted for review and approval by the Town.

2A.06 100-Year Flood Plain

- A. *Encroachments, including fills, new construction, substantial improvements, and other development within the regulatory flood way that would result in any increase in flood levels during the occurrence of the "100-year" flood discharge shall be prohibited.*
- B. *"100-year flood" means the flood having a one percent chance of being equalled or exceeded in any given year."*
- C. *Delineation of the "100-year" flood plain shall be in accordance with the elevations established by the U.S. Geological Survey's Flood Insurance Study (latest published edition) for the U.S. Department of Housing and Urban Development.*

FINDING: Refer to finding for YMC 15.10 (Page 12 of this staff report).

2A.09 Water Quality Standards

Water Quality shall be maintained per the recommendations of the Puget Sound Manual.

FINDING: Based on the land use narrative, stormwater treatment for pollution generating surfaces will be provided by a stormwater wet pond. This standard is met.

2B Design Standards

2B.01 Temporary Erosion Control

- A. *Prior to any clearing and grading of any land development, devices for interception of all runoff from the cleared area shall be installed. Said interception shall preclude discharging silt-laden runoff from the proposed land development to downstream properties to the maximum extent possible with the best available technology. Said interception shall cause all silt-laden runoff to be conveyed by open swale or other means to whatever temporary facility is necessary or required to remove silt from said runoff prior to discharge to downstream properties (see paragraph e below).*

Sequence of work shall be specified on the plans. An applicant for pre-application review of a preliminary short plat shall submit the requisite fee, a completed pre-application review form provided for that purpose by the city, and the information listed in Chapter 1.030.020(C) WDC.

- B. Care shall be taken so as to deposit no material from sites of land alteration activity onto public rights-of-way and/or adjoining properties. If such depositions occur, it shall be the responsibility of the Permittee to immediately remove such material from public rights-of-way and adjoining properties, and restore to the original conditions.*
- C. Since site conditions may change rapidly during construction due to construction activity, weather, and other factors, it should be anticipated that the erosion control measures on the approved plan may become ineffective. Under special conditions, measures additional to those showing on the plan may be required by the Town in order to control erosion and sedimentation when such special conditions occur.*
- D. The following shall be carried as general notes on the Temporary Erosion/Sedimentation Control Plan:*
 - 1. All construction shall be in accordance with the Town of Yacolt's Engineering Standards for Public Works Construction, Yacolt Ordinances, Permit Conditions, and all other applicable codes, ordinances, standards and policies.*
 - 2. The temporary erosion control system shall be installed prior to all other construction.*
 - 3. Where possible, maintain natural vegetation for erosion and siltation control.*
 - 4. As construction progresses and seasonal conditions dictate, more siltation control facilities may be required to ensure complete siltation control. Therefore, during the course of construction, it shall be the obligation and responsibility of the developer to address any new conditions that may be created by his activities and to provide additional facilities over and above the minimum requirements as may be needed to achieve the performance standards required by the permit.*
 - 5. Temporary siltation ponds and all temporary siltation and erosion controls shall be maintained in a satisfactory conditions until such time that clearing and/or construction is completed, permanent drainage facilities are operational, and the potential for erosion has passed. Ponds and controls shall be cleaned or replaced as directed by the Town. Contractor shall maintain a 24 hour contact number at (206) - for emergency response to maintain and repair all on site erosion and sedimentation control measures and facilities.*
 - 6. All disturbed land areas unworked for seven (7) days or more shall be protected from erosion by hydroseeding with a mix or by a method approved by the Town. If required due to weather, timing, or site conditions, the hydroseeding shall be supplemented by mulching with straw a minimum of 1 inch thick and stapling jute or utility mesh over the mulch.*
 - 7. Approval of this temporary erosion and sedimentation control plan does not constitute an approval of design, nor location of pipes, restrictors, or*

retention facilities, or an approval of plans required for a building permit; but is an approval of grading and sedimentation control plan only, unless specifically noted on the plan approval stamp.

8. *Prior to occupancy of the building, the permanent storm drainage system shall be cleaned by pumping (not into the storm drainage system) or other method as approved by the Town.*
 9. *The Permittee shall be responsible for preventing water pollution due to construction materials, methods or equipment. All exposed aggregate concrete shall be installed and constructed so that no wash water enters the storm drainage system. The contractor shall provide a separate area, a minimum of 200 square feet in size, for washing of concrete trucks. This area shall also be isolated so that no water enters the storm drainage system.*
- E. *General Methods of Erosion and Sedimentation Controls - The types of controls, as outlined in the Puget Sound Manual, shall be utilized in such combination as is necessary to achieve the level of erosion control required by these Standards and meet water quality objectives. Erosion control facilities shall be periodically inspected and maintenance performed in order to ensure their proper functioning as required by the approved erosion and sedimentation control management plan.*

FINDING: Refer to finding for YES 2A.03, 04 and 05 of this report.

2B.02 Environmental Protection During Construction

A. General Policy and Requirements

1. *It is the policy of the Town of Yacolt to require temporary and permanent measures for all construction projects to lessen the adverse effects of construction on the environment.*

The Contractor shall properly install, operate, and maintain both temporary and permanent works as provided in this section or in an approved plan, to protect the environment during the term of the project.

The Town may, in addition, require that a construction project be scheduled so as to minimize erosion or other environmental harm.

Nothing in this section shall relieve any person from the obligation to comply with the regulations or permits of any federal, state, or other local authority.

2. *For all projects the prohibitions and regulations of this section shall apply. The Town may temporarily suspend the work or require additional protection measures if it appears, based upon observed conditions of the project, that the approved plan is insufficient to prevent environmental harm, and that such suspension or additional measures will prevent or minimize such harm.*

B. Air Pollution Control

1. *Dust. Dust shall be minimized to the extent practicable, utilizing all measures necessary, including, but not limited to:*
 - a. *Sprinkling haul and access roads and other exposed dust producing areas with water. Obtaining water from a hydrant will require specific authorization from the applicable water jurisdiction.*

- b. *Applying DOE approved dust palliatives on access and haul roads.*
 - c. *Establishing temporary vegetative cover.*
 - d. *Placing wood chips or other effective mulches on vehicle and pedestrian use areas.*
 - e. *Maintaining the proper moisture condition on all fill surfaces.*
 - f. *Pre-wetting cut and borrow area surfaces.*
 - g. *Use of covered haul equipment.*
2. *Fumes, Smoke, and Odors*
- a. *Tires, oils, paints, asphalts, coated metals, or other such materials will not be permitted in combustible waste piles, and will not be burned at the construction site.*
 - b. *Open burning shall not be permitted unless approved by the Southwest Washington Air Pollution Control Authority and the County Fire Marshal's Office.*
 - c. *Open burning shall not be permitted within 1,000 feet of a structure or within 250 feet of the drip line of any standing timber or flammable growth.*
 - d. *Open burning shall not be permitted during a local air inversion or other climatic conditions that may result in a smoke pall hanging over a built-up area or community.*
 - e. *Open burning shall not be permitted when climatic and moisture conditions are contributing to high danger of forest or range fires as determined by town, state, or federal authorities.*
 - f. *All open burning shall be constantly attended by a crew with a supply of fire-fighting tools and equipment. The number and size of fires shall be limited such that the burning crew can adequately control them.*

C. *Erosion Control*

The Town of Yacolt has adopted the Puget Sound Manual. All construction standards must meet or exceed these requirements for the installation and maintenance of erosion control devices.

The Town has the following notations in addition to the Puget Sound Manual.

1. *Measures to prevent erosion at construction sites shall be incorporated into the construction drawings and specifications.*
2. *All earth and soft or broken rock areas that have been disturbed by construction operations such as during stripping, excavation, and by traffic shall be protected from erosion by the action of concentrated runoff, by the impact of falling rain, by wind action, by vehicular tracking, or a combination of actions.*
3. *The concentration of runoff on or across slopes shall be prevented.*
4. *Sections of bare earth and the length of time of their exposure to potential erosion shall be minimized by proper scheduling, limiting the work areas, and placement of appropriate cover.*
5. *Precautions shall be taken in the use of construction equipment to prevent operations that increase the potential for erosion. Wheel tracks or ruts, particularly down slopes, that permit concentration of surface flows, shall be avoided. Fording of live streams that accelerate erosion and damage*

aquatic animal habitat shall be avoided. Where frequent stream crossings are necessary, temporary bridges shall be installed.

- 6. Areas for borrow pits and waste disposal shall be selected with full consideration of erosion control needs during and after borrow operations.*

D. Maintaining Surface Water Quality

- 1. Construction between stream banks shall be kept to a minimum.*
- 2. Pollutants such as fuels, lubricants, bitumens, raw sewage, and other harmful materials shall not be discharged into or near rivers, streams, or impoundments. Sterilizing water from water line construction activities shall not be directly discharged into the public storm drainage system.*
- 3. The use of water from a stream or impoundment shall not result in altering the temperature of the water body enough to affect aquatic life.*

E. Fish and Wildlife Habitat Preservation

- 1. The construction shall be done in a manner to minimize the adverse effects on wildlife and fishery resources.*
- 2. The requirements of local, state, and federal agencies charged with wildlife and fish protection shall be adhered to by the entire construction work force.*

F. Control of Noise Levels

Construction noise shall be minimized by the use of proper engine mufflers, protective sound reducing enclosures, and other sound barriers. Construction activities producing excessive noise that cannot be reduced by mechanical means shall be restricted to locations where their sound impact is reduced to a minimum at the edge of the work area.

G. Natural Vegetation

- 1. As far as is practicable, the natural vegetation shall be protected and left in place. Work areas shall be carefully located and marked to reduce potential damage. Trees shall not be used as anchors for stabilizing working equipment.*
- 2. During clearing operations, trees shall not be pennitted to fall outside the work area. In areas designated for selective cutting or clearing, care in falling and removing trees and brush shall be taken to avoid injuring trees and shrubs to be left in place.*

H. Historical and Archaeological Areas

When burial sites, buried camp areas, village sites, and other distinctive archaeological or historical items are uncovered, or other items suspected of being of historical or archaeologic significance are encountered, the Contractor shall report the matter to the Town and the state liaison officer. Construction operations shall be stopped until the appropriate authorities can examine the area and give clearance to proceed with the work.

Under the Natural Historical Preservation Act, state liaison officers shall be notified when historical or archaeological items are unearthed.

The Washington Criminal Code prohibits disinterment of a corpse without permission of the appropriate authorities.

I. Use of Pesticides

- 1. The use of pesticides including insecticides, herbicides, defoliants, soil sterilants, and so forth, must strictly adhere to federal, state, county, and*

- local restrictions. Time, area, method, and rate of application must be approved by all relevant authorities and their requirements followed.*
- 2. All materials delivered to the job site shall be covered and protected from the weather. None of the materials shall be exposed during storage. Waste material, rinsing fluids, and other such material shall be disposed of in such a manner that pollution of groundwater, surface water, or the air does not occur. In no case shall toxic materials be dumped into drainageways.*
 - 3. All personnel shall stay out of sprayed areas for the prescribed time. All such areas should be fenced, appropriately signed, or otherwise protected to restrict entry.*

FINDING: The land use narrative indicates; the proposed subdivision has been designed to meet or exceed applicable environmental regulations including but not limited to stormwater requirements. This standard is applied.

CONDITION of APPROVAL: Prior to engineering approval, the applicant shall demonstrate compliance with applicable environmental standards and permitting including but not limited to WDFW for work within the buffer of Yacolt Creek and a Stormwater General Construction permit.

Chapter 3 - Streets

3A Functional Classification

3A.01 Access

Access to public streets shall conform to the requirements of Paragraph 3B.10. The Town Engineer shall have the authority to limit access and designate access locations on public streets under the jurisdiction of the Town. Access to streets and highways under Clark County or State of Washington jurisdiction must be formally approved by those entities at the applicant's initiative and expense.

3A.02 Width

Table 3B.04A is a summary of road width standards by the functional classification of the road. It should be noted that public utility easements beyond the right-of-way are typically required.

3A.03 Number of Lanes

The number of lanes for each class of road shall be as directed by the Town Engineer. Additional lanes may be required at intersections in excess of the road sections shown in Table 3B.04A. Right-of-way may be needed in addition to that shown in Table 3B.04A to accommodate the increased number of lanes at intersections.

3A.04 Design Speed

The minimum design speed for each road classification shall be as shown in Tables 3B.04A or as otherwise determined by the Town Engineer.

3A.05 Dedications

- A. *Right-of-Way shall be deeded for streets and other improvements as required per Table 3B.04A to accommodate motorized and non-motorized transportation, landscaping, utility and buffer requirements. Some reduction in the minimum right-of-way requirement may be granted by the Town where it can be demonstrated that sufficient area has been provided for all functions within the right-of-way and/or alternate locations. Conveyance shall be fee simple using a statutory warranty deed.*
- B. *Easements for all public systems shall be provided as required. Specific requirements for sewer, water, and storm drainage easements are detailed in the relevant chapters. Particular design features of a road may necessitate slope, wall or drainage easements. Such easements may be required by the Engineer in conjunction with dedication or acquisition of right-of-way and other standard easements (temporary construction, right of entry, sidewalk, pedestrian., street lighting, and traffic control devices, etc.).*
- C. *Special Access Easements or Tracts.*
Where it is necessary to facilitate pedestrian circulation between neighborhoods, schools, shopping or other activity centers, public access easements or tracts shall be dedicated.
Improvements to the easement shall include a sidewalk or trail consistent with other non-motorized facilities in the area. Fences shall be constructed along access easements in residential areas where buildings will be located nearer than fifty feet (50') to the edge of the easement. Diverters or bollards shall be installed at the direction of the Town.
- D. *All subdivisions and short subdivisions (short plats) will be required to deed additional right-of-way, as a condition of approval of the subdivision, where the existing right-of-way for a public street is not adequate to incorporate necessary frontage improvements for public safety and provide compatibility with area's circulation system.*
All short subdivisions (short plats) will be required to deed additional right-of-way, as a condition of approval of the short plat, under one or more of the following conditions:
1. *The short plat abuts an existing substandard public street and the additional right-of-way is necessary to incorporate future frontage improvements necessary for public safety, or*
 2. *Additional right-of-way is needed to provide right-of-way for the extension of existing public street improvements necessary for public safety, or*
 3. *Additional right-of-way is needed to provide future street improvements necessary for public safety for planned new public streets.*
- E. *It is within the authority of the Town to refuse to approve or sign any land partition, partition plat, or subdivision plat for a development that has not installed or completed the construction of the necessary public infrastructure to serve the proposed and affected existing lots. Such approval may be withheld until it can be verified that the location and width of proposed rights of way and easements are adequate for the completed infrastructure.*
- F. *Easements are subject to the approval of the Town Attorney prior to recording. Variation from the Town standard form of conveyance shall be allowed only when*

extraordinary circumstances warrant, as determined by the Mayor and Town Attorney.

- G. *All recording costs for easements created by private development shall be borne by the developer unless specifically agreed to by the Town.*

FINDING: The proposal includes frontage improvement on S Railroad Avenue (Residential Arterial) along the eastern boundary, W Hoag Street (Residential Collector) along the northern boundary, and S Parcel Avenue (Residential Access) along the western boundary. Additionally, this application proposes to construct four internal public streets (W Oak Street, W Bumpski Street, S Ranck Avenue, and S Amro Avenue). This standard is applied.

CONDITION of APPROVAL: Prior to engineering approval, plans depicting all street/roadway construction meeting chapter 3 Streets of the Town of Yacolt's Engineering Standard shall be submitted for review and approval by the Town.

3A.06 Private Streets

FINDING: The proposal does not include private streets. This standard does not apply.

3A.07 Street Frontage Improvements

- A. *All residential subdivisions, commercial developments and short plats shall install street frontage improvements at the time of construction as detailed in their subdivision or short plat approval, as detailed in their approved building plans, or as directed by the Town Engineer. Such improvements may include curb and gutter; sidewalk; street storm drainage; street lighting system; traffic signal modification, relocation or installation; utility relocation; landscaping and irrigation and street widening all per these Standards. Plans shall be prepared and signed by a licensed civil engineer registered in the State of Washington.*
- B. *Plan preparation shall be as specified in Chapter 1 of these standards.*

FINDING: Based on the land use narrative, the proposed project will construct half-width frontage improvements to S Railroad Avenue (public), W Hoag Street (public), and S Parcel Avenue (public). The improvements include dedication of right-of-way, half-width pavement, planter strip and sidewalk.

CONDITION of APPROVAL: Prior to engineering approval, the applicant shall provide engineering plans showing street trees on the Railroad Ave frontage improvements.

3A.08 Street Ends

- A. *Cul-de-sacs shall be provided at all public and private street ends.*
- B. *Hammerheads may be used in lieu of a cul-de-sac provided that the street serves six (6) or less lots and the street is less than two hundred feet (200') in length.*
- C. *Temporary Dead Ends. Where a street is temporarily dead ended, turn around provisions must be provided where the road serves more than one lot. The turnaround may be a hammerhead if the dead end is less than two-hundred feet (200') in length. If over two-hundred feet (200') long, a cul-de-sac with a minimum*

radius of thirty-five feet (35') is required for residential streets, and forty-eight feet (48') for industrial streets.

FINDING: The proposal includes a cul-de-sac turnaround at the terminus of W Bumpski Circle, and the cul-de-sac with a radius of forty-one feet. This standard is met.

CONDITION of APPROVAL: Prior to engineering approval, all street names will be provided by the Town.

3A.09 Medians

A median shall be in addition to, not part of, the specified roadway width. Medians shall be designed so as not to limit turning radius or sight distance at intersections. Landscaping and irrigation shall be installed when directed by the Town Engineer.

FINDING: The proposal does not include medians; therefore, this standard is not applied.

3A.10 Intersections

- A. Traffic control will be as specified in the Manual of Uniform Traffic Control Devices (M.U.T.C.D.) or as modified by the Engineer as a result of appropriate traffic engineering studies.*
- B. Traffic signal modification, relocation or installation is required when roadway or driveway geometrics interfere with existing signal facilities, or would result in an unsignalized approach or intersection that meets signal warrants.*

FINDING: The land use narrative indicates that controlled intersections with a stop sign shall be provided. This standard is applied. See condition of approval for section 18.85 YMC.

3A.11 Sight Obstruction Requirements

- A. Sight distance should be maintained at all driveways, building or garage entrances where structures, wing walls, etc. are located adjacent to or in close proximity to a pedestrian walkway.*
- B. Sight lines to traffic control devices (signs, signals, etc.) should not be obscured by landscaping, street furniture, marquees, awnings or other obstructions. Refer to the Manual of Uniform Traffic Control Devices for required sightlines (MUTCD).*

FINDING: The proposed development plan shows corner sight distance triangles. This standard is met.

3A.12 Curb and Gutter - Types and Application

- A. Curb and gutter shall be utilized for street edges whenever possible and shall always be used under the following conditions:
 - 1. All streets - residential, commercial, or arterial.*
 - 2. Modified curb and gutter shall be used on designated bicycle lanes.**
- B. Vertical Curb shall be used for edges of islands and medians except when emergency vehicle access across the median is required.*
- C. Rolled Curb may be used at the end of cul-de-sacs where approved by the Town.*

FINDING: The proposal includes curbs and gutters are on all streets within the development. This standard is met.

3A.13 Survey Monuments

A survey monument shall be located in all subdivisions and short plats.

3A.14 Concrete Sidewalks

A. *Where Required. Concrete sidewalks shall be provided as follows:*

1. *Both sides of all arterial streets.*
2. *Both sides of all other streets (through street or dead-end) except permanent dead-end streets less than three-hundred feet (300') in length.*
3. *One side of local permanent dead-end streets less than three-hundred feet (300') in length.*
4. *Both sides of dead-end streets over three-hundred (300'), except in the cul-de-sacs or hammerhead turn arounds. In these circumstances installed sidewalks may end at the property line nearest the street/cul-de-sac transitions.*

B. *Exceptions*

Where subdivision design provides an acceptable surfaced and maintained internal walkway system, as approved by the Town Engineer, a sidewalk may not be required adjacent to the street.

C. *Wheelchair Ramps*

In accordance with State law, wheelchair ramps shall be provided at all pedestrian crossings with curb sections.

FINDING: The proposal includes concrete sidewalks along all frontages and on both sides of all internal streets. In addition, the narrative indicates wheelchair ramps are proposed at all pedestrian crossings within the development. However, the proposed development plan does not show wheelchair ramps location. This standard is met.

CONDITION OF APPROVAL: Prior to engineering approval, a plan for pedestrian access meeting the requirements of YES Chapter 3 shall be submitted for review and approval by the Town.

3A.17 Bikeways/Bikelanes

Bikeway construction is required in conjunction with commercial development, plat or short plat approval, when the need for such a bikeway is established by the Council.

FINDING: The proposal does not include bikeways in the development site. Staff does not see a need for bikeways with the proposal. Council has the ultimate decision.

3A.18 Driveways

A. *General Requirements*

1. *Standard residential or commercial driveways shall be required for all developments.*

2. *A private intersection opening shall be used in lieu of a conventional driveway in commercial areas where the following criteria as determined by the Town are met:*
 - a. *Projected driveway usage is greater than two-thousand (2,000) vehicles per day.*
 - b. *In any case where traffic signalization is approved and provided.*
 - c. *A minimum one-hundred (100') foot storage area is provided between the street and any turning or parking maneuvers within the development.*
 - d. *The opening is at least one-hundred and fifty feet (150') from any other intersection opening.*
 - e. *The opening is at least one-hundred and fifty feet (150') away from any other driveway on the property frontage under control of the applicant.*
 - f. *Easement dedication for traffic control devices.*

B. Conditions of Approval

1. *Driveways directly giving access onto arterials may be denied if alternate access is available.*
2. *All abandoned driveway areas on the street frontage to be improved shall be removed and new curb, gutter, and sidewalk shall be installed.*
3. *No commercial driveway shall be approved where backing onto the sidewalk or street will occur.*
4. *Left turns from and to a driveway may be restricted as a development condition or in the future if such maneuvers are found to be unduly hazardous.*
5. *Driveways shall be aligned wherever possible with existing driveways on the opposite side of the street on two (2) or three (3) lane streets.*
6. *All driveways shall be angled ninety-degrees (90°) to the street, unless designated as right turn only with the approval of the Engineer.*

FINDING: The proposal indicates all driveways are angled ninety-degrees to the street and that they will meet Town standards.

CONDITION OF APPROVAL: Prior to engineering approval, all the driveway design shall be in accordance with Yacolt Engineering Standard 3A.18. Standard residential driveways shall be required for all developments. Corner lot driveways shall be located near the property line farthest from the intersection. Additionally, the driveway for lot No 1 as shown on the preliminary plat shall be located near the south property line.

3A.20 Landscaping in the Right-Of-Way, Easements and Access Tracts

- A. *Plantings established in the right-of-way shall be maintained by the abutting property owner.*
- B. *Any existing planting areas within the right-of-way that are disturbed by construction activity shall be restored to their original condition.*
- C. *Any plantings or other improvements placed within the right-of-way (by abutting property owners) are subject to removal when the right-of-way is needed for public use. The property owner is responsible for removing any landscaping or other*

improvements upon official notice. The property owners shall be responsible for survival of the relocated plantings.

- D. Measures shall be taken by the developer to provide groundcover in areas within the right-of-way which have been stripped of natural vegetation or have a potential for erosion. Native plants shall be used whenever possible.*
- E. Plantings within the right-of-way shall comply with the following provisions:*
 - 1. All landscaping shall comply with the sight distance provisions of these standards.*
 - 2. Where existing landscaping maintained by the Town exists every effort shall be taken to protect and preserve the existing vegetation during construction. Plants shall be relocated or removed only upon approval of the Public Works Departments. Damaged landscape areas shall be restored prior to issuing a final occupancy permit.*
 - 3. In areas where an existing landscaping concept or pattern has been established or approved, all new landscaping shall conform to the intent of the concept. Plantings shall be of a similar variety, size, and spacing to those already established and/or approved for the area.*
 - 4. All trees planted in areas with adjacent pedestrian usage shall maintain a seven foot (7') clearance to the lowest branches.*
 - 5. Approval from the Public Works Department must be received before trees are planted in or adjacent to sidewalk sections.*

FINDING: The proposal provides planter strips area for the right-of-way, but does not include landscaping plan. This standard is not met.

CONDITION OF APPROVAL: Prior to engineering approval, the landscaping plans and information shall satisfy all parts of YES 3A.20. Landscaping shall be submitted and approved by the Town.

3A.21 Mailboxes

- A. Mailboxes should be clustered together when practical and when reasonably convenient to the houses served.*
- B. When mail boxes are located in the sidewalk, individually or in clusters, sidewalk shall be widened to provide the full design width around the mail boxes.*
- C. In the case of new road construction, or reconstruction requiring mail boxes to be moved back or rearranged, the designer and builder shall coordinate with the local postmaster of the U.S. Postal Service. Mail box locations approved by the Post Office shall be shown on approved road construction plans.*

FINDING: The proposal does not include mailbox information; therefore, the standard does not apply.

3A.22 Street Illumination

- A. Plats and Short Plats*

Street lighting is required for all public streets. The street lighting design shall be reviewed and approved by the Town prior to final plat approval. The cost of all street lighting shall be paid for by the developer.

The Town will accept maintenance and power cost responsibility for the public street light system when a plat is fifty percent (50%) or more occupied. Until the plat is fifty percent (50%) occupied, the developer is responsible for the maintenance and energy charges for the street lighting system.

Street lighting is not required on private streets within a plat. However, a street lighting system is encouraged. The Town does not install or maintain private street lighting systems. On private streets, all street light maintenance and power cost shall be paid by the developer, homeowner, or homeowners association.

B. Existing Residential Areas

If a resident or group of residents desires the installation of a new street light, they must apply to the Public Works Superintendent.

C. Commercial

Street lighting is required on all public street frontages. The developer is responsible for design, installation or relocation of new or existing lighting. Commercial development shall replace existing lighting systems on power poles with a new lighting system serviced by underground power if the system will not conflict with essential distribution lines.

D. General Considerations

All public street light designs shall be prepared by a licensed engineer experienced in lighting design. The design calculations should indicate luminaire spacing, illumination levels, uniformity ratio, line losses and the electrical and physical layout of the system, including its connection to the existing system.

All public street light systems shall be accessible for public maintenance by a wheeled vehicle weighing twenty-thousand pounds (20,000 lbs.).

All street light installations including wiring, conduit, and power connections shall be located underground. Exception: existing residential areas with existing above ground utilities may have street lighting installed on the existing power poles.

As-built drawings on (24") x (36") mylar are required for all new or relocated underground street lighting systems prior to receiving a final occupancy permit.

FINDING: The land use narrative indicates that street lights will be provided on all public streets within the development. A lighting plan will be submitted and approved prior to final plat approval.

CONDITION OF APPROVAL: Prior to engineering approval, a streetlighting plan and design shall be submitted for review and approval by the Town. All street lights shall be fiberglass and decorative.

3A.23 Traffic Control and Signing

A. Traffic Control Devices. *The Town shall review and approve all traffic control devices.*

B. Signing. *In new plats the developer shall install all traffic control signs which shall include but not be limited to street name, parking, stop, dead end, and pedestrian signing. The developer will be responsible for supplying and installing the required signs.*

C. Pavement Marking. *In new plats or commercial developments pavement markings, including buttons, paint, thermoplastics and delineators will be required for*

roadway safety. Such markings shall be provided and installed by the developer. All markings shall be approved by the Town prior to installation.

- D. Temporary Traffic Control. It is the responsibility of the developer to provide adequate temporary traffic control to ensure traffic safety during construction activities.*
- E. Traffic Signal Modification. Traffic signal modification designs shall be prepared by a licensed engineer experienced in traffic signal design.*

FINDING: Please see YES section 3A.10 of this staff report below for compliance with this section.

3A.28 Surfacing Requirements

All materials and workmanship shall be in accordance with the Standard Specifications, these Standards, and as approved by the Engineer.

3A.29 Trench Backfill and Restoration

All materials and workmanship shall be per these standards and in accordance with the Standard Specifications except where otherwise noted in these Standards. Materials and workmanship are required to be in conformance with standards for the Standard Specifications for Road, Bridge, and Municipal Construction prepared by the Washington State Chapter of the American Public Works Association (APWA) and the Washington State Department of Transportation (WDOT) and shall comply with the current edition.

FINDING: The preliminary utility plan indicates that proposed water, and storm lines shall require cutting of the existing road. This standard applies.

CONDITION OF APPROVAL: Prior to construction, all materials for public improvements shall be submitted for review and approval by the Town.

3B Design Standards

3B.01 Easements

- A. Pedestrian access easements or tracts shall be a minimum of ten feet (10') wide. If the easement is over one-hundred and fifty feet (150') in length but less than three-hundred feet (300'), the width shall be fifteen feet (15'); if over three-hundred (300') in length, the width shall be twenty feet (20'). Structure setbacks shall be a minimum of fifteen feet from the edge of the easement or tract.*
- B. In residential subdivisions or residential short subdivisions, minimum panhandle width shall be twenty feet (20'). A greater width may be required to accommodate grading or utility requirements.*
- C. In commercial subdivisions or commercial short subdivisions, minimum private roadway easement or panhandle width shall be thirty feet (30'). A greater width may be required to accommodate grading or utility requirements.*

FINDING: The land use narrative indicates the development includes a 26-foot panhandle easement to provide access to Lot 21 through Lot 22. This standard is met.

3B.02 Private Streets

FINDING: The proposal does not include private street designs; therefore, this standard does not apply.

3B.03 Street Frontage Improvements

- A. *Street Frontage design shall incorporate all applicable sections of these Standards and other standard reference materials. The designer shall utilize good engineering practice in any situation not specified in these Standards.*

3B.04 Street Widths

Table 3B.04A
Street Widths

	<u>Residential Arterial</u>	<u>Residential Collector</u>	<u>Residential Access</u>	<u>Local</u>
Right-of-way	60	60	60	50
Total Pavement Width	42	36	36	26
No. of Drives Lane	2	2	2	1
Width of Drive Lane	12	10	10	10
No. of Turn Lanes	0	0	0	0
No. of Parking Lanes	2	2	2	2
Width of Parking Lane	9	8	8	8
No. of Sidewalks	2	2	2	2
Width of Sidewalks [1]	6	5	4	4
No. of Planter Strips [2] (Curb-sidewalk separation)	0	2	2	2
Width of Planter Strips [2]	0	10	10	10
Design Volume	10,000	5,000	2,000	500
Design Speed	35	35	25	25

Notes:

1. *Width shall be increased by one foot where sidewalk is adjacent to the curb.*
2. *The planter strip is for water quality and may not be required where other approved water quality features are provided per the Town's Stormwater Management Plan.*

FINDING: The proposal includes frontage improvement on S Railroad Avenue (Residential Arterial) along the eastern boundary, W Hoag Street (Residential Collector) along the northern boundary, and S Parcel Avenue (Residential Access) along the western boundary. Additionally, this application proposes to construct four internal public streets (W Oak Street, W Bumpski Street, S Ranck Avenue, and S Amro Avenue).

Based on the preliminary utility and street plan, proposed residential local improvements include 50 feet of ROW, 28 feet of pavement width, 5-foot planter strips on both sides, 5-foot sidewalks on both sides. Residential arterial improvement for half width existing ROW is 30 feet; 21 feet of pavement width, 3-foot planter strip, 6-foot sidewalk and 10-foot ROW dedication. The residential collectors' improvement for half width of existing ROW are 30-44

feet; 18 feet of pavement width, 5-foot planter strip, 5-foot sidewalk and approximately 5-foot ROW dedication on S Parcel Ave. The standard is met.

CONDITION OF APPROVAL: Prior to engineering approval, street width design shall be constructed to meet YES 3B except one side shall be designated no parking per fire marshal comments.

3B.05 Horizontal Alignment

Street alignments shall meet the following requirements:

- Center line alignment of improvements should be parallel to the center line of the right-of-way.
- Center line of a proposed street extension shall be aligned with the existing street center line.
- Horizontal curves in alignments shall meet the minimum radius requirements as shown in Table 3B.05A.
- Reversing horizontal curves shall be separated by no less than 50 feet of tangent. On arterials, the separation shall be no less than 100 feet.

*Table 3B.05A - Design Speed/ Center Line Radius – Minimums
Arterials Streets*

Design Speed (mph)	Friction Factor (F)	Slope/R min					
		(e)-4%	(e)-2.5%	(e)-0%	(e)2.5%	(e)4%	(e)6%
25	0.165	335'	300'	255'	220'	205'	185'
30	0.160	500'	445'	375'	325'	300'	275'
35	0.155	710'	630'	530'	455'	420'	380'
40	0.150	970'	855'	710'	610'	560'	510'
45	0.145	1285'	1125'	930'	795'	730'	660'
50	0.140	1665'	1450'	1190'	1010'	925'	835'
55	0.130	2240'	1920'	1550'	1300'	1190'	1060'
60	0.120	3000'	2525'	2000'	1655'	1500'	1335'

Residential Streets

Design Speed (mph)	Friction Factor (F)	Slope/R min					
		(e)-4%	(e)-2.5%	(e)-0%	(e)2.5%	(e)4%	(e)6%
25	0.252	195'	185'	165'	150'	145'	135'
30	0.221	330'	305'	270'	245'	230'	215'
35	0.197	520'	475'	415'	370'	345'	320'

Notes:

For Table 3B.05A- affright-of-way runoff shall be controlled to prevent concentrated cross flow in super-elevated sections.

Super elevations may only be used with the written approval of the Town. Where super elevation is used, street curves should be designed per AASHTO guidelines except that the maximum super elevation rate of 0.04 shall be used. If terrain dictates sharp curvature, a maximum super elevation of 0.06 is justified if the curve is long enough to provide an adequate super elevation transition.

On local streets, requests for design speeds less than 25 miles per hour shall be based on topography, right of way, or geographic conditions which impose an economic hardship on the applicant. Requests must show that a reduction in center line radius will not compromise safety. There will be posting requirements associated with designs below 25 miles per hour.

Off-set crown cross-sections are not acceptable as super elevation sections.

Super elevation transitions shall be designed to not allow concentrations of storm water to flow over the travel lanes.

3B.06 Vertical Alignment

Street alignments shall meet the following requirements:

- *Minimum tangent street gradients shall be one-half (0.5) percent along the crown and curb.*
- *Maximum street gradients shall be fifteen (15) percent for residential streets and ten (10) percent for all other streets. Grades in excess of fifteen (15) percent must be approved in writing by the Town on an individual basis.*
- *Local streets intersecting with a residential collector or greater functional classification street or streets intended to be posted with a stop sign shall provide a landing averaging five (5) percent or less. Landings are that portion of the street within twenty (20) feet of the projected curb line of the intersecting street at full improvement.*
- *Grade changes of more than one (1) percent shall be accomplished with vertical curves.*
- *At street intersections, the crown of the major (higher classification) street shall continue through the intersection. The roadway section of the minor street will flatten to match the longitudinal grade of the major street at the projected curb line.*
- *Street grades, intersections, and super elevation transitions shall be designed to not allow concentrations of storm water to flow across the travel lanes.*
- *Off-set crowns shall be allowed only with the specific prior approval of the Town.*
- *Slope easements shall be dedicated or obtained for the purposes of grading outside of the right-of-way.*
- *Streets intersected by streets not constructed to full urban standards shall be designed to match both present and future (as far as practicable) vertical alignments of the intersecting street. The requirements of these standards shall be met for both present and future conditions.*

FINDING: The land use narrative indicates the horizontal and vertical alignments will meet the requirements in the subsection, and more information/details will be provided with the final engineering plans. The standard applies.

CONDITION OF APPROVAL: Prior to engineering approval, the horizontal and vertical alignments shall meet requirement of YES 3B.05 and 3B.06.

3B.08 Street Ends

The following specifies the minimum requirements for cul-de-sacs, eyebrows, and turnaround

areas. Other turnaround geometrics may be used when conditions warrant and Town Engineer approves the design and application of its use.

- *Cul-de-sacs shall have a minimum outside curb radius of forty-one feet (41') for residential streets and forty-eight feet (48') for industrial streets.*
- *Cul-de-sacs, eyebrows, and turnaround areas shall be allowed only on local streets and commercial/industrial streets.*
- *Cul-de-sacs shall not be more than 500 feet in length. The length of a cul-de-sac shall be measured along the center line of the roadway from the near side right-of-way of the nearest through traffic intersecting street to the farthest point of the cul-de-sac right-of-way.*
- *The minimum curb radius for transitions into cul-de-sac bulbs shall be 25 feet, and the right-of-way radius shall be sufficient to maintain the same right-of-way to curb spacing as in the adjacent portion of the road.*
- *Hammerheads may be used in lieu of a cul-de-sac provided that the street service six (6) or less lots and the street is less than two hundred feet (200') in length.*
- *An eyebrow corner may be used on a local street where expected ADT will not exceed 500 vehicles per day or as otherwise approved by the Engineer. Minimum curb radius on the outside of an eyebrow corner is 36 feet; minimum right-of-way radius is 45 feet. Eyebrow geometry shall be evaluated on the basis of turning requirements for Fire Department vehicles.*

FINDING: As shown on the proposed development plan, the cul-de-sacs outside curb radius is 46 feet, and the length is around 308.5 feet. This standard is met.

3B.10 Intersections and Curb Returns

A. Angle between intersections.

The following specifies the minimum requirements for intersections:

The interior angle at intersecting streets shall be kept as near to 90 degrees as possible and in no case shall it be less than 75 degrees. A tangent section shall be carried a minimum of 25 feet each side of intersecting right-of-way lines.

B. Maximum street spacing - 500 feet.

C. Minimum centerline offset of adjacent streets:

1. Residential - 160 feet

2. Residential or arterials intersecting arterials - 300 feet

D. Sloping approaches:

On sloping approaches, including commercial driveways, garage entrances, and private street openings, landings are not to exceed two feet (2') difference in elevation for a distance of thirty feet (30') approaching an arterial or twenty feet (20') approaching a local collector or industrial or commercial street, measured from the back of sidewalk or the back of curb if no sidewalk exists.

E. Curb returns

Curb radii at intersections shall be shown in Table 3B.10A for the various functional classifications. The right-of-way radii at intersections shall be sufficient to maintain at least the same right-of-way to curb spacing as the lower classified street.

Sidewalk access ramps shall be provided at all corners of all intersections, regardless of curb type, and shall conform to Standard Drawings.

Table 3B.10A -Turning Radii (Feet)

Street Classification	Edge of Pavement/Curb -Minimums			
	Arterial Street	Residential Collector Street	Commercial Industrial Street	Residential Access/Local Street
Major/Minor Arterial Street	55	30	40	20
Residential Collector Street	30	20	30	15
Commercial Industrial Street	40	30	40	25
Local Street	20	20	15	15

**If bike lane or on-street parking exists, above radii may be reduced by five (5) feet.*

**The radii of the major street will be used for all intersection curb returns.*

F. Sight Distance

It is the policy of the Town to have the developer's engineer evaluate safe intersection sight distance using the principles and methods recommended by AASHTO. The following minimum standards shall apply.

The following table is for intersection and driveway sight distances:

Table 3B.10B - Corner Sight Distance

Design Speed (MPH)	Minimum Corner Sight Distance* (Feet)
20	210
30	310
40	415
50	515
60	650

Sight distance should always be measured from a driver's eye 3.5 feet high and 15 feet from the near edge of the nearest lane to a distance of 4.25 feet. Sight distances must be checked on the actual vertical and horizontal values of the proposed improvement. There shall be nothing to block observation of objects between 6 inches and 4 feet, 3 inches above grade in both directions. The only exceptions should be for luminaire or utility poles, conforming traffic control devices, and fire hydrants. Cumulative effects must be considered, and all efforts taken to minimize sight obstructions.

Modifications or exceptions to these standards shall be approved by the Town.

FINDING: As shown on the land use narrative and proposed development plan, the angle of all proposed intersections is near 90 degrees. The centerline offset intersections are between 168 feet and 370 feet, and the site is flat with little elevation difference across the site. Additionally, 25-foot curb radii on all corners, with exception to 30-foot radii at the corners of W Hoag Street and S Railroad Avenue and W Oak Street and S Railroad Avenue. The corner sight distance triangles are shown on the proposed development plan. This standard is met.

3B.11 Curb & Grading

All curb and gutter shall be constructed with Class B concrete.

When new curbing is being placed, a stamp shall be placed to mark where each water and sanitary sewer service crosses the curb line. The method of marking the curb shall be approved by the Town Engineer and noted on the approved construction plans. If an imprinting stamp is used, the impression left for a water service shall be the letter "W"; for a sanitary service, it shall be the letter "S" These impressions shall be 2 inches high, placed on the top of the curb.

The following specifies the requirements for curbs and cross-slope grading for streets:

- All streets shall include curbs on both sides except in the situations of interim width improvements. Interim designs, where approved in writing by the Town shall have shoulders and ditches.
- Interim width streets shall have 6-foot side shoulders adjacent to the street at a 2-1/2 percent cross-slope and roadside ditches each side of the shoulders with a maximum side-slope of 2 horizontal to 1 vertical. The 6-foot shoulder area may consist of a section of pavement and/or a section of crushed rock. The pavement section shall be a minimum of 2 feet wide and a maximum of 6 feet wide.
- Cross-slope of the street section shall be no less than 2.5 percent and no greater than 5 percent. Whenever possible, the crown of the street shall be the same elevation as the top of the curbs.

Grading outside the improved areas shall be as follows unless approved in writing by the Engineer.

- Arterials shall have a maximum 2 percent upward grading to the right-of-way line, and no steeper than 1-1/2 to 1 up, or 2 to 1 down, outside the right-of-way.
- Local Street and Commercial/Industrial functional classifications shall have a maximum 2 percent upward grading to the right-of-way line, a 5 to 1 upward or downward grading within the public utility easement, and no steeper than 1-1/2 to 1 up, or 2 to 1 down outside the public utility easement.
- Retaining walls shall be used if slopes are greater than the 1-1/2 to 1 requirement in the paragraphs above or where slope stability is a problem. If slopes are to be maintained (mowed) by the Town, a maximum of 3 to 1 slope will be required. Retaining walls shall be constructed to a height where the slope is no more than 1-1/2 to 1.

FINDING: The proposed development plan shows that curbs are proposed on all streets within the development. This standard is applied.

CONDITION OF APPROVAL: Prior to engineering approval, the curb and grading shall meet YES 3B.11.

3B.12 Concrete Sidewalks

A. Width

1. Residential Streets: four feet (4') where separated from the curb. Five feet (5') where adjacent to the curb.

2. *Local Commercial/Industrial Streets: six feet (6').*
3. *Arterial Streets: eight feet (8').*
4. *Width of sidewalk does not include curb when the sidewalk is adjacent to the curb.*
5. *Meandering sidewalks shall maintain the full design width around obstructions that cannot be relocated. Additional Right-of-Way (or easement) may be required to either relocate the obstruction or meander the sidewalk.*

B. Material

All sidewalks shall be five inch (5u) thick Class B concrete with a stiff broom finish. At driveways the concrete shall be six inches (6") thick.

C. Landscape/Separation

A minimum six foot (6') separation between the back of the curb and sidewalk is required for landscaping and appurtenance locating purposes unless no practicable alternative exists and when approved in writing by the Engineer. Sidewalks shall meander no more than six feet (6') from the curb at all pedestrian crossings and at driveways.

D. Curb Ramps

The edge of the sidewalk shall merge into curb ramps. One ramp is used on each curb return on residential streets and unsignalized intersections. At signalized intersections, a curb ramp shall be aligned with each crosswalk.

FINDING: The land use narrative indicates that the project's sidewalks follow the requirement of table 3B.04A. The proposed development plan's road cross section shows the development includes five-foot sidewalks on all streets with exception to providing a six-foot sidewalk along S Railroad Avenue, which is a Residential Arterial. According to the land use narrative, curb ramps shall meet applicable standards, but are not shown on the proposed development plans. This standard is met. See condition of approval for section 3A.14 YES.

3B.13 Driveways

Design Criteria:

A. Width

The maximum two (2)-way driveway width shall be twenty feet (20') for residential uses and thirty feet (30') for commercial uses. A wider commercial driveway width may be approved by the Engineer where a substantial percentage of oversized vehicle traffic exists. In this case the driveway should be sized to accommodate the largest vehicles. Commercial driveways shall be thirty feet (30') on any arterial, twenty-six feet (26') to thirty feet (30') on any local street. Where intersection openings are approved the width shall be as determined by the Engineer.

Maximum one way driveway width shall be ten feet (10') for residential and twenty-two feet (22') for commercial driveways. Commercial openway driveways shall meet the separation requirements of section 3A.18. Parking lot circulation needs shall be met on site. The public right-of-way shall not be utilized as part of a one way parking lot flow.

Driveways on local access streets serving single-family homes may be up to 30 feet in width, subject to approval by the Engineer.

B. Elevation

Back edge of driveway shall be at the same elevation as the back of the sidewalk adjacent to the driveway approach.

C. Clearance from Structures

No object (including fire hydrants, light or power poles, street trees) shall be placed or allowed to remain within fifteen feet (15') of the driveway edge.

Where the building facade or other design element is less than ten feet (10') behind the sidewalk front setback both pedestrian and vehicular sight distance shall be maintained. Vehicular sight distance shall be per section 3A.11.

D. Sight Distance

Pedestrian sight distance shall be as follows: The driver of an existing vehicle shall be able to view a one-foot (1') high object fifteen feet (15') away from either edge of the driveway throat when the drivers eye is fourteen feet (14') behind the back of the sidewalk.

E. Maximum driveway grade shall be fifteen percent (15%).

F. On sloping approaches, a landing as described in section 3B.06, shall be provided.

G. Construction shall be per Standard Drawings.

H. Approach grades and configuration shall accommodate future street widening to prevent major driveway reconstruction.

FINDING: The land use narrative indicates that single-family driveways are anticipated to be between 20 and 30 feet in width; however, the maximum driveway width shall be 20 feet for residential uses unless approved by the Town. This standard is met.

Additionally, the driveways will be at the same elevation as the back of the sidewalk adjacent to the driveway approach, and no objects will be within 15 feet of the driveway edge. Pedestrian sight distance will be met and no driveway grade will exceed 15%. See condition of approval for section 3A.18 YMC.

3B.15 Mailboxes

It shall be the responsibility of the developer to ascertain mailbox design requirements as required by the Postmaster. Mailboxes, in the general case, shall be set:

A. Bottom or base of box forty-four inches (44") above road surface or as directed by the Postmaster.

B. Placement in relation to curb or sidewalk:

1. Local Streets. Front of mailbox one foot (1') back of vertical curb face or outside edge of shoulder; six inches (6") behind back edge of rolled curbs.

2. Arterial Streets. Front of mailbox one foot (1') behind the back of sidewalk.

C. On posts strong enough to give firm support but not to exceed 4" x 411 wood or one and one-half inch (1-1/2") diameter pipe, or material with comparable breakaway characteristics.

D. Sidewalk widening behind the mailbox shall be five feet (5') long with a ten to one (10: 1) taper to the standard sidewalk section.

FINDING: The applicant shall coordinate with the postmaster to determine mailbox design and location.

CONDITION OF APPROVAL: Prior to engineering approval, the applicant shall provide postmaster approval for mailbox design and location.

3B.17 Street Illumination

A. Design Standards

Street lighting system designs are to be prepared by a licensed engineer experienced with lighting design. Calculations should include luminaire spacing, illumination level, uniformity ratio, line losses, power source and other necessary details for the electrical and physical installation of the street lighting system. The lighting engineer shall use the standard specifications of the Washington State Department of Transportation, unless otherwise noted in the Standards.

Illumination Levels		
Street Classification	Horizontal Foot Candles	Uniformity Ratio (average to minimum)
Arterials	1.0 FC	3:1
Local Commercial/Industrial	1.0 FC	3:1
Local Residential Collectors	0.7 FC	3:1
Local Residential Streets	0.3 FC	None; 300 foot maximum spacing

B. General Considerations

1. *All street lights shall be on two-hundred and forty (240v) volt single phase systems. The exact location of the power source should be indicated together with the remaining capacity of that circuit. System continuity and extension should be considered.*
2. *Contractor cabinets equipped with electrical meters, time clocks, circuit breakers and other required components are required on commercial installations of five (5) or more street lights.*
3. *All street lighting, wiring, conduit, service connections shall be located underground except in residential areas where existing power distribution poles exist.*
4. *Particular attention shall be given to locating luminaires near intersections, at all street ends and at pedestrian and/or equestrian crossings.*

FINDING: The land use narrative indicates the development will include street lighting in accordance with this standard. A lighting plan will be submitted and approved prior to final plat. The standard applies. See condition of approval for section 3A.22 YES.

3B.18 Traffic Control and Signing

- A. *Traffic Control Devices. All traffic control devices shall conform to the "Manual on Uniform Traffic Control Devices" (M.U.T.C.D.) as adopted by the Washington State Department of Transportation (WDOT).*
- B. *Signing. See WDOT Standard Drawings for typical installations and details.*

For pavement sections other than those in Section 3B.20. Alternative sections may be approved by the Town Engineer following submission of calculations by a Registered Engineer and for the design requirements described herein. Soil testing to obtain the strength of the soil is required for all roads and streets in order to analyze and design the structural section. Soil tests are needed on undisturbed samples of the sub grade materials that are expected to be within three (3) feet of the planned sub grade elevation. Samples are needed for each five hundred (500) feet of roadway and for each visually observed soil type. Soil tests are required from a minimum of three (3) locations.

The selected design structural strength of the soil needs to be consistent with the sub grade compaction requirements. The strength and compaction moisture content, at optimum to slightly over optimum, needs to be specified. The soils report shall address subgrade drainage and ground water considerations for year round conditions.

Recommendations for both summer and winter construction shall be included. The required density of treated and untreated subgrade materials shall not be less than 95 percent maximum density as determined by AASHTO T-99.

FINDING: The land use narrative indicates that controlled intersections with a stop sign shall be provided. This standard is met. See condition of approval for section 18.85 YMC.

Chapter 4 – Storm Drainage

4A Polices

4A.01 General

- A. The Town of Yacolt has established the requirements for the design of facilities intended to protect the public health, safety, and welfare from damage due to flooding. Beyond that level of protection, additional measures are specified in this chapter which are intended to minimize any potential flooding damage and allow for efficient operation, repair, and maintenance of the storm drainage system.*
- B. Provisions must be made for gravity drainage of roofs and foundation drains for all new buildings and structures. For multi-family, residential, commercial, or industrial developments, these drains shall be piped directly to on-site stormwater systems. In single family residential developments, these drains shall be discharged to on-site splash blocks and shall not be permitted to discharge to the street gutter or directly to the public storm drain system.*
- C. Provisions must be made for stormwater from private property to remain on private property wherever feasible. Runoff from driveways shall not be permitted to drain directly to the street.*
- D. These requirements shall apply to all storm drainage facilities in existing and proposed public right-of-way, public drainage easements, and tracts of common ownership in the Town. Storm drainage systems include, but are not limited to: inlets, pipes, ditches, creeks, rivers, wetlands, and storm water quality and quantity facilities.*

- E. *The Town of Yacolt has adopted the '1Stormwater Management Manual for the Puget Sound Basin' (hereinafter referred to as the Puget Sound Manual) prepared by the Washington State Department of Ecology. All design and construction standards must meet or exceed these requirements and those shown on the Town's Standard Details. The Town has adopted the Puget Sound Manual with the following notations:*
1. *Storm water quantity management requirements are amended by Section 4B of these Standards.*
 2. *All steps within structures must comply with OSHA standards. There shall be no more than 24 inches between the top of the casting and the rung of the top step.*
 3. *No more than eight (8) inches of riser rings shall be used.*
 4. *All inside drops and pollution control structures must be constructed with pipe; no partitions will be allowed.*
 5. *All inside drops and pollution control manholes must be 60 inch or larger diameter structures.*
 6. *All pipe shall be installed with watertight joints.*
 7. *All backfill material shall be referenced per Standard Specifications.*
 8. *No private storm sewer shall be located within any lot other than the lot which is the site of the building or structure served by such sewer. The exception to this will be common areas in planned unit developments, and/or Town right-of-ways, or as otherwise approved by the Town Engineer.*
- F. *Drain inlets shall be curb inlets per the Standard Drawings. Curb inlets shall be placed so that no more than 7,000 square feet of hard surfacing, pavement and driveways which drain to the street including top of curb and sidewalk where sidewalk is adjacent to the curb, shall drain to each drain inlet.*
- G. *Stonn drain conveyance systems shall be designed in accordance with the requirements of Chapter 6 of these Standards. All storm sewer pipe and culverts used in the Town shall be gasketed concrete pipe meeting the requirements of the Standard Specifications.*
- H. *Storm drainage design for all developments shall conform to the Town's Stormwater Management Plan.*

4B Design Standards

4B.01 Water Quantity Standards

- A. *All development shall conform to the Town's Stormwater Management Plan. For the areas planned for surface water discharge to Yacolt Creek, if a development occurs prior to the availability of the regional facility, sites one-half (0.5) acre or greater in area shall be required to provide on-site detention.*
- B. *Storm detention facilities shall be designed to provide storage using a 25 year event, with the safe overflow conveyance of the 100 year storm. Calculations of site discharge for both the existing and proposed conditions shall be required using the King County Hydrograph V4.20. Storms to be evaluated shall include the 2, 10, 25, and 100 year events. Allowable post-development discharge rate for the 2, 10, and 25 year events shall be that of the pre-development discharge rate, with a*

maximum allowable release rate of one half (0.5) cubic feet per second per acre in the 25 year event. An outfall structure such as a 11Vee-Notch" weir or multiple orifice structure shall be designed to control the release rate for the above events. No flow control orifice smaller than 2.5 inches shall be allowed. If the allowable release rate cannot be met with all the site drainage controlled by a single 2.5 inch orifice, the allowable release rate provided by a 2.5 inch orifice will be considered adequate at the discretion of the Town Engineer.

- C. If a site is proposed to be constructed in phases, the first phase shall have a storm water quantity facility designed and built to accommodate the ultimate development of the site.*
- D. When the above storm detention requirement is to be met by creating a ponded area in a parking lot, the following shall apply:*
 - 1. Maximum depth of standing water in all parking lot ponds shall be one (1) foot. No more than 25 percent of the entire number of parking stalls in a parking lot shall be inundated by a parking lot pond during the design storm.*
 - 2. No parking lot ponds shall be located within the primary ingress/egress portions of a site. Parking lot ponding shall be so designed that, at maximum water level for the design storm, a minimum twenty (20) foot wide emergency vehicle lane to the buildings will remain unflooded, including during system overflow condition.*
 - 3. Slopes on all parking lot surface ponds should not be less than one (1) percent nor exceed five (5) percent in areas designed for vehicular traffic.*
 - 4. All parking lot ponds shall be designed and constructed in such a manner so as to provide a maximum water surface elevation 0.25 feet lower than any and all structures designed to contain the ponding.*
 - 5. Where curbing is used to contain a parking lot pond, extruded curbing shall not be used. A public standard "vertical" type curb will be required.*
 - 6. No parking lot ponding shall occur at an elevation more than one (1) foot below the lowest habitable floor elevation of buildings within the proximity of the pond. Under no circumstances shall ponds or other detention facilities be designed in such a manner that system failure would cause flooding in any habitable building area.*
 - 7. No parking lot ponding shall be designed for parking lots under buildings. Whenever the possibility of flooding an underground parking facility or other uninhabited building area exists, care shall be taken to floodproof electrical equipment areas and other building appurtenances with overflow and/or private pump systems being provided to drain such a flooded facility.*
 - 8. Parking lot pond construction plans shall include a note stating that "Grading is critical to functioning of detention system and plan must be strictly followed." Parking lot design volumes shall be shown on the plans and the pond volume inspected prior to paving. The developer's engineer shall certify that the design pond volume has been constructed.*

4B.02 Water Quality Standards

The minimum standards for the design and construction of storm water quality facilities in the Town of Yacolt shall be the same as the current standards of the Puget Sound Manual as amended by the Clark County, Washington Stormwater Control Ordinance dated January 26, 1994 or the latest edition.

FINDING: The preliminary stormwater design report shows this project complies with the 1992 Stormwater Management Manual for the Puget Sound Basin. The Code section adopts the Clark County Stormwater Control Ordinance or the latest edition. The applicant will need to demonstrate compliance. The total impervious area is around 8.22 acres. The proposed stormwater will discharge directly from the wet pond and will be conveyed to Yacolt Creek. According to the preliminary TIR report, the stormwater conveyance system analysis will be provided with final engineering. Moreover, the development sites are to demonstrate compliance with the minimum requirements through the preparation of stormwater site plan. Two major components of these plans are erosion and sediment control (ESC) plan and permanent stormwater quality control (PSQC) plan. The application includes a preliminary stormwater plan, but not ESC plan. This standard is not met.

CONDITION OF APPROVAL: Prior to engineering approval stormwater plan compliant with YES Chapter 4 Storm Drainage and shall be submitted for review and approval by the Town.

Chapter 5 – Water

FINDING: Clark Public Utilities (CPU) maintains the Town’s public water system. CPU will provide review and approval of the engineered submittal for water infrastructure.

CONDITION OF APPROVAL: Prior to engineering approval, all the water system design shall be reviewed and approved by Clark Public Utilities.

FINDING: The Town of Yacolt is a part of Clark County Fire District 13. The fire Marshal shall have review authority. Comments and conditions on the land use submittal are attached to this report as Exhibit 21.

CONDITION OF APPROVAL: Prior to engineering approval the applicant shall submit plans to the appropriate Clark County Fire Marshal for review and approval.

5A.10 Contract for Reimbursement (Latecomer Agreements)

The Town does not have a policy for reimbursement for utility extensions. Should the developer deem that the utility extension is an undue hardship and will significantly benefit other property owners, the developer may request for a latecomer agreement. Such requests shall be in writing and shall be made to the Town Council.

FINDING: Based on the land use narrative, the applicant understands that a latecomer agreement may be requested.

V. GENERAL

- A. The narrative indicates the proposed stormwater facility will be publicly owned and maintained. However, per YMC 13.10.110 the property owners are responsible for the maintenance, operation or repair of stormwater drainage systems and BMPs.

VI. CONDITIONS OF APPROVAL

A. Prior to Engineering Approval

- 1) Prior to engineering approval, the applicant shall submit a final plan and report that accounts for the high ground water and flooding issues in the proposed pond location. The applicant shall apply and receive a flood hazard permit as part of the land division review process per YMC 16.35.030.C.2.
- 2) Prior to engineering approval, the applicant shall perform a critical areas assessment of the proposed outfall for Town review and approval.
- 3) Prior to engineering approval, architectural and site design plans satisfying all parts of YMC Section 18.25. Site Planning and Architectural Design Guidelines shall be submitted and approved by the Town.
- 4) Prior to engineering approval, the final civil plans shall meet the requirement of YES chapter I section 1.04.
- 5) Prior to engineering approval, an erosion control plan compliant with chapter 2A of the Town of Yacolt's Engineering Standard shall be submitted for review and approval by the Town.
- 6) Prior to engineering approval, the applicant shall demonstrate compliance with applicable environmental standards and permitting including but not limited to WDFW for work within the buffer of Yacolt Creek and a Stormwater General Construction permit.
- 7) Prior to engineering approval, plans depicting all street/roadway construction meeting chapter 3 Streets of the Town of Yacolt's Engineering Standard shall be submitted for review and approval by the Town.
- 8) Prior to engineering approval, the applicant shall provide engineering plans showing street trees on the Railroad Ave frontage improvements.
- 9) Prior to engineering approval, all street names will be provided by the Town.
- 10) Prior to engineering approval, a plan for pedestrian access meeting the requirements of YES Chapter 3 shall be submitted for review and approval by the Town.
- 11) Prior to engineering approval, all the driveway design shall be in accordance with Yacolt Engineering Standard 3A.18. Standard residential driveways shall be required for all developments. Corner lot driveways shall be located near the property line farthest from the intersection. Additionally, the driveway for lot No 1 as shown on the preliminary plat shall be located near the south property line.
- 12) Prior to engineering approval, the landscaping plans and information shall satisfy all parts of YES 3A.20. Landscaping shall be submitted and approved by the Town.
- 13) Prior to engineering approval, a streetlighting plan and design shall be submitted for review and approval by the Town. All street lights shall be fiberglass and decorative.
- 14) Prior to engineering approval, street width design shall be constructed to meet YES 3B except one side shall be designated no parking per fire marshal comments.

- 15) Prior to engineering approval, the horizontal and vertical alignments shall meet requirement of YES 3B.05 and 3B.06.
 - 16) Prior to engineering approval, the curb and grading shall meet YES 3B.11.
 - 17) Prior to engineering approval, the applicant shall provide postmaster approval for mailbox design and location.
 - 18) Prior to engineering approval stormwater plan compliant with YES Chapter 4 Storm Drainage and shall be submitted for review and approval by the Town.
 - 19) Prior to engineering approval, all the water system design shall be reviewed and approved by Clark Public Utilities.
 - 20) Prior to engineering approval the applicant shall submit plans to the appropriate Clark County Fire Marshal for review and approval.
- B. Prior to Construction Approval
- 1) Prior to construction, applicant shall obtain and have in their possession all necessary permits to perform work.
 - 2) Prior to construction, all materials for public improvements shall be submitted for review and approval by the Town.
- C. General
- 1) No fences shall be installed without a fence installation permit issued by the Town of Yacolt. Fences area, size and location shall be in accordance with YMC 18.80.

RECOMMENDATION

Based upon the proposed plan, and the findings and conclusion stated above and within the attached reports and recommendation, the City of Winlock Community Development Director hereby **Approves with Conditions**.

EXHIBITS

ARCO – RUSH RD SITE PLAN	
EXHIBIT #	DESCRIPTION
1	TOC and Cover
2	Town Lan Use Forms
3	TOC and Cover
4	Pre-Application Conf Report
5	GIS Packet
6	Land Use Narrative
7	Title Report
8	Prelim Boundary
9	Proposed Development Plans
10	Geotech Soil Analysis
11	Prelim TIR
12	Prelim Stom Plan
13	SEPA Checklist
14	Soil Suitability Letter
15	Water RUR
16	Floodplain
17	Prelim Bndy Survey
18	LUA Plans
19	Interceptor Drain Layout
20	Railroad Ave Memo
21	Fire Marshal Land Use Comments

Railroad Avenue Subdivision Subdivision Application

Date: December 2021

Submitted to: Town of Yacolt
Public Works
202 W. Cushman Street
Yacolt, WA 98675

Applicant: AHO Construction I, Inc.
5512 NE 109th Court, Ste. 101
Vancouver, WA 98662
Houston Aho
(360) 254-0493
HoustonA@AhoConstruction.com

AKS Job Number: 8706



9600 NE 126th Avenue, Suite 2520
Vancouver, WA 98682
(360) 882-0419

Submittal Items **(One Original)**

1. Town Land Use Forms
2. Application Fee
3. Pre-Application Conference Report
4. Developer's GIS Packet
5. Land Use Narrative
6. Title Report
7. Preliminary Boundary Survey
8. Proposed Development Plans (Reduced)
9. Geotechnical Soil Analysis Report
10. Preliminary Stormwater Design Report TIR (Included Separately)
11. Preliminary Stormwater Plan (Included in Stormwater TIR)
12. State Environment Review SEPA
13. Soil Suitability Letter
14. Water Purveyor Utility Review Letter
15. CCPH Review Letter
16. Archeological Information (DAHP Correspondence)
17. Floodplain

Included Separately with Application

- Land Use Plans – 22" x 34" (1 Copy)
- Preliminary Boundary Survey (1 Copy)
- Stormwater Technical Information Report and Plan (1 Copy)

1. Town Land Use Forms



COST RECOVERY AGREEMENT

THIS AGREEMENT is by and between the Town of Yacolt, a Washington municipal corporation, (“Town”), and Aho Construction I, Inc., (“Applicant”), concerning the following:

Project: Proposed development of a 47-lot residential subdivision on property zoned R1-12.5.

Project Address: 19.01+/- acres Southeast of West Hoag Street and South Parcel Avenue, Yacolt, Washington.

Parcel Number: 64522000.

Scope of Project / Permit Review: Review and evaluate Applicant’s submittals for a pre-application conference; process subdivision application including zoning, environmental, land use, engineering and other required or related reviews; satisfy public notice and public hearing requirements; request Town Council review and approval; inspect public improvements; and final plat approval.

Section 1 - Purpose: The purpose of this Agreement is to establish the terms by which the Applicant agrees to be responsible for the payment of the Town’s reasonable costs to process applications, inspect and review plans and project elements, to prepare detailed statements required by State Environmental Policies under RCW 43.21C, and all other work that is in reasonable support of and directly related to these activities. These costs may include the internal costs for the Town’s staff, publication of notices, supplies, and overhead costs, as well as the Town’s external costs of consultants and other costs and fees related to review and inspection services for Applicant’s land use and/or building application(s).

Section 2 - Background: Applicant recognizes that the Town is obligated by law to provide a complete review of subdivision, land use, development, and building applications, including all technical support documents, to determine compliance with all applicable approval standards. The Town is authorized to recover from applicants the actual cost of performing land use, subdivision, building, and technical plan and project reviews, including all engineering, project inspections, planning, mitigation inspections, legal review, and other costs and fees.

Section 3 - Cost Recovery Agreement: Applicant agrees to pay the Town’s internal and external costs and fees incurred during the review, inspections, permitting, and related processing of the Project’s permits. The costs and fees to be paid by the Applicant may include, without limitation, fees and costs for professional consultant services that the Town determines are necessary to complete its review of the

application(s). Such professional consultant services may include, without limitation, engineering, building, legal, and surveying services. Such services may include, without limitation, review and processing related to SEPA, critical areas, zoning, archeological surveys, building inspections and plan review, and support for the Town’s staff and Council before and during public hearings.

Section 4 - Scheduled Fees: Applicant understands and agrees that in addition to the cost recovery obligation described in this Agreement, the Town may request, and the Applicant agrees to pay, any fees described in the Yacolt Municipal Code and/or by resolution of the Yacolt Town Council. Where such fees relate to actual costs of processing the Application, the fees will be treated as a refundable deposit toward the Town’s actual costs that are recoverable under this Agreement. Other scheduled fees, (such as, by way of example only, impact fees), would not be considered a ‘processing cost’ under this Agreement, and would continue to be payable by the Applicant as an independent obligation pursuant to the Yacolt Municipal Code and/or Town Resolution.

Section 5 - Counter Complete Application(s) and Continued Processing: To be deemed counter complete, the Application(s) must include all technical support documents applicable to the Project, a fully-executed original of this Agreement, and payment of any initial deposit that may be requested by the Town Clerk. The Town will not begin to process the Project Application(s) until all requested elements of the Application are received by the Town. In addition, Applicant understands that in the event payment of any invoice due under this Agreement is late, the Town may suspend processing of the application(s) until such time that full payment is made.

Section 6 – Deposits and Estimated Costs: The Town may require the payment of deposits from time to time to be applied to the Town’s costs of processing permits. The Town may provide an estimate of permit processing costs in support of an initial or subsequent deposit request. If provided by the Town, an estimate of processing costs will be an estimate of the costs and fees that the Town expects may be incurred to process the Application(s) at least through an initial review and determination of feasibility by the Town Council or the Town Council’s designee(s), (such as, for example, the Town’s Building Consultant or Town Engineer). If the Town determines that payment of a deposit is not necessary, or if the Town does not provide an estimate on its own initiative, the Applicant may nevertheless request an estimate from the Town, and the Town will endeavor to provide the estimate within 15 days of receipt of the request. Estimates will identify the staff and consultants from whom services will initially be requested, together with their hourly rates and an estimate of the billable hours involved, as well as any expected costs identified by staff or consultants. Applicant acknowledges that deposits and/or estimates may not cover all of the consultants actually hired by the Town, or all of the costs and fees actually charged by such consultants and staff during the processing of the application(s) for which payment by the Applicant is expected.

Section 7 - Invoices and Reconciliation: The Town will provide invoices to the Applicant for estimates, costs and fees due under this Agreement from time to time as such estimates, costs and fees are determined and/or incurred by the Town. The Applicant agrees to pay the Town’s invoices within fifteen (15) days of the date of each invoice. Any funds deposited by Applicant in excess of the Town’s costs and fees shall be refunded to the Applicant following termination of this Agreement.

Section 8 - Notices and Payments: All notices, payments, and other communications between the parties shall be in writing and shall be hand-delivered or mailed by first-class mail, postage prepaid, as follows:

If to Town:	Town Clerk Town of Yacolt P.O. Box 160 Yacolt, WA 98675	<i>(street address)</i> 202 W. Cushman Street Yacolt, WA 98675
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If to Applicant: Aho Construction I, Inc _____
5512 NE 109th Ct Ste 101 _____
Vancouver, WA 98662 _____

Section 9 - Dispute Resolution: Any dispute that arises over the interpretation or application of this Agreement shall be resolved by the Town Council through a public hearing process. The Town Council's decision in such a matter shall be final.

Section 10 - Remedies: If the Applicant fails to timely pay the Town's costs and fees under this Agreement as invoiced by the Town, the Town may pursue any and all legal and equitable remedies available, including but not limited to recording and enforcing a lien on the property for all amounts owed; issuance of a stop work order; and/or non-issuance of permits for the Project. The Applicant further agrees to any delay in the processing of permit(s) for the Project including issuance of a final permit, until the Applicant has paid all amounts due to the Town. The Town's remedies are not mutually exclusive.

Section 11 - Binding Effect: The terms of this Agreement shall extend to and be binding upon the heirs, administrators, executors, personal representatives, successors and assigns of the parties.

Section 12 - Attorney Fees and Costs: If suit or action is brought either directly or indirectly to enforce the terms of this Agreement, the prevailing party shall recover and the losing party hereby agrees to pay reasonable attorney fees incurred in such proceeding, in both the trial and appellate courts, as well as the prevailing party's costs and disbursements. Further, if it becomes necessary for the Town to contract for the services of an attorney to enforce any provision of this Agreement without initiating litigation, the Applicant agrees to pay the Town's attorney fees so incurred.

Section 13 - Agreement Modifications: This Agreement may be modified only by written amendments that are approved and signed by both parties.

Section 14 - Agreement Termination: This Agreement will terminate upon completion of all work contemplated by this Agreement to process the application(s). Applicant may terminate this Agreement for any reason by providing notice to the Town that it is terminating the Agreement and withdrawing its application(s). In the event of such termination, Applicant remains responsible for all amounts due under this Agreement and incurred through the business date of receipt of the notice by the Town.

Section 15 – Waiver: The failure of either party to enforce any provision of this Agreement will not constitute a waiver by that party of that or any other provision of this Agreement.

Section 16 – Signatures: This Agreement may be executed in several counterparts, each of which will be an original, all of which will constitute one and the same instrument. A facsimile, PDF or other electronic signature will be considered an original. The individuals signing this Agreement certify that they are authorized to execute this Agreement on behalf of the Applicant and the Town, respectively.

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Section 17 – Applicable Law and Venue: This Agreement shall be construed in accordance with and governed by the laws of the State of Washington. Venue for any suit based on the Agreement shall be in Clark County, Washington.

IT IS SO AGREED:

“Applicant”
Aho Construction I, Inc.



By (print): Houston AHO _____

Title: A&D _____

Date: 12/02/2021 _____

“Town”
Town of Yacolt

By: Katelyn J. Listek
Title: Mayor

Date _____

Dave Weston

From: Clerk <clerk@townofyacolt.com>
Sent: Thursday, November 18, 2021 12:28 PM
To: Susan Weisenborn
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use
Attachments: 20210611 RR Ave Pre-app Agenda.pdf

EXTERNAL EMAIL: This email originated from outside AKS Engineering & Forestry.

Hi Susan,

The Cost Recovery Form is what we are using for all building application submittals at this point. I believe it is the one you folks have already submitted. **There is no need then, for an additional "application" at this time.** We simply move forward with submittals for the project, reviews, hearing(s), etc., as outlined in the conference back in June. (I have attached the agenda from that conference to this email.) My apologies for the confusion. I certainly don't want to be holding things up.

Please let me know if I've *still* got you confused, or if I can help with anything else.

Thank you,
Stephanie Fields
Clerk, Town of Yacolt
(360) 686-3922

Disclaimer: This email and its attachments may be subject to public disclosure.

From: Susan Weisenborn <SusanW@aks-eng.com>
Sent: Friday, November 12, 2021 9:08 AM
To: Clerk <clerk@townofyacolt.com>
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use

Stephanie,

Not sure if I missed an e-mail, but after you said the application for Land use I had was incorrect, I asked you to send me the correct one.

If you did I missed it. could you please send me the correct one for our Subdivision Land use submittal.

Thank you

Susan Weisenborn
Project Assistant



AKS ENGINEERING & FORESTRY, LLC

9600 NE 126th Avenue, Suite 2520 | Vancouver, WA 98682

P: 360.882.0419 Ext. 336 | F: 360.882.0426 | www.aks-eng.com | susanw@aks-eng.com

From: Clerk <clerk@townofyacolt.com>
Sent: Wednesday, October 13, 2021 2:40 PM
To: Susan Weisenborn <SusanW@aks-eng.com>
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use

EXTERNAL EMAIL: This email originated from outside AKS Engineering & Forestry.

Hi,
Yes, in this instance We already do have the Cost Recovery Agreement on file, as well as a deposit. So with this new "format", it is my understanding that what we still need are the items from the checklist that you just sent. If I need more deposit, I will let you know, but for now, please feel free to submit the numbered items on the checklist.

Thank you,
Stephanie Fields
Clerk, Town of Yacolt
(360) 686-3922

Disclaimer: This email and its attachments may be subject to public disclosure.

From: Susan Weisenborn <SusanW@aks-eng.com>
Sent: Wednesday, October 13, 2021 11:32 AM
To: Clerk <clerk@townofyacolt.com>
Cc: Kent Andreasen <andreasenk@aks-eng.com>; Seth Halling <SethH@aks-eng.com>
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use

Stephanie,
So can you send me the correct Land use application and a cost recovery agreement was done during Pre App. See below and attached.
So this should cover Land use correct?

Description:

Scope of Project / Permit Review: Review and evaluate Applicant's submittals for a pre-application conference; process subdivision application including zoning, environmental, land use, engineering and other required or related reviews; satisfy public notice and public hearing requirements; request Town Council review and approval; inspect public improvements; and final plat approval.

Thank you

Susan Weisenborn
Project Assistant



AKS ENGINEERING & FORESTRY, LLC
9600 NE 126th Avenue, Suite 2520 | Vancouver, WA 98682
P: 360.882.0419 Ext. 336 | F: 360.882.0426 | www.aks-eng.com | susanw@aks-eng.com

From: Clerk <clerk@townofyacolt.com>
Sent: Wednesday, October 13, 2021 11:25 AM

3. Pre-Application Conference Report



Town of Yacolt

202 W. Cushman Street, Yacolt, WA 98675

(360) 686-3922

Pre-application Conference Agenda

- Project Name:** NE Railroad Avenue Subdivision
- Meeting Date:** June 11, 2021
- Proposal:** The applicant is seeking to subdivide approximately 19.41 acres into 55 single-family residential lots.
- Location:** The site is located south of W Hoag Street between NE Parcel Ave and Railroad Ave Assessor's Tax Parcel # 64522-000
- Applicant:** Jorgensen Timber, LLC
PO Box 1503
Chehalis, WA 98532
- Applicant's Rep:** AKS Engineering & Forestry
Attn: Seth Halling
9600 NE 126th Ave, Ste 2520
Vancouver, WA 98682
- Staff:** Katie Listek, Mayor
Tom Esteb, Public Works
Stephanie Fields, Town Clerk
David Ridenour, Town Attorney (*Consultant*)
Devin Jackson, Town Engineer (*Consultant*)
-

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 - 1. Title 13 Public Improvements
 - 2. Title 15 Building and Construction
 - 3. Title 16 Environmental Code
 - 4. Title 17 Short Subdivisions
 - 5. Title 18 Zoning
 - B. Service Development Charges, Impact Fees, Credits
- IV. SUBMITTAL REQUIREMENTS**

I. BACKGROUND

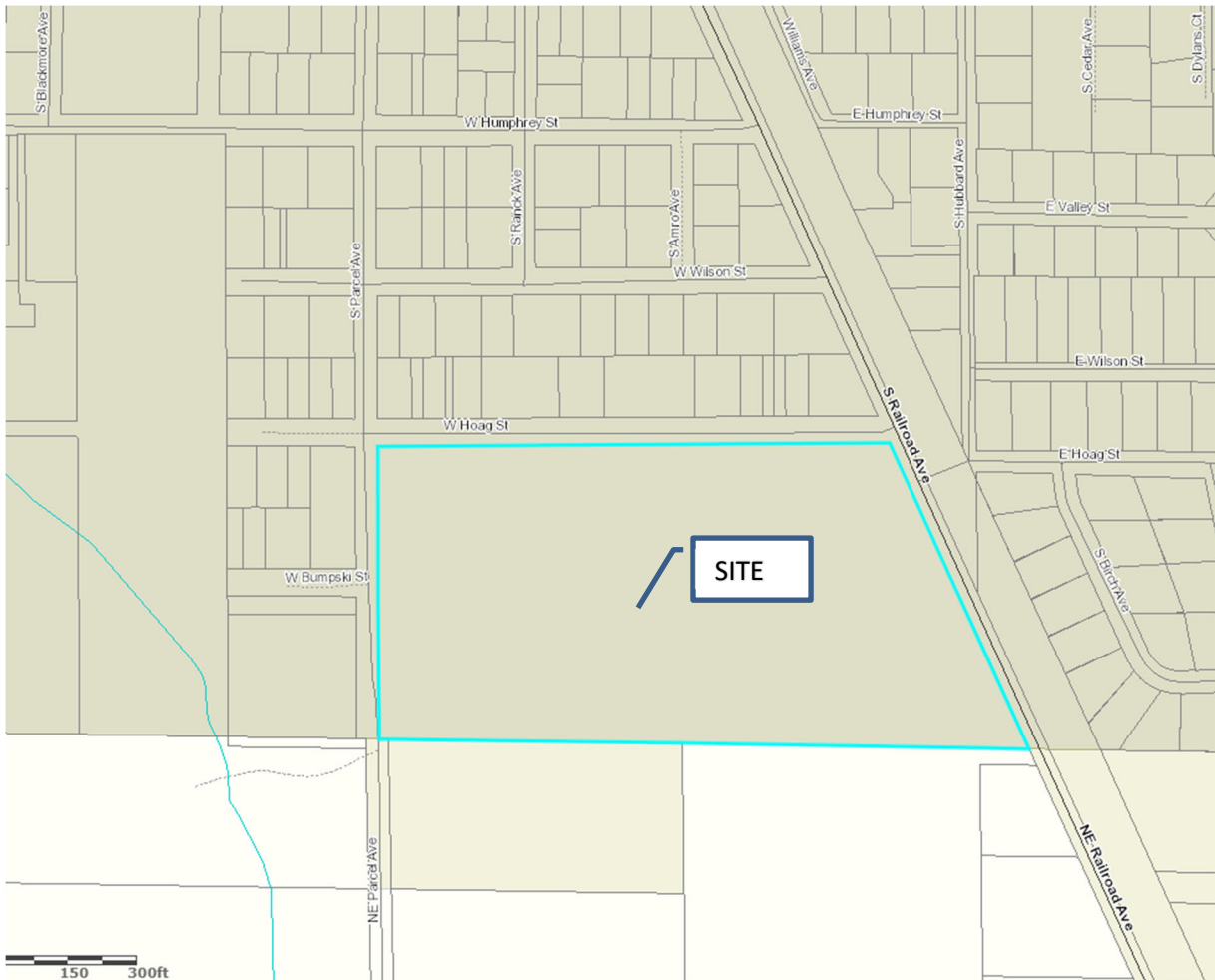
A. General Site Information

Size of Site: 19.41 acres
Existing Vegetation: Recently Harvested
Existing Structures: None
Adjacent Land Uses: Surrounded by residential lots
Adjacent Zoning: Single-Family Residential (R1-12.5) the North, East, and West. Unicornortated Clark County and UGA to the south.
Topography: The site is flat
Wetlands: No mapping indicators
Flood Plain: 100-year flood plain
Access Roads: W Hoag St, S Parcel Ave, W Bumpski St

B. Land Use Processing

Application Submitted:	28 Day Counter Complete Determination
Application Technically Complete:	120 Day for Review

Figure 1. Location



II. PROCEDURAL REQUIREMENTS

The authority for this review is described in YMC 18.25 (Single-Family Residential Districts); YMC 13.10 (Stormwater Management and Facility Maintenance); YMC 13.25 (Public Works Construction Standards); YMC 16.05-16.10 (SEPA); and the Town of Yacolt Comprehensive Growth Management Plan 2003-2023 (as updated). The Application appears to comply with YMC 16.20-16.45, (Critical Areas). The public hearing will be conducted in accordance with rules of procedure adopted by the Yacolt Town Council. The final decision on the Applications will be made by the Yacolt Town Council.

III. APPLICABLE REGULATIONS/ANALYSIS

Yacolt Municipal Code (YMC); Town of Yacolt Engineering Standards

1.	Title 13 Public Services
	13.05 Water Main Installation
	<p>Finding: Potable water will be required for this project. Clark Public Utilities (CPU) is the public water purveyor for properties within the town limits.</p> <p>Applicant shall provide a letter from CPU in response to a request for utility review. Utilities will need to be extended south to provide for future development.</p>
	13.10 Stormwater Management and Facility Maintenance
	<p>Finding: YMC 13.10.010 adopts the Town of Yacolt Stormwater Management Plan. The plan specifies the Puget Sound Manual as the governing manual.</p> <p>It is anticipated that the development shall create greater than 2,000 square feet of new impervious surface, therefore all minimum requirements apply.</p> <p>The Town has adopted the Puget Sound Manual. The current Stormwater Management Manual for Western Washington (SMMWW) may be used in lieu of the Puget Sound Manual. However, the manual must be followed in its totality. The site is inside a Critical Aquifer Recharge Area (CARA) and therefore Class V are regulated by the town and ecology. See Title 16.</p>
	13.15 On-site Sewage Disposal Systems
	<p>Finding: The proposed development will require the construction of on-site sewage disposal systems.</p> <p>The systems are subject to State and Clark County Health Department (CCHD) requirements. The applicant will have to provide CCHD development review approval.</p>
	13.20 Fire Hydrants
	<p>Finding: Applicant shall meet hydrant spacing per section 5A.06 of the adopted Town of Yacolt Engineering Standards for Public Works Construction or per Clark County Fire District standards.</p> <p>Existing and proposed hydrants shall be shown on preliminary plans. Clark County Fire District #13 covers Yacolt. See fire comments below for additional comments.</p>
	13.25 Public Works Construction Standards
	<p>Finding: The project shall meet the Town of Yacolt’s Engineering Standards for Public Works Construction.</p> <p>Chapter 1 – General Design Requirements. Applicant should reference this Chapter to familiarize with the Town’s general requirements.</p> <p>2A.06.A – Encroachments, including fills, new construction, substantial improvements, and other development within the regulatory floodway that would result in any increase in flood levels during the occurrence of the “100-year” flood discharge shall be prohibited. <i>The applicant’s proposal develops inside an identified flood plain where the town has experienced recent flooding. The applicant shall provide analysis and a design that demonstrates this standard is met.</i></p>

3A – Functional Classification - The functional classification of existing and proposed roads is established by the Town on an individual basis using the existing land use and existing operational characteristics. *Note that in the adopted Comprehensive Plan W Hoag is identified as a secondary arterial. Parcel being one of two connectors from the center of town to south of town is considered a secondary arterial.*

Table 3B.04A Street Widths and the comprehensive plan section IV.B layout street widths. *The applicant has proposed an internal cross-section for interior streets that is consistent with the comprehensive plan. This would be considered with the preferred 28’ pavement width.*

3A.07 Street Frontage Improvements – *The applicant shall be required to improve the frontages of W Hoag and Parcel Ave.*

3A.12 Curb and Gutter – *Shall be required on both sides*

3A.13 Survey Monuments

3A.14 Concrete Sidewalks – *Applicant proposes sidewalk on one side of the interior streets. This is consistent with the comprehensive plan.*

3A.18 Driveways – *Driveways accessing Parcel will not be supported given its eventual buildout and being across from an emergency facility.*

3A.22(C) & 3B.17 Street Illumination – *Street illumination spacing shall be designed to meet the levels provided in 3B.17. All street lights shall be LED and of a decorative type to be approved by the Town.*

It should be noted that the applicant is responsible for submitting an application compliant with the Town of Yacolt’s Engineering standards. Failure to include specific section in this pre-application agenda does not relieve the applicant from their duty to comply with all pertinent standards.

2.	Title 15 Building and Construction	
15.05 Code for the Abatement of Dangerous Buildings		
<p>Finding: The Town of Yacolt adopts the “Uniform Code for the Abatement of Dangerous Buildings, 1976 Edition.” This is superseded by the adopted state standard.</p> <p>All permits must be secured prior to any construction and all applicable impact and permit fees shall be paid prior to the issuance of the permits.</p>		
15.10 Energy Code		
<p>Finding: The Town of Yacolt adopts the “Northwest Energy Code 1987 Edition.” This is superseded by the adopted state standard.</p> <p>All permits must be secured prior to any construction and all applicable impact and permit fees shall be paid prior to the issuance of the permits.</p>		
15.15 Flood Damage Prevention		
<p>Finding: The Town of Yacolt has adopted a 100-year Flood Plain Map. The proposed development falls inside of identified flood plains.</p>		

3.	Title 16 Environment
<p>Division 1: State Environmental Policy Act (SEPA).</p> <p>Division 2 – The proposed development is inside a Category 1 Critical Aquifer Recharge Area (CARA). Note that Class V injection wells shall be limited to roof areas only inside a CARA unless the applicant is able to meet the non-endangerment criteria provided in WAC 173-218.</p>	

5.	Title 18 Zoning
18.25 Single Family Residential Districts	
<p>Finding: A. Recognize, maintain and protect low density residential areas.</p> <ul style="list-style-type: none"> A. Establish higher densities where a full range of community services and facilities are present or will be present at the time of development. B. Provide for additional related issues such as schools, parks and utility uses necessary to serve immediate residential areas. <p>The subdivision as proposed does not provide for service to immediate areas. The applicant will be required to connect Bumpski into the subdivision. The applicant will also need to provide street and utility connections to the south allowing for the continued development of adjacent areas.</p> <p>Proposed lots shall meet dimensional and setback standards.</p>	
18.70 Parking, Access, and Circulation	
Finding: Application will be required to meet parking standards.	
18.75 Landscaping and Screening	
Finding: Landscaping will be required to meet the standards of this section. Also note landscaping of the development would be considered possible mitigation to release the existing moratorium.	
6.	Service Development Charges, Impact Fees, Credits
This section is replaced by a pass-through agreement. Town hall can provide additional information.	

6.	Clark County Fire
Comment Summary	
<p>Comments from Fire</p> <ol style="list-style-type: none"> 1. Road widths are at minimum and should be signed as no parking on both sides, would stipulate to no parking on side only. 2. We would like the flag lots to be sprinkled due to access. 3. Access to flag lots should be at least 20' wide 4. Would like a hydrant added on Parcel at Bumpski 5. No street parking along Parcel across from the fire station 6. Confirming 8" main for water supply 	

- 1) FEMA maps an isolated floodway fringe area in the northwest corner of the site. Does the Town see any issues with structures, septics, roadways, etc. within this area? *See 2A.06.A for engineering standards. The town is aware of an issue with water coming out of the ground in this area and on the north side of Hoag near parcel.*
- 2) The proposed development plan includes sidewalk on one side of the street to allow for stormwater infiltration facilities within the planter strip on the opposite side of the street. Is the Town agreeable to this proposal? *The proposed cross section would require a design modification however it is supported as a possible alternative by the comprehensive plan. This isn't the preferred cross section due to increased maintenance for Town staff and historical issues experienced by the town in areas where this cross section has been used by developers.*
- 3) The site was recently logged under a DNR forest practice permit and Clark County GIS notes a 6-year forest practice moratorium is in effect through October 2026. The DNR FPA was a Class IVG for a conversion from timberland. Will this FPA meet the requirements of the Town of Yacolt for the conversion? *The Town would consider supporting a release of the moratorium via the SEPA process with appropriate mitigation.*
- 4) Please confirm the required street typical sections for the proposed street widening as well as the internal local street. *The adopted street cross sections can be found in Table 3B.04A of the engineering standards. The town has the ability to support the alternative street cross section provided in the comprehensive plan however it's not preferred. Street classifications are identified above.*
- 5) If stormwater UIC facilities are proposed, will a Critical Aquifer Recharge Area permit be required? If so, will the Town process the CARA permit? *Title 16 Division 2 of the town code addresses CARA permits. The Town has authority however it does not at this time have an official permit process. Processing of a CARA permit would be completed jointly with the Department of Ecology.*

Applicant should be aware that the Town, its agents, and its consultants can make no promise about the probable success or failure of the applicant's changing strategies. The Town makes no representation about what the recommendation to the Council would be following staff's review of a formal and complete application. Applicant is free to structure its application as it sees fit, but Applicant should be clear that the Town has not waived its right to make any determination it believes is appropriate as to any of the issues on which the project would depend.

V. SUBMITTAL REQUIREMENTS

- 1) Narrative
 - a. How the application meets or exceeds each of the applicable approval criteria.
 - b. How the proposed plan meets the minimum area and dimensions of the zone.
 - c. How the issues identified in the pre-application conference have been addressed and how services will be provided to the site.
- 2) Preliminary boundary survey
- 3) Proposed development plan
 - a. General Information
 - i. Applicants name, mailing address, and phone number
 - ii. Owners name and mailing address
 - iii. Contact Person's name, mailing address, and phone number
 - iv. North arrow, Scale & Legend
 - v. Proposed name of project
 - vi. Area of site in acres or square feet
 - b. Existing conditions
 - i. Topography
 - ii. Structures
 - iii. Trees larger than 6" DBH
 - iv. Watercourses, streams, rivers, etc.
 - v. FEMA floodplains – Yacolt Map identifies flood plains on property
 - vi. Critical areas including wetlands and priority habitat
 - c. Land Use
 - i. Square footage and dimensions of all parcels
 - ii. Locations of any existing buildings and use
 - iii. Location and width of existing easements
 - iv. Name, Location, and Width of existing right-of-ways
 - v. Centerline and right-of-way radius of existing roadways that abut the site
 - vi. Name, location, width, and surfacing materials of adjacent roadways and easements
 - vii. Locations and width of existing driveways and those driveways across the street to include distance between driveways and roadways from edge to edge
 - viii. Location and width of existing pedestrian and bicycle facilities on and within 100 feet of the site
 - d. Water and Sewer
 - i. Location and direction to nearest fire hydrant
 - ii. Locations of existing sewage disposal systems and wells on site
- 4) Preliminary stormwater plan and technical information report compliant with the Town's adopted stormwater management plan.
- 5) Department of health septic review letter
- 6) Clark Public Utilities District water review letter
- 7) Title Report
- 8) Associated applications
- 9) Signed application and passthrough agreement

2. Application Fee

Dave Weston

From: Clerk <clerk@townofyacolt.com>
Sent: Wednesday, October 13, 2021 2:40 PM
To: Susan Weisenborn
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use

EXTERNAL EMAIL: This email originated from outside AKS Engineering & Forestry.

Hi,
Yes, in this instance We already do have the Cost Recovery Agreement on file, as well as a deposit. So with this new "format", it is my understanding that what we still need are the items from the checklist that you just sent. **If I need more deposit, I will let you know, but for now, please feel free to submit the numbered items on the checklist.**

Thank you,
Stephanie Fields
Clerk, Town of Yacolt
(360) 686-3922

Disclaimer: This email and its attachments may be subject to public disclosure.

From: Susan Weisenborn <SusanW@aks-eng.com>
Sent: Wednesday, October 13, 2021 11:32 AM
To: Clerk <clerk@townofyacolt.com>
Cc: Kent Andreasen <andreasenk@aks-eng.com>; Seth Halling <SethH@aks-eng.com>
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use

Stephanie,
So can you send me the correct Land use application and a cost recovery agreement was done during Pre App. See below and attached.
So this should cover Land use correct?

Description:

Scope of Project / Permit Review: Review and evaluate Applicant's submittals for a pre-application conference; **process subdivision application including zoning, environmental, land use, engineering and other required or related reviews;** satisfy public notice and public hearing requirements; request Town Council review and approval; inspect public improvements; and final plat approval.

Thank you

Susan Weisenborn
Project Assistant



AKS ENGINEERING & FORESTRY, LLC

9600 NE 126th Avenue, Suite 2520 | Vancouver, WA 98682

P: 360.882.0419 Ext. 336 | F: 360.882.0426 | www.aks-eng.com | susanw@aks-eng.com

From: Clerk <clerk@townofyacolt.com>
Sent: Wednesday, October 13, 2021 11:25 AM
To: Susan Weisenborn <SusanW@aks-eng.com>
Subject: RE: 8706 NE Railroad Ave Subdivision - Land Use

EXTERNAL EMAIL: This email originated from outside AKS Engineering & Forestry.

Hi Susan,
The application is wrong, but the checklist is correct. We would need a Cost-Recovery Agreement. I will be able to advise re: deposit after these items have been submitted.

Thank you,
Stephanie Fields
Clerk, Town of Yacolt
(360) 686-3922

Disclaimer: This email and its attachments may be subject to public disclosure.

From: Susan Weisenborn <SusanW@aks-eng.com>
Sent: Wednesday, October 13, 2021 7:39 AM
To: Clerk <clerk@townofyacolt.com>
Cc: Kent Andreasen <andreasenk@aks-eng.com>; Seth Halling <SethH@aks-eng.com>
Subject: 8706 NE Railroad Ave Subdivision - Land Use

Stephanie,
Will you confirm that this is the correct application & Checklist for land use.
Also can you verify how fees will be handled, will you need a deposit and if so how much? Or just submit and you will advise fees and a cost recovery agreement will be submitted.

Thank you

Susan Weisenborn Project Assistant



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9600 NE 126th Avenue, Suite 2520 | Vancouver, WA 98682

P: 360.882.0419 Ext. 336 | F: 360.882.0426 | www.aks-eng.com | susanw@aks-eng.com

Offices in: Bend, OR | Keizer, OR | Tualatin, OR | Vancouver, WA

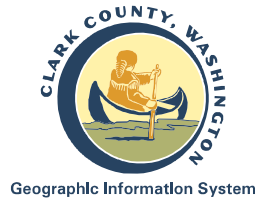
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4. Developer's GIS Packet

DEVELOPER'S PACKET

Produced By:

Clark County Geographic Information System (GIS)



For:

AKS Engineering & Forestry

Subject Property Account Number(s):

64522000

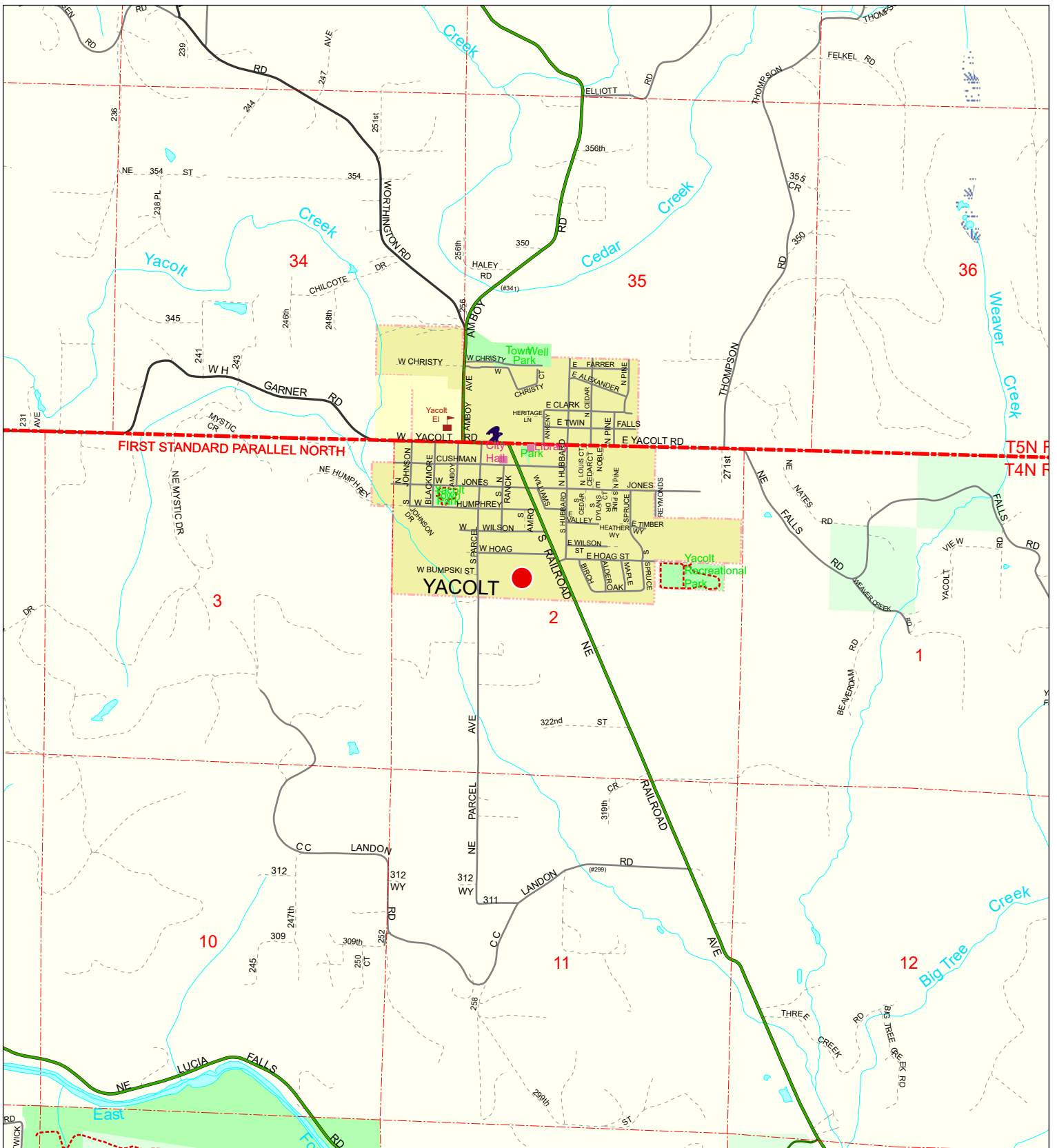
PDF # 275309

Printed: October 21, 2021

Expires: October 21, 2022

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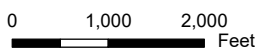
General Location

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

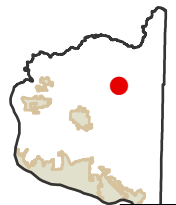
Printed on: October 21, 2021



Geographic Information System



● Location of Subject Property(s)



Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

Property Information Fact Sheet

Mailing Information:

Account No.: 64522000
Owner: JORGENSEN TIMBER LLC
Address: PO BOX 1503
C/S/Z: CHEHALIS, WA 98532

Assessed Parcel Size: 20.0 Ac

Property Type: UNUSED OR VACANT LAND - NO IMPROVEMENTS

PARCEL LOCATION FINDINGS:

Quarter Section(s): NE 1/4,S02,T4N,R3E,
NW 1/4,S02,T4N,R3E

Municipal Jurisdiction: Yacolt

Urban Growth Area: Yacolt

Zoning: R1-12.5

Zoning Overlay: No Mapping Indicators

Comprehensive Plan Designation: UL

Columbia River Gorge NSA: No Mapping Indicators

Late-Comer Area: No Mapping Indicators

Trans. Impact Fee Area: Yacolt

Park Impact Fee District: No Mapping Indicators

Neighborhood Association: No Mapping Indicators

School District: Battle Ground

Elementary School: Yacolt

Junior High School: Amboy

Senior High School: Battle Ground

Fire District: Clark Fire District 13

Sewer District: Yacolt

Water District: Clark Public Utilities

Wildfire Danger Area: Over 500ft need further review

ENVIRONMENTAL CONSTRAINTS:

Soil Type(s): YaA, 88.4% of parcel
YcB, 11.6%

Hydric Soils: Non-Hydric, 100.0% of parcel

Flood Zone Designation: Outside Flood Area,
Floodway Fringe

CARA: Category 1 Recharge Areas, Category 2 Recharge Areas

Forest Moratorium Area: No Mapping Indicators

Liquefaction Susceptibility: Very Low

NEHRP: C

Slope: 0 - 5 percent, 100.0% of parcel

Landslide Hazards: No Mapping Indicators

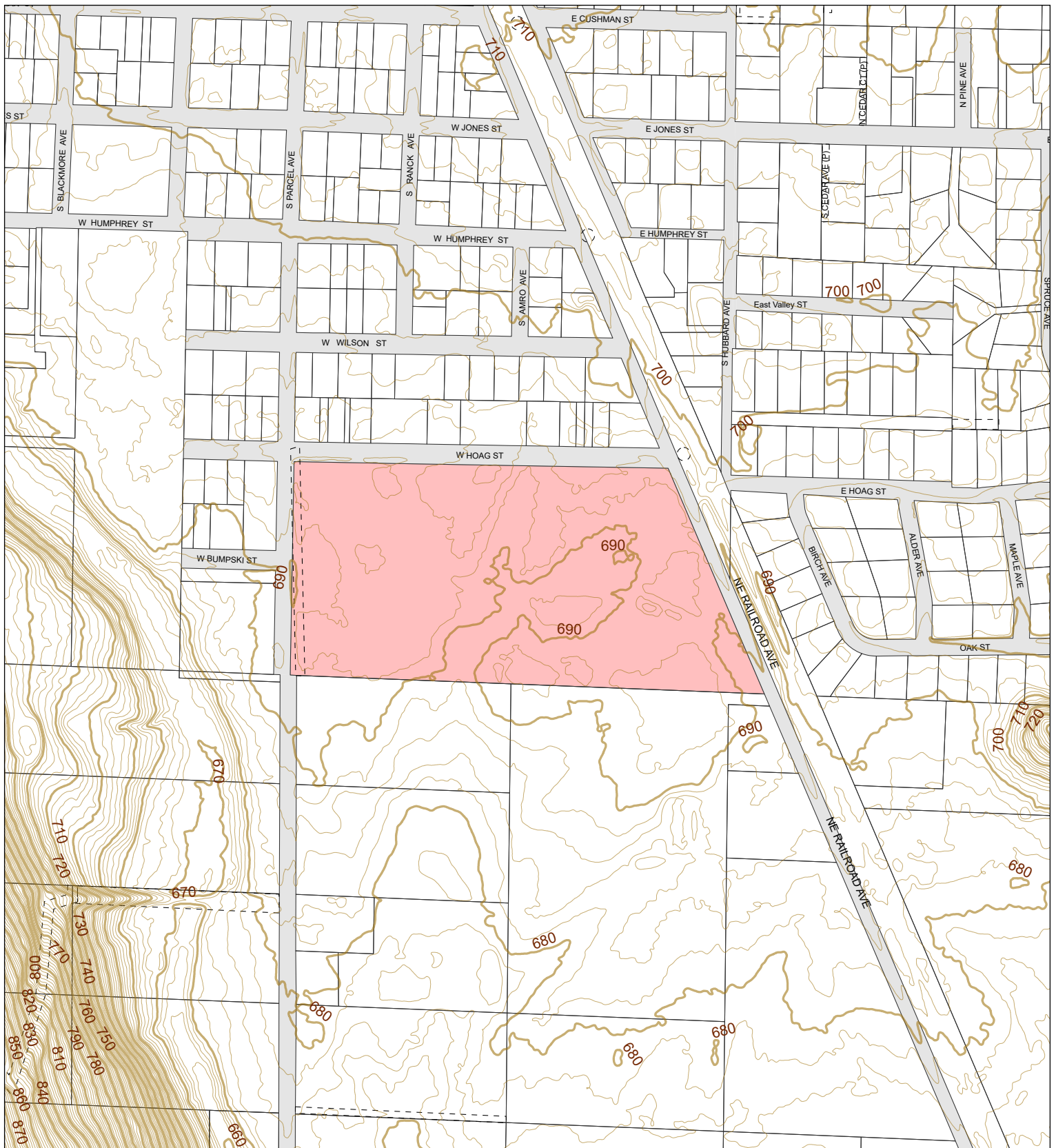
Slope Stability: No Mapping Indicators

Cultural Resources:

Archeological Predictive: High, 10.3% of parcel
Moderate-High, 89.7%

Archeological Site Buffers: Mapping Indicators Found

Historic Sites: No Mapping Indicators



Elevation Contours

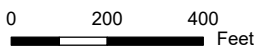
Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- 10' Elevation Contours
- 2' Elevation Contours

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Geographic Information System



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53134	53135	
43103	43102	43101
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2020 Aerial Photography

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

Printed on: October 21, 2021



Geographic Information System

0 200 400 Feet

 Subject Property(s)

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Developer's Packet: Pa

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CLARK COUNTY, WASHINGTON

Geographic Information System

0 100 200 Feet

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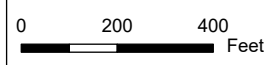
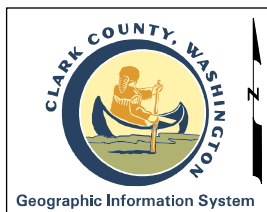
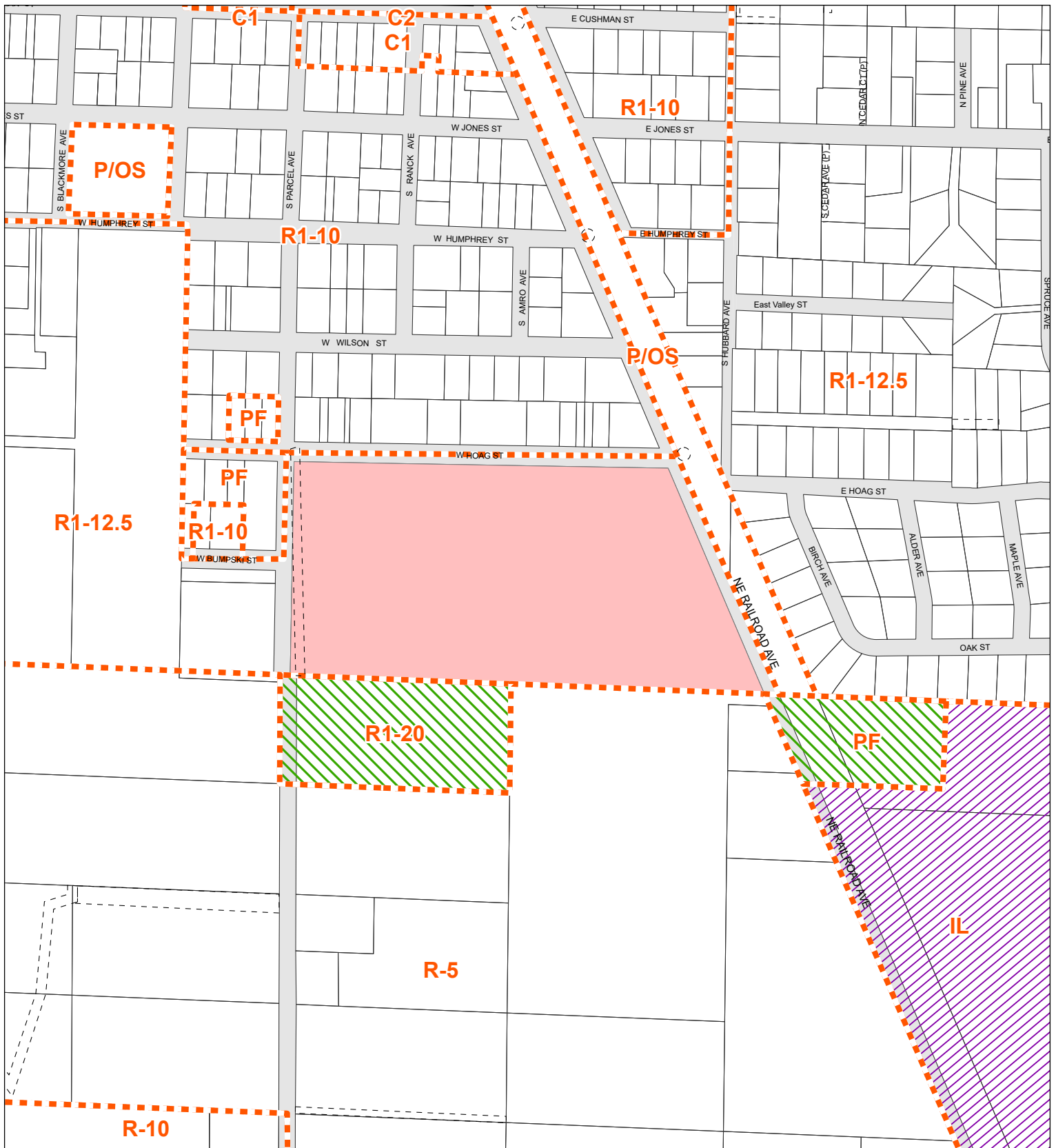
2020 Aerial Photography with Elevation Contours

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- 2' Elevation Contours
- Subject Property(s)

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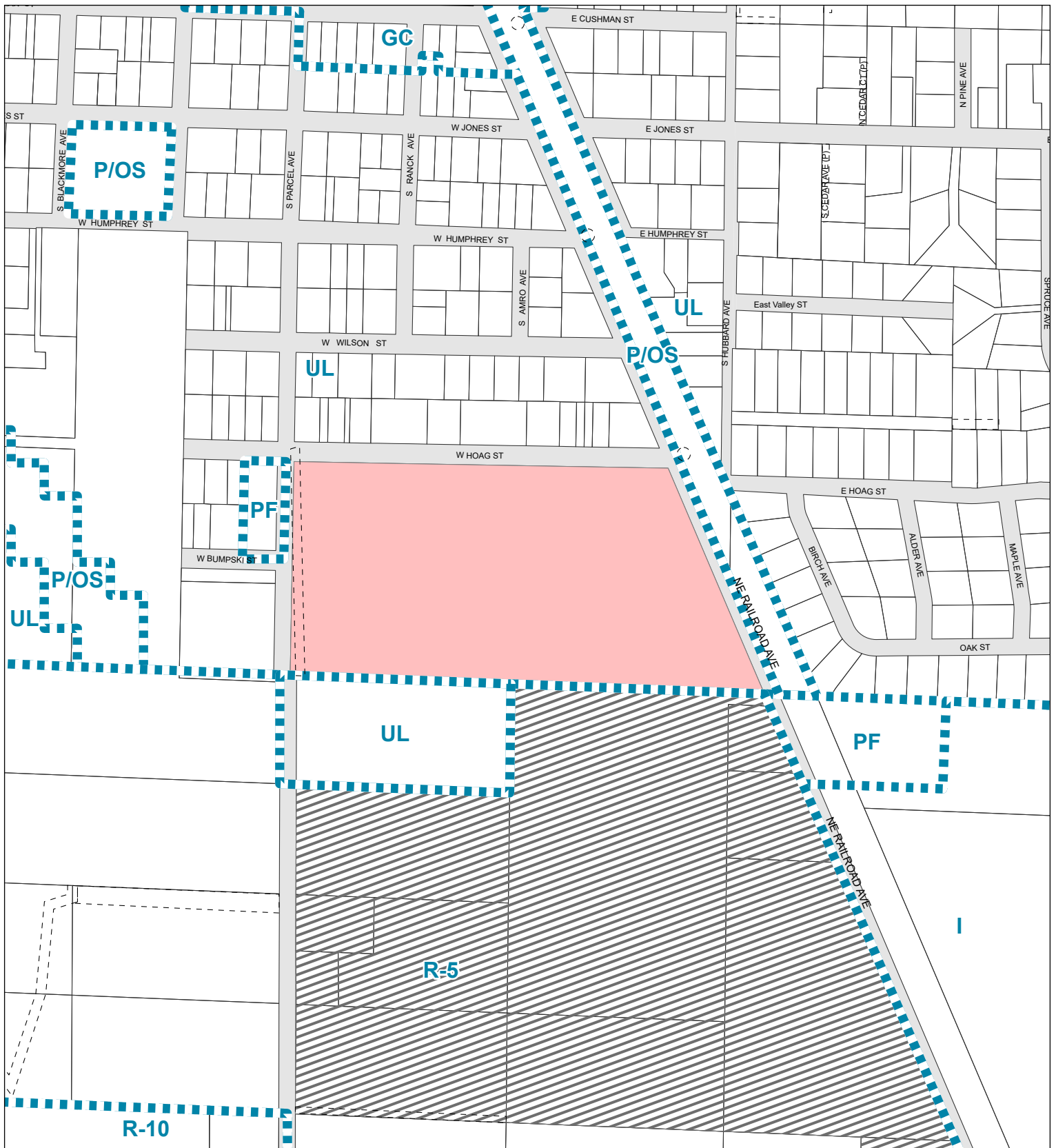
Zoning Designations

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Zoning Boundary
- Urban Holding - 10 (UH-10)
- Urban Holding - 20 (UH-20)
- Urban Holding - 40 (UH-40)
- Surface Mining Overlay District

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Geographic Information System
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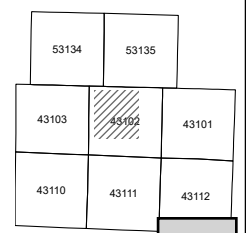
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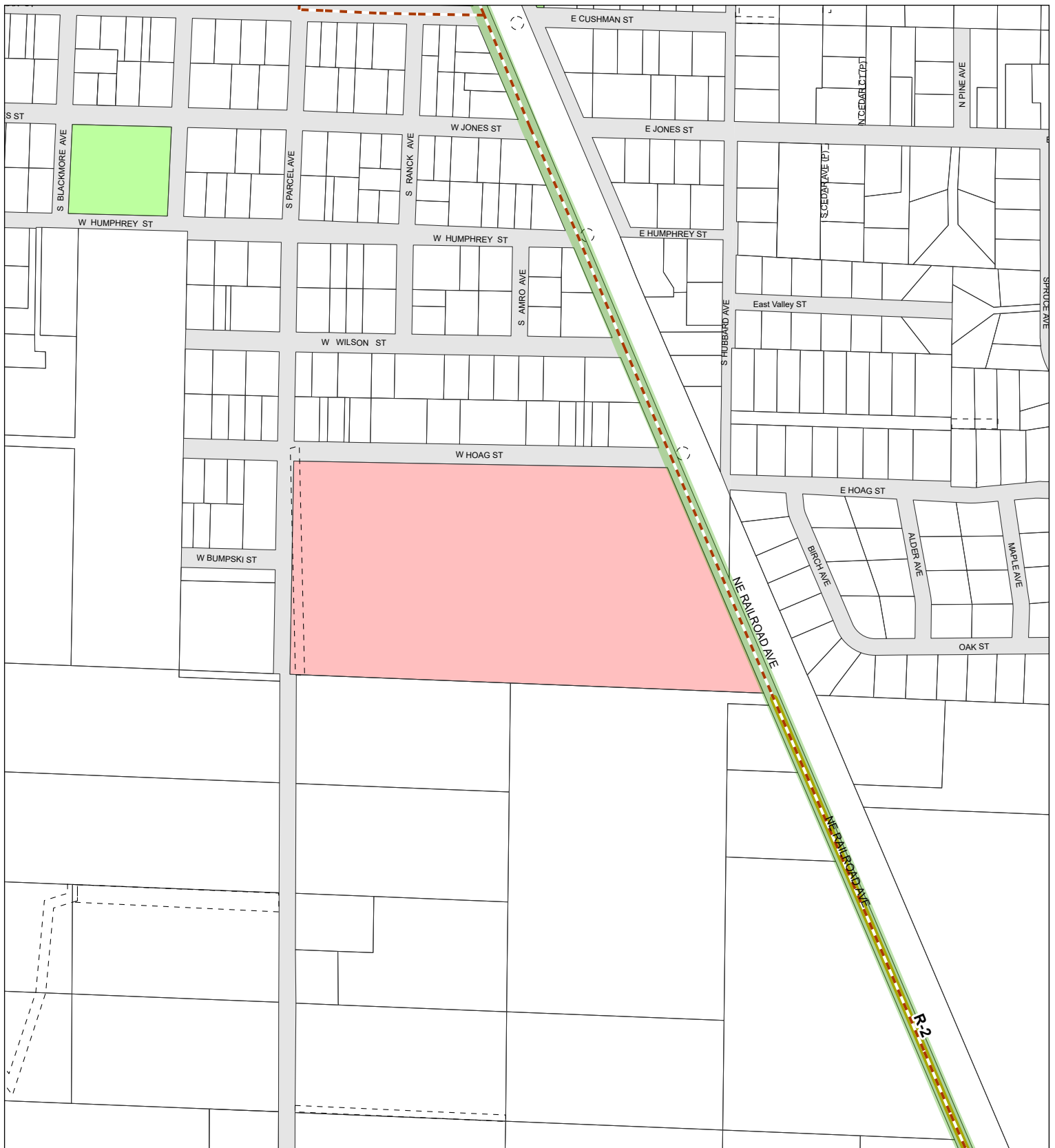
Comprehensive Plan Designations

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Comprehensive Plan Boundary
- Industrial Reserve
- Railroad Industrial Reserve
- Mining
- Urban Reserve
- Rural Center Mixed Use
- Columbia River Gorge Scenic Area

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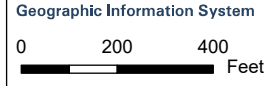




Arterials, C-Tran Bus Routes, Parks & Trails

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

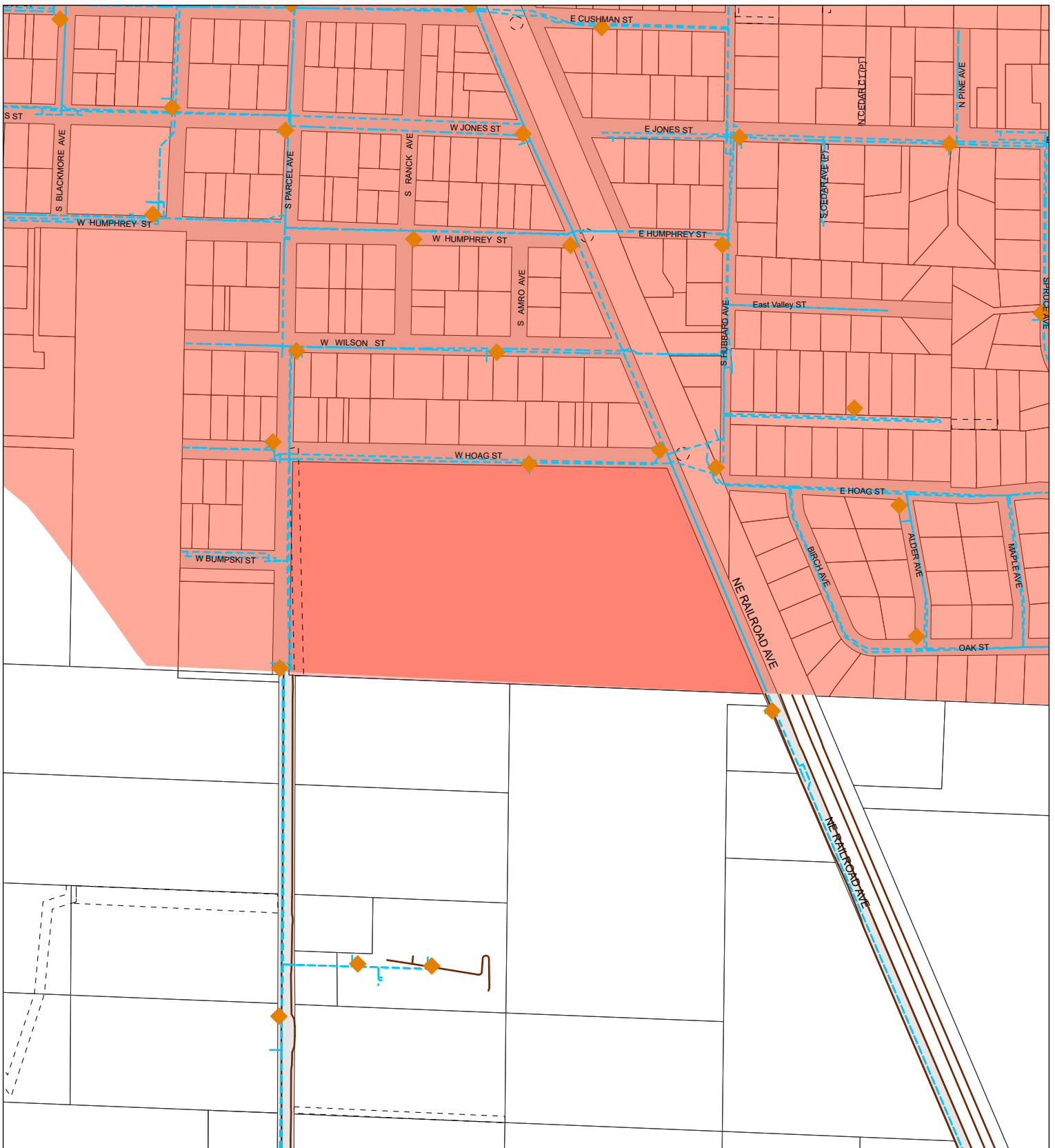
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- Subject Property(s)
- C-Tran Route
- Rural Minor Collector
- Public Road
- Principal Arterial
- State Route
- Transportation or Major Utility Easement
- Minor Arterial
- Other
- Parks
- Collector
- Proposed Arterial
- Trail
- Rural Major Collector
- Scenic Highway

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Geographic Information System

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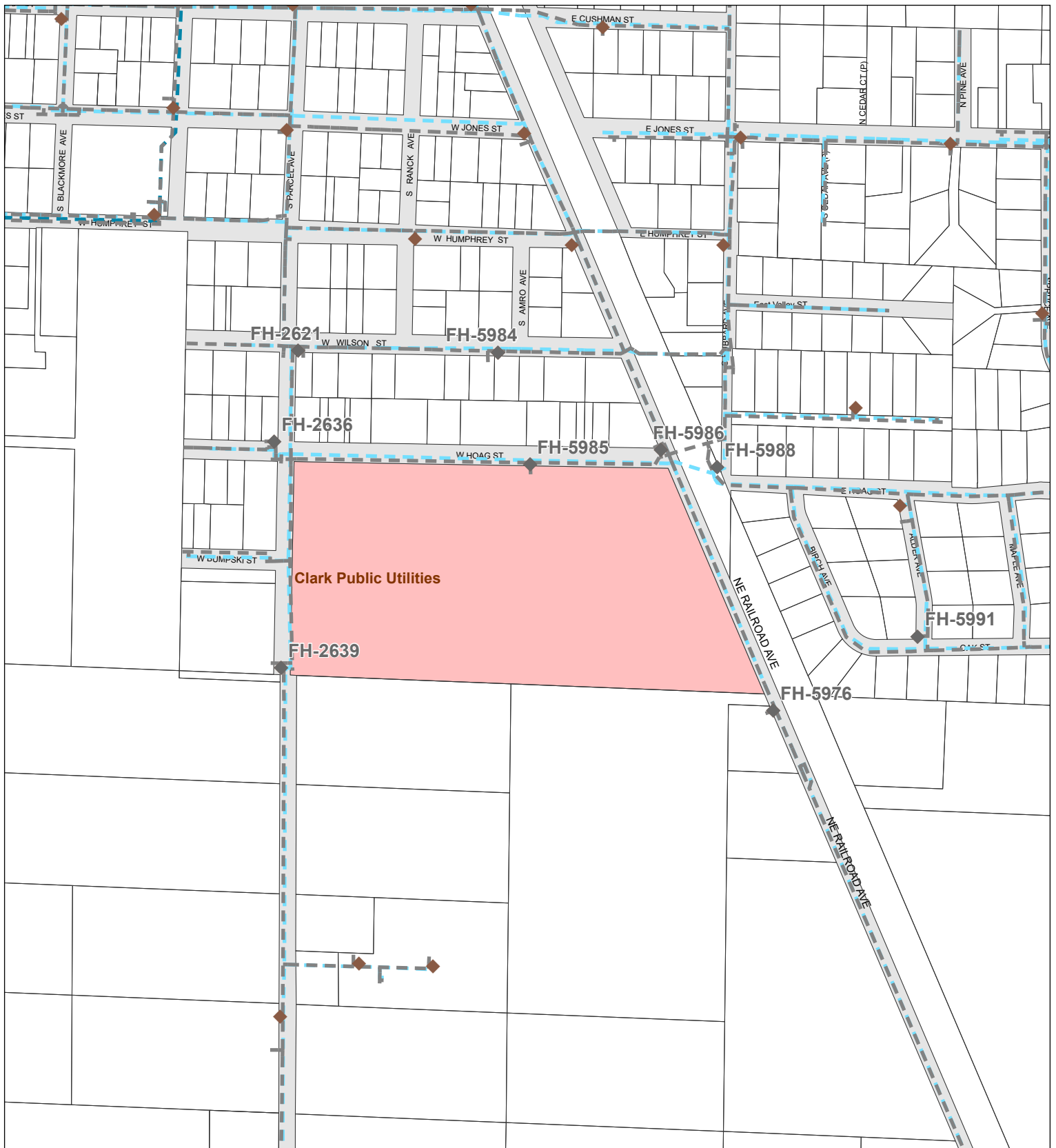
Water, Sewer, and Storm Systems


Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- 1-Year Wellhead ZOC
- 5-Year Wellhead ZOC
- 10-Year Wellhead ZOC
- Water Lines
- Sewer Lines
- Storm Water Lines
- Hydrants

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CLARK COUNTY, WASHINGTON

Geographic Information System

0 200 400 Feet

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Water Systems

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

Printed on: October 21, 2021

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<ul style="list-style-type: none"> Subject Parcel Public Road Water District Boundary Unknown Size Water Line < 10" Water Line 	<ul style="list-style-type: none"> 10-20" Water Line > 20" Water Line No Flow Data Hydrant 0 - 499 GPM at 20 PSI 	<ul style="list-style-type: none"> 500 - 999 GPM at 20 PSI > 1000 - 1749 GPM at 20 PSI > 1750 GPM at 20 PSI Hydrant > 500' from parcel(s)
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Developer's Packet: Page 117

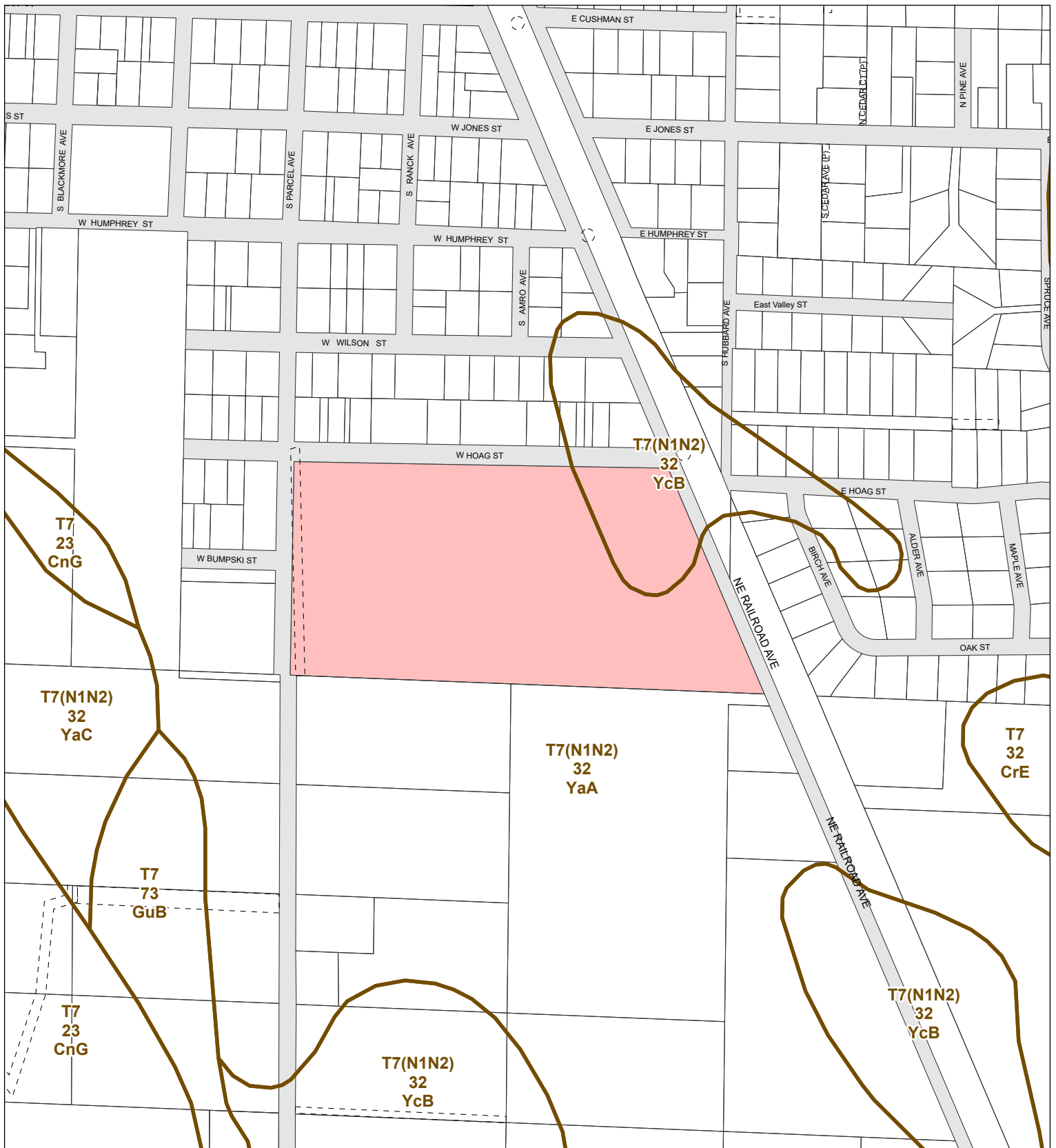
Hydrant Fire Flow Details

Account No.: 64522000
Owner: JORGENSEN TIMBER LLC
Address: PO BOX 1503
C/S/Z: CHEHALIS, WA 98532

Water District(s)	Hydrant Data Update	Project Site Provider
Clark Public Utilities	June 30, 2021	Service Provider

HYDRANT INFORMATION:

Hydrant ID	Hydrant Owner	Main Diameter	Flow at 20 PSI	Test Date	Distance to site
FH-5985	Clark Public Utilities	6.0"	No Data		4 ft
FH-2639	Clark Public Utilities	6.0"	No Data		27 ft
FH-5986	Clark Public Utilities	8.0"	No Data		54 ft
FH-5976	Clark Public Utilities	8.0"	No Data		57 ft
FH-2636	Clark Public Utilities	6.0"	No Data		84 ft
FH-5988	Clark Public Utilities	6.0"	No Data		138 ft
FH-2621	Clark Public Utilities	6.0"	No Data		334 ft
FH-5984	Clark Public Utilities	6.0"	No Data		340 ft
FH-5991	Clark Public Utilities	8.0"	No Data		494 ft



Geographic Information System

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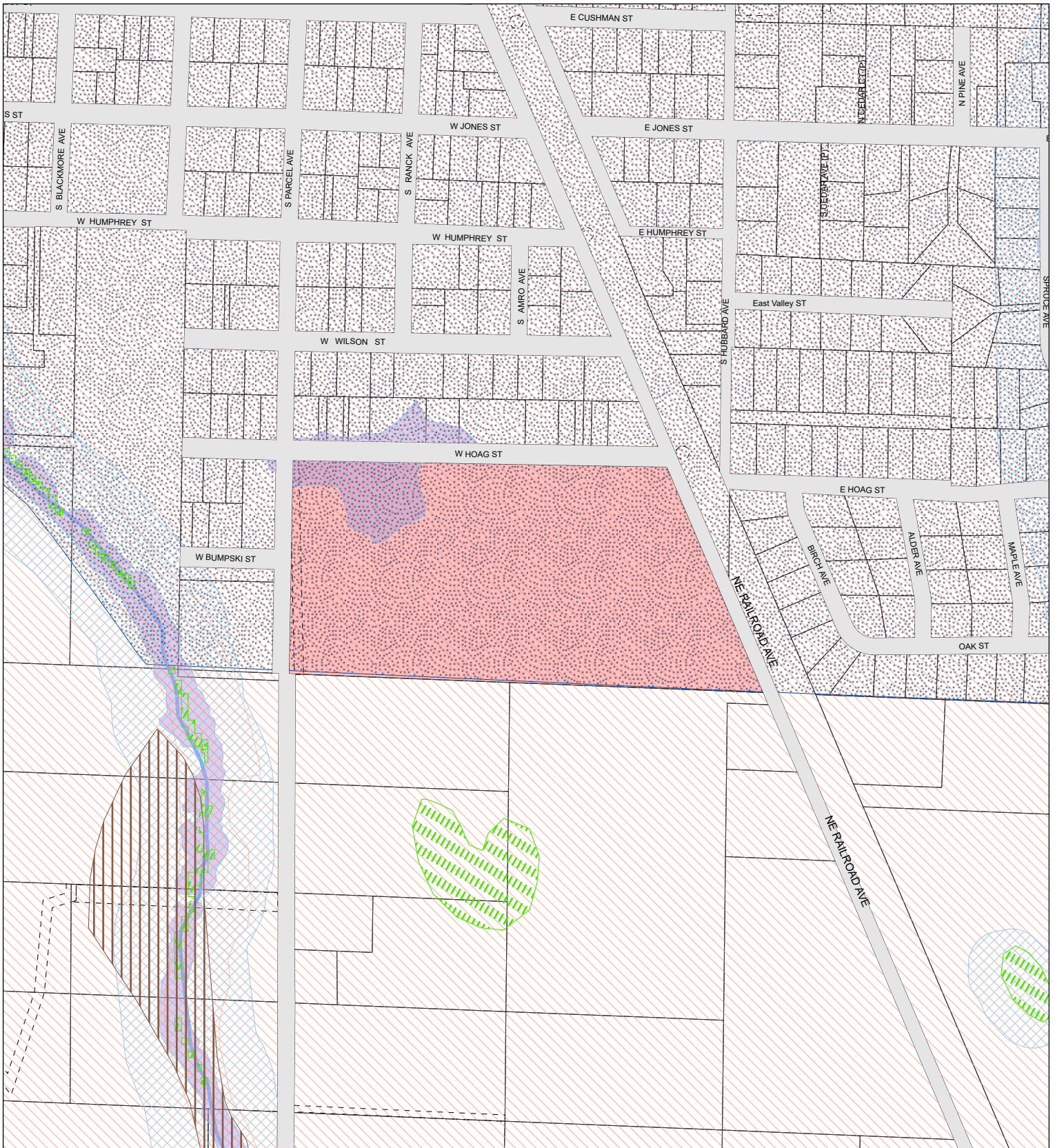
Soil Types

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Soil Type Boundary

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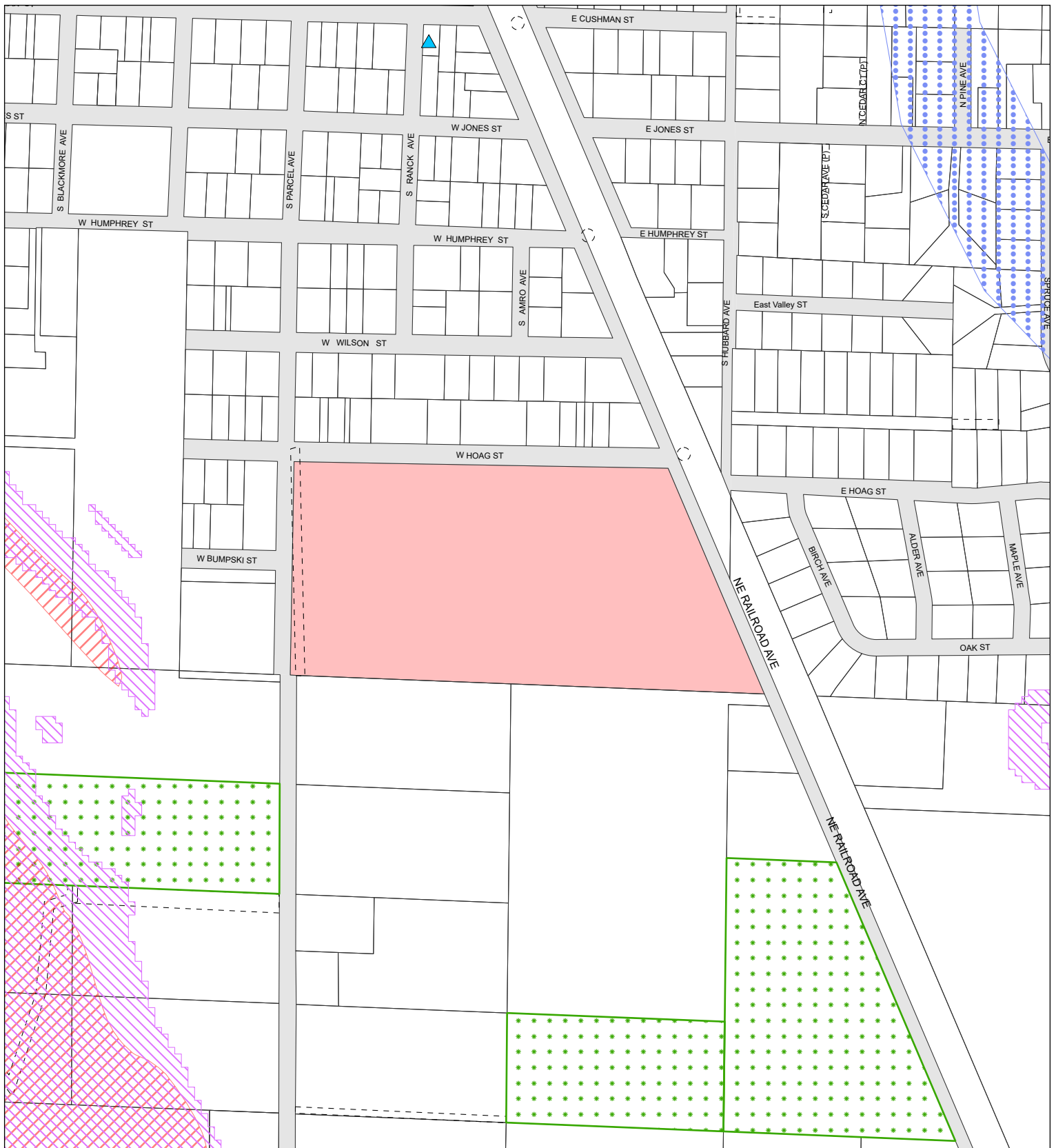
Environmental Constraints I

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Hydric Soils
- Wetland Inventory
- CARA Category 1
- Riparian Habitat or Species Area
- Non-Riparian Habitat or Species Area
- 100 year Floodplains
- Floodway
- Shorelines
- Stream

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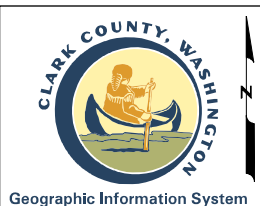


Environmental Constraints II

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Slopes > 15%
- Potentially Unstable Slope
- Historic or Active Landslide
- Severe Erosion Hazard Area
- Forest Moratorium Area
- CCHR Historic Site
- NRHP Historic Site
- WSHR Historic Site
- WSHR Historic Barn
- INV Historic Site

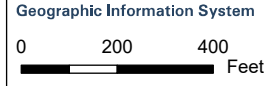
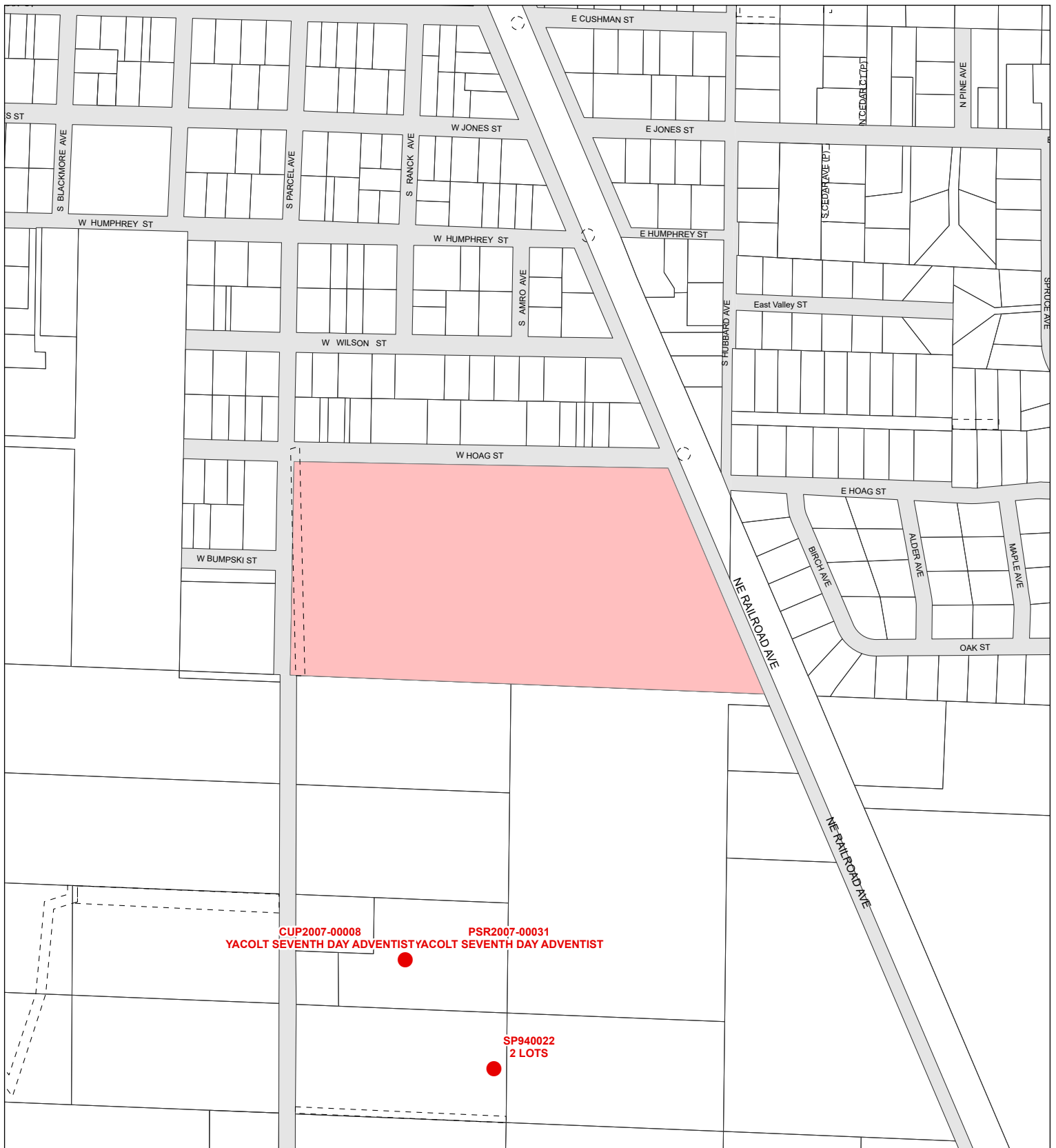
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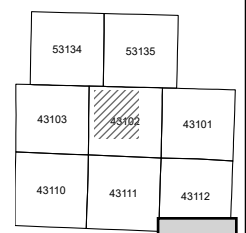
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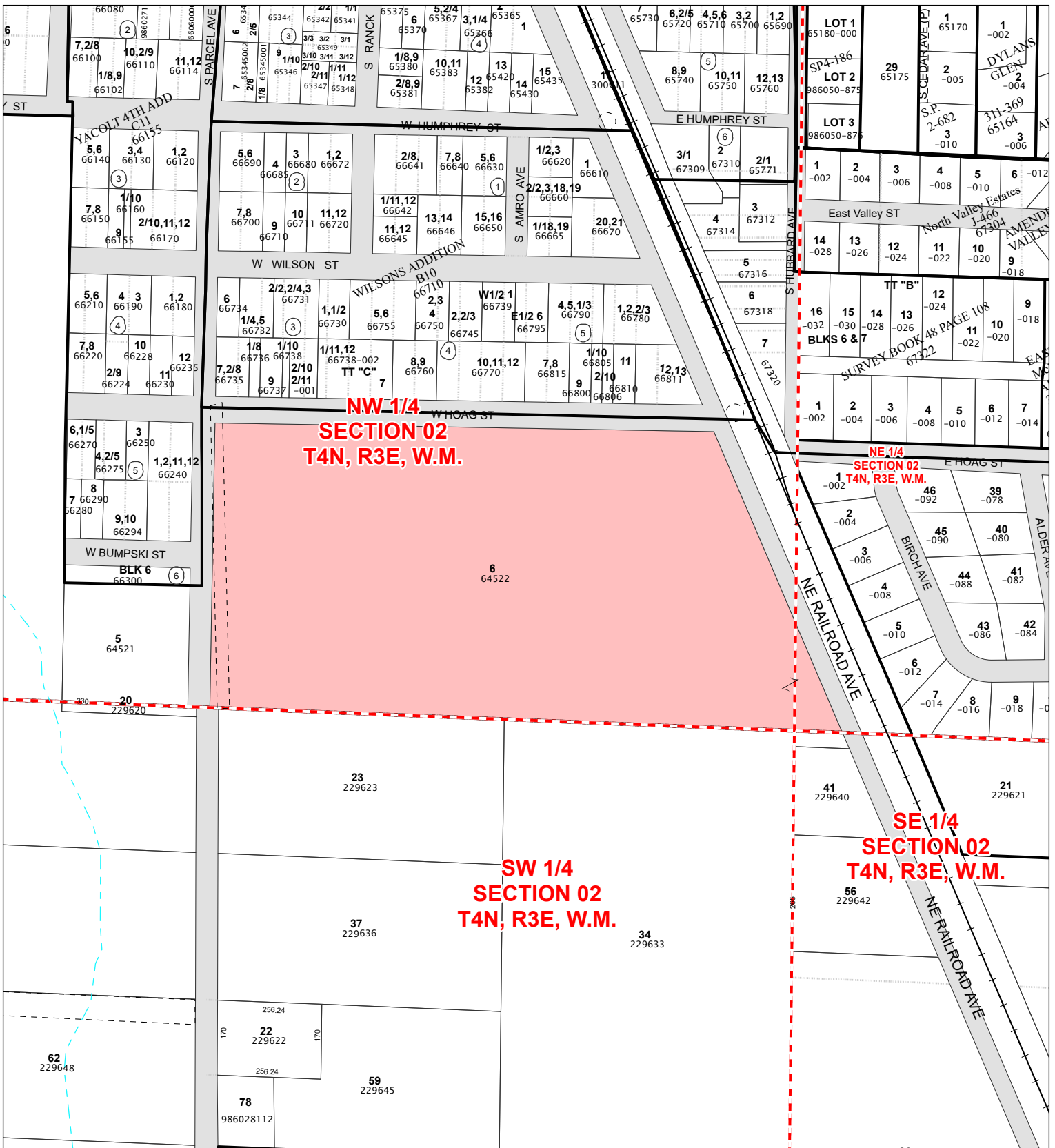
Adjacent Development

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Adjacent Development

Printed on: October 21, 2021

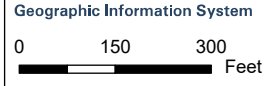




Quarter Section Parcels

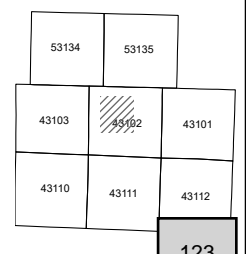
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 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

Printed on: October 21, 2021

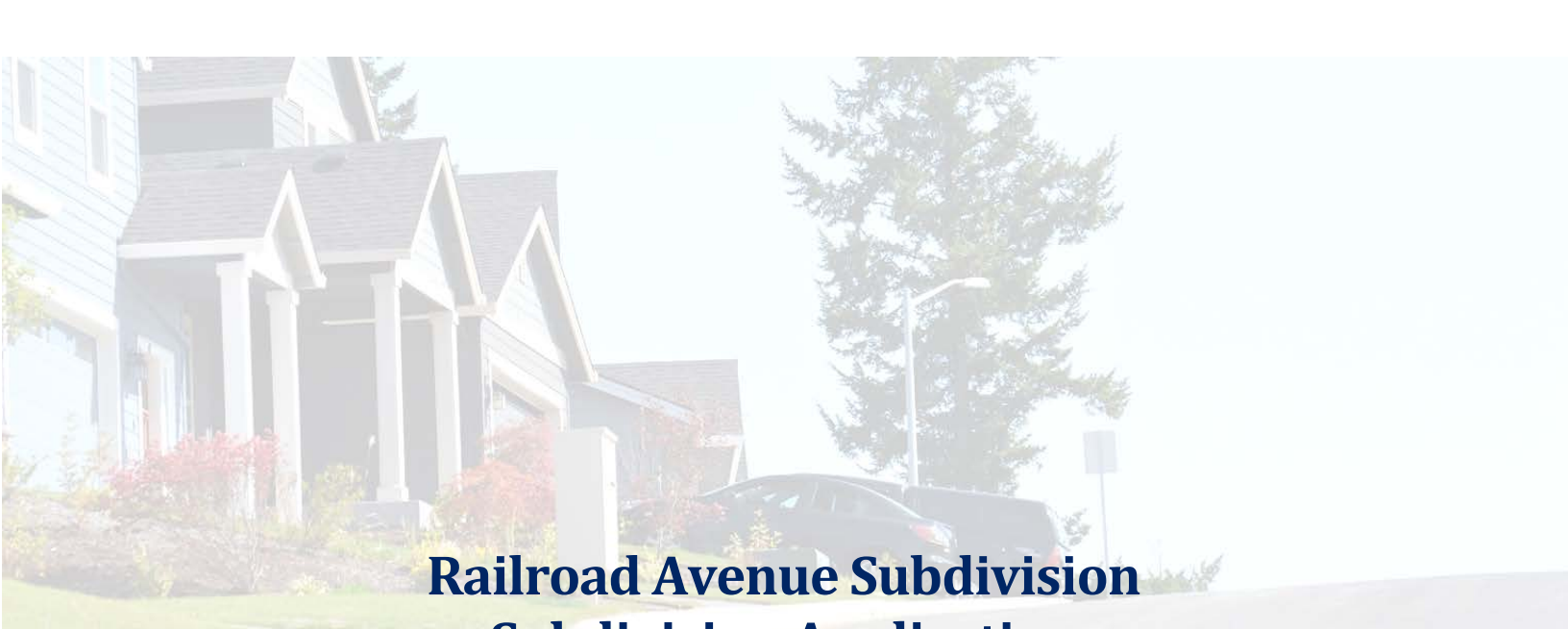


Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

- Subdivision Lines
- Donation Land Claim
- Section Quarters
- City Boundaries
- Subject Property(s)
- Road Right of Way - Actual Road May not Exist
- Transportation or Major Utility Easement



5. Land Use Narrative



Railroad Avenue Subdivision

Date: December 2021

Submitted to: Town of Yacolt
Public Works
202 W. Cushman Street
Yacolt, WA 98675

Applicant: AHO Construction I, Inc.
5512 NE 109th Court, Ste. 101
Vancouver, WA 98662
Houston Aho
(360) 254-0493
HoustonA@AhoConstruction.com

AKS Job Number: 8706

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Railroad Avenue Subdivision Subdivision Application

Submitted to: Town of Yacolt
Public Works
202 W. Cushman Street
Yacolt, WA 98675

Applicant: AHO Construction I, Inc.
5512 NE 109th Court, Ste. 101
Vancouver, WA 98662
Houston Aho
(360) 254-0493
HoustonA@AhoConstruction.com

Property Owner: Jorgensen Timber, LLC.
PO Box 1503
Chehalis, WA 98532

Applicant's Consultant: AKS Engineering & Forestry, LLC
9600 NE 126th Avenue, Suite 2520
Vancouver, WA 98682

Contact(s): Seth Halling
Email: SethH@aks-eng.com
Phone: (360) 882-0419

Site Location: Unaddressed

Clark County Parcels: 64522000

Site Size: ±19.01 acres (±828,198 square feet)

Land Use Districts: Single Family Residential (R1-12.5)



I. Executive Summary

Through this application, Aho Construction I Inc. (Applicant), requests approval from the Town of Yacolt (Town) to subdivide the subject site (described below) into a 47-lot subdivision (Railroad Avenue Subdivision) for the future construction of 47 single-family detached homes. The development will gain access from S Railroad Avenue, W Hoag Street, and S Parcel Avenue. Access to Lot 1 will be from S. Parcel Avenue, with the remaining proposed lots being provided access by the construction of an internal street network. The development will also provide for future circulation to the south via a street stub of S Amro Avenue. Each lot will be provided with sanitary sewer, storm sewer, and water service, and other dry utilities. In addition to this narrative, the application package includes the materials necessary for the Town to review and approve this submittal, including Preliminary Plans, Stormwater Technical Information Report (TIR), Geotechnical Infiltration Testing Results Report, Traffic Report, Archaeological Predetermination, and State Environmental Policy Act (SEPA) checklist.

The highlights of this project, that will be discussed further in this narrative, include:

- Subdivision with 47 single-family detached lots.
- Construction of an internal public street network to serve the development and provide future circulation to south.
- Construction of all necessary utilities to serve the development.
- Frontage improvements to S Railroad Avenue, S Parcel Avenue, and W Hoag Street.

The written narrative includes findings of fact demonstrating that the application complies with all applicable approval criteria. These findings are supported by substantial evidence, including Preliminary Plans and other written documentation. This information, which is included in this application package, provides the basis for the Town to approve the application.

II. Site Description/Setting

The subject site consists of one parcel and is ±19.01 acres in size. The site is unaddressed and is located in Yacolt, Washington. The included property is identified as Parcel Number 64522-000 of the North Half of Section 02, Township 4 North, Range 3 East, Willamette Meridian. The site is zoned Single-Family Residential (R1-12.5) with no zoning overlays. The surrounding properties to the north, across W Hoag Street, are zoned R1-10 and in use as single-family residential. The properties to the west, across S Parcel Avenue, are zoned R1-12.5 and PF in use as undeveloped timber land and a fire station respectively. The properties to the east, across S Railroad Avenue, are zoned P/OS and in use as a railroad. The properties to the south are zoned R1-20 and R-5 and are in use as large-lot residential and undeveloped land respectively.

The site has frontage on S Railroad Avenue to the east, S Parcel Avenue to the west, and W Hoag Street to the north, all of which are public streets. S Railroad Avenue is classified as a Residential Arterial, S Parcel Avenue is classified as a Residential Collector, and W Hoag Street is classified as a Residential Collector. Existing improvements to the fronting streets include 40 feet of right-of-way and ±24 feet of pavement width on S Railroad Avenue, variable right-of-way width and ±18 feet of pavement width on S Parcel Avenue, and 60 feet of right-of-way and ±22 feet of pavement width on W Hoag Street.



The site is generally flat. According to County Geographic Information Services (GIS), the northwest corner of the site is in the Floodplain (Floodway Fringe). There appears to be a mapping error, as GIS also places a Riparian Habitat area over the mapped Floodplain, yet the mapped floodplain is not associated with any river, stream, or creek. There is minimal existing vegetation on site since the site was recently logged. The archaeological predictive for the site is moderate-high to high and there are mapping indicators for an archaeological site buffer. The site is within the Category I and II Critical Aquifer Recharge Areas (CARA 1 and 2). All critical areas will be discussed in further detail later in this narrative.

III. Applicable Review Criteria

YACOLT MUNICIPAL CODE

Title 13 PUBLIC SERVICES

Chapter 13.05 WATER MAIN INSTALLATION

Response: According to the Clark Public Utilities water availability letter, there is an 8-inch ductile iron water main located in S Railroad Avenue, a 6-inch steel water main in W Hoag Street, and a 6-inch ductile iron water main in S Parcel Avenue. This application proposes to connect to the existing water mains in S Railroad Avenue, W Hoag Street, and S Parcel Avenue to provide service to the development and fire hydrants on site. Water service will be provided by Clark Public Utilities. This standard is met.

Chapter 13.10 STORMWATER MANAGEMENT AND FACILITY MAINTENANCE

Article I. Stormwater Management

13.10.010 Stormwater management plan.

Response: As noted by the Town of Yacolt in the pre-application conference report dated June 11, 2021, the Applicant is required to meet all minimum stormwater requirements. The stormwater runoff from on-site impervious surfaces will be collected on site and conveyed to a stormwater wetpond for temporary storage, treatment, and detention. See the Stormwater TIR and Preliminary Stormwater Plans that are included with this application for more information. This standard is met.

Article II. Stormwater Facility Maintenance

13.10.080 Maintenance required.

All stormwater facilities shall be maintained in accordance with this article and the Stormwater Management Manual. Systematic, routine preventive maintenance is preferred.

Response: The proposed stormwater facility will be publicly owned and maintained. This standard will be met.

Chapter 13.15 ON-SITE SEWAGE DISPOSAL SYSTEMS

13.15.060 New OSS installations, maintenance, deficiencies, and OSS failures.

Property owners in the town of Yacolt shall install, inspect, pump, maintain, repair and/or replace their on-site sewage disposal systems as may be required by state and local law, including without



limitation the laws and regulations currently described in Clark County Code Title 24 together with any future amendments thereto, or as required by the department under the authority of said title.

Response: On-site sewage treatment and disposal systems will be installed on each of the proposed residential lots. The proposed septic systems will meet the requirements of Yacolt Municipal Code and the Clark County Health Department, and any required permits will be obtained prior to construction. The proposed septic systems will be privately owned and maintained by the individual lot owners. This standard will be met.

Chapter 13.20 FIRE HYDRANTS

13.20.030 Fire hydrants required.

All buildings constructed within the town of Yacolt shall be served by fire hydrants installed in accordance with the requirements of this chapter. In addition, presently existing fire hydrants which do not conform with the requirements and standards of this chapter when placed, shall be replaced with hydrants which do conform to the standards and requirements of this chapter. All fire hydrants shall be served by a municipal or quasi-municipal water system, or as otherwise approved by the fire chief. All hydrants shall be subject to testing, inspection and approval by the fire department.

Response: This application proposes four new fire hydrants. All fire hydrants will meet the spacing per section 5A.06 of the adopted Town of Yacolt Engineering Standards for Public Works Construction or per Clark County Fire District standards. The four hydrants are proposed at the intersections of or near the intersections of W Oak St/S Ranck Ave, W Oak St/S Railroad Ave, S Amro Ave/W Bumpski Cir, and S Ranck Ave/W Hoag St.

There are three off-site fire hydrants that can also serve the site. The locations of the off-site hydrants are listed below:

- A hydrant is located on the west side of S Parcel Road near the site's southwest corner.
- A hydrant is located at the northwest corner of the intersection of W Hoag Street and S Parcel Avenue.
- A hydrant is located on the north side of W Hoag Street near the site's northeast corner.

13.20.060 Installation requirements.

N. The maximum distance between fire hydrants in single-family use district zones shall be 700 feet.

Response: The proposed application is for the construction of a single-family subdivision, which requires a maximum fire hydrant spacing of 700 feet. The proposed on-site fire hydrants are located ±700 feet apart. This standard is met.



Chapter 13.25 PUBLIC WORKS CONSTRUCTION STANDARDS

13.25.010 Adoption of engineering standards for public works construction.

The town council of Yacolt, Washington, does hereby adopt and accept the town of Yacolt's engineering standards for public works construction.

Response: The project will meet all applicable requirements of the Town of Yacolt Public Works Construction Standards. Specific standards identified in the pre-application notes are discussed below.

Town of Yacolt Engineering Standards for Public Works Construction

CHAPTER 1 - GENERAL DESIGN REQUIREMENTS

1.00 Requirements For Public Improvements

A. General

The purpose of this document is to set standards for the construction of public improvements to serve new and future developments. These include street, bikeway, drainage, and water improvements as required by the development review process, Town Ordinance, and other Town policies adopted by the Town Council. Standards for site grading, erosion control, parking lot and driveway construction on private property are also contained in these standards. No such work shall commence prior to Town approval of the construction plans. Designs submitted shall be stamped by a registered Professional Engineer licensed to practice in the State of Washington.

All public improvements and private streets, parking lots, sidewalks, and driveways shall be designed and constructed in such a manner as to be readily accessible to and usable by individuals with disabilities as per the requirements of the Americans With Disabilities Act of 1990. This includes providing curb ramps at intersections with pedestrian crosswalks to allow a smooth transition between street and sidewalk elevations.

Response: This project will construct streets and sidewalks meeting the requirements of the American with Disabilities Act (ADA). This standard is met.

C. Applicability

These Standards shall govern all new construction and upgrading of facilities both in the right-of-way and on-site for: transportation-related facilities; storm drainage facilities and stream channel improvements; sewer and water improvements; and park, recreation, and open-space facilities used by the public.



Response: This project is subject to the Standards as applicable. This standard is met.

CHAPTER 2 - LAND ALTERATION

2A POLICES

2A.04 Temporary Erosion/Sedimentation Control

Erosion control during construction shall be required per the recommendations of the Puget Sound Manual.

2A.05 Permanent Erosion Control and Vegetation Restoration

- A. Permanent erosion control shall be required per the Puget Sound Manual.
- B. Vegetation shall be restored on those areas of the site disturbed by the land alteration activity which are not covered by permanent impervious surface improvements (e.g. buildings, parking lots, etc.) at the earliest possible time consistent with appropriate planting times. The soil shall be stabilized prior to vegetation restoration since vegetation alone cannot provide an effective erosion control cover and prevent soil slippage on a soil that is not stable due to its texture, structure, water movement or excessive slope.
- C. In no case will the period between the land alteration operation and final and complete restorative, or permanent erosion control, vegetation planting for a given project or project phase be longer than one year. Said planting shall restore the vegetation on site to a condition equal to or better than the precleared condition to the maximum extent possible. Temporary erosion and sedimentation control measures shall be maintained in full operating condition for all areas to be restored until said restoration is complete and the site fully stabilized.

Response: Consistent with this subsection, a SWPPP and Erosion Control Plan is required for this development. A NPDES permit will be submitted during final engineering or grading review to the Department of Ecology. The SWPPP will provide appropriate stormwater BMP's for site stabilization. Some of the BMP's that will be utilized for this site are filter fence, temporary sediment pond, storm drain inlet protection, and outfall protection. All restoration, permanent erosion control, and vegetation planting will be complete in accordance with this section. An experienced Certified Erosion and Sediment Control Lead (CESCL) will be on site during construction to help guide the contractor in the proper implementation of soil stabilization methods. This standard is met.

2A.06 100-Year Flood Plain

- A. Encroachments, including fills, new construction, substantial improvements, and other development within the regulatory floodway that would result in



any increase in flood levels during the occurrence of the "100-year" flood discharge shall be prohibited.

- B. "100-year flood" means the flood having a one percent chance of being equaled or exceeded in any given year."
- C. Delineation of the "100-year" flood plain shall be in accordance with the elevations established by the U.S. Geological Survey's Flood Insurance Study (latest published edition) for the U.S. Department of Housing and Urban Development.

Response: GIS maps the northwest corner of the site as Floodway Fringe, but outside the Flood Area; therefore, the project is allowed to fill and construct within this area. This application proposes to construct a stormwater facility, streets, and portions of Lots 5 through 8 within the Floodway Fringe with a net cut of grading quantities. This standard is met.

2A.09 Water Quality Standards

Water Quality shall be maintained per the recommendations of the Puget Sound Manual.

Response: Stormwater treatment for pollution generating surfaces will be provided by a stormwater wetpond. The stormwater wetpond will meet all the requirements of the Puget Sound Manual. This standard is met.

2B DESIGN STANDARDS

2B.01 Temporary Erosion Control

- A. Prior to any clearing and grading of any land development, devices for interception of all runoff from the cleared area shall be installed. Said interception shall preclude discharging silt-laden runoff from the proposed land development to downstream properties to the maximum extent possible with the best available technology. Said interception shall cause all silt-laden runoff to be conveyed by open swale or other means to whatever temporary facility is necessary or required to remove silt from said runoff prior to discharge to downstream properties (see paragraph e below). Sequence of work shall be specified on the plans.
- B. Care shall be taken so as to deposit no material from sites of land alteration activity onto public rights-of-way and/or adjoining properties. If such depositions occur, it shall be the responsibility of the Permittee to immediately remove such material from public rights-of-way and adjoining properties, and restore to the original conditions.
- C. Since site conditions may change rapidly during construction due to construction activity, weather, and other factors, it should be anticipated that the erosion control measures on the approved plan may become ineffective. Under special conditions,



measures additional to those showing on the plan may be required by the Town in order to control erosion and sedimentation when such special conditions occur.

D. The following shall be carried as general notes on the Temporary Erosion/Sedimentation Control Plan:

1. All construction shall be in accordance with the Town of Yacolt's Engineering Standards for Public Works Construction, Yacolt Ordinances, Permit Conditions, and all other applicable codes, ordinances, standards and policies.
2. The temporary erosion control system shall be installed prior to all other construction.
3. Where possible, maintain natural vegetation for erosion and siltation control.
4. As construction progresses and seasonal conditions dictate, more siltation control facilities may be required to ensure complete siltation control. Therefore during the course of construction, it shall be the obligation and responsibility of the developer to address any new conditions that may be created by his activities and to provide additional facilities over and above the minimum requirements as may be needed to achieve the performance standards required by the permit.
5. Temporary siltation ponds and all temporary siltation and erosion controls shall be maintained in a satisfactory conditions until such time that clearing and/or construction is completed, permanent drainage facilities are operational, and the potential for erosion has passed. Ponds and controls shall be cleaned or replaced as directed by the Town. Contractor shall maintain a 24 hour contact number at (206) - for emergency response to maintain and repair all on site erosion and sedimentation control measures and facilities.
6. All disturbed land areas unworked for seven (7) days or more shall be protected from erosion by hydroseeding with a mix or by a method approved by the Town. If required due to weather, timing, or site conditions, the hydroseeding shall be supplemented by mulching with straw a



minimum of 1 inch thick and stapling jute or utility mesh over the mulch.

7. Approval of this temporary erosion and sedimentation control plan does not constitute an approval of design, nor location of pipes, restrictors, or retention facilities, or an approval of plans required for a building permit; but is an approval of grading and sedimentation control plan only, unless specifically noted on the plan approval stamp.
8. Prior to occupancy of the building, the permanent storm drainage system shall be cleaned by pumping (not into the storm drainage system) or other method as approved by the Town.
9. The Permittee shall be responsible for preventing water pollution due to construction materials, methods or equipment. All exposed aggregate concrete shall be installed and constructed so that no wash water enters the storm drainage system. The contractor shall provide a separate area, a minimum of 200 square feet in size, for washing of concrete trucks. This area shall also be isolated so that no water enters the storm drainage system.

- D. General Methods of Erosion and Sedimentation Controls - The types of controls, as outlined in the Puget Sound Manual, shall be utilized in such combination as is necessary to achieve the level of erosion control required by these Standards and meet water quality objectives. Erosion control facilities shall be periodically inspected and maintenance performed in order to ensure their proper functioning as required by the approved erosion and sedimentation control management plan.

Response: Consistent with this subsection, a SWPPP and Erosion Control Plan is required for this development. A NPDES permit will be submitted during final engineering or grading review to the Department of Ecology. The SWPPP will provide appropriate stormwater BMP's for site stabilization. Some of the BMP's that will be utilized for this site are filter fence, temporary sediment pond, storm drain inlet protection, and outfall protection. All restoration, permanent erosion control, and vegetation planting will be complete in accordance with this section. An experienced Certified Erosion and Sediment Control Lead (CESCL) will be on site during construction to help guide the contractor in the proper implementation of soil stabilization methods. The Temporary Erosion/Sedimentation

Control plan will include the notes from section 2B.01 of the Town of Yacolt’s Engineering Standards for Public Works Construction. This standard is met.

2B.02 Environmental Protection During Construction

A. General Policy and Requirements

- 1. It is the policy of the Town of Yacolt to require temporary and permanent measures for all construction projects to lessen the adverse effects of construction on the environment.

The Contractor shall properly install, operate, and maintain both temporary and permanent works as provided in this section or in an approved plan, to protect the environment during the term of the project.

The Town may, in addition, require that a construction project be scheduled so as to minimize erosion or other environmental harm.

Nothing in this section shall relieve any person from the obligation to comply with the regulations or permits of any federal, state, or other local authority.

- 2. For all projects the prohibitions and regulations of this section shall apply. The Town may temporarily suspend the work or require additional protection measures if it appears, based upon observed conditions of the project, that the approved plan is insufficient to prevent environmental harm, and that such suspension or additional measures will prevent or minimize such harm.

Response: The proposed subdivision has been designed to meet or exceed applicable environmental regulations including but not limited to stormwater requirements. This standard is met.

B. Air Pollution Control

- 1. Dust. Dust shall be minimized to the extent practicable, utilizing all measures necessary, including, but not limited to:
 - a. Sprinkling haul and access roads and other exposed dust producing areas with water. Obtaining water from a hydrant will require specific authorization from the applicable water jurisdiction.

-
- b. Applying DOE approved dust palliatives on access and haul roads.
 - c. Establishing temporary vegetative cover.
 - d. Placing wood chips or other effective mulches on vehicle and pedestrian use areas.
 - e. Maintaining the proper moisture condition on all fill surfaces.
 - f. Pre-wetting cut and borrow area surfaces.
 - g. Use of covered haul equipment.

Response: Proper air pollution prevention BMP's will be implemented on site. BMP's will prevent wind transport of dust from disturbed soil surfaces onto, roadways, drainage ways, and surface waters. An experienced CESCL will be on site during construction to help guide the contractor in the proper implementation of dust control. This standard is met.

2. Fumes, Smoke, and Odors

- a. Tires, oils, paints, asphalts, coated metals, or other such materials will not be permitted in combustible waste piles, and will not be burned at the construction site.
- b. Open burning shall not be permitted unless approved by the Southwest Washington Air Pollution Control Authority and the County Fire Marshal's Office.
- c. Open burning shall not be permitted within 1,000 feet of a structure or within 250 feet of the drip line of any standing timber or flammable growth.
- d. Open burning shall not be permitted during a local air inversion or other climatic conditions that may result in a smoke pall hanging over a built-up area or community.
- e. Open burning shall not be permitted when climatic and moisture conditions are contributing to high danger of forest or range fires as determined

by town, state, or federal authorities.

- f. All open burning shall be constantly attended by a crew with a supply of fire-fighting tools and equipment. The number and size of fires shall be limited such that the burning crew can adequately control them.

Response: No open burning will occur with the construction of this development. This standard is met.

C. Erosion Control

The Town of Yacolt has adopted the Puget Sound Manual. All construction standards must meet or exceed these requirements for the installation and maintenance of erosion control devices.

The Town has the following notations in addition to the Puget Sound Manual.

1. Measures to prevent erosion at construction sites shall be incorporated into the construction drawings and specifications.
2. All earth and soft or broken rock areas that have been disturbed by construction operations such as during stripping, excavation, and by traffic shall be protected from erosion by the action of concentrated runoff, by the impact of falling rain, by wind action, by vehicular tracking, or a combination of actions.
3. The concentration of runoff on or across slopes shall be prevented.
4. Sections of bare earth and the length of time of their exposure to potential erosion shall be minimized by proper scheduling, limiting the work areas, and placement of appropriate cover.
5. Precautions shall be taken in the use of construction equipment to prevent operations that increase the potential for erosion. Wheel tracks or ruts, particularly down slopes, that permit concentration of surface flows, shall be avoided. Fording of live streams that accelerate erosion and damage aquatic animal habitat shall be avoided.

Where frequent stream crossings are necessary, temporary bridges shall be installed.

6. Areas for borrow pits and waste disposal shall be selected with full consideration of erosion control needs during and after borrow operations.

Response: The Erosion Control Plan submitted with final engineering will follow the Puget Sound Manual along with the additional Town of Yacolt requirements. This standard is met.

D. Maintaining Surface Water Quality

1. Construction between stream banks shall be kept to a minimum.
2. Pollutants such as fuels, lubricants, bitumens, raw sewage, and other harmful materials shall not be discharged into or near rivers, streams, or impoundments. Sterilizing water from water line construction activities shall not be directly discharged into the public storm drainage system.
3. The use of water from a stream or impoundment shall not result in altering the temperature of the water body enough to affect aquatic life.

Response: Stormwater BMP's (temporary sediment pond, wetpond, and outfall protection) are designed to reduce impacts to the downstream Yacolt Creek. The stormwater facilities in their entirety will detain runoff equal to or below the pre-developed discharge rates from the threshold discharge area. This standard is met.

E. Fish and Wildlife Habitat Preservation

1. The construction shall be done in a manner to minimize the adverse effects on wildlife and fishery resources.
2. The requirements of local, state, and federal agencies charged with wildlife and fish protection shall be adhered to by the entire construction work force.

Response: The Washington State Department of Fish and Wildlife (WDFW) will receive notice of the project and have an opportunity to comment during the SEPA comment period. It is anticipated that all construction work force will abide to the requirements of local, state, and federal agencies.

F. Control of Noise Levels

Construction noise shall be minimized by the use of proper engine mufflers, protective sound reducing enclosures, and other sound barriers. Construction activities producing excessive noise that cannot be

reduced by mechanical means shall be restricted to locations where their sound impact is reduced to a minimum at the edge of the work area.

Response: It is anticipated that the construction equipment will have proper engine mufflers and that any industry standard sound reducing equipment and/or methods will be used in the construction of this development. This standard will be met.

G. Natural Vegetation

1. As far as is practicable, the natural vegetation shall be protected and left in place. Work areas shall be carefully located and marked to reduce potential damage. Trees shall not be used as anchors for stabilizing working equipment.
2. During clearing operations, trees shall not be permitted to fall outside the work area. In areas designated for selective cutting or clearing, care in falling and removing trees and brush shall be taken to avoid injuring trees and shrubs to be left in place.

Response: The site was recently logged and there are no trees left on site. This standard is met.

H. Historical and Archaeological Areas

When burial sites, buried camp areas, village sites, and other distinctive archaeological or historical items are uncovered, or other items suspected of being of historical or archaeological significance are encountered, the Contractor shall report the matter to the Town and the state liaison officer. Construction operations shall be stopped until the appropriate authorities can examine the area and give clearance to proceed with the work.

Under the Natural Historical Preservation Act, state liaison officers shall be notified when historical or archaeological items are unearthed.

The Washington Criminal Code prohibits disinterment of a corpse without permission of the appropriate authorities.

Response: No historical or archaeological sites are known to exist on site. The Applicant's Archaeologist, Applied Archaeological Resources (AAR), completed a predetermination on the site in 2021. The predetermination report was submitted to the Washington State Department of Archaeological and Historic Preservation (DAHP) for review. The Applicant will follow the guidance of DAHP. This standard is met.

I. Use of Pesticides

1. The use of pesticides including insecticides, herbicides, defoliants, soil sterilants, and so forth, must strictly adhere to federal, state, county, and local



restrictions. Time, area, method, and rate of application must be approved by all relevant authorities and their requirements followed.

2. All materials delivered to the job site shall be covered and protected from the weather. None of the materials shall be exposed during storage. Waste material, rinsing fluids, and other such material shall be disposed of in such a manner that pollution of groundwater, surface water, or the air does not occur. In no case shall toxic materials be dumped into drainageways.
3. All personnel shall stay out of sprayed areas for the prescribed time. All such areas should be fenced, appropriately signed, or otherwise protected to restrict entry.

Response: No pesticides are anticipated to be used with the construction of this development.

CHAPTER 3 - STREETS

3A FUNCTIONAL CLASSIFICATION

The functional classification of existing and proposed roads is established by the Town on an individual basis using the existing land use and existing operational characteristics. Yacolt classifies roads and streets as follows:

1. Arterials.

The arterial system complements and supports the principal and major systems, but is primarily oriented toward travel within and between adjacent sub-areas. These facilities provide connections to major activity centers and provide access into each sub-area.

2. Collectors.

The collector system is deployed nearly entirely within sub-regions to provide mobility between communities and neighborhoods or from neighborhoods to the minor and major arterial systems. An adequate collector system is needed to ensure these movements do not occur on principal routes or major arterials. Land is directly accessible with emphasis on collection and distribution of trips within an arterial grid.

3. Access and Local Streets.

The local street system is used throughout developed areas to provide for local circulation and direct land access. It provides mobility within neighborhoods and other homogenous land uses, and comprises the largest percentage of total street

mileage. In general, local traffic should not occur on major arterials and principal routes.

Response: The site has frontage on S Railroad Avenue (Residential Arterial) along the eastern boundary, W Hoag Street (Residential Collector) along the northern boundary, and S Parcel Avenue (Residential Access) along the western boundary. All proposed internal streets are classified as Residential Local streets. The proposed project will construct half-width frontage improvements to S Railroad Avenue (public), W Hoag Street (public), and S Parcel Avenue (public). S Railroad Avenue improvements are proposed to include 30-feet of half-width ROW, 21-feet of half-width pavement, 3-foot planter strip, and 6-foot detached sidewalk. W Hoag Street improvements include 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk. S Parcel Avenue improvements to meet the Residential Collector Street standards at the request of the Town of Yacolt to include a minimum 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk. In addition to the frontage improvements, this application proposes to construct four internal public streets (W Oak Street, W Bumpski Street, S Ranck Avenue, and S Amro Avenue). Proposed internal street improvements include 50 feet of ROW, 28 feet of pavement, 5-foot planter strips, and 5-foot sidewalks.

3A.07 Street Frontage Improvements

- A. All residential subdivisions, commercial developments and short plats shall install street frontage improvements at the time of construction as detailed in their subdivision or short plat approval, as detailed in their approved building plans, or as directed by the Town Engineer. Such improvements may include curb and gutter; sidewalk; street storm drainage; street lighting system; traffic signal modification, relocation or installation; utility relocation; landscaping and irrigation and street widening all per these Standards. Plans shall be prepared and signed by a licensed civil engineer registered in the State of Washington.

Response: The proposed project will construct half-width frontage improvements to S Railroad Avenue (public), W Hoag Street (public), and S Parcel Avenue (public). S Railroad Avenue improvements include 30-feet of half-width ROW, 21-feet of half-width pavement, 3-foot planter strip, and 6-foot detached sidewalk. W Hoag Street improvements include 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk. S Parcel Avenue improvements include a minimum 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk.

- B. Plan preparation shall be as specified in Chapter 1 of these standards.



Response: Preliminary Plans showing the proposed frontage improvements are included with this application. This standard is met.

3A.08 Street Ends

- A. Cul-de-sacs shall be provided at all public and private street ends.
- B. Hammerheads may be used in lieu of a cul-de-sac provided that the street serves six (6) or less lots and the street is less than two hundred feet (200') in length.
- C. Temporary Dead Ends. Where a street is temporarily dead ended, turn around provisions must be provided where the road serves more than one lot. The turn around may be a hammerhead if the dead end is less than two-hundred feet (200) in length. If over two-hundred feet (200) long, a cul-de-sac with a minimum radius of thirty-five feet (35') is required for residential streets, and forty-eight feet (48') for industrial streets.

Response: A cul-de-sac turnaround is proposed at the terminus of W Bumpski Circle. This application proposes to provide a street stub to the southern property line to provide future circulation when the properties to the south develop. This proposed street stub does not serve any of the development's lots; therefore, a turnaround is not required.

3A.12 Curb and Gutter - Types and Application

- A. Curb and gutter shall be utilized for street edges whenever possible and shall always be used under the following conditions:
 - 1. All streets - residential, commercial, or arterial.
 - 2. Modified curb and gutter shall be used on designated bicycle lanes.
- B. Vertical Curb shall be used for edges of islands and medians except when emergency vehicle access across the median is required.
- C. Rolled Curb may be used at the end of cul-de-sacs where approved by the Town.

Response: Curb and gutter are proposed on all streets within the development. This standard is met.

3A.14 Concrete Sidewalks

- A. Where Required. Concrete sidewalks shall be provided as follows:
 - 1. Both sides of all arterial streets.
 - 2. Both sides of all other streets (through street or dead-end) except permanent deadend streets less than three-hundred feet (300') in length.



3. One side of local permanent dead-end streets less than three-hundred feet (300') in length.
4. Both sides of dead-end streets over three-hundred (300'), except in the cul-de-sacs or hammerhead turn arounds. In these circumstances installed sidewalks may end at the property line nearest the street/cul-de-sac transitions.

Response: The development is proposed to have concrete sidewalks along all frontages and on both sides of all internal streets. This standard is met.

B. Exceptions

Where subdivision design provides an acceptable surfaced and maintained internal walkway system, as approved by the Town Engineer, a sidewalk may not be required adjacent to the street.

Response: The Applicant is not requesting to use the Exception.

C. Wheelchair Ramps

In accordance with State law, wheelchair ramps shall be provided at all pedestrian crossings with curb sections.

Response: Wheelchair ramps are proposed at all pedestrian crossing within the development. This standard is met.

3A.22 Street Illumination

A. Plats and Short Plats

Street lighting is required for all public streets. The street lighting design shall be reviewed and approved by the Town prior to final plat approval. The cost of all street lighting shall be paid for by the developer.

Response: Street lights will be provided on all public streets within the development. A lighting plan will be submitted and approved prior to final plat approval. This standard is met.

3B DESIGN STANDARDS

3B.01 Easements

B. In residential subdivisions or residential short subdivisions, minimum panhandle width shall be twenty feet (20'). A greater width may be required to accommodate grading or utility requirements.

Response: The development includes a 26-foot panhandle easement to provide access to Lot 21 through Lot 22. This standard is met.

3B.04 Street Widths

See Table 3B.04A.



Table 3B.04A

Street Widths

	<u>Residential Arterial</u>	<u>Residential Collector</u>	<u>Residential Access</u>	<u>Local</u>
Right-of-way	60	60	60	50
Total Pavement Width	42	36	36	26
No. of Drive Lanes	2	2	2	1
Width of Drive Lane	12	10	10	10
No. of Turn Lanes	0	0		
No. of Parking Lanes	2	2	2	2
Width of Parking Lane	9	8	8	8
No. of Sidewalks	2	2	2	2
Width of Sidewalks [1]	6	5	4	4
No. of Planter Strips [2] (Curb-sidewalk separation)	0	2	2	2
Width of Planter Strips [2]	0	10	10	10
Design Volume	10,000	5,000	2,000	500
Design Speed	35	35	25	25

Notes:

1. Width shall be increased by one foot where sidewalk is adjacent to the curb.
2. The planter strip is for water quality and may not be required where other approved water quality features are provided per the Town's Stormwater Management Plan.

Response:

The site has frontage on S Railroad Avenue (Residential Arterial) along the eastern boundary, W Hoag Street (Residential Collector) along the northern boundary, and S Parcel Avenue (Residential Access) along the western boundary. All proposed internal streets are classified as Residential Local streets. The proposed project will construct half-width frontage improvements to S Railroad Avenue (public), W Hoag Street (public), and S Parcel Avenue (public). S Railroad Avenue improvements include 30-feet of half-width ROW, 21-feet of half-width pavement, 3-foot planter strip, and 6-foot detached sidewalk, meeting the minimum required 30-feet of half-width ROW, 21-feet of half-width pavement, 0-foot planter strip, and 6-foot detached sidewalk per Table 3B.04A. W Hoag



Street improvements include 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk, meeting the minimum required 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk per Table 3B.04A. S Parcel Avenue improvements include a minimum 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk, meeting the minimum required 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk per Table 3B.04A. In addition to the frontage improvements, this application proposes to construct four internal public streets (W Oak Street, W Bumpski Street, S Ranck Avenue, and S Amro Avenue). Proposed internal street improvements include 50 feet of ROW, 28 feet of pavement, 5-foot planter strips, and 5-foot sidewalks, meeting the minimum required 50 feet of ROW, 26 feet of pavement, 5-foot planter strips, and 4-foot sidewalks. Refer to the preliminary plans included with this application for additional information.

3B.05 Horizontal Alignment

Street alignments shall meet the following requirements:

- Center line alignment of improvements should be parallel to the center line of the right-of-way.
- Center line of a proposed street extension shall be aligned with the existing street center line.
- Horizontal curves in alignments shall meet the minimum radius requirements as shown in Table 3B.05A.
- Reversing horizontal curves shall be separated by no less than 50 feet of tangent. On arterials, the separation shall be no less than 100 feet.

Table 3B.05A - Design Speed / Center Line Radius – Minimums

Design Speed (mph)	Friction Factor (F)	Arterials Streets					
		Slope / R min.					
		(e)-4%	(e)-2.5%	(e) 0%	(e)2.5%	(e)4%	(e)6%
25	0.165	335'	300'	255'	220'	205'	185'
30	0.160	500'	445'	375'	325'	300'	275'
35	0.155	710'	630'	530'	455'	420'	380'
40	0.150	970'	855'	710'	610'	560'	510'
45	0.145	1285'	1125'	930'	795'	730'	660'
50	0.140	1665'	1450'	1190'	1010'	925'	835'
55	0.130	2240'	1920'	1550'	1300'	1190'	1060'
60	0.120	3000'	2525'	2000'	1655'	1500'	1335'

Design Speed (mph)	Friction Factor (F)	Residential Streets					
		Slope / R min.					
		(e)-4%	(e)-2.5%	(e) 0%	(e)2.5%	(e)4%	(e)6%
25	0.252	195'	185'	165'	150'	145'	135'
30	0.211	330'	305'	270'	245'	230'	215'
35	0.197	520'	475'	415'	370'	345'	320'

NOTES:



For Table 3B.05A - off right-of-way runoff shall be controlled to prevent concentrated cross flow in super-elevated sections.

Super elevations may only be used with the written approval of the Town. Where super elevation is used, street curves should be designed per AASHTO guidelines except that the maximum super elevation rate of 0.04 shall be used. If terrain dictates sharp curvature, a maximum super elevation of 0.06 is justified if the curve is long enough to provide an adequate super elevation transition.

On local streets, requests for design speeds less than 25 miles per hour shall be based on topography, right of way, or geographic conditions which impose an economic hardship on the applicant. Requests must show that a reduction in center line radius will not compromise. There will be posting requirements associated with designs below 25 miles per hour.

Off-set crown cross-sections are not acceptable as super elevation sections.

Super elevation transitions shall be designed to not allow concentrations of storm water to flow over the travel lanes.

Response: Horizontal alignments will meet the requirements in this subsection. More information and details will be provided with the final engineering plans.

3B.06 Vertical Alignment

Street alignments shall meet the following requirements:

- Minimum tangent street gradients shall be one-half (0.5) percent along the crown and curb.
- Maximum street gradients shall be fifteen (15) percent for residential streets and ten (10) percent for all other streets. Grades in excess of fifteen (15) percent must be approved in writing by the Town on an individual basis.
- Local streets intersecting with a residential collector or greater functional classification street or streets intended to be posted with a stop sign shall provide a landing averaging five (5) percent or less. Landings are that portion of the street within twenty (20) feet of the projected curb line of the intersecting street at full improvement.
- Grade changes of more than one (1) percent shall be accomplished with vertical curves.
- At street intersections, the crown of the major (higher classification) street shall continue through the intersection. The roadway section of the minor street will flatten to match the longitudinal grade of the major street at the projected curb line.
- Street grades, intersections, and super elevation transitions shall be designed to not allow concentrations of storm water to flow across the travel lanes.
- Off-set crowns shall be allowed only with the specific prior approval of the Town.
- Slope easements shall be dedicated or obtained for the purposes of grading outside of the right-of-way.

- Streets intersected by streets not constructed to full urban standards shall be designed to match both present and future (as far as practicable) vertical alignments of the intersecting street. The requirements of these standards shall be met for both present and future conditions.

When new streets are built adjacent to or crossing drainage ways, the following standards shall govern the vertical alignment:

<u>FUNCTIONAL CLASSIFICATION</u>	<u>VERTICAL STANDARD</u>
Arterial Streets	Travel lanes at or above the 50 year flood elevation but not lower than 6 inches below the 100 year flood elevation.
All other streets	Travel lanes at or above the 25 year flood elevation but not lower than 6 inches below the 50 year flood elevation.

If alternate access is available for properties served by a particular local street, a design could be considered for approval by the Town that would set the travel lanes at or above the 10 year flood elevation but not lower than 6 inches below the 25 year flood event.

Response: Vertical alignments will meet the requirements in this subsection. More information and details will be provided with the final engineering plans.

- B. For street width transitions from a wider width to a narrower width, the length of transition taper shall be determined as follows:

$$L = S \times w \text{ (for } S \geq 45 \text{ Nm-1 or more)}$$

$$L = W \times S^2 \text{ (for } S = \text{less than } 45)$$

$$60$$

Where L = minimum length of taper (feet)

S = Design speed (NQH)

W = EP to EP offset width

Delineators, as approved by the Engineer, may be installed to define the configuration. Maximum spacing of delineators shall be the numerical value of the design speed, in feet (i.e. 35-foot spacing for 35 NTH).

In situations where a tapered transition cannot be provided, a barricade shall be installed at the end of the wider section of the street and a taper shall be appointed and delineated as approved by the Engineer. The barricade shall conform to the Standard Drawing. If the wider section does not provide an additional travel lane, only a barricade is required without the transition.



Response: Transition tapers will meet the requirements in this subsection. More information and details will be provided with the final engineering plans. This standard is met.

3B.08 Street Ends

The following specifies the minimum requirements for cul-de-sacs, eyebrows, and turnaround areas. Other turnaround geometrics may be used when conditions warrant and Town Engineer approves the design and application of its use.

- Cul-de-sacs shall have a minimum outside curb radius of forty-one feet (41') for residential streets and forty-eight feet (48') for industrial streets.
- Cul-de-sacs, eyebrows, and turnaround areas shall be allowed only on local streets and commercial/industrial streets.
- Cul-de-sacs shall not be more than 500 feet in length. The length of a cul-de-sac shall be measured along the center line of the roadway from the near side right-of-way of the nearest through traffic intersecting street to the farthest point of the cul-de-sac right-of-way.
- The minimum curb radius for transitions into cul-de-sac bulbs shall be 25 feet, and the right-of-way radius shall be sufficient to maintain the same right-of-way to curb spacing as in the adjacent portion of the road.
- Hammerheads may be used in lieu of a cul-de-sac provided that the street serves six (6) or less lots and the street is less than two hundred feet (200) in length.

An eyebrow corner may be used on a local street where expected ADT will not exceed 500 vehicles per day or as otherwise approved by the Engineer. Minimum curb radius on the outside of an eyebrow corner is 36 feet; minimum right-of-way radius is 45 feet. Eyebrow geometry shall be evaluated on the basis of turning requirements for Fire Department vehicles.

Response: A cul-de-sac turnaround is proposed at the terminus of W Bumpski Circle. As shown on the preliminary plans included with this application, the proposed cul-de-sac meets the requirements of this section. This standard is met.

3B.10 Intersections and Curb Returns

A. Angle between intersections.

The following specifies the minimum requirements for intersections:

The interior angle at intersecting streets shall be kept as near to 90 degrees as possible and in no case shall it be less than 75 degrees. A tangent section shall be carried a minimum of 25 feet each side of intersecting right-of-way lines.

Response: The angle of all proposed intersections is near 90 degrees. This standard is met.



B. Maximum street spacing - 500 feet.

Response: The development proposes to construct frontage improvements to S Railroad Avenue, S Parcel Avenue, and W Hoag Street. Additionally, this development will provide internal circulation to the proposed lots and provide a street stub to the south for future circulation.

C. Minimum centerline offset of adjacent streets:

1. Residential - 160 feet
2. Residential or arterials intersecting arterials - 300 feet

Response: This development includes three offset intersections; W Bumpski Street to W Oak Street has a centerline offset of ±168 feet, W Bumpski Circle to W Hoag Street has a centerline offset of ±187 feet, and W Oak Street to E Hoag Street has a centerline offset of ±370 feet. This standard is met.

D. Sloping approaches:

On sloping approaches, including commercial driveways, garage entrances, and private street openings, landings are not to exceed two feet (2) difference in elevation for a distance of thirty feet (30') approaching an arterial or twenty feet (20') approaching a local collector or industrial or commercial street, measured from the back of sidewalk or the back of curb if no sidewalk exists.

Response: The site is flat with little elevation difference across the site. This standard is met.

E. Curb returns

Curb radii at intersections shall be shown in Table 3B.10A for the various functional classifications. The right-of-way radii at intersections shall be sufficient to maintain at least the same right-of-way to curb spacing as the lower classified street.

Sidewalk access ramps shall be provided at all corners of all intersections, regardless of curb type, and shall conform to Standard Drawings.

Table 3B.10A - Turning Radii (Feet)

Edge of Pavement/Curb -Minimums

Street Classification	Arterial Street	Residential Collector Street	Commercial Industrial Street	Residential Access Local Street
Major/Minor Arterial Street	55	30	40	20
Residential Collector Street	30	20	30	15
Commercial Industrial Street	40	30	40	25
Local Street	20	20	15	15

* If bike lane or on-street parking exists, above radii may be reduced by five (5) feet.

* The radii of the major street will be used for all intersection curb returns.

Response: The development’s proposed corner radii meets the requirements of Table 3B.10A, by providing 25-foot radii on all corners, with exception to 30-foot radii at the corners of W Hoag Street and S Railroad Avenue and W Oak Street and S Railroad Avenue. This standard is met.

F. Sight Distance

It is the policy of the Town to have the developer's engineer evaluate safe intersection sight distance using the principles and methods recommended by AASHTO. The following minimum standards shall apply.

The following table is for intersection and driveway sight distances:

Table 3B.10B - Corner Sight Distance

Design Speed (MPH)	Minimum Corner Sight Distance* (Feet)
20	210
30	310
40	415
50	515
60	650

Sight distance should always be measured from a driver's eye 3.5 feet high and 15 feet from the near edge of the nearest lane to a distance of 4.25 feet. Sight distances must be checked on the actual



vertical and horizontal values of the proposed improvement. There shall be nothing to block observation of objects between 6 inches and 4 feet, 3 inches above grade in both directions. The only exceptions should be for luminaire or utility poles, conforming traffic control devices, and fire hydrants. Cumulative effects must be considered, and all efforts taken to minimize sight obstructions.

Modifications or exceptions to these standards shall be approved by the Town.

Response: Corner sight distance will be met with this development. See land use plans for corner sight distance triangles. This standard is met.

3B.12 Concrete Sidewalks

A. Width

1. Residential Streets: four feet (4') where separated from the curb. Five feet (5) where adjacent to the curb.
2. Local Commercial/Industrial Streets: six feet (6').
3. Arterial Streets: eight feet (6).
4. Width of sidewalk does not include curb when the sidewalk is adjacent to the curb.
5. Meandering sidewalks shall maintain the full design width around obstructions that cannot be relocated. Additional Right-of-Way (or easement) may be required to either relocate the obstruction or meander the sidewalk.

Response: The project's sidewalks follow the requirements of Table 3B.04A. The development includes five-foot sidewalks on all streets with exception to providing a six-foot sidewalk along S Railroad Avenue, which is a Residential Arterial. This standard is met.

B. Material

All sidewalks shall be five inch (5") thick Class B concrete with a stiff broom finish. At driveways the concrete shall be six inches (6") thick.

Response: Final engineering plans will call out sidewalk and driveway concrete thicknesses. This standard is met.

C. Landscape/Separation

A minimum six foot (6') separation between the back of the curb and sidewalk is required for landscaping and appurtenance locating purposes unless no practicable alternative exists and when approved in writing by the Engineer. Sidewalks shall meander no more than six feet (6) from the curb at all pedestrian crossings and at driveways.



Response: The proposed street improvements have been designed to meet or exceed the minimum standards of Table 3B.04A of the Town of Yacolt Engineering Standards for Public Works Construction.

D. Curb Ramps

The edge of the sidewalk shall merge into curb ramps. One ramp is used on each curb return on residential streets and unsignalized intersections. At signalized intersections, a curb ramp shall be aligned with each crosswalk.

Response: Curb ramps meeting this standard are included in the development. Refer to the preliminary plans for additional information.

3B.13 Driveways

Design Criteria:

A. Width.

The maximum two (2)-way driveway width shall be twenty feet (20) for residential uses and thirty feet (30) for commercial uses. A wider commercial driveway width may be approved by the Engineer where a substantial percentage of oversized vehicle traffic exists. In this case the driveway should be sized to accommodate the largest vehicles. Commercial driveways shall be thirty feet (30') on any arterial, twenty-six feet (26') to thirty feet (30) on any local street. Where intersection openings are approved the width shall be as determined by the Engineer.

Maximum one way driveway width shall be ten feet (1 (Y) for residential and twenty-two feet (22) for commercial driveways. Commercial open way driveways shall meet the separation requirements of section 3A.18. Parking lot circulation needs shall be met on site. The public right-of-way shall not be utilized as part of a one way parking lot flow.

Driveways on local access streets serving single-family homes may be up to 30 feet in width, subject to approval by the Engineer.

Response: The development's single-family home driveways will be constructed with home construction and are anticipated to be between 20 and 30 feet in width. This standard will be met.

B. Elevation

Back edge of driveway shall be at the same elevation as the back of the sidewalk adjacent to the driveway approach.

Response: The development's single-family home driveways will be at the same elevation as the back of the sidewalk adjacent to the driveway approach. This standard is met.



C. Clearance from Structures

No object (including fire hydrants, light or power poles, street trees) shall be placed or allowed to remain within fifteen feet (15') of the driveway edge.

Where the building facade or other design element is less than ten feet (10) behind the sidewalk front setback both pedestrian and vehicular sight distance shall be maintained. Vehicular sight distance shall be per section 3A.11.

Response: No objects will be within 15' of the driveway edge. Vehicular sight distance will meet section 3A.11. This standard is met.

D. Sight Distance

Pedestrian sight distance shall be as follows: The driver of an exiting vehicle shall be able to view a one-foot (1) high object fifteen feet (15) away from either edge of the driveway throat when the drivers eye is fourteen feet (14) behind the back of the sidewalk.

Response: Pedestrian sight distance will be met with this subdivision. This standard is met.

E. Maximum driveway grade shall be fifteen percent (15%).

Response: No driveway will exceed 15%. This standard is met.

F. On sloping approaches, a landing as described in section 3B.06, shall be provided.

Response: Controlled intersections with a stop sign will provide a landing averaging five (5) percent or less. In addition, landings will be within twenty (20) feet of the projected curb line of the intersecting street at full improvement.

G. Construction shall be per Standard Drawings.

Response: The development's driveways will be constructed per the Standard Drawings. This standard will be met.

H. Approach grades and configuration shall accommodate future street widening to prevent major driveway reconstruction.

Response: Half-width improvements will take place on all frontage improvements (S Parcel Ave, W Hoag St, and S Railroad Ave). This standard is met.

3B.17 Street Illumination

A. Design Standards

Street lighting system designs are to be prepared by a licensed engineer experienced with lighting design. Calculations should include luminaire spacing, illumination level, uniformity ratio, line losses, power source and other necessary details for



the electrical and physical installation of the street lighting system. The lighting engineer shall use the standard specifications of the Washington State Department of Transportation, unless otherwise noted in the Standards.

Street Classification	Illumination Levels	
	Horizontal Foot Candles	Uniformity Ratio (average to minimum)
Arterials	1.0 FC	
Local Commercial/Industrial	1.0 FC	
Local Residential Collectors	0.7 FC	
Local Residential Streets	0.3 FC	None; 300 foot maximum spacing.

Response: The development will include street lighting in accordance with this standard. A lighting plan will be submitted and approved prior to final plat. This standard is met.

B. General Considerations

1. All street lights shall be on two-hundred and forty (240v) volt single phase systems. The exact location of the power source should be indicated together with the remaining capacity of that circuit. System continuity and extension should be considered.
2. Contractor cabinets equipped with electrical meters, time clocks, circuit breakers and other required components are required on commercial installations of five (5) or more street lights.
3. All street lighting, wiring, conduit, service connections shall be located underground except in residential areas where existing power distribution poles exist.
4. Particular attention shall be given to locating luminaires near intersections, at all street ends and at pedestrian and/or equestrian crossings.

Response: The development will include street lighting in accordance with this standard. A lighting plan will be submitted and approved prior to final plat. This standard is met.

CHAPTER 4 - STORM DRAINAGE

4A POLICIES



4A.01 General

- A. The Town of Yacolt has established the requirements for the design of facilities intended to protect the public health, safety, and welfare from damage due to flooding. Beyond that level of protection, additional measures are specified in this chapter which are intended to minimize any potential flooding damage and allow for efficient operation, repair, and maintenance of the storm drainage system.
- B. Provisions must be made for gravity drainage of roofs and foundation drains for all new buildings and structures. For multi-family, residential, commercial, or industrial developments, these drains shall be piped directly to on-site stormwater systems. In single family residential developments, these drains shall be discharged to on-site splash blocks and shall not be permitted to discharge to the street gutter or directly to the public storm drain system.
- C. Provisions must be made for stormwater from private property to remain on private property wherever feasible. Runoff from driveways shall not
- D. These requirements shall apply to all storm drainage facilities in existing and proposed public right-of-way, public drainage easements, and tracts of common ownership in the Town. Storm drainage systems include, but are not limited to: inlets, pipes, ditches, creeks, rivers, wetlands, and storm water quality and quantity facilities.
- E. The Town of Yacolt has adopted the "Stormwater Management Manual for the Puget Sound Basin" (hereinafter referred to as the Puget Sound Manual) prepared by the Washington State Department of Ecology. All design and construction standards must meet or exceed these requirements and those shown on the Town's Standard Details. The Town has adopted the Puget Sound Manual with the following notations:
 - 1. Storm water quantity management requirements are amended by Section 4B of these Standards.
 - 2. All steps within structures must comply with OSHA standards. There shall be no more than 24 inches between the top of the casting and the rung of the top step.
 - 3. No more than eight (8) inches of riser rings shall be used.

4. All inside drops and pollution control structures must be constructed with pipe; no partitions will be allowed.
 5. All inside drops and pollution control manholes must be 60 inch or larger diameter structures.
 6. All pipe shall be installed with watertight joints.
 7. All backfill material shall be referenced per Standard Specifications.
 8. No private storm sewer shall be located within any lot other than the lot which is the site of the building or structure served by such sewer. The exception to this will be common areas in planned unit developments, and/or Town right-of-ways, or as otherwise approved by the
- F. Drain inlets shall be curb inlets per the Standard Drawings. Curb inlets shall be placed so that no more than 7,000 square feet of hard surfacing, pavement and driveways which drain to the street including top of curb and sidewalk where sidewalk is adjacent to the curb, shall drain to each drain
- G. Storm drain conveyance systems shall be designed in accordance with the requirements of Chapter 6 of these Standards. All storm sewer pipe and culverts used in the Town shall be gasketed concrete pipe meeting the requirements of the Standard Specifications.
- H. Storm drainage design for all developments shall conform to the Town's Stormwater Management Plan.

4B DESIGN STANDARDS

4B.01 Water Quantity Standards

- A. All development shall conform to the Town's Stormwater Management Plan. For the areas planned for surface water discharge to Yacolt Creek, if a development occurs prior to the availability of the regional facility, sites one-half (0.5) acre or greater in area shall be required to provide on-site detention.
- B. Storm detention facilities shall be designed to provide storage using a 25 year event, with the safe overflow conveyance of the 100 year storm. Calculations of site discharge for both the existing and proposed conditions shall be required using the King County Hydrograph V4.20. Storms to be evaluated shall include the 2, 10, 25, and 100 year events. Allowable post-development discharge rate



for the 2, 10, and 25 year events shall be that of the pre-development discharge rate, with a maximum allowable release rate of one half (0.5) cubic feet per second per acre in the 25 year event. An outfall structure such as a "Vee-Notch" weir or multiple orifice structure shall be designed to control the release rate for the above events. No flow control orifice smaller than 2.5 inches shall be allowed. If the allowable release rate cannot be met with all the site drainage controlled by a single 2.5 inch orifice, the allowable release rate provided by a 2.5 inch orifice will be considered adequate at the discretion of the Town Engineer.

- C. If a site is proposed to be constructed in phases, the first phase shall have a storm water quantity facility designed and built to accommodate the ultimate development of the site.
- D. When the above storm detention requirement is to be met by creating a ponded area in a parking lot, the following shall apply:

4B.02 Water Quality Standards

The minimum standards for the design and construction of storm water quality facilities in the Town of Yacolt shall be the same as the current standards of the Puget Sound Manual as amended by the Clark County, Washington Stormwater Control Ordinance dated January 26, 1994 or the latest edition.

Response: The proposed stormwater facilities with this development will meet Chapter 4 of the Town of Yacolt Engineering Standards. This standard is met.

CHAPTER 5 - WATER

Response: The development will be served with public water from CPU as outlined in their Service Provider Letter included with this application. Refer to the preliminary plans for more information.

5A.06 Hydrants

- A. The number and locations of fire hydrants, fire flow requirements and fire sprinkler components will be determined by the Town or Clark County Fire Marshal's office. Following are general requirements for fire hydrant locations: (These criteria are subject to change. For the most current information, contact the Fire Marshal's office.)
 - 1. Commercial Buildings: Fire hydrants shall be located so that no part of a commercial building is more than 250 feet from a fire hydrant measured along a route accessible to fire department vehicles. When a fire department connection (FDC) is installed



in conjunction with an automatic sprinkler system, it is required to have a fire hydrant located within 70 feet of the FDC.

2. Non-Commercial Buildings Unless otherwise approved by the Fire Marshal, a fire hydrant shall be placed at each street intersection, or at spacings not exceeding 700'.

Intermediate hydrants are required when the distances to any part of noncommercial buildings exceeds 500 feet measured along a route accessible to fire department vehicles.

- B. Fire hydrants shall not be connected to mains less than 8 inches, or 6 inches in diameter where the length of 6-inch main is less than 200 feet. As per the UFC, fire hydrants shall be located to allow a 5-foot clear space surrounding the hydrant. For example, street lights, sign posts, protective posts, or retaining walls shall be no closer than 5' from the nearest portion of a hydrant. There shall also be no obstructions directly in line with any of the ports of the hydrant.
- C. Fire hydrants shall have Storz fittings.

Response: All fire hydrants within this development will meet this section. This standard is met.

5A.07 Water Meters

- C. In plat and short plats, water meter applications will be processed for meter sets and water turned on after acceptance of the water mainline facility by the Town.
- D. All irrigation meters require the installation of certified backflow devices. Certification must be either Town or State approved. All irrigation service shall be by separate connection and tapped off the water main. Deduct or exempt meters shall not be permitted in new construction.

All irrigation meters will be set and turned on after acceptance of the water system by the Town. The Town will not accept a water system until all the requirements of the Extension Agreement have been completed and all the fees have been paid.

- E. Adjustments, repairs or replacement of the service line, meter box or setter shall be the responsibility of the property owner.
- F. Any deficient water service brought up to standards by the Town as requested by a property owner by application shall be billed by the Town on a time and material basis.

-
- G. Water services are to be single runs from the main line to each meter.

Response: All water meters within this development will meet this section. This standard is met.

5A.08 Fees and Charges

All fees and charges related to development shall be in accordance with the latest requirements of the Town's ordinances.

Response: The project will be subject to applicable fees and charges in accordance with the Town's ordinances. This standard is met.

5A.09 Cross Connection Control

- A. All water system connections to serve buildings or properties with domestic potable water, fire sprinkler systems, or irrigation systems shall comply with the minimum backflow requirements as established by the Department of Social and Health Services (DSHS) and the Town.
- B. The installation of all backflow devices shall be required to protect the existing water system and users from possible contamination. These backflow devices shall be installed in accordance with the requirements of the "Accepted Procedure and Practice in Cross Connection Control" manual, the Uniform Plumbing Code and the Codes.

Response: This development's backflow devices will be designed and approved in accordance with this standard.

5A.10 Contract for Reimbursement (Latecomer Agreements)

The Town does not have a policy for reimbursement for utility extensions. Should the developer deem that the utility extension is an undue hardship and will significantly benefit other property owners, the developer may request for a latecomer agreement. Such requests shall be in writing and shall be made to the Town Council.

Response: The Applicant understands that a latecomer agreement may be requested.

5B DESIGN STANDARDS

All extensions to the water system shall conform to the most recent edition of the design standards of the Town and American Public Works Association (APWA). The system shall be capable of future expansion and be constructed of permanent materials.

5B.01 Plans and Specifications

The installation of water extensions shall be in accordance with construction plans and specifications prepared by the developer's engineer and reviewed and approved by the Town. All work and materials shall be in accordance with this document and American Public Works Association



(APWA) Standards. Where conflicts exist the more stringent specification shall apply as approved by the Town.

Response: This development’s water extensions will be designed and approved in accordance with this standard.

5B.02 Connections to Existing Pipelines

- A. Connections may be made to existing pipes under pressure with a tapping machine by determining the size and type of pipe and installing tapping sleeve to fit complete with tapping gate valve. Where cut-ins are permitted to be made in existing pipes, the work shall be conducted at such a time and in such a manner as to minimize the interruption of service. Cut-in time must be approved by the Town. Necessary pipe, fittings and gate valves shall be assembled at the site ready for installation prior to the shutting-off of water in the existing main. Once the water has been shut off, the work shall be performed vigorously and shall not be halted until the line is restored to service. Operation of all water main line valves shall be by the Town. The Town shall witness all wet taps and cut-in connections and requires forty-eight (48) hours notice and approval by the Town.
- B. The Contractor shall have the responsibility of giving at least a forty-eight (48) hour notice to the Town and affected customers of intention to disrupt service.
- C. Pipes to be abandoned shall be capped with mechanical couplings.

Response: This development proposes hot tap connections to existing watermain lines. The connections to existing water mains will follow this section. This standard is met.

Title 15 BUILDINGS AND CONSTRUCTION

Chapter 15.10 ENERGY CODE

Response: The development and future residences will be designed, reviewed, and constructed to meet the requirements of this section. All building permits will be submitted separately from this land use application and secured prior to construction. This standard is met.

Chapter 15.15 FLOOD DAMAGE PREVENTION

Response: GIS maps the northwest corner of the site as Floodway Fringe, but outside the Flood Area; therefore, the project is allowed to fill and construct within this area. This application proposes to construct a stormwater facility, streets, utilities, and portions of Lots 5 through 8 within the Floodway Fringe. The proposed improvements within the Floodway Fringe will meet the requirements of this section. This standard is met.

Title 16 ENVIRONMENT

Division I. SEPA Regulations



Railroad Avenue Subdivision – Town of Yacolt
Subdivision Application

December 2021
Page 35

Chapter 16.05 STATE ENVIRONMENTAL POLICY ACT (SEPA)

Response: This application meets the threshold requirement to provide a SEPA review. A SEPA checklist is included with this application. This standard is met.

Division II. Critical Areas

Chapter 16.25 CRITICAL AQUIFER RECHARGE AREAS (CARAS)

Response: All project work on and off site will occur within a Category I CARA (CARA 1). The proposed residential subdivision is an exempt activity per YMC 16.25.010.D.2.b; therefore, a CARA Permit is not required. This standard is met.

Chapter 16.35 FREQUENTLY FLOODED AREAS

Response: GIS maps the northwest corner of the site as Floodway Fringe, but outside the Flood Area; therefore, the project is allowed to fill and construct within this area. This application proposes to construct a stormwater facility, streets, utilities, and portions of Lots 5 through 8 within the Floodway Fringe. The proposed improvements result in a reduction of 15,700 cubic yards of soil in the mapped Floodway Fringe; therefore, the project is not increasing the flood elevation. Building envelopes, outside of the mapped flood area, are proposed for Lots 5 through 6. A flood hazard permit will be issued as part of the land division review process per YMC 16.35.030.C.2. Refer to the preliminary plans accompanying this application for additional information. This standard is met.

Chapter 16.40 PRIORITY HABITAT AREAS

Response: GIS maps an off-site 200-foot Riparian Habitat Area for Yacolt Creek on the south end of W Bumpski Street. This application proposes to install a stormwater pipe and outfall just west of W Bumpski Street's terminus, within the Riparian Habitat Area. The Applicant will submit a Habitat Permit prior to Construction Plan Approval. Refer to the preliminary plans accompanying this application for additional information. This standard will be met.

Title 18 ZONING

Article I. Single-Family Residential – R1-12.5, R-10

18.25.020 Permitted uses.

The following uses are permitted:

- A. Single-family detached dwellings, including manufactured homes as defined in Ordinance 356.
- B. Public parks and recreational facilities.
- C. Accessory uses and structures normal to a residential environment, including detached garages.
- D. Cemeteries, and mausoleums, crematories, columbaria and mortuaries within cemeteries; provided, that no mortuary or crematorium is within 100 feet of a boundary street, or where no street borders the cemetery within 200 feet of a lot in a residential district.
- E. Family day care centers.



Response: The Applicant is proposing the construction of a single-family subdivision in the R1-12.5 zone. Per YMC 18.25.030.A, the proposed development is a permitted use in the single-family residential zone.

18.25.040 Height regulations.

No building or structure with the exception of storage sheds shall be hereafter erected, enlarged or structurally altered to exceed 35 feet in height. No storage sheds shall be hereafter erected, enlarged or structurally altered to exceed 10 feet in height. The height of storage sheds shall be measured at the peak of the roof. [Ord. 399, 2000; Ord. 371 § 4(A)(4), 1997.]

Response: The height regulation is a maximum of 35 feet. The height of the future homes will be 35 feet or less. Building height will be approved during the building permit process. This standard will be met.

18.25.050 Lot requirements.

The minimum lot requirements shall be one of those set out in Table 4A for this district classification, as designated on the zoning map.

Table 4A							
Classification	Minimum Lot Area (sq. ft.)	Average Lot Width (feet)	Average Lot Depth (feet)	SETBACK			
				Front Yard (feet)	Side Yard (feet)	Opposite Side Yard (feet)	Rear Yard (feet)
R1-12.5	12,500*	80	90	25	5	5	25

The minimum street side yard shall be 15 feet.

* The minimum lot size will be established using Method 2, in the building lot size of 12,500, provided there are no soil concerns that would result in the change of the minimum building lot size.

Response: The application materials include preliminary plans showing proposed lot dimensions and areas meeting the requirements of Table 4A. Each future home’s setbacks will be reviewed and approved during the building permit process. This standard will be met.

18.25.060 Lot coverage.

Maximum lot coverage by building and structures shall not exceed 50 percent. Carports are excluded from this provision; provided, that the total coverage limitation is not exceeded by more than 10 percent as a result of these exceptions. [Ord. 371 § 4(A)(6), 1997.]

Response: The development’s lots are limited to a maximum lot coverage of 50 percent. Each lot’s lot coverage will be reviewed and approved during the building permit process. This standard will be met.

18.25.070 Signs.

Signs shall be permitted according to the provisions of Chapter 18.85 YMC. [Ord. 371 § 4(A)(7), 1997.]

Response: No signs are proposed with this application. If a development sign is wanted in the future, the Applicant will submit a standalone sign permit.

18.25.080 Off-street parking.



Off-street parking shall be provided as required in Chapter 18.70 YMC. [Ord. 371 § 4(A)(8), 1997.]

Response: Single-family residences are required to be provided with a minimum of two spaces per dwelling per Table 11A. The development's future homes will have a minimum of four parking spaces per lot/dwelling (2-car garage and driveway). This standard is met.

18.25.085 Local health officer authority.

The local health officer shall have final authority to approve, approve with conditions, or deny any development application in single-family residential R1-12.5, R1-10 zoning districts. No building or development permit may be issued by the town except in compliance with the conditions described in a recommendation for approval from the local health officer, who shall determine the minimum lot size, minimum land area, lot coverage criteria, dwelling density, soil condition standards, or such other standards and requirements as the local health officer is authorized by law or regulation to determine, as such law or regulation is now enacted or may hereafter be amended. [Ord. 563 § 2(b), 2017.]

Response: A Development Review Application was submitted to Clark County Public Health (CCPH) on October 26, 2021 and a CCPH Review Letter is included with this application. The development's septic systems will be permitted by CCPH with the construction of each residence. This standard is met.

Chapter 18.70 PARKING, ACCESS AND CIRCULATION

Response: Each single-family lot within the development is required to have a minimum of two parking spaces. The development's future homes will have a minimum of four parking spaces per lot/dwelling (2-car garage and driveway). This standard is met.

Chapter 18.75 LANDSCAPING AND SCREENING

Response: The proposed development is zoned single-family residential, and the majority of the surrounding properties are similarly zoned single-family, therefore no landscaping or screening is required along those site boundaries per Table 12A. The properties to the east are zoned Parks/Open Space and a property to the west is zoned Public Facility, neither of these zones are listed in Table 12A; therefore, no landscaping or screening is required. This standard is met.

Chapter 18.80 FENCES

Response: No fences are proposed at this time. If the Applicant decides to install fences, they will follow the requirements of Chapter 18.80.

IV. Conclusion

The Applicant is proposing a 47-lot single-family subdivision meeting the requirements of the Town of Yacolt's R1-12.5 zoning and other applicable portions of the Yacolt Municipal Code.

The submittal requirements have been met and the required findings made for all applicable approval criteria. These findings serve as the basis for the Town to approve the application and are supported by

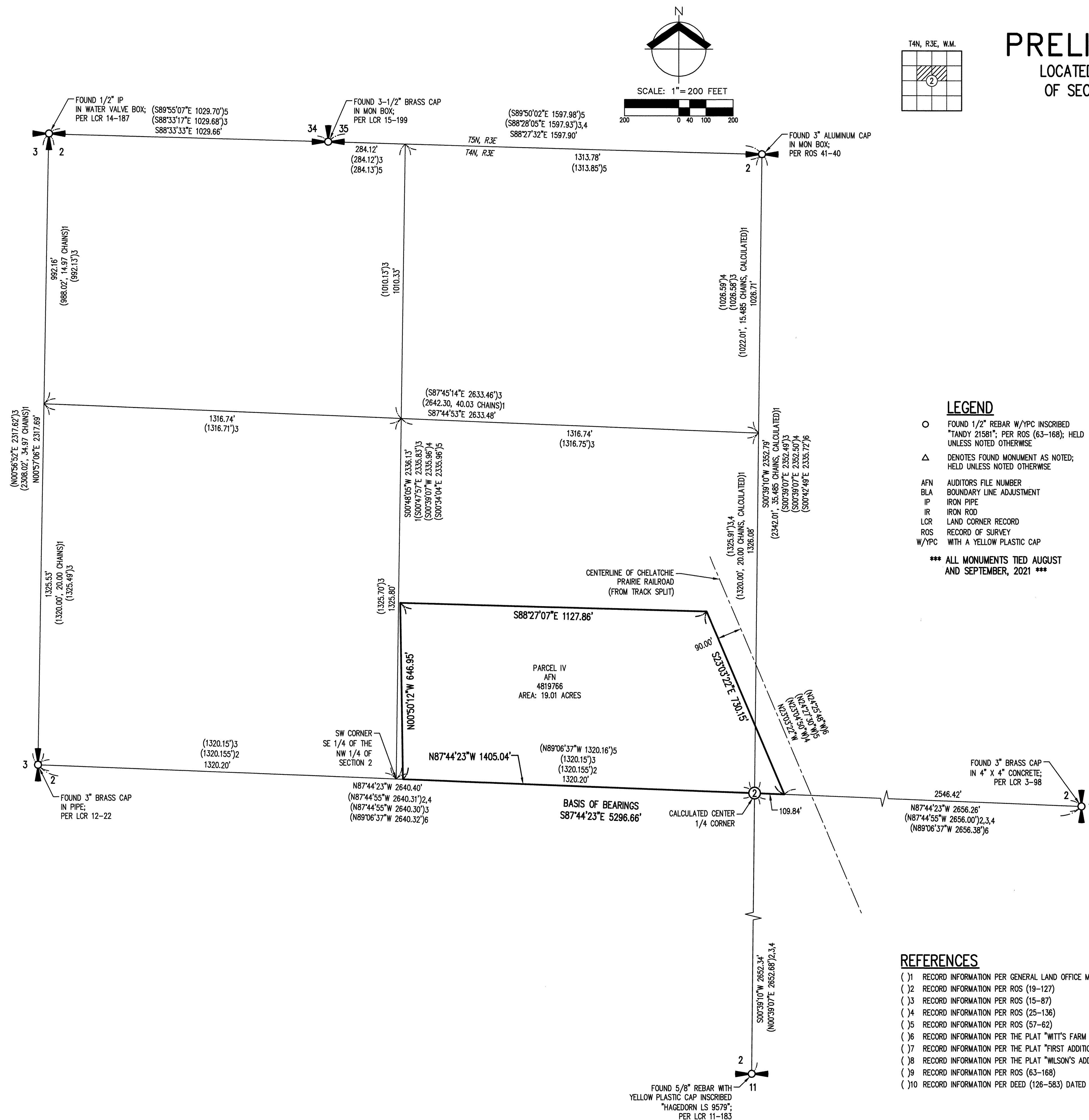


substantial evidence in the application materials. Therefore, the Applicant respectfully requests approval of the proposed development (Railroad Avenue Subdivision).



PRELIMINARY BOUNDARY SURVEY

LOCATED IN THE SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4
 OF SECTION 2, TOWNSHIP 4 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
 TOWN OF YACOLT, CLARK COUNTY, WASHINGTON
 NOVEMBER, 2021



NARRATIVE

THE PURPOSE OF THIS PRELIMINARY BOUNDARY SURVEY WAS TO ESTABLISH THE OUTER BOUNDARY OF PARCEL IV OF AUDITOR'S FILE NO. 4819766, CLARK COUNTY DEED RECORDS.

THE BASIS OF BEARINGS IS THE SOUTH LINE OF THE NORTHEAST AND NORTHWEST QUARTERS OF SECTION 2 AS SHOWN, BEARINGS SHOWN HEREON ARE ON WASHINGTON STATE PLANE, SOUTH ZONE 4602, NAD83(2011) EPOCH 2010.0000 DERIVED FROM THE WASHINGTON STATE REFERENCE NETWORK (WSRN).

THE NORTHWEST QUARTER OF SECTION 2 WAS ESTABLISHED BY ACCEPTING FOUND MONUMENTS AS SHOWN. SAID NORTHWEST QUARTER WAS THEN SUBDIVIDED PER THE BLM MANUAL OF SURVEY INSTRUCTIONS.

THE SOUTH RIGHT-OF-WAY LINE OF W HOAG STREET, BEING THE SOUTH LINE OF THE PLAT "WILSON'S ADDITION TO YACOLT" (B-10) WAS ESTABLISHED BY HOLDING DISTANCES PER THE PLATS "FIRST ADDITION TO YACOLT" (A-94) AND SAID "WILSON'S ADDITION TO YACOLT" (B-10) ALONG THE WEST LINE OF THE EAST HALF OF THE NORTHWEST QUARTER OF SECTION 2 TO ESTABLISH THE SOUTHWEST CORNER OF SAID "WILSON'S ADDITION TO YACOLT" (B-10) AND HOLDING A 30-FOOT OFFSET FROM THE CONSTRUCTED CENTERLINE OF W HOAG STREET (YACOLT AVENUE).

THE WEST RIGHT-OF-WAY LINE OF S RAILROAD AVENUE WAS ESTABLISHED BY HOLDING A 40-FOOT OFFSET FROM THE WEST LINE OF THE CHELATCHIE PRAIRIE RAILROAD PER BOOK 60 PAGE 250 (10/13/1905).

THE EAST RIGHT-OF-WAY LINE OF S PARCEL AVENUE WAS ESTABLISHED BY HOLDING DEED CALLS PER BOOK 126 PAGE 583 (11/19/1918).

THE SOUTH DEED LINE OF THE SUBJECT PROPERTY WAS ESTABLISHED BY HOLDING THE SOUTH LINES OF THE NORTHEAST AND NORTHWEST QUARTERS OF SECTION 2. FENCE ENCROACHMENTS WERE NOTED AS SHOWN AND SHALL BE ADDRESSED DURING THE COURSE OF THIS PROJECT.

THE CONTROL TRAVERSE MET THE STANDARDS CONTAINED IN WAC 332-130-090. A TRIMBLE 3-SECOND TOTAL STATION INSTRUMENT WITH ELECTRONIC DATA COLLECTOR AND TRIMBLE R10 GPS RECEIVER WAS USED FOR ALL FIELD WORK.

LEGEND

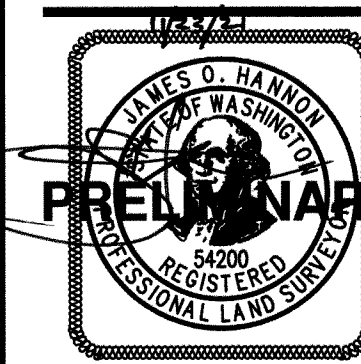
- FOUND 1/2" REBAR W/YPC INSCRIBED "TANDY 21581"; PER ROS (63-168); HELD UNLESS NOTED OTHERWISE
- △ DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
- AFN AUDITOR'S FILE NUMBER
- BLA BOUNDARY LINE ADJUSTMENT
- IP IRON PIPE
- IR IRON ROD
- LCR LAND CORNER RECORD
- ROS RECORD OF SURVEY
- W/YPC WITH A YELLOW PLASTIC CAP

*** ALL MONUMENTS TIED AUGUST AND SEPTEMBER, 2021 ***

REFERENCES

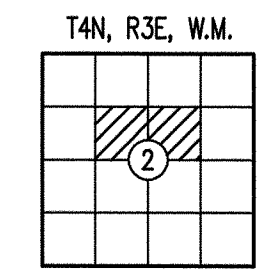
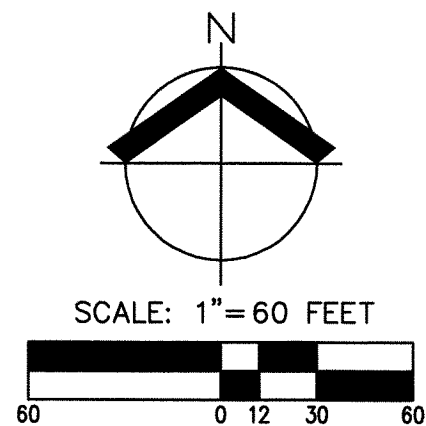
- (1) RECORD INFORMATION PER GENERAL LAND OFFICE MAP
- (2) RECORD INFORMATION PER ROS (19-127)
- (3) RECORD INFORMATION PER ROS (15-87)
- (4) RECORD INFORMATION PER ROS (25-136)
- (5) RECORD INFORMATION PER ROS (57-62)
- (6) RECORD INFORMATION PER THE PLAT "WITT'S FARM SUBDIVISION" (311-296)
- (7) RECORD INFORMATION PER THE PLAT "FIRST ADDITION TO YACOLT" (A-94)
- (8) RECORD INFORMATION PER THE PLAT "WILSON'S ADDITION TO YACOLT" (B-10)
- (9) RECORD INFORMATION PER ROS (63-168)
- (10) RECORD INFORMATION PER DEED (126-583) DATED 11/19/1918

RAILROAD AVENUE SUBDIVISION
AHO CONSTRUCTION I, INC.
TOWN OF YACOLT



JOB NUMBER: 8706
 DATE:
 DESIGNED BY:
 DRAWN BY: CJC
 CHECKED BY: JOH

34 35
 S88°27'32"E 284.12'
 (S88°28'05"E 284.12')3
 (S89°50'02"E 284.13')5
 FOUND 3-1/2" BRASS CAP
 IN MON BOX,
 PER LCR 15-199

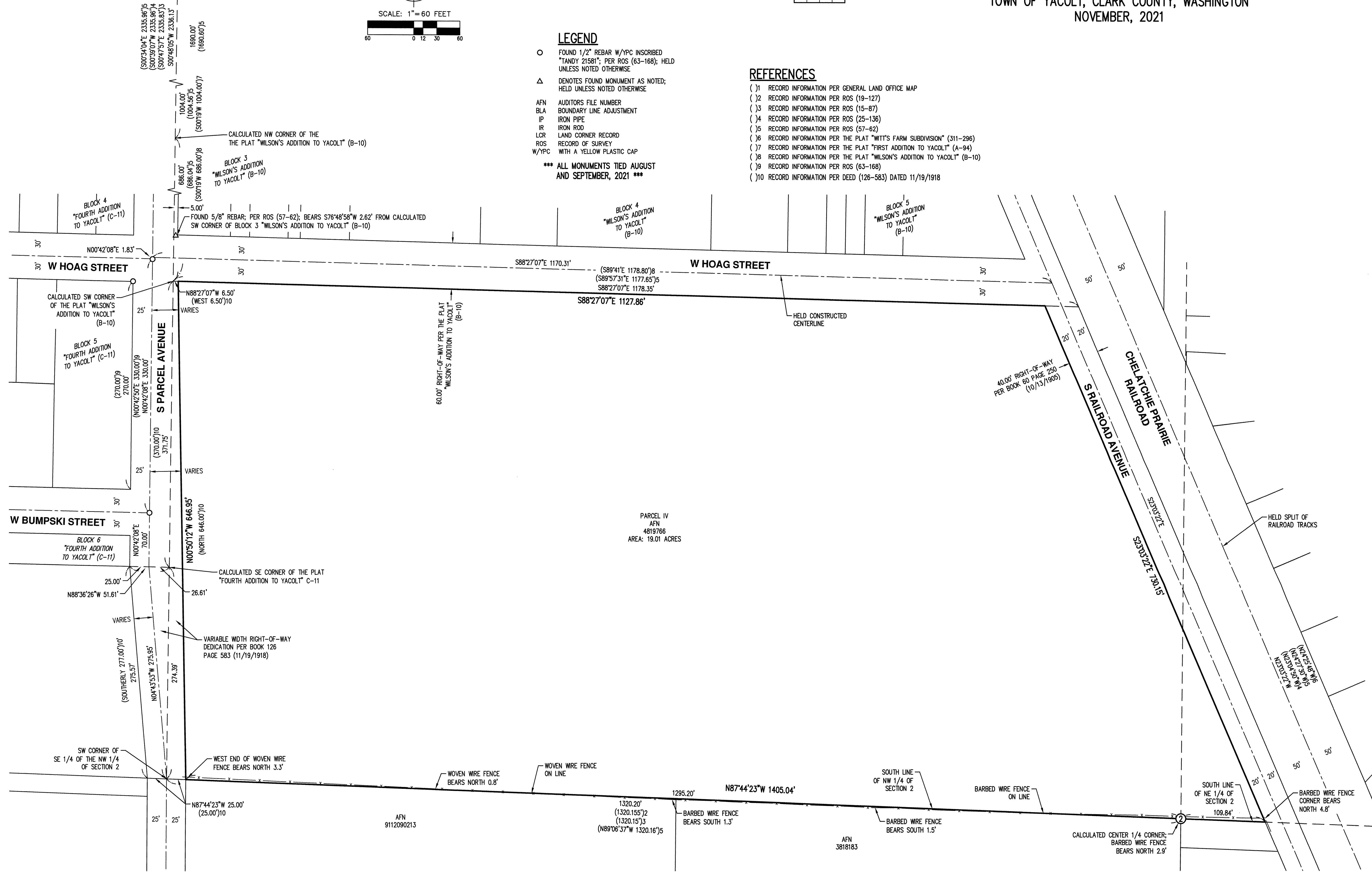


PRELIMINARY BOUNDARY SURVEY

LOCATED IN THE SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4
 OF SECTION 2, TOWNSHIP 4 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
 TOWN OF YACOLT, CLARK COUNTY, WASHINGTON
 NOVEMBER, 2021

- LEGEND**
- FOUND 1/2" REBAR W/YPC INSCRIBED "TANDY 21581", PER ROS (63-168); HELD UNLESS NOTED OTHERWISE
 - △ DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
 - AFN AUDITORS FILE NUMBER
 - BLA BOUNDARY LINE ADJUSTMENT
 - IP IRON PIPE
 - IR IRON ROD
 - LCR LAND CORNER RECORD
 - ROS RECORD OF SURVEY
 - W/YPC WITH A YELLOW PLASTIC CAP
- *** ALL MONUMENTS TIED AUGUST AND SEPTEMBER, 2021 ***

- REFERENCES**
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 ENGINEERING · SURVEYING · NATURAL RESOURCES
 FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

RAILROAD AVENUE SUBDIVISION
AHO CONSTRUCTION I, INC.
TOWN OF YACOLT



JOB NUMBER: 8706
 DATE:
 DESIGNED BY:
 DRAWN BY: CJC
 CHECKED BY: JOH

6. Title Report



CASCADE TITLE COMPANY OF CLARK COUNTY, INC.
 404 E. 15TH ST., STE. 12, VANCOUVER, WA 98663
 PHONE: 360-695-1301 FAX: 360-695-2358

AGENT FOR
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY
ALTA COMMITMENT

SCHEDULE A

TITLE OFFICER: **ERIC ZILM**

ORDER NO.: **CTV13106**

ESCROW OFFICER: **AMELIA AUTREY**

ESCROW NO.: **10052**

REF: **JORGENSEN TIMBER, LLC / AHO CONSTRUCTION I, INC.**

1. EFFECTIVE DATE: **APRIL 28, 2021 AT 8:00 AM.**

2. POLICY OR POLICIES TO BE ISSUED:

- | | |
|---|------------------------------|
| A. ALTA 2006 STANDARD OWNER'S POLICY
PROPOSED INSURED:
AHO CONSTRUCTION I, INC., AND/OR ASSIGNS | AMOUNT \$1,500,000.00 |
| B.
PROPOSED INSURED: | AMOUNT |
| C.
PROPOSED INSURED: | AMOUNT |

PREMIUM INFORMATION:

A. GENERAL SCHEDULE RATE	\$2,860.00	TAX: \$243.10	TOTAL: \$3,103.10
B.		TAX:	TOTAL:

3. THE ESTATE OR INTEREST IN THE LAND DESCRIBED HEREIN AND WHICH IS COVERED BY THIS COMMITMENT IS:

FEE SIMPLE

4. THE ESTATE OR INTEREST REFERRED TO HEREIN IS AT DATE OF COMMITMENT VESTED IN:

JORGENSEN TIMBER, LLC, A WASHINGTON LIMITED LIABILITY COMPANY

5. THE LAND REFERRED TO IN THIS COMMITMENT IS SITUATED IN THE COUNTY OF CLARK, STATE OF WASHINGTON AND IS MORE FULLY DESCRIBED AS FOLLOWS:

SEE ATTACHED EXHIBIT "A"

SCHEDULE B - SECTION I

REQUIREMENTS:

1. INSTRUMENTS CREATING THE ESTATE OR INTEREST TO BE INSURED MUST BE APPROVED AND FILED OF RECORD.
2. PAYMENT OF CANCELLATION FEE IN ACCORDANCE WITH OUR FILED RATE SCHEDULE, TO BE IMPOSED IF THIS TRANSACTION IS CANCELED FOR ANY REASON.
3. THIS COMMITMENT SHALL NOT OBLIGATE THE COMPANY TO ISSUE ANY ENDORSEMENT. ALL ENDORSEMENTS TO BE ISSUED MUST BE AGREED TO BY THE COMPANY AND APPROPRIATE FOR THE ESTATE INSURED.
4. ANY SKETCH OR MAP ENCLOSED AS AN ATTACHMENT HEREWITH IS FURNISHED FOR INFORMATION PURPOSES ONLY TO ASSIST IN PROPERTY LOCATION WITH REFERENCE TO STREETS AND OTHER PARCELS. NO REPRESENTATION IS MADE AS TO ACCURACY AND THE COMPANY ASSUMES NO LIABILITY FOR ANY LOSS OCCURRING BY REASON OF RELIANCE THEREON.

END OF SCHEDULE B - SECTION I REQUIREMENTS

SCHEDULE B - SECTION II

SCHEDULE B OF THE POLICY OR POLICIES TO BE ISSUED WILL CONTAIN EXCEPTIONS TO THE FOLLOWING MATTERS UNLESS THE SAME ARE DISPOSED OF TO THE SATISFACTION OF THE COMPANY.

GENERAL EXCEPTIONS:

- A. RIGHTS OR CLAIMS DISCLOSED ONLY BY POSSESSION, OR CLAIMED POSSESSION, OF THE PREMISES.
- B. ENCROACHMENTS, OVERLAPS, BOUNDARY LINE DISPUTES WHICH WOULD BE DISCLOSED BY AN ACCURATE SURVEY OR INSPECTION OF THE PREMISES.
- C. EASEMENTS, PRESCRIPTIVE RIGHTS, RIGHTS-OF-WAY, STREETS, ROADS, ALLEYS OR HIGHWAYS NOT DISCLOSED BY THE PUBLIC RECORDS.
- D. ANY LIEN, OR RIGHT TO A LIEN, FOR CONTRIBUTIONS TO EMPLOYEES BENEFIT FUNDS, OR FOR STATE WORKERS' COMPENSATION, OR FOR SERVICES, LABOR OR MATERIAL HERETOFORE OR HEREAFTER FURNISHED, ALL AS IMPOSED BY LAW AND NOT SHOWN BY THE PUBLIC RECORDS.
- E. UNDERGROUND EASEMENTS, SERVITUDES OR INSTALLATIONS OF WHICH NO NOTICE IS OF RECORD.
- F. GENERAL TAXES NOT NOW PAYABLE; MATTERS RELATING TO SPECIAL ASSESSMENTS AND SPECIAL LEVIES, IF ANY, PRECEDING THE SAME BECOMING A LIEN.
- G. ANY SERVICE, INSTALLATION, CONNECTION, MAINTENANCE, OR CONSTRUCTION CHARGES FOR SEWER, WATER, ELECTRICITY, NATURAL GAS OR OTHER UTILITIES OR GARBAGE COLLECTION AND DISPOSAL.
- H. RESERVATIONS OR EXCEPTIONS IN UNITED STATES PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF.
- I. INDIAN TRIBAL CODES OR REGULATIONS, INDIAN TREATY OR ABORIGINAL RIGHTS, INCLUDING EASEMENTS OR EQUITABLE SERVITUDES.
- J. WATER RIGHTS, CLAIMS OR TITLE TO WATER.
- K. DEFECTS, LIENS ENCUMBRANCES, ADVERSE CLAIMS OR OTHER MATTERS, IF ANY, CREATED, FIRST APPEARING IN THE PUBLIC RECORDS OR ATTACHING SUBSEQUENT TO THE EFFECTIVE DATE HEREOF BUT PRIOR TO THE DATE THE PROPOSED INSURED ACQUIRES FOR VALUE OF RECORD THE ESTATE OR INTEREST OR MORTGAGE THEREON COVERED BY THIS COMMITMENT

END OF SCHEDULE B SECTION II GENERAL EXCEPTIONS

SPECIAL EXCEPTIONS:

1. LIEN OF EXCISE TAX, IF UNPAID.

EFFECTIVE JANUARY 1, 2020, EXCISE TAX RATE IS A GRADUATED, MARGINAL RATE BASED ON SALES PRICE (PLUS \$5.00 STATE TECHNOLOGY FEE):

\$500,000 OR LESS	1.60%
\$500,000.01 - \$1,500,000.00	1.78%
\$1,500,000.01 - \$3,000,000.00	3.25%
\$3,000,000.01 OR MORE	3.50%

CALCULATION IS MARGINAL (FIRST \$500,000.00 IS AT LOWER RATE, PLUS AMOUNT OF PRICE ABOVE \$500,000.00 AT HIGHER RATE). EXAMPLE \$600,000.00 SALES PRICE: \$500,000.00 AT 1.6% PLUS \$100,000.00 AT 1.78% = \$9,780.00 PLUS \$5.00 AFFIDAVIT PROCESSING FEE = \$9,785.00.

EXCEPTIONS TO ABOVE RATES:

- **YACOLT SCHOOL DISTRICT NOS. 119050 AND 119051:**

\$500,000.00 OR LESS	1.35%
\$500,000.01 - \$1,500,000.00	1.53%
\$1,500,000.01 - \$3,000,000.00	3.00%
\$3,000,000.01 OR MORE	3.25%

- **AGRICULTURAL LAND/TIMBERLAND EXCISE TAX IS 1.78% REGARDLESS OF SALES PRICE.**

2. REAL PROPERTY TAXES - TOTAL DUE MAY INCLUDE FIRE PATROL ASSESSMENT, R.I.D. ASSESSMENT AND/OR CLEAN WATER PROJECT ASSESSMENT, IF ANY, NOT INCLUDING INTEREST AND PENALTY AFTER DELINQUENCY:

YEAR	AMOUNT	PAID	OWING
2021	\$28.76	\$0.00	\$28.76
TAX ACCOUNT NO: 064522-000		SCHOOL DISTRICT CODE NO: 119050	

REAL PROPERTY TAXES ARE A LIEN JANUARY 1ST, PAYABLE FEBRUARY 15TH, FIRST HALF DELINQUENT MAY 1ST AND SECOND HALF DELINQUENT NOVEMBER 1ST.

JURISDICTION: YACOLT

NOTE: TAX PAYMENTS CAN BE MAILED TO THE FOLLOWING ADDRESS:

**CLARK COUNTY TREASURER
CALLER BOX 35150
SEATTLE, WA 98124-5150
PHONE: 564-397-2252**

3. **TERMS, COVENANTS AND CONDITIONS CONTAINED IN APPLICATION FOR CURRENT USE CLASSIFICATION, ENTERED PURSUANT TO RCW 84.33 (INCLUDING POTENTIAL LIABILITY FOR FUTURE APPLICABLE TAXES, ANY SPECIAL BENEFIT ASSESSMENTS LEVIED BY LOCAL GOVERNMENTS, PENALTIES AND INTEREST UPON BREACH OF, OR WITHDRAWAL FROM, SAID CLASSIFICATION);**
CLASSIFICATION: FOREST LAND
4. **UNPAID CHARGES AND ASSESSMENTS, IF ANY, LEVIED BY THE CITY OF YACOLT.**
5. **NOTICE AND THE TERMS AND CONDITIONS THEREOF:**
REGARDING: NOTICE OF APPROVAL OR DENIAL OF APPLICATION FOR
 DESIGNATION AS FOREST LAND
RECORDED: MAY 01, 2012
AUDITOR'S FILE NO.: 4851084
6. **RESERVATIONS AND THE TERMS AND CONDITIONS THEREOF:**
REGARDING: CLARK COUNTY TIMBER COMPANY
RECORDED: NOVEMBER 15, 1920
AUDITOR'S FILE NO.: B 16397, BOOK 140, PAGE 42
7. **ANY QUESTION OR DISPUTE ABOUT OWNERSHIP OR ADVERSE POSSESSION ARISING FROM THE RECORD CONFLICT IN THE LEGAL DESCRIPTIONS BETWEEN THE SUBJECT PARCEL AND THE PROPERTY ADJOINING TO THE WEST, BY REASON OF THE DIFFERING MANNER IN WHICH THE TWO PROPERTIES ARE DESCRIBED.**
8. **ACCORDING TO EVIDENCE SUPPLIED TO THIS COMPANY, JENS JORGENSEN AND LORIE SPOGEN ARE AUTHORIZED TO SIGN FOR JORGENSEN TIMBER LLC; ANY AMENDMENTS THERETO SHOULD BE SUBMITTED PRIOR TO CLOSING.**

END OF SCHEDULE B - SECTION II SPECIAL EXCEPTIONS

NOTES:

- a. THE ADDRESS OF THE SUBJECT PROPERTY IS:

W HOAG ST
YACOLT, WA 98675

- b. ACCORDING TO THE RECORDS OF CLARK COUNTY ASSESSOR, THE CURRENT VALUE OF SAID PREMISES IS AS FOLLOWS:

TAX ACCOUNT NO.:	064522-000
LAND:	\$253,000.00
IMPROVEMENTS:	\$0.00
TOTAL:	\$253,000.00

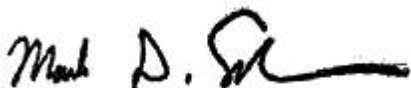
- c. THE FOLLOWING ABBREVIATED LEGAL DESCRIPTION IS PROVIDED AS A COURTESY TO ENABLE THE DOCUMENT PREPARER TO CONFORM WITH THE REQUIREMENTS OF RCW 65.04.045, PERTAINING TO STANDARDIZATION OF RECORDED DOCUMENTS.

ABBREVIATED LEGAL DESCRIPTION:

#6 & #7 SEC 2 T4N R3E WM

- d. THERE ARE NO CONVEYANCES AFFECTING SAID PREMISES RECORDED WITHIN THE LAST 24 MONTHS.
- e. THE COMPANY FINDS NO PERTINENT MATTERS OF RECORD AGAINST JORGENSEN TIMBER, LLC, EXCEPT AS NOTED IN SCHEDULE B.
- f. ACCORDING TO THE APPLICATION FOR TITLE INSURANCE, TITLE IS TO VEST IN AHO CONSTRUCTION I, INC., AND/OR ASSIGNS. WE FIND NO PERTINENT MATTERS OF RECORD AGAINST THE NAME(S) OF SAID PARTY/PARTIES.

END OF SCHEDULE B - SECTION II NOTES



AUTHORIZED SIGNATURE

EXHIBIT "A"

ALL THAT PART OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER AND OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 4 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN, CLARK COUNTY, WASHINGTON, LYING SOUTH OF WILSON'S ADDITION TO YACOLT AND WESTERLY OF THE NORTHERN PACIFIC RAILWAY CO. RIGHT OF WAY, RUNNING THROUGH SAID SECTION;

EXCEPTING THAT PORTION HERETOFORE DEDICATED TO CLARK COUNTY AS PUBLIC ROAD, BY DEED RECORDED IN BOOK 60, CLARK COUNTY DEED RECORDS, AT PAGE 250;

ALSO EXCEPT THAT PORTION LYING WITHIN GARNER ROAD AND YACOLT STREET.



FACTS WHAT DOES OLD REPUBLIC TITLE DO WITH YOUR PERSONAL INFORMATION?

Why?	Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.
What?	<p>The types of personal information we collect and share depend on the product or service you have with us. This information can include:</p> <ul style="list-style-type: none"> • Social Security number and employment information • Mortgage rates and payments and account balances • Checking account information and wire transfer instructions <p>When you are <i>no longer</i> our customer, we continue to share your information as described in this notice.</p>
How?	All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons Old Republic Title chooses to share; and whether you can limit this sharing.

Reasons we can share your personal information	Does Old Republic Title share?	Can you limit this sharing?
For our everyday business purposes — such as to process your transactions, maintain your account(s), or respond to court orders and legal investigations, or report to credit bureaus	Yes	No
For our marketing purposes — to offer our products and services to you	No	We don't share
For joint marketing with other financial companies	No	We don't share
For our affiliates' everyday business purposes — information about your transactions and experiences	Yes	No
For our affiliates' everyday business purposes — information about your creditworthiness	No	We don't share
For our affiliates to market to you	No	We don't share
For non-affiliates to market to you	No	We don't share

Questions Go to www.oldrepublictitle.com (Contact Us)

Who we are	
Who is providing this notice?	Companies with an Old Republic Title name and other affiliates. Please see below for a list of affiliates.

What we do	
How does Old Republic Title protect my personal information?	To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings. For more information, visit http://www.OldRepublicTitle.com/newnational/Contact/privacy .
How does Old Republic Title collect my personal information?	<p>We collect your personal information, for example, when you:</p> <ul style="list-style-type: none"> • Give us your contact information or show your driver’s license • Show your government-issued ID or provide your mortgage information • Make a wire transfer <p>We also collect your personal information from others, such as credit bureaus, affiliates, or other companies.</p>
Why can’t I limit all sharing?	<p>Federal law gives you the right to limit only:</p> <ul style="list-style-type: none"> • Sharing for affiliates’ everyday business purposes - information about your creditworthiness • Affiliates from using your information to market to you • Sharing for non-affiliates to market to you <p>State laws and individual companies may give you additional rights to limit sharing. See the "Other important information" section below for your rights under state law.</p>

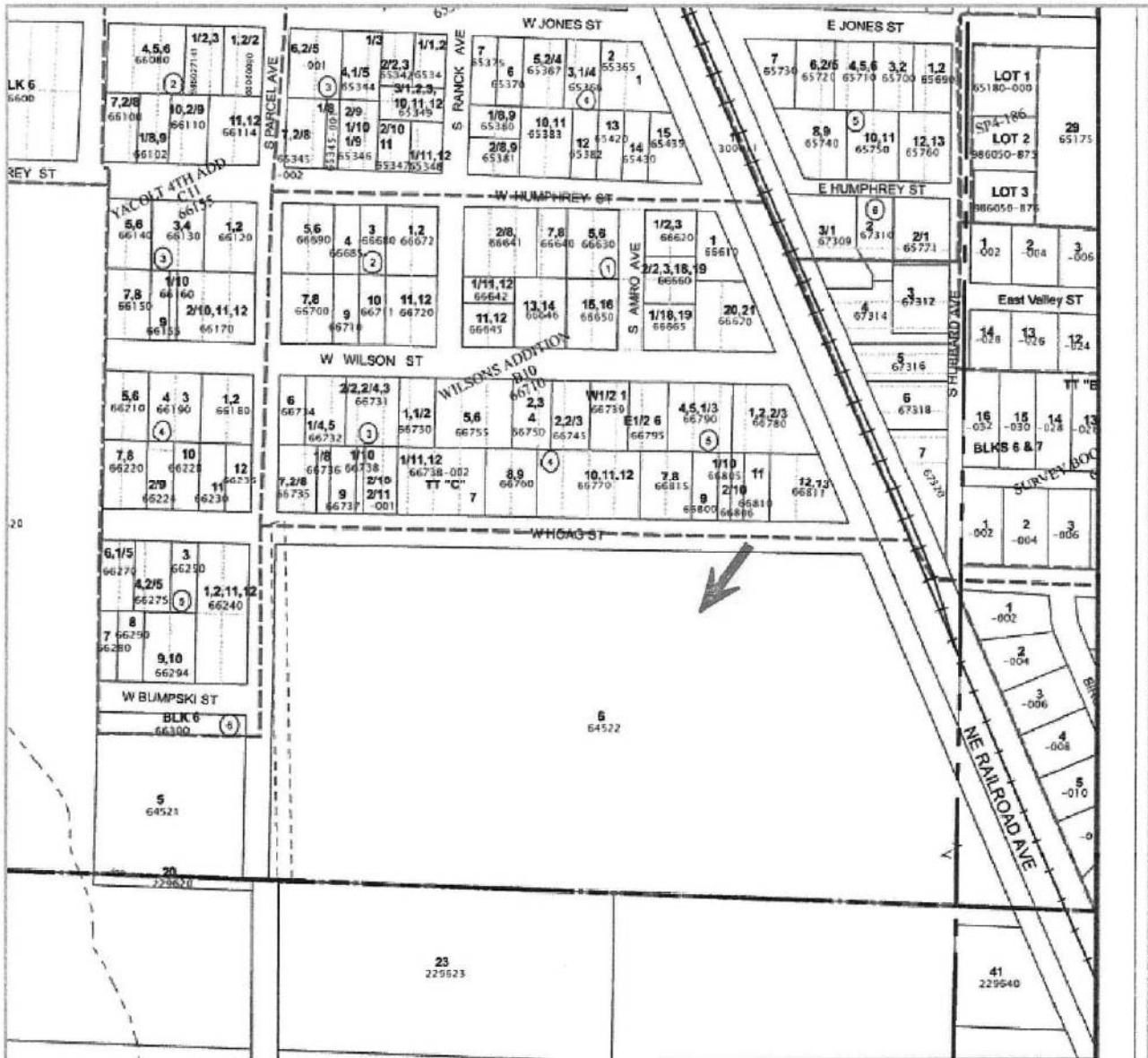
Definitions	
Affiliates	<p>Companies related by common ownership or control. They can be financial and nonfinancial companies.</p> <ul style="list-style-type: none"> • <i>Our affiliates include companies with an Old Republic Title name, and financial companies such as Attorneys’ Title Fund Services, LLC, Lex Terrae National Title Services, Inc., Mississippi Valley Title Services Company, and The Title Company of North Carolina.</i>
Non-affiliates	<p>Companies not related by common ownership or control. They can be financial and non-financial companies.</p> <ul style="list-style-type: none"> • <i>Old Republic Title does not share with non-affiliates so they can market to you</i>
Joint marketing	<p>A formal agreement between non-affiliated financial companies that together market financial products or services to you.</p> <ul style="list-style-type: none"> • <i>Old Republic Title doesn’t jointly market.</i>

Other Important Information

Oregon residents only: We are providing you this notice under state law. We may share your personal information (described on page one) obtained from you or others with non-affiliate service providers with whom we contract, such as notaries and delivery services, in order to process your transactions. You may see what personal information we have collected about you in connection with your transaction (other than personal information related to a claim or legal proceeding). To see your information, please click on "Contact Us" at www.oldrepublictitle.com and submit your written request to the Legal Department. You may see and copy the information at our office or ask us to mail you a copy for a reasonable fee. If you think any information is wrong, you may submit a written request online to correct or delete it. We will let you know what actions we take. If you do not agree with our actions, you may send us a statement.

Affiliates Who May be Delivering This Notice

American First Abstract, LLC	American First Title & Trust Company	American Guaranty Title Insurance Company	Attorneys' Title Fund Services, LLC	Compass Abstract, Inc.
eRecording Partners Network, LLC	Genesis Abstract, LLC	Kansas City Management Group, LLC	L.T. Service Corp.	Lenders Inspection Company
Lex Terrae National Title Services, Inc.	Lex Terrae, Ltd.	Mara Escrow Company	Mississippi Valley Title Services Company	National Title Agent's Services Company
Old Republic Branch Information Services, Inc.	Old Republic Diversified Services, Inc.	Old Republic Exchange Company	Old Republic National Title Insurance Company	Old Republic Title and Escrow of Hawaii, Ltd.
Old Republic Title Co.	Old Republic Title Company of Conroe	Old Republic Title Company of Indiana	Old Republic Title Company of Nevada	Old Republic Title Company of Oklahoma
Old Republic Title Company of Oregon	Old Republic Title Company of St. Louis	Old Republic Title Company of Tennessee	Old Republic Title Information Concepts	Old Republic Title Insurance Agency, Inc.
Old Republic Title, Ltd.	Republic Abstract & Settlement, LLC	Sentry Abstract Company	The Title Company of North Carolina	Title Services, LLC
Trident Land Transfer Company, LLC				



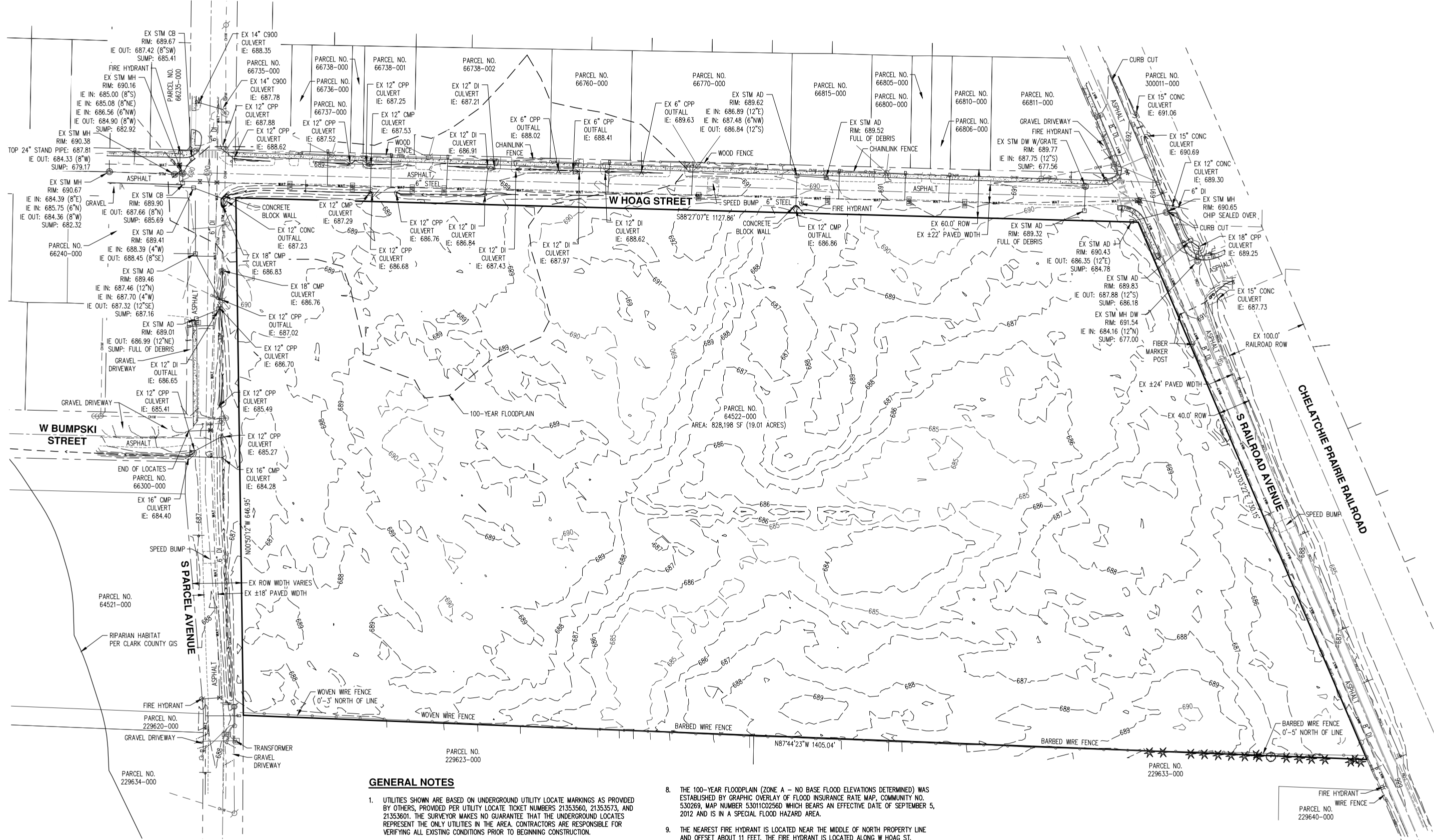
Clark County
Geographic Information System

NW Qtr of Section 02 T4N R3E WM



This map/plat is furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.

8. Proposed Development Plans (Reduced)



LEGEND

EXISTING GROUND CONTOUR (1 FT) --- 686 ---
 EXISTING GROUND CONTOUR (5 FT) --- 690 ---

GENERAL NOTES

- UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBERS 21353560, 21353573, AND 21353601. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
- FIELD WORK WAS CONDUCTED AUGUST-SEPTEMBER, 2021.
- VERTICAL DATUM: ELEVATIONS ARE BASED ON CLARK COUNTY BENCHMARK NO. 415, LOCATED ON THE EAST SIDE OF THE CHELATCHIE PRAIRIE RAILROAD TRACKS AT THE SOUTH END OF THE TOWN OF YACOLT. ELEVATION = 688.39 FEET (NGVD 29(47)).
- THIS IS NOT A PROPERTY BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY SURVEYOR. BOUNDARIES MAY BE PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
- BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
- CONTOUR INTERVAL IS 1 FOOT.
- TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE DETERMINED BY VISUAL INSPECTION. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.
- THE 100-YEAR FLOODPLAIN (ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED) WAS ESTABLISHED BY GRAPHIC OVERLAY OF FLOOD INSURANCE RATE MAP, COMMUNITY NO. 530269, MAP NUMBER 5301002560 WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 5, 2012 AND IS IN A SPECIAL FLOOD HAZARD AREA.
- THE NEAREST FIRE HYDRANT IS LOCATED NEAR THE MIDDLE OF NORTH PROPERTY LINE AND OFFSET ABOUT 11 FEET. THE FIRE HYDRANT IS LOCATED ALONG W HOAG ST.
- ACCORDING TO CLARK COUNTY GIS, THERE ARE NO EXISTING SEPTIC SYSTEMS (PUMP CHAMBERS, DRAIN FIELDS, & SEPTIC RESERVE) OR WELLS ON SITE.
- THERE ARE NO DRY WELLS ON SITE.
- THERE ARE NO UNDERGROUND OR ABOVE GROUND STORAGE TANKS ON SITE.
- THERE ARE NO EXISTING STRUCTURES ON SITE.
- THERE ARE NO EXISTING EASEMENTS ON SITE.
- THERE ARE NO KNOWN UNSTABLE SLOPES OR LANDSLIDE HAZARD AREAS, WATER COURSES, WATER BODIES, WETLANDS, OR SIGNIFICANT HISTORICAL RESOURCES ON SITE OR WITHIN 100' OF THE SITE ACCORDING TO CLARK COUNTY GIS INFORMATION.
- THERE ARE NO CENTERLINE OR ROW RADI ABUTTING THE SITE.

SCALE: 1" = 60 FEET

0 10 20 30 40 50 60
 ORIGINAL PAGE SIZE: 22" x 34"

**EXISTING CONDITIONS PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**

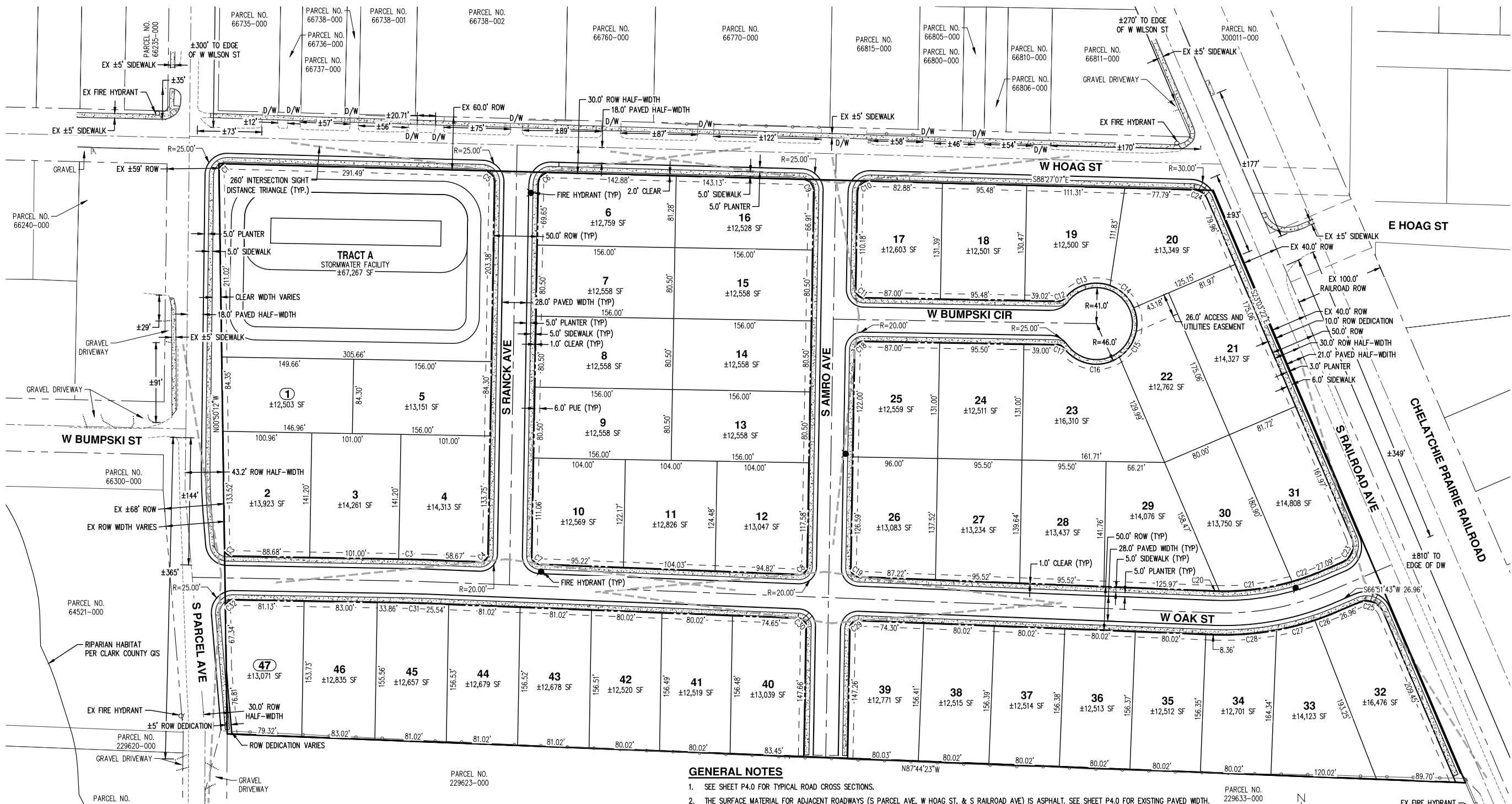


JOB NUMBER: 8706
 DATE: 12/16/2021
 DESIGNED BY:
 DRAWN BY: CJC
 CHECKED BY: JQH

**PROPOSED DEVELOPMENT PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**

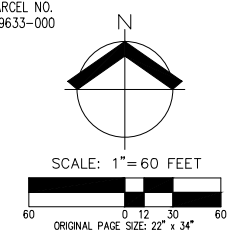


JOB NUMBER: 8706
 DATE: 12/16/2021
 DESIGNED BY: KWA
 DRAWN BY: KWA
 CHECKED BY: SWH



GENERAL NOTES

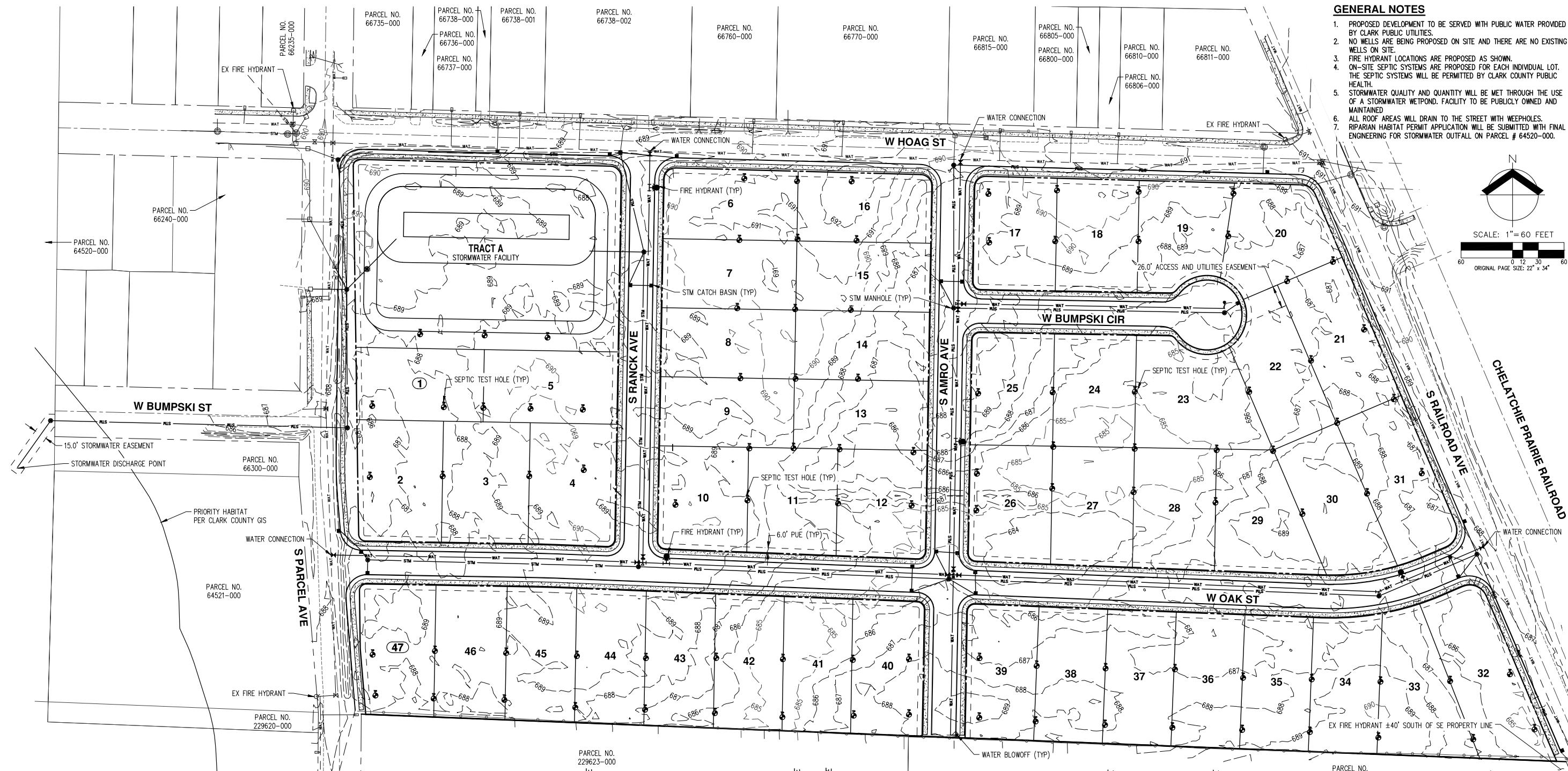
- SEE SHEET P4.0 FOR TYPICAL ROAD CROSS SECTIONS.
- THE SURFACE MATERIAL FOR ADJACENT ROADWAYS (S PARCEL AVE, W HOAG ST, & S RAILROAD AVE) IS ASPHALT. SEE SHEET P4.0 FOR EXISTING PAVED WIDTH.
- NO BICYCLE OR TRANSIT IMPROVEMENTS ARE PROPOSED ON SITE OR WITHIN 100' OF THE SITE.
- EXISTING S PARCEL AVENUE, W HOAG STREET AND S RAILROAD AVENUE PROVIDE ACCESS TO THE SITE.
- FRONTAGE IMPROVEMENTS TO S PARCEL AVE, S RAILROAD AVE, AND W HOAG STREET ARE PROPOSED.
- STORMWATER QUANTITY AND QUALITY REQUIREMENTS WILL BE MET THROUGH THE USE OF A STORMWATER WETPOND. TRACT A TO BE DEDICATED TO TOWN OF YACOLT. STORMWATER FACILITY TO BE PUBLICLY OWNED AND MAINTAINED.
- EACH LOT WILL CONTAIN A SEPTIC SYSTEM FOR ON SITE SEWAGE TREATMENT AND DISPOSAL.
- ALL LOTS WILL BE SERVED WITH PUBLIC WATER BY CLARK PUBLIC UTILITIES.
- THERE ARE NO PROPOSED OFF-STREET PARKING SPACES OTHER THAN EACH LOT'S PRIVATE DRIVEWAY.
- NO LANDSCAPING IS PROPOSED DURING SITE DEVELOPMENT.
- NO WALLS OR FENCES ARE PROPOSED FOR THIS DEVELOPMENT.
- STREET LIGHTING REQUIREMENTS WILL BE MET ACCORDING TO THE TOWN OF YACOLT MUNICIPAL CODE.
- THERE ARE NO EXISTING BUILDINGS ON SITE.
- THERE ARE NO EXISTING EASEMENTS ON SITE.
- ALL PROPOSED FUTURE ONE STORY AND TWO STORY HOMES WILL BE WOOD FRAMED.
- NO WELLS ARE PROPOSED WITH THIS SITE AND THERE ARE NO EXISTING WELLS ON SITE.
- ACCORDING TO CLARK COUNTY GIS, THERE ARE NO EXISTING SEPTIC SYSTEMS (PUMP CHAMBERS, DRAIN FIELDS, & SEPTIC RESERVE) ON SITE.
- THERE ARE NO UNDERGROUND OR ABOVE GROUND STORAGE TANKS ON SITE.
- THERE ARE NO KNOWN UNSTABLE SLOPES OR LANDSLIDE HAZARD AREAS, WATER COURSES, WATER BODIES, WETLANDS, OR SIGNIFICANT HISTORICAL RESOURCES ON SITE OR WITHIN 100' OF THE SITE ACCORDING TO CLARK COUNTY GIS INFORMATION.
- THE NEAREST FIRE HYDRANT IS LOCATED NEAR THE MIDDLE OF NORTH PROPERTY LINE AND OFFSET ABOUT 11 FEET. THE FIRE HYDRANT IS LOCATED ALONG W HOAG ST. THE EXISTING FIRE HYDRANT WILL BE RELOCATED.
- THERE ARE NO CENTERLINE OR ROW RADII ABUTTING THE SITE.
- THERE ARE NO EXISTING DRIVEWAYS ON SITE.
- RIPARIAN HABITAT PERMIT APPLICATION WILL BE SUBMITTED WITH FINAL ENGINEERING FOR STORMWATER OUTFALL ON PARCEL # 64520-000.



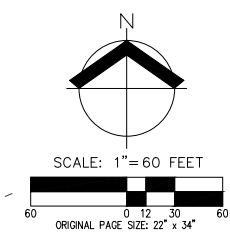
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	8.00'	92°23'05"	12.90'	S45°21'21"W 11.55'
C2	8.00'	88°09'50"	12.31'	S44°55'07"E 11.13'
C3	1025.00'	1°16'13"	22.72'	N88°21'56"W 22.72'
C4	9.00'	91°16'13"	14.34'	N46°38'04"E 12.87'
C5	13.00'	89°27'05"	20.30'	N43°43'35"W 18.30'
C6	13.00'	90°32'55"	20.54'	S46°16'25"W 18.47'
C7	9.00'	88°43'47"	13.94'	S43°21'56"E 12.59'
C8	9.00'	91°16'13"	14.34'	N46°38'04"E 12.87'
C9	13.00'	89°27'05"	20.30'	N43°43'35"W 18.30'
C10	13.00'	90°32'55"	20.54'	S46°16'26"W 18.47'
C11	9.00'	90°00'00"	14.14'	S44°00'02"E 12.73'
C12	8.00'	52°19'48"	7.31'	N64°50'04"E 7.06'
C13	46.00'	71°05'37"	57.08'	S74°12'58"W 53.49'
C14	46.00'	47°05'56"	37.81'	N46°41'15"W 36.76'
C15	46.00'	78°29'16"	63.01'	N16°06'21"E 58.20'
C16	46.00'	87°58'47"	70.63'	S80°39'37"E 63.90'

CURVE	RADIUS	DELTA	LENGTH	CHORD
C17	8.00'	52°19'48"	7.31'	N62°50'08"W 7.06'
C18	9.00'	90°00'00"	14.14'	S45°59'57"W 12.73'
C19	9.00'	88°43'47"	13.94'	S43°21'56"E 12.59'
C20	275.00'	1°03'20"	5.07'	S88°15'29"E 5.07'
C21	275.00'	17°22'38"	83.40'	N82°31'32"E 83.09'
C22	275.00'	6°58'30"	33.48'	N70°20'58"E 33.46'
C23	21.00'	89°55'02"	32.96'	N21°54'12"E 29.68'
C24	18.00'	65°23'45"	20.54'	N55°45'15"W 19.45'
C25	21.00'	90°04'23"	33.01'	N68°06'06"W 29.72'
C26	325.00'	4°47'25"	27.17'	N69°15'26"E 27.16'
C27	325.00'	7°52'43"	44.69'	N75°35'30"E 44.65'
C28	325.00'	12°44'20"	72.26'	N85°54'01"E 72.11'
C29	9.00'	91°16'13"	14.34'	S46°38'04"W 12.87'
C30	9.00'	88°43'47"	13.94'	N43°21'56"W 12.59'
C31	975.00'	1°16'13"	21.62'	N88°21'56"W 21.61'
C32	8.00'	91°50'10"	12.82'	S45°04'53"W 11.49'

THE PURPOSE OF THIS PRELIMINARY PLAT IS TO SHOW THE PROPOSED LOT DIMENSIONS AND AREAS FOR PLANNING PURPOSES. THIS IS NOT AN OFFICIAL PLAT AND IS NOT TO BE USED FOR SURVEY PURPOSES.



- GENERAL NOTES**
1. PROPOSED DEVELOPMENT TO BE SERVED WITH PUBLIC WATER PROVIDED BY CLARK PUBLIC UTILITIES.
 2. NO WELLS ARE BEING PROPOSED ON SITE AND THERE ARE NO EXISTING WELLS ON SITE.
 3. FIRE HYDRANT LOCATIONS ARE PROPOSED AS SHOWN.
 4. ON-SITE SEPTIC SYSTEMS ARE PROPOSED FOR EACH INDIVIDUAL LOT. THE SEPTIC SYSTEMS WILL BE PERMITTED BY CLARK COUNTY PUBLIC HEALTH.
 5. STORMWATER QUALITY AND QUANTITY WILL BE MET THROUGH THE USE OF A STORMWATER WETPOND. FACILITY TO BE PUBLICLY OWNED AND MAINTAINED.
 6. ALL ROOF AREAS WILL DRAIN TO THE STREET WITH WEEPHOLES.
 7. RIPARIAN HABITAT PERMIT APPLICATION WILL BE SUBMITTED WITH FINAL ENGINEERING FOR STORMWATER OUTFALL ON PARCEL # 64520-000.

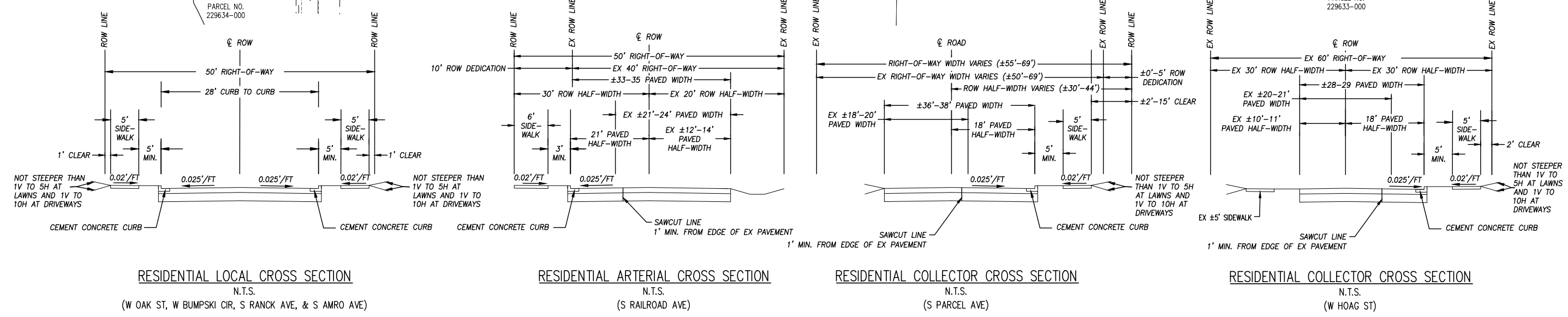


AKS
 AKS ENGINEERING & FORESTRY, LLC
 9600 NE 126TH AVE, STE 2520
 VANCOUVER, WA 98682
 360.882.0419
 WWW.AKS-ENG.COM
 ENGINEERING • SURVEYING • NATURAL RESOURCES
 FORESTRY • PLANNING • LANDSCAPE ARCHITECTURE

**PRELIMINARY UTILITY AND STREET PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**



JOB NUMBER: 8706
 DATE: 12/16/2021
 DESIGNED BY: KWA
 DRAWN BY: KWA
 CHECKED BY: SMH



AKS DRAWING FILE: 8706 P4.0 UTIL.DWG | LAYOUT: P4.0

9. Geotechnical Soil Analysis Report

August 6, 2021

Mr. Jon Johnson
AHO Construction, Inc.
5512 NE 109th Court, Suite 101
Vancouver, Washington 98662

**Re: Infiltration Testing Results Report
NE Railroad Avenue Subdivision
Parcel No. 64522000
Yacolt, Washington
CWE W.O. # 21126**

Mr. Johnson:

As requested, Columbia West Engineering, Inc. (Columbia West) is pleased to submit this infiltration testing results report for the above-referenced project located in Yacolt, Washington. The purpose of this report is to provide soil infiltration rate observations and test results. The specific scope of services was outlined in a proposal contract dated June 1, 2021. This report is subject to the limitations expressed in Appendix E.

Site Location and Description

As indicated on Figures 1 and 2, the subject site is located south of 112 W Hoag Street in Yacolt, Washington. The site is comprised of a portion of tax parcel 64522000 totaling approximately 20 acres. The regulatory jurisdictional agency is the City of Yacolt, Washington. The approximate latitude and longitude are N 45° 51' 40" and W 122° 24' 24", and the legal description is a portion of the NE and NW ¼ of Section 02, T4N, R3E, Willamette Meridian.

Proposed Development

Correspondence with the project civil engineer indicates that proposed development will include the construction of approximately 55 single-family residential lots with asphalt roadways, underground utilities and stormwater management facilities. This report is based upon proposed development as described above and may not be applicable if modified.

Site Soil and Geologic Conditions

According to the *Geologic Map of the Yacolt Quadrangle, Clark County, Washington* (USGS, SIM 2901, 2006), near-surface soils are expected to consist of upper-Pleistocene-aged, crudely stratified, moderately to well-sorted, weakly cemented outwash glacial basin fill consisting of poorly consolidated pebbly to cobbly gravel and sand (Qao).

The *Web Soil Survey* (United States Department of Agriculture, Natural Resource Conservation Service [USDA NRCS], 2021 Website) identifies surface soils primarily as Yacolt loam and Yacolt stony loam. Yacolt series soils are generally deep, granular gravels formed in volcanic ash mixed with glacial drift on terraces, well-drained and exhibit moderate permeability, low shear strength, and a slight erosion hazard based primarily upon slope grade.

Field Exploration and Soil Description

Subsurface exploration for infiltration testing conducted on June 18, 2021 consisted of nine test pit explorations (TP-1 through TP-9) to a maximum depth of approximately 11 feet below ground surface

(bgs). Results of subsurface exploration indicate that the site is generally covered by approximately 12 inches of topsoil and deleterious material at the locations observed.

Underlying the topsoil layer, silty/sandy soils were encountered in all subsurface explorations to depths ranging from 3 to 7 ½ feet bgs where they were underlain by well- to poorly-graded gravels. Representative soil samples were collected from infiltration test depths. Selected samples were submitted for laboratory analysis for USCS soil classification. Analytical laboratory test results are presented in Appendix A. Exploration locations are indicated on Figure 2. Subsurface exploration logs are presented in Appendix B. Soil descriptions and classification information are provided in Appendix C. A photo log is presented in Appendix D. Subsurface lithology may generally be described by soil types identified in the following text. Detailed field logs of the encountered materials are presented in Appendix B, *Exploration Logs*.

Soil Type 1 - Sandy SILT with Cobbles

Soil Type 1 was observed to primarily consist of brown, dry to moist, sandy SILT with cobbles. Soil Type 1 was encountered in TP-2, 3, and 5-7 at depths ranging from approximately 1 to 4 ½ feet bgs where it was underlain by Soil Type 3 in all observed locations.

Soil Type 2 - Silty SAND with Gravel and Cobbles

Soil Type 2 was observed to primarily consist of brown/tan, dry to moist, silty SAND with gravel and cobbles. Soil Type 2 was encountered in TP-1, 4, 8 and 9 at depths ranging from approximately 1 to 7 ½ feet bgs where it was underlain by Soil Type 3 in all observed locations.

Soil Type 3 - Well- to Poorly-Graded GRAVEL with Silt, Sand, Cobbles and Boulders

Soil Type 3 was observed to primarily consist of brown/grey, mottled, moist, well- to poorly-graded GRAVEL with silt, sand, cobbles, and trace boulders. Soil Type 3 was encountered in all test pit explorations at depths ranging from 3 to 7 ½ feet bgs and extended to depths ranging from 8 to 11 feet bgs where excavation encountered practical refusal.

Groundwater

Groundwater was not encountered within test pit explorations to the maximum depths explored on June 18, 2021. Review of Clark County Maps Online and nearby well logs obtained from the State of Washington Department of Ecology indicates that groundwater levels may vary considerably. Variations in ground water elevations likely reflect the screened interval depth of these wells, changes in ground surface elevation, and the presence of multiple aquifers and confining units.

Groundwater levels are also subject to seasonal variance and may rise during extended periods of increased precipitation. Perched groundwater may also be present in localized areas. Seeps and springs may become evident during site grading, primarily in areas cut below existing grade. Structures, roads, and drainage design should be planned accordingly. Piezometer installation and long-term monitoring, beyond the scope of this investigation, would be necessary to provide more detailed groundwater information.

Infiltration Analysis

To investigate the feasibility of subsurface disposal of stormwater, a field investigation consisting of nine test pit explorations and 18 encased, single-ring, falling head infiltration tests was conducted at the site on June 18, 2021 at depths ranging from approximately 3 to 6 feet bgs. Tests were performed by inserting standpipes into the soil at the depths noted in Table 1, filling the pipes with water, and measuring time relative to changes in hydraulic head following a presoak period. Using Darcy's Law for saturated flow in homogenous media, the coefficient of permeability (k) was then calculated.

Subsurface exploration was conducted with a track-mounted excavator. Results of in-situ infiltration testing are presented in Table 1. Infiltration rates have been reported without application of a factor of safety.

Summary of Results

Soils at the tested locations were observed and sampled where appropriate to adequately characterize the subsurface profile. Tested native soil may be classified as silty SAND and silty SAND with gravel (SM), well-graded GRAVEL with silt and sand (GW-GM), poorly-graded GRAVEL with sand (GP), and sandy SILT (ML).

Table 1: Infiltration Test Data (Coefficient of Permeability, k).

Infiltration Test Results							
Test Number	Location	Approximate Test Depth (feet bgs)	USCS Soil Type (* Indicates Visual Classification)	Redommeded USDA Soil Group Classification	Passing No. 200 Sieve (%)	Depth to Groundwater on 6/ 18/ 21 (feet bgs)	Infiltration Rate (Coefficient of Permeability, k) (inches/ hour)
IT-1.1	TP-1	3.0	Silty SAND with Gravel	D	14	Not Observed to 8 feet	12.7
IT-1.2		6.0	Well-Graded GRAVEL with Silt and Sand		9.4		<0.06
IT-2.1	TP-2	3.0	Sandy SILT*	C	—	Not Observed to 11 feet	0.7
IT-2.2		6.0	Poorly-Graded GRAVEL with Sand		1.7		1.5
IT-3.1	TP-3	3.0	Sandy SILT*	C	—	Not Observed to 8 feet	2.2
IT-3.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.5
IT-4.1	TP-4	3.0	Silty SAND	C	24.2	Not Observed to 8.5 feet	6.0
IT-4.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.5
IT-5.1	TP-5	3.0	Sandy SILT	C	65.7	Not Observed to 9 feet	0.7
IT-5.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.5
IT-6.1	TP-6	3.0	Sandy SILT*	C	—	Not Observed to 9 feet	0.6
IT-6.2		6.0	Poorly-Graded GRAVEL with Sand*		—		18.7
IT-7.1	TP-7	3.0	Sandy SILT*	C	—	Not Observed to 8 feet	2.2
IT-7.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.0
IT-8.1	TP-8	3.0	Silty SAND*	C	—	Not Observed to 8 feet	18.7
IT-8.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.0
IT-9.1	TP-9	3.0	Silty SAND*	C	—	Not Observed to 8 feet	6.7
IT-9.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.6

** USDA and WWHM classifications are based upon subsurface investigation and infiltration testing conducted at the locations shown. Infiltration rates are shown without application of a factor of safety.

Recommendations

Columbia West provides the following recommendations for design and construction of the proposed stormwater management system:

- The reported infiltration rates reflect approximate raw observed data, without application of a factor of safety. An adequate factor of safety should be applied to the observed infiltration rates prior to use in design calculations.
- An emergency overflow to an approved discharge location should be installed.
- If infiltration is considered, excavation and preparation of stormwater disposal facilities should be closely monitored by Columbia West.
- Infiltration facilities should be protected from erosion, especially during construction. Improperly designed or constructed systems may become fouled or plugged with mud or micaceous sediment.
- Infiltration rates should be verified by additional testing during construction when subgrade soils are exposed. Subgrade soils should be observed by Columbia West to verify soil index properties pertaining to infiltration are similar to those at the tested locations.
- As described previously, groundwater is often subject to seasonal variation and may rise significantly during wet precipitation months.
- Site soil conditions and localized infiltration capability may be highly variable. Limited one-day infiltration testing may not be an accurate predictor of long-term, post-developed system performance for sites with complex and highly variable soils. It should be understood that the systems may require additional infiltration capacity if future conditions indicate the systems are not functioning according to original tested and designed parameters.

Conclusion and Limitations

This infiltration testing results report was prepared in accordance with accepted standard conventional principles and practices of geotechnical engineering. This report pertains only to material tested and observed and is based upon proposed site development as described in this report. The information, and test results in this report are intended for use during the design phase of the project. This report is not an environmental assessment and should not be construed as a representative warranty of subsurface site conditions. Results and observations of this investigation are directly applicable and specifically accurate only for the exact tested locations on the date of the tests. If infiltration is proposed at areas or depths other than the locations tested, the results of this investigation may not be applicable for design. The discovery of adverse environmental conditions, or subsurface soils that deviate significantly from those described in this report, should immediately prompt further investigation. The above statements are in lieu of all other statements expressed or implied.

This report was prepared solely for the client and is not to be reproduced without prior authorization from Columbia West. Columbia West is not responsible for independent conclusions or recommendations made by others based upon information presented in this report. Additional limitations and important information about this report are provided in Appendix E. This information should be carefully read and understood by the client and civil/site plan engineer.

Columbia West appreciates the opportunity to provide geotechnical services. Please call me at 360-823-2900 if you have any questions or need additional information.

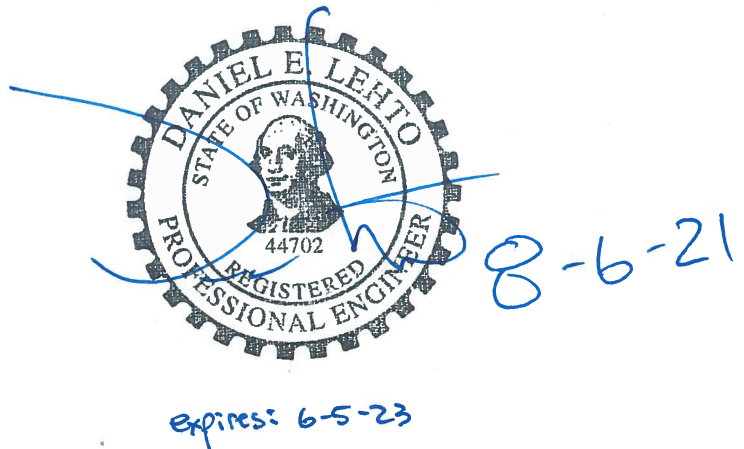
Sincerely,

COLUMBIA WEST ENGINEERING, Inc.



Daniel E. Lehto, PE, GE
Principal

Attachments: Figure 1- Site Location Map
Figure 2- Exploration Location Map
Appendices A through E



References

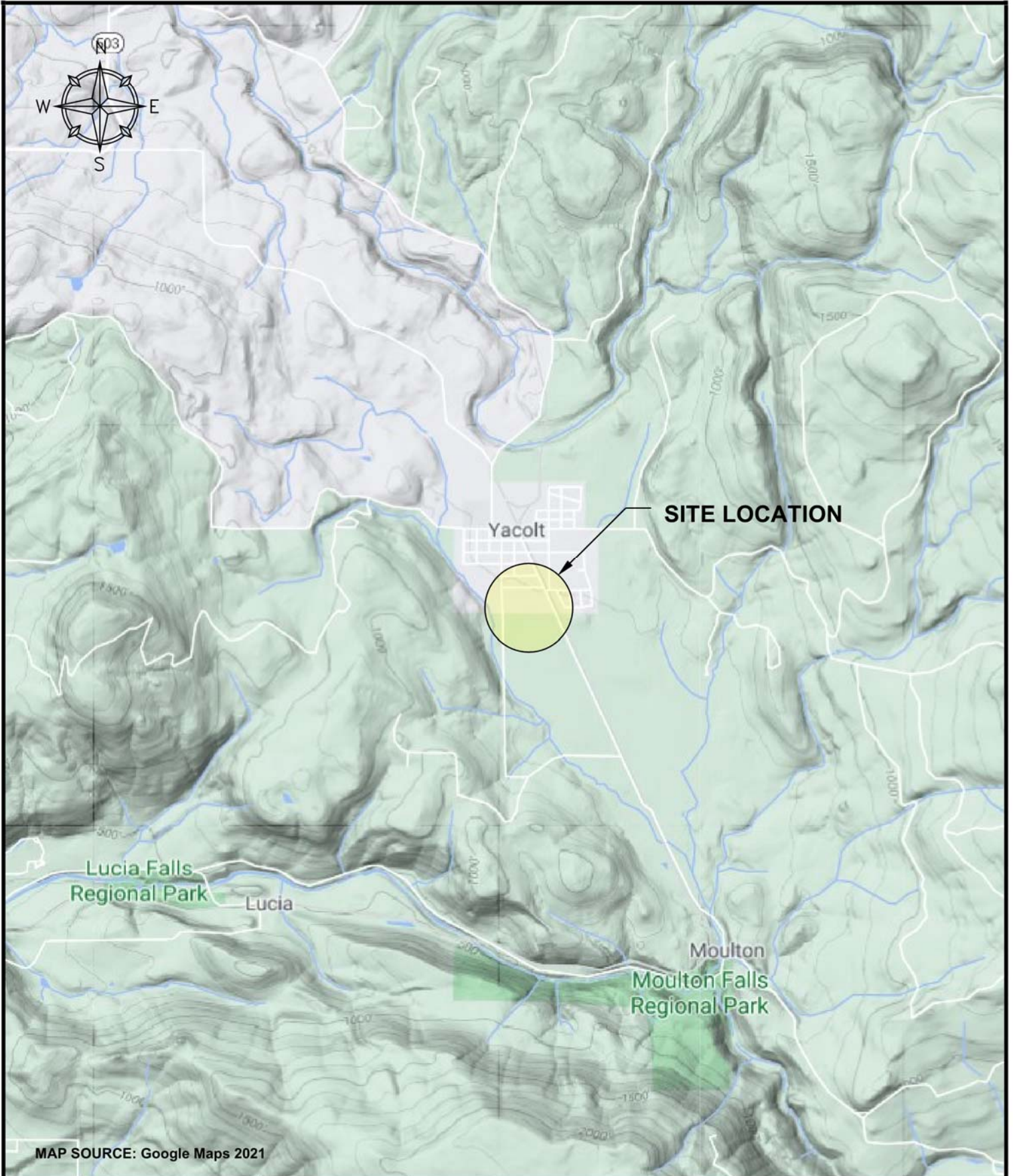
Evarts, R.C., *Geologic Map of the Yacolt Quadrangle, Clark County, Washington* (SIM-2901, 2006).

Clark County Maps Online, website (<http://gis.clark.wa.gov/ccgis/mol/property.htm>).

Web Soil Survey, Natural Resources Conservation Service, United States Department of Agriculture 2021 website (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.)

State of Washington Department of Ecology, *Washington State Well Log Viewer* (apps.exy.wa.gov/wellog/).

FIGURES

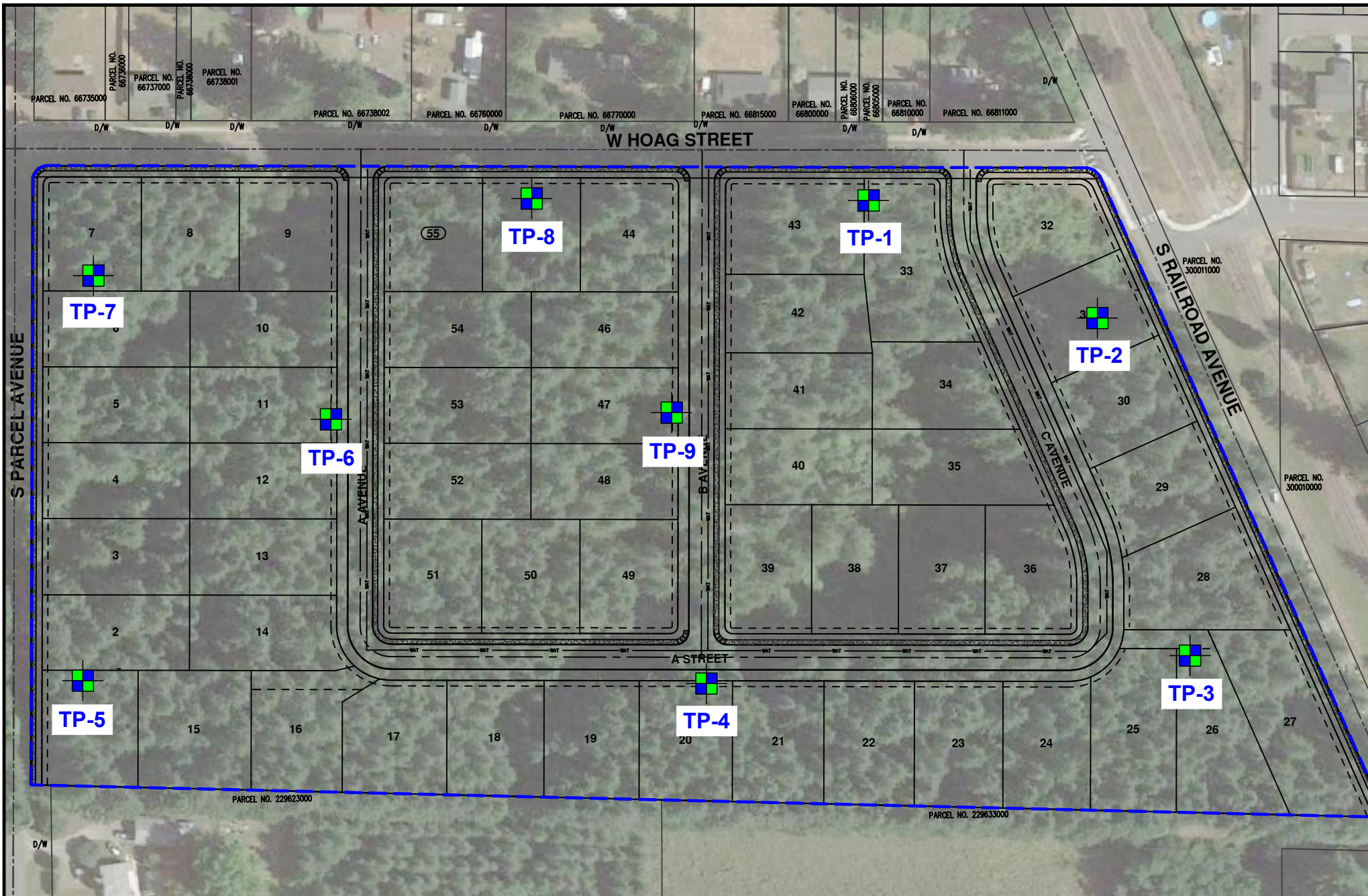


Geotechnical ■ Environmental ■ Special Inspections
Columbia West
 Engineering, Inc.

Job No: 21126
 Date: 7/21/21
 Drawn: CWS
 Checked: DEL

SITE LOCATION MAP
 NE RAILROAD AVENUE SUBDIVISION
 YACOLT, WASHINGTON

FIGURE
 1



+
 TEST PIT LOCATION

+
 INFILTRATION TEST LOCATION

 SITE BOUNDARY

Infiltration Test Results

Test Number	Location	Approximate Test Depth (feet bgs)	USCS Soil Type [* Indicates Visual Classification]	Redommeded USDA Soil Group Classification	Passing No. 200 Sieve (%)	Depth to Groundwater on 6/18/21 (feet bgs)	Infiltration Rate (Coefficient of Permeability, k) (inches/hour)
IT-1.1	TP-1	3.0	Silty SAND with Gravel	D	14	Not Observed to 8 feet	12.7
IT-1.2		6.0	Well-Graded GRAVEL with Silt and Sand		9.4		<0.06
IT-2.1	TP-2	3.0	Sandy SILT*	C	—	Not Observed to 11 feet	0.7
IT-2.2		6.0	Poorly-Graded GRAVEL with Sand		1.7		1.5
IT-3.1	TP-3	3.0	Sandy SILT*		—	Not Observed to 8 feet	2.2
IT-3.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.5
IT-4.1	TP-4	3.0	Silty SAND		24.2	Not Observed to 8.5 feet	6.0
IT-4.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.5
IT-5.1	TP-5	3.0	Sandy SILT		65.7	Not Observed to 9 feet	0.7
IT-5.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.5
IT-6.1	TP-6	3.0	Sandy SILT*		—	Not Observed to 9 feet	0.6
IT-6.2		6.0	Poorly-Graded GRAVEL with Sand*		—		18.7
IT-7.1	TP-7	3.0	Sandy SILT*		—	Not Observed to 8 feet	2.2
IT-7.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.0
IT-8.1	TP-8	3.0	Silty SAND*		—	Not Observed to 8 feet	18.7
IT-8.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.0
IT-9.1	TP-9	3.0	Silty SAND*		—	Not Observed to 8 feet	6.7
IT-9.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.6

**USDA and WWHM classifications are based upon subsurface investigation and infiltration testing conducted at the locations shown. Infiltration rates are shown without application of a factor of safety.



Project: 21126
Date: 7/30/21
Drawn: CWS
Checked: DEL

INFILTRATION TEST DATA NE RAILROAD AVE SUBDIVISION

NOTES:
1. SITE LOCATION: SOUTH OF 112 W HOAG ST, YACOLT, WASHINGTON.
2. SITE CONSISTS OF TAX PARCEL 64522000 TOTALING APPROXIMATELY 20 ACRES.
3. SITE PLAN PROVIDED BY AKS ENGINEERING AND FORESTRY.
4. EXPLORATION LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.
5. TEST PIT EXPLORATIONS BACKFILLED LOOSELY WITH ONSITE SOIL ON 6/18/21.

FIGURE

194

APPENDIX A
LABORATORY TEST RESULTS

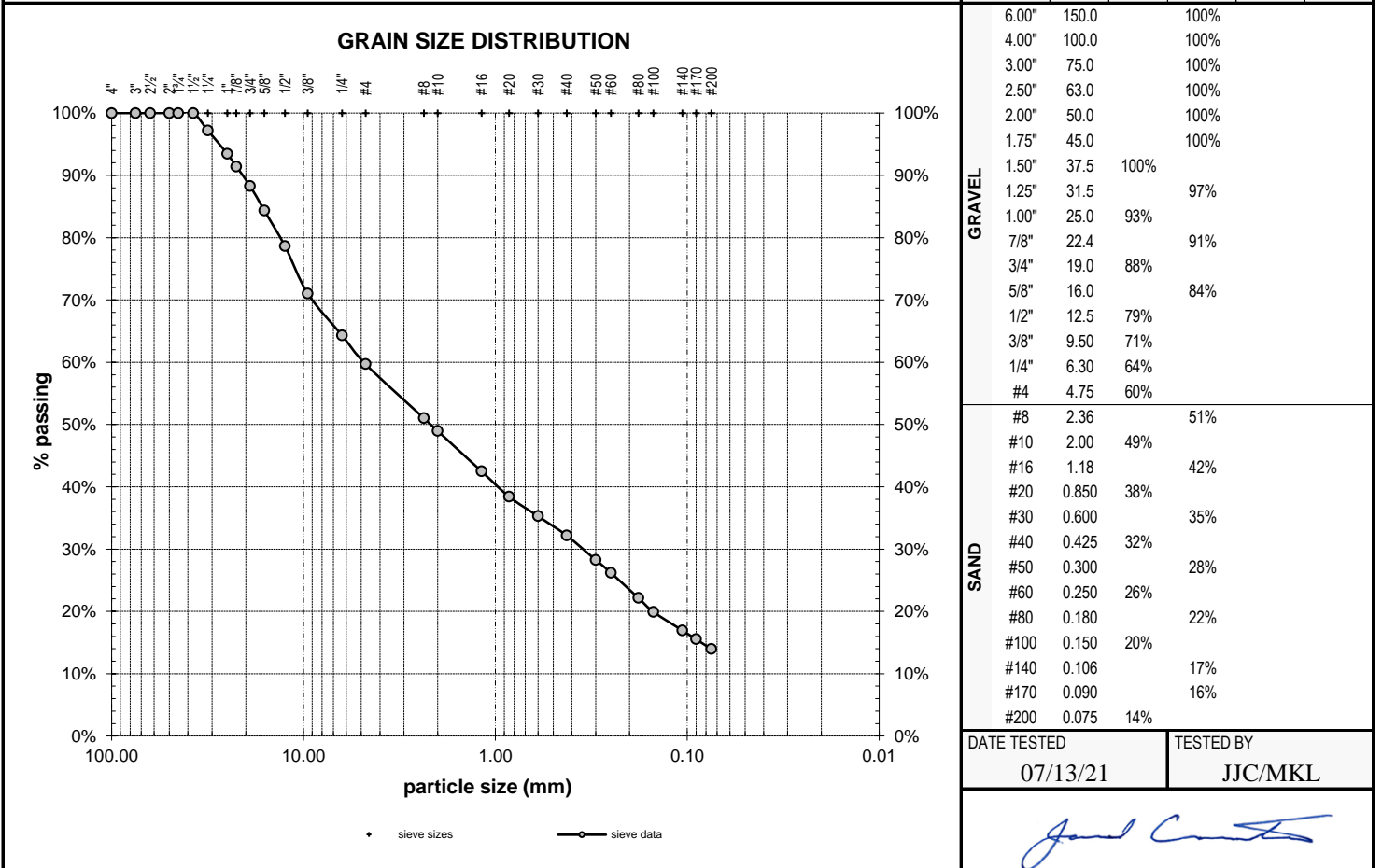
PARTICLE-SIZE ANALYSIS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0529
		REPORT DATE 07/19/21	FIELD ID TP1.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA		
MATERIAL SAMPLED Silty SAND with Gravel	MATERIAL SOURCE Test Pit, TP-01 depth = 3 feet	USCS SOIL TYPE SM, Silty Sand with Gravel
SPECIFICATIONS none		AASHTO CLASSIFICATION A-2-7(0)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA initial dry mass (g) = 1024.0 as-received moisture content = 30.7% liquid limit = 54 plastic limit = 42 plasticity index = 12 fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = 0.351 mm $D_{(60)}$ = 4.842 mm NOTES: Entire sample used for analysis; did not meet minimum size required.	SIEVE DATA % gravel = 40.3% % sand = 45.7% % silt and clay = 14.0%
---	--



DATE TESTED 07/13/21	TESTED BY JJC/MKL

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ATTERBERG LIMITS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0529
		REPORT DATE 07/19/21	FIELD ID TP1.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

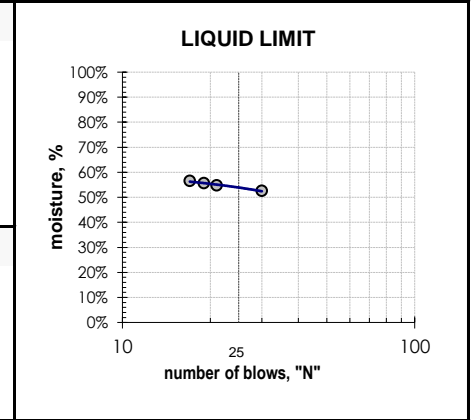
MATERIAL DATA

MATERIAL SAMPLED Silty SAND with Gravel	MATERIAL SOURCE Test Pit, TP-01 depth = 3 feet	USCS SOIL TYPE SM, Silty Sand with Gravel
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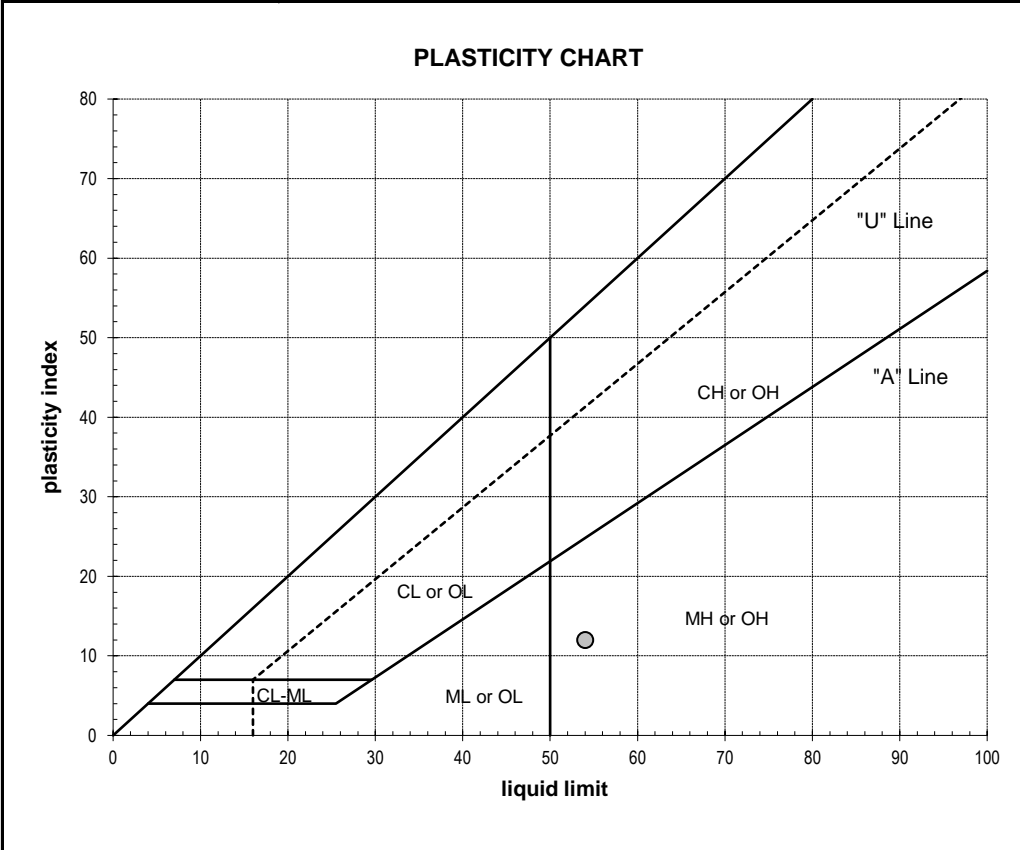
LABORATORY TEST DATA

LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
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ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION			
	①	②	③	④
liquid limit = 54	wet soil + pan weight, g = 34.54	33.90	31.91	34.35
plastic limit = 42	dry soil + pan weight, g = 29.83	29.28	27.97	29.55
plasticity index = 12	pan weight, g = 20.86	20.85	20.89	21.05
	N (blows) = 30	21	19	17
	moisture, % = 52.5 %	54.8 %	55.7 %	56.5 %



SHRINKAGE	PLASTIC LIMIT DETERMINATION			
	①	②	③	④
shrinkage limit = n/a	wet soil + pan weight, g = 27.04	28.41		
shrinkage ratio = n/a	dry soil + pan weight, g = 25.23	26.14		
	pan weight, g = 20.94	20.76		
	moisture, % = 42.2 %	42.2 %		



ADDITIONAL DATA

% gravel =	40.3%
% sand =	45.7%
% silt and clay =	14.0%
% silt =	n/a
% clay =	n/a
moisture content =	30.7%

DATE TESTED 07/13/21	TESTED BY BTT
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Janet Curtis

PARTICLE-SIZE ANALYSIS REPORT

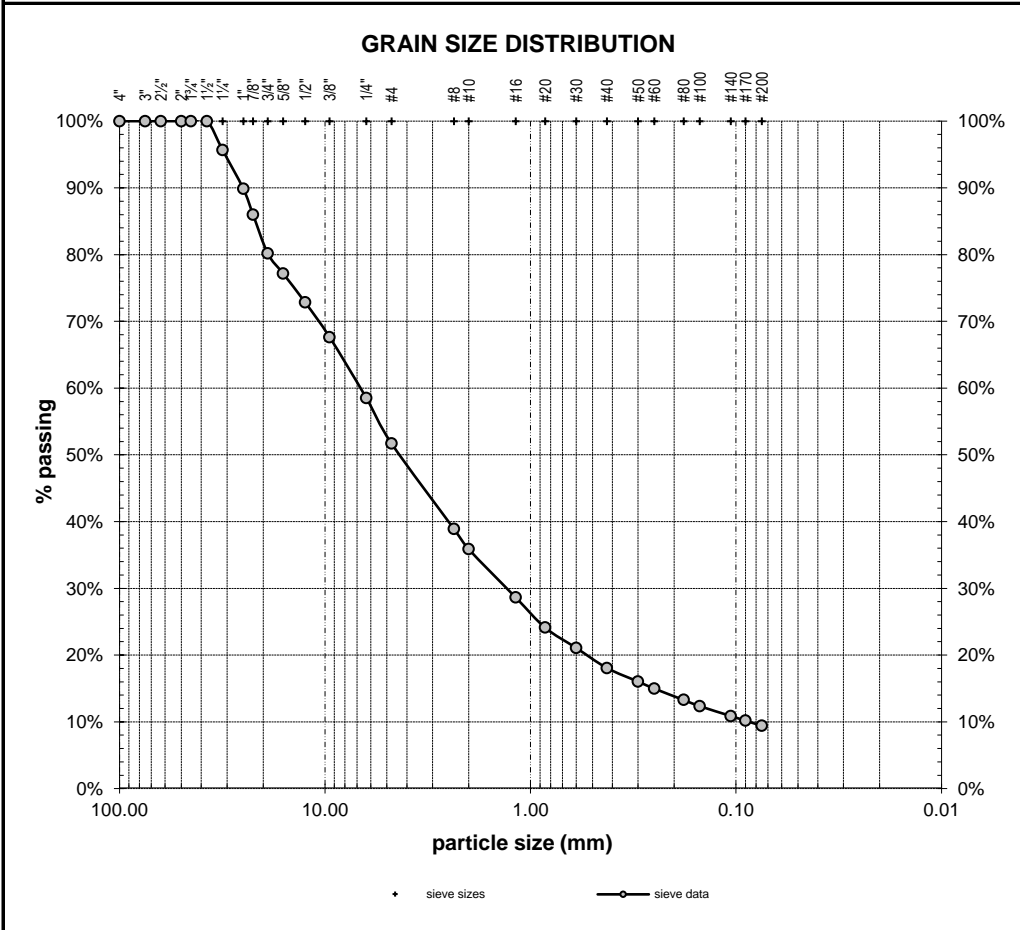
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		REPORT DATE 07/19/21	FIELD ID TP1.2
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA		
MATERIAL SAMPLED Well graded GRAVEL with Silt and Sand	MATERIAL SOURCE Test Pit, TP-01 depth = 6 feet	USCS SOIL TYPE GW-GM, Well-graded Gravel with Silt and Sand
SPECIFICATIONS none		AASHTO CLASSIFICATION A-1-a(0)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA	
initial dry mass (g) = 2153.5 as-received moisture content = 25.4% liquid limit = - plastic limit = - plasticity index = NP fineness modulus = n/a	coefficient of curvature, C_c = 2.93 coefficient of uniformity, C_u = 77.96 effective size, $D_{(10)}$ = 0.086 mm $D_{(30)}$ = 1.305 mm $D_{(60)}$ = 6.733 mm
NOTES: Entire sample used for analysis; did not meet minimum size required.	

SIEVE DATA			
		% gravel = 48.3%	
		% sand = 42.3%	
		% silt and clay = 9.4%	
		PERCENT PASSING	
SIEVE SIZE		SIEVE	SPECS
US	mm	act.	interp.
		max	min



GRAVEL	6.00"	150.0	100%
	4.00"	100.0	100%
	3.00"	75.0	100%
	2.50"	63.0	100%
	2.00"	50.0	100%
	1.75"	45.0	100%
	1.50"	37.5	100%
	1.25"	31.5	96%
	1.00"	25.0	90%
	7/8"	22.4	86%
SAND	3/4"	19.0	80%
	5/8"	16.0	77%
	1/2"	12.5	73%
	3/8"	9.50	68%
	1/4"	6.30	59%
	#4	4.75	52%
	#8	2.36	39%
	#10	2.00	36%
	#16	1.18	29%
	#20	0.850	24%
#30	0.600	21%	
#40	0.425	18%	
#50	0.300	16%	
#60	0.250	15%	
#80	0.180	13%	
#100	0.150	12%	
#140	0.106	11%	
#170	0.090	10%	
#200	0.075	9%	

DATE TESTED 07/13/21	TESTED BY JJC/MKL
--------------------------------	-----------------------------

James J. C...

PARTICLE-SIZE ANALYSIS REPORT

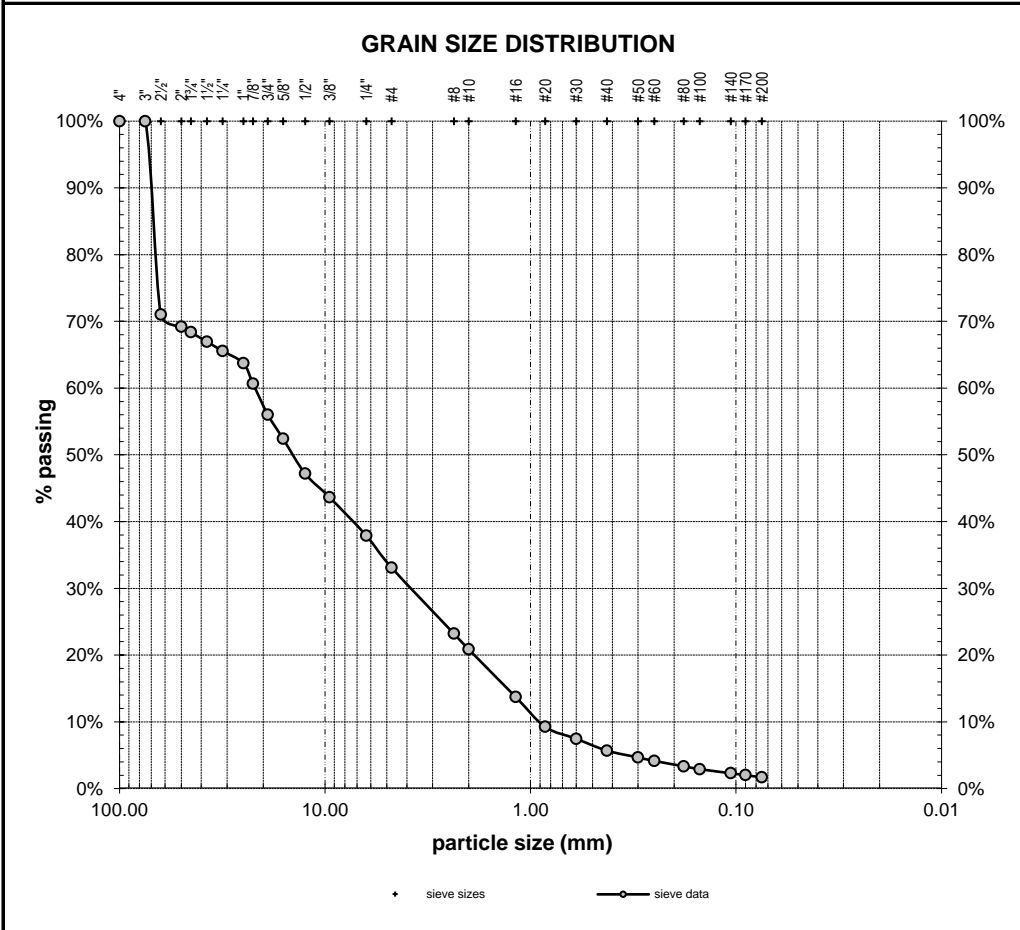
PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0531
		REPORT DATE 07/19/21	FIELD ID TP2.2
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA		
MATERIAL SAMPLED Poorly graded GRAVEL with Sand	MATERIAL SOURCE Test Pit, TP-02 depth = 6 feet	USCS SOIL TYPE GP, Poorly graded gravel with sand
SPECIFICATIONS none		AASHTO CLASSIFICATION A-1-a(0)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA	
initial dry mass (g) = 2021.2 as-received moisture content = 12.8% liquid limit = - plastic limit = - plasticity index = NP fineness modulus = n/a	coefficient of curvature, C_c = 0.74 coefficient of uniformity, C_u = 24.38 effective size, $D_{(10)}$ = 0.898 mm $D_{(30)}$ = 3.813 mm $D_{(60)}$ = 21.888 mm
NOTES: Entire sample used for analysis; did not meet minimum size required.	

SIEVE DATA					
			% gravel = 66.9%		
			% sand = 31.4%		
			% silt and clay = 1.7%		
SIEVE SIZE	PERCENT PASSING		SPECS		
	US	mm	act.	interp.	max min



GRAVEL	6.00"	150.0	100%
	4.00"	100.0	100%
	3.00"	75.0	100%
	2.50"	63.0	71%
	2.00"	50.0	69%
	1.75"	45.0	68%
	1.50"	37.5	67%
	1.25"	31.5	66%
	1.00"	25.0	64%
	7/8"	22.4	61%
SAND	3/4"	19.0	56%
	5/8"	16.0	52%
	1/2"	12.5	47%
	3/8"	9.50	44%
	1/4"	6.30	38%
	#4	4.75	33%
	#8	2.36	23%
	#10	2.00	21%
	#16	1.18	14%
	#20	0.850	9%
#30	0.600	7%	
#40	0.425	6%	
#50	0.300	5%	
#60	0.250	4%	
#80	0.180	3%	
#100	0.150	3%	
#140	0.106	2%	
#170	0.090	2%	
#200	0.075	2%	

DATE TESTED 07/13/21	TESTED BY JJC/MKL
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James J. C. [Signature]

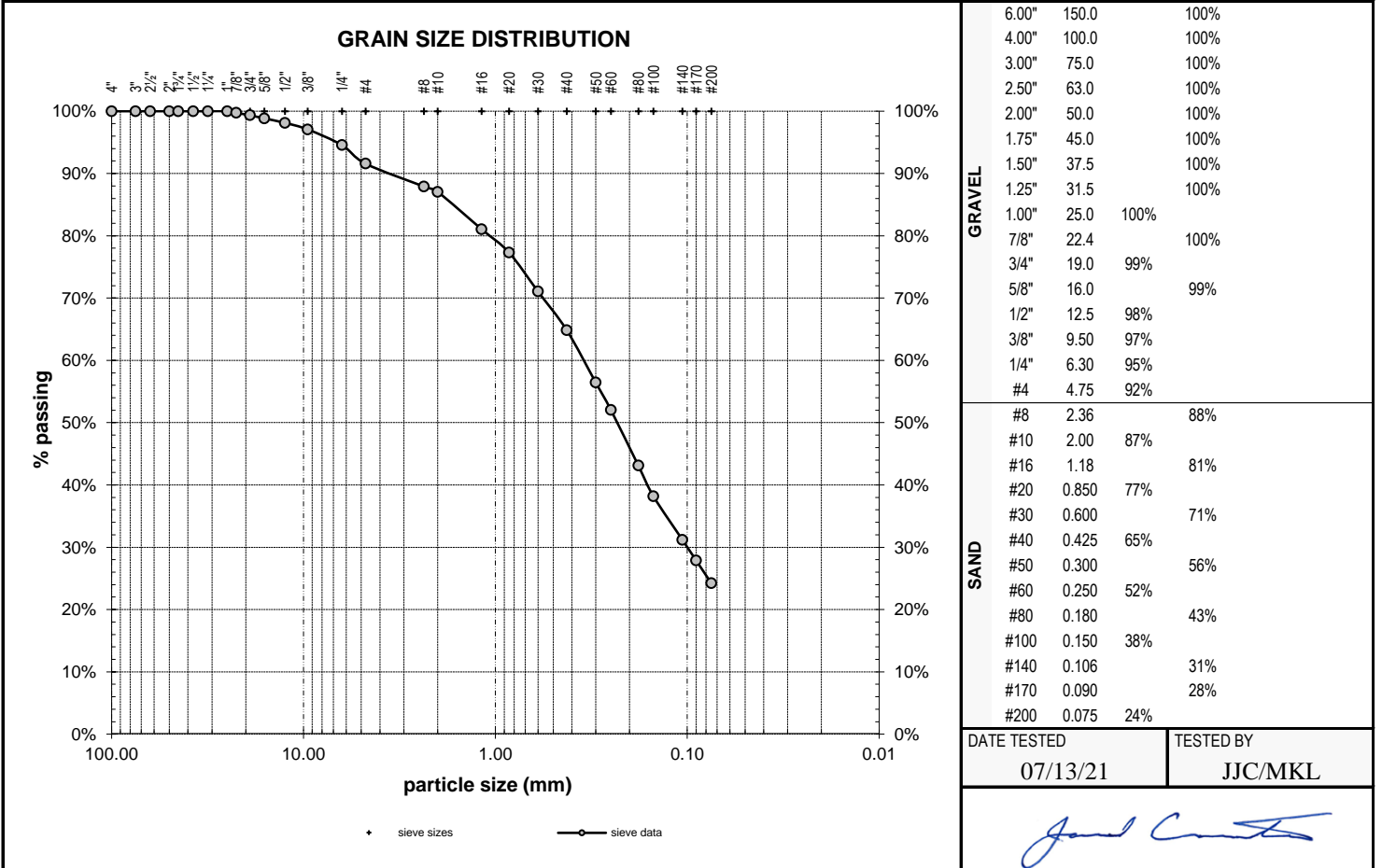
PARTICLE-SIZE ANALYSIS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0532
		REPORT DATE 07/19/21	FIELD ID TP4.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA	
MATERIAL SAMPLED Silty SAND	MATERIAL SOURCE Test Pit, TP-04 depth = 3 feet
SPECIFICATIONS none	USCS SOIL TYPE SM, Silty Sand
	AASHTO CLASSIFICATION A-2-4(0)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA initial dry mass (g) = 1251.5 as-received moisture content = 45.3% liquid limit = - plastic limit = - plasticity index = NP fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = 0.100 mm $D_{(60)}$ = 0.348 mm NOTES: Entire sample used for analysis; did not meet minimum size required.	SIEVE DATA % gravel = 8.4% % sand = 67.3% % silt and clay = 24.2% <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">SIEVE SIZE</th> <th colspan="2">PERCENT PASSING</th> </tr> <tr> <th>act.</th> <th>interp.</th> </tr> </thead> <tbody> <tr> <td>US</td> <td></td> <td></td> </tr> <tr> <td>mm</td> <td></td> <td></td> </tr> <tr> <td></td> <td>max</td> <td>min</td> </tr> </tbody> </table>	SIEVE SIZE	PERCENT PASSING		act.	interp.	US			mm				max	min
SIEVE SIZE	PERCENT PASSING														
	act.	interp.													
US															
mm															
	max	min													



DATE TESTED 07/13/21	TESTED BY JJC/MKL

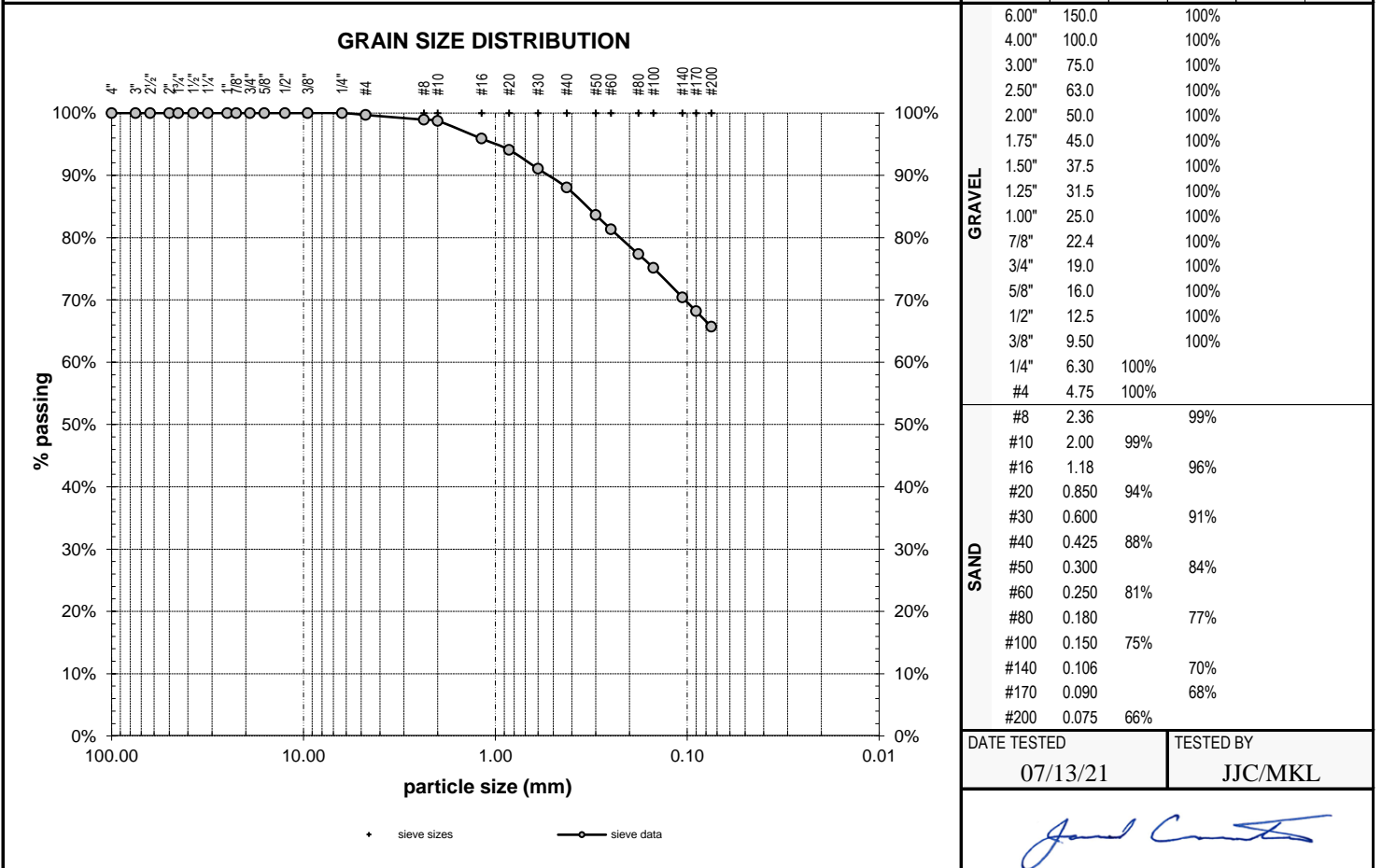
PARTICLE-SIZE ANALYSIS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0533
		REPORT DATE 07/19/21	FIELD ID TP5.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA	
MATERIAL SAMPLED Sandy SILT	MATERIAL SOURCE Test Pit, TP-05 depth = 3 feet
SPECIFICATIONS none	USCS SOIL TYPE ML, Sandy Silt
	AASHTO CLASSIFICATION A-7-5(9)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, moist prep, hand washed, 12" single sieve-set	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA initial dry mass (g) = 142.7 as-received moisture content = 40.3% liquid limit = 47 plastic limit = 34 plasticity index = 13 fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = n/a $D_{(60)}$ = n/a	SIEVE DATA % gravel = 0.3% % sand = 34.0% % silt and clay = 65.7%
---	---



DATE TESTED 07/13/21	TESTED BY JJC/MKL

ATTERBERG LIMITS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0533
		REPORT DATE 07/19/21	FIELD ID TP5.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

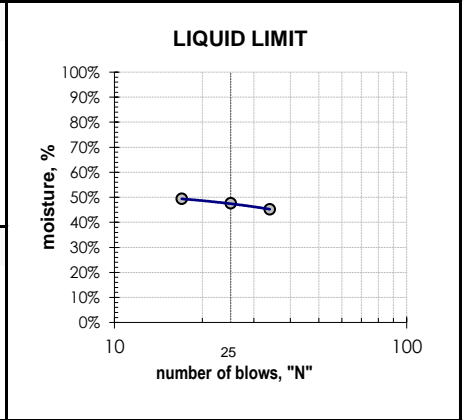
MATERIAL DATA

MATERIAL SAMPLED Sandy SILT	MATERIAL SOURCE Test Pit, TP-05 depth = 3 feet	USCS SOIL TYPE ML, Sandy Silt
--------------------------------	--	----------------------------------

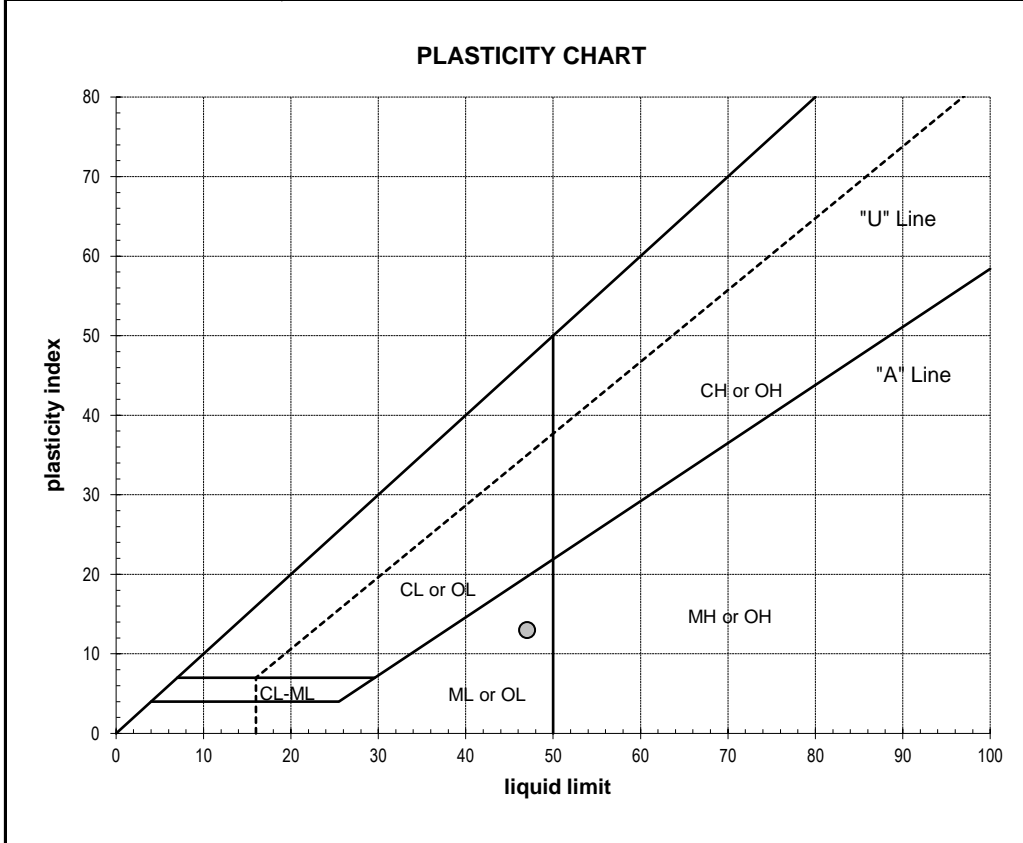
LABORATORY TEST DATA

LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
---	------------------------------

ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION			
	1	2	3	4
liquid limit = 47	wet soil + pan weight, g = 31.60	31.62	32.82	
plastic limit = 34	dry soil + pan weight, g = 28.24	28.07	28.89	
plasticity index = 13	pan weight, g = 20.80	20.61	20.92	
	N (blows) = 34	25	17	
	moisture, % = 45.2 %	47.6 %	49.3 %	



SHRINKAGE	PLASTIC LIMIT DETERMINATION			
	1	2	3	4
shrinkage limit = n/a	wet soil + pan weight, g = 27.77	28.13		
shrinkage ratio = n/a	dry soil + pan weight, g = 25.99	26.31		
	pan weight, g = 20.79	20.91		
	moisture, % = 34.2 %	33.7 %		



ADDITIONAL DATA


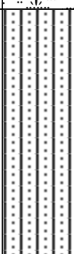

% gravel =	0.3%
% sand =	34.0%
% silt and clay =	65.7%
% silt =	n/a
% clay =	n/a
moisture content =	40.3%

DATE TESTED 07/12/21	TESTED BY JJC
-------------------------	------------------

James Curtis


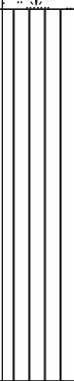

APPENDIX B EXPLORATION LOGS

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision			CLIENT AHO Construction, Inc.			PROJECT NO. 21126		TEST PIT NO. TP-1				
PROJECT LOCATION Yacolt, Washington			CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS		DATE 6/18/21					
TEST PIT LOCATION See Figure 2			APPROX. SURFACE ELEVATION 692 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 0800		FINISH TIME 1015					
Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS		Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	TP-1.1					Approximately 10-12 inches of topsoil and grass.		30.7	14	54	12	IT-1.1 D=3' bgs 12.7 in/hr
		Yacolt Stony Loam	A-2-7(0)	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 2].						
5					GW-GM 	Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].						
	TP-1.2		A-1-a(0)					25.4	9.4	NP	NP	IT-1.2 D=6' bgs <0.06 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.						


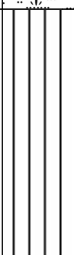

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-2
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 692 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 0845	FINISH TIME 1117

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Stony Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1.					IT-2.1 D=3' bgs 0.7 in/hr
5	TP-2.2			GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].	12.8	1.7	NP	NP	IT-2.2 D=6' bgs 1.5 in/hr
10						Bottom of test pit at approximately 11 feet bgs. Groundwater not encountered on 6/18/21.					


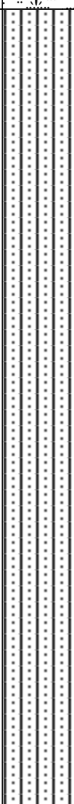

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-3
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 692 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 0930	FINISH TIME 1245

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Stony Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					
5			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-3.1 D=3' bgs 2.2 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					IT-3.2 D=6' bgs 1.5 in/hr


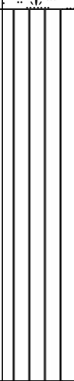
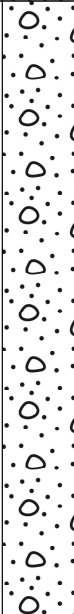
TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-4
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 690 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1035	FINISH TIME 1400

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
	TP-4.1	Yacolt Loam	A-2-4(0)	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 2].	45.3	24.2	NP	NP	IT-4.1 D=3' bgs 6.0 in/hr
5			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-4.2 D=6' bgs 0.5 in/hr
10							Bottom of test pit at approximately 8.5 feet bgs. Groundwater not encountered on 6/18/21.				


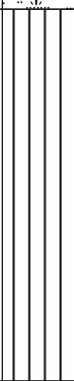
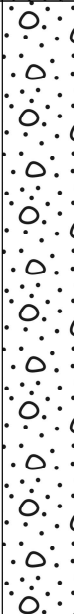
TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-5
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 694 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1140	FINISH TIME 1502

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	TP-5.1					Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-7-5(9)	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].	40.3	65.7	47	13	IT-5.1 D=3' bgs 0.7 in/hr
5				A-1	GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].				
10						Bottom of test pit at approximately 9 feet bgs. Groundwater not encountered on 6/18/21.					


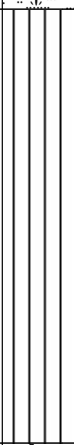

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-6
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 694 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1300	FINISH TIME 1617

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					IT-6.1 D=3' bgs 0.6 in/hr
5			A-1	GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-6.2 D=6' bgs 18.7 in/hr
10						Bottom of test pit at approximately 9 feet bgs. Groundwater not encountered on 6/18/21.					

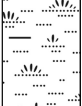
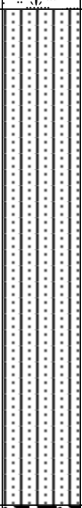
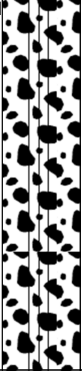
TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-7
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 694 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1337	FINISH TIME 1515

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					IT-7.1 D=3' bgs 2.2 in/hr
5			A-1	GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-7.2 D=6' bgs 1.0 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					




TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-8
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 696 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1420	FINISH TIME 1630

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-2	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 1].					IT-8.1 D=3' bgs 18.7 in/hr
5			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-8.2 D=6' bgs 1.0 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-9
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 690 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1532	FINISH TIME 1732

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
5		Yacolt Loam	A-2	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 2].					IT-9.1 D=3' bgs 6.7 in/hr
			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-9.2 D=6' bgs 0.6 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					

APPENDIX C
SOIL CLASSIFICATION INFORMATION

SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
Fine	19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
Fine	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	2	less than 0.25
Soft	2 to 4	0.25 to 0.50
Medium Stiff	4 to 8	0.50 to 1.0
Stiff	8 to 15	1.0 to 2.0
Very Stiff	15 to 30	2.0 to 4.0
Hard	30 to 60	greater than 4.0
Very Hard	greater than 60	-

Relative Density for Granular Soil

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	more than 50

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
	A-1	A-3	A-2	A-4	A-5	A-6	A-7
<u>Sieve analysis, percent passing:</u>							
2.00 mm (No. 10)	-	-	-	-	-	-	-
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

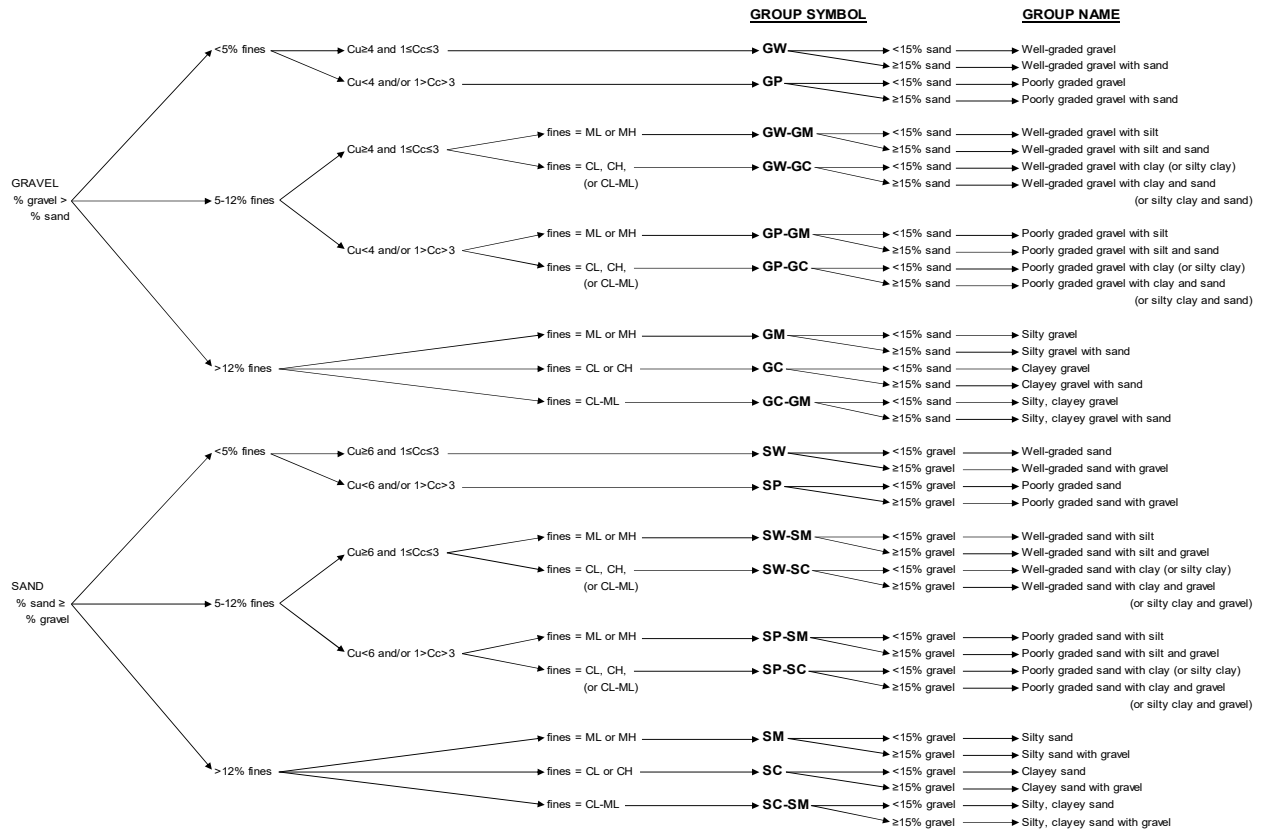
TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing 0.075 mm)							Silt-Clay Materials (More than 35 Percent Passing 0.075 mm)			
	A-1		A-2					A-7			
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5, A-7-6
<u>Sieve analysis, percent passing:</u>											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

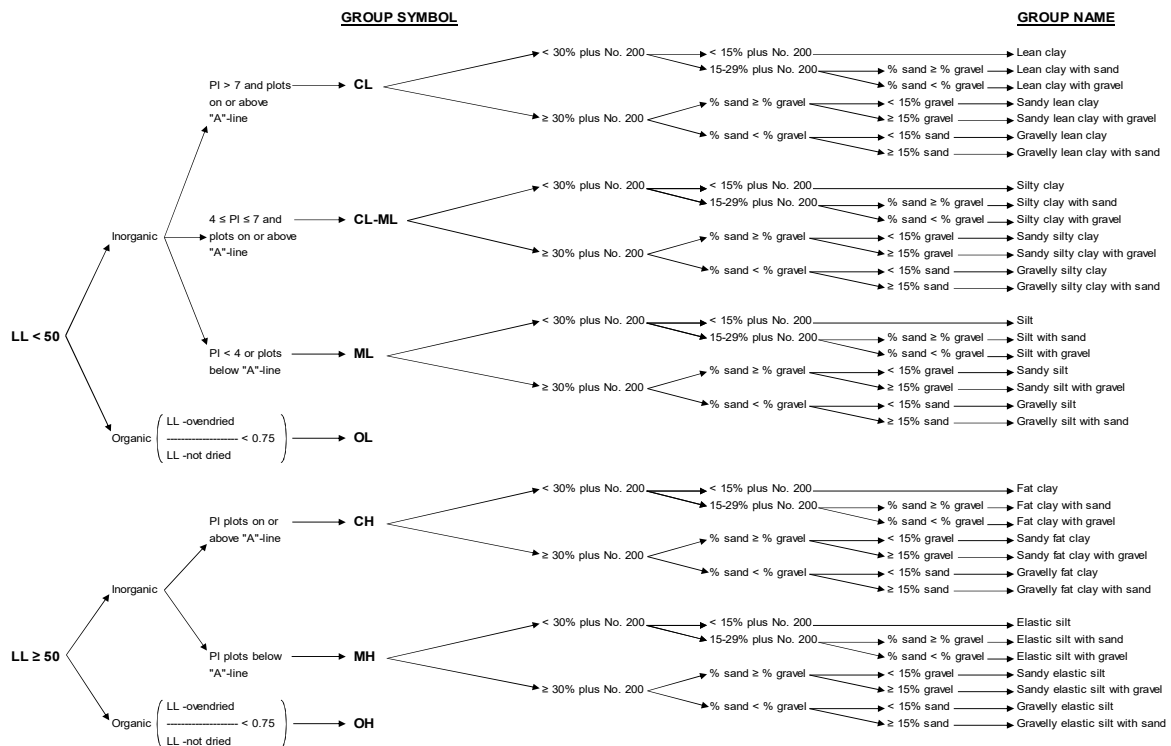
Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

USCS SOIL CLASSIFICATION SYSTEM



Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

**APPENDIX D
PHOTO LOG**

NE RAILROAD AVENUE SUBDIVISION



Conducting Test Pits, TP-6



Typical Excavation Spoils Observed, TP-3

NE RAILROAD AVENUE SUBDIVISION



Typical Soil Profile Observed, TP-1

NE RAILROAD AVENUE SUBDIVISION



Conducting Infiltration Testing, TP-5

APPENDIX E
REPORT LIMITATIONS AND IMPORTANT INFORMATION

Date: August 6, 2021
Project: NE Railroad Avenue Subdivision
Yacolt, Washington

Geotechnical and Environmental Report Limitations and Important Information

Report Purpose, Use, and Standard of Care

This report has been prepared in accordance with standard fundamental principles and practices of geotechnical engineering and/or environmental consulting, and in a manner consistent with the level of care and skill typical of currently practicing local engineers and consultants. This report has been prepared to meet the specific needs of specific individuals for the indicated site. It may not be adequate for use by other consultants, contractors, or engineers, or if change in project ownership has occurred. It should not be used for any other reason than its stated purpose without prior consultation with Columbia West Engineering, Inc. (Columbia West). It is a unique report and not applicable for any other site or project. If site conditions are altered, or if modifications to the project description or proposed plans are made after the date of this report, it may not be valid. Columbia West cannot accept responsibility for use of this report by other individuals for unauthorized purposes, or if problems occur resulting from changes in site conditions for which Columbia West was not aware or informed.

Report Conclusions and Preliminary Nature

This geotechnical or environmental report should be considered preliminary and summary in nature. The recommendations contained herein have been established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. The exploration and associated laboratory analysis of collected representative samples identifies soil conditions at specific discreet locations. It is assumed that these conditions are indicative of actual conditions throughout the subject property. However, soil conditions may differ between tested locations at different seasonal times of the year, either by natural causes or human activity. Distinction between soil types may be more abrupt or gradual than indicated on the soil logs. This report is not intended to stand alone without understanding of concomitant instructions, correspondence, communication, or potential supplemental reports that may have been provided to the client.

Because this report is based upon observations obtained at the time of exploration, its adequacy may be compromised with time. This is particularly relevant in the case of natural disasters, earthquakes, floods, or other significant events. Report conclusions or interpretations may also be subject to revision if significant development or other manmade impacts occur within or in proximity to the subject property. Groundwater conditions, if presented in this report, reflect observed conditions at the time of investigation. These conditions may change annually, seasonally or as a result of adjacent development.

Additional Investigation and Construction QA/QC

Columbia West should be consulted prior to construction to assess whether additional investigation above and beyond that presented in this report is necessary. Even slight variations in soil or site conditions may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions do not differ from the interpreted conditions utilized for preparation of this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Actual subsurface conditions are more readily observed and discerned during the earthwork phase of construction when soils are exposed. Columbia West cannot accept responsibility for deviations from recommendations described in this report or future performance of structural facilities if another consultant is retained during the construction phase or Columbia West is not engaged to provide construction observation to the full extent recommended.

Collected Samples

Uncontaminated samples of soil or rock collected in connection with this report will be retained for thirty days. Retention of such samples beyond thirty days will occur only at client's request and in return for payment of storage charges incurred. All contaminated or environmentally impacted materials or samples are the sole property of the client. Client maintains responsibility for proper disposal.

Report Contents

This geotechnical or environmental report should not be copied or duplicated unless in full, and even then only under prior written consent by Columbia West, as indicated in further detail in the following text section entitled *Report Ownership*. The recommendations, interpretations, and suggestions presented in this report are only understandable in context of reference to the whole report. Under no circumstances should the soil boring or test pit excavation logs, monitor well logs, or laboratory analytical reports be separated from the remainder of the report. The logs or reports should not be redrawn or summarized by other entities for inclusion in architectural or civil drawings, or other relevant applications.

Report Limitations for Contractors

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Consultant Responsibility

Geotechnical and environmental engineering and consulting is much less exact than other scientific or engineering disciplines, and relies heavily upon experience, judgment, interpretation, and opinion often based upon media (soils) that are variable, anisotropic, and non-homogenous. This often results in unrealistic expectations, unwarranted claims, and uninformed disputes against a geotechnical or environmental consultant. To reduce potential for these problems and assist relevant parties in better understanding of risk, liability, and responsibility, geotechnical and environmental reports often provide definitive statements or clauses defining and outlining consultant responsibility. The client is encouraged to read these statements carefully and request additional information from Columbia West if necessary.

10. Preliminary Stormwater Design Report TIR ~~(Included Separately)~~

Railroad Avenue Subdivision

Preliminary Stormwater Technical Information Report

Date:	December 2021
Submitted To:	Town of Yacolt Engineering Department 202 W Cushman Street Yacolt, WA 98675
Applicant:	Aho Construction I, Inc. 5512 NE 109 th Court, Suite 101 Vancouver, WA 98662 Contact: Houston Aho (360) 254-0493 houstona@ahoconstruction.com
Engineering Contact:	Seth Halling, PE (360) 882-0419 Sethh@aks-eng.com
Prepared By:	AKS Engineering & Forestry, LLC 9600 NE 126 th Avenue, Suite 2520 Vancouver, WA 98682
AKS Job Number:	8706

Certificate of the Engineer
Railroad Avenue Subdivision
Town of Yacolt, Washington
Preliminary Technical Information Report

This Technical Information Report and the data contained herein were prepared by the undersigned, whose seal, as a Professional Engineer licensed to practice as such, is affixed below. All information required by the Town of Yacolt Municipal Code (YMC) Chapter 13.10, Stormwater Management and Facility Maintenance Erosion Control, is included in the Stormwater Plan. This project complies with Best Management Practices as identified by the State Department of Ecology (ECY) 1992 *Stormwater Management Manual for the Puget Sound Basin*.



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Table D.4: Post-Development Curve Numbers	3
Table D.4: Post-Development Curve Numbers	3

References

- 1992 Stormwater Management Manual for the Puget Sound Basin – “SMMPSB”
- 1994 Town of Yacolt Engineering Standards For Public Works Construction

Preliminary Stormwater Technical Information Report (TIR)

RAILROAD AVENUE SUBDIVISION YACOLT, WASHINGTON

Section A – Project Overview

This report analyzes the effects the proposed development will have on the existing stormwater conveyance system; documents the criteria, methodology, and informational sources used to design the proposed stormwater system; and presents the results from the final hydraulic analysis.

The site consists of a single ±19.01-acre parcel identified as 64522-000 within the Northwest and Northeast 1/4 of Section 2, Township 4 North Range 3 East, Willamette Meridian, Clark County, Washington. The site is unaddressed and is located in Yacolt, Washington. The site is bound by S Parcel Ave, W Hoag St, S Railroad Ave and single-family residential zoned properties to the south. The existing parcel is logged, previously forested land. The site is zoned Single-Family Residential 12.5 (R1-12.5) with no zoning overlays.

The site was recently logged under a Department of Natural Resources (DNR) forest practice permit. The DNR Forest Practice Application (FPA) was a Class IVG for a conversion from timberland. The existing site is flat with most of the site being less than 5% slope. There is an existing 100-year floodplain and riparian habitat in the northwest corner of the site. The site is inside a Category 1 Critical Aquifer Recharge Area (CARA). According to Clark County geographic information system (GIS), there are no known unstable slopes or landslide hazard areas, water courses, water bodies, and wetlands on site or within 100' of the site. There is a 100-year floodplain in the northwest corner of the site.

Proposed site improvements include sidewalks, public streets, 47 residential lots, and half-street frontage improvements. A publicly owned and maintained stormwater wetpond will be used for flow control and water quality treatment. The publicly owned stormwater facilities are sized for 8.22 acres of pollution-generating impervious surface (PGIS) area consisting of public streets, sidewalks, and driveways and 12.49 acres of pollution-generating pervious surface (PGPS). A Vicinity Map is included in Appendix A of this report.

The stormwater from the wetpond will discharge approximately 400 feet west of the project boundary within the riparian habitat area and will drain into the Yacolt Creek. Stormwater will discharge at predeveloped rates to Yacolt Creek, which is a fish bearing stream. The riparian habitat permit application will be submitted with final engineering.

Section B –Approval Conditions Summary

An approval conditions summary will be provided during final engineering.

Section C –Downstream Analysis

The proposed stormwater runoff is collected by catch basins and treated in the stormwater wetpond prior to discharge into the Riparian Habitat associated with Yacolt Creek. The discharge is located approximately 400 feet west of the project boundary. The stormwater facilities in their entirety will detain runoff equal to or below the pre-developed discharge rates from the TDA. The development is designed to prevent excessive sedimentation and stream bank erosion at least 1/4-mile downstream. Stormwater BMPs (temporary sediment pond, wetpond, and outfall protection) are designed to reduce impacts to

downstream properties and groundwater sources. The tributary bank appears to be well vegetated and naturally stabilized with trees and underbrush. There are no known existing or potential problems within the study area. As long as the on-site detention and water quality systems are constructed and maintained properly, no downstream water quality or quantity impacts are expected as a result of this development.

Section D – Quantity Control Analysis and Design

On site areas have been designed to meet the quantity control requirements of the 1992 SMMPSB. Required and proposed peak release rates for each catchment are summarized in Table D-5. The detention facility proposed for the development is a surface pond that will be above the wet pool volume. The values in Table D-5 represent the pre-developed peak flow rates and the design post-developed peak flow rates. The volume correction factor is 27%, which is based on the site’s developed impervious cover. The correction factor has been applied to the volume of the detention facility without changing its depth or design of the outlet structure. See Appendix H for volume correction factor chart.

Table D.1: Existing Hard Surface and Landscaping

Basin	Forest Area	Asphalt/Gravel Area	Sidewalk Area	Roof Area	Total Impervious Area	Total Area
1X	20.12	0.59	0	0	0.59	20.71

Note: Areas listed here are in acres.

Table D.2: Proposed Hard Surface and Landscaping

Basin	Landscape Area	Asphalt Road/Concrete Driveway/ Wetpond Area	Sidewalk Area	Roof Area	Total Impervious Area	Total Area
1S	12.49	4.10	0.88	3.24	8.22	20.71

Note: Areas listed here are in acres.

Tables D.3 and D.4 below show the pre-development and post-development runoff curve numbers (CN) that were used in the HydroCAD software analysis (Appendix G). These curve numbers are for Hydrologic Soil Group C per the Columbia West Engineering, Inc. geotechnical report. See Appendix I for SMMPSB runoff curve number table.

Table D.3: Pre-Development Curve Numbers

Area (acres)	Curve Number (CN)	Land Use	Description
20.12	81	Forest Land	Young Second Growth
0.59	98	Asphalt Road	Impervious Surface

Curve numbers listed here refer to Hydrologic Soil Group C.

Table D.4: Post-Development Curve Numbers

Area (acres)	Curve Number (CN)	Land Use	Description
12.49	86	Grass (Landscaping)	Good condition (≥75% grass cover)
7.75	98	Roads, Driveways, Sidewalks, and Roofs	Impervious Surface
0.47	100	Open Water Bodies	Pond

Curve numbers listed here refer to Hydrologic Soil Group C.

Table D.5: Flow Control

Design Storm	Pre-Developed Peak Flow Rate	Maximum Allowed Post-Developed Flow Rate (cfs)	Design Post-Developed Peak Flow Rate (cfs)
2-yr, 24-hr	3.81	1.91	1.84
10-yr, 24-hr	6.77	6.77	5.26
100-yr, 24-hr	9.96	9.96	9.94

All stormwater quantity facilities for the site have been designed in conformance with the SMMP SB.

Section E – Conveyance Systems Analysis and Design

The stormwater conveyance system analysis will be provided with final engineering.

Section F – Water Quality Design

Stormwater treatment for pollution generating surfaces will be provided by a stormwater wetpond. The site will discharge directly from the wetpond and will be conveyed to Yacolt Creek, which is a fish bearing stream. To determine the water quality volume requirements of the stormwater wetpond, the basin was modeled in HydroCAD using the 6-month, 24-hour storm event of 2.4 inches. Stormwater wetpond usage is approved as a treatment facility by the Washington State Department of Ecology. Water quality design will meet all requirements per 1992 SMMP SB. See Appendix K for isopluvial maps and Appendix F for wetpond calculations.

Section G – Soils Evaluation

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, on-site soils consist of Yacolt Loam (0 to 3 percent slopes) and Yacolt Stony Loam (0 to 5 percent slopes). The soils are classified as Hydrologic Soil Group B on the USDA NRCS Web Soil Survey. The Geotech classifies the soils as USDA Hydrologic Soil Group C and D and are based upon subsurface investigation and infiltration testing conducted by Columbia West Engineering, Inc. The Geotechnical Report contains additional information about site conditions (Appendix J).

Section H – Special Reports and Studies

A geotechnical investigation was performed on site by Columbia West Engineering, Inc., and a report summarizing the results of the evaluation was issued on August 6, 2021. Infiltration rates were measured

at several on-site locations and varied widely from <0.06 inches/hour to 18.7 inches/hour. No groundwater was encountered during the geotechnical exploration on June 18, 2021, at depths of 8-11 feet below ground surface. Review of Clark County Maps Online and nearby well logs obtained from the State of Washington Department of Ecology indicates that groundwater levels may vary considerably. Groundwater levels are often subject to seasonal variance and may rise during extended periods of increased precipitation. Perched groundwater may also be present in localized areas. Seeps and springs may become evident during site grading, primarily along slopes or in areas cut below existing grade. Structures, roads, and drainage design should be planned accordingly. See Geotechnical Report in Appendix J for more information.

Section I – Other Permits

The following permits will be required:

Construction Stormwater General Permit (To be completed prior to commencing construction)

Habitat Permit Application (To be completed with the final engineering phase)

Section J – Operation and Maintenance Manual

An Operation and Maintenance Manual will be provided with final engineering.

Section K – Technical Appendix

Appendix A: Map Submittals

Appendix B: New Development Flow Chart

Appendix C: Development Plans

Appendix D: Basin Delineation Plans

Appendix E: BMP Details

Appendix F: Wetpond Calculations

Appendix G: HydroCAD Analysis - Detention

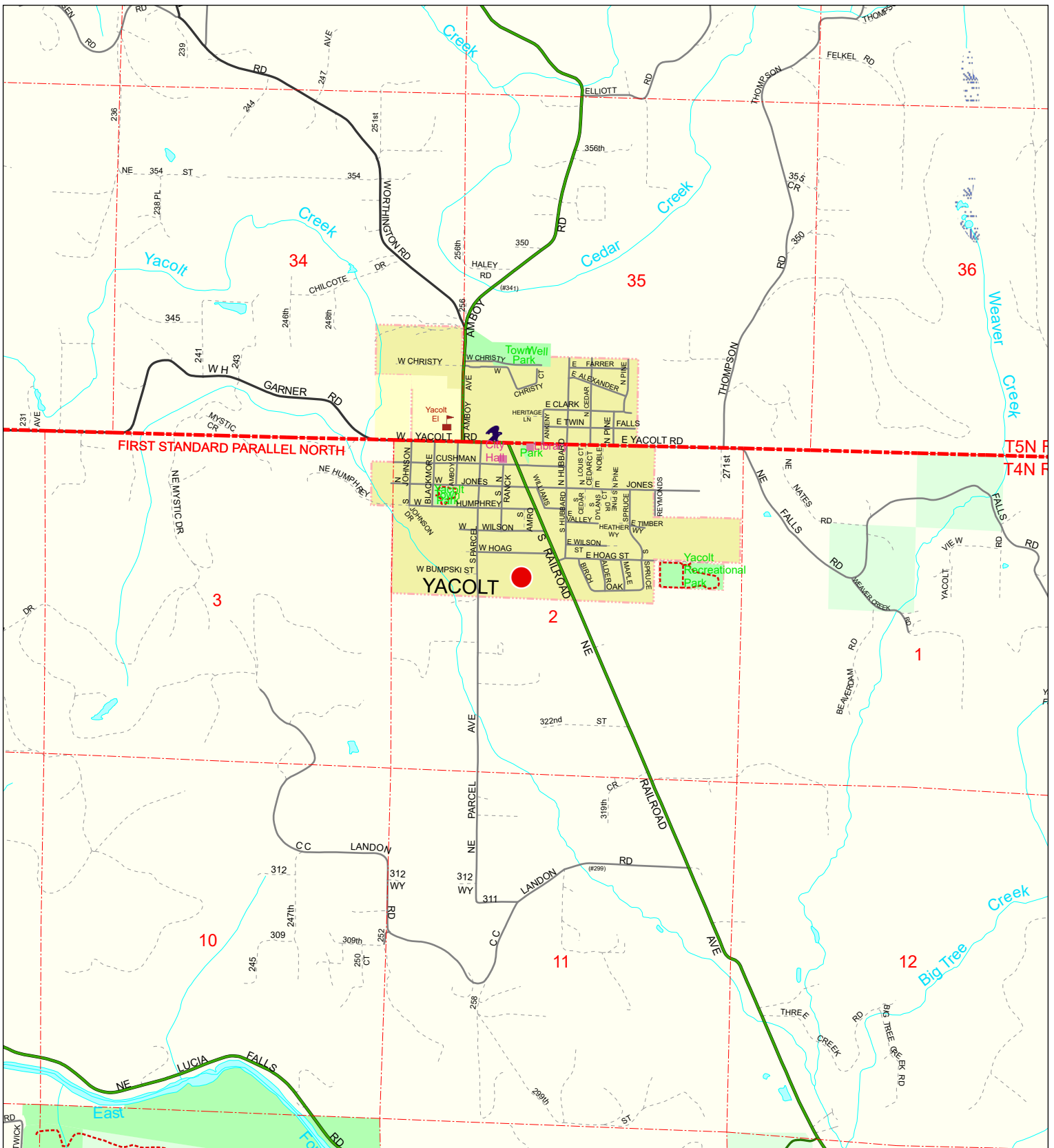
Appendix H: Volume Correction Factor

Appendix I: Curve Numbers

Appendix J: Geotechnical Report

Appendix K: Isopluvial Maps

Appendix A: Map Submittals



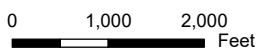
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 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

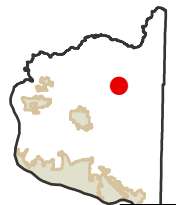
Printed on: October 21, 2021



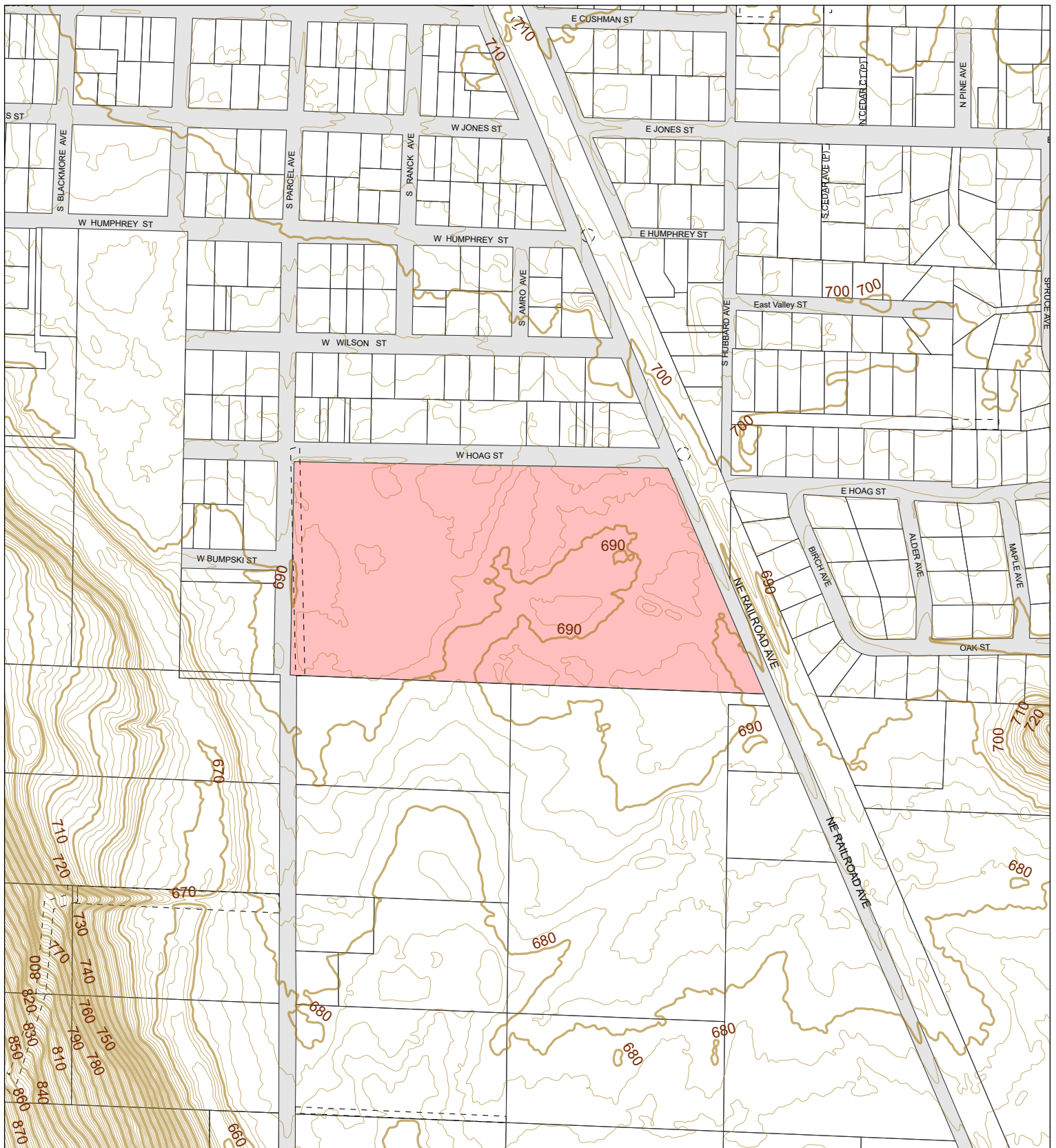
Geographic Information System



● Location of Subject Property(s)



Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.



CLARK COUNTY, WASHINGTON

Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

Elevation Contours

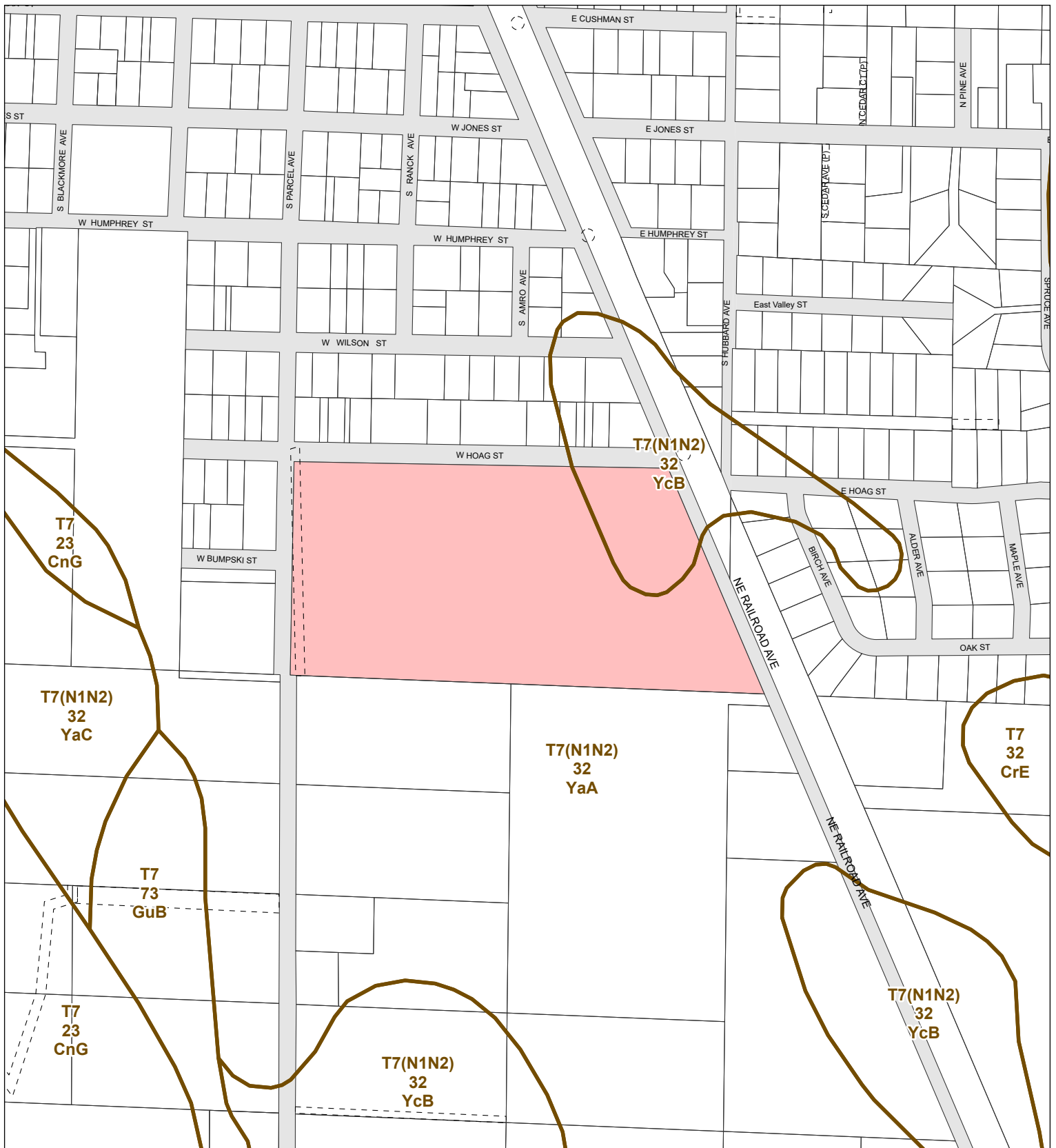
Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- 10' Elevation Contours
- 2' Elevation Contours

Printed on: October 21, 2021

53134	53135	
43103	43102	43101
43110	43111	43112

234



CLARK COUNTY, WASHINGTON
Geographic Information System

0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

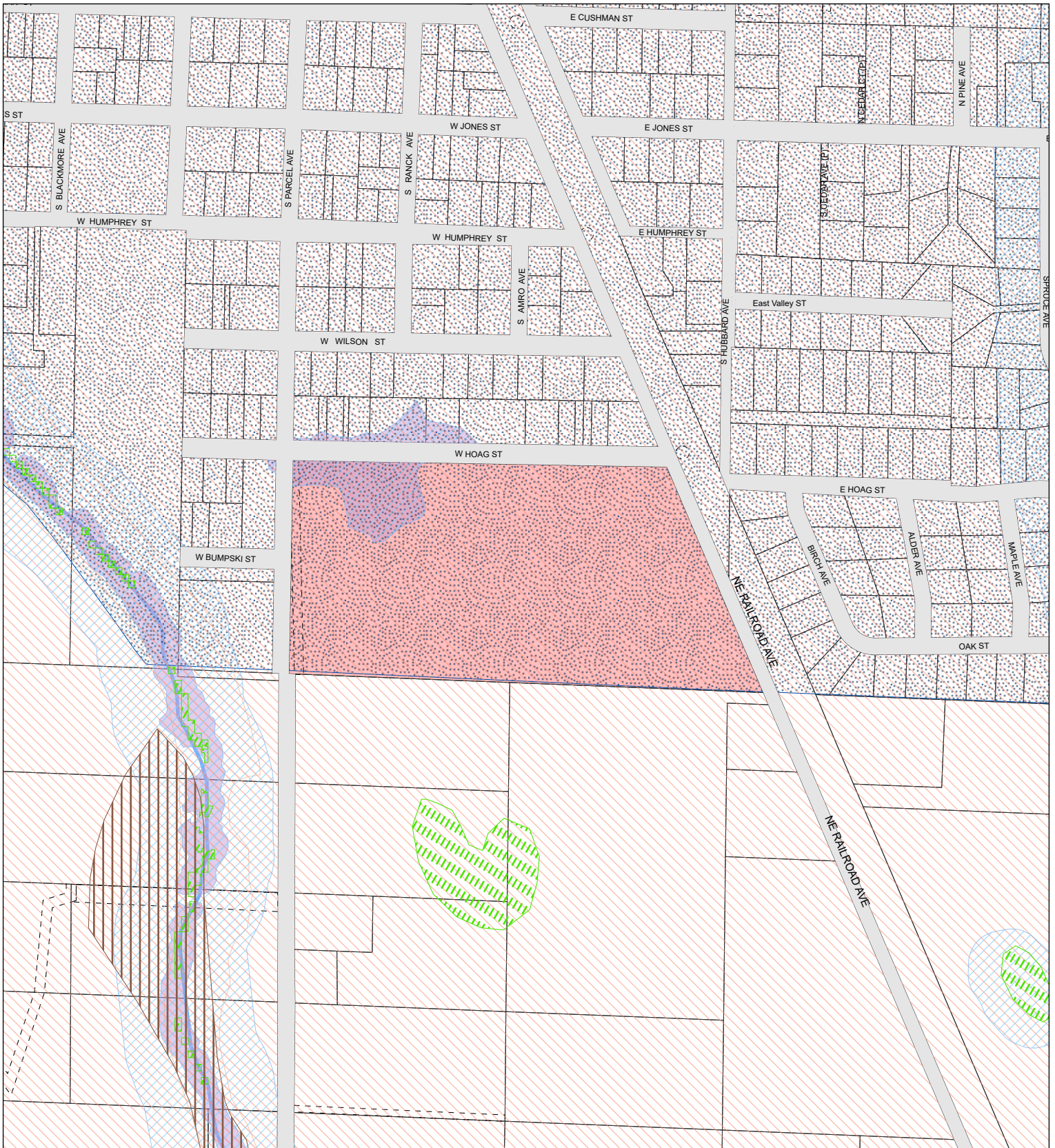
Soil Types

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Soil Type Boundary

Printed on: October 21, 2021

53134	53135	
43103	43102	43101
43110	43111	43112



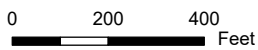
Environmental Constraints I

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

Printed on: October 21, 2021



Geographic Information System

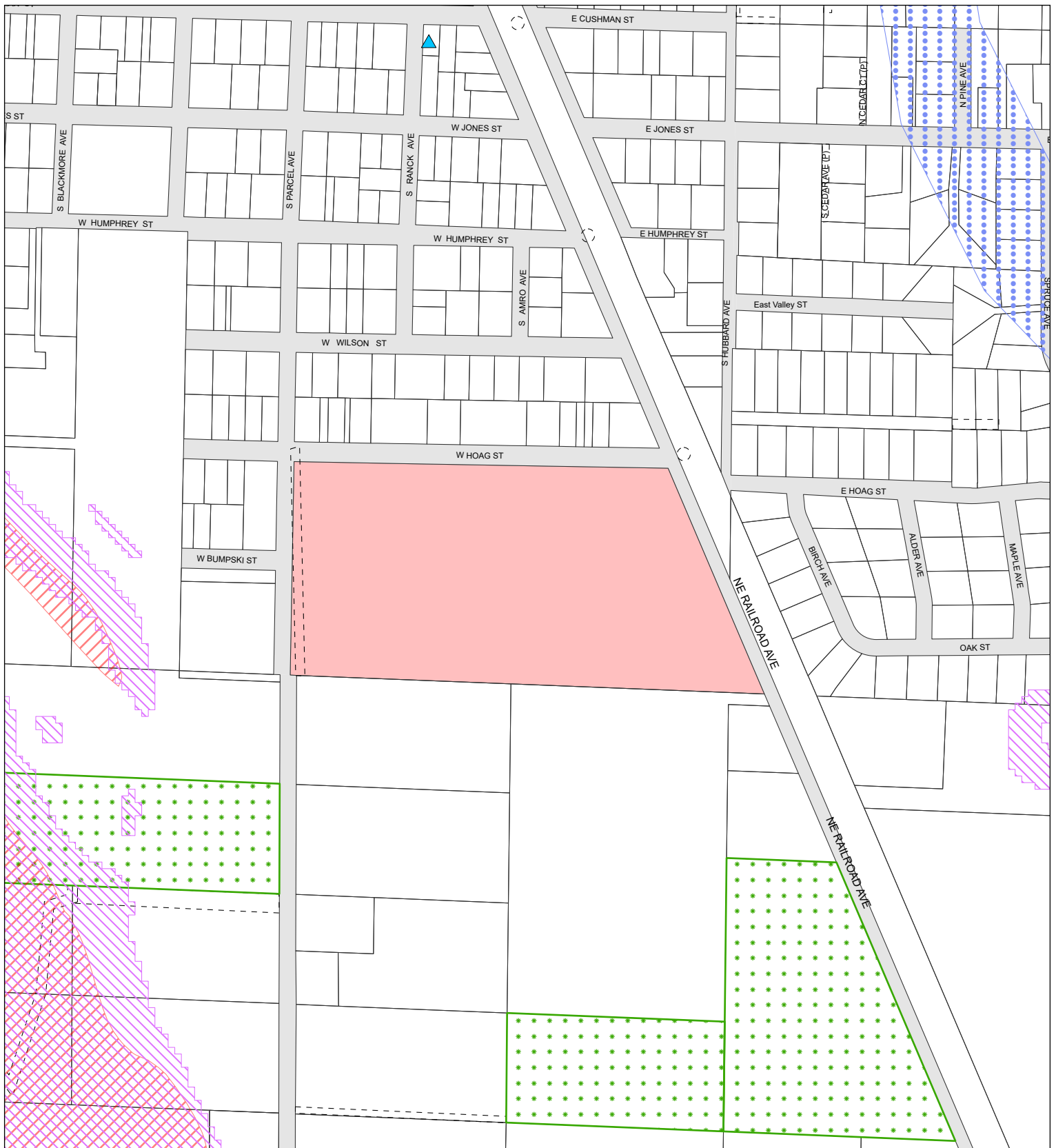


Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Hydric Soils
- Wetland Inventory
- CARA Category 1
- Riparian Habitat or Species Area
- Non-Riparian Habitat or Species Area
- 100 year Floodplains
- Floodway
- Shorelines
- Stream

53134	53135
43103	43102
43110	43111
	43101
	43112

236

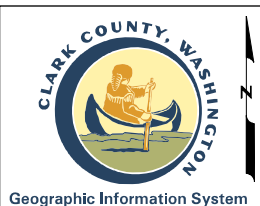


Environmental Constraints II

Account: 64522000
 Owner: JORGENSEN TIMBER LLC
 Address: PO BOX 1503
 C/S/Z: CHEHALIS, WA 98532

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Slopes > 15%
- Potentially Unstable Slope
- Historic or Active Landslide
- Severe Erosion Hazard Area
- Forest Moratorium Area
- CCHR Historic Site
- NRHP Historic Site
- WSHR Historic Site
- WSHR Historic Barn
- INV Historic Site

Printed on: October 21, 2021



0 200 400 Feet

Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

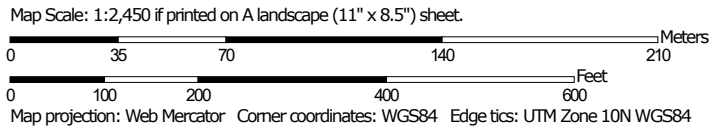
53134	53135	
43103	43102	43101
43110	43111	43112

237

Soil Map—Clark County, Washington




Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

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


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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 map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Clark County, Washington
 Survey Area Data: Version 19, Aug 23, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 24, 2018—May 10, 2019

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
YaA	Yacolt loam, 0 to 3 percent slopes	17.4	83.2%
YcB	Yacolt stony loam, 0 to 5 percent slopes	3.5	16.8%
Totals for Area of Interest		21.0	100.0%

Clark County, Washington

YaA—Yacolt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2f0b

Elevation: 400 to 1,100 feet

Mean annual precipitation: 75 to 95 inches

Mean annual air temperature: 48 degrees F

Frost-free period: 160 to 200 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Yacolt and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yacolt

Setting

Landform: Terraces

Parent material: Volcanic ash, alluvium and/or glacial drift

Typical profile

H1 - 0 to 6 inches: medial loam

H2 - 6 to 23 inches: medial loam

H3 - 23 to 60 inches: cobbly loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Ecological site: F003XC305WA - Low mountain slopes Moist

Forest western hemlock

Forage suitability group: Droughty Soils (G003XF403WA)

Other vegetative classification: Droughty Soils (G003XF403WA)

Hydric soil rating: No

Data Source Information

Soil Survey Area: Clark County, Washington
Survey Area Data: Version 19, Aug 23, 2021

Clark County, Washington

YcB—Yacolt stony loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2f0d
Elevation: 400 to 1,100 feet
Mean annual precipitation: 75 to 95 inches
Mean annual air temperature: 48 to 50 degrees F
Frost-free period: 110 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Yacolt and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yacolt

Setting

Landform: Terraces
Parent material: Volcanic ash, alluvium and/or glacial drift

Typical profile

H1 - 0 to 6 inches: stony medial loam
H2 - 6 to 23 inches: medial loam
H3 - 23 to 60 inches: cobbly loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: B
Ecological site: F003XC305WA - Low mountain slopes Moist Forest western hemlock
Forage suitability group: Soils with Moderate Limitations (G003XF603WA)
Other vegetative classification: Soils with Moderate Limitations (G003XF603WA)

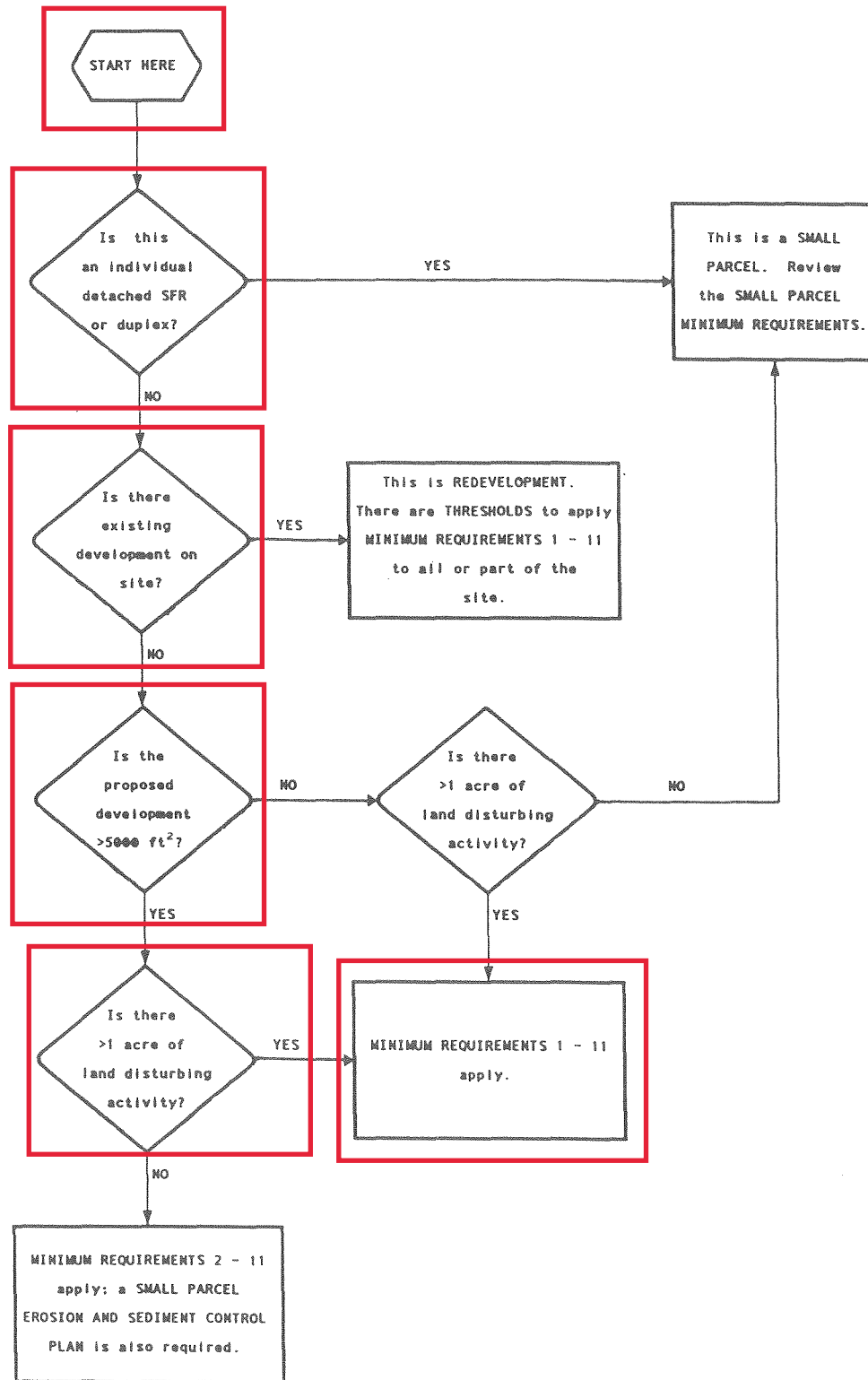
Hydric soil rating: No

Data Source Information

Soil Survey Area: Clark County, Washington
Survey Area Data: Version 19, Aug 23, 2021

Appendix B: New Development Flow Chart

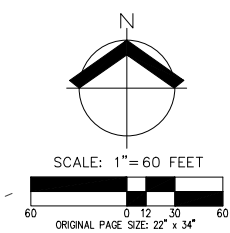
Figure I-2.1 Flowchart Demonstrating Minimum Requirements



Appendix C: Development Plans

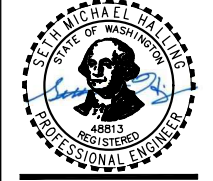


- GENERAL NOTES**
1. PROPOSED DEVELOPMENT TO BE SERVED WITH PUBLIC WATER PROVIDED BY CLARK PUBLIC UTILITIES.
 2. NO WELLS ARE BEING PROPOSED ON SITE AND THERE ARE NO EXISTING WELLS ON SITE.
 3. FIRE HYDRANT LOCATIONS ARE PROPOSED AS SHOWN.
 4. ON-SITE SEPTIC SYSTEMS ARE PROPOSED FOR EACH INDIVIDUAL LOT. THE SEPTIC SYSTEMS WILL BE PERMITTED BY CLARK COUNTY PUBLIC HEALTH.
 5. STORMWATER QUALITY AND QUANTITY WILL BE MET THROUGH THE USE OF A STORMWATER WETPOND. FACILITY TO BE PUBLICLY OWNED AND MAINTAINED.
 6. ALL ROOF AREAS WILL DRAIN TO THE STREET WITH WEEPHOLES.
 7. RIPARIAN HABITAT PERMIT APPLICATION WILL BE SUBMITTED WITH FINAL ENGINEERING FOR STORMWATER OUTFALL ON PARCEL # 64520-000.

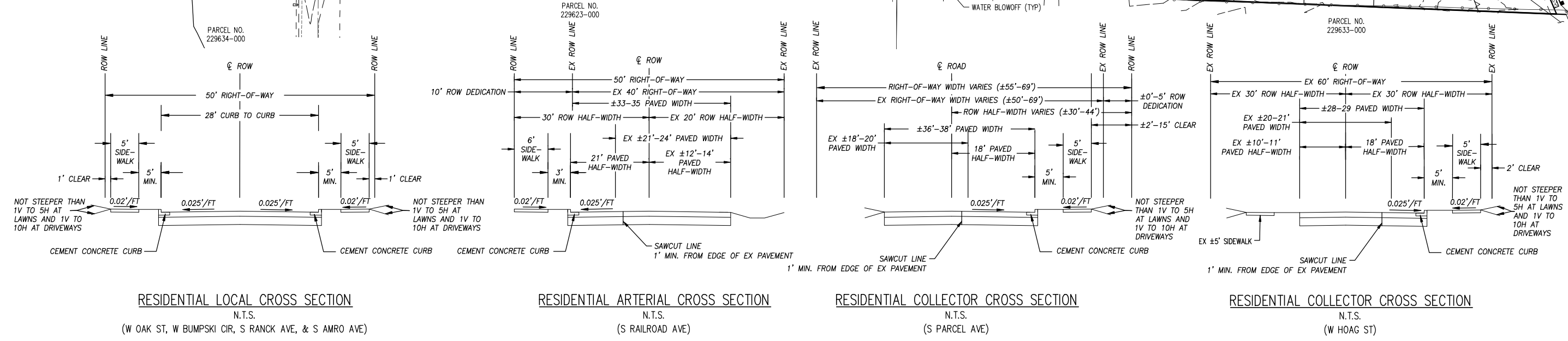


AKS
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 360.882.0419
 WWW.AKS-ENG.COM
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 FORESTRY • PLANNING

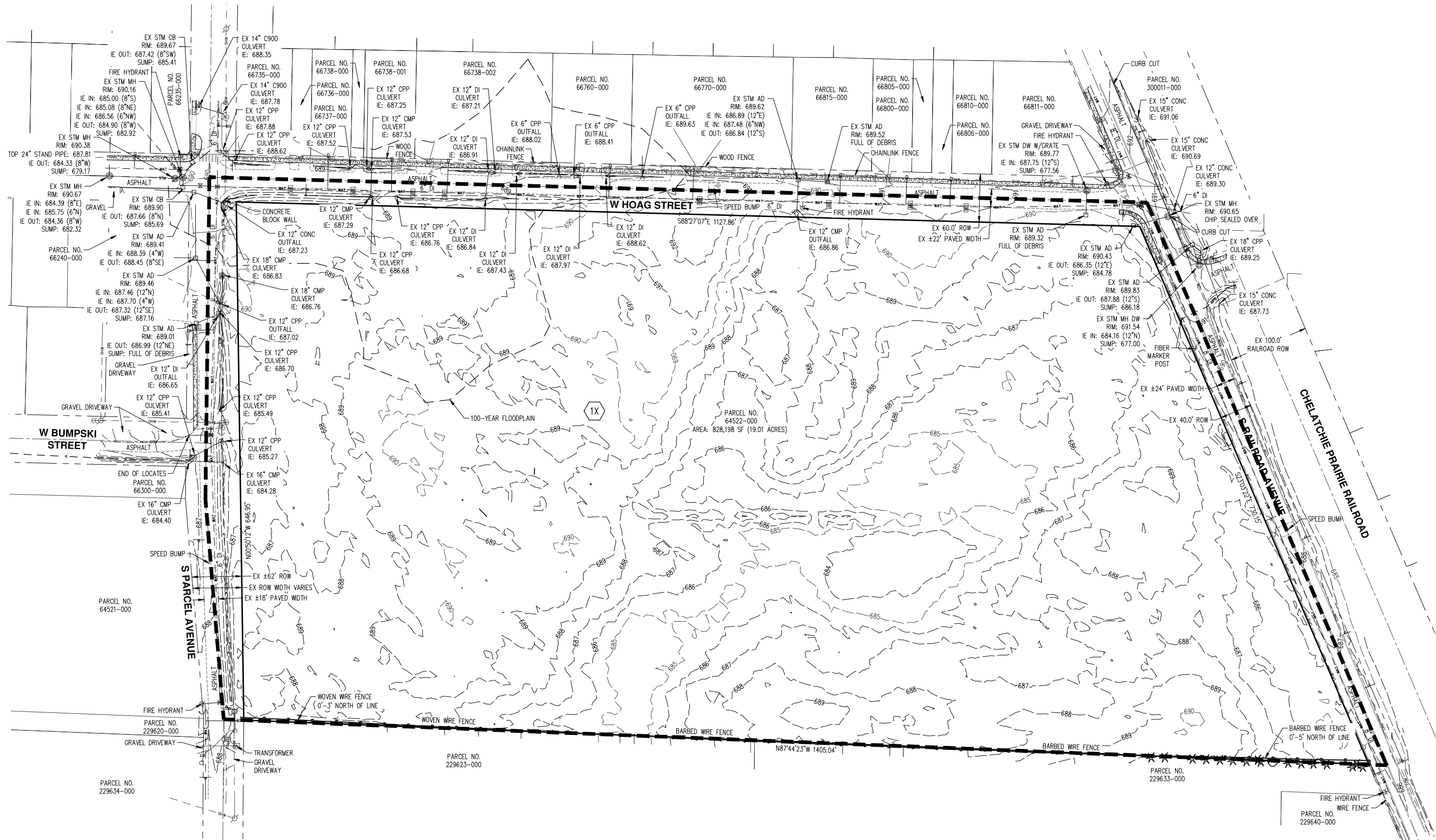
**PRELIMINARY UTILITY AND STREET PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**



JOB NUMBER: 8706
 DATE: 12/16/2021
 DESIGNED BY: KWA
 DRAWN BY: KWA
 CHECKED BY: SWH



Appendix D: Basin Delineation Plans



**PRE-DEVELOPED BASIN PLAN
 NE RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**

PRELIMINARY

LEGEND

- EXISTING GROUND CONTOUR (2 FT) ----- 282 -----
- EXISTING GROUND CONTOUR (10 FT) ----- 290 -----
- PRE-DEVELOPED BASIN BOUNDARY - - - - -
- PRE-DEVELOPED BASIN #IX

N

SCALE: 1" = 60 FEET

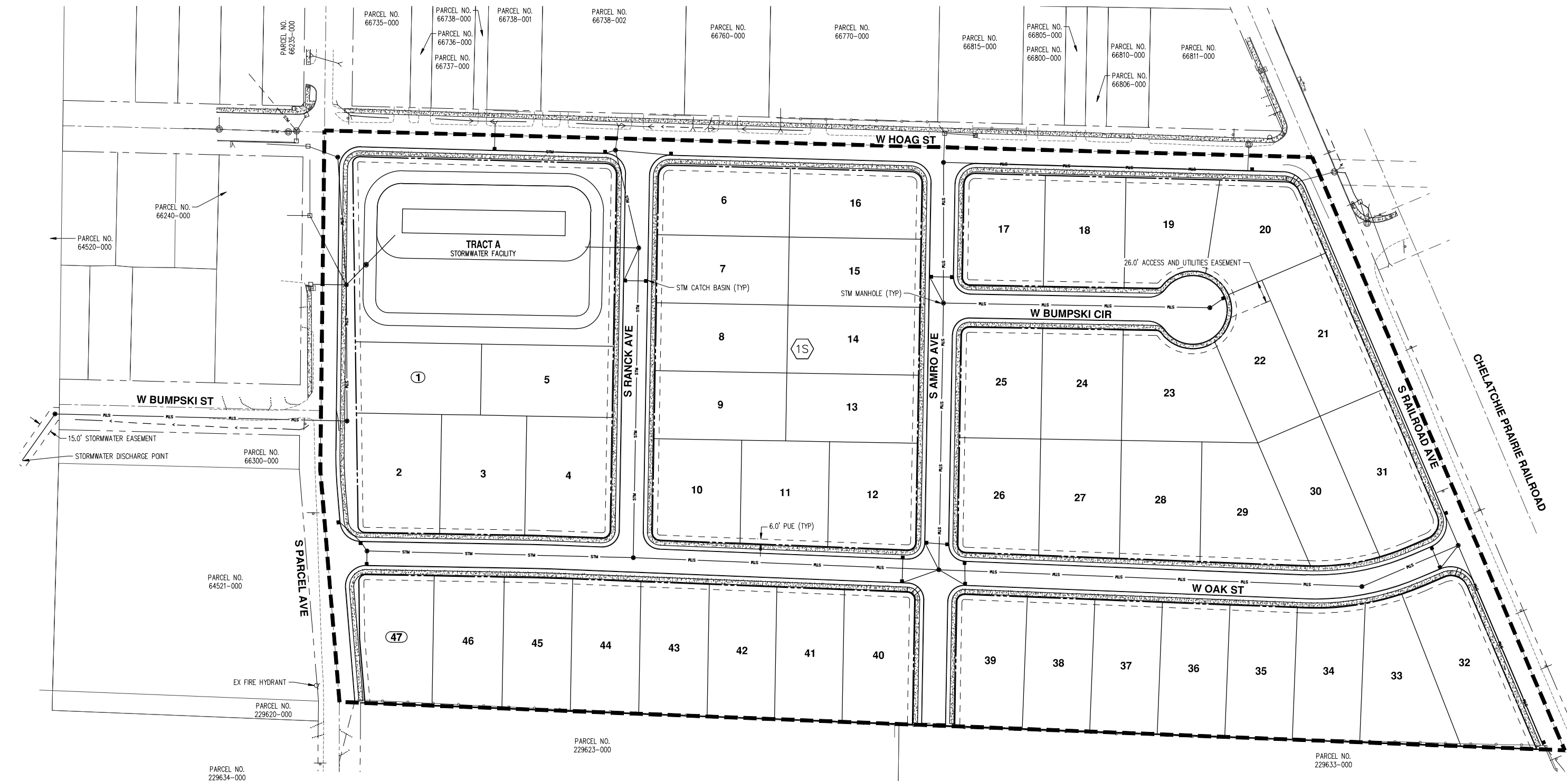
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JOB NUMBER:	8706
DATE:	11/11/2021
DESIGNED BY:	KWA
DRAWN BY:	KWA
CHECKED BY:	SWH

**POST-DEVELOPED BASIN PLAN
 NE RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**

PRELIMINARY

JOB NUMBER:	8706
DATE:	11/11/2021
DESIGNED BY:	KWA
DRAWN BY:	KWA
CHECKED BY:	SWH



LEGEND

POST-DEVELOPED BASIN BOUNDARY

POST-DEVELOPED BASIN

SCALE: 1"=60 FEET

ORIGINAL PAGE SIZE: 22" x 34"

Appendix E: BMP Details

III-4.4 STANDARDS AND SPECIFICATIONS FOR DETENTION PONDS

III-4.4.1 BMP RD.05 Wet Pond (Conventional Pollutants)

Purpose and Definition

This BMP is designed to provide runoff treatment for conventional pollutants but not nutrients. It may also be designed to provide streambank erosion control. A wet pond is an open pond which treats runoff using a permanent pool of water ("dead storage"). As an option, a shallow marsh area can be created within the permanent pool volume to provide additional treatment (see BMP RD.06, Wet Pond for Nutrient Control). Streambank erosion control is provided in the "live storage" area above the permanent pool. Figure III-4.1 illustrates a typical wet pond BMP.

Planning Considerations

Wet ponds require careful planning in order to function correctly. Throughout the design process the designer should be committed to considering the potential impacts of the completed facility. Such impacts can be positive or negative and can be as broadly classified as social, economic, political, and environmental. Designers can often influence the positive or negative aspects of these impacts by their careful evaluation of decisions made in the design process. Generally speaking, the completed facility must provide for safety to people as well as protection of real property, water quality, and wildlife habitats.

Multiple Uses

Multi-purpose use of the facility and aesthetic enhancement of the general area should also be major considerations. Above all, the facility should function in such a manner as to be compatible with overall stormwater systems both upstream and downstream to promote a watershed approach to providing stormwater management as well as local flood control and erosion protection.

If the facility is planned as an artificial lake to enhance property values and promote the aesthetic value of the land, pretreatment in the form of landscape retention areas or perimeter swales should be incorporated into the stormwater management facility. If possible, catchbasins should be located in grassed areas. By incorporating this "treatment train" concept into the overall collection and conveyance system, the engineer can prolong the utility of these permanently wet installations and improve their appearance. Any amount of runoff waters, regardless how small, that is filtered or percolated along its way to the final detention area can remove oil and grease, metals, and sediment. In addition, this will reduce the annual nutrient load to prevent the wet detention lake from eutrophying.

Detention system site selection should consider both the natural topography of the area and property boundaries. Aesthetic and water quality considerations may also dictate locations. For example, ponds with wetland vegetation are more aesthetically pleasing than ponds without vegetation. Ponds containing wetland vegetation also provide better conditions for pollutant capture and treatment.

A storage facility is an integral part of the environment and therefore should serve as an aesthetic improvement to the area if possible. Use of good landscaping principles is encouraged. The planting and preservation of desirable trees and other vegetation should be an integral part of the storage facility design.

Water Quality Considerations

In planning new detention facilities, it should be kept in mind that the goal of improved water quality downstream may conflict with certain desired uses of the facility. It is only logical that if the basin is used to remove pollutants, the

water quality within the basin itself will be lowered, thus reducing the applicability for uses such as water supply, recreation, and aesthetics. In planning the facility the engineer or planner should have a good knowledge of site-specific runoff constituents and an understanding of the possible effects on the quality of the stored water.

Basin Planning

The design of urban detention facilities should be coordinated with a basin plan for managing stormwater runoff. In a localized situation, an individual property owner can, of course, by his or her actions alone, provide effective assistance to the next owner downstream if no other areas contribute to that owner's problems. However, uncontrolled proliferation of impoundments within a watershed can severely alter natural flow conditions, causing compounded flow peaks or increased flow duration which can contribute to downstream degradation. In addition, upstream impacts due to future land use changes should be considered when designing the structure. Land use planning and regulation may be necessary to preserve the intended function of the impoundment. See Minimum Requirement #9 (Basin Planning) and the appendix in Volume I for a further discussion of basin planning.

Sediment and Debris

More often than not, detention ponds serve primarily as sedimentation basins during construction when erosion rates are particularly high. In and of itself, this situation does not present a problem. Unfortunately, these facilities are often installed without the benefit of the designer having evaluated the capacity of either the initial or the final (post-construction) design configuration to perform this type of function.

If a facility is to be used as the principal means to avoid having excessive levels of turbidity discharged from the site during construction, the engineer should evaluate the pond geometry in conjunction with the rate of outflow and grain size distribution of the soils and design the temporary sediment basin according to BMPs E3.35 or E3.40 in Volume II.

Heavy Metal Contamination

Studies have shown high accumulation rates of lead, zinc, and copper on and near heavily traveled highways and streets. Runoff from highways and streets can be expected to carry significant concentrations of these heavy metals. If a significant portion of the drainage area into a pond consists of highways, streets, or parking areas or other known sources of heavy metal contamination, there is a potential environmental health hazard. In such cases the multiple use functions of the pond should be limited and accessibility should be restricted. Additionally, liners may be required in order to prevent these types of pollutants from migrating into the underlying soil and ground water system.

This may require that sediment dredged out of the basins during maintenance cleaning be treated as a Dangerous Waste. Investigations of sediments removed from detention ponds to date have found that many pollutants are tightly bound with only a slight possibility of leaching. To be safe, sediments to be removed should be analyzed and elutriate tests performed to verify that the sediment can be safely disposed of by conventional methods (see Volume IV, Catchbasin Sediment Disposal Policy (to be written) which deals with disposal procedures).

Overflows

Detention facility design must take into consideration overflows and secondary overflow. Overflows include all facilities designed to bypass flows over or around the restrictor system. Overflow may result from higher intensity or longer duration storms than the design storm or result from plugged orifices or inadequate storage

due to sediment buildup in the facility.

Secondary overflow occurs when the capacities of all conveyance facilities, and all overflow facilities are exceeded or are not functioning. In such instances, stormwater will often exit the conveyance system through catchbasin grates and flow down the corridor of least resistance. Careful consideration must be given to the impact of secondary overflows on public health, safety and welfare, property, and wildlife habitat. When secondary overflow occurs, design of secondary drainage facilities following careful analysis and planning can significantly reduce impacts. Street alignments and grades are the key components in developing secondary drainage design, and consideration should be given early in the planning stages to their use as secondary overflow facilities.

Site Constraints and Setbacks

Site constraints are any manmade restrictions such as property lines, easements, structures, etc. that impose constraints on development. Constraints may also be imposed from natural features such as requirements of the local government's Sensitive Areas Ordinance and Rules (if adopted). These should also be reviewed for specific application to the proposed development.

All facilities shall be a minimum of 20 feet from any structure, property line, and any vegetative buffer required by the local government, and 100 feet from any septic tank/drainfield (except wet vaults shall be a minimum of 20 feet).

All facilities shall be a minimum of 50 feet from any steep (greater than 15%) slope. A geotechnical report must address the potential impact of a wet pond on a steep slope.

Dam Safety

In urban or urbanizing areas, failure of an impoundment structure can cause significant property damage and even loss of life. Such structures should be designed only by professional engineers registered in the State of Washington who are qualified and experienced in impoundment design. Wherever they exist, local safety standards for impoundment design shall be followed. Where no such criteria exist, widely recognized design criteria such as those used by the USDA Soil Conservation Service, Ecology Dam Safety Standards, or U.S. Army Corps of Engineers are recommended.

Safety, Signage and Fencing

Ponds which are readily accessible to populated areas should incorporate all possible safety precautions. Steep side slopes (steeper than 3H:1V) at the perimeter shall be avoided and dangerous outlet facilities shall be protected by enclosure. Warning signs for deep water and potential health risks shall be used wherever appropriate. Signs should be placed so that at least one is clearly visible and legible from all adjacent streets, sidewalks or paths. A notice should be posted warning residents of potential waterborne disease that may be associated with body contact recreation such as swimming in these facilities.

If the pond surface exceeds 20,000 sq. feet, include a safety bench around the basin with a width of 5 feet, and with a depth not exceeding 1 foot during non-storm periods. Emergent vegetation such as cattails should be placed on the bench to inhibit entry by unauthorized people.

A fence is required at the maximum water surface elevation, or higher, when a pond slope is a wall. Local governments and Homeowners Associations may also require appropriate fencing as an additional safety requirement in any event.

Design Criteria

Sizing Wet Ponds

Wet ponds designed for treatment of conventional pollutants utilize a permanent pool of water to provide treatment and are to be designed using the hydrologic analysis methods presented in Chapter III-1.

Permanent Pool Volume

The permanent pool volume shall be equal to the runoff volume of the 6-month, 24-hour design storm. It is not necessary to vegetate the permanent pool, but establishment of a shallow marsh system can provide additional pollutant removal capabilities.

Surface Area-Pool Depth Relationships

The pond surface area is found by dividing the permanent pool volume by the depth, with a maximum depth of six (6) feet recommended. A minimum depth of three (3) feet is recommended so that resuspension of trapped pollutants is inhibited. Permanent ponds deeper than six (6) feet could potentially contaminate ground water (should they intersect the existing ground water level). Also, deeper ponds can stratify and create anaerobic condition that can cause pollutants which are normally bound in the sediment (e.g., metals and phosphorus) to resolubilize; their release back to the water column can seriously affect the effectiveness of the BMP and also create nuisance conditions.

See Table III-4.2 for the surface area-pool depth relationship. Table III-4.3 illustrates typical surface area-to-drainage area ratios for this and other detention BMPs.

If the wet pond is also designed to provide streambank erosion control, then additional surface area and depth will be required for the "live storage" volume located above the permanent pool. There is no specific surface area-pool depth relationship for the "live storage" volume.

Ponds designed to provide streambank erosion control may be deeper than six feet as long as the permanent pool volume provided for runoff treatment does not exceed six feet.

Outlet Structure

The outlet structure must be designed to accomplish an extended detention time so that runoff can be released at the flow rates established by Minimum Requirement #5, Streambank Erosion Control (see Chapter I-2). Figure III-4.3 illustrates methods for extending detention time in wet ponds.

Pond Configuration and Geometry

Wet ponds shall be multi-celled with a least two cells, and preferably three. The cells should be approximately equal in size. The first cell should be three feet deep in order to effectively trap coarser sediments and reduce turbulence which can resuspend sediments. It should be easily accessible for maintenance purposes.

Long, narrow, and irregularly shaped ponds are preferred, as these configurations are less prone to short-circuiting and tend to maximize available treatment area. The length-to-width ratio should be at least 3:1 and preferably 5:1. Irregularly shaped ponds may perform more effectively and will have a more natural appearance.

The inlet and outlet should be at opposite ends of the pond where feasible. If this is not possible, then baffles can be installed to increase the flow path and water residence time (see BMP RD.10, Presettling Basin, for details).

Interior side slopes up to the maximum water surface shall be no steeper than 3H:1V. Exterior side slopes shall be no steeper than 2H:1V.

The pond bottom shall be level to facilitate sedimentation.

Pond walls may be retaining walls, provided that the design is prepared and stamped by a structural engineer registered in the State of Washington, that they are constructed of reinforced concrete per Section III-4.6.1, that a fence is provided along the top of the wall, and that at least 25 percent of the pond perimeter will be a vegetated soil slope of not greater than 3H:1V.

Other Design Considerations

Liner to Prevent Infiltration

Detention BMPs should have negligible infiltration rates through the bottom of the pond. Infiltration will impair the proper functioning of detention BMPs and can contaminate ground water. If infiltration is anticipated, then a detention facility must either **not** be used and an infiltration BMP used instead (see Chapter III-3) or a liner should be installed to prevent infiltration. If a liner is used, the specifications provided in Section III-3.7 (Filtration BMPs) can be used. When using a liner the following are recommended:

- A layer of (track) compacted top soil (minimum 18" thick shall be placed over the liner prior to seeding with an appropriate seed mixture (see BMP El.35 in Chapter II-5).
- Other liners may be used provided the design engineer can supply support documentation that the material will provide the required performance.

Overflow and Emergency Spillway

If streambank erosion control is not required, a pond overflow system must provide controlled discharge of the 100-year, 24-hour design storm event for developed site conditions without overtopping any part of the pond embankment or exceeding the capacity of the emergency spillway. The design must provide controlled discharge directly into the downstream conveyance system. This assumes the pond will be full due to plugged control structure inflow pipe and/or plugged restrictor/orifices conditions.

Open Type 2 catchbasins can function as weirs when used as pond overflow structures to control overtopping. The overflow structure, as shown in Figure III-4.5, may be required in some circumstances to protect embankments from overtopping.

In addition to the above overflow requirements, an emergency overflow spillway (secondary overflow) must be provided to safely pass the 100-year, 24-hour design storm event (for developed site conditions and assuming the pond is full to the crest of the spillway) over the pond embankment in the event of control structure failure or for storm/runoff events exceeding design. The spillway must be located to direct overflows safely towards the downstream conveyance system and shall be located in existing soil wherever feasible. The emergency overflow spill shall be armored with riprap in conformance with Table III-2.4 and shall extend to the toe of each face of the berm embankment.

- Design of emergency overflow spillways requires the analysis of a broad-crested trapezoidal weir. The following weir section is required for the emergency overflow spillway, as per Figure III-4.4.

Figure III-4.2 Methods for Extending Detention Time in Wet Ponds

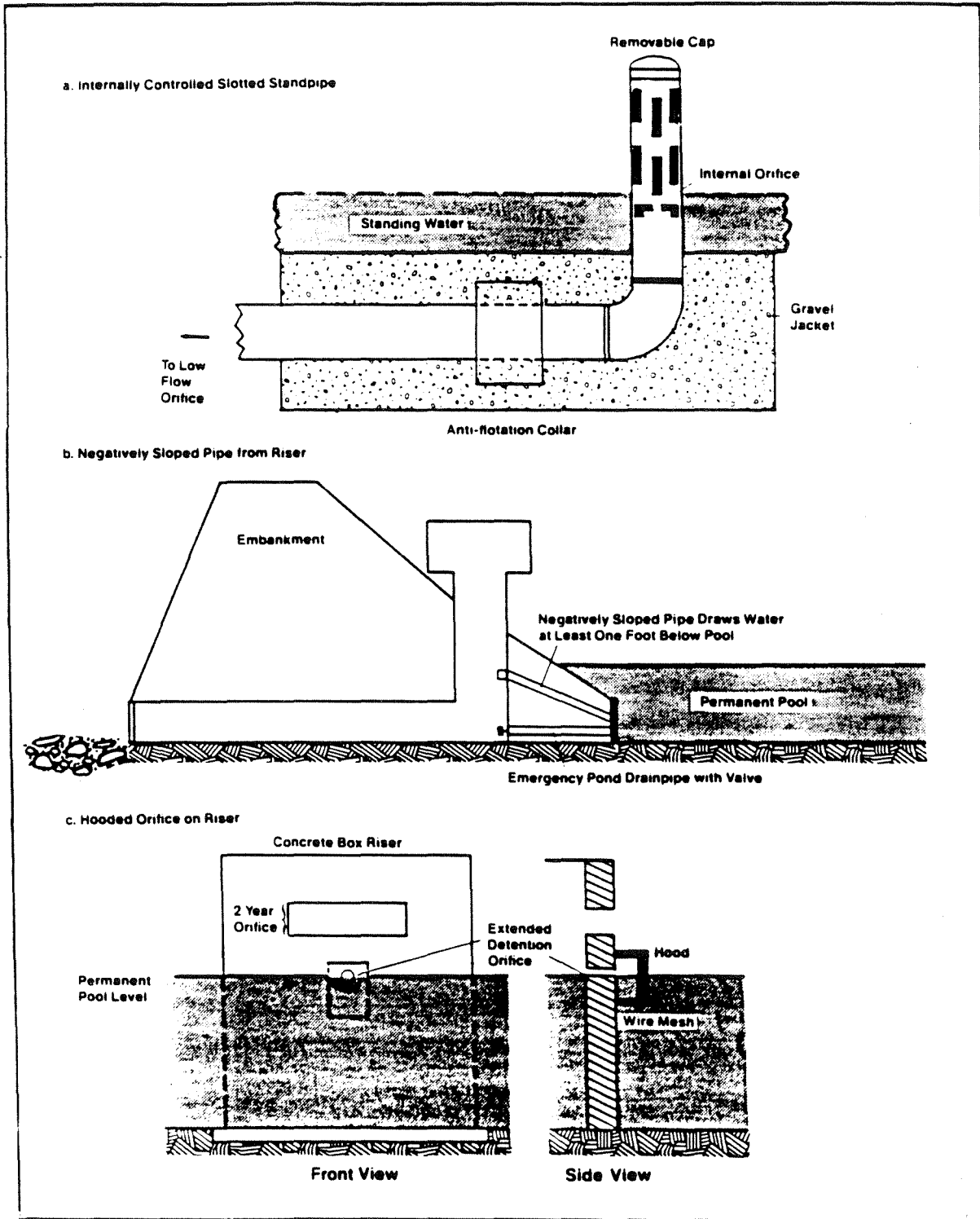
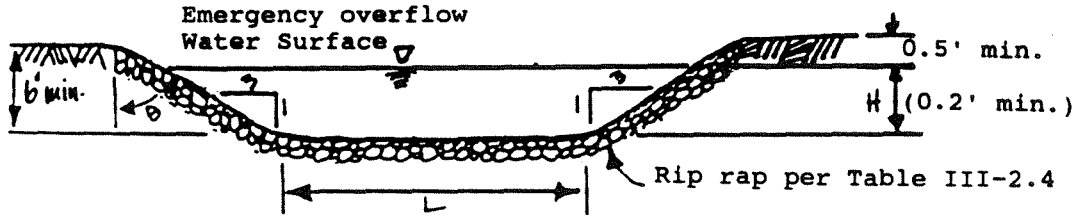


Figure III-4.3 Weir Section for Emergency Overflow Spillway



- The emergency overflow spillway weir section can be designed to pass the 100-year, 24-hour design storm event for developed conditions as follows:

For this weir, $Q_{100} = C (2g)^{1/2} [(2/3)LH^{3/2} + 8/15 \tan \theta H^{5/2}]$

using: $C = 0.6$ (discharge coefficient);
 $\tan \theta = 3$ (for 3:1 slopes);
 $\theta = 72^\circ$;

The equation becomes: $Q_{100} = 3.21 (LH^{3/2} + 2.4H^{5/2})$

To find width L, the equation is rearranged to use the computed Q_{100} (peak flow for the 100-year, 24-hour design storm) and trial values of H (0.2 feet minimum).

$L = (Q_{100} / (3.21H^{3/2})) - (2.4H^{5/2})$;
 $= 6$ feet minimum

Berm Embankment/Slope Stabilization

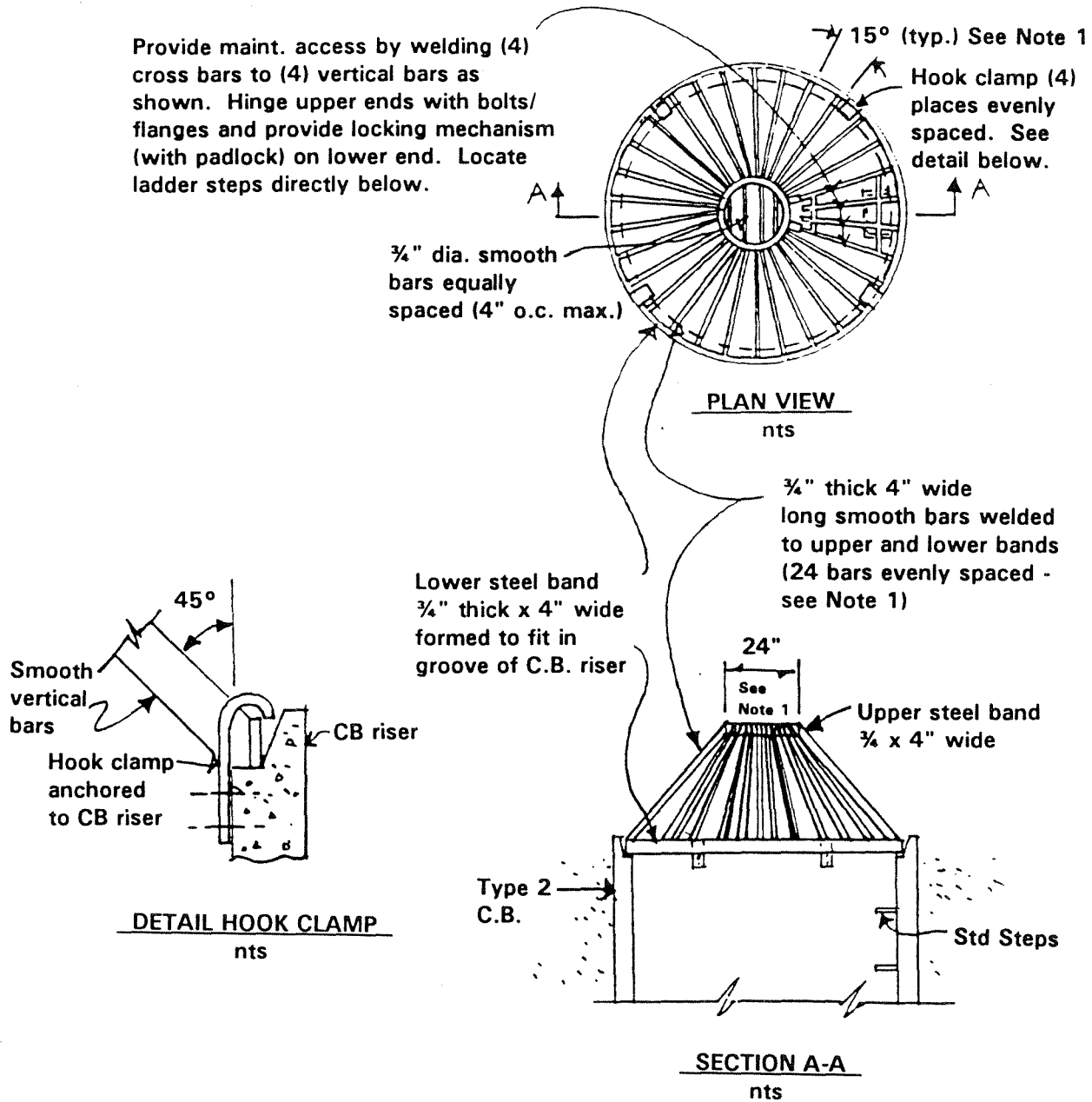
Pond embankments higher than 6 feet shall require design by a geotechnical-civil engineer licensed in the State of Washington. The embankment shall have a minimum 15 foot top width where necessary for maintenance access; otherwise, top width may vary as recommended by the geotechnical-civil engineer.

The berm dividing the pond into cells shall have a 5 foot minimum top width, a top elevation set one foot lower than the design water surface, maximum 3:1 side slopes, and a quarry spall and gravel filter "window" between the cells (see Figure III-4.5).

For berm embankments of 6 feet or less than (including 1 foot freeboard), the minimum top width shall be 6 feet or as recommended by the geotechnical-civil engineer.

The toe of the exterior slope of pond berm embankment must be no closer than 5 feet from the tract or easement property line.

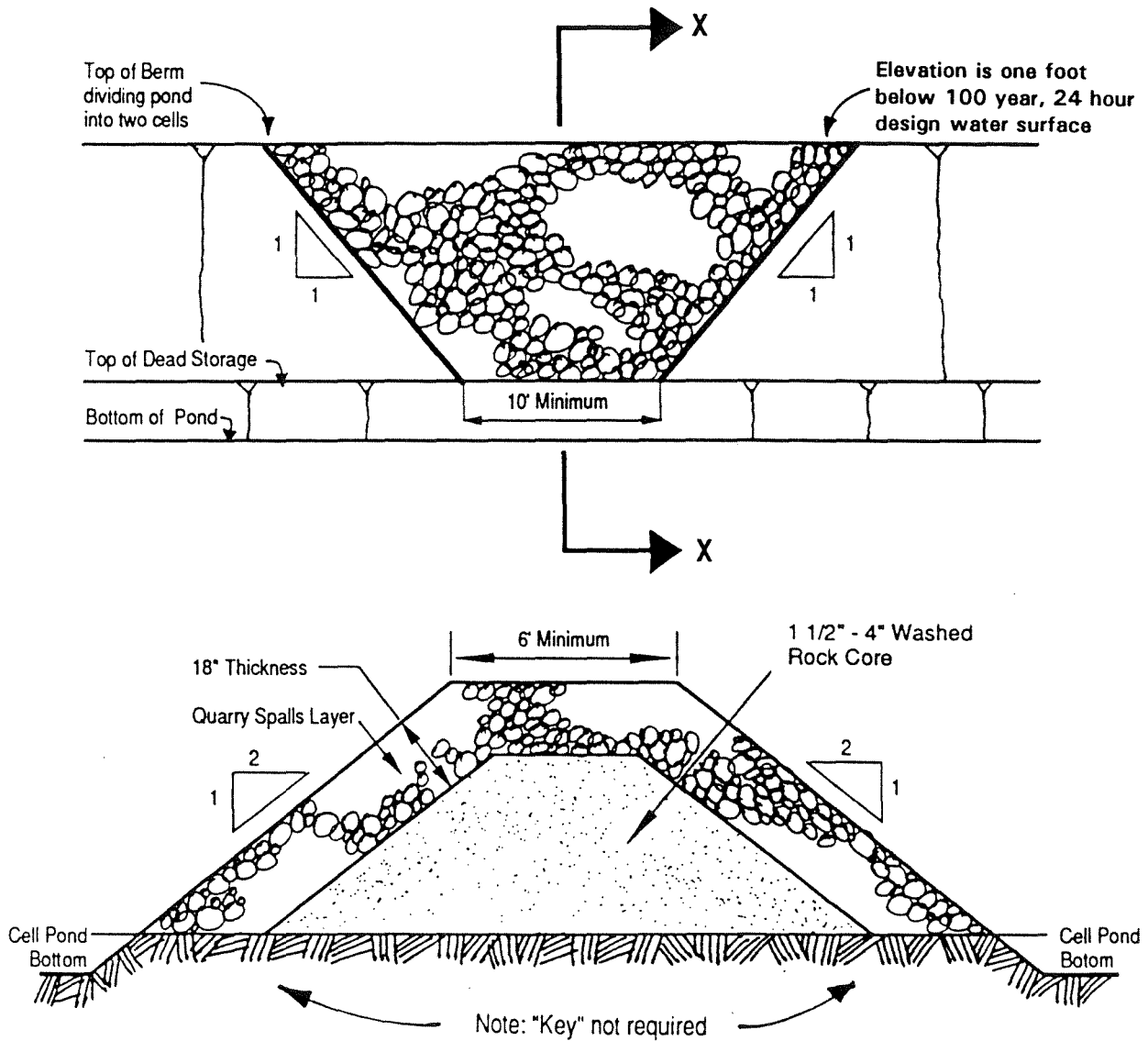
Figure III-4.4 Detention Pond Overflow Structure



Notes:

1. Dimensions are for installation on 54" dia. C.B. For different dia.C.B.'s adjust dimensions to maintain 45° angle on "vertical" bars and 7" O.C. max. spacing of bars around lower steel band.
2. Metal parts: corrosion resistant.
3. This debris barrier is also recommended for use on the inlet to roadway cross-culverts with high potential for debris collection (except on Class 2 streams).

Figure III-4.5 Quarry Spall and Gravel Filter "Window"



Pond berm embankments must be constructed on native consolidated soil (or adequately compacted and stable fill soils analyzed by a geotechnical report) free of loose surface soil materials, roots and other organic debris.

Pond berm embankments must be constructed by excavating a "key" equal to 50 percent of the berm embankment cross-sectional height and width (except on highly compacted till soils where the "key" minimum depth can be reduced to 1 foot of excavation into the till).

The berm embankment shall be constructed on compacted soil (95 percent minimum dry density, standard proctor method per ASTM D1557), placed in 6-inch lifts, with the following soil characteristics per the United States Department of Agriculture's Textural Triangle: a minimum of 30 percent clay, a maximum of 60 percent sand, a maximum of 60 percent silt, with nominal gravel and cable content (Note, in general, excavated glacial till will be well-suited for berm embankment material).

Anti-seepage collars must be placed on outflow pipes in berm embankments impounding water greater than 8 feet in depth at the design water surface.

Exposed earth on the pond bottom and side slopes shall be sodded or seeded with the appropriate seed mixture as soon as is practicable (see Erosion and Sediment Control BMP E1.35 in Volume II). Establishment of protective vegetative cover shall be ensured with jute mesh or other protection and reseeded as necessary (see Erosion and Sediment Control BMPs E1.15 and E1.35 in Volume II).

Gravity Drain

A gravity drain for maintenance shall provide an outlet invert of one foot above the bottom of the facility and shall be sized to drain the facility in four hours or less.

Erosion and Sediment

Bank erosion is often a significant problem during the initial stages of development. Stabilization with sod down to the permanent pool and preventing undue sediment deposition is required for the planting to survive.

Erosion and sediment control BMPs must be used to retain sediment on-site during construction (see Erosion and Sediment Control in Volume II). BMPs must be shown on the design plans and the engineer must provide instructions for proper O&M. Permanently stabilize all areas above the normal water level of ponds to prevent erosion and sedimentation of plantings (see Chapter II-5).

Littoral Zone Planting

For treating conventional pollutants a wet pond does not require the establishment of vegetation in its shallow areas, or "littoral zones." However, a shallow marsh system can provide additional treatment of runoff and be aesthetically pleasing (see BMP RD.06, Wet Pond for Nutrient Control, for details). If littoral zone vegetation is planned it shall be planted according to the advice of a wetlands specialist. Nursery sources are recommended wherever possible. Small (2-4 inch) containers are encouraged to avoid transporting large amounts of potting soil to the pond. White roots and active basal budding indicate a healthy stock.

Most wetlands specialists prefer to have someone on-site during the construction phase to ensure that the littoral shelf is located and graded properly. Knowing exactly where the normal water level of the facility will reside after construction is absolutely essential to the success of this element of the system.

Construction and Maintenance Criteria

Construction

Widely acceptable construction standards and specifications such as those developed by the USDA - Soil Conservation Service or the U.S. Army Corps of Engineers for embankment ponds and reservoirs should be followed to build the impoundment.

Chapter 17 of the SCS Engineering Field Manual provides guidance on construction methods for the various elements of a pond or reservoir. Specifications for the work should conform to methods and procedures for installing earthwork, concrete, reinforcing steel, pipe, water gates, metal work, woodwork, and masonry, that are applicable to the site and the purpose of the structure, and satisfy all requirements of the local government.

Maintenance

General

Maintenance is of primary importance if detention ponds are to continue to function as originally designed. A local government, a designated group such as a homeowners' association, or some individual shall accept the responsibility for maintaining the structures and the impoundment area. A specific maintenance plan shall be formulated outlining the schedule and scope of maintenance operations. Debris removal in detention basins can be achieved through the use of trash racks or other screening devices.

Design with maintenance in mind. Good maintenance will be crucial to successful use of the impoundment. Hence, provisions to facilitate maintenance operations must be built into the project when it is installed. Maintenance must be a basic consideration in design and in determination of first cost. See Table III-4.4 for specific maintenance requirements.

Any standing water removed during the maintenance operation must be disposed of to a sanitary sewer at an approved discharge location. Residuals must be disposed in accordance with current health department requirements of the local government.

Vegetation

If a shallow marsh is established, then periodic removal of dead vegetation will be necessary. The frequency of removal has not been established and Ecology requests comments on this issue. Since decomposing vegetation can release pollutants captured in the wet pond, especially nutrients, it may be necessary to harvest dead vegetation annually prior to the winter wet season. Otherwise the decaying vegetation can export pollutants out of the pond and also can cause nuisance conditions to occur. If harvesting is to be done in the wetland, a written harvesting procedure shall be prepared by a wetland scientist and will be submitted with the drainage design to the local government.

Sediment

Maintenance of sediment forebays and attention to sediment accumulation within the pond is extremely important. Sediment deposition should be continually monitored in the basin. Owners, operators, and maintenance authorities should be aware that significant concentrations of heavy metals (e.g., lead, zinc, and cadmium) as well as some organics such as pesticides, may be expected to accumulate at the bottom of these treatment facilities. Testing of sediment, especially near points of inflow, should be conducted regularly to determine the leaching potential and level of accumulation of hazardous material before disposal. For disposal procedures, refer to Volume IV - disposal requirements for catchbasin and pond sediments (to be written).

Access

Pond access tracts and roads are required when ponds do not abut public right-of-way. Road(s) shall provide access to the control structure and along side(s) of the pond as necessary for vehicular maintenance. For ponds with bottom widths of 15 feet or more, the access road shall extend to the pond bottom and an access pad provided to facilitate cleaning. For ponds less than 15 feet in width, an access road must extend along one side.

Roads and pads shall meet the following criteria:

- Maximum Grade: 15 percent to control structure, 20 percent into pond.
- Provide 40 foot minimum outside radius on the access road to the control structure and the turn around to the pond bottom.
- Fence gates shall be provided for access roads at "straight" sections of road.
- Access roads shall be 15 feet in width.
- Access pads shall be 15 feet in width and 25 feet in length.
- Manhole and catchbasin lids must be at either edge of an access road or pad and be at least 3 feet from a property line.

Access shall be limited by a double-posted gate if a fence is required or by bollards. Bollards shall consist of two fixed bollards on each side of the access road and two removable bollards equally located between the fixed bollards.

Access roads and pads shall be constructed by utilizing one of the following techniques:

- Construct an asphalt surface meeting the same standard as residential minor access streets, as required by the local government.
- Construct a gravel surface road by removing all unsuitable material, laying a geotextile fabric over the native soil, placing quarry spalls (2"-4") six inches thick then providing a two-inch thick crushed gravel surface.
- Construct a landscape block (24"x24"x 6") surface by removing all unsuitable material, laying a geotextile fabric over the native soil, placing landscape blocks, filling the honeycombs with soil particles, and planting grass.

Nuisance Conditions

The presence of wet ponds and marshes in established urban areas is perceived by many people to be undesirable. They are often thought of as mud holes where mosquitoes and other insects breed. If the wet pond has a shallow marsh established (more likely in the cases of BMP RD.06 and BMP RD.09), the pond can become a welcomed addition to an urban community. Constructed fresh water marshes can provide miniature wildlife refuges, and while insect populations are increased, insect predators also increase, often reducing the problem to a tolerable level. Advice from the University of Washington (Rick Sugg, personal communication) suggests that in the Puget Sound lowlands, the extra breeding habitat provided by any wetponds would not be significant. Nevertheless, local governments and homeowners associations may wish to temporarily drain wet ponds during late spring (May) and summer if there is sufficient concern. However, it is imperative that vegetation in shallow marsh areas not die off during draindown periods. Otherwise, the pollutant removal effectiveness of the wet pond can be severely impacted. In addition, the decaying vegetation can create nuisance conditions.

Table III-4.4 Specific Maintenance Requirements for Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
I. Ponds - General	Trash and debris	Any trash or debris which exceeds 1 ft ³ /1000 ft ² (equal to the volume of a standard size office garbage can). In general, there should be no evidence of dumping.	Trash and debris cleared from site.
	Poisonous vegetation	Any poisonous vegetation which may constitute a hazard to maintenance personnel or the public, e.g. tansy, poison oak, stinging nettles, devils club.	No danger of poisonous vegetation where maintenance personnel or the public might normally be. Coordinate with the local county health dept.
	Pollution	1 gallon or more of oil, gas or other contaminants <u>or</u> any amount found that could: 1) cause damage to plant, animal or marine life, 2) constitute a fire hazard, 3) be flushed downstream during storms or 4) contaminate ground water.	No contaminants present other than a surface film. Coordinate with the local county health dept.
	Unmowed grass/ground cover	In residential areas, mowing is needed when the cover exceeds 18 inches in height. Otherwise, match facility cover with adjacent ground cover and terrain as long as there is no decrease in facility function.	When mowing is needed, grass or ground cover should be mowed down to 2 inches. A dense grass cover must be maintained on slopes, and in dry ponds on the bottom as well.
	Rodent holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired. Coordinate with the local county health dept.
	Insects	When insects such as wasps or hornets interfere with maintenance activities.	Insects destroyed or removed from site. Coordinate with people who remove wasps for anti-venom production.
	Tree growth	Tree growth does not allow maintenance access or interferes with maintenance activity. If trees are not interfering with access, leave trees alone.	Trees do not hinder maintenance activities. Selectively cultivate trees such as alders for firewood.
Side Slopes of Pond	Erosion	Eroded damage > 2 inches deep where cause of damage is still present or where there is potential for continued erosion.	Slopes should be stabilized with appropriate erosion control BMPs e.g. seeding, plastic covers, riprap.
Storage Area, Forebay	Sediment	Accumulated sediment that exceeds 10% of the designed forebay depth, or every three years.	Sediment cleaned out to designed pond shape and depth; reseeded if necessary to control erosion.
Pond Dikes	Settling	Any part of dike which has settled 4 inches lower than the design elevation.	Dike should be built back to the design elevation.
Emergency Overflow, Spillway	Rock missing	Only 1 layer of rock above native soil in an area $\geq 5 \text{ ft}^2$ or any exposure of native soil.	Replace rock to design standards.
II. Debris Barriers - General	Trash and debris	Trash or debris that is plugging $\geq 20\%$ of the openings in the barrier.	Barrier clear to receive capacity flow.

STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed	
III. Fencing - General	Metal Damaged/missing bars	Bars are bent out of shape ≥ 3 inches. Bars or entire barrier is missing. Bars are loose and rust is causing 50% deterioration to any part of the barrier.	Bars in place with no bend $\geq 3/4$ ". Bars in place according to design. Repair or replace barrier to standards.	
	Missing or broken parts	Any defect in the fence that permits easy entrance to the facility. Parts broken or missing.	Parts in place to provide adequate security. Broken or missing parts replaced.	
	Erosion	Erosion ≥ 4 inches deep and 12 - 18 inches wide permitting an opening under the fence.	No opening under the fence ≥ 4 inches in depth.	
Wire Fences	Damaged parts	Posts out of plumb more than 6 inches.	Posts plumb within $1\frac{1}{2}$ inches.	
		Top rails bent more than 6 inches.	Top rail free of bends ≥ 1 inch.	
		Any part of fence (including posts, top rails and fabric) ≥ 1 foot out of design alignment.	Fence is aligned and meets design standards.	
		Missing or loose tension wire.	Tension wire in place & holding fabric.	
		Missing or loose barbed wire sagging more than $2\frac{1}{2}$ inches between posts.	Barbed wire in place with $< 3/4$ inch sag between posts.	
IV. Gates - General	Deteriorated paint or protective coating	Extension arm missing, broken or bent out of shape more than $1\frac{1}{2}$ inches.	Extension arm in place with no bends larger than $3/4$ inch.	
		Part(s) that have a rusting or scaling condition which has affected structural adequacy.	Structurally adequate posts or parts with a uniform protective coating.	
		Openings in fabric	Openings in fabric are such that an 8 inch diameter ball could fit through.	No openings in fence.
		Damaged or missing members	Missing gate or locking device.	Gates and locking devices in place.
			Broken or missing hinges such that gate cannot be easily opened and closed by maintenance personnel.	Hinges intact & lubed, gate working freely.
Gate is out of plumb ≥ 6 inches and ≥ 1 foot out of design alignment.	Gate is aligned & vertical.			
V. Access Roads, Easements - General	Blocked roadway	Missing stretcher bar, stretcher bands and ties.	Stretcher bar, bands & ties in place.	
		See "Fencing" standard, above.	See "Fencing" standard, above.	
		Exceeds $1 \text{ ft}^3/1000 \text{ ft}^2$ or the amount that would fill a standard size garbage can.	Trash & debris cleared from site.	
		Debris which could damage vehicle tires.	Roadway free of such debris.	
		Obstructions which reduce clearance above road surface to < 14 feet.	Roadway overhead clear to 14 feet high.	

STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
V. Access Roads, Easements, continued	Blocked roadway, continued	Any obstructions restricting access to a 10 - 12 foot width for a distance of ≥ 12 feet or any point restricting access to a < 10 foot width.	Obstruction moved to allow at least a 12 foot access route.
	Settlement, potholes, mushy spots, ruts	When any surface exceeds 6 inches in depth and 6 ft ² in area. In general, any surface defect which prevents or hinders maintenance access.	Road surface uniformly smooth with no evidence of potholes, settlement, mushy spots or ruts.
	Vegetation in surface	Weeds growing in the road surface that are ≥ 6 inches tall and < 6 inches apart within a 400 ft ² area.	Road surface free of weeds taller than 2 inches.
	Erosion damage	Erosion within 1 foot of the roadway ≥ 8 inches wide & 6 inches deep.	Shoulder free of erosion & matching the surrounding road.
	Weeds and brush	Weeds and brush exceed 18 inches in height or hinder maintenance access.	Weeds and brush cut to 2 inches in height or cleared in such a way as to allow maintenance access.

Appendix F: Wetpond Calculations

8706 Wetpond with Whole Lot

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Page 1

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	1,632.0	0.0017	0.013	18.0	0.0	0.0

8706 Wetpond with Whole Lot

Prepared by HP Inc.

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Type IA 24-hr WQ Rainfall=2.40"

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Page 2

Summary for Subcatchment 1S: Basin 1S

Runoff = 7.33 cfs @ 7.99 hrs, Volume= 2.684 af, Depth> 1.56"

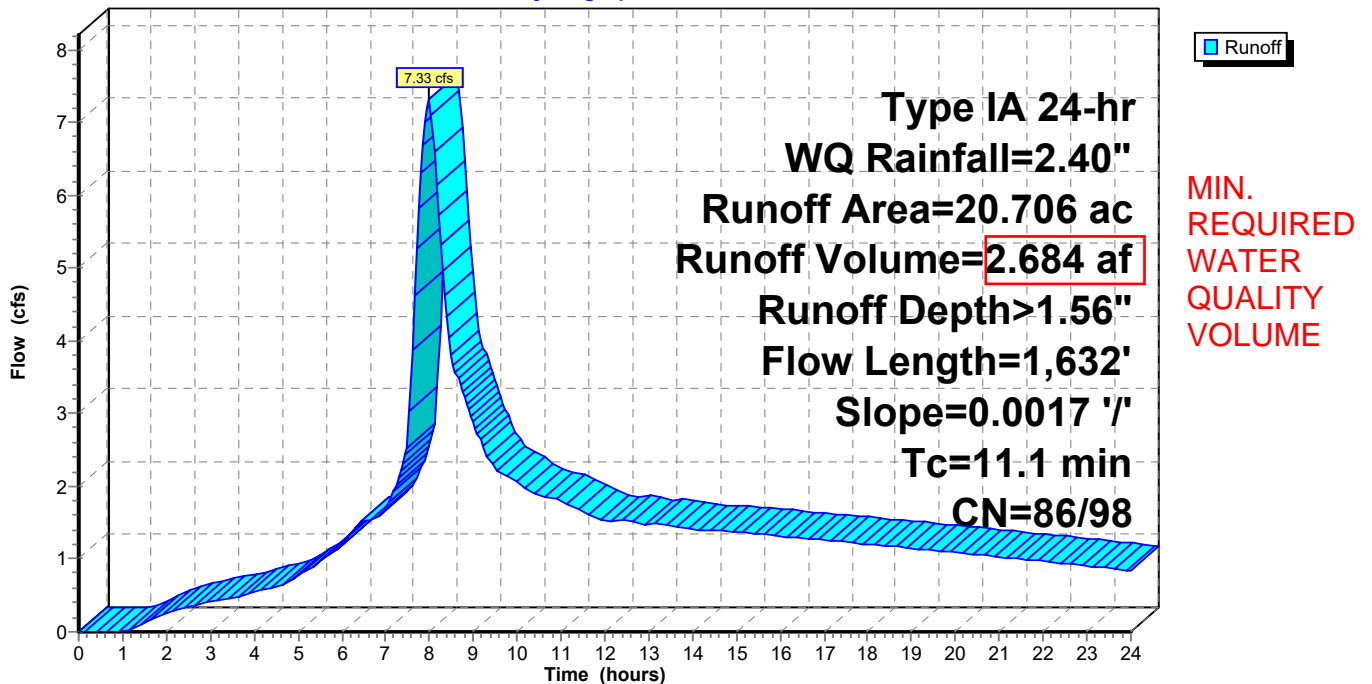
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr WQ Rainfall=2.40"

Area (ac)	CN	Description
* 7.749	98	Imp.
* 12.487	86	>75% Grass cover, Good, HSG C
* 0.470	100	Pond
20.706	91	Weighted Average
12.487	86	60.31% Pervious Area
8.219	98	39.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	1,632	0.0017	2.45	4.33	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013

Subcatchment 1S: Basin 1S

Hydrograph



8706 Wetpond with Whole Lot

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Type IA 24-hr 100-YR Rainfall=6.80"

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Page 1

Summary for Pond 1P: Permanent Pool (Dead Storage)

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	2.731 af	ae (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	0.131	0.000	0.000
9.00	0.476	2.731	2.731

PROPOSED
VOLUME
WATER QUALITY
PERMANENT POOL



Appendix G: HydroCAD Analysis - Detention

2-YR STM

8706 Wetpond with Whole Lot

Type IA 24-hr 2-YR Rainfall=3.80"

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Page 1

Summary for Subcatchment 1X: Basin 1X

Runoff = 3.81 cfs @ 8.84 hrs, Volume= 3.252 af, Depth> 1.88"

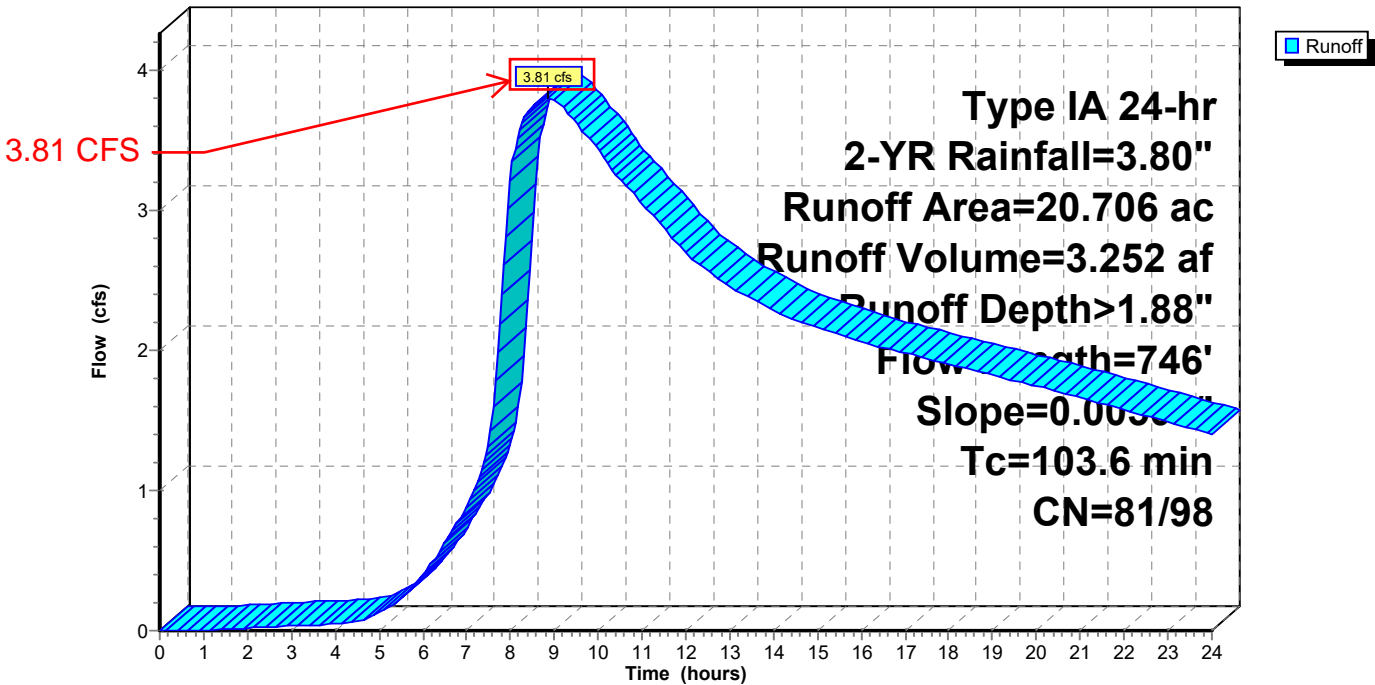
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-YR Rainfall=3.80"

Area (ac)	CN	Description
* 0.591	98	Imp.
* 20.115	81	Wood or Forest Land Soil Group C
20.706	81	Weighted Average
20.115	81	97.15% Pervious Area
0.591	98	2.85% Impervious Area

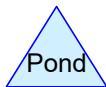
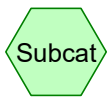
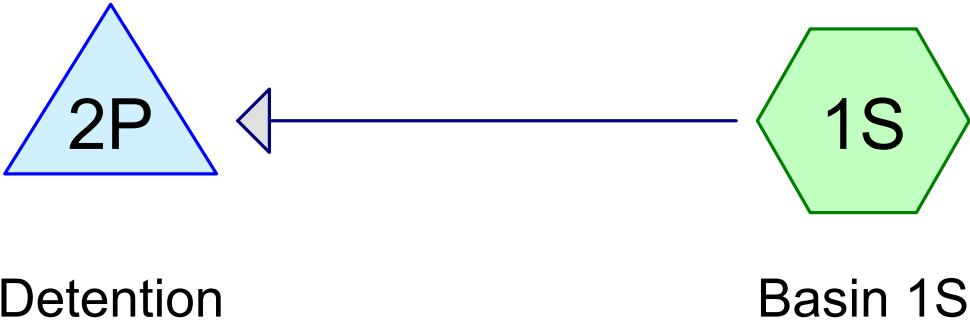
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.6	300	0.0050	0.06		Sheet Flow, Sheet flow Woods: Light underbrush n= 0.400 P2= 3.80"
21.0	446	0.0050	0.35		Shallow Concentrated Flow, Shallow Concentrated Flow Woodland Kv= 5.0 fps
103.6	746	Total			

Subcatchment 1X: Basin 1X

Hydrograph



2-YR STM



Routing Diagram for 8706 Wetpond with Whole Lot
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8706 Wetpond with Whole Lot

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.487	86	>75% Grass cover, Good, HSG C (1S)
7.749	98	Imp. (1S)
0.470	100	Pond (1S)
20.706	91	TOTAL AREA

8706 Wetpond with Whole Lot

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
12.487	HSG C	1S
0.000	HSG D	
8.219	Other	1S
20.706		TOTAL AREA

8706 Wetpond with Whole Lot

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	12.487	0.000	0.000	12.487	>75% Grass cover, Good	1S
0.000	0.000	0.000	0.000	7.749	7.749	Imp.	1S
0.000	0.000	0.000	0.000	0.470	0.470	Pond	1S
0.000	0.000	12.487	0.000	8.219	20.706	TOTAL AREA	

8706 Wetpond with Whole Lot

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Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	1,632.0	0.0017	0.013	18.0	0.0	0.0

8706 Wetpond with Whole Lot

Type IA 24-hr 2-YR Rainfall=3.80"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Basin 1S

Runoff Area=20.706 ac 39.69% Impervious Runoff Depth>2.83"
Flow Length=1,632' Slope=0.0017 '/' Tc=11.1 min CN=86/98 Runoff=13.74 cfs 4.882 af

Pond 2P: Detention

Peak Elev=3.11' Storage=2.335 af Inflow=13.74 cfs 4.882 af
Outflow=1.84 cfs 2.611 af

Total Runoff Area = 20.706 ac Runoff Volume = 4.882 af Average Runoff Depth = 2.83"
60.31% Pervious = 12.487 ac 39.69% Impervious = 8.219 ac

8706 Wetpond with Whole Lot

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Type IA 24-hr 2-YR Rainfall=3.80"

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Summary for Subcatchment 1S: Basin 1S

Runoff = 13.74 cfs @ 7.99 hrs, Volume= 4.882 af, Depth> 2.83"

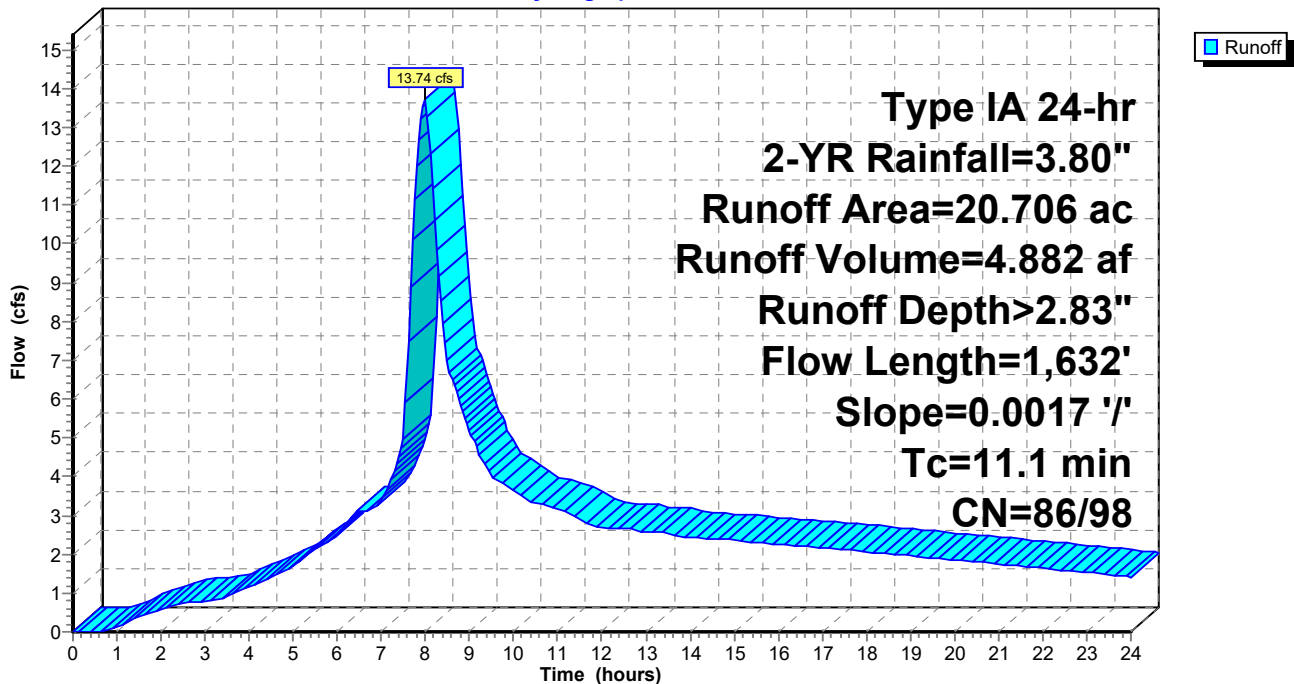
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 2-YR Rainfall=3.80"

Area (ac)	CN	Description
* 7.749	98	Imp.
* 12.487	86	>75% Grass cover, Good, HSG C
* 0.470	100	Pond
20.706	91	Weighted Average
12.487	86	60.31% Pervious Area
8.219	98	39.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	1,632	0.0017	2.45	4.33	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013

Subcatchment 1S: Basin 1S

Hydrograph



8706 Wetpond with Whole Lot

Type IA 24-hr 2-YR Rainfall=3.80"

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Summary for Pond 2P: Detention

Inflow Area = 20.706 ac, 39.69% Impervious, Inflow Depth > 2.83" for 2-YR event
 Inflow = 13.74 cfs @ 7.99 hrs, Volume= 4.882 af
 Outflow = 1.84 cfs @ 20.17 hrs, Volume= 2.611 af, Atten= 87%, Lag= 730.6 min
 Primary = 1.84 cfs @ 20.17 hrs, Volume= 2.611 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 3.11' @ 20.17 hrs Surf.Area= 0.831 ac Storage= 2.335 af

Plug-Flow detention time= 444.2 min calculated for 2.606 af (53% of inflow)
 Center-of-Mass det. time= 190.7 min (907.0 - 716.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3.997 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	0.672	0.000	0.000
5.00	0.927	3.997	3.997

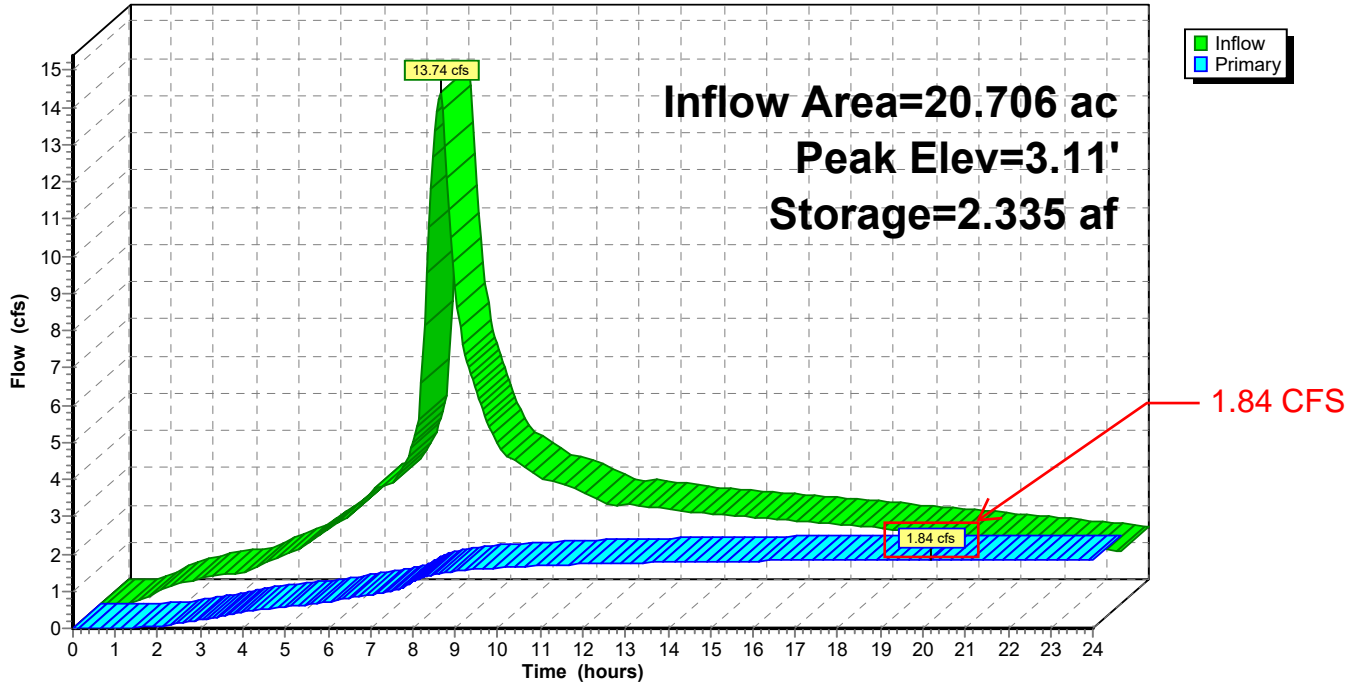
Device	Routing	Invert	Outlet Devices
#1	Primary	3.15'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	0.00'	6.3" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.84 cfs @ 20.17 hrs HW=3.11' (Free Discharge)

- 1=Orifice/Grate (Controls 0.00 cfs)
- 2=Orifice/Grate (Orifice Controls 1.84 cfs @ 8.49 fps)

Pond 2P: Detention

Hydrograph



10-YR STM

8706 Wetpond with Whole Lot

Type IA 24-hr 10-YR Rainfall=5.30"

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Summary for Subcatchment 1X: Basin 1X

Runoff = 6.77 cfs @ 8.71 hrs, Volume= 5.399 af, Depth> 3.13"

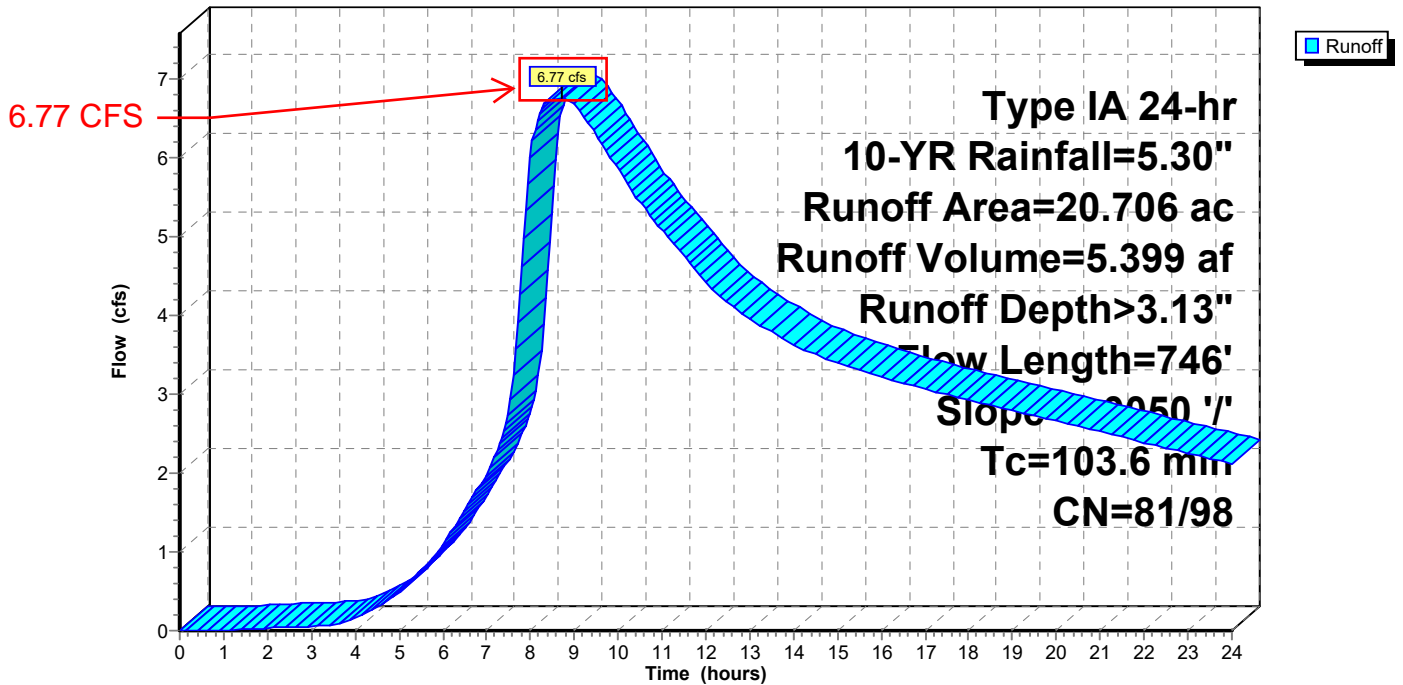
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=5.30"

Area (ac)	CN	Description
* 0.591	98	Imp.
* 20.115	81	Wood or Forest Land Soil Group C
20.706	81	Weighted Average
20.115	81	97.15% Pervious Area
0.591	98	2.85% Impervious Area

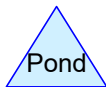
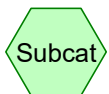
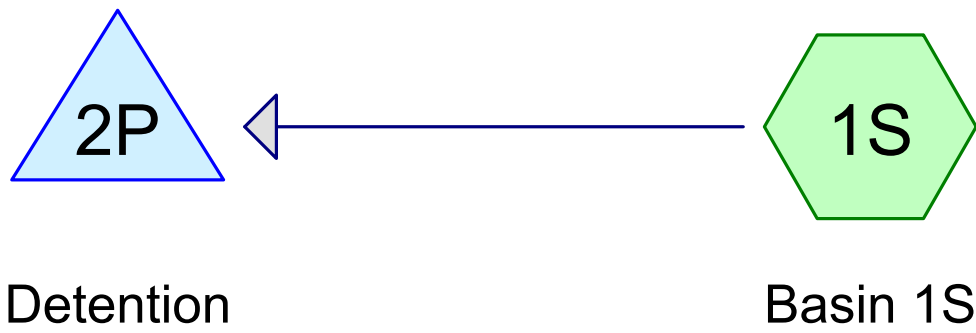
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.6	300	0.0050	0.06		Sheet Flow, Sheet flow Woods: Light underbrush n= 0.400 P2= 3.80"
21.0	446	0.0050	0.35		Shallow Concentrated Flow, Shallow Concentrated Flow Woodland Kv= 5.0 fps
103.6	746	Total			

Subcatchment 1X: Basin 1X

Hydrograph



10-YR STM



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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.487	86	>75% Grass cover, Good, HSG C (1S)
7.749	98	Imp. (1S)
0.470	100	Pond (1S)
20.706	91	TOTAL AREA

8706 Wetpond with Whole Lot

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
12.487	HSG C	1S
0.000	HSG D	
8.219	Other	1S
20.706		TOTAL AREA

8706 Wetpond with Whole Lot

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	12.487	0.000	0.000	12.487	>75% Grass cover, Good	1S
0.000	0.000	0.000	0.000	7.749	7.749	Imp.	1S
0.000	0.000	0.000	0.000	0.470	0.470	Pond	1S
0.000	0.000	12.487	0.000	8.219	20.706	TOTAL AREA	

8706 Wetpond with Whole Lot

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Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	1,632.0	0.0017	0.013	18.0	0.0	0.0

8706 Wetpond with Whole Lot

Type IA 24-hr 10-YR Rainfall=5.30"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Basin 1S

Runoff Area=20.706 ac 39.69% Impervious Runoff Depth>4.25"
Flow Length=1,632' Slope=0.0017 '/' Tc=11.1 min CN=86/98 Runoff=20.88 cfs 7.336 af

Pond 2P: Detention

Peak Elev=3.51' Storage=2.671 af Inflow=20.88 cfs 7.336 af
Outflow=5.26 cfs 4.898 af

Total Runoff Area = 20.706 ac Runoff Volume = 7.336 af Average Runoff Depth = 4.25"
60.31% Pervious = 12.487 ac 39.69% Impervious = 8.219 ac

8706 Wetpond with Whole Lot

Type IA 24-hr 10-YR Rainfall=5.30"

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Summary for Subcatchment 1S: Basin 1S

Runoff = 20.88 cfs @ 7.99 hrs, Volume= 7.336 af, Depth> 4.25"

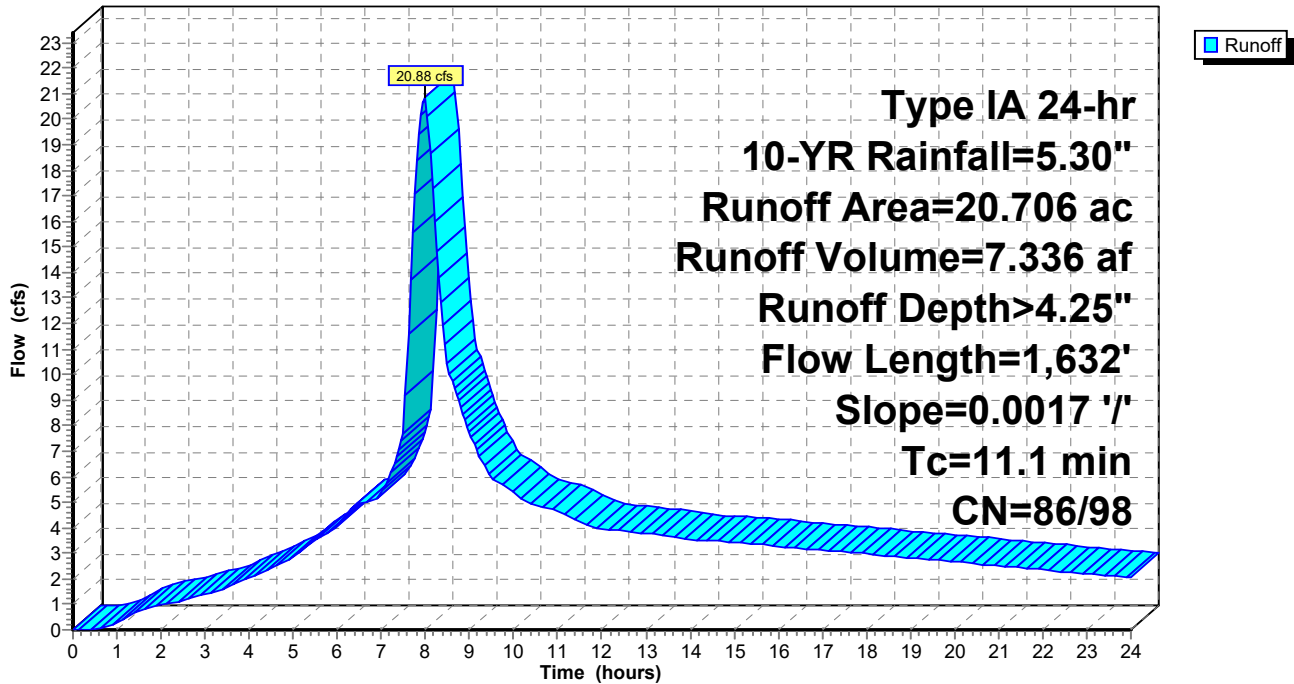
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YR Rainfall=5.30"

Area (ac)	CN	Description
* 7.749	98	Imp.
* 12.487	86	>75% Grass cover, Good, HSG C
* 0.470	100	Pond
20.706	91	Weighted Average
12.487	86	60.31% Pervious Area
8.219	98	39.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	1,632	0.0017	2.45	4.33	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013

Subcatchment 1S: Basin 1S

Hydrograph



8706 Wetpond with Whole Lot

Type IA 24-hr 10-YR Rainfall=5.30"

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Summary for Pond 2P: Detention

Inflow Area = 20.706 ac, 39.69% Impervious, Inflow Depth > 4.25" for 10-YR event
 Inflow = 20.88 cfs @ 7.99 hrs, Volume= 7.336 af
 Outflow = 5.26 cfs @ 10.11 hrs, Volume= 4.898 af, Atten= 75%, Lag= 127.2 min
 Primary = 5.26 cfs @ 10.11 hrs, Volume= 4.898 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 3.51' @ 10.11 hrs Surf.Area= 0.851 ac Storage= 2.671 af

Plug-Flow detention time= 363.0 min calculated for 4.898 af (67% of inflow)
 Center-of-Mass det. time= 164.8 min (867.4 - 702.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3.997 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	0.672	0.000	0.000
5.00	0.927	3.997	3.997

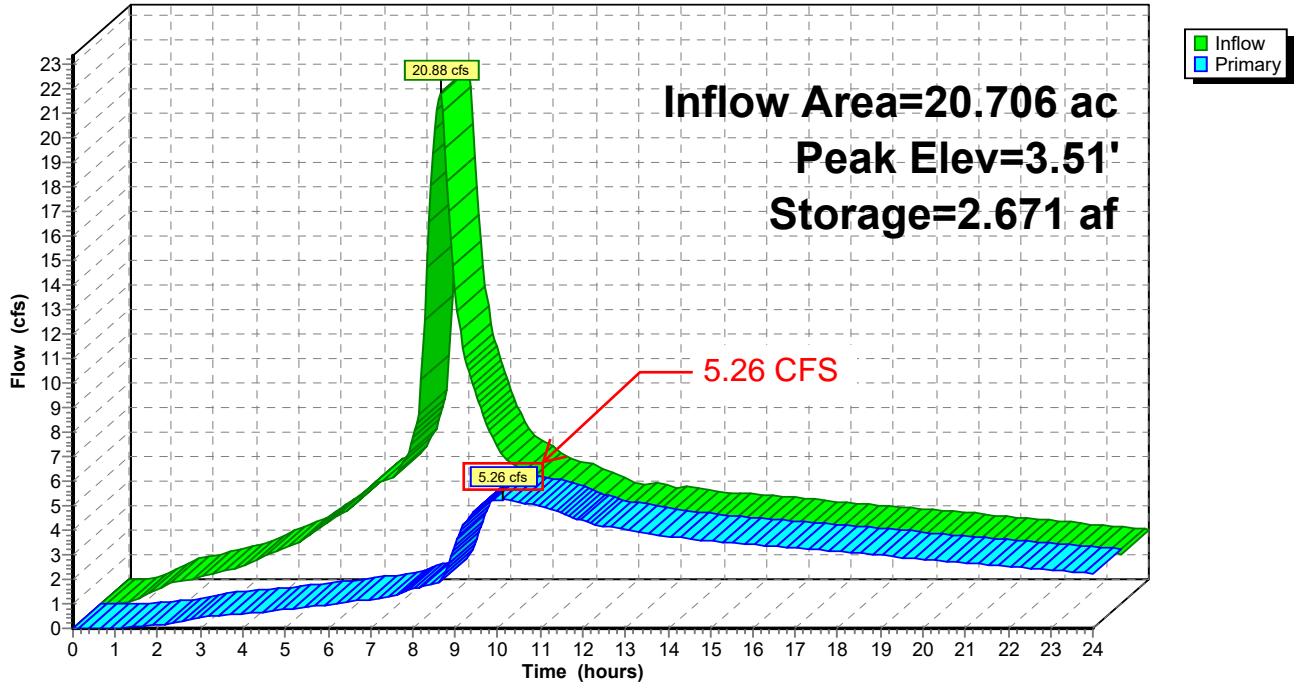
Device	Routing	Invert	Outlet Devices
#1	Primary	3.15'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	0.00'	6.3" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.25 cfs @ 10.11 hrs HW=3.51' (Free Discharge)

- 1=Orifice/Grate (Weir Controls 3.30 cfs @ 1.96 fps)
- 2=Orifice/Grate (Orifice Controls 1.95 cfs @ 9.02 fps)

Pond 2P: Detention

Hydrograph



100-YR STM

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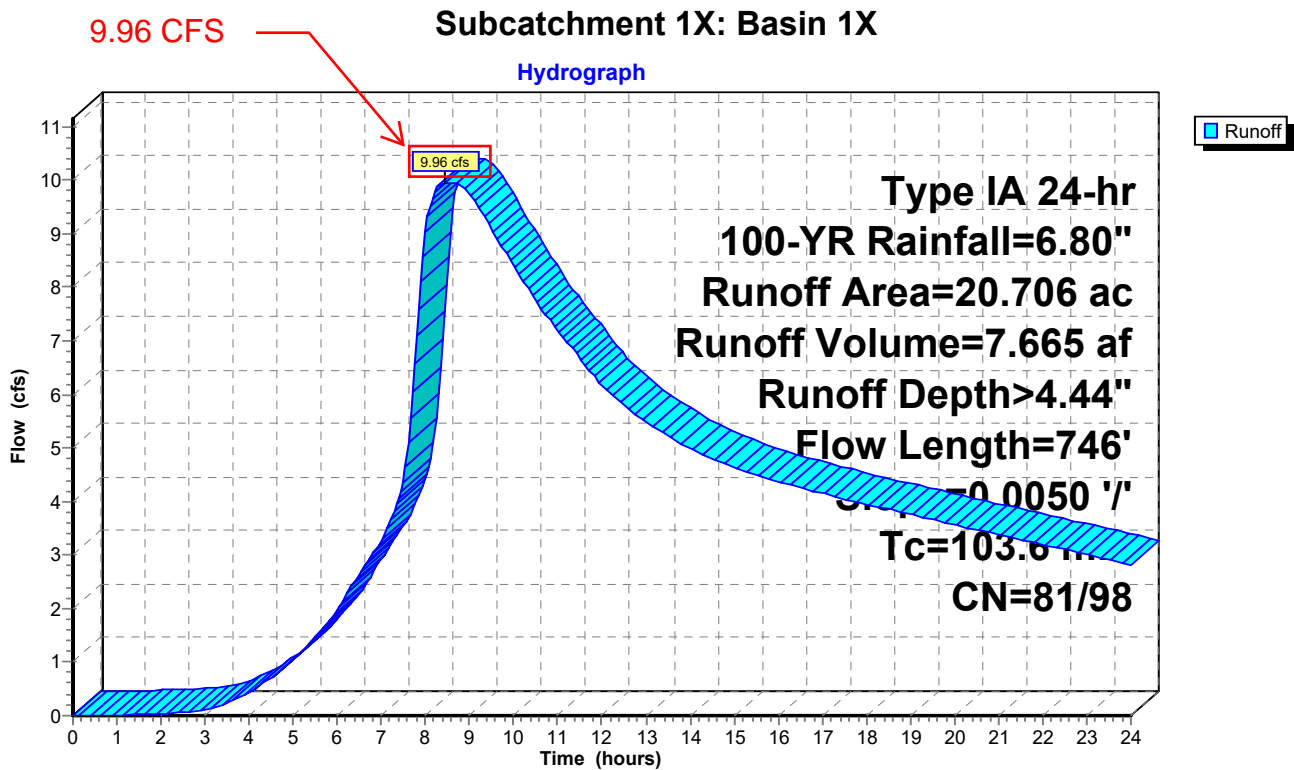
Summary for Subcatchment 1X: Basin 1X

Runoff = 9.96 cfs @ 8.42 hrs, Volume= 7.665 af, Depth> 4.44"

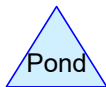
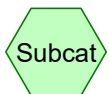
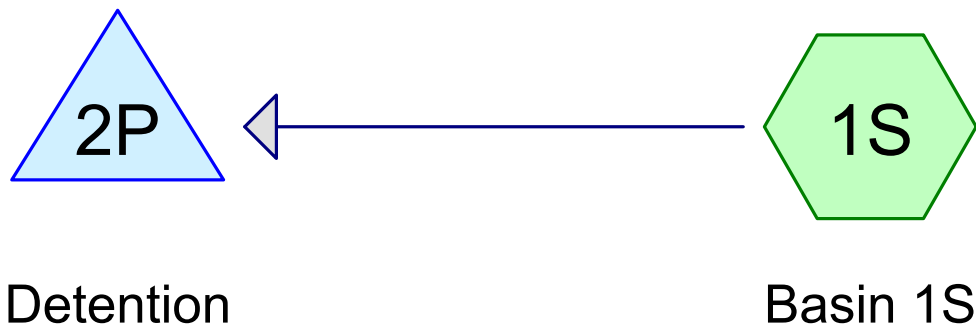
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-YR Rainfall=6.80"

Area (ac)	CN	Description
* 0.591	98	Imp.
* 20.115	81	Wood or Forest Land Soil Group C
20.706	81	Weighted Average
20.115	81	97.15% Pervious Area
0.591	98	2.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
82.6	300	0.0050	0.06		Sheet Flow, Sheet flow Woods: Light underbrush n= 0.400 P2= 3.80"
21.0	446	0.0050	0.35		Shallow Concentrated Flow, Shallow Concentrated Flow Woodland Kv= 5.0 fps
103.6	746	Total			



100-YR STM



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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.487	86	>75% Grass cover, Good, HSG C (1S)
7.749	98	Imp. (1S)
0.470	100	Pond (1S)
20.706	91	TOTAL AREA

8706 Wetpond with Whole Lot

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
12.487	HSG C	1S
0.000	HSG D	
8.219	Other	1S
20.706		TOTAL AREA

8706 Wetpond with Whole Lot

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	12.487	0.000	0.000	12.487	>75% Grass cover, Good	1S
0.000	0.000	0.000	0.000	7.749	7.749	Imp.	1S
0.000	0.000	0.000	0.000	0.470	0.470	Pond	1S
0.000	0.000	12.487	0.000	8.219	20.706	TOTAL AREA	

8706 Wetpond with Whole Lot

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Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	1S	0.00	0.00	1,632.0	0.0017	0.013	18.0	0.0	0.0

8706 Wetpond with Whole Lot

Type IA 24-hr 100-YR Rainfall=6.80"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Basin 1S

Runoff Area=20.706 ac 39.69% Impervious Runoff Depth>5.70"
Flow Length=1,632' Slope=0.0017 '/' Tc=11.1 min CN=86/98 Runoff=28.08 cfs 9.837 af

Pond 2P: Detention

Peak Elev=4.00' Storage=3.099 af Inflow=28.08 cfs 9.837 af
Outflow=9.94 cfs 7.336 af

Total Runoff Area = 20.706 ac Runoff Volume = 9.837 af Average Runoff Depth = 5.70"
60.31% Pervious = 12.487 ac 39.69% Impervious = 8.219 ac

8706 Wetpond with Whole Lot

Prepared by HP Inc.

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Type IA 24-hr 100-YR Rainfall=6.80"

Printed 11/11/2021

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Summary for Subcatchment 1S: Basin 1S

Runoff = 28.08 cfs @ 7.98 hrs, Volume= 9.837 af, Depth> 5.70"

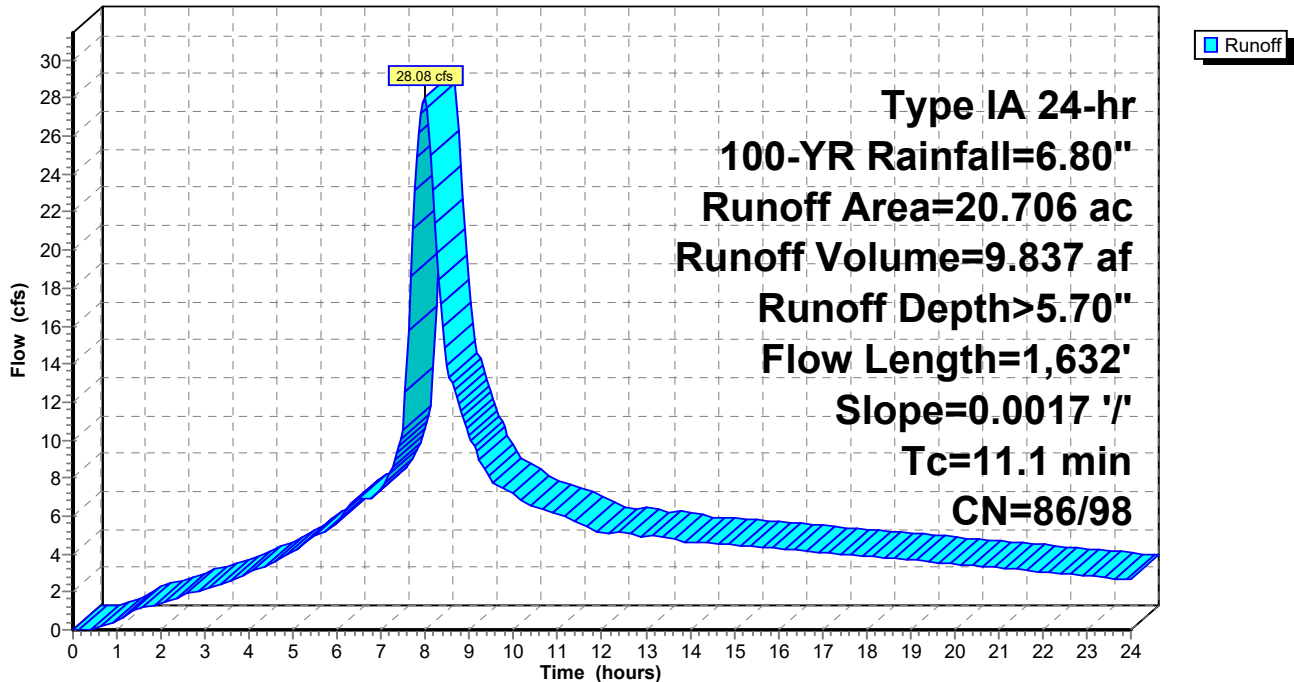
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100-YR Rainfall=6.80"

Area (ac)	CN	Description
* 7.749	98	Imp.
* 12.487	86	>75% Grass cover, Good, HSG C
* 0.470	100	Pond
20.706	91	Weighted Average
12.487	86	60.31% Pervious Area
8.219	98	39.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	1,632	0.0017	2.45	4.33	Pipe Channel, 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013

Subcatchment 1S: Basin 1S

Hydrograph



8706 Wetpond with Whole Lot

Type IA 24-hr 100-YR Rainfall=6.80"

Prepared by HP Inc.

Printed 11/11/2021

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Summary for Pond 2P: Detention

Inflow Area = 20.706 ac, 39.69% Impervious, Inflow Depth > 5.70" for 100-YR event
 Inflow = 28.08 cfs @ 7.98 hrs, Volume= 9.837 af
 Outflow = 9.94 cfs @ 9.05 hrs, Volume= 7.336 af, Atten= 65%, Lag= 64.2 min
 Primary = 9.94 cfs @ 9.05 hrs, Volume= 7.336 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 4.00' @ 9.05 hrs Surf.Area= 0.876 ac Storage= 3.099 af

Plug-Flow detention time= 291.9 min calculated for 7.336 af (75% of inflow)
 Center-of-Mass det. time= 131.9 min (825.0 - 693.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3.997 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	0.672	0.000	0.000
5.00	0.927	3.997	3.997

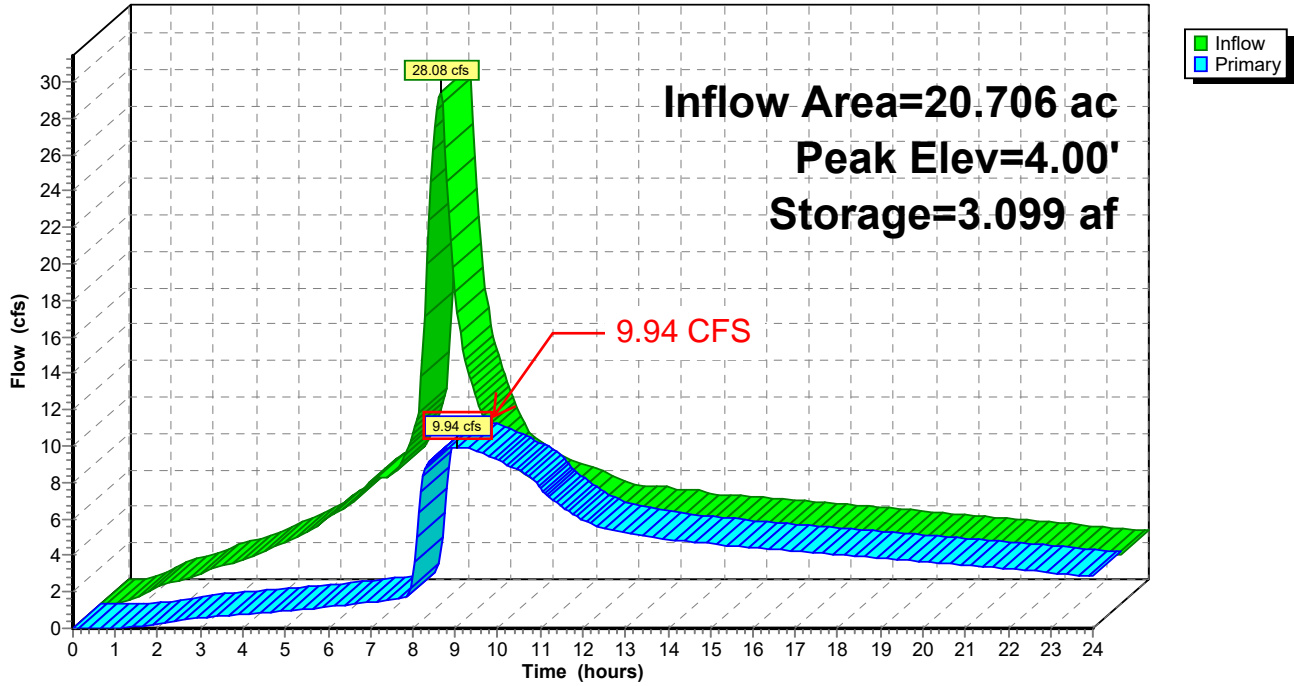
Device	Routing	Invert	Outlet Devices
#1	Primary	3.15'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	0.00'	6.3" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=9.94 cfs @ 9.05 hrs HW=4.00' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 7.86 cfs @ 4.45 fps)
- 2=Orifice/Grate (Orifice Controls 2.09 cfs @ 9.63 fps)

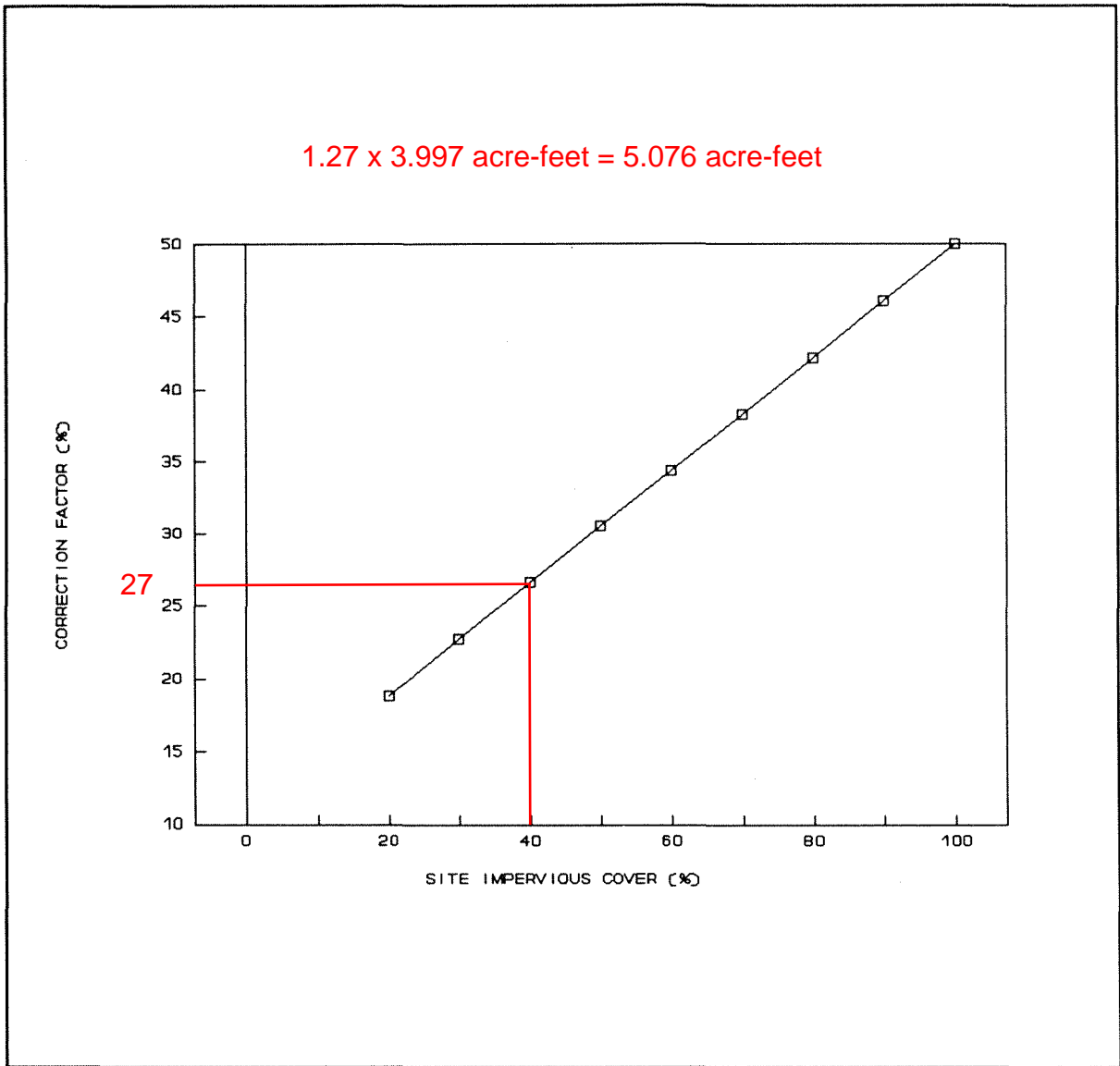
Pond 2P: Detention

Hydrograph



Appendix H: Volume Correction Factor

FIGURE III-1.1
Volume Correction Factor to be Applied to
Streambank Erosion Control BMPs
Based on Site Impervious Cover



Summary for Pond 28P: Detention with 27% Volume Correction Factor

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	5.112 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	0.881	0.000	0.000
5.00	1.164	5.112	5.112

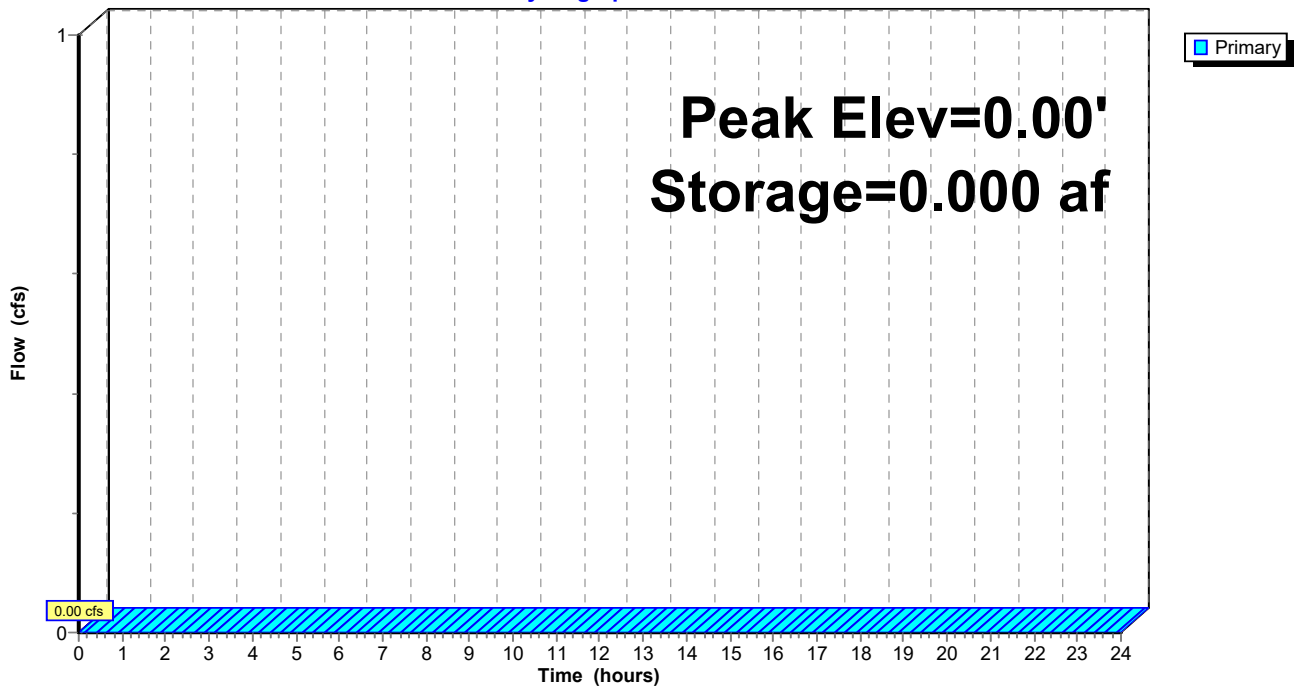
Device	Routing	Invert	Outlet Devices
#1	Primary	3.14'	18.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Primary	0.00'	6.3" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)

- 1=Orifice/Grate (Controls 0.00 cfs)
- 2=Orifice/Grate (Controls 0.00 cfs)

Pond 28P: Detention with 27% Volume Correction Factor

Hydrograph



Appendix I: Curve Numbers

Table III-1.3 SCS Western Washington Runoff Curve Numbers
 (Published by SCS in 1982) Runoff curve numbers for selected agricultural, suburban and urban land use for Type 1A rainfall distribution, 24-hour storm duration.

LAND USE DESCRIPTION	CURVE NUMBERS BY HYDROLOGIC SOIL GROUP			
	A	B	C	D
Cultivated land(1): winter condition	86	91	94	95
Mountain open areas: low growing brush & grasslands	74	82	89	92
Meadow or pasture:	65	78	85	89
Wood or forest land: undisturbed	42	64	76	81
Wood or forest land: young second growth or brush	55	72	81	86
Orchard: with cover crop	81	88	92	94
Open spaces, lawns, parks, golf courses, cemeteries, landscaping.				
Good condition: grass cover on $\geq 75\%$ of the area	68	80	86	90
Fair condition: grass cover on 50-75% of the area	77	85	90	92
Gravel roads & parking lots:	76	85	89	91
Dirt roads & parking lots:	72	82	87	89
Impervious surfaces, pavement, roofs etc.	98	98	98	98
Open water bodies: lakes, wetlands, ponds etc.	100	100	100	100
Single family residential(2):				
Dwelling Unit/Gross Acre		%Impervious(3)		
1.0 DU/GA		15		
1.5 DU/GA		20		
2.0 DU/GA		25		
2.5 DU/GA		30		
3.0 DU/GA		34		
3.5 DU/GA		38		
4.0 DU/GA		42		
4.5 DU/GA		46		
5.0 DU/GA		48		
5.5 DU/GA		50		
6.0 DU/GA		52		
6.5 DU/GA		54		
7.0 DU/GA		56		
PUD's, condos, apartments, commercial businesses & industrial areas		%impervious must be computed		
			Separate curve number shall be selected for pervious & impervious portions of the site or basin	

- (1) For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Sec. 4, Hydrology, Chapter 9, August 1972.
- (2) Assumes roof and driveway runoff is directed into street/storm system.
- (3) The remaining pervious areas (lawn) are considered to be in good condition for these curve numbers.

Appendix J: Geotechnical Report

August 6, 2021

Mr. Jon Johnson
AHO Construction, Inc.
5512 NE 109th Court, Suite 101
Vancouver, Washington 98662

**Re: Infiltration Testing Results Report
NE Railroad Avenue Subdivision
Parcel No. 64522000
Yacolt, Washington
CWE W.O. # 21126**

Mr. Johnson:

As requested, Columbia West Engineering, Inc. (Columbia West) is pleased to submit this infiltration testing results report for the above-referenced project located in Yacolt, Washington. The purpose of this report is to provide soil infiltration rate observations and test results. The specific scope of services was outlined in a proposal contract dated June 1, 2021. This report is subject to the limitations expressed in Appendix E.

Site Location and Description

As indicated on Figures 1 and 2, the subject site is located south of 112 W Hoag Street in Yacolt, Washington. The site is comprised of a portion of tax parcel 64522000 totaling approximately 20 acres. The regulatory jurisdictional agency is the City of Yacolt, Washington. The approximate latitude and longitude are N 45° 51' 40" and W 122° 24' 24", and the legal description is a portion of the NE and NW ¼ of Section 02, T4N, R3E, Willamette Meridian.

Proposed Development

Correspondence with the project civil engineer indicates that proposed development will include the construction of approximately 55 single-family residential lots with asphalt roadways, underground utilities and stormwater management facilities. This report is based upon proposed development as described above and may not be applicable if modified.

Site Soil and Geologic Conditions

According to the *Geologic Map of the Yacolt Quadrangle, Clark County, Washington* (USGS, SIM 2901, 2006), near-surface soils are expected to consist of upper-Pleistocene-aged, crudely stratified, moderately to well-sorted, weakly cemented outwash glacial basin fill consisting of poorly consolidated pebbly to cobbly gravel and sand (Qao).

The *Web Soil Survey* (United States Department of Agriculture, Natural Resource Conservation Service [USDA NRCS], 2021 Website) identifies surface soils primarily as Yacolt loam and Yacolt stony loam. Yacolt series soils are generally deep, granular gravels formed in volcanic ash mixed with glacial drift on terraces, well-drained and exhibit moderate permeability, low shear strength, and a slight erosion hazard based primarily upon slope grade.

Field Exploration and Soil Description

Subsurface exploration for infiltration testing conducted on June 18, 2021 consisted of nine test pit explorations (TP-1 through TP-9) to a maximum depth of approximately 11 feet below ground surface

(bgs). Results of subsurface exploration indicate that the site is generally covered by approximately 12 inches of topsoil and deleterious material at the locations observed.

Underlying the topsoil layer, silty/sandy soils were encountered in all subsurface explorations to depths ranging from 3 to 7 ½ feet bgs where they were underlain by well- to poorly-graded gravels. Representative soil samples were collected from infiltration test depths. Selected samples were submitted for laboratory analysis for USCS soil classification. Analytical laboratory test results are presented in Appendix A. Exploration locations are indicated on Figure 2. Subsurface exploration logs are presented in Appendix B. Soil descriptions and classification information are provided in Appendix C. A photo log is presented in Appendix D. Subsurface lithology may generally be described by soil types identified in the following text. Detailed field logs of the encountered materials are presented in Appendix B, *Exploration Logs*.

Soil Type 1 - Sandy SILT with Cobbles

Soil Type 1 was observed to primarily consist of brown, dry to moist, sandy SILT with cobbles. Soil Type 1 was encountered in TP-2, 3, and 5-7 at depths ranging from approximately 1 to 4 ½ feet bgs where it was underlain by Soil Type 3 in all observed locations.

Soil Type 2 - Silty SAND with Gravel and Cobbles

Soil Type 2 was observed to primarily consist of brown/tan, dry to moist, silty SAND with gravel and cobbles. Soil Type 2 was encountered in TP-1, 4, 8 and 9 at depths ranging from approximately 1 to 7 ½ feet bgs where it was underlain by Soil Type 3 in all observed locations.

Soil Type 3 - Well- to Poorly-Graded GRAVEL with Silt, Sand, Cobbles and Boulders

Soil Type 3 was observed to primarily consist of brown/grey, mottled, moist, well- to poorly-graded GRAVEL with silt, sand, cobbles, and trace boulders. Soil Type 3 was encountered in all test pit explorations at depths ranging from 3 to 7 ½ feet bgs and extended to depths ranging from 8 to 11 feet bgs where excavation encountered practical refusal.

Groundwater

Groundwater was not encountered within test pit explorations to the maximum depths explored on June 18, 2021. Review of Clark County Maps Online and nearby well logs obtained from the State of Washington Department of Ecology indicates that groundwater levels may vary considerably. Variations in ground water elevations likely reflect the screened interval depth of these wells, changes in ground surface elevation, and the presence of multiple aquifers and confining units.

Groundwater levels are also subject to seasonal variance and may rise during extended periods of increased precipitation. Perched groundwater may also be present in localized areas. Seeps and springs may become evident during site grading, primarily in areas cut below existing grade. Structures, roads, and drainage design should be planned accordingly. Piezometer installation and long-term monitoring, beyond the scope of this investigation, would be necessary to provide more detailed groundwater information.

Infiltration Analysis

To investigate the feasibility of subsurface disposal of stormwater, a field investigation consisting of nine test pit explorations and 18 encased, single-ring, falling head infiltration tests was conducted at the site on June 18, 2021 at depths ranging from approximately 3 to 6 feet bgs. Tests were performed by inserting standpipes into the soil at the depths noted in Table 1, filling the pipes with water, and measuring time relative to changes in hydraulic head following a presoak period. Using Darcy's Law for saturated flow in homogenous media, the coefficient of permeability (k) was then calculated.

Subsurface exploration was conducted with a track-mounted excavator. Results of in-situ infiltration testing are presented in Table 1. Infiltration rates have been reported without application of a factor of safety.

Summary of Results

Soils at the tested locations were observed and sampled where appropriate to adequately characterize the subsurface profile. Tested native soil may be classified as silty SAND and silty SAND with gravel (SM), well-graded GRAVEL with silt and sand (GW-GM), poorly-graded GRAVEL with sand (GP), and sandy SILT (ML).

Table 1: Infiltration Test Data (Coefficient of Permeability, k).

Infiltration Test Results							
Test Number	Location	Approximate Test Depth (feet bgs)	USCS Soil Type (* Indicates Visual Classification)	Redommeded USDA Soil Group Classification	Passing No. 200 Sieve (%)	Depth to Groundwater on 6/ 18/ 21 (feet bgs)	Infiltration Rate (Coefficient of Permeability, k) (inches/ hour)
IT-1.1	TP-1	3.0	Silty SAND with Gravel	D	14	Not Observed to 8 feet	12.7
IT-1.2		6.0	Well-Graded GRAVEL with Silt and Sand		9.4		<0.06
IT-2.1	TP-2	3.0	Sandy SILT*	C	—	Not Observed to 11 feet	0.7
IT-2.2		6.0	Poorly-Graded GRAVEL with Sand		1.7		1.5
IT-3.1	TP-3	3.0	Sandy SILT*	C	—	Not Observed to 8 feet	2.2
IT-3.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.5
IT-4.1	TP-4	3.0	Silty SAND	C	24.2	Not Observed to 8.5 feet	6.0
IT-4.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.5
IT-5.1	TP-5	3.0	Sandy SILT	C	65.7	Not Observed to 9 feet	0.7
IT-5.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.5
IT-6.1	TP-6	3.0	Sandy SILT*	C	—	Not Observed to 9 feet	0.6
IT-6.2		6.0	Poorly-Graded GRAVEL with Sand*		—		18.7
IT-7.1	TP-7	3.0	Sandy SILT*	C	—	Not Observed to 8 feet	2.2
IT-7.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.0
IT-8.1	TP-8	3.0	Silty SAND*	C	—	Not Observed to 8 feet	18.7
IT-8.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.0
IT-9.1	TP-9	3.0	Silty SAND*	C	—	Not Observed to 8 feet	6.7
IT-9.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.6

** USDA and WWHM classifications are based upon subsurface investigation and infiltration testing conducted at the locations shown. Infiltration rates are shown without application of a factor of safety.

Recommendations

Columbia West provides the following recommendations for design and construction of the proposed stormwater management system:

- The reported infiltration rates reflect approximate raw observed data, without application of a factor of safety. An adequate factor of safety should be applied to the observed infiltration rates prior to use in design calculations.
- An emergency overflow to an approved discharge location should be installed.
- If infiltration is considered, excavation and preparation of stormwater disposal facilities should be closely monitored by Columbia West.
- Infiltration facilities should be protected from erosion, especially during construction. Improperly designed or constructed systems may become fouled or plugged with mud or micaceous sediment.
- Infiltration rates should be verified by additional testing during construction when subgrade soils are exposed. Subgrade soils should be observed by Columbia West to verify soil index properties pertaining to infiltration are similar to those at the tested locations.
- As described previously, groundwater is often subject to seasonal variation and may rise significantly during wet precipitation months.
- Site soil conditions and localized infiltration capability may be highly variable. Limited one-day infiltration testing may not be an accurate predictor of long-term, post-developed system performance for sites with complex and highly variable soils. It should be understood that the systems may require additional infiltration capacity if future conditions indicate the systems are not functioning according to original tested and designed parameters.

Conclusion and Limitations

This infiltration testing results report was prepared in accordance with accepted standard conventional principles and practices of geotechnical engineering. This report pertains only to material tested and observed and is based upon proposed site development as described in this report. The information, and test results in this report are intended for use during the design phase of the project. This report is not an environmental assessment and should not be construed as a representative warranty of subsurface site conditions. Results and observations of this investigation are directly applicable and specifically accurate only for the exact tested locations on the date of the tests. If infiltration is proposed at areas or depths other than the locations tested, the results of this investigation may not be applicable for design. The discovery of adverse environmental conditions, or subsurface soils that deviate significantly from those described in this report, should immediately prompt further investigation. The above statements are in lieu of all other statements expressed or implied.

This report was prepared solely for the client and is not to be reproduced without prior authorization from Columbia West. Columbia West is not responsible for independent conclusions or recommendations made by others based upon information presented in this report. Additional limitations and important information about this report are provided in Appendix E. This information should be carefully read and understood by the client and civil/site plan engineer.

Columbia West appreciates the opportunity to provide geotechnical services. Please call me at 360-823-2900 if you have any questions or need additional information.

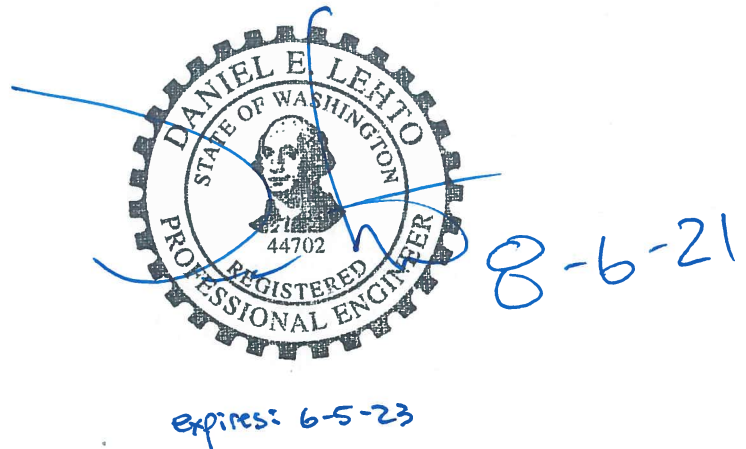
Sincerely,

COLUMBIA WEST ENGINEERING, Inc.



Daniel E. Lehto, PE, GE
Principal

Attachments: Figure 1- Site Location Map
Figure 2- Exploration Location Map
Appendices A through E



References

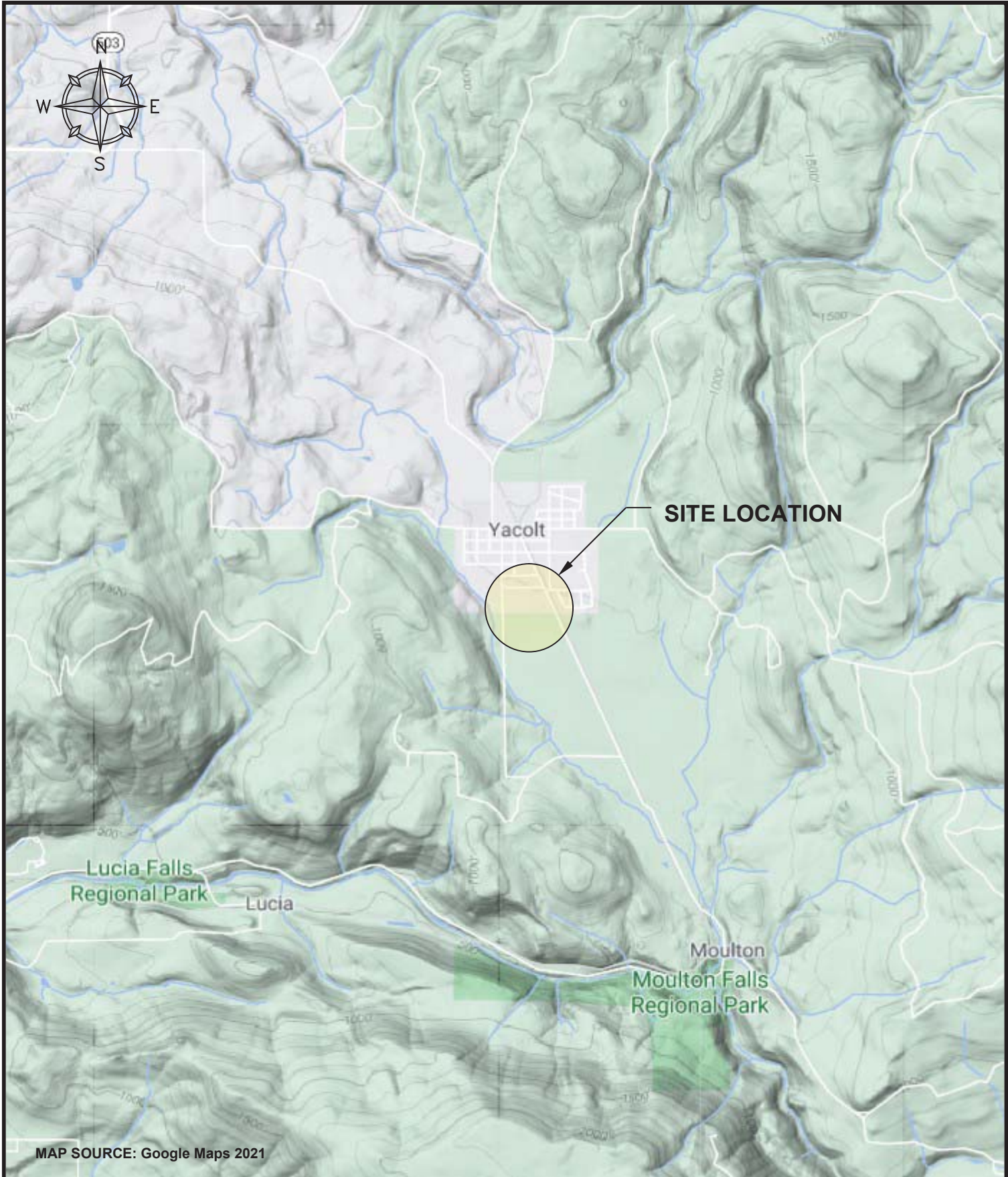
Evarts, R.C., *Geologic Map of the Yacolt Quadrangle, Clark County, Washington* (SIM-2901, 2006).

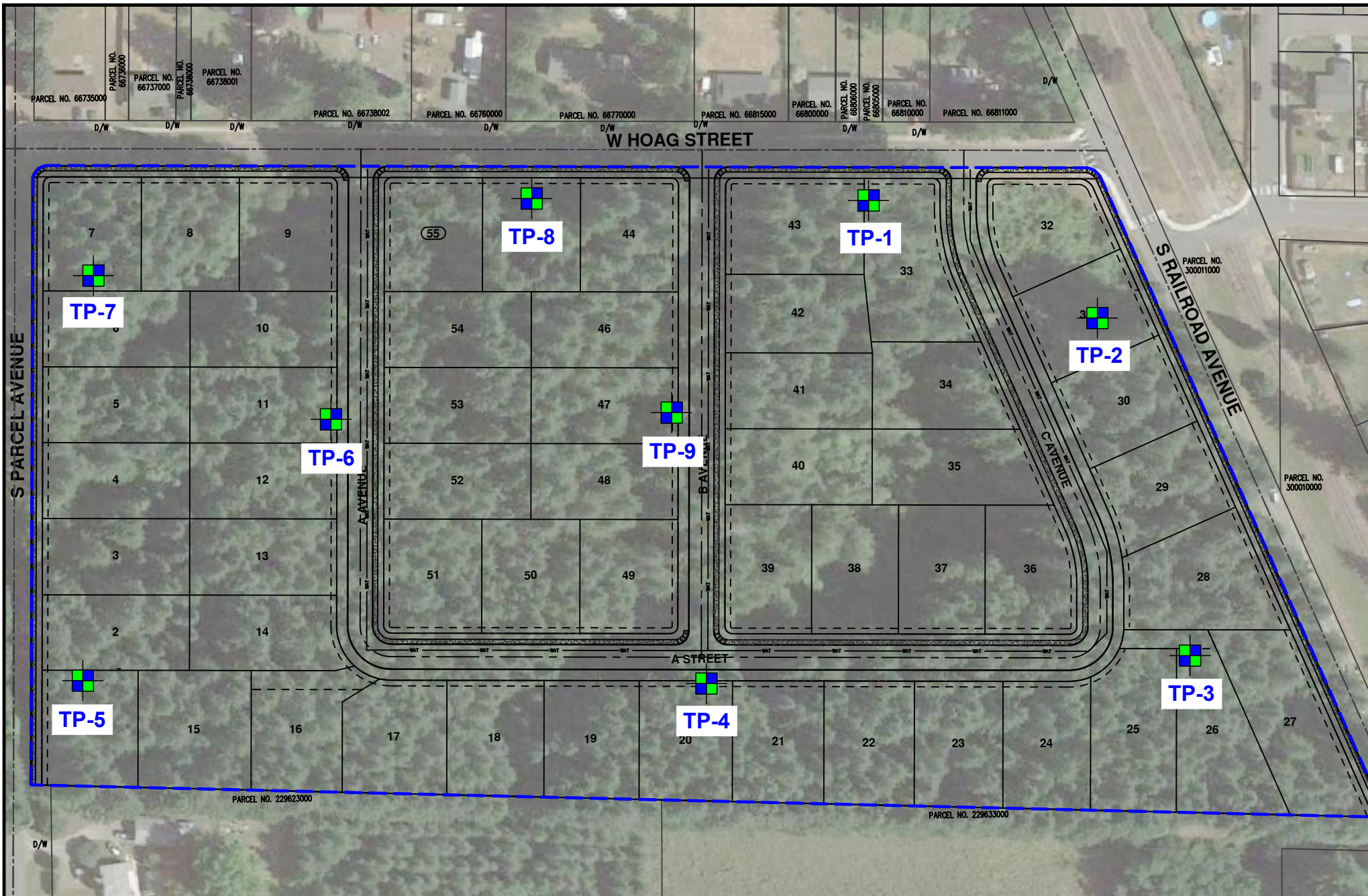
Clark County Maps Online, website (<http://gis.clark.wa.gov/ccgis/mol/property.htm>).

Web Soil Survey, Natural Resources Conservation Service, United States Department of Agriculture 2021 website (<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.)

State of Washington Department of Ecology, *Washington State Well Log Viewer* (apps.exy.wa.gov/wellog/).

FIGURES





TEST PIT LOCATION

 INFILTRATION TEST LOCATION

 SITE BOUNDARY

Infiltration Test Results

Test Number	Location	Approximate Test Depth (feet bgs)	USCS Soil Type [* Indicates Visual Classification]	Redommeded USDA Soil Group Classification	Passing No. 200 Sieve (%)	Depth to Groundwater on 6/18/21 (feet bgs)	Infiltration Rate (Coefficient of Permeability, k) (inches/hour)
IT-1.1	TP-1	3.0	Silty SAND with Gravel	D	14	Not Observed to 8 feet	12.7
IT-1.2		6.0	Well-Graded GRAVEL with Silt and Sand		9.4		<0.06
IT-2.1	TP-2	3.0	Sandy SILT*	C	—	Not Observed to 11 feet	0.7
IT-2.2		6.0	Poorly-Graded GRAVEL with Sand		1.7		1.5
IT-3.1	TP-3	3.0	Sandy SILT*		—	Not Observed to 8 feet	2.2
IT-3.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.5
IT-4.1	TP-4	3.0	Silty SAND		24.2	Not Observed to 8.5 feet	6.0
IT-4.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.5
IT-5.1	TP-5	3.0	Sandy SILT		65.7	Not Observed to 9 feet	0.7
IT-5.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.5
IT-6.1	TP-6	3.0	Sandy SILT*		—	Not Observed to 9 feet	0.6
IT-6.2		6.0	Poorly-Graded GRAVEL with Sand*		—		18.7
IT-7.1	TP-7	3.0	Sandy SILT*		—	Not Observed to 8 feet	2.2
IT-7.2		6.0	Poorly-Graded GRAVEL with Sand*		—		1.0
IT-8.1	TP-8	3.0	Silty SAND*		—	Not Observed to 8 feet	18.7
IT-8.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		1.0
IT-9.1	TP-9	3.0	Silty SAND*		—	Not Observed to 8 feet	6.7
IT-9.2		6.0	Well-Graded GRAVEL with Silt and Sand*		—		0.6

**USDA and WWHM classifications are based upon subsurface investigation and infiltration testing conducted at the locations shown. Infiltration rates are shown without application of a factor of safety.



Project: 21126
Date: 7/30/21
Drawn: CWS
Checked: DEL

INFILTRATION TEST DATA
NE RAILROAD AVE SUBDIVISION

NOTES:
1. SITE LOCATION: SOUTH OF 112 W HOAG ST, YACOLT, WASHINGTON.
2. SITE CONSISTS OF TAX PARCEL 64522000 TOTALING APPROXIMATELY 20 ACRES.
3. SITE PLAN PROVIDED BY AKS ENGINEERING AND FORESTRY.
4. EXPLORATION LOCATIONS ARE APPROXIMATE AND NOT SURVEYED.
5. TEST PIT EXPLORATIONS BACKFILLED LOOSELY WITH ONSITE SOIL ON 6/18/21.

FIGURE

317

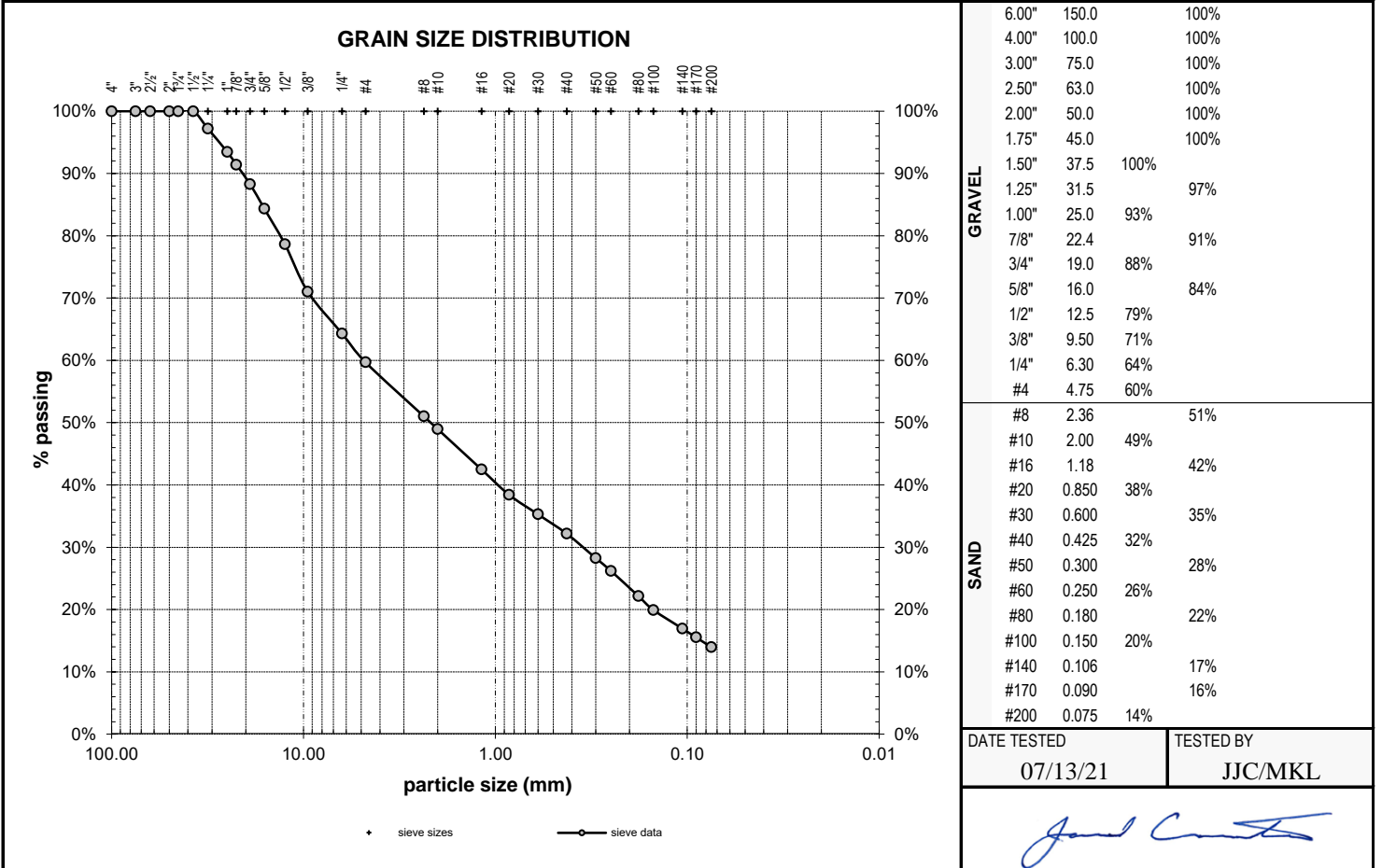
APPENDIX A
LABORATORY TEST RESULTS

PARTICLE-SIZE ANALYSIS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0529
		REPORT DATE 07/19/21	FIELD ID TP1.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA	
MATERIAL SAMPLED Silty SAND with Gravel	MATERIAL SOURCE Test Pit, TP-01 depth = 3 feet
SPECIFICATIONS none	USCS SOIL TYPE SM, Silty Sand with Gravel
AASHTO CLASSIFICATION A-2-7(0)	

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A
ADDITIONAL DATA initial dry mass (g) = 1024.0 as-received moisture content = 30.7% liquid limit = 54 plastic limit = 42 plasticity index = 12 fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = 0.351 mm $D_{(60)}$ = 4.842 mm	SIEVE DATA % gravel = 40.3% % sand = 45.7% % silt and clay = 14.0%
NOTES: Entire sample used for analysis; did not meet minimum size required.	



DATE TESTED 07/13/21	TESTED BY JJC/MKL

ATTERBERG LIMITS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0529
		REPORT DATE 07/19/21	FIELD ID TP1.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

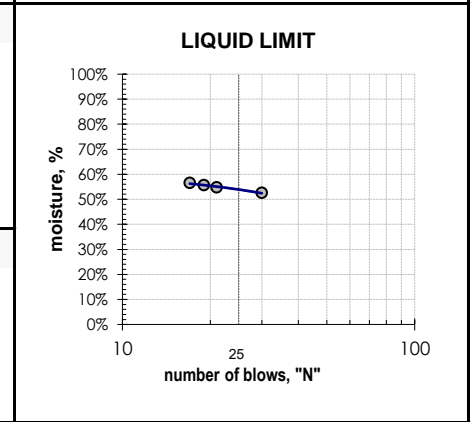
MATERIAL DATA

MATERIAL SAMPLED Silty SAND with Gravel	MATERIAL SOURCE Test Pit, TP-01 depth = 3 feet	USCS SOIL TYPE SM, Silty Sand with Gravel
--	--	--

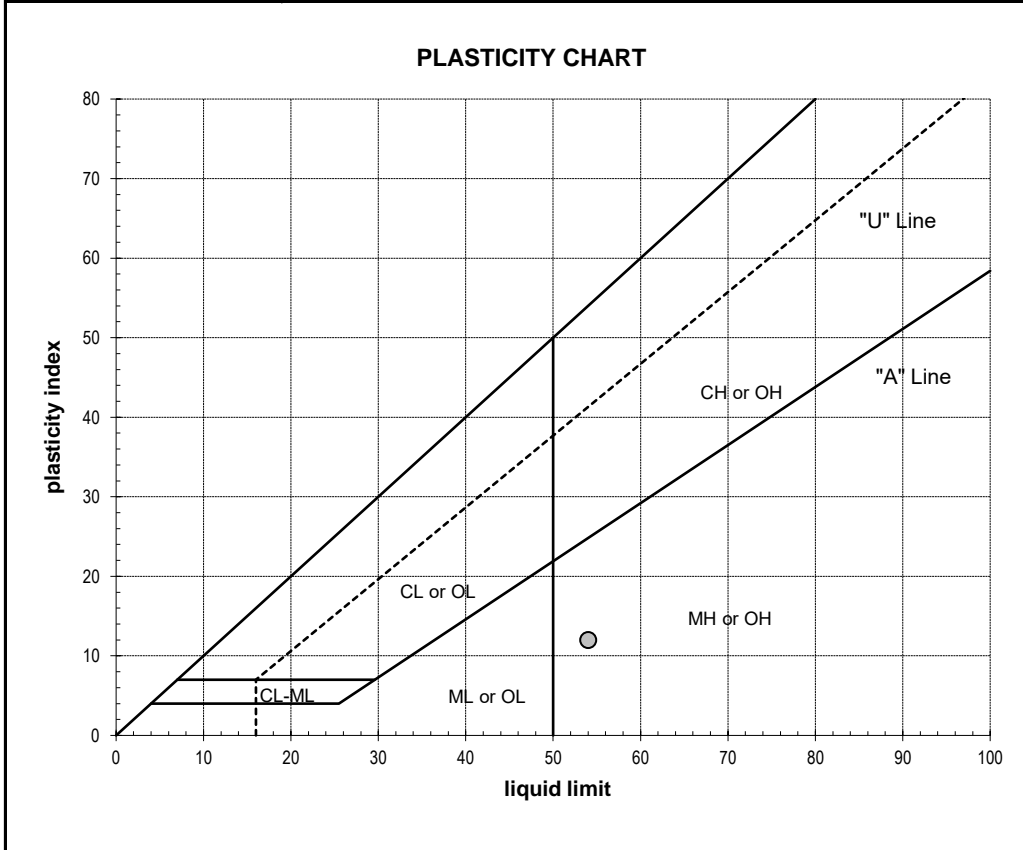
LABORATORY TEST DATA

LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
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ATTERBERG LIMITS liquid limit = 54 plastic limit = 42 plasticity index = 12	LIQUID LIMIT DETERMINATION				
		①	②	③	④
	wet soil + pan weight, g =	34.54	33.90	31.91	34.35
	dry soil + pan weight, g =	29.83	29.28	27.97	29.55
	pan weight, g =	20.86	20.85	20.89	21.05
N (blows) =	30	21	19	17	
moisture, % =	52.5 %	54.8 %	55.7 %	56.5 %	



SHRINKAGE shrinkage limit = n/a shrinkage ratio = n/a	PLASTIC LIMIT DETERMINATION				
		①	②	③	④
	wet soil + pan weight, g =	27.04	28.41		
	dry soil + pan weight, g =	25.23	26.14		
	pan weight, g =	20.94	20.76		
moisture, % =	42.2 %	42.2 %			



ADDITIONAL DATA	
% gravel =	40.3%
% sand =	45.7%
% silt and clay =	14.0%
% silt =	n/a
% clay =	n/a
moisture content =	30.7%

DATE TESTED 07/13/21	TESTED BY BTT
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Janet Curtis

PARTICLE-SIZE ANALYSIS REPORT

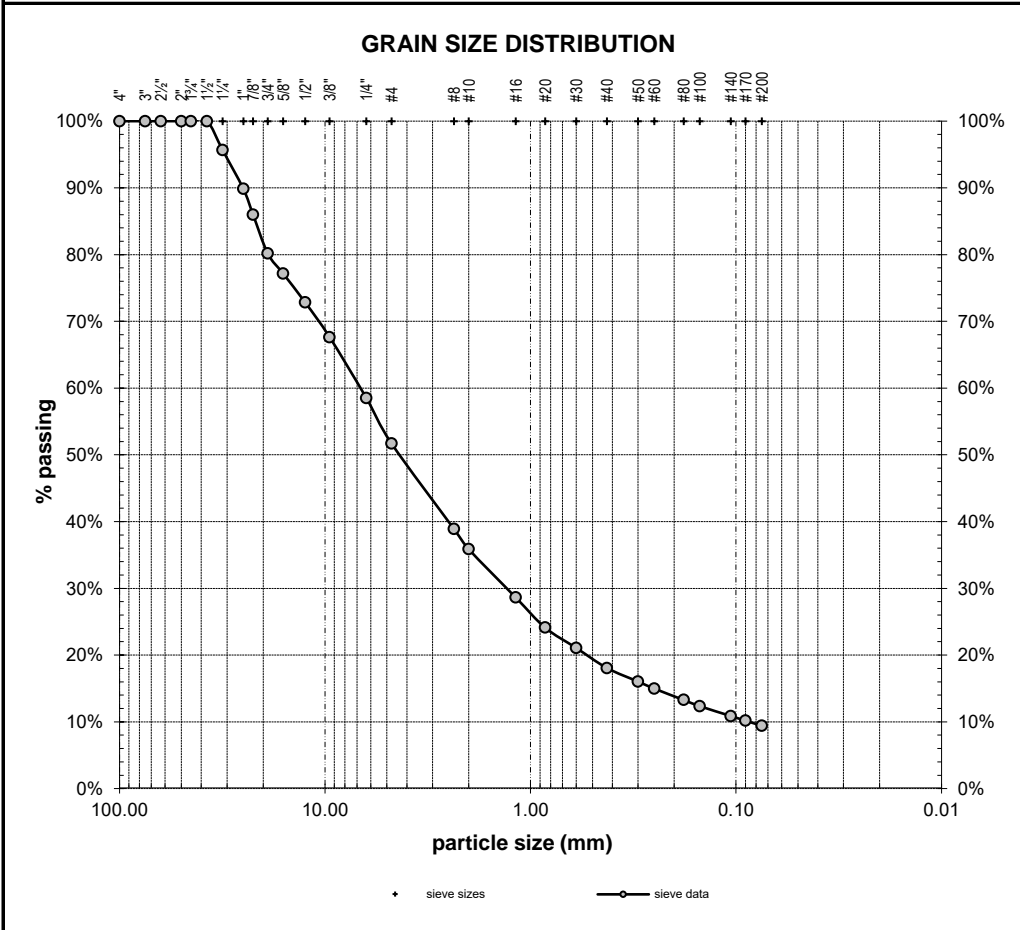
PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0530
		REPORT DATE 07/19/21	FIELD ID TP1.2
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA		
MATERIAL SAMPLED Well graded GRAVEL with Silt and Sand	MATERIAL SOURCE Test Pit, TP-01 depth = 6 feet	USCS SOIL TYPE GW-GM, Well-graded Gravel with Silt and Sand
SPECIFICATIONS none		AASHTO CLASSIFICATION A-1-a(0)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA			
initial dry mass (g) =	2153.5	coefficient of curvature, C_c =	2.93
as-received moisture content =	25.4%	coefficient of uniformity, C_u =	77.96
liquid limit =	-	effective size, $D_{(10)}$ =	0.086 mm
plastic limit =	-	$D_{(30)}$ =	1.305 mm
plasticity index =	NP	$D_{(60)}$ =	6.733 mm
fineness modulus =	n/a		
NOTES: Entire sample used for analysis; did not meet minimum size required.			

SIEVE DATA			
		% gravel =	48.3%
		% sand =	42.3%
		% silt and clay =	9.4%
SIEVE SIZE	PERCENT PASSING		
US mm	SIEVE	SPECS	
	act. interp.	max min	



GRAVEL	6.00"	150.0	100%
	4.00"	100.0	100%
	3.00"	75.0	100%
	2.50"	63.0	100%
	2.00"	50.0	100%
	1.75"	45.0	100%
	1.50"	37.5	100%
	1.25"	31.5	96%
	1.00"	25.0	90%
	7/8"	22.4	86%
3/4"	19.0	80%	
5/8"	16.0	77%	
1/2"	12.5	73%	
3/8"	9.50	68%	
1/4"	6.30	59%	
#4	4.75	52%	
SAND	#8	2.36	39%
	#10	2.00	36%
	#16	1.18	29%
	#20	0.850	24%
	#30	0.600	21%
	#40	0.425	18%
	#50	0.300	16%
	#60	0.250	15%
	#80	0.180	13%
	#100	0.150	12%
#140	0.106	11%	
#170	0.090	10%	
#200	0.075	9%	

DATE TESTED 07/13/21	TESTED BY JJC/MKL
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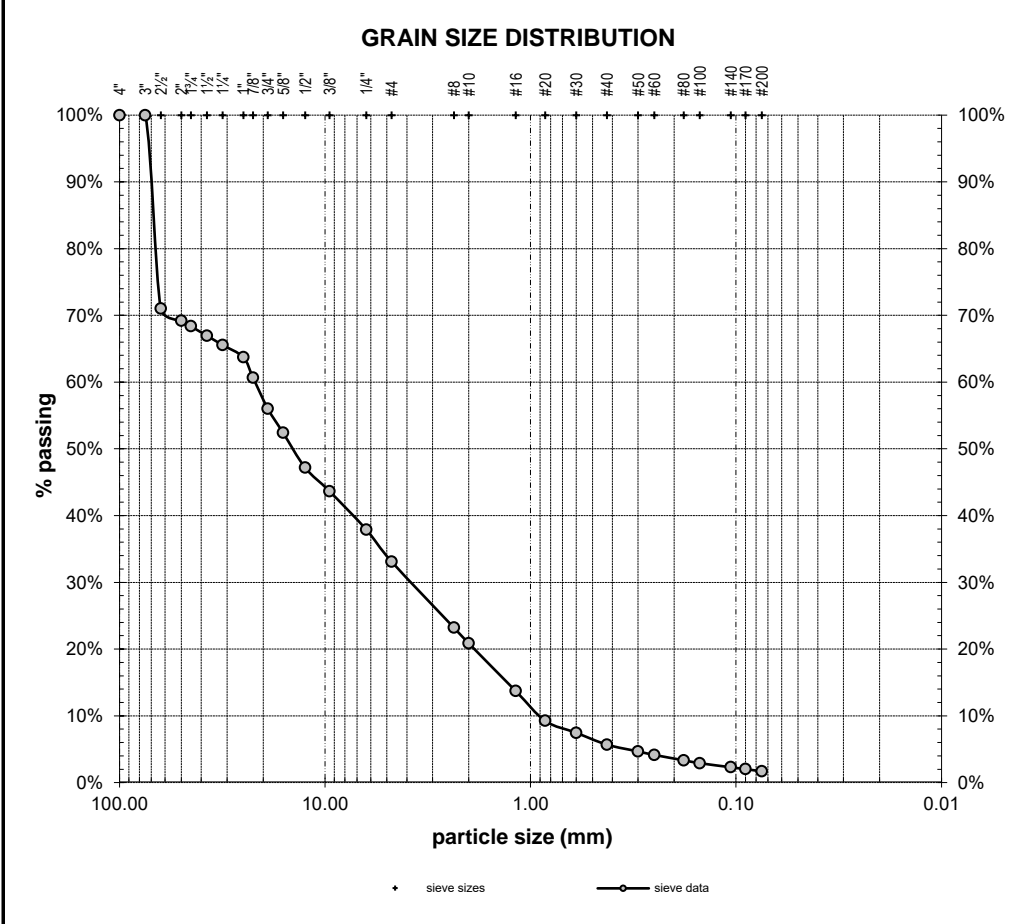
James J. C...

PARTICLE-SIZE ANALYSIS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0531
		REPORT DATE 07/19/21	FIELD ID TP2.2
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA		
MATERIAL SAMPLED Poorly graded GRAVEL with Sand	MATERIAL SOURCE Test Pit, TP-02 depth = 6 feet	USCS SOIL TYPE GP, Poorly graded gravel with sand
SPECIFICATIONS none		AASHTO CLASSIFICATION A-1-a(0)

LABORATORY TEST DATA																																																																																																	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A																																																																																																
ADDITIONAL DATA initial dry mass (g) = 2021.2 as-received moisture content = 12.8% liquid limit = - plastic limit = - plasticity index = NP fineness modulus = n/a coefficient of curvature, C_c = 0.74 coefficient of uniformity, C_u = 24.38 effective size, $D_{(10)}$ = 0.898 mm $D_{(30)}$ = 3.813 mm $D_{(60)}$ = 21.888 mm	SIEVE DATA % gravel = 66.9% % sand = 31.4% % silt and clay = 1.7%																																																																																																
NOTES: Entire sample used for analysis; did not meet minimum size required.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">SIEVE SIZE</th> <th colspan="2">PERCENT PASSING</th> </tr> <tr> <th>SIEVE</th> <th>SPECS</th> </tr> <tr> <th>US</th> <th>mm</th> <th>act. interp. max min</th> </tr> </thead> <tbody> <tr><td>6.00"</td><td>150.0</td><td>100%</td></tr> <tr><td>4.00"</td><td>100.0</td><td>100%</td></tr> <tr><td>3.00"</td><td>75.0</td><td>100%</td></tr> <tr><td>2.50"</td><td>63.0</td><td>71%</td></tr> <tr><td>2.00"</td><td>50.0</td><td>69%</td></tr> <tr><td>1.75"</td><td>45.0</td><td>68%</td></tr> <tr><td>1.50"</td><td>37.5</td><td>67%</td></tr> <tr><td>1.25"</td><td>31.5</td><td>66%</td></tr> <tr><td>1.00"</td><td>25.0</td><td>64%</td></tr> <tr><td>7/8"</td><td>22.4</td><td>61%</td></tr> <tr><td>3/4"</td><td>19.0</td><td>56%</td></tr> <tr><td>5/8"</td><td>16.0</td><td>52%</td></tr> <tr><td>1/2"</td><td>12.5</td><td>47%</td></tr> <tr><td>3/8"</td><td>9.50</td><td>44%</td></tr> <tr><td>1/4"</td><td>6.30</td><td>38%</td></tr> <tr><td>#4</td><td>4.75</td><td>33%</td></tr> <tr><td>#8</td><td>2.36</td><td>23%</td></tr> <tr><td>#10</td><td>2.00</td><td>21%</td></tr> <tr><td>#16</td><td>1.18</td><td>14%</td></tr> <tr><td>#20</td><td>0.850</td><td>9%</td></tr> <tr><td>#30</td><td>0.600</td><td>7%</td></tr> <tr><td>#40</td><td>0.425</td><td>6%</td></tr> <tr><td>#50</td><td>0.300</td><td>5%</td></tr> <tr><td>#60</td><td>0.250</td><td>4%</td></tr> <tr><td>#80</td><td>0.180</td><td>3%</td></tr> <tr><td>#100</td><td>0.150</td><td>3%</td></tr> <tr><td>#140</td><td>0.106</td><td>2%</td></tr> <tr><td>#170</td><td>0.090</td><td>2%</td></tr> <tr><td>#200</td><td>0.075</td><td>2%</td></tr> </tbody> </table>		SIEVE SIZE	PERCENT PASSING		SIEVE	SPECS	US	mm	act. interp. max min	6.00"	150.0	100%	4.00"	100.0	100%	3.00"	75.0	100%	2.50"	63.0	71%	2.00"	50.0	69%	1.75"	45.0	68%	1.50"	37.5	67%	1.25"	31.5	66%	1.00"	25.0	64%	7/8"	22.4	61%	3/4"	19.0	56%	5/8"	16.0	52%	1/2"	12.5	47%	3/8"	9.50	44%	1/4"	6.30	38%	#4	4.75	33%	#8	2.36	23%	#10	2.00	21%	#16	1.18	14%	#20	0.850	9%	#30	0.600	7%	#40	0.425	6%	#50	0.300	5%	#60	0.250	4%	#80	0.180	3%	#100	0.150	3%	#140	0.106	2%	#170	0.090	2%	#200	0.075	2%
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GRAVEL	6.00"	150.0	100%	
	4.00"	100.0	100%	
	3.00"	75.0	100%	
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	#16	1.18	14%	
	#20	0.850	9%	
	#30	0.600	7%	
	#40	0.425	6%	
	#50	0.300	5%	
	#60	0.250	4%	
	#80	0.180	3%	
	#100	0.150	3%	
	#140	0.106	2%	
	#170	0.090	2%	
#200	0.075	2%		

DATE TESTED 07/13/21	TESTED BY JJC/MKL

PARTICLE-SIZE ANALYSIS REPORT

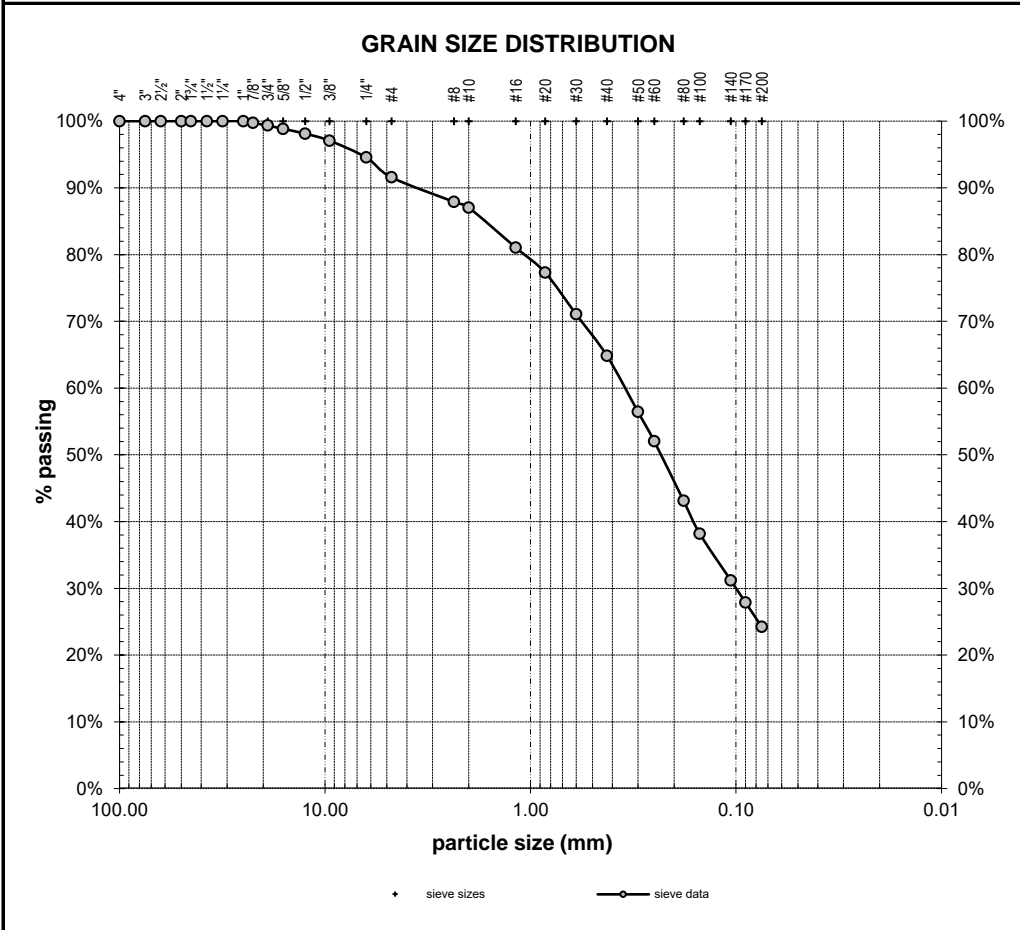
PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0532
		REPORT DATE 07/19/21	FIELD ID TP4.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA	
MATERIAL SAMPLED Silty SAND	MATERIAL SOURCE Test Pit, TP-04 depth = 3 feet
SPECIFICATIONS none	USCS SOIL TYPE SM, Silty Sand
	AASHTO CLASSIFICATION A-2-4(0)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, air-dried prep, hand washed, composite sieve - #4 split	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA	
initial dry mass (g) = 1251.5 as-received moisture content = 45.3% liquid limit = - plastic limit = - plasticity index = NP fineness modulus = n/a	coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = 0.100 mm $D_{(60)}$ = 0.348 mm
NOTES: Entire sample used for analysis; did not meet minimum size required.	

SIEVE DATA				
		% gravel = 8.4%		
		% sand = 67.3%		
		% silt and clay = 24.2%		
		PERCENT PASSING		
SIEVE SIZE		SIEVE	SPECS	
US	mm	act.	interp.	max min



GRAVEL	6.00"	150.0	100%
	4.00"	100.0	100%
	3.00"	75.0	100%
	2.50"	63.0	100%
	2.00"	50.0	100%
	1.75"	45.0	100%
	1.50"	37.5	100%
	1.25"	31.5	100%
	1.00"	25.0	100%
	7/8"	22.4	100%
SAND	3/4"	19.0	99%
	5/8"	16.0	99%
	1/2"	12.5	98%
	3/8"	9.50	97%
	1/4"	6.30	95%
	#4	4.75	92%
	#8	2.36	88%
	#10	2.00	87%
	#16	1.18	81%
	#20	0.850	77%
	#30	0.600	71%
	#40	0.425	65%
#50	0.300	56%	
#60	0.250	52%	
#80	0.180	43%	
#100	0.150	38%	
#140	0.106	31%	
#170	0.090	28%	
#200	0.075	24%	

DATE TESTED 07/13/21	TESTED BY JJC/MKL

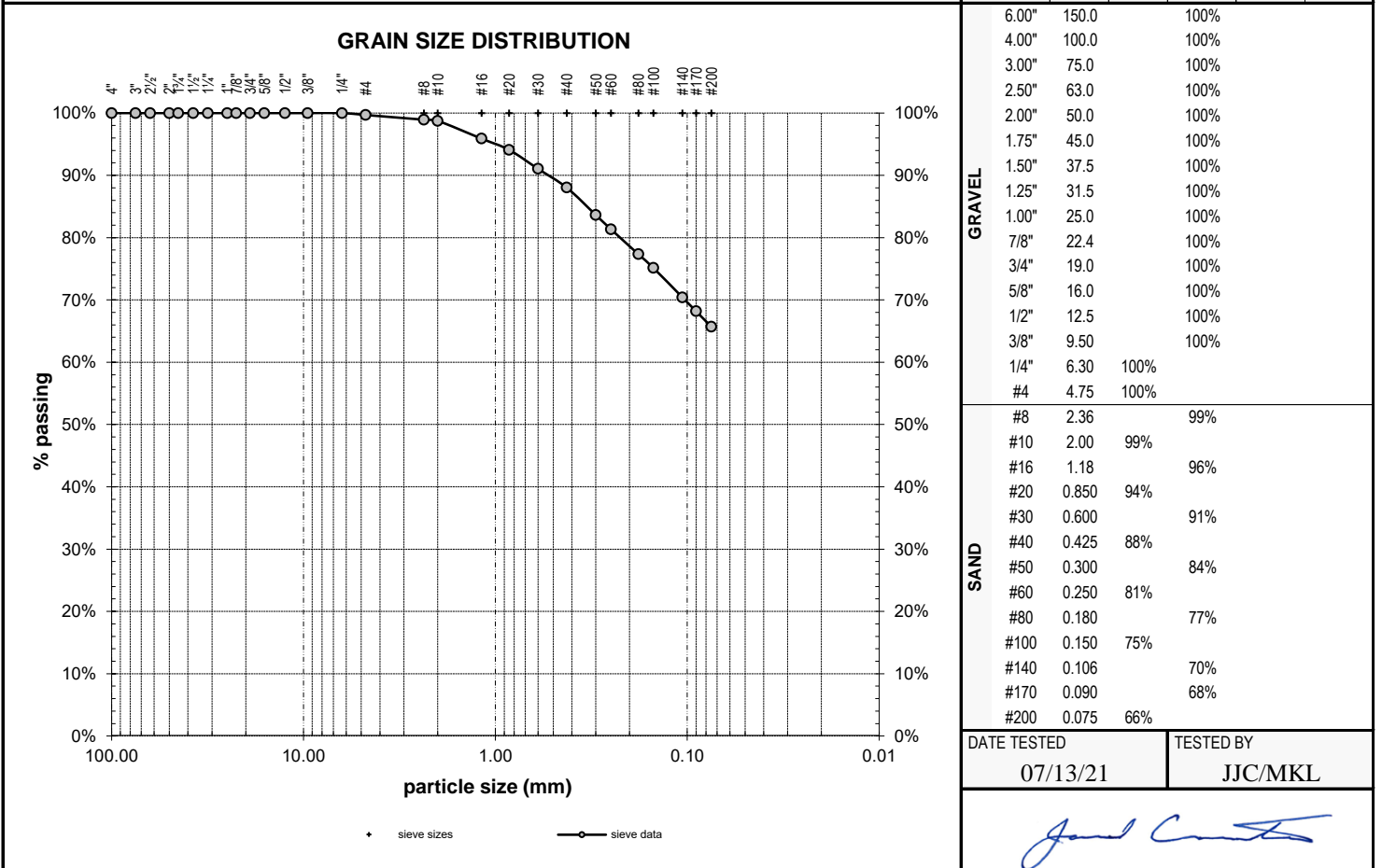
PARTICLE-SIZE ANALYSIS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0533
		REPORT DATE 07/19/21	FIELD ID TP5.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

MATERIAL DATA		
MATERIAL SAMPLED Sandy SILT	MATERIAL SOURCE Test Pit, TP-05 depth = 3 feet	USCS SOIL TYPE ML, Sandy Silt
SPECIFICATIONS none		AASHTO CLASSIFICATION A-7-5(9)

LABORATORY TEST DATA	
LABORATORY EQUIPMENT Rainhart "Mary Ann" Sifter, moist prep, hand washed, 12" single sieve-set	TEST PROCEDURE ASTM D6913, Method A

ADDITIONAL DATA initial dry mass (g) = 142.7 as-received moisture content = 40.3% liquid limit = 47 plastic limit = 34 plasticity index = 13 fineness modulus = n/a coefficient of curvature, C_c = n/a coefficient of uniformity, C_u = n/a effective size, $D_{(10)}$ = n/a $D_{(30)}$ = n/a $D_{(60)}$ = n/a	SIEVE DATA % gravel = 0.3% % sand = 34.0% % silt and clay = 65.7%
---	---



DATE TESTED 07/13/21	TESTED BY JJC/MKL

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ATTERBERG LIMITS REPORT

PROJECT NE Railroad Avenue Subdivision Yacolt, Washington	CLIENT AHO Construction, Inc. 5512 NE 109th Court, Suite 101 Vancouver, Washington 98675	PROJECT NO. 21126	LAB ID S21-0533
		REPORT DATE 07/19/21	FIELD ID TP5.1
		DATE SAMPLED 06/18/21	SAMPLED BY CWS

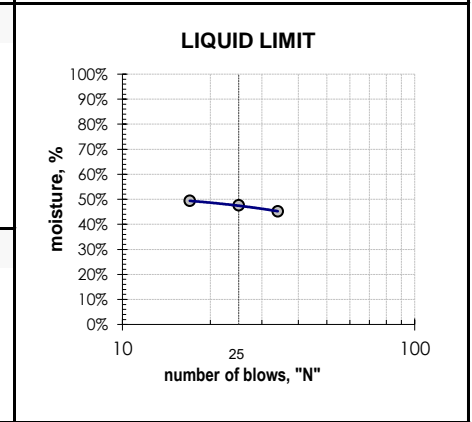
MATERIAL DATA

MATERIAL SAMPLED Sandy SILT	MATERIAL SOURCE Test Pit, TP-05 depth = 3 feet	USCS SOIL TYPE ML, Sandy Silt
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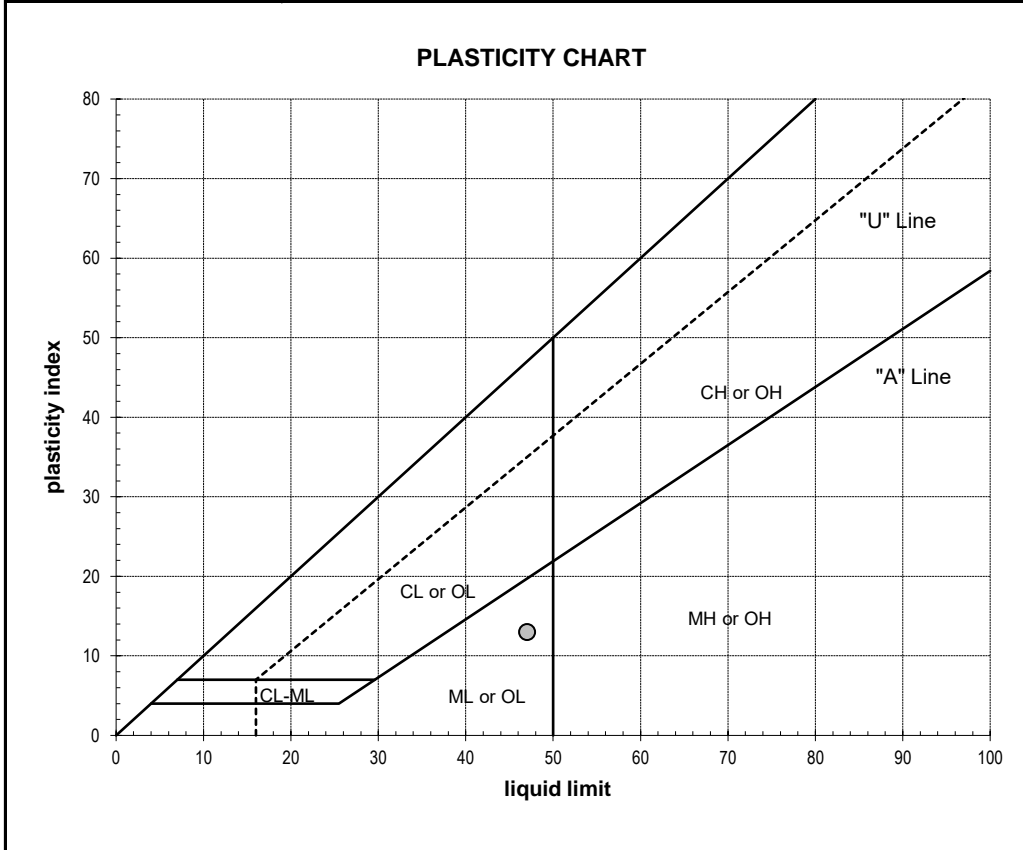
LABORATORY TEST DATA

LABORATORY EQUIPMENT Liquid Limit Machine, Hand Rolled	TEST PROCEDURE ASTM D4318
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ATTERBERG LIMITS	LIQUID LIMIT DETERMINATION			
	1	2	3	4
liquid limit = 47	wet soil + pan weight, g = 31.60	31.62	32.82	
plastic limit = 34	dry soil + pan weight, g = 28.24	28.07	28.89	
plasticity index = 13	pan weight, g = 20.80	20.61	20.92	
	N (blows) = 34	25	17	
	moisture, % = 45.2 %	47.6 %	49.3 %	



SHRINKAGE	PLASTIC LIMIT DETERMINATION			
	1	2	3	4
shrinkage limit = n/a	wet soil + pan weight, g = 27.77	28.13		
shrinkage ratio = n/a	dry soil + pan weight, g = 25.99	26.31		
	pan weight, g = 20.79	20.91		
	moisture, % = 34.2 %	33.7 %		



ADDITIONAL DATA


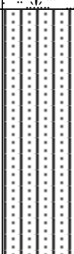

% gravel =	0.3%
% sand =	34.0%
% silt and clay =	65.7%
% silt =	n/a
% clay =	n/a
moisture content =	40.3%

DATE TESTED 07/12/21	TESTED BY JJC
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James C. ...


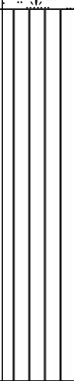

APPENDIX B EXPLORATION LOGS

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision			CLIENT AHO Construction, Inc.			PROJECT NO. 21126		TEST PIT NO. TP-1				
PROJECT LOCATION Yacolt, Washington			CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS		DATE 6/18/21					
TEST PIT LOCATION See Figure 2			APPROX. SURFACE ELEVATION 692 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 0800		FINISH TIME 1015					
Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS		Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	TP-1.1					Approximately 10-12 inches of topsoil and grass.		30.7	14	54	12	IT-1.1 D=3' bgs 12.7 in/hr
		Yacolt Stony Loam	A-2-7(0)	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 2].						
5					GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					
	TP-1.2		A-1-a(0)					25.4	9.4	NP	NP	IT-1.2 D=6' bgs <0.06 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.						


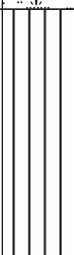

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-2
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 692 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 0845	FINISH TIME 1117


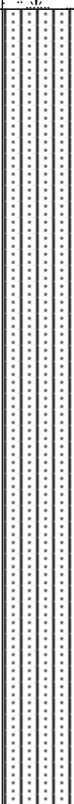

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Stony Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					IT-2.1 D=3' bgs 0.7 in/hr
5	TP-2.2			GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].	12.8	1.7	NP	NP	IT-2.2 D=6' bgs 1.5 in/hr
10						Bottom of test pit at approximately 11 feet bgs. Groundwater not encountered on 6/18/21.					

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-3
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 692 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 0930	FINISH TIME 1245


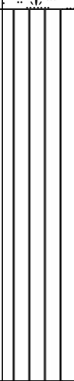
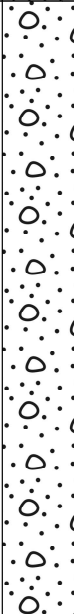
Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Stony Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					
5			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-3.1 D=3' bgs 2.2 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					IT-3.2 D=6' bgs 1.5 in/hr

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision			CLIENT AHO Construction, Inc.			PROJECT NO. 21126		TEST PIT NO. TP-4					
PROJECT LOCATION Yacolt, Washington			CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS		DATE 6/18/21						
TEST PIT LOCATION See Figure 2			APPROX. SURFACE ELEVATION 690 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1035		FINISH TIME 1400						
Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS		Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing	
0	TP-4.1					Approximately 10-12 inches of topsoil and grass.							
5		Yacolt Loam	A-2-4(0)	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 2].		45.3	24.2	NP	NP	IT-4.1 D=3' bgs 6.0 in/hr	
				A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].						
10							Bottom of test pit at approximately 8.5 feet bgs. Groundwater not encountered on 6/18/21.						IT-4.2 D=6' bgs 0.5 in/hr


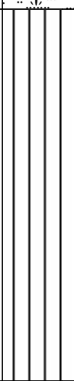
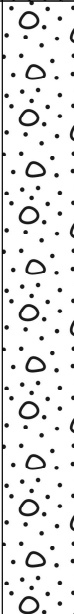
TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-5
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 694 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1140	FINISH TIME 1502

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0	TP-5.1					Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-7-5(9)	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].	40.3	65.7	47	13	IT-5.1 D=3' bgs 0.7 in/hr
5				A-1	GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].				
10						Bottom of test pit at approximately 9 feet bgs. Groundwater not encountered on 6/18/21.					

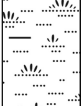
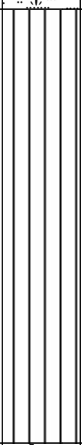
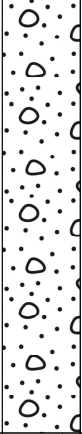
TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-6
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 694 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1300	FINISH TIME 1617


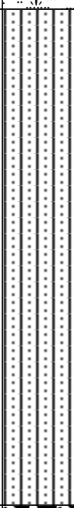

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					IT-6.1 D=3' bgs 0.6 in/hr
5			A-1	GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-6.2 D=6' bgs 18.7 in/hr
10						Bottom of test pit at approximately 9 feet bgs. Groundwater not encountered on 6/18/21.					

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-7
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 694 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1337	FINISH TIME 1515


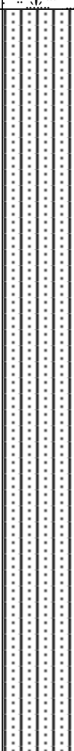

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-7	ML		Brown, dry to moist, sandy SILT with cobbles [Soil Type 1].					IT-7.1 D=3' bgs 2.2 in/hr
5			A-1	GP		Brown/grey, mottled, moist, poorly-graded GRAVEL with sand, cobbles and boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-7.2 D=6' bgs 1.0 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					

TEST PIT LOG

PROJECT NAME		CLIENT			PROJECT NO.	TEST PIT NO.					
NE Railroad Avenue Subdivision		AHO Construction, Inc.			21126	TP-8					
PROJECT LOCATION		CONTRACTOR	EQUIPMENT	GEOLOGIST / ENGINEER	DATE						
Yacolt, Washington		L&S Excavating	Excavator	CWS	6/18/21						
TEST PIT LOCATION		APPROX. SURFACE ELEVATION	GROUNDWATER DEPTH 6-18-21	START TIME	FINISH TIME						
See Figure 2		696 amsl	Not Encountered	1420	1630						
Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
		Yacolt Loam	A-2	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 1].					IT-8.1 D=3' bgs 18.7 in/hr
5			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-8.2 D=6' bgs 1.0 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					

TEST PIT LOG

PROJECT NAME NE Railroad Avenue Subdivision		CLIENT AHO Construction, Inc.		PROJECT NO. 21126	TEST PIT NO. TP-9
PROJECT LOCATION Yacolt, Washington		CONTRACTOR L&S Excavating	EQUIPMENT Excavator	GEOLOGIST / ENGINEER CWS	DATE 6/18/21
TEST PIT LOCATION See Figure 2		APPROX. SURFACE ELEVATION 690 amsl	GROUNDWATER DEPTH 6-18-21 Not Encountered	START TIME 1532	FINISH TIME 1732

Depth (feet)	Sample Field ID	NRCS Soil Survey Description	AASHTO Soil Type	USCS Soil Type	Graphic Log	LITHOLOGIC DESCRIPTION AND REMARKS	Moisture Content (%)	Passing No. 200 Sieve (%)	Liquid Limit	Plasticity Index	Infiltration Testing
0						Approximately 10-12 inches of topsoil and grass.					
5		Yacolt Loam	A-2	SM		Brown/tan, dry to moist, silty SAND with gravel and cobbles [Soil Type 2].					IT-9.1 D=3' bgs 6.7 in/hr
			A-1	GW-GM		Brown/grey, moist, well-graded GRAVEL with silt, sand, cobbles and trace boulders up to approximately 36 inches in diameter [Soil Type 3].					IT-9.2 D=6' bgs 0.6 in/hr
10						Bottom of test pit at approximately 8 feet bgs. Groundwater not encountered on 6/18/21.					

APPENDIX C
SOIL CLASSIFICATION INFORMATION

SOIL DESCRIPTION AND CLASSIFICATION GUIDELINES

Particle-Size Classification

COMPONENT	ASTM/USCS		AASHTO	
	size range	sieve size range	size range	sieve size range
Cobbles	> 75 mm	greater than 3 inches	> 75 mm	greater than 3 inches
Gravel	75 mm – 4.75 mm	3 inches to No. 4 sieve	75 mm – 2.00 mm	3 inches to No. 10 sieve
Coarse	75 mm – 19.0 mm	3 inches to 3/4-inch sieve	-	-
Fine	19.0 mm – 4.75 mm	3/4-inch to No. 4 sieve	-	-
Sand	4.75 mm – 0.075 mm	No. 4 to No. 200 sieve	2.00 mm – 0.075 mm	No. 10 to No. 200 sieve
Coarse	4.75 mm – 2.00 mm	No. 4 to No. 10 sieve	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve
Medium	2.00 mm – 0.425 mm	No. 10 to No. 40 sieve	-	-
Fine	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve	0.425 mm – 0.075 mm	No. 40 to No. 200 sieve
Fines (Silt and Clay)	< 0.075 mm	Passing No. 200 sieve	< 0.075 mm	Passing No. 200 sieve

Consistency for Cohesive Soil

CONSISTENCY	SPT N-VALUE (BLOWS PER FOOT)	POCKET PENETROMETER (UNCONFINED COMPRESSIVE STRENGTH, tsf)
Very Soft	2	less than 0.25
Soft	2 to 4	0.25 to 0.50
Medium Stiff	4 to 8	0.50 to 1.0
Stiff	8 to 15	1.0 to 2.0
Very Stiff	15 to 30	2.0 to 4.0
Hard	30 to 60	greater than 4.0
Very Hard	greater than 60	-

Relative Density for Granular Soil

RELATIVE DENSITY	SPT N-VALUE (BLOWS PER FOOT)
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	more than 50

Moisture Designations

TERM	FIELD IDENTIFICATION
Dry	No moisture. Dusty or dry.
Damp	Some moisture. Cohesive soils are usually below plastic limit and are moldable.
Moist	Grains appear darkened, but no visible water is present. Cohesive soils will clump. Sand will bulk. Soils are often at or near plastic limit.
Wet	Visible water on larger grains. Sand and silt exhibit dilatancy. Cohesive soil can be readily remolded. Soil leaves wetness on the hand when squeezed. Soil is much wetter than optimum moisture content and is above plastic limit.

AASHTO SOIL CLASSIFICATION SYSTEM

TABLE 1. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing .075 mm)				Silt-Clay Materials (More than 35 Percent Passing 0.075)		
	A-1	A-3	A-2	A-4	A-5	A-6	A-7
Sieve analysis, percent passing:							
2.00 mm (No. 10)	-	-	-	-	-	-	-
0.425 mm (No. 40)	50 max	51 min	-	-	-	-	-
0.075 mm (No. 200)	25 max	10 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>							
Liquid limit				40 max	41 min	40 max	41 min
Plasticity index	6 max	N.P.		10 max	10 max	11 min	11 min
General rating as subgrade	Excellent to good				Fair to poor		

Note: The placing of A-3 before A-2 is necessary in the "left to right elimination process" and does not indicate superiority of A-3 over A-2.

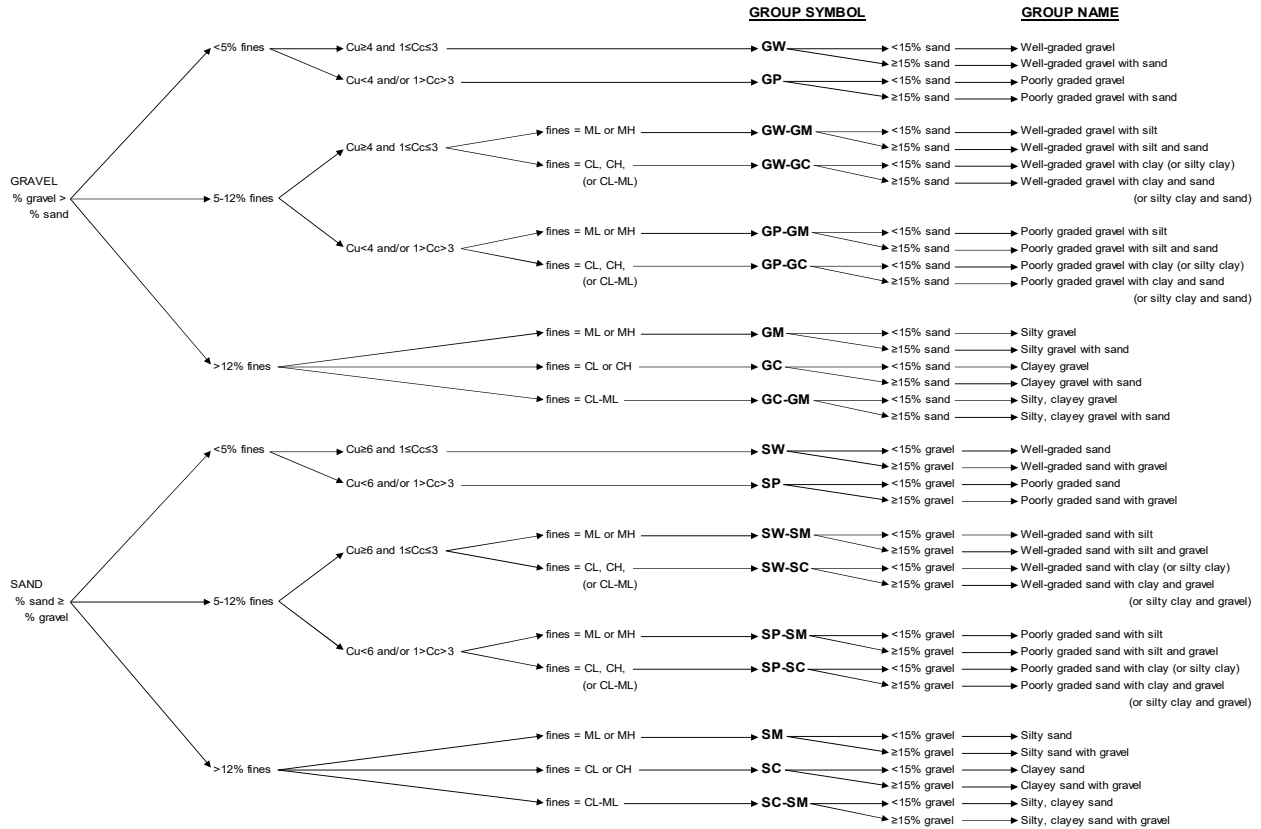
TABLE 2. Classification of Soils and Soil-Aggregate Mixtures

General Classification	Granular Materials (35 Percent or Less Passing 0.075 mm)							Silt-Clay Materials (More than 35 Percent Passing 0.075 mm)			
	A-1		A-2					A-7			
Group Classification	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7-5, A-7-6
Sieve analysis, percent passing:											
2.00 mm (No. 10)	50 max	-	-	-	-	-	-	-	-	-	-
0.425 mm (No. 40)	30 max	50 max	51 min	-	-	-	-	-	-	-	-
0.075 mm (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
<u>Characteristics of fraction passing 0.425 mm (No. 40)</u>											
Liquid limit				40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min
Usual types of significant constituent materials	Stone fragments, gravel and sand		Fine sand	Silty or clayey gravel and sand				Silty soils		Clayey soils	
General ratings as subgrade	Excellent to Good							Fair to poor			

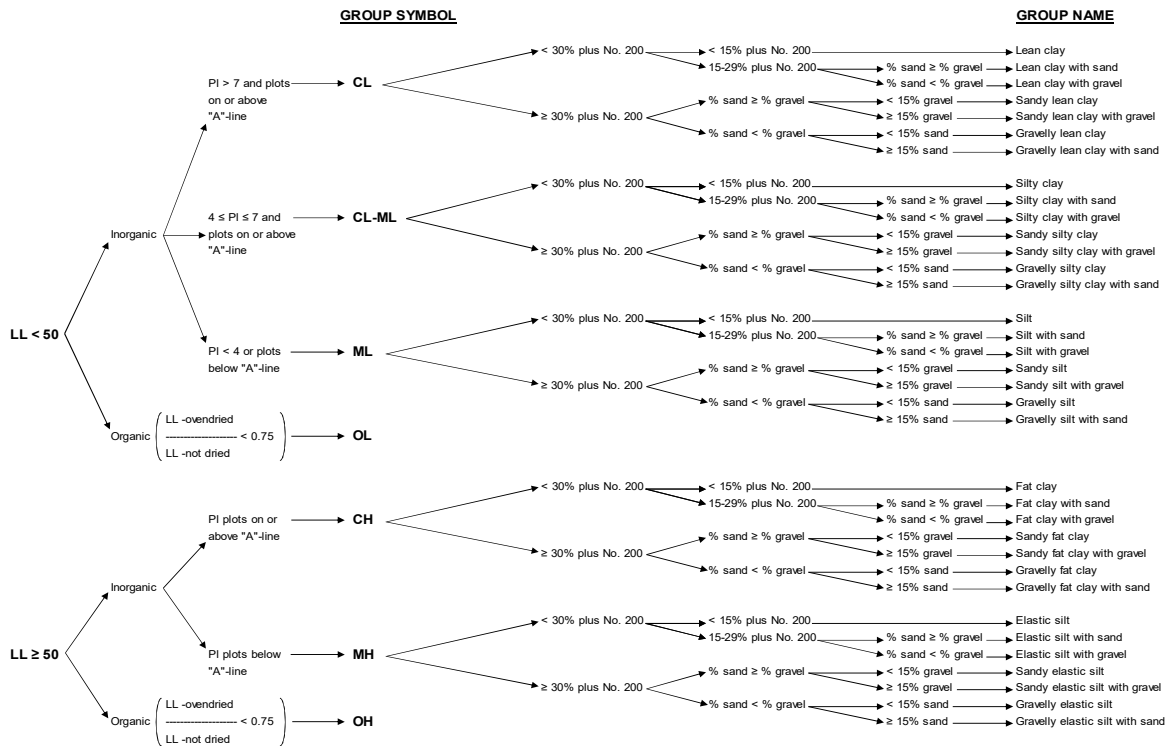
Note: Plasticity index of A-7-5 subgroup is equal to or less than LL minus 30. Plasticity index of A-7-6 subgroup is greater than LL minus 30 (see Figure 2).

AASHTO = American Association of State Highway and Transportation Officials

USCS SOIL CLASSIFICATION SYSTEM



Flow Chart for Classifying Coarse-Grained Soils (More Than 50% Retained on No. 200 Sieve)



Flow Chart for Classifying Fine-Grained Soil (50% or More Passes No. 200 Sieve)

APPENDIX D PHOTO LOG

NE RAILROAD AVENUE SUBDIVISION



Conducting Test Pits, TP-6



Typical Excavation Spoils Observed, TP-3

NE RAILROAD AVENUE SUBDIVISION



Typical Soil Profile Observed, TP-1

NE RAILROAD AVENUE SUBDIVISION



Conducting Infiltration Testing, TP-5

APPENDIX E
REPORT LIMITATIONS AND IMPORTANT INFORMATION

Date: August 6, 2021
Project: NE Railroad Avenue Subdivision
Yacolt, Washington

Geotechnical and Environmental Report Limitations and Important Information

Report Purpose, Use, and Standard of Care

This report has been prepared in accordance with standard fundamental principles and practices of geotechnical engineering and/or environmental consulting, and in a manner consistent with the level of care and skill typical of currently practicing local engineers and consultants. This report has been prepared to meet the specific needs of specific individuals for the indicated site. It may not be adequate for use by other consultants, contractors, or engineers, or if change in project ownership has occurred. It should not be used for any other reason than its stated purpose without prior consultation with Columbia West Engineering, Inc. (Columbia West). It is a unique report and not applicable for any other site or project. If site conditions are altered, or if modifications to the project description or proposed plans are made after the date of this report, it may not be valid. Columbia West cannot accept responsibility for use of this report by other individuals for unauthorized purposes, or if problems occur resulting from changes in site conditions for which Columbia West was not aware or informed.

Report Conclusions and Preliminary Nature

This geotechnical or environmental report should be considered preliminary and summary in nature. The recommendations contained herein have been established by engineering interpretations of subsurface soils based upon conditions observed during site exploration. The exploration and associated laboratory analysis of collected representative samples identifies soil conditions at specific discreet locations. It is assumed that these conditions are indicative of actual conditions throughout the subject property. However, soil conditions may differ between tested locations at different seasonal times of the year, either by natural causes or human activity. Distinction between soil types may be more abrupt or gradual than indicated on the soil logs. This report is not intended to stand alone without understanding of concomitant instructions, correspondence, communication, or potential supplemental reports that may have been provided to the client.

Because this report is based upon observations obtained at the time of exploration, its adequacy may be compromised with time. This is particularly relevant in the case of natural disasters, earthquakes, floods, or other significant events. Report conclusions or interpretations may also be subject to revision if significant development or other manmade impacts occur within or in proximity to the subject property. Groundwater conditions, if presented in this report, reflect observed conditions at the time of investigation. These conditions may change annually, seasonally or as a result of adjacent development.

Additional Investigation and Construction QA/QC

Columbia West should be consulted prior to construction to assess whether additional investigation above and beyond that presented in this report is necessary. Even slight variations in soil or site conditions may produce impacts to the performance of structural facilities if not adequately addressed. This underscores the importance of diligent QA/QC construction observation and testing to verify soil conditions do not differ from the interpreted conditions utilized for preparation of this report.

Therefore, this report contains several recommendations for field observation and testing by Columbia West personnel during construction activities. Actual subsurface conditions are more readily observed and discerned during the earthwork phase of construction when soils are exposed. Columbia West cannot accept responsibility for deviations from recommendations described in this report or future performance of structural facilities if another consultant is retained during the construction phase or Columbia West is not engaged to provide construction observation to the full extent recommended.

Collected Samples

Uncontaminated samples of soil or rock collected in connection with this report will be retained for thirty days. Retention of such samples beyond thirty days will occur only at client's request and in return for payment of storage charges incurred. All contaminated or environmentally impacted materials or samples are the sole property of the client. Client maintains responsibility for proper disposal.

Report Contents

This geotechnical or environmental report should not be copied or duplicated unless in full, and even then only under prior written consent by Columbia West, as indicated in further detail in the following text section entitled *Report Ownership*. The recommendations, interpretations, and suggestions presented in this report are only understandable in context of reference to the whole report. Under no circumstances should the soil boring or test pit excavation logs, monitor well logs, or laboratory analytical reports be separated from the remainder of the report. The logs or reports should not be redrawn or summarized by other entities for inclusion in architectural or civil drawings, or other relevant applications.

Report Limitations for Contractors

Geotechnical or environmental reports, unless otherwise specifically noted, are not prepared for the purpose of developing cost estimates or bids by contractors. The extent of exploration or investigation conducted as part of this report is usually less than that necessary for contractor's needs. Contractors should be advised of these report limitations, particularly as they relate to development of cost estimates. Contractors may gain valuable information from this report, but should rely upon their own interpretations as to how subsurface conditions may affect cost, feasibility, accessibility and other components of the project work. If believed necessary or relevant, contractors should conduct additional exploratory investigation to obtain satisfactory data for the purposes of developing adequate cost estimates. Clients or developers cannot insulate themselves from attendant liability by disclaiming accuracy for subsurface ground conditions without advising contractors appropriately and providing the best information possible to limit potential for cost overruns, construction problems, or misunderstandings.

Report Ownership

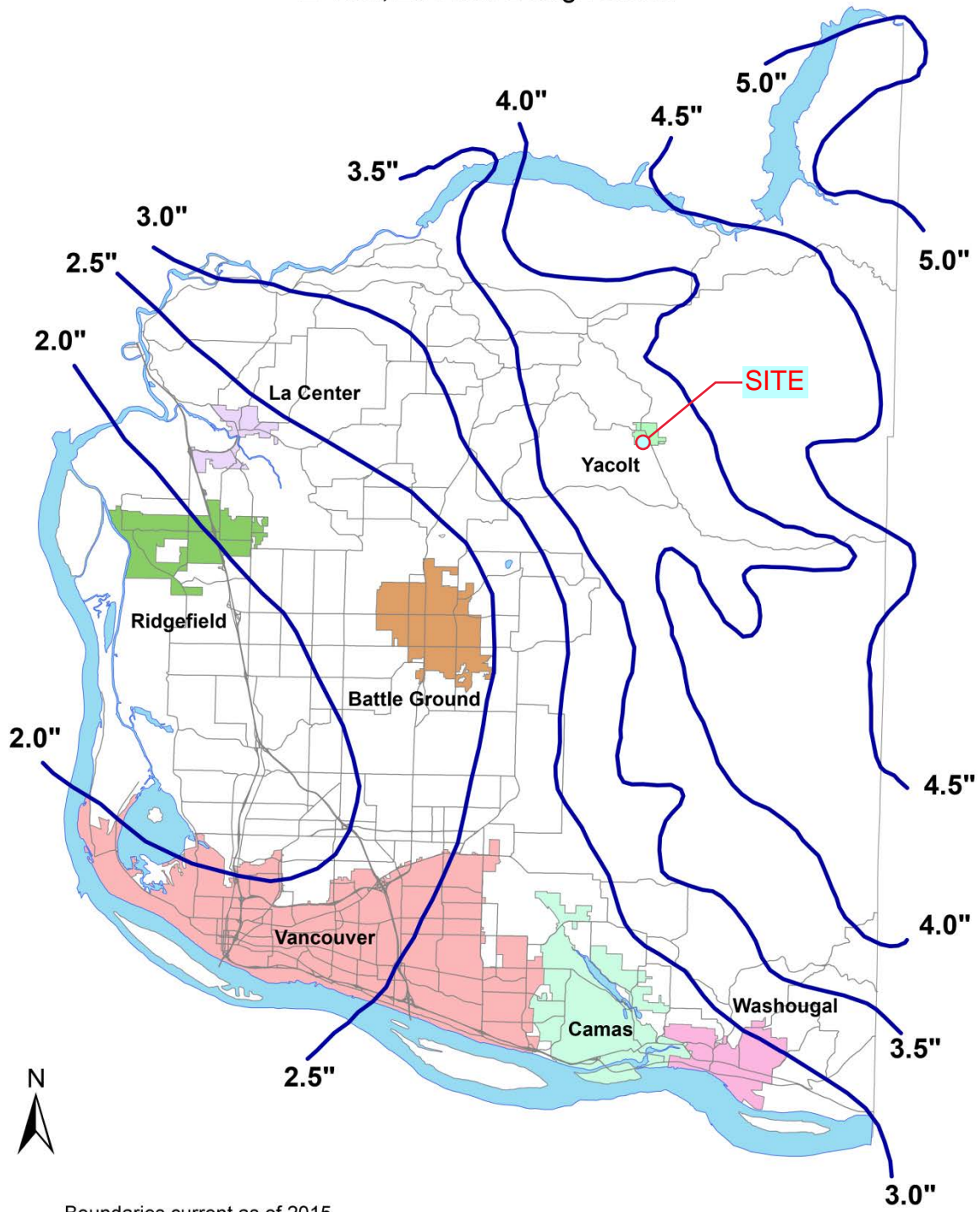
Columbia West retains the ownership and copyright property rights to this entire report and its contents, which may include, but may not be limited to, figures, text, logs, electronic media, drawings, laboratory reports, and appendices. This report was prepared solely for the client, and other relevant approved users or parties, and its distribution must be contingent upon prior express written consent by Columbia West. Furthermore, client or approved users may not use, lend, sell, copy, or distribute this document without express written consent by Columbia West. Client does not own nor have rights to electronic media files that constitute this report, and under no circumstances should said electronic files be distributed or copied. Electronic media is susceptible to unauthorized manipulation or modification, and may not be reliable.

Consultant Responsibility

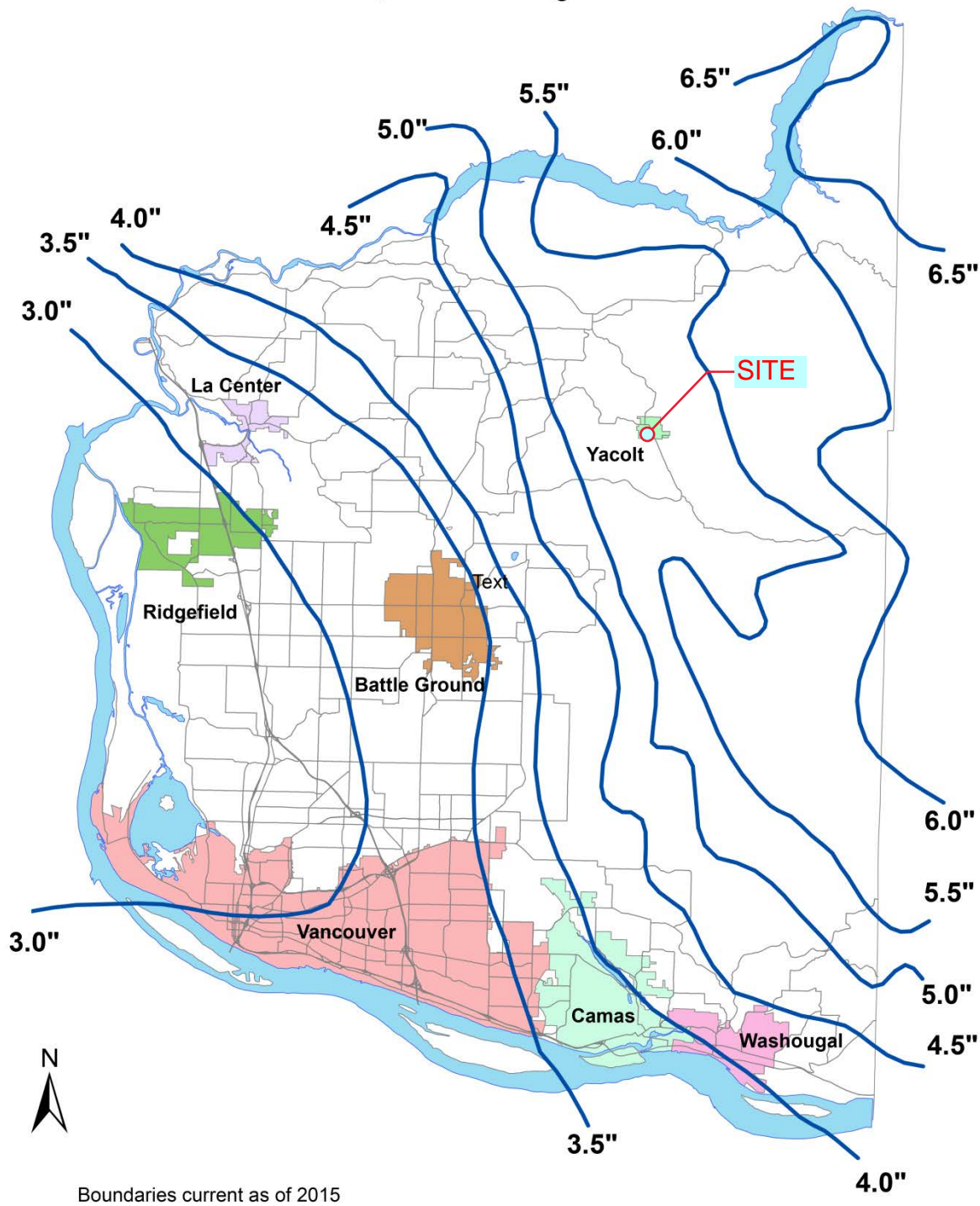
Geotechnical and environmental engineering and consulting is much less exact than other scientific or engineering disciplines, and relies heavily upon experience, judgment, interpretation, and opinion often based upon media (soils) that are variable, anisotropic, and non-homogenous. This often results in unrealistic expectations, unwarranted claims, and uninformed disputes against a geotechnical or environmental consultant. To reduce potential for these problems and assist relevant parties in better understanding of risk, liability, and responsibility, geotechnical and environmental reports often provide definitive statements or clauses defining and outlining consultant responsibility. The client is encouraged to read these statements carefully and request additional information from Columbia West if necessary.

Appendix K: Isopluvial Maps

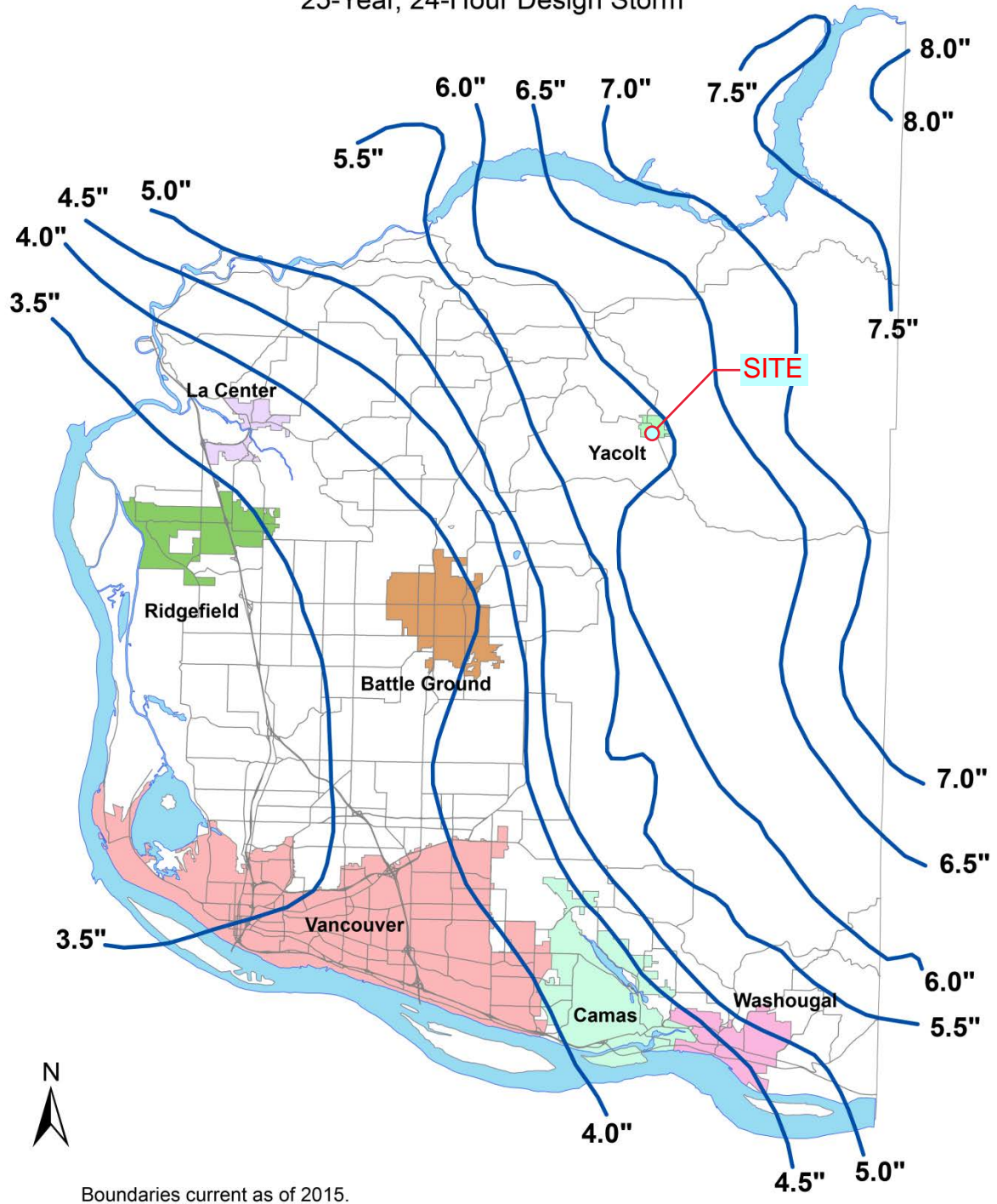
Isopluvial Map for Clark County 2-Year, 24-Hour Design Storm



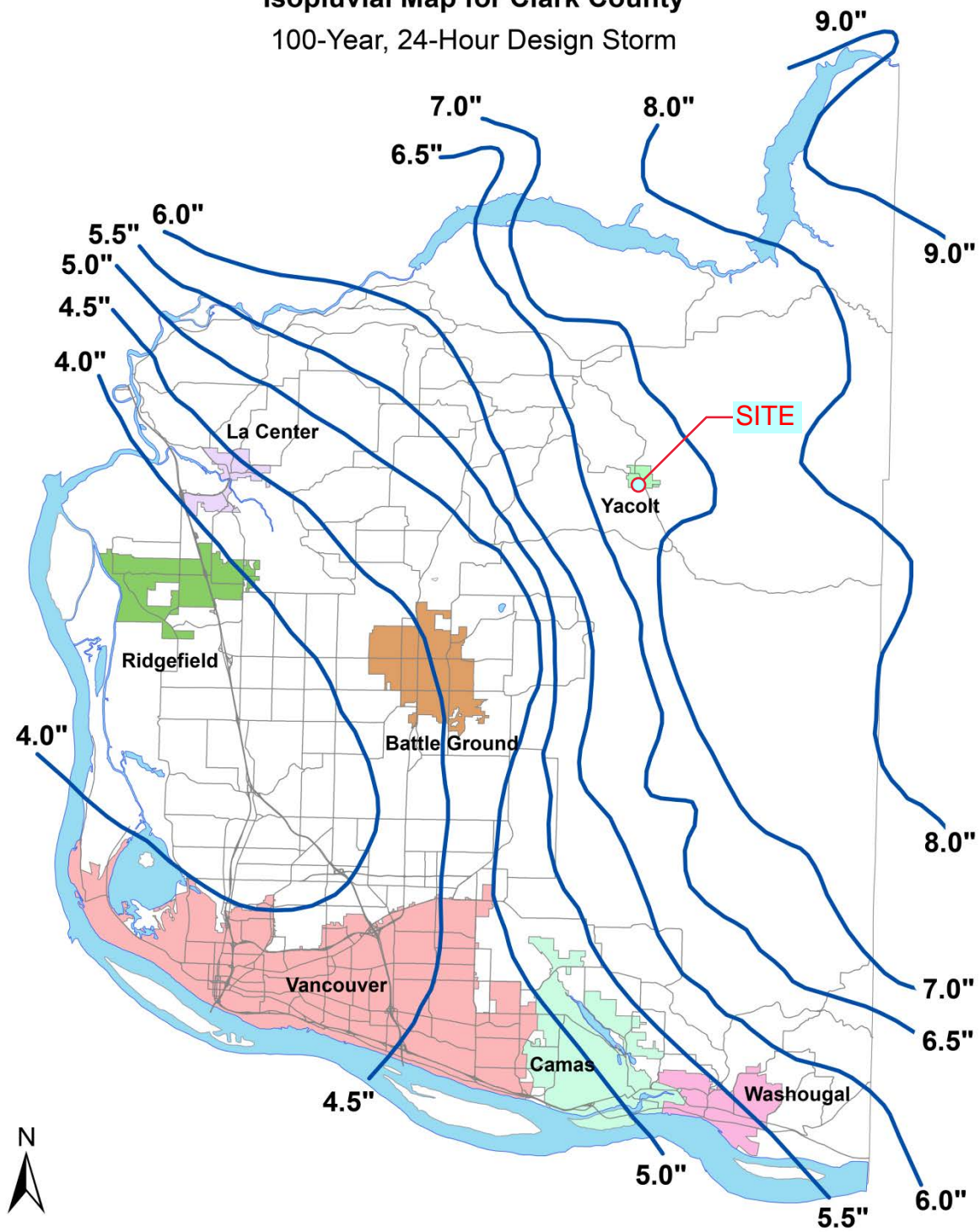
Isopluvial Map for Clark County 10-Year, 24-Hour Design Storm



Isopluvial Map for Clark County 25-Year, 24-Hour Design Storm



Isopluvial Map for Clark County 100-Year, 24-Hour Design Storm



Boundaries current as of 2015.

11. Preliminary Stormwater Plan (Included in Stormwater TIR)

12. State Environment Review SEPA

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:

Railroad Avenue Subdivision

2. Name of applicant:

AHO Construction I, Inc.

3. Address and phone number of applicant and contact person:

Applicant: AHO Construction I, Inc.

5512 NE 109th Court, Ste. 101

Vancouver, WA 98662

Houston Aho

houstona@ahoconstruction.com

(360) 254-0493

Contact: AKS Engineering & Forestry

9600 NE 126th Avenue, Suite 2520

Vancouver, WA 98682

Seth Halling

sethh@aks-eng.com

(360) 882-0419

4. Date checklist prepared:

December 2, 2021

5. Agency requesting checklist:

Town of Yacolt

6. Proposed timing or schedule (including phasing, if applicable):

Construction is anticipated to begin in the Summer of 2022, once all permits are obtained. The project will be constructed in one phase. Completion of construction is anticipated to be fall/winter of 2022.

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

None proposed.

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

- **Stormwater Report – AKS Engineering & Forestry, LLC.**
- **Geotechnical Report – Columbia West Engineering, Inc.**
- **Archaeological Predetermination – Applied Archaeological Research**
- **Flood Hazard Permit – AKS Engineering & Forestry, LLC.**
- **NPDES - AKS Engineering & Forestry, LLC.**
- **SWPPP – AKS Engineering & Forestry, LLC.**
- **SEPA checklist**
- **Riparian Habitat Permit prior to construction plan approval**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

Engineering Plan Approval
Preliminary Subdivision Approval
Erosion Control Plan Approval
Grading Permit
NPDES Permit
Preliminary Plat Approval
Final Plat Approval
Grading Plan Approval
Stormwater Plan Approval
SEPA Determination
Riparian Habitat Permit

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The project site is 19.01 acres in size and zoned single-family residential R1-12.5. The site development will include 47 residential lots, utilities, and street improvements.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The site is unaddressed
Abbreviated legal: NW & NE 1/4, S2, T4N, R3E
Clark County Parcel ID #: 64522-000

B. Environmental Elements

1. Earth

a. General description of the site:

(circle one): **Flat**, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope is approximately 10% in the middle of the site.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

- **YaA (Yacolt loam, 0-3 % slopes), 83.2% of the site**
- **YcB (Yacolt stony loam, 0-5% slopes), 16.8% of the site.**

According to GIS, the site's soils are classified as Poor and Good Agricultural Soils.

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

No surface indications or history of unstable soils on site or in the immediate vicinity.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The Applicant proposes to remove all surface vegetation within the project area to perform the necessary site grading to complete the proposed development. The development is anticipated to generate approximately 50,000 cubic yards of cut and 45,000 cubic yards of fill. Excess material to be hauled off to an approved site.

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

Yes, erosion is possible during work in the form of silt transfer and dust blow-off. Erosion potential will be minimized by utilizing best management practices for erosion control.

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

Once the site is developed, there will be approximately 7.75 acres of impervious surface, totaling approximately 37% of the site.

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

The applicant proposes to utilize best management practices for soil erosion. An erosion control plan will be approved by the Town of Yacolt prior to construction.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

During site grading and construction there will be exhaust emission from construction equipment. Once construction is complete air emissions will be limited to automobile exhaust from vehicles entering and leaving the site.

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

None known.

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

The applicant will comply with applicable code and best management practices.

3. Water

a. Surface Water:

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

During the Pre-Application Meeting, Staff mentioned that there is periodically standing water in the ditch located at the northwest corner of the site. This existing ditch discharges, through a culvert under S Parcel Avenue, to Yacolt Creek to the

west. In addition, there is an existing Type F Stream located approximately 95 feet from the stormwater discharge for the site development.

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

Yes, the existing ditch will be filled to accommodate the project's required frontage improvements. Stormwater piping is proposed to capture existing stormwater draining to the existing ditch. Stormwater from the proposed site development and off-site stormwater entering the site will discharge approximately 95 feet from an off-site Type F Stream (Yacolt Creek) and is located approximately 400 feet west of the project site along near the dead end of W Bumpski Street.

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

There will be no fill or dredging material within the riparian habitat. This project will place 300 CY of fill in the existing ditch at the northwest corner of the site. The fill will be from on-site sources or other off-site approved sources.

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

No surface water withdrawals or diversions are required for this site.

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

Yes, GIS maps the northwest corner of the site as being in the Floodway Fringe.

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

No, this application does not involve any discharge of waste materials to surface waters.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn from a well as part of this project for any purpose. No water will be discharged to groundwater. No impacts to groundwater will occur.

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

The development is proposing individual septic tanks on each lot as allowed by the Town of Yacolt and Clark County Public Health. The size of the septic systems is unknown at this time, all permitting will be obtained prior to construction of the septic systems to ensure they are adequately sized to serve the future homes. The proposed septic tanks will discharge domestic sewage into the ground.

c. Water runoff (including stormwater):

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

After the site development is complete, stormwater runoff from on-site impervious and pervious surfaces will be collected on site and conveyed to a stormwater wetpond for detention, and treatment. Off-site stormwater will bypass the wetpond and connect into stormwater conveyance pipe downstream of the wetpond. Stormwater will be conveyed from the wetpond, piped down W Bumpski Street, and discharged within Yacolt Creek's Riparian Habitat Buffer Area.

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

Fuels, such as diesel or gasoline, could potentially spill on the site during construction. Without adequate erosion control or stormwater mitigation, waste materials could possibly enter ground or surface waters. However, the proposed stormwater treatment and erosion control measures will minimize the potential for waste materials to be conveyed to ground or surface waters.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No, this application does not alter or otherwise affect drainage patterns in the vicinity of the site.

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

This proposal will meet or exceed the Town of Yacolt and Washington State Department of Ecology's erosion control standards. The stormwater generated by the proposed impervious and pervious surfaces will be collected, treated, detained, and discharged off site at rates allowed per the Stormwater Management Manual for the Puget Sound Basin. Any spills will be immediately responded to and appropriate remediation measures will be taken.

4. Plants

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

deciduous tree: alder, maple, aspen, other

evergreen tree: fir, cedar, pine, other

shrubs

grass

pasture

crop or grain

Orchards, vineyards or other permanent crops.

wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other

water plants: water lily, eelgrass, milfoil, other

other types of vegetation

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

The site was recently logged and there is no additional vegetation on site. Any vegetation that grows on site prior to construction will be removed with this project.

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

None known.

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

Landscaping will be installed by future homeowners.

e. List all noxious weeds and invasive species known to be on or near the site.

None known.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: **hawk**, heron, eagle, **songbirds**, other:

mammals: **deer**, bear, elk, beaver, other: **rabbit, squirrel, Big Brown Bat**

fish: bass, salmon, **trout**, herring, shellfish, other

b. List any threatened and endangered species known to be on or near the site.

No threatened or endangered species are known to be on site. The Washington State Department of Fish and Wildlife PHS Website lists occurrences of Big Brown Bat and Rainbow Trout within 500 feet of the site. Per PHS, the Big Brown Bat is listed as Sensitive, but not threatened or endangered.

c. Is the site part of a migration route? If so, explain.

The site is located within what is commonly referred to as the Pacific Flyway. This Flyway is the general migratory route for various species of ducks, geese, and other migratory waterfowl. Neotropical birds, such as Robins, may also seasonally utilize or be near the site.

d. Proposed measures to preserve or enhance wildlife, if any:

The future homes will have landscaping which could enhance wildlife activity on site.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and Natural Resources

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

Typical residential uses of electricity will be used for the completed project.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No, it is not anticipated that the project will affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

All construction on site will be designed to comply with the Washington State energy code and the adopted version of the International Building Code as applicable to this project.

7. Environmental Health

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

Heavy equipment and a variety of materials will be utilized to construct the project.

1) Describe any known or possible contamination at the site from present or past uses.

There is no known contamination at the site from present or past uses.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Typical construction materials such as: gas, diesel, oil, etc. during construction.

4) Describe special emergency services that might be required.

No special emergency services are anticipated.

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

Contractors will be expected to comply with applicable local, state, and federal regulations relating to the construction and operation of the project. All construction is anticipated to be inspected according to industry requirements and standards.

b. Noise

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

Existing traffic noise from adjacent roadways may be heard on the property. However, this noise should not adversely affect the proposed project.

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

Construction on the site will create short-term construction noise. Visitor, resident, mail delivery, deliveries, and sold waste and recycling vehicles will create some noise in the long-term. Other long term noise sources include small power tools including, but not limited to, small gas-powered equipment used for site and landscape maintenance.

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

Require all construction equipment to have muffled exhaust. Restrict construction to hours allowed by the Town of Yacolt.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The proposed project site is currently vacant. The properties to the south are undeveloped and underdeveloped single-family residential. The properties to the west are undeveloped and a fire station. The properties to the north are developed with single-family residential. The properties to the east are developed with a railroad. It is not anticipated that the project will affect the current uses adjacent to the site.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

Yes, the site was previously forested and was recently logged. The logging permit process included a conversion. The site is not under a Forest Practice Moratorium.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No, the project will not affect or be affected by surrounding working farm or forest land normal business operations.

c. Describe any structures on the site.

There are no existing structures on site.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

The site is zoned Single-family Residential (R1-12.5).

f. What is the current comprehensive plan designation of the site?

The comprehensive plan designation is UL.

g. If applicable, what is the current shoreline master program designation of the site?

None.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
The site is in a CARA 1 & 2 Recharge Area. There is also mapped Floodway Fringe and Riparian Habitat on the northeast corner of the site.

i. Approximately how many people would reside or work in the completed project?
Assuming 2.69 people per residence, approximately 126 people will reside in the completed project.

j. Approximately how many people would the completed project displace?
The site is currently vacant, no people will be displaced.

k. Proposed measures to avoid or reduce displacement impacts, if any:
As no displacement impacts are proposed, no measures are proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
Proposed measures include approval through the Town of Yacolt subdivision review process.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
No impacts to agricultural or forest lands of long-term commercial significance will occur. The property was recently logged under a conversion forest practice permit and is zoned for residential use within town limits. The proposed project will obtain subdivision approval through the Town of Yacolt's review process.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
47 middle-income dwelling units are proposed.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
The site is currently vacant, no units will be eliminated.

c. Proposed measures to reduce or control housing impacts, if any:
No impacts are proposed, so no measures are proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
The final height of the future homes will be less than the 35' maximum. The building materials will consist of wood, metal, stone, and concrete. Building height and materials will be reviewed during the Town of Yacolt building permit application review.

b. What views in the immediate vicinity would be altered or obstructed?
Views across the site will be altered with the project, and adjoining properties may be able to see some of the future residences.

c. Proposed measures to reduce or control aesthetic impacts, if any:

No proposed measures outside of meeting the requirements of Town of Yacolt Municipal Code.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Typical residential lighting will light the area in the nighttime hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The installation of illuminated materials will be done in such a way to minimize dispersion off-site and to not constitute a safety hazard.

c. What existing off-site sources of light or glare may affect your proposal?

None known.

d. Proposed measures to reduce or control light and glare impacts, if any:

Lights will be installed and shielded to minimize dispersion and control any potential off-site impacts. Intensity of lighting will be kept at a level to assure safety on the site, but will meet all applicable Town of Yacolt light shielding and glare requirements.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Designated or informal recreational opportunities in the immediate vicinity include the following:

- **Yacolt Town Park is located approximately 800' to the northwest.**
- **Yacolt Town Square is located approximately 1,400' to the north.**
- **Yacolt Recreational Park is located approximately 1,400' to the east.**

b. Would the proposed project displace any existing recreational uses? If so, describe.

No existing recreational uses are being displaced with this application.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No impacts are anticipated so no measures are proposed.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There are no buildings on site. Some of the single-family residences north of the site are older than 45 years old. It is unknown if any of these residences are eligible for listing on any preservation register.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No sites have been identified on the project site. The Applicant's archaeologist, Applied Archaeological Resources (AAR) completed a predetermination on the site in 2021. The predetermination has been submitted to DAHP.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The survey generally employed a series of east-to-west oriented pedestrian transects spaced no more than 20m apart. At the time of the survey, it was observed that the project area had recently been logged and grubbed. Numerous pulped tree stumps and branches and large shattered rock fragments were noted throughout the tract. Its ground surface was hummocky, which likely was due to soil being pushed around during yarding the cut trees. Based on the depth of ruts, in places, the ground to a depth of 50 centimeters (cm) below surface (cmbs) had been disturbed. Twenty STPs were excavated in the project area on September 22, 2021 (Table 2). They were placed in a grid-like pattern across the property and were offset when probe location overlapped with thick surface mulch.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The project will comply with applicable regulations and protocols of DAHP and the Town of Yacolt. It is unknown at this time if additional permits will be required.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site is served by S Railroad Avenue along its east boundary, W Hoag Street along its north boundary, and S Parcel Avenue along its west boundary. Access to the development will be gained from all three streets.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

C-Tran provides service to the area with Route 47, which has a stop on W Yacolt Road just west of N Railroad Ave. The stop is approximately 0.3 miles north of the site.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The proposed project will provide a minimum of two parking spaces on each lot (approximately 94 off-street parking spaces). Additionally, on-street parking will be allowed on the majority of the internal streets. No parking spaces are being eliminated.

- d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The proposed project will construct half-width frontage improvements to S Railroad Avenue (public), W Hoag Street (public), and S Parcel Avenue (public). S Railroad Avenue improvements include 30-feet of half-width ROW, 21-feet of half-width pavement, 3-foot planter strip, and 6-foot detached sidewalk. W Hoag Street improvements include 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot

detached sidewalk. S Parcel Avenue improvements include a minimum 30-feet of half-width ROW, 18-feet of half-width pavement, 5-foot planter strip, and 5-foot detached sidewalk. In addition to the frontage improvements, this application proposes to construct four internal public streets (W Oak Street, W Bumpski Street, S Ranck Avenue, and S Amro Avenue). Proposed internal street improvements include 50 feet of ROW, 28 feet of pavement, 5-foot planter strips, and 5-foot sidewalks.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No, the project will not occur in the vicinity of water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

According to the ITETripGen Web-based App (Land Use Code 210), the development's 47 dwelling units will generate 444 daily average trips, 35 a.m. peak hour trips, and 47 p.m. peak hour trips.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No, it is not anticipated that the project will interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.

h. Proposed measures to reduce or control transportation impacts, if any:

The Applicant will pay any applicable fees and taxes associated with the project.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

Yes, future public services will be needed for the development.

b. Proposed measures to reduce or control direct impacts on public services, if any.

The Applicant will construct on site utilities, pay any applicable system development charges, property taxes and other municipally imposed taxes and fees.

16. Utilities

a. Circle utilities currently available at the site:

electricity, natural gas **water, refuse service, telephone**, sanitary sewer, septic system, other _____

d. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Electric: Clark PUD

Telephone/Internet: Comcast/CenturyLink

Sanitary Sewer: On-site Septic

Water: Clark PUD

Refuse: Waste Connections

Sanitary sewer will be served by individual septic systems on each lot.

Water will be provided by connecting to existing mains within S Parcel Ave, W Hoag St, and S Railroad Avenue.

Stormwater from the development will be collected and conveyed to the proposed on-site wetpond for treatment and detention, then the water will be conveyed off-site through a pipe in W Bumpski Street and then discharged just west of the street's terminus within the Yacolt Creek Riparian Habitat Buffer Area.

C. Signature

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

Signature: 

Name of signee Seth Halling

Position and Agency/Organization Project Manager / AKS Engineering & Forestry

Date Submitted: 12/15/2021

13. Soil Suitability Letter



CLARK COUNTY PUBLIC HEALTH

1601 E. Fourth Plain Blvd.
P.O. BOX 9825 - Vancouver, WA 98666-8825
(564) 397-8428 - Fax (360) 397-8084

For Office Use Only:

ON-SITE SEWAGE SOIL & SITE EVALUATION RESULTS LETTER

To: <u>Aho Construction</u>	<u>C/O Ek Engineering</u>	ON # <u> </u>
	<u>PO Box 3097</u>	SR # <u>See Below</u>
	<u>Battle Ground, WA 98604</u>	Tax Parcel # <u>64522000</u>

Location of Soil and Site Evaluation: At the SW corner of S. Railroad Ave. and W Hoag St., Yacolt

FINDINGS & RESULTS:

**Soil & Site Evaluation Results do not ensure all other county requirements are met. It is recommended that appropriate agencies are contacted (i.e. Planning, Public Works, Building Department).*

Restrictive Layer/Seasonal High Ground Water Depth Range: See Below Estimated Slope Range: See Below

- Based on information provided and the test hole findings, an area on the property was found that meets current minimum standards for an on-site sewage system (OSS). **NOTE: Clark County Code 24.17 requires that a licensed designer or professional engineer specify the type of OSS to be designed. A list of licensed designers and professional engineers is enclosed.**
- Drainfield staking review required. { Basic or Detailed Staking }
- The existing site was denied. You may wish to explore other areas of the property to qualify for a more suitable site.
- Additional site visit fee required for evaluation of more test holes (*please see fee schedule*).
- No additional site visit fee required if new test holes are called in within 90 days of the date of this letter.

Notes & Conditions:

This site visit was conducted to evaluate the soils and site findings and recommendations submitted by the licensed Engineer / Designer.

Lot & Test Hole Summary:

- **Site and soil evaluation for NE Railroad Ave. Subdivision.**
- **CCPH development review submitted 10/26/21 (SR0049433).**
- **Due to small lot size, an approved method II analysis will be required prior to preliminary land use approval.**
- **All systems must meet TLB with a minimum 24" of vertical separation or an equivalent level of enhanced treatment.**
- **Within test hole # 57 there is a clay tile drainpipe running from NE to SW. Future OSS designs must account for this drain and any drains located on the parent parcel.**
- **Each OSS design must account for a final slope measurement, after final grading is approved.**

**This evaluation is valid for five years from date on this form.
ANY MODIFICATION TO SITE MAY RESULT IN SITE APPROVAL BEING VOIDED**



CLARK COUNTY PUBLIC HEALTH

1601 E. Fourth Plain Blvd.

P.O. BOX 9825 - Vancouver, WA 98666-8825

(564) 397-8428 – Fax (360) 397-8084

ON-SITE SEWAGE SOIL & SITE EVALUATION RESULTS LETTER

Notes & Conditions:

Tax ID 64522000 – SR49353 proposed Lot “1”: Restrictive layer between 62-64” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49354 proposed Lot “2”: Restrictive layer between 63-70” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49355 proposed Lot “3”: Restrictive layer between 55-70” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49356 proposed Lot “4”: Restrictive layer between 47-56” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49357 proposed Lot “5”: Restrictive layer between 47-70” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49358 proposed Lot “6”: Restrictive layer between 38-40” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49359 proposed Lot “7”: Restrictive layer between 39-46” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49361 proposed Lot “8”: Restrictive layer between 37-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49362 proposed Lot “9”: Restrictive layer between 37-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49363 proposed Lot “10”: Restrictive layer between 43-64” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49365 proposed Lot “11”: Restrictive layer between 43-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49366 proposed Lot “12”: Restrictive layer between 47-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

- The approved area for placement of the OSS drain field is limited to the area of the approved test holes that conforms to the health code.
- The test hole locations are to be measured in from two property lines on the design layout to help provide adequate reference for accurate placement of the drain field.
- Additional fees for design review and construction permit are required for most applications

**This evaluation is valid for five years from date on this form.
ANY MODIFICATION TO SITE MAY RESULT IN SITE APPROVAL BEING VOIDED**



CLARK COUNTY PUBLIC HEALTH

1601 E. Fourth Plain Blvd.
P.O. BOX 9825 - Vancouver, WA 98666-8825
(564) 397-8428 – Fax (360) 397-8084

ON-SITE SEWAGE SOIL & SITE EVALUATION RESULTS LETTER

Notes & Conditions:

Tax ID 64522000 – SR49367 proposed Lot “13”: Restrictive layer between 37-54” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49368 proposed Lot “14”: Restrictive layer between 42-60” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49369 proposed Lot “15”: Restrictive layer between 40-46” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49370 proposed Lot “16”: Restrictive layer between 38-42” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49371 proposed Lot “17”: Restrictive layer between 40-44” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49373 proposed Lot “18”: Restrictive layer between 40-42” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49375 proposed Lot “19”: Restrictive layer between 40-54” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49376 proposed Lot “20”: Restrictive layer between 44-54” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49379 proposed Lot “21”: Restrictive layer between 40-41” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49380 proposed Lot “22”: Restrictive layer between 41-50” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49382 proposed Lot “23”: Restrictive layer between 39-46” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49383 proposed Lot “24”: Restrictive layer between 40-46” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

- The approved area for placement of the OSS drain field is limited to the area of the approved test holes that conforms to the health code.
- The test hole locations are to be measured in from two property lines on the design layout to help provide adequate reference for accurate placement of the drain field.
- Additional fees for design review and construction permit are required for most applications.

This evaluation is valid for five years from date on this form.

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P.O. BOX 9825 - Vancouver, WA 98666-8825
(564) 397-8428 – Fax (360) 397-8084

ON-SITE SEWAGE SOIL & SITE EVALUATION RESULTS LETTER

Notes & Conditions:

Tax ID 64522000 – SR49384 proposed Lot “25”: Restrictive layer between 37-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49385 proposed Lot “26”: Restrictive layer between 46-60” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49386 proposed Lot “27”: Restrictive layer between 39-60” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49388 proposed Lot “28”: Restrictive layer between 39-51” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49389 proposed Lot “29”: Restrictive layer between 39-51” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49391 proposed Lot “30”: Restrictive layer between 39-50” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49393 proposed Lot “31”: Restrictive layer between 40-41” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49395 proposed Lot “32”: Restrictive layer between 60-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49396 proposed Lot “33”: Restrictive layer between 40-64” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49400 proposed Lot “34”: Restrictive layer between 38-40” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49402 proposed Lot “35”: Restrictive layer between 38-64” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49403 proposed Lot “36”: Restrictive layer between 60-64” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

- The approved area for placement of the OSS drain field is limited to the area of the approved test holes that conforms to the health code.
- The test hole locations are to be measured in from two property lines on the design layout to help provide adequate reference for accurate placement of the drain field.
- Additional fees for design review and construction permit are required for most applications.

**This evaluation is valid for five years from date on this form.
ANY MODIFICATION TO SITE MAY RESULT IN SITE APPROVAL BEING VOIDED**



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P.O. BOX 9825 - Vancouver, WA 98666-8825
(564) 397-8428 - Fax (360) 397-8084

ON-SITE SEWAGE SOIL & SITE EVALUATION RESULTS LETTER

Notes & Conditions:

Tax ID 64522000 – SR49404 proposed Lot “37”: Restrictive layer between 66-68” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49405 proposed Lot “38”: Restrictive layer between 68” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49406 proposed Lot “39”: Restrictive layer between 66-68” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49407 proposed Lot “40”: Restrictive layer between 62-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49408 proposed Lot “41”: Restrictive layer between 66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49409 proposed Lot “42”: Restrictive layer between 62-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49410 proposed Lot “43”: Restrictive layer between 62-66” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49411 proposed Lot “44”: Restrictive layer between 54-60” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49412 proposed Lot “45”: Restrictive layer between 54-60” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49413 proposed Lot “46”: Restrictive layer between 60” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

Tax ID 64522000 – SR49414 proposed Lot “47”: Restrictive layer between 60-62” for 0.6 gal/ft²/day
The primary and reserve areas require **TL B w/pressure distribution**

- The approved area for placement of the OSS drain field is limited to the area of the approved test holes that conforms to the health code.
- The test hole locations are to be measured in from two property lines on the design layout to help provide adequate reference for accurate placement of the drain field.
- Additional fees for design review and construction permit are required for most applications.

**This evaluation is valid for five years from date on this form.
ANY MODIFICATION TO SITE MAY RESULT IN SITE APPROVAL BEING VOIDED**

Miles Lawson x7273

Name of Environmental Health Specialist /Telephone Ext.

12/16/2021

Date

IF YOU HAVE ANY QUESTIONS, PLEASE CALL (564) 397-8428

Page 5 of 5

14. Water Purveyor Utility Review Letter



REQUEST FOR UTILITY REVIEW – WATER AVAILABILITY
 P. O. Box 8900 (8600 N.E. 117 Ave) Vancouver, WA 98668
 (360) 992-8022 Email: wateradmin@clarkpud.com

APPLICANT INFORMATION

DATE: 6/28/2021

NAME Kent Andreasen/AKS Engineering
 ADDRESS 9600 NE 126th Ave Suite 2520
 CITY Vancouver STATE WA ZIP 98682
 TELEPHONE (360) 882-0419 EMAIL andreasenk@aks-eng.com

Notification Method: Email Type of Development: Subdivision
 Number of Units: 51

Property Location

Serial Acct. No 64522-000
 Property Address S Railroad Ave & W Hoag St, Yacolt, WA (or nearest cross street)
 Property Size 20 ACRES Required Fire Flow TBD GPM

PLEASE SUBMIT PLAT MAP WITH REQUEST

GENERAL CONDITIONS FOR SERVICE (CPU Staff Only)

Clark Public Utilities (CPU) is the water purveyor for this site. CPU Water distribution maps indicate that there is an existing 8" DI water main within S Railroad Ave, a 6" steel line within W Hoag, a 6" DI line within S Parcel, and fire hydrants located on the northern border & southwest corner. See attached CPU water distribution map for reference. Utility drawings are for reference only and project engineer should verify existing conditions in the field prior to final design.

The fire flow at FH – 2924, located 1/3 mile north of the site along NE Parcel Ave was previously calculated at 1,691 gpm at 20 psi. Static water pressure is expected to vary, around 85 psi depending on site elevation, system demand and reservoir levels. Due to the anticipated high water pressure it is recommended that a plumber be consulted regarding privately owned and operated pressure reducing valves. If updated fire flow data is required, please contact Water Services at (360) 992-8022.

For this development, depending on site access and layout, plan to connect to the existing 8" water main within S Railroad Ave and loop through to connect to W Hoag St or S Parcel Ave. Connection to the 8" S Railroad Ave is needed for fire flow. If fire protection is required, extend a minimum 8" water main within the public right-of-way to the site. If fire protection is not required, a minimum 4" water main may be acceptable. Install proper fire protection (i.e. hydrants and building sprinkler systems) as required by the Fire Marshal. Any existing, unused services shall be properly capped and abandoned. All water mains and services (up to the meter) located within private property, shall be included in an easement granted to Clark Public Utilities.

Proper state approved backflow devices will be required for all domestic, fire and landscape water services. All hot taps shall be performed by a Utility approved contractor. The Developer is responsible for costs associated with the service and fire protection installation, right-of-way permitting, and any other needed water improvements.

Submit full engineering plan set for further requirements and comments.

- Licensed Civil Eng. Drawing Required for Clark Public Utilities approval prior to construction
- Easement Required
- Clark Public Utilities has the capacity to serve, if the above conditions are met
- Developer/Owner shall pay County Right-of-Way fees based on off-site improvements

Review comments are subject to modification during detailed plan check and review.
This utility review is valid for six months after the date of signature below.

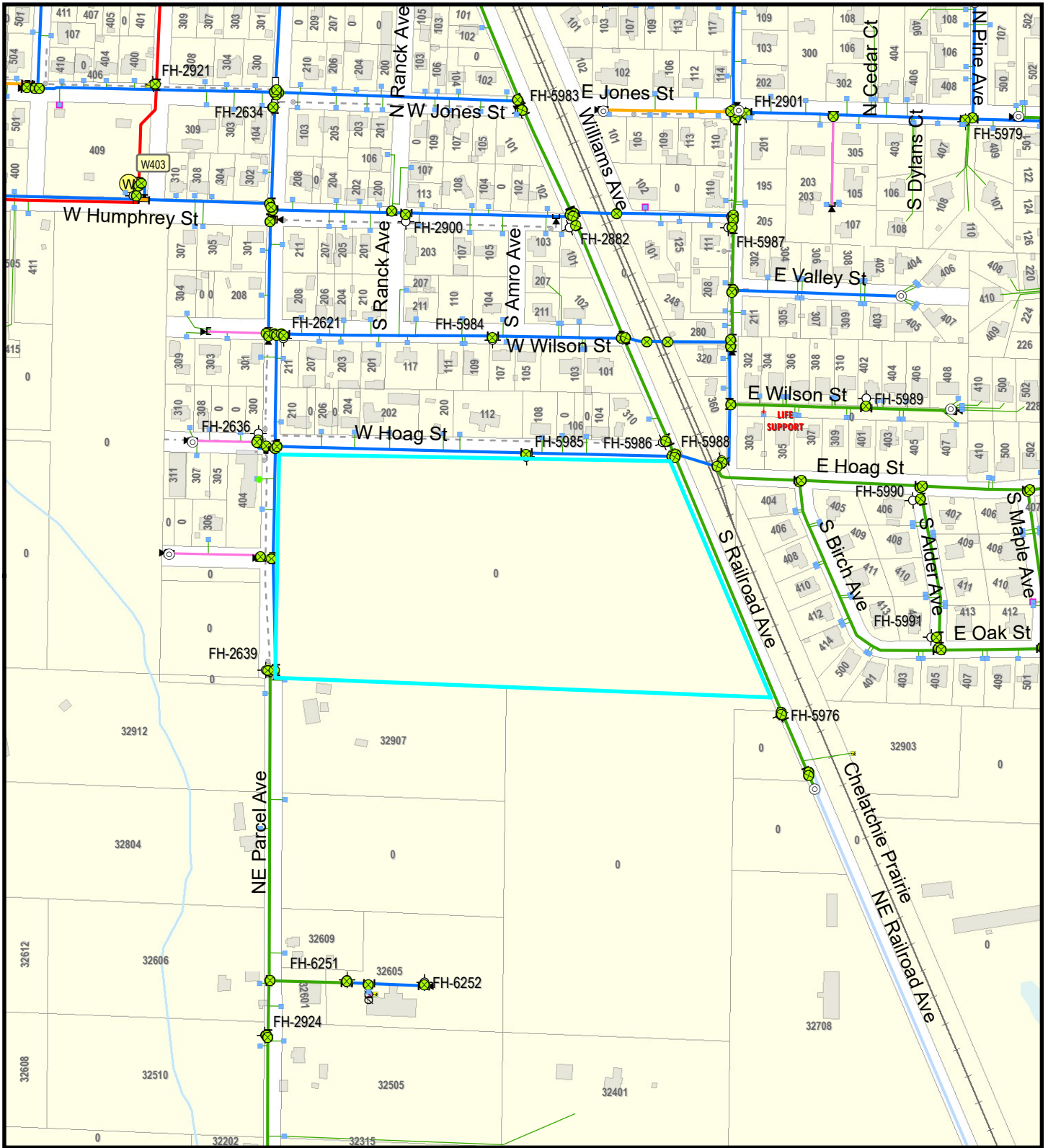
Tonya Dow

REVIEWED BY _____

Tonya Dow, PE

DATE _____

6/28/21



Legend

Unknown	8"	Butterfly, Closed	Air Release	Cross	Reservoir	Fire Flow At 20psi Not Tested
2"	10"	Butterfly, Open	Check	Tee	Booster Pumping Station	1 - 499
3"	12"	Gate, Closed	Double Check	Cap and Thrust Block	Satellite Well	500 - 999
4"	14"	Gate, Open	Blow Off	Reducer	Production Well	1000 - 1499
6"	16"	Abandoned Valve	Pressure Regulating Valve	Coupling		1500 - 7981
Water Service	Water Meter	Valve Book	Tapping Sleeve			

1 inch = 400 feet

OPERATIONS MAP

Printed on: 6/28/2021 Printed by: TonyaD

MAP NUMBER
4302-N

377

15. CCPH Review Letter



December 9, 2021

Seth Halling
AKS Engineering
9600 NE 126th Ave #2520
Vancouver, WA 98682

RE: Conditional Development Review Evaluation for "NE Railroad Ave. Subdivision" located parcel # 64522000 (SR49433)

***Approved Method II Analysis required prior to preliminary land use approval**

****Final Plat Approval required: The Health Department must sign the final plat**

This proposal has been reviewed and the following comments noted:

LAND-USE DETERMINATIONS MADE BY CLARK COUNTY PUBLIC HEALTH ARE BASED ON INFORMATION PROVIDED BY THE APPLICANT, FINDINGS, TECHNOLOGY, REGULATIONS AND POLICIES IN EFFECT AT THE TIME OF THE EVALUATION. SUBSEQUENT PERMIT APPLICATIONS WILL BE REQUIRED TO ADHERE TO REGULATIONS AND POLICIES IN EFFECT AT THE TIME SUCH APPLICATION IS MADE. WHENEVER THE REGULATIONS OF CLARK COUNTY PUBLIC HEALTH ARE IN CONFLICT WITH THE REGULATIONS OF ANOTHER JURISDICTION, (i.e., OTHER COUNTY DEPARTMENT OR STATE) THE MOST STRINGENT OF THE REGULATIONS SHALL APPLY. ACCORDINGLY, THE FOLLOWING DETERMINATIONS WERE MADE AT THE TIME OF THE EVALUATION OF THE PROPOSED PROJECT AND ARE SUBJECT TO REVISION IF CONDITIONS CHANGE OR ADDITIONAL INFORMATION BECOMES AVAILABLE.

CLARK COUNTY PUBLIC HEALTH (CCPH) DEVELOPMENT REVIEW EVALUATION:

The CCPH Development Review evaluation shows that adequate on-site sewage system areas can be provided within the proposed lot lines of the proposed sub-division. Connection to public water is required. This determination does not guarantee that all lots will be recognized as buildable lots by the Town of Yacolt. This determination is also contingent on an approved method II analysis.

LOT SIZE: Clark County Code (CCC) 24.17, Washington Administrative Code (WAC) 246-272A

The proposed lot sizes for this project exceed 12,500 square feet, but are below the minimum land area requirement of 18,000 square feet (based on the inclusion of on-site sewage system (OSS) in type 4 soils with public water) per WAC 246-272A-0320. A Method II analysis for smaller lot sizes must be approved prior to preliminary land use approval. The Method II analysis must address all the requirements outlined in WAC 246-272A-0320-2(d).

WATER SUPPLY: CCC24.17, WAC 246-272A, WAC 246-290, WAC 173-160, Revised Code of Washington (RCW) 58.17

Clark Public Utilities (CPU) is the water purveyor for this project. This development must connect to an approved public water supply. A final acceptance letter or equivalent from CPU must be submitted to CCPH with the final plat.

SEWAGE TREATMENT AND DISPOSAL: CCC 24.17, WAC 246-272A

All 47 lots have current satisfactory Soil & Site Evaluations. Prior to preliminary land use approval, a Method II analysis must be submitted by a licensed OSS designer or engineer and approved by CCPH. Current Soil & Site Evaluations and/or OSS Designs are required at the time of final plat approval.

Each on-site sewage system shall be on the same lot it serves. The test hole locations corresponding to the designated on-site sewage system sites shall be surveyed and marked on the final plat. The final plat must provide septic envelopes sufficient in area to accommodate 100% primary and reserve drainfields. The envelopes must also accommodate 5-foot property line setbacks, and 10-foot structure setbacks. The area designated must concur with the septic plot plans and must be surveyed to the plat.

A note shall be required on the plat stating: "The approved initial and reserve on-site sewage system sites shall be protected from damage due to development". These sites shall be maintained so they are free from encroachment by buildings, roads, and other structures. These areas shall not be covered by any impervious material and not be subject to vehicular traffic or other activity which would adversely affect the soil. Provisions shall be made to prevent flow or accumulation of surface water over the area where an on-site sewage system is located.

DRAINAGE PLAN:

Prior to final plat approval, Clark County Public Health must review a copy of the approved final drainage plan. The on-site sewage system test hole locations shall be included in the drainage plans. If no drainage plan is required, then a written statement from engineering staff must be provided for confirmation.

Please contact me at 564-397-7273 if there are any questions concerning this letter.

Sincerely,

Miles Lawson

Digitally signed by Miles
Lawson
Date: 2021.12.09 14:51:09
-08'00'

Miles Lawson
Environmental Health Specialist

CC: Town of Yacolt

16. Archeological Information (DAHP Correspondence)

Susan Weisenborn

From: Dave Weston
Sent: Wednesday, October 27, 2021 11:31 AM
To: Susan Weisenborn
Subject: FW: DAHP Project 2021-09-06371, NE Railroad Ave Subdivision Predetermination, AAR Report 2513

Please log

Dave Weston, RLA

Land Use Planner



AKS ENGINEERING & FORESTRY, LLC

9600 NE 126th Avenue, Suite 2520 | Vancouver, WA 98682

P: 360.882.0419 Ext. 334 | F: 360.882.0426 | www.aks-eng.com | davew@aks-eng.com

Offices in: Bend, OR | Keizer, OR | Tualatin, OR | Vancouver, WA

From: Emily Taber <emily@aar-crm.com>
Sent: Wednesday, October 27, 2021 11:24 AM
To: Dave Weston <DaveW@aks-eng.com>
Cc: Bill Roulette <bill@aar-crm.com>
Subject: FW: DAHP Project 2021-09-06371, NE Railroad Ave Subdivision Predetermination, AAR Report 2513

EXTERNAL EMAIL: This email originated from outside AKS Engineering & Forestry.

Hi Dave,

Here is the DAHP's response that they have received the predetermination report. Please let us know if you have any additional questions.

Best,
- Emily

From: SEPA (DAHP) <sepa@dahp.wa.gov>
Sent: Wednesday, October 27, 2021 11:20 AM
To: Emily Taber <emily@aar-crm.com>
Cc: Bill Roulette <bill@aar-crm.com>
Subject: RE: DAHP Project 2021-09-06371, NE Railroad Ave Subdivision Predetermination, AAR Report 2513

Hello Emily,

Thank you for contacting the DAHP about your project. This predetermination report has been received by the DAHP. No formal review of this project has been undertaken at this time.

Best,
Stephanie



DAHP staff are working remotely until further notice. My hours are 8 am – 4:30 pm Monday - Friday. Staff no longer have land lines. For a directory of staff cell phone numbers please see the Meet the Staff page on our [website](#).

Stephanie Jolivette | Local Government Archaeologist
(preferred pronouns: she / her / hers)
Work Cell: 360-628-2755 | stephanie.jolivette@dahp.wa.gov

Department of Archaeology & Historic Preservation | www.dahp.wa.gov
1110 Capitol Way S, Suite 30 | Olympia WA 98501
PO Box 48343 | Olympia WA 98504-8343

From: Emily Taber <emily@aar-crm.com>
Sent: Thursday, October 14, 2021 12:01 PM
To: Jolivette, Stephanie (DAHP) <stephanie.jolivette@dahp.wa.gov>; SEPA (DAHP) <sepa@dahp.wa.gov>
Cc: Bill Roulette <bill@aar-crm.com>
Subject: DAHP Project 2021-09-06371, NE Railroad Ave Subdivision Predetermination, AAR Report 2513

External Email

Hello Stephanie,

I've submitted a predetermination report for this project. Please send me a confirmation of receipt when you are able.

Best,
- Emily

Emily C. Taber, M.S., RPA 17399 (she/her)
Project Archaeologist
Applied Archaeological Research, Inc.
4001 NE Halsey St., Ste. 3
Portland, OR 97232
[\(503\) 281-9451](tel:(503)281-9451)

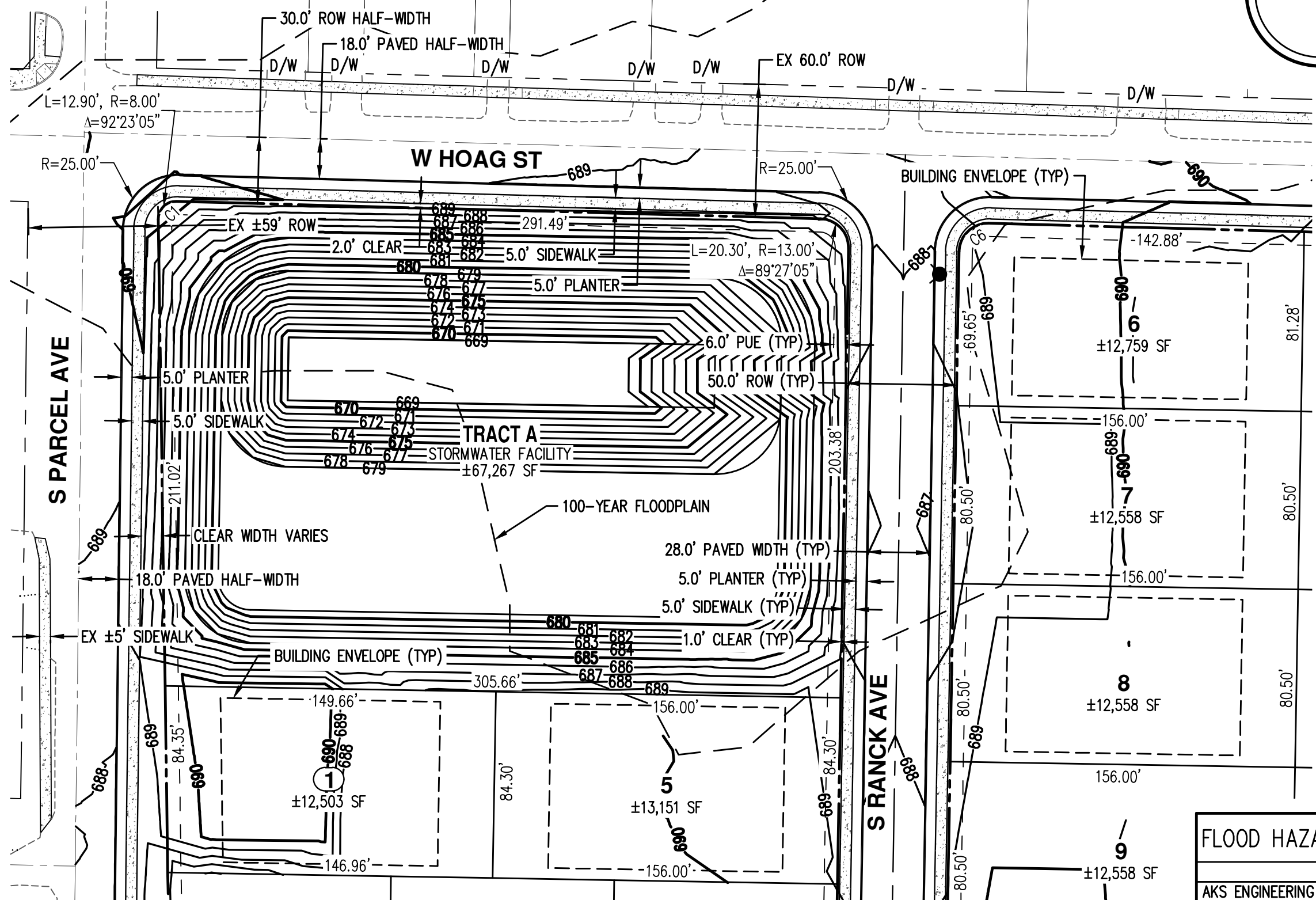
17. Floodplain

PARCEL NO. 66735-000
 PARCEL NO. 66738-000
 PARCEL NO. 66738-001
 PARCEL NO. 66738-002
 PARCEL NO. 66736-000
 PARCEL NO. 66737-000
 PARCEL NO. 66760-000

LEGEND

FINISHED GRADE CONTOUR (1 FT) 671

FINISHED GRADE CONTOUR (5 FT) 675



GENERAL NOTE

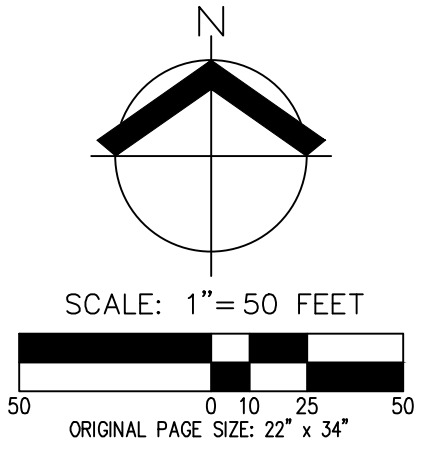
- THE 100-YEAR FLOODPLAIN (ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED) WAS ESTABLISHED BY GRAPHIC OVERLAY OF FLOOD INSURANCE RATE MAP, COMMUNITY NO. 530269, MAP NUMBER 53011C0256D WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 5, 2012 AND IS IN A SPECIAL FLOOD HAZARD AREA.

SETBACKS

- FRONT SETBACK: 25'
 INTERIOR SIDE SETBACK: 5'
 STREET SIDE SETBACK: 15'
 REAR SETBACK: 25'

PROPOSED GRADING QUANTITIES

CUT: 16,000 CY
 FILL: 300 CY



DATE: 11/18/2021

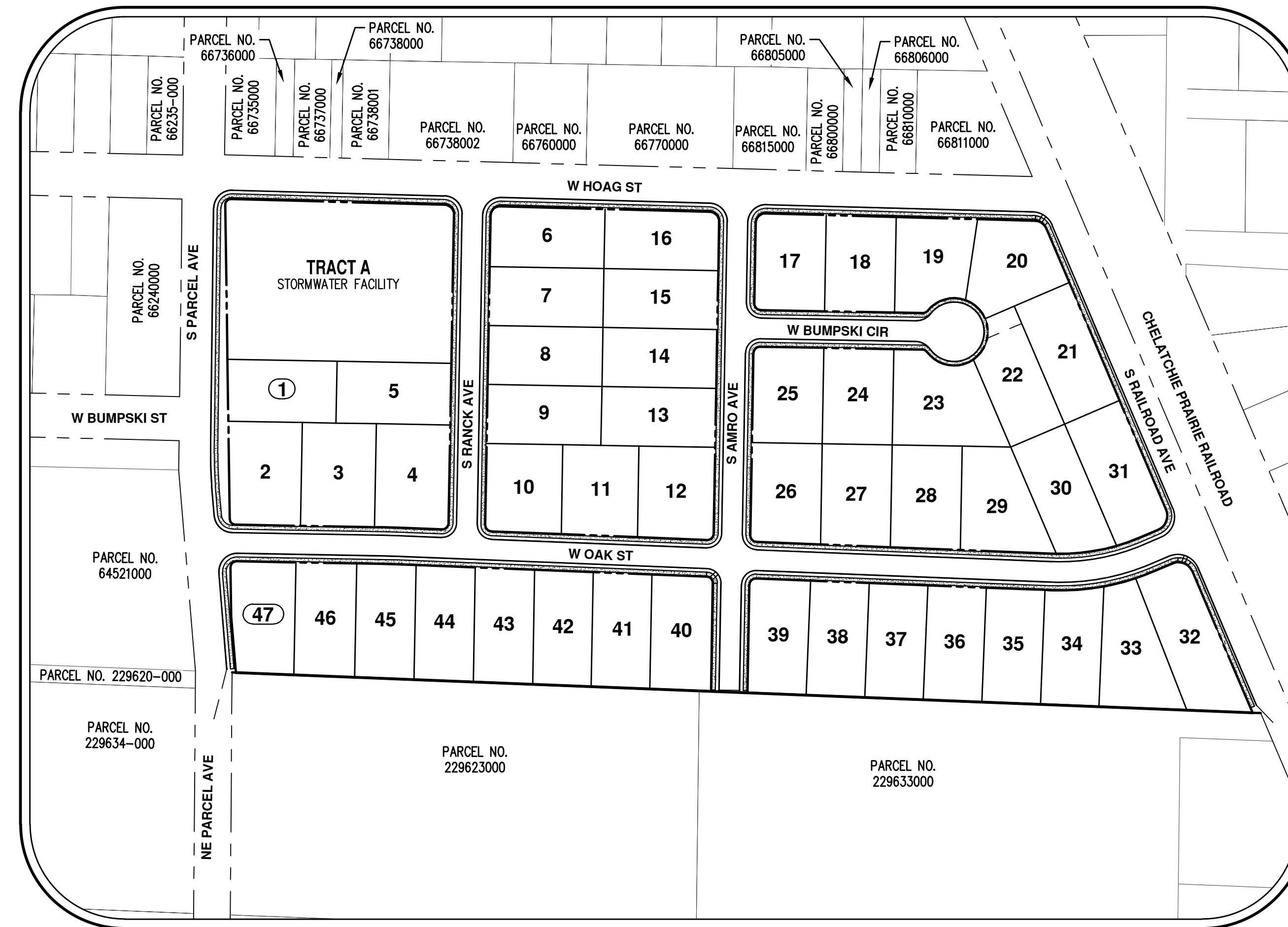
FLOOD HAZARD EXHIBIT	EXHIBIT
AKS ENGINEERING & FORESTRY, LLC 9600 NE 126TH AVE, STE 2520 VANCOUVER, WA 98682 360.882.0419 WWW.AKS-ENG.COM	A
AKS	DRWN: KWA CHKD: SMH AKS 385

RAILROAD AVENUE SUBDIVISION

SUBDIVISION PLANS



VICINITY MAP
N.T.S.



SITE MAP
N.T.S.

SHEET INDEX

- P1.0 COVER SHEET
- P2.0 EXISTING CONDITIONS PLAN
- P3.0 PROPOSED DEVELOPMENT PLAN
- P4.0 PRELIMINARY UTILITY AND STREET PLAN

APPLICANT

AHO CONSTRUCTION I, INC.
CONTACT: HOUSTON AHO
5512 NE 109TH COURT, SUITE 101
VANCOUVER, WA 98662
PH: 360-254-0493
EMAIL: HOUSTONA@AHOCONSTRUCTION.COM

OWNER

JORGENSEN TIMBER, LLC.
P.O. BOX 1503
CHEHALIS, WA 98532

CONTACT/ENGINEERING/PLANNING/ SURVEYING FIRM

AKS ENGINEERING & FORESTRY, LLC.
CONTACT: SETH HALLING, P.E.
9600 NE 126TH AVENUE, SUITE 2520
VANCOUVER, WA 98682
PH: 360-882-0419
FAX: 360-882-0426
E-MAIL: SETHH@AKS-ENG.COM

PROPERTY DESCRIPTION

LOCATED IN THE NORTHWEST AND NORTHEAST 1/4 OF SECTION 2, TOWNSHIP 4 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN. CLARK COUNTY, WASHINGTON. PROPERTY SERIAL # 64522-000.

EXISTING LAND USE

VACANT; ZONED R1-12.5

PROJECT PURPOSE

47 LOT SINGLE-FAMILY RESIDENTIAL SUBDIVISION

SITE AREA

19.01 AC (828,198 SF)

VERTICAL DATUM

VERTICAL DATUM: ELEVATIONS ARE BASED ON CLARK COUNTY BENCHMARK NO. 415. LOCATED ON THE EAST SIDE OF THE CHELATCHIE PRAIRIE RAILROAD TRACKS AT THE SOUTH END OF THE TOWN OF YACOLT. ELEVATION = 688.39 FEET (NGVD 29(47)).

LEGEND

EXISTING		PROPOSED		EXISTING		PROPOSED	
DECIDUOUS TREE							
CONIFEROUS TREE							
FIRE HYDRANT							
WATER BLOWOFF							
WATER METER							
WATER VALVE							
DOUBLE CHECK VALVE							
AIR RELEASE VALVE							
SANITARY SEWER CLEAN OUT							
SANITARY SEWER MANHOLE							
SIGN							
STREET LIGHT							
MAILBOX							

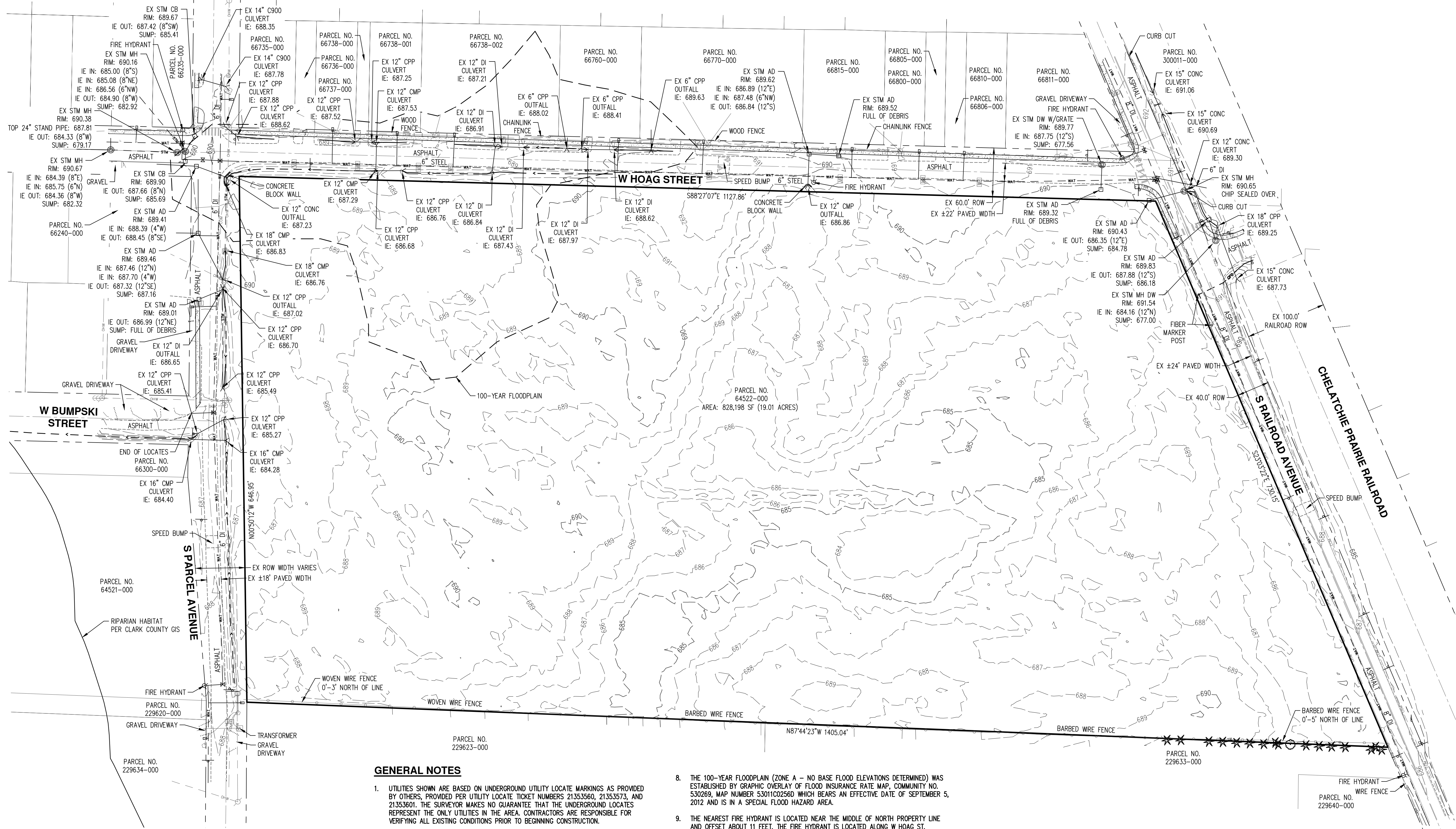
EXISTING

PROPOSED

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
BOUNDARY LINE		
PROPERTY LINE		
CENTERLINE		
DITCH		
CURB		
EDGE OF PAVEMENT		
EASEMENT		
FENCE LINE		
GRAVEL EDGE		
POWER LINE		
OVERHEAD WIRE		
COMMUNICATIONS LINE		
FIBER OPTIC LINE		
GAS LINE		
STORM DRAIN LINE		
SANITARY SEWER LINE		
WATER LINE		



JOB NUMBER: 8706
DATE: 12/16/2021
DESIGNED BY: KWA
DRAWN BY: KWA
CHECKED BY: SMH



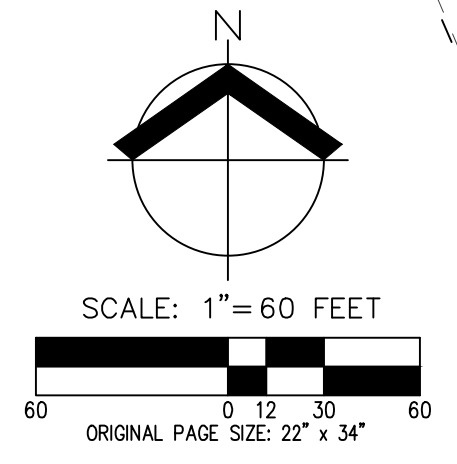
LEGEND

EXISTING GROUND CONTOUR (1 FT) --- 686 ---

EXISTING GROUND CONTOUR (5 FT) --- 690 ---

GENERAL NOTES

- UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBERS 21353560, 21353573, AND 21353601. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
- FIELD WORK WAS CONDUCTED AUGUST-SEPTEMBER, 2021.
- VERTICAL DATUM: ELEVATIONS ARE BASED ON CLARK COUNTY BENCHMARK NO. 415, LOCATED ON THE EAST SIDE OF THE CHELATCHIE PRAIRIE RAILROAD TRACKS AT THE SOUTH END OF THE TOWN OF YACOLT. ELEVATION = 688.39 FEET (NGVD 29(47)).
- THIS IS NOT A PROPERTY BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY SURVEYOR. BOUNDARIES MAY BE PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
- BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
- CONTOUR INTERVAL IS 1 FOOT.
- TREES WITH DIAMETER OF 6" AND GREATER ARE SHOWN. TREE DIAMETERS WERE DETERMINED BY VISUAL INSPECTION. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.
- THE 100-YEAR FLOODPLAIN (ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED) WAS ESTABLISHED BY GRAPHIC OVERLAY OF FLOOD INSURANCE RATE MAP, COMMUNITY NO. 530269, MAP NUMBER 5301002560 WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 5, 2012 AND IS IN A SPECIAL FLOOD HAZARD AREA.
- THE NEAREST FIRE HYDRANT IS LOCATED NEAR THE MIDDLE OF NORTH PROPERTY LINE AND OFFSET ABOUT 11 FEET. THE FIRE HYDRANT IS LOCATED ALONG W HOAG ST.
- ACCORDING TO CLARK COUNTY GIS, THERE ARE NO EXISTING SEPTIC SYSTEMS (PUMP CHAMBERS, DRAIN FIELDS, & SEPTIC RESERVE) OR WELLS ON SITE.
- THERE ARE NO DRY WELLS ON SITE.
- THERE ARE NO UNDERGROUND OR ABOVE GROUND STORAGE TANKS ON SITE.
- THERE ARE NO EXISTING STRUCTURES ON SITE.
- THERE ARE NO EXISTING EASEMENTS ON SITE.
- THERE ARE NO KNOWN UNSTABLE SLOPES OR LANDSLIDE HAZARD AREAS, WATER COURSES, WATER BODIES, WETLANDS, OR SIGNIFICANT HISTORICAL RESOURCES ON SITE OR WITHIN 100' OF THE SITE ACCORDING TO CLARK COUNTY GIS INFORMATION.
- THERE ARE NO CENTERLINE OR ROW RADI ABUTTING THE SITE.



**EXISTING CONDITIONS PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**

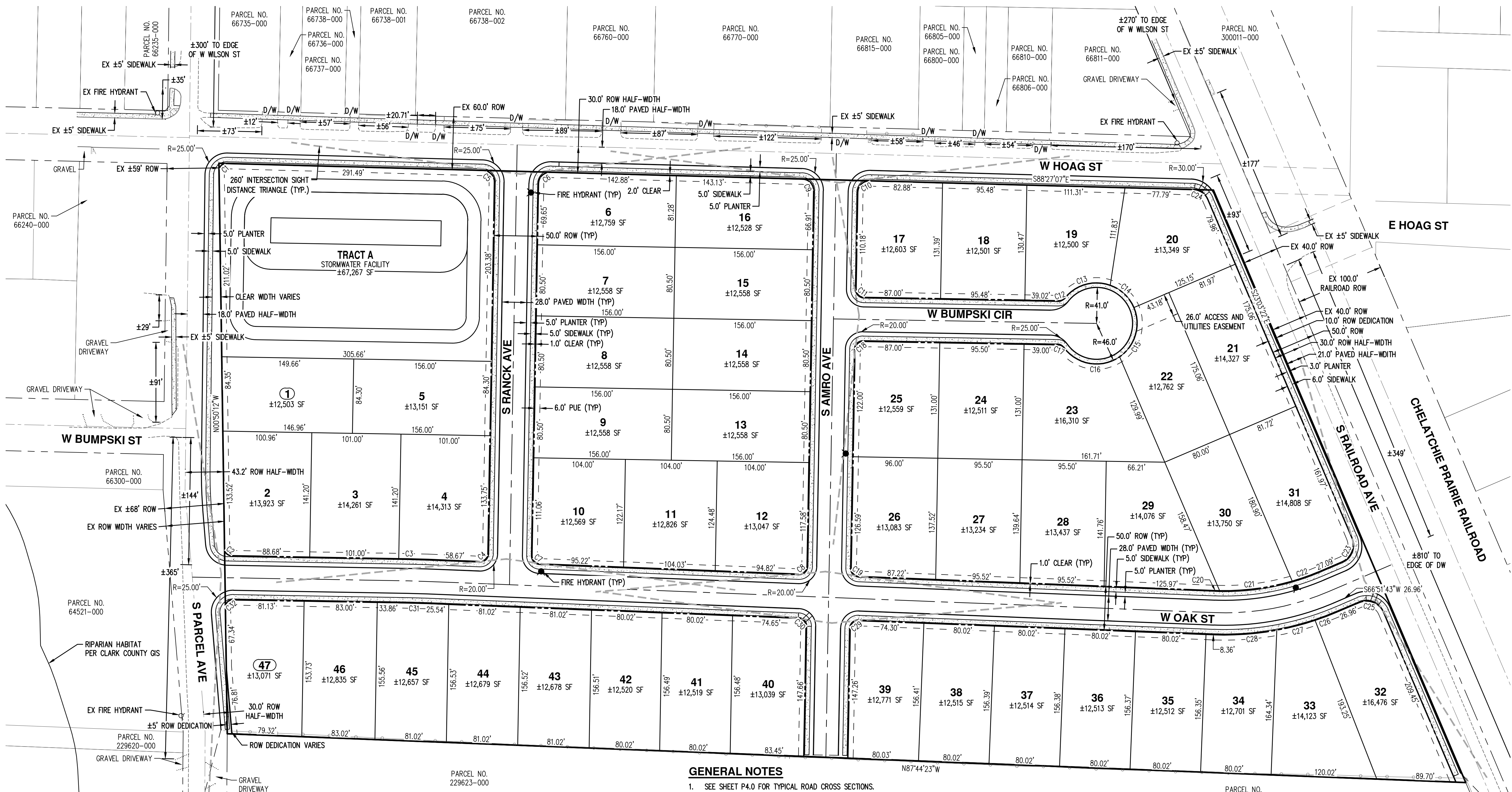


JOB NUMBER: 8706
 DATE: 12/16/2021
 DESIGNED BY:
 DRAWN BY: CJC
 CHECKED BY: JOH

**PROPOSED DEVELOPMENT PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**



JOB NUMBER:	8706
DATE:	12/16/2021
DESIGNED BY:	KWA
DRAWN BY:	KWA
CHECKED BY:	SMH

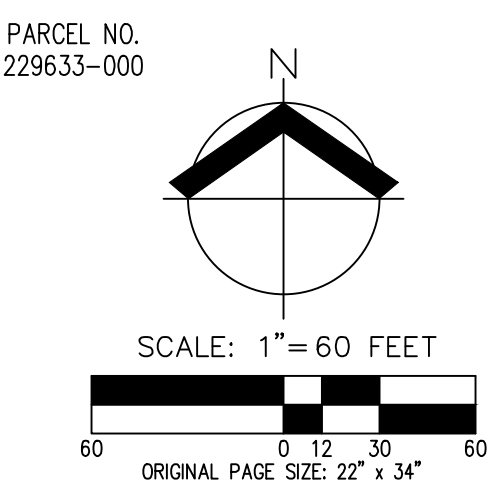


CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	8.00'	92°23'05"	12.90'	S45°21'21"W 11.55'
C2	8.00'	88°09'50"	12.31'	S44°55'07"E 11.13'
C3	1025.00'	1°16'13"	22.72'	N88°21'56"W 22.72'
C4	9.00'	91°16'13"	14.34'	N46°38'04"E 12.87'
C5	13.00'	89°27'05"	20.30'	N43°43'35"W 18.30'
C6	13.00'	90°32'55"	20.54'	S46°16'25"W 18.47'
C7	9.00'	88°43'47"	13.94'	S43°21'56"E 12.59'
C8	9.00'	91°16'13"	14.34'	N46°38'04"E 12.87'
C9	13.00'	89°27'05"	20.30'	N43°43'35"W 18.30'
C10	13.00'	90°32'55"	20.54'	S46°16'26"W 18.47'
C11	9.00'	90°00'00"	14.14'	S44°00'02"E 12.73'
C12	8.00'	52°19'48"	7.31'	N64°50'04"E 7.06'
C13	46.00'	71°05'37"	57.08'	S74°12'58"W 53.49'
C14	46.00'	47°05'56"	37.81'	N46°41'15"W 36.76'
C15	46.00'	78°29'16"	63.01'	N16°06'21"E 58.20'
C16	46.00'	87°58'47"	70.63'	S80°39'37"E 63.90'

CURVE	RADIUS	DELTA	LENGTH	CHORD
C17	8.00'	52°19'48"	7.31'	N62°50'08"W 7.06'
C18	9.00'	90°00'00"	14.14'	S45°59'57"W 12.73'
C19	9.00'	88°43'47"	13.94'	S43°21'56"E 12.59'
C20	275.00'	1°03'20"	5.07'	S88°15'29"E 5.07'
C21	275.00'	17°22'38"	83.40'	N82°31'32"E 83.09'
C22	275.00'	6°58'30"	33.48'	N70°20'58"E 33.46'
C23	21.00'	89°55'02"	32.96'	N21°54'12"E 29.68'
C24	18.00'	65°23'45"	20.54'	N55°45'15"W 19.45'
C25	21.00'	90°04'23"	33.01'	N68°06'06"W 29.72'
C26	325.00'	4°47'25"	27.17'	N69°15'26"E 27.16'
C27	325.00'	7°52'43"	44.69'	N75°35'30"E 44.65'
C28	325.00'	12°44'20"	72.26'	N85°54'01"E 72.11'
C29	9.00'	91°16'13"	14.34'	S46°38'04"W 12.87'
C30	9.00'	88°43'47"	13.94'	N43°21'56"W 12.59'
C31	975.00'	1°16'13"	21.62'	N88°21'56"W 21.61'
C32	8.00'	91°50'10"	12.82'	S45°04'53"W 11.49'

GENERAL NOTES

- SEE SHEET P4.0 FOR TYPICAL ROAD CROSS SECTIONS.
- THE SURFACE MATERIAL FOR ADJACENT ROADWAYS (S PARCEL AVE, W HOAG ST, & S RAILROAD AVE) IS ASPHALT. SEE SHEET P4.0 FOR EXISTING PAVED WIDTH.
- NO BICYCLE OR TRANSIT IMPROVEMENTS ARE PROPOSED ON SITE OR WITHIN 100' OF THE SITE.
- EXISTING S PARCEL AVENUE, W HOAG STREET AND S RAILROAD AVENUE PROVIDE ACCESS TO THE SITE.
- FRONTAGE IMPROVEMENTS TO S PARCEL AVE, S RAILROAD AVE, AND W HOAG STREET ARE PROPOSED.
- STORMWATER QUANTITY AND QUALITY REQUIREMENTS WILL BE MET THROUGH THE USE OF A STORMWATER WETPOND. TRACT A TO BE DEDICATED TO TOWN OF YACOLT. STORMWATER FACILITY TO BE PUBLICLY OWNED AND MAINTAINED.
- EACH LOT WILL CONTAIN A SEPTIC SYSTEM FOR ON SITE SEWAGE TREATMENT AND DISPOSAL.
- ALL LOTS WILL BE SERVED WITH PUBLIC WATER BY CLARK PUBLIC UTILITIES.
- THERE ARE NO PROPOSED OFF-STREET PARKING SPACES OTHER THAN EACH LOT'S PRIVATE DRIVEWAY.
- NO LANDSCAPING IS PROPOSED DURING SITE DEVELOPMENT.
- NO WALLS OR FENCES ARE PROPOSED FOR THIS DEVELOPMENT.
- STREET LIGHTING REQUIREMENTS WILL BE MET ACCORDING TO THE TOWN OF YACOLT MUNICIPAL CODE.
- THERE ARE NO EXISTING BUILDINGS ON SITE.
- THERE ARE NO EXISTING EASEMENTS ON SITE.
- ALL PROPOSED FUTURE ONE STORY AND TWO STORY HOMES WILL BE WOOD FRAMED.
- NO WELLS ARE PROPOSED WITH THIS SITE AND THERE ARE NO EXISTING WELLS ON SITE.
- ACCORDING TO CLARK COUNTY GIS, THERE ARE NO EXISTING SEPTIC SYSTEMS (PUMP CHAMBERS, DRAIN FIELDS, & SEPTIC RESERVE) ON SITE.
- THERE ARE NO UNDERGROUND OR ABOVE GROUND STORAGE TANKS ON SITE.
- THERE ARE NO KNOWN UNSTABLE SLOPES OR LANDSLIDE HAZARD AREAS, WATER COURSES, WATER BODIES, WETLANDS, OR SIGNIFICANT HISTORICAL RESOURCES ON SITE OR WITHIN 100' OF THE SITE ACCORDING TO CLARK COUNTY GIS INFORMATION.
- THE NEAREST FIRE HYDRANT IS LOCATED NEAR THE MIDDLE OF NORTH PROPERTY LINE AND OFFSET ABOUT 11 FEET. THE FIRE HYDRANT IS LOCATED ALONG W HOAG ST. THE EXISTING FIRE HYDRANT WILL BE RELOCATED.
- THERE ARE NO CENTERLINE OR ROW RADII ABUTTING THE SITE.
- THERE ARE NO EXISTING DRIVEWAYS ON SITE.
- RIPARIAN HABITAT PERMIT APPLICATION WILL BE SUBMITTED WITH FINAL ENGINEERING FOR STORMWATER OUTFALL ON PARCEL # 64520-000.



SETBACKS

- FRONT SETBACK: 25'
- INTERIOR SIDE SETBACK: 5'
- STREET SIDE SETBACK: 15'
- REAR SETBACK: 25'

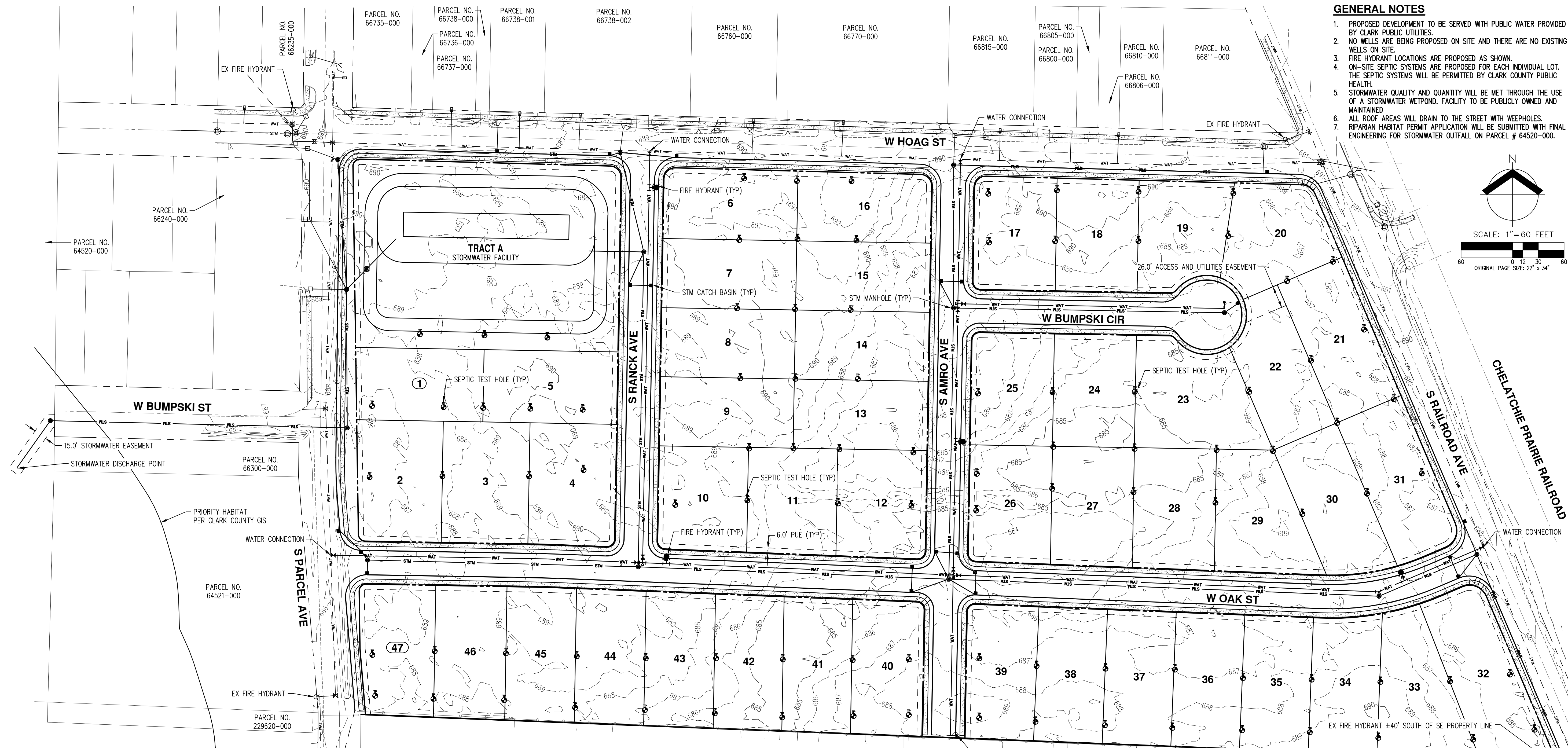
STATISTICS

GROSS SITE AREA:	828,198 SF (19.01 AC)
RIGHT-OF-WAY DEDICATION:	143,771 SF (3.30 AC)
NET R1-12.5 AREA:	684,427 SF (15.71 AC)

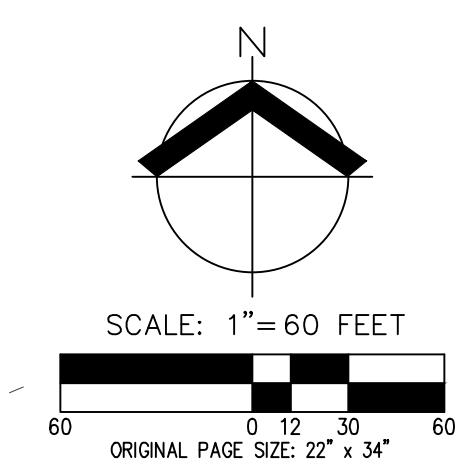
DENSITY CALCULATIONS (ZONE R1-12.5)

MINIMUM LOT AREA:	12,500 SF
PROPOSED MINIMUM LOT AREA:	12,500 SF
PROPOSED LOTS:	47 LOTS

THE PURPOSE OF THIS PRELIMINARY PLAT IS TO SHOW THE PROPOSED LOT DIMENSIONS AND AREAS FOR PLANNING PURPOSES. THIS IS NOT AN OFFICIAL PLAT AND IS NOT TO BE USED FOR SURVEY PURPOSES.



- GENERAL NOTES**
1. PROPOSED DEVELOPMENT TO BE SERVED WITH PUBLIC WATER PROVIDED BY CLARK PUBLIC UTILITIES.
 2. NO WELLS ARE BEING PROPOSED ON SITE AND THERE ARE NO EXISTING WELLS ON SITE.
 3. FIRE HYDRANT LOCATIONS ARE PROPOSED AS SHOWN.
 4. ON-SITE SEPTIC SYSTEMS ARE PROPOSED FOR EACH INDIVIDUAL LOT. THE SEPTIC SYSTEMS WILL BE PERMITTED BY CLARK COUNTY PUBLIC HEALTH.
 5. STORMWATER QUALITY AND QUANTITY WILL BE MET THROUGH THE USE OF A STORMWATER WETPOND. FACILITY TO BE PUBLICLY OWNED AND MAINTAINED.
 6. ALL ROOF AREAS WILL DRAIN TO THE STREET WITH WEEPHOLES.
 7. RIPARIAN HABITAT PERMIT APPLICATION WILL BE SUBMITTED WITH FINAL ENGINEERING FOR STORMWATER OUTFALL ON PARCEL # 64520-000.



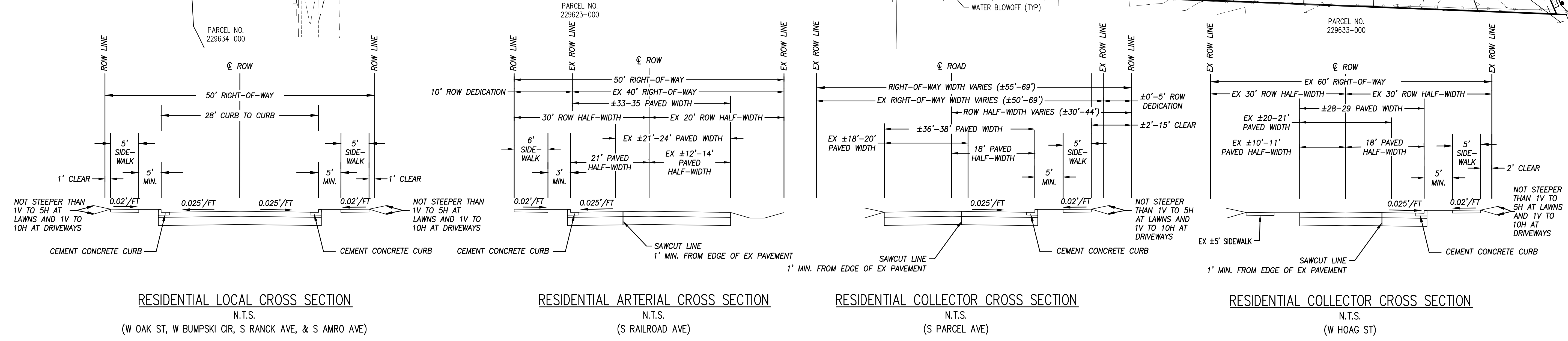
AKS
 AKS ENGINEERING & FORESTRY, LLC
 9600 NE 126TH AVE, STE 2520
 VANCOUVER, WA 98682
 360.882.0419
 WWW.AKS-ENG.COM

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**PRELIMINARY UTILITY AND STREET PLAN
 RAILROAD AVENUE SUBDIVISION
 AHO CONSTRUCTION I, INC.
 TOWN OF YACOLT**



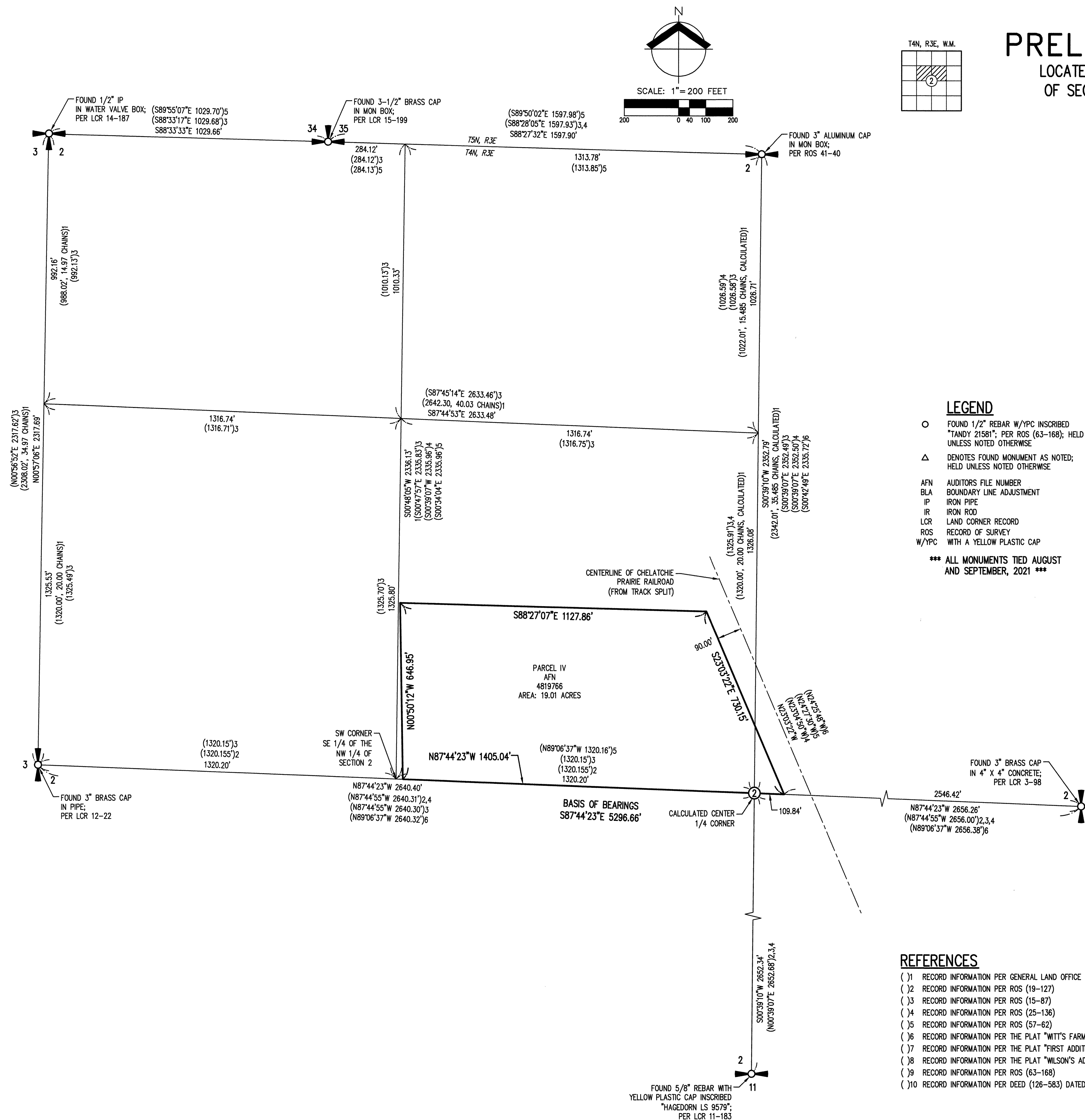
JOB NUMBER:	8706
DATE:	12/16/2021
DESIGNED BY:	KWA
DRAWN BY:	KWA
CHECKED BY:	SMH



AKS DRAWING FILE: 8706 P4.0 UTIL.DWG | LAYOUT: P4.0

PRELIMINARY BOUNDARY SURVEY

LOCATED IN THE SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4
 OF SECTION 2, TOWNSHIP 4 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
 TOWN OF YACOLT, CLARK COUNTY, WASHINGTON
 NOVEMBER, 2021



NARRATIVE

THE PURPOSE OF THIS PRELIMINARY BOUNDARY SURVEY WAS TO ESTABLISH THE OUTER BOUNDARY OF PARCEL IV OF AUDITOR'S FILE NO. 4819766, CLARK COUNTY DEED RECORDS.

THE BASIS OF BEARINGS IS THE SOUTH LINE OF THE NORTHEAST AND NORTHWEST QUARTERS OF SECTION 2 AS SHOWN, BEARINGS SHOWN HEREON ARE ON WASHINGTON STATE PLANE, SOUTH ZONE 4602, NAD83(2011) EPOCH 2010.0000 DERIVED FROM THE WASHINGTON STATE REFERENCE NETWORK (WSRN).

THE NORTHWEST QUARTER OF SECTION 2 WAS ESTABLISHED BY ACCEPTING FOUND MONUMENTS AS SHOWN. SAID NORTHWEST QUARTER WAS THEN SUBDIVIDED PER THE BLM MANUAL OF SURVEY INSTRUCTIONS.

THE SOUTH RIGHT-OF-WAY LINE OF W HOAG STREET, BEING THE SOUTH LINE OF THE PLAT "WILSON'S ADDITION TO YACOLT" (B-10) WAS ESTABLISHED BY HOLDING DISTANCES PER THE PLATS "FIRST ADDITION TO YACOLT" (A-94) AND SAID "WILSON'S ADDITION TO YACOLT" (B-10) ALONG THE WEST LINE OF THE EAST HALF OF THE NORTHWEST QUARTER OF SECTION 2 TO ESTABLISH THE SOUTHWEST CORNER OF SAID "WILSON'S ADDITION TO YACOLT" (B-10) AND HOLDING A 30-FOOT OFFSET FROM THE CONSTRUCTED CENTERLINE OF W HOAG STREET (YACOLT AVENUE).

THE WEST RIGHT-OF-WAY LINE OF S RAILROAD AVENUE WAS ESTABLISHED BY HOLDING A 40-FOOT OFFSET FROM THE WEST LINE OF THE CHELATCHIE PRAIRIE RAILROAD PER BOOK 60 PAGE 250 (10/13/1905).

THE EAST RIGHT-OF-WAY LINE OF S PARCEL AVENUE WAS ESTABLISHED BY HOLDING DEED CALLS PER BOOK 126 PAGE 583 (11/19/1918).

THE SOUTH DEED LINE OF THE SUBJECT PROPERTY WAS ESTABLISHED BY HOLDING THE SOUTH LINES OF THE NORTHEAST AND NORTHWEST QUARTERS OF SECTION 2. FENCE ENCROACHMENTS WERE NOTED AS SHOWN AND SHALL BE ADDRESSED DURING THE COURSE OF THIS PROJECT.

THE CONTROL TRAVERSE MET THE STANDARDS CONTAINED IN WAC 332-130-090. A TRIMBLE 3-SECOND TOTAL STATION INSTRUMENT WITH ELECTRONIC DATA COLLECTOR AND TRIMBLE R10 GPS RECEIVER WAS USED FOR ALL FIELD WORK.

LEGEND

- FOUND 1/2" REBAR W/YPC INSCRIBED "TANDY 21581"; PER ROS (63-168); HELD UNLESS NOTED OTHERWISE
- △ DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
- AFN AUDITOR'S FILE NUMBER
- BLA BOUNDARY LINE ADJUSTMENT
- IP IRON PIPE
- IR IRON ROD
- LCR LAND CORNER RECORD
- ROS RECORD OF SURVEY
- W/YPC WITH A YELLOW PLASTIC CAP

*** ALL MONUMENTS TIED AUGUST AND SEPTEMBER, 2021 ***

REFERENCES

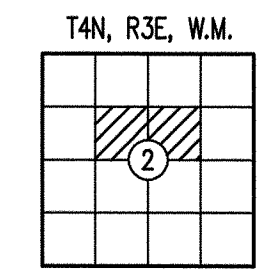
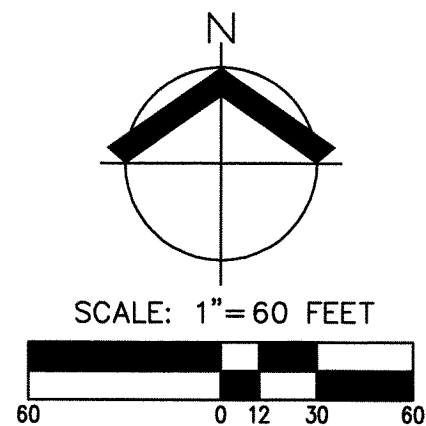
- (1) RECORD INFORMATION PER GENERAL LAND OFFICE MAP
- (2) RECORD INFORMATION PER ROS (19-127)
- (3) RECORD INFORMATION PER ROS (15-87)
- (4) RECORD INFORMATION PER ROS (25-136)
- (5) RECORD INFORMATION PER ROS (57-62)
- (6) RECORD INFORMATION PER THE PLAT "WITT'S FARM SUBDIVISION" (311-296)
- (7) RECORD INFORMATION PER THE PLAT "FIRST ADDITION TO YACOLT" (A-94)
- (8) RECORD INFORMATION PER THE PLAT "WILSON'S ADDITION TO YACOLT" (B-10)
- (9) RECORD INFORMATION PER ROS (63-168)
- (10) RECORD INFORMATION PER DEED (126-583) DATED 11/19/1918

RAILROAD AVENUE SUBDIVISION
AHO CONSTRUCTION I, INC.
TOWN OF YACOLT



JOB NUMBER: 8706
 DATE:
 DESIGNED BY:
 DRAWN BY: CJC
 CHECKED BY: JOH

34 35
 S88°27'32"E 284.12'
 (S88°28'05"E 284.12')3
 (S89°50'02"E 284.13')5
 FOUND 3-1/2" BRASS CAP
 IN MON BOX,
 PER LCR 15-199



PRELIMINARY BOUNDARY SURVEY

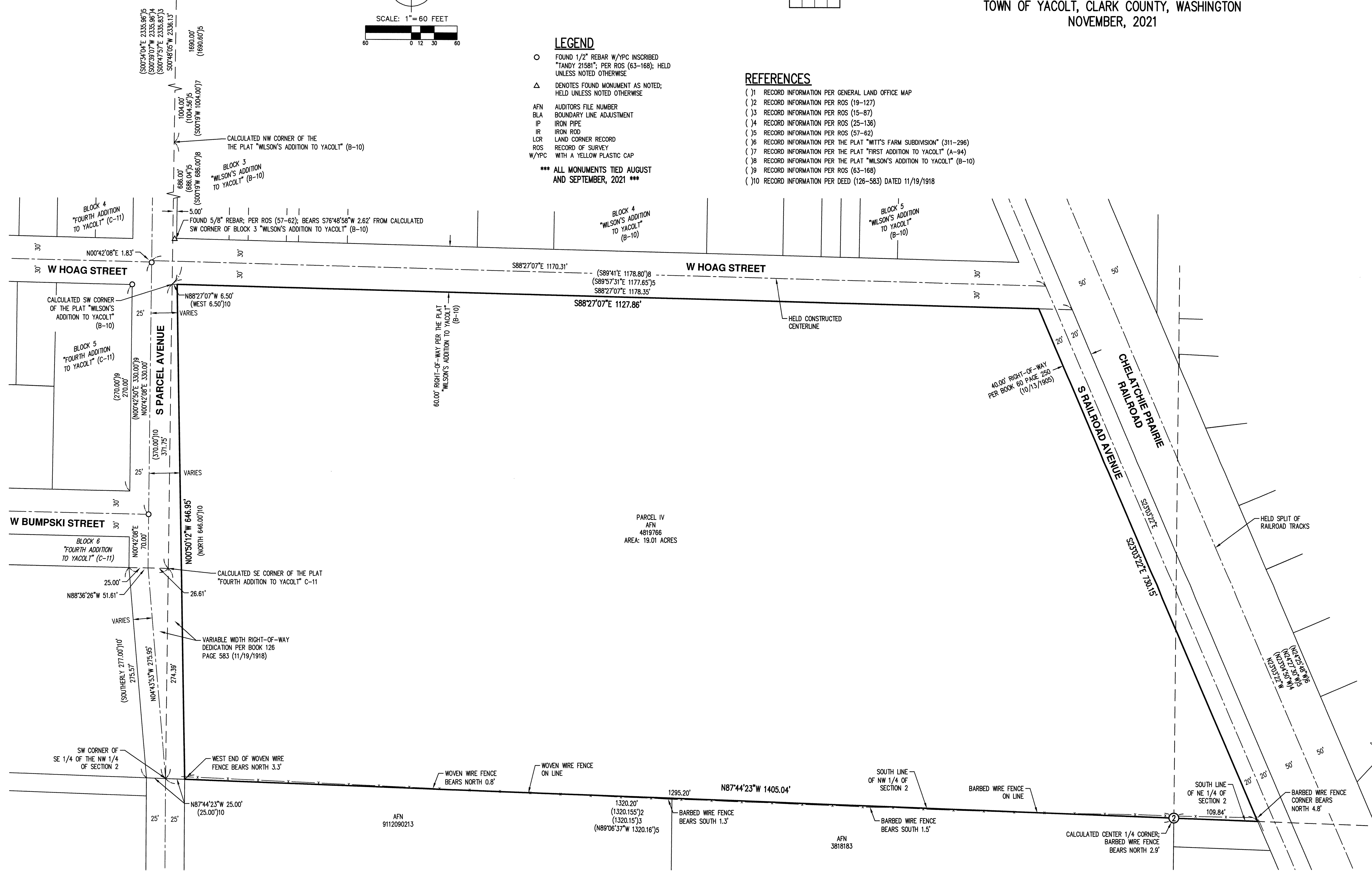
LOCATED IN THE SE 1/4 OF THE NW 1/4 AND THE SW 1/4 OF THE NE 1/4
 OF SECTION 2, TOWNSHIP 4 NORTH, RANGE 3 EAST, WILLAMETTE MERIDIAN,
 TOWN OF YACOLT, CLARK COUNTY, WASHINGTON
 NOVEMBER, 2021

LEGEND

- FOUND 1/2" REBAR W/YPC INSCRIBED "TANDY 21581", PER ROS (63-168); HELD UNLESS NOTED OTHERWISE
 - △ DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE
 - AFN AUDITORS FILE NUMBER
 - BLA BOUNDARY LINE ADJUSTMENT
 - IP IRON PIPE
 - IR IRON ROD
 - LCR LAND CORNER RECORD
 - ROS RECORD OF SURVEY
 - W/YPC WITH A YELLOW PLASTIC CAP
- *** ALL MONUMENTS TIED AUGUST AND SEPTEMBER, 2021 ***

REFERENCES

- ()1 RECORD INFORMATION PER GENERAL LAND OFFICE MAP
- ()2 RECORD INFORMATION PER ROS (19-127)
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RAILROAD AVENUE SUBDIVISION
AHO CONSTRUCTION I, INC.
TOWN OF YACOLT



JOB NUMBER: 8706
 DATE:
 DESIGNED BY:
 DRAWN BY: CJC
 CHECKED BY: JOH

From: [Dan Young](#)
To: [Clerk](#)
Subject: RE: Review for Proposed Subdivision
Date: Thursday, March 10, 2022 10:08:01 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

Stephanie,

In answer to your questions:

1. Lot 21 would be required to have fire sprinklers installed
2. The 28' width is adequate
3. The fire district would prefer no parking on one side, not sure what the City's code would require
4. The turning radius is ok if rolled curbs are installed
5. Fire hydrant locations are adequate
6. Lot 1 would be allowed access to S Parcel Ave with the condition that S Parcel Ave would be a fire lane between W Hoag St and W Oak St. No parking signs would be required
7. No other comments at this time

Let me know if you have any questions.



Dan Young
Fire Marshal
COMMUNITY DEVELOPMENT
564.397.3324



From: Clerk <clerk@townofyacolt.com>
Sent: Thursday, March 3, 2022 4:28 PM
To: Dan Young <Dan.Young@clark.wa.gov>
Subject: Review for Proposed Subdivision

CAUTION: This email originated from outside of Clark County. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

I am writing to ask for your review and comments with regard to a proposed subdivision here in Yacolt. We are trying to complete a staff report next week, so would greatly appreciate it if you could get back to me by then. Attached are the plans. Questions I need answered are:

1. Would the flag lot (Lot #21) need to be sprinklered?
2. Is the 28' road width adequate?
3. With the road width at 28' curb-curb, would we need to require "No Parking" signs along one side of each street?
4. Is the 41' turning radius in the cul-de-sac sufficient?
5. Do we need any additional fire hydrants?
6. The block directly west of the subdivision houses our local fire/EMS station. As long as we require the driveway of Lot #1 to be as far south as feasible, will it be alright for that one lot only to open up onto Parcel Ave? The remainder of the lots will be accessible from within the subdivision only.
7. Do you have any other recommendations or comments?

Thank you for your time and attention on this matter. Again, we would greatly appreciate it if you could get back to us within the week.

Thank you,
Stephanie Fields
Clerk, Town of Yacolt
(360) 686-3922

Disclaimer: This email and its attachments may be subject to public disclosure.

April 5, 2022

Attn: Stephanie Fields
Town of Yacolt
202 W Cushman St
Yacolt WA 98675

RE: Railroad Avenue Subdivision; SEPA 202201311

Stephanie Fields:

The Southwest Clean Air Agency (SWCAA) has learned that your agency has issued/will issue a SEPA Determination for the above project. Please be advised that SWCAA administers/enforces a number of regulations that may apply to the proposed project. The applicability of these regulations depends on the exact nature of the project in question. The following section provides a brief summary of the requirements for the general types of activity that may be affected by this project.

Construction Dust [SWCAA 400 - General Regulations for Air Pollution Sources]:

- Construction and earthmoving activities have the potential to generate excessive dust emissions if reasonable control measures are not implemented. SWCAA Regulation 400-040(2) requires that “no person shall cause or permit the emission of particulate matter from any stationary source to be deposited beyond the property under direct control of the owner or operator of the stationary source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited”. Furthermore, SWCAA Regulation 400-040(8)(a) requires that “the owner or operator of any source of fugitive dust shall take reasonable precautions to prevent fugitive dust from becoming airborne and shall maintain and operate the source to minimize emissions”.
- Common control measures to mitigate the emission of dust from construction and earthmoving activities include: application of water before and during earthmoving operations, application of water to disturbed surface areas (including access roads and staging areas) after earthmoving operations, application of chemical dust control products and/or surfactants, limiting access to open/disturbed areas, reducing equipment/vehicle speeds, establishing vegetative cover on inactive areas and ceasing operations altogether during high wind events.
- Violations of SWCAA Regulation 400-040 may result in civil penalties being assessed against the project operator and/or property owner.

The proponent of this project may contact SWCAA at 360-574-3058 for more information regarding the agency’s requirements. Notification forms, permit applications, air quality regulations and other information are available on the internet at <http://www.swcleanair.gov>.

Sincerely,



Duane Van Johnson
Air Quality Specialist II





STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 6, 2022

Stephanie Fields, Town Clerk
Town of Yacolt
202 W Cushman
Yacolt, WA 98675

Dear Stephanie Fields:

Thank you for the opportunity to comment on the determination of nonsignificance for the 2020 Railroad Avenue Subdivision Project as proposed by AHO Construction I, Inc. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

SOLID WASTE MANAGEMENT: Derek Rockett (360) 407-6287

All grading and filling of land must utilize only clean fill. All other materials may be considered solid waste and permit approval may be required from the local jurisdictional health department prior to filling. All removed debris resulting from this project must be disposed of at an approved site. Contact the local jurisdictional health department for proper management of these materials.

**WATER QUALITY/WATERSHED RESOURCES UNIT:
Greg Bengel (360) 690-4787**

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent stormwater runoff from carrying soil and other pollutants into surface water or stormdrains that lead to waters of the state. Sand, silt, clay particles, and soil will damage aquatic habitat and are considered to be pollutants.

Any discharge of sediment-laden runoff or other pollutants to waters of the state is in violation of Chapter 90.48 RCW, Water Pollution Control, and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, and is subject to enforcement action.

Construction Stormwater General Permit:

The following construction activities require coverage under the Construction Stormwater General Permit:

1. Clearing, grading and/or excavation that results in the disturbance of one or more acres **and** discharges stormwater to surface waters of the State; and
2. Clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more **and** discharge stormwater to surface waters of the State.
 - a) This includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, **and** discharge to surface waters of the State; and
3. Any size construction activity discharging stormwater to waters of the State that Ecology:
 - a) Determines to be a significant contributor of pollutants to waters of the State of Washington.
 - b) Reasonably expects to cause a violation of any water quality standard.

If there are known soil/ground water contaminants present on-site, additional information (including, but not limited to: temporary erosion and sediment control plans; stormwater pollution prevention plan; list of known contaminants with concentrations and depths found; a site map depicting the sample location(s); and additional studies/reports regarding contaminant(s)) will be required to be submitted. For additional information on contaminated construction sites, please contact Carol Serdar at Carol.Serdar@ecy.wa.gov, or by phone at (360) 742-9751.

Additionally, sites that discharge to segments of waterbodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH, or phosphorous, or to waterbodies covered by a TMDL may need to meet additional sampling and record keeping requirements. See condition S8 of the Construction Stormwater General Permit for a description of these requirements. To see if your site discharges to a TMDL or 303(d)-listed waterbody, use Ecology's Water Quality Atlas at: <https://fortress.wa.gov/ecy/waterqualityatlas/StartPage.aspx>.

The applicant may apply online or obtain an application from Ecology's website at: [http://www.ecy.wa.gov/programs/wq/stormwater/construction/- Application](http://www.ecy.wa.gov/programs/wq/stormwater/construction/-Application). Construction site operators must apply for a permit at least 60 days prior to discharging stormwater from construction activities and must submit it on or before the date of the first public notice.

WATER RESOURCES: Charlotte Lattimore (360) 407-6066

Under RCW 90.03.350, a Dam Safety construction permit is required for those dams or ponds that can impound a volume of 10 acre-feet or more of water or other liquids above ground level. The 2020 Railroad Avenue Subdivision project references the construction of a stormwater/detention pond, if the impoundment meets or exceeds the above referenced criteria; you will need to apply for a dam construction permit. To determine if a Dam Safety construction permit is required for your project, the applicant must submit a set of construction plans to:

Stephanie Fields

April 6, 2022

Page 3

WA Department of Ecology
Dam Safety Office
P.O. Box 47600
Olympia, WA 98504-7600

For more information, please contact Charlotte Lattimore by e-mail at clat461@ecy.wa.gov or by telephone at (360) 407-6066.

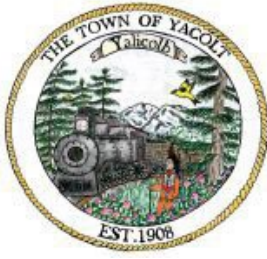
Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(GMP:202201311)

cc: Derek Rockett, SWM
Greg Benge, WQ
Charlotte Lattimore, WR
Houston Aho, Aho Construction (Proponent)



Town of Yacolt Request for Council Action

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Clerk Fields

Group Name:

Address: 202 W. Cushman
Yacolt, WA 98675

Phone: 360-686-3922

Email Address: clerk@townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: NCLL Use Agreement Extension

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Vote on whether you would like to have the NCLL User Agreement extended another 10 years

Proposed Motion: "I move that we approve (or don't approve) NCLL's request to extend their Field Use Agreement for another 10 years."

Summary/ Background: The current Field User Agreement we have with NCLL was executed on April 16, 2012 and expires as of April 16, 2022. NCLL wishes to extend their agreement for another ten years. They have kept up the ball fields and used the fields responsibly. A key issue was brought up at the last Council Meeting, and Council decided to push this vote out until this meeting, in order to give time for NCLL to rectify the key situation. This issue was the only thing holding Council back from approving the renewal at the last meeting.

Staff Contact(s): Clerk Stephanie Fields

Mayor Katelyn Listek

clerk@townofyacolt.com

mayorlistek@townofyacolt.com

(360) 686-3922

LICENSE AGREEMENT BETWEEN THE TOWN OF YACOLT AND NORTH CLARK LITTLE LEAGUE

This Agreement is made this__ day of April, 2022, by and between the Town of Yacolt, a Washington municipal corporation, ("*Yacolt*" or "*Licensor*"), and North Clark Little League, a Washington licensed public benefit corporation, ("*NCLL*" or "*Licensee*").

Background

Whereas, Yacolt is the owner of Property commonly known as the 'Old Ball Park', (approximately 2.9 acres), and the 'Big League Field', (approximately 3 acres), legally described in Exhibit A, and as such parcels may have been altered by events including boundary line adjustments of record, (together the "*Property*");

Whereas, NCLL has used the Property for many years to support little league baseball and related activities for children, and desires to continue to use the Property for such purposes;

Whereas, the Yacolt Town Council believes that NCLL's continued use of the Property stimulates business, tourism and revenue for the community, promotes community pride and involvement, and is therefore in the public interest; and,

Whereas, the Yacolt Town Council has passed Resolution #476 authorizing the execution of this Agreement to give permission to NCLL to make non-exclusive use of the Property as described herein:

Now, therefore, in consideration of the mutual covenants and provisions set forth herein, the parties agree as follows:

Agreement

1. **Grant of License.** The Town of Yacolt hereby grants to NCLL, its agents, guests and invitees, a non-exclusive license and privilege to use the Property for the purposes and at such times and in such manner as hereinafter set forth.
2. **Purpose of License:** NCLL is authorized to use the Property for the purpose of Little League baseball fields, and all other reasonable uses related to that purpose. NCLL agrees that its use of the Property shall be proper, legal and safe.
3. **Term of License.** This Agreement shall commence upon the effective date of the Agreement described above, and shall continue for ten (10) years, at which time the Agreement shall terminate automatically unless extended by the parties.
4. **Termination.** Either party may terminate this Agreement at any time and for any reason by giving to the other party sixty (60) days written notice.

5. **No Transfer or Assignment.** The license granted to NCLL under this Agreement is personal to NCLL. Any attempt to transfer or assign this Agreement by the Licensee shall terminate this Agreement.
6. **Cooperation and Scheduling.** NCLL understands that its license to use the Property is non-exclusive, and that Yacolt and other licensees are also expected to use the Property during the term of this Agreement. In order to avoid scheduling conflicts, NCLL agrees to provide a schedule of anticipated uses as least thirty (30) days in advance of all activities on the Property, including planned T-ball, baseball, and softball practices and games, and to obtain written approval from the Licensor for said schedule. NCLL agrees that it shall not unreasonably interfere with the normal operations and activities of Licensor, and NCLL agrees to use ordinary care in its activities on the Property to minimize damage to the Property and inconvenience to the Licensor, its agents, employees, licensees and invitees. For its part, Yacolt agrees that it will provide to Licensee a schedule of the Town's desires and intentions to use the Property that provides at least thirty (30) days advance notice of the Town's planned use of the Property. As a form of advance notice through this Agreement, Yacolt discloses that it intends to regularly use some or all of the Property for events including, without limitation, annual events such as the Town Easter Egg Hunt, the 4th of July Celebration, and the Spring Clean-Up. In the case of any scheduling conflict, NCLL understands and agrees that the use of the Property by the Licensor shall be considered a priority over use of the Property by the Licensee. As a general matter, the parties agree to work cooperatively and in reasonable fashion to avoid scheduling conflicts over the use of the Property.
7. **Compliance with Applicable Law/ Necessary Permits.** At all times during the term of this Agreement, NCLL will comply with any and all applicable federal, state and local laws, rules and regulations, and shall obtain or cause to be obtained any and all state or local licenses or permits required of or applicable to the uses to be made of the Property.
8. **Maintenance of Property.**
 - 8.1 NCLL agrees to pay all costs involved in construction, repairs and maintenance of the buildings and grounds related to its use of the Property. All construction, plumbing and electrical work shall comply with all applicable laws and codes. NCLL agrees to reasonably clean the Property following activities to ensure debris from an event does not damage or impact public property. NCLL agrees to obtain written permission prior to constructing or altering the Property or its improvements other than general clean up, lawn mowing and tilling. NCLL agrees to notify Yacolt and Clark Public Utilities in writing prior to any grading or excavating on the Property. NCLL assumes all responsibility for utility maintenance improvements and security of Property. NCLL agrees that NO herbicides, pesticides, fungicides or dust palliatives may be applied to the soil or vegetation. Any substance used to enhance or decrease growth in vegetation must be verified to be a safe product for use near a well field. NCLL agrees to obtain in writing approval from the Public Works Department of the Licensor and Clark Public Utilities prior to use of any such substance.
 - 8.2 **Repair and Restoration.** If Licensee, its agents or contractors cause any damage to the Property or to Licensor's roads, infrastructure or other property and improvements, Licensee shall repair and restore the Property and improvements to their original condition prior to Licensee's use of the Property under this Agreement. In the event that repair and restoration is performed following the termination this Agreement, the Licensee's indemnity and

any way connected with this License including, without limitation, claims for loss or damage to any property, or for death or injury to any person or persons but only in proportion to and to the extent that such Claims arise from the negligent or intentional acts or omissions of Licensee, its officers, agents, or employees.

13.2 Licensor's Obligation. Licensor shall indemnify, defend, and hold harmless Licensee, its officers, agents and employees, from and against any claims, damages, costs, expenses, or liabilities (collectively "Claims") arising out of or in any way connected with this License including, without limitation, Claims for loss or damage to any property, or for death or injury to any person or persons but only in proportion to and to the extent that such Claims arise from the negligent or intentional acts or omissions of Licensor, its officers, agents, partners or employees.

14. Insurance. The Town of Yacolt agrees that it is responsible for its own insurance coverage with respect to claims or losses as a result of the Town's actions and events on the Property and/or the Town's use of the Property. The insurance required by Licensee under this Paragraph is to provide coverage for the obligations or actions of the Licensee and/or its agents, guests and invitees, as described in this Agreement. Licensee, at its sole cost and expense, shall insure its activities in connection with this Agreement and obtain, keep in force and maintain insurance as described below. NCLL shall provide a certificate of insurance for all liabilities prior to the beginning of each year's activities.

14.1 General Liability Insurance, (contractual liability included), with minimum limits of \$1,000,000 per each occurrence, with a general aggregate of coverage of \$2,000,000.00, with such coverage to be described on an occurrence basis rather than a claims-made basis, by a carrier licensed to conduct business in the State of Washington.

14.2 Property, Fire and Extended Coverage in an amount sufficient to reimburse Licensee for all of its equipment, trade fixtures, inventory, fixtures and other personal property located on or in the Premises including improvements hereinafter constructed or installed.

14.3 Worker's Compensation Insurance, to the extent required by the laws of the State of Washington.

14.4 The coverages required under this Section 14 shall not limit the liability of Licensee.

14.5 The coverages referred to under Section 14.1 and 14.2 shall include Licensor as an additional insured. Upon the execution of this Agreement and with respect to all insurance renewals, Licensee shall furnish Licensor with certificates of insurance evidencing compliance with all requirements. Certificates shall provide for thirty (30) days advance written notice to Licensor of any material modification, change or cancellation of the above insurance coverages.

14.6 Waiver of Subrogation. The Licensee hereby waives any right of recovery against the Licensor as a result of loss or damage to the property of either Licensee or Licensor when such loss or damage arises out of an Act of God or any of the property perils insurable under extended coverage, whether or not such peril has been insured, self-insured, or non-insured.

insurance obligations under this Agreement shall continue until repair and restoration is completed.

9. **Revenue from Activities.** All proceeds from activities under this Agreement including revenue from concessions and memorabilia sales shall belong to NCLL or its designee.
10. **Breach and Cure.** In the event that Licensee breaches any of its obligations under this Agreement, Licensor shall send Licensee a written notice specifying the nature of such breach. Licensee shall have ten (10) days from the receipt of such notice to cure such breach. If more time is reasonably required for Licensee's performance, then Licensee shall commence performance within such ten (10) day period and, thereafter, diligently proceed to completion. If Licensee fails to cure or to commence cure within such ten (10) day period, then Licensor shall have the right to terminate this License immediately by serving Licensee with written notice of termination. Licensor shall have all rights and remedies available under Washington law including, but not limited to, actions for damages and specific performance, for any breach of Licensee's obligations hereunder. In the event litigation arises out of this Agreement, the losing party agrees to pay the prevailing party's attorney's fees incident to said litigation, together with all costs and expenses incurred in connection with such action, and whether or not incurred in the trial court or on appeal.
11. **Alteration in Writing.** This Agreement supersedes any and all prior understandings and agreements, whether written or oral, between the parties with respect to the subject matter of this License. No alteration or variation of this Agreement shall be valid unless made in writing and signed by Licensor and Licensee.
12. **Notices.** All notices and other communications between the parties shall be in writing and may be hand-delivered or mailed by first-class mail, postage prepaid, to the parties hereto at the appropriate address below. The parties shall keep each other advised of their mailing addresses to enable the notices anticipated herein.

Licensor: Town of Yacolt
 P.O. Box 160
 Yacolt, WA 98675

(physical address)
202 W. Cushman Street
Yacolt, WA 98675

Licensee: North County Little League
 P.O. Box 732
 Yacolt, WA 98675

(physical address)
202 W. Christy
Yacolt, WA 98675

13. **Indemnification.**

13.1 **Licensee's Obligation.** Licensee shall indemnify, defend and hold harmless Licensor, its officers, agents, partners and employees, from and against any Claims, arising out of or in

- 15. **Lien Free Condition.** Licensee shall not cause or permit any liens to be placed against the Property as a result of Licensee's exercise of rights under this Agreement. In the event of the filing of any such liens, Licensee shall promptly cause such liens to be removed.
- 16. **Additional Rules.** The Yacolt Town Council may by resolution adopt additional rules and regulations for NCLL's use of the Property for any reason that the Council considers appropriate, including an effort to minimize strain upon Town services. Such additional rules and regulations shall become effective sixty (60) days after written notice to NCLL.
- 17. **Nondiscrimination of Services and Employment.** NCLL covenants and agrees that in all matters pertaining to the performance of this Agreement, NCLL shall at all times conduct its business in a manner which assures fair, equal and nondiscriminatory treatment of all persons with respect to race, color, national origin, religion, gender, age, marital status, or disability, including compliance with all requirements of applicable federal, state and local laws and regulations issued pursuant thereto relating to the establishment of any nondiscriminatory requirements in hiring and employment practices.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.

Town of Yacolt
"Yacolt" or "Licensor"

North Clark Little League
"NCLL" or "Licensee"

 Katelyn Listek, Mayor

 Trevor Conder, President

Attest:

 Stephanie Fields, Town Clerk/Treasurer

 , Secretary

Approved as to Form:

 David W. Ridenour, Town Attorney



Town of Yacolt Agenda Request

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: David Ridenour, Town Attorney

Group Name:

Address: 202 W. Cushman St.
Yacolt, WA 98675

Phone: (360) 686-3922

Email Address: david@davidridenourlaw.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Results of Hardin Property Auction

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Listen to the update on the status of the Hardin Property

Proposed Motion: none

Summary/ Background: Yacolt continues its efforts to collect on a money judgment that it recorded against the owner of the property at 110 S. Hubbard. That property is now part of a probate estate, and is being liquidated by the estate's administrator to satisfy the debts of the estate. The property administrator has solicited bids on the property. At its March meeting, the Town Council authorized the Mayor to make a bid on the property for the Town in the amount of \$72,000. The Town submitted its bid on Monday, March 28, 2022. Bids were reviewed by the probate administrator that same day. On Tuesday, March 29, the probate administrator announced that she received a high bid of \$115,000 for the property. All bidders were given the opportunity to make one further 'highest and best bid' by the end of the day on Thursday, March 31. No higher bids were received.

The Administrator of the estate is now working to enter a Purchase and Sale Agreement with the high bidder. She will then seek Court approval of the sale. If the sale is approved and closed, the proceeds of the sale will be used to satisfy the debts of the Estate. If this process is completed as expected, the Town of Yacolt should be paid in full for its Judgment and all interest earned to date. The total payment to the Town should be nearly \$54,500.00.

Staff Contact(s): Stephanie Fields, Town Clerk
Katelyn Listek, Mayor

(360) 686-3922



Town of Yacolt Agenda Request

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Clerk Stephanie Fields

Group Name:

Address: 202 W. Cushman St.
Yacolt, WA 98675

Phone: (360) 686-3922

Email Address: clerk@townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Spruce Ave. Short Plat Update

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Hear the final update on the Spruce Ave. Short Plat

Proposed Motion: none

Summary/ Background: The property at 125 S. Spruce Ave. has been in the process of being short-platted into 3 parcels for just about a year, and three new homes have been built on the lots. Despite Murphy's Law rearing its ugly head multiple times during this project, the Short Plat was finally recorded on March 18, and Certificates of Occupancy were issued that same day for all three homes.

Staff Contact(s): Stephanie Fields, Town Clerk
Katelyn Listek, Mayor
(360) 686-3922



Town of Yacolt Agenda Request

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Mollie Mangerich

Group Name:

Address: N/A

Phone:(360) 601-0619
ext. 0619

Email Address: mollie.mangerich@clark.wa.gov

Alt. Phone:

ITEM INFORMATION:

Item Title: Recycling Presentation

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Learn how Clark County Public Health plans to change how recycling pick-ups will be done going forward with our new Interlocal Agreement.

Proposed Motion: none

Summary/ Background: The Interlocal Agreement between the Town of Yacolt and Clark County for Solid Waste Removal is set to expire in June of this year. Clark County Public Health has been re-evaluating its solid waste collection processes and determined that a switch to every-other-week recycling pick-up will be beneficial to both them and us. Mollie Mangerich, Sr. Environmental Specialist with Clark County Public Health will make a short presentation at our meeting. The current Interlocal Agreement is attached (note that it appears to be expired, however due to COVID it has been extended to June), as well as some background info and slides for Mollie's PowerPoint presentation.

Staff Contact(s): Stephanie Fields, Town Clerk
Katelyn Listek, Mayor
(360) 686-3922

**TOWN OF YACOLT – CLARK COUNTY
SOLID WASTE
INTERLOCAL AGREEMENT**

THIS SOLID WASTE INTERLOCAL AGREEMENT ("Interlocal Agreement") is entered under the authority of the Interlocal Cooperation Act, chapter 39.34 RCW between the Town of Yacolt ("Town") and Clark County ("County").

WHEREAS, the Town and County previously entered into a Solid Waste Interlocal Agreement on May 9, 2006 and have enjoyed a lengthy, productive, and effective working relationship in coordinating a wide range of solid waste disposal and collection issues; and

WHEREAS, the Town and County have distinct responsibilities and authorities for oversight and operation of programs affecting the collection and disposal of solid waste and recyclables; and

WHEREAS, the Town and the County recognize that our citizens and businesses, public policy-makers and local government staff benefit from cooperative, coordinated and shared approaches to managing the regional solid waste system; and

WHEREAS, the Clark County Comprehensive Solid Waste Management Plan (the "Comprehensive Solid Waste Management Plan") designates Clark County to be responsible for the designation of sites and a method for the disposal of solid waste generated within the County, and this infrastructure provides the basis for the Regional Solid Waste System; and

WHEREAS, the County has contracted with a Contractor for solid waste handling services, including development of local facilities for the receipt, recycling, and processing for out-of-county disposal of solid waste generated within the cities, towns, and unincorporated areas of the County; and

WHEREAS, in order to successfully develop, finance and manage the Regional Solid Waste System, it is desirable that all waste generated in the County, including waste generated in incorporated cities and towns within the County, be disposed of through the Regional Solid Waste System and that the Town authorizes the County to designate a disposal site(s) and transfer sites for the disposal of solid waste generated within the corporate limits of the Town; and

WHEREAS, the Town and County desire to continue a more regionalized and standardized solid waste management system; NOW, THEREFORE,

CLARK COUNTY AND THE TOWN OF YACOLT UNDERSTAND AND AGREE AS FOLLOWS:

1. Definitions. For purposes of this Interlocal Agreement, the following definitions shall apply.
 - 1.1 "Town" means the Town of Yacolt.
 - 1.2 "Comprehensive Solid Waste Management Plan" means the Clark County Comprehensive Solid Waste Management Plan adopted and amended by the County pursuant to Chapter 70.95 RCW.
 - 1.3 "Contract" means the Transfer, Transportation and Out of County Disposal Contract by and between Columbia Resource Company and Clark County and any amendments, modifications or supplements thereto.
 - 1.4 "Contractor" means Columbia Resource Company, LLC, a wholly owned subsidiary of Waste Connections of Washington.
 - 1.5 "County" means Clark County, Washington.
 - 1.6 "Designated Disposal Sites" means Finley Buttes Landfill located near Boardman, Oregon.
 - 1.7 "Hazardous Waste" means any waste, material or substance that is not excluded from regulation as "hazardous waste" or "dangerous waste" by application of hazardous waste or dangerous waste regulations adopted by the United States Environmental Protection Agency, the Washington State Department of Ecology or the Oregon State Department of Environmental Quality and that now or hereafter:
 - a) is required to be dealt with as hazardous waste under regulations promulgated by the United States Environmental Protection Agency at 40 CFR part 261;
 - b) contains a radioactive material the storage or disposal of which is regulated by state or federal law or regulation; or
 - c) is designated a "dangerous waste" or "extremely hazardous" waste by regulations adopted pursuant to Chapter 70.105 RCW or Oregon law.

Certain waste that is not as of the effective date of this Interlocal Agreement within one of the subsections (a) through (c) above, may after that date come within the scope of one or more of those subsections as determined by a governmental entity with jurisdiction; certain other waste that is within one of those subsections may cease to be recognized as a Hazardous Waste as defined herein. Accordingly, as waste, material or substance shall be deemed Hazardous Waste only so long as and to the extent that it is included in at least one of subsections (a) through (c) above.
 - 1.8 "Solid Waste" means:
 - a) Solid waste as defined by RCW 70.95.030 with the exception of Hazardous Waste.
 - b) Solid waste, including recyclable material collected within the Town by the Town, a Town contractor, or a private hauler under the authority of a "G" certificate granted by the Washington State Utilities and Transportation Commission under the provisions of Chapter 81.77 RCW; and
 - c) Solid waste which is the residual waste remaining from commercial recyclables collected within the Town; and

- d) Residential recyclable material collected by the Town or pursuant to a contract with the Town or with the Washington State Utilities and Transportation Commission under RCW 81.77.150.
- 1.9 "Special Waste" means Solid Wastes that require special handling and are collected, processed, recycled and/or disposed of separately from other Solid Wastes as defined in the Comprehensive Solid Waste Management Plan or upon written mutual agreement of the Town and County. Special Waste may or may not be required to be disposed of through the Regional Solid Waste System as determined by the Town and County.
 - 1.10 "Regional Solid Waste System" means all facilities for solid waste handling provided by the County, either directly or by contract with a Vendor, and all administrative activities related thereto. The term "Regional Solid Waste System" includes all sites designated by the County for the receipt or disposal of solid waste as well as the supporting practices and programs being operated within the region for waste collection, waste diversion and program promotion and administration.
 - 1.11 "Transfer Stations" means West Van Materials Recovery Center located on 6601 NW Old Lower River Road, Central Transfer & Recycling Center located at 11034 NE 117th Avenue, Washougal Transfer Station located at 4020 South Grant Street.
- 2. Responsibility for Solid Waste Disposal. For the term of this agreement, the County shall be responsible for the contracted disposal of Solid Waste generated within unincorporated areas of the County and within the Town to the extent provided in the Comprehensive Solid Waste Management Plan, this agreement, and as appropriate under local, state and Federal laws.
 - 3. Term of Agreement. The initial term of this agreement shall commence on its execution by both Town and County and shall expire on December 31, 2021 ("Initial Term"). The term of this agreement shall be automatically extended annually beyond 2021 unless terminated as described in Section 13.
 - 4. Comprehensive Plan. For the duration of this Interlocal Agreement, the Town shall participate in the planning process of the Comprehensive Solid Waste Management Plan prepared and periodically reviewed and revised by the County pursuant to Chapter 70.95 RCW. For the duration of this Interlocal Agreement, the Town authorizes the County to include in the Comprehensive Solid Waste Management Plan provisions for the management of Solid Waste generated in the Town. The Town, its staff and policy- makers shall be partners and participants with the County and the Solid Waste Advisory Commission (SWAC) in the regularly scheduled plan review, update and implementation and will be afforded opportunity to adopt plan modifications.
 - 5. Waste Reduction and Recycling. The Town and the County agree to cooperate to achieve the priorities for waste reduction and waste recycling set forth in the Comprehensive Solid Waste Management Plan. The Town shall establish and maintain recycling and waste reduction programs in compliance with all applicable federal, state and local laws.

6. Regional Solid Waste System Steering Committee. The Town and the County, along with other Cities who choose to participate, agree to form a Regional Solid Waste System Steering Committee (the "RSWSSC") comprised of the Public Works Directors or their designees. The role of the RSWSSC is to provide direction to the County concerning the development of the Regional Solid Waste System, and its infrastructure, and the implementation of the recommended priorities and programs set forth in the Comprehensive Solid Waste Management Plan. The RSWSSC shall provide recommendations to the County on matters such as: contracts; budgets; public education, outreach and marketing; resource sharing; system analysis and improvements.

The RSWSSC will develop bylaws to describe how the group conducts its business in fulfilling this charge. The RSWSSC will meet regularly to review the priorities for waste reduction and waste recycling set forth in the Comprehensive Solid Waste Management Plan, to assure that these priorities are incorporated in the budget proposals and work programs of member organizations, to assess the results of programs and projects and to assure that future infrastructure needs are addressed through operational practices and procedures. The RSWSSC will maintain regular communication with the Clark County Solid Waste Advisory Commission and elected officials.

7. Town Designation of Regional Solid Waste System for Solid Waste Transfer and Disposal. The Town authorizes the County to issue and manage the contract(s) for long- term processing, transfer, transport and disposal of wastes collected within the Town, however, the Town retains the right to designate those sites for the transfer and disposal of such solid waste so that a single landfill is designated to handle solid waste collected under the Town's collection contracts or by a private hauler under the authority of a "G" certificate granted by the Washington State Utilities and Transportation Commission under the provisions of Chapter 81.77 RCW. The transfer site or sites so designated shall be the Transfer Stations closest to the Town. The County shall direct all such Solid Waste delivered to these Transfer Stations, which is not recycled, to the Designated Disposal Sites. Special Waste generated within the Town may be exempted from the aforementioned requirements upon written notice from the Town's Public Works Director to the County. The Town will make all reasonable efforts through contracts and ordinances to deliver solid waste generated in the Town to the Transfer Stations. The designation of the Regional Solid Waste System in this section shall not reduce or otherwise affect the Town's control over Solid Waste collection as permitted by applicable state law.
8. Tipping Fees. Rates at the County Designated Disposal Site or designated Transfer Stations shall be set through the Contract. Increases in the tipping fees shall reflect the County Contractor's reasonable actual increased costs due to changes in the Consumer Price Index, change in law, increases in certain taxes, uncontrollable circumstances, or certain other reasons, all in accordance with the Contract with the County. The County agrees that the tipping fees shall be reviewed periodically and may be adjusted in accordance with the Contract. If the Town believes that the tipping fees or a component thereof are unreasonable or inappropriate, the Town may obtain

additional justification for the increase from the County and review the issue with the Clark County Board of Commissioners. The Town shall be given notice of all proposed rate increases or decreases and shall have the right to comment and meet with the County regarding the proposed rate changes.

9. Enforcement. For the duration of this Interlocal Agreement, the Town shall maintain in effect and reasonably enforce an ordinance(s) related to the collection of municipal solid waste and recyclable materials (and any future amendments to the code). Upon the request of the County, the Town also shall consider revocation or termination of licenses, franchises, or contracts previously granted by the Town to persons who are violating or in the future shall violate ordinances relating to the disposal of Solid Waste. It is specially noted that the Town's existing Solid Waste collection contracts or franchise granted by the Washington State Utilities and Transportation Commission under RCW 81.77 will not be affected by this agreement.

10. Contracts with Vendors; No Town Obligation.

10.1 The County may at its discretion enter into a contract or contracts with a vendor to provide Solid Waste handling services. The Town acknowledges that in entering into such an agreement with the vendor, the County may rely on the Town's designation of the County as the entity with responsibility for preparing and revising the Comprehensive Solid Waste Management Plan and for designating Solid Waste disposal and transfer sites under the terms of the Comprehensive Solid Waste Management Plan and this Interlocal Agreement.

10.2 No contract between the County and a vendor shall purport to create any general obligation or special fund or utility obligation of the Town.

11. Indemnification.

11.1 Except as provided below, the County shall indemnify and hold harmless, and shall have the right and duty to defend the Town, through the County's attorneys, against any and all claims arising out of the County's operations of the transfer and disposal system, and the right to settle those claims, recognizing that all costs incurred by the County thereby are transfer and disposal system costs which must be satisfied from disposal rates. In providing a defense for the Town, the County shall exercise good faith in that defense or settlement so as to protect the Town's interests. For purposes of this paragraph, "claims arising out of the County's operations" shall include claims arising out of the ownership, control or maintenance of the transfer and disposal system, but shall not include the claims arising out of the Town's collection of Solid Waste, the operation of motor vehicles in connection with the transfer and disposal system, the disposal or attempted disposal of Hazardous Waste, or other activities under the control of the Town.

11.2 In the event that the County acts to defend the Town against a claim, the Town shall cooperate with the County.

11.3 For purposes of this section; reference to the Town and to the County shall be deemed to include the officers and employees of any party, acting within the scope of their authority.

12. Amendment or Supplementation. This Interlocal Agreement may be amended or supplemented upon the agreement of the County and the Town. Any amendment or supplement shall be in writing, signed by the authorized officers of the County and the Town.

13. Termination.

13.1 Through 2021 and throughout the term of any subsequent contract extension, this Interlocal Agreement may be terminated upon the mutual agreement of the County and the Town.

13.2 After the Initial Term, either party may give written notification of intended termination. Such notice shall be no less than twenty-four months before such intended termination, and contain evidence of the party's preparation of a comprehensive solid waste management plan that does not provide for the other party. And, termination shall not be effective until such a solid waste management plan has been approved and adopted pursuant to law.

13.3 Any controversy or claim arising out of or relating to the termination of this Interlocal Agreement shall be first addressed through mediation and, if still unresolved, then through binding arbitration prior to the commencement of any legal proceedings. The parties shall equally share the cost of a mutually acceptable mediator or arbitrator, as the case may be.

14. Miscellaneous.

14.1 No waiver by any party of any term or condition of this Interlocal Agreement shall be deemed or construed to constitute a waiver of any other term or condition or of any subsequent breach whether of the same or of a different provision of this Interlocal Agreement.

14.2 This Interlocal Agreement is not entered into with the intent that it shall benefit any other entity or person, and no other such person or entity shall be entitled to be treated as a third party beneficiary of this Interlocal Agreement.

14.3 This Interlocal Agreement supersedes that Agreement dated May 9, 2006.

ADOPTED this ____ day of _____. 2015

Attest:

**Board of County Councilors
Clark County, Washington**

Clerk to the Board

By _____
David Madore, Chair

Approved at to Form Only
Anthony F. Golik
Prosecuting Attorney

By _____

Attest:

Town of Yacolt, Washington

Town Clerk

By _____
Jeff Carothers, Town Mayor

Approved at to Form Only
Town Attorney

By _____

SUMMARY OF ANTICIPATED CHANGES TO RECYCLING CONTRACT w/WASTE CONNECTION AND INTERLOCAL AGREEMENTS

EFFECTIVE DATE:

Effective July 1, 2022 – June 30, 2032

PURPOSE

The purpose of this Summary is to introduce the recently negotiated updates to the Residential Recycling Collection contract with Waste Connections to help prepare for both a council presentation and the process to update interlocal agreements once the contract is active.

COLLECTION CONTRACT BACKGROUND AND OVERVIEW

Washington State law requires all counties to develop and manage regularly updated plans for solid waste handling facilities, waste reduction programs, residential recycling collection, outreach, and education, and managing moderate risk wastes. Within these requirements, cities have the authority to contract independently for solid waste services or participate in the county system.

This contract is set to expire on June 30, 2022, as will the interlocal agreements. With input from the Regional Solid Waste System Steering Committee and the Solid Waste Advisory Committee, Clark County staff recently negotiated a restated contract with Waste Connections to address system needs and improvements.

SCOPE OF CURRENT CONTRACT

- Provides the collection of curbside recyclable materials from single and multifamily homes.
- Provides collection services for residents in Urban (weekly) and Rural (every other week)
- Establishes service levels for recycling collection
 - Established acceptable materials list
 - Additional items beyond program materials – oil, antifreeze, batteries.
- Provides education and outreach support in the form of Waste Connection staff.
- Sets expectations for outreach, education, and other regular marketing strategies (newsletters, A to Z website truck wraps, etc.).
- Sets customer service expectations:
 - Location of customer services staff
 - Customer service performance (timeliness, thoroughness, and accessibility)
- Establishes equipment expectations
 - Types of vehicles (fuel (electric, diesel, CNG), body style (split body), and capacity) – specs located in the appendix.
 - Carts (sizes, colors, customer options for right-sizing containers) – specs located in the appendix.

ANTICIPATED CHANGES TO CONTRACT

- Every other week collection of recycling in urban services areas (including Yacolt)
- Improvements to education and outreach expectations (development of outreach management plan).
- Formalizes cart-tagging program.
- Improvement to customer service expectations
- Electric collection truck pilot
- Recycling revenue adjustments put on hold
- Free recycling services for all government facilities and parks (currently only free to Clark County government facilities and parks.
- No rate increases associated w/improvements

Residential Recycling Collection Contract Update

Town of Yacolt Council Meeting
Monday, April 11, 2022



Goals

1

Introduce a summary of the negotiated updates to the Residential Recycling Collection contract with Waste Connections for questions and feedback.

2

Gain support from Yacolt Town Council on updated contract terms.



Background

▶ Existing Contract

The existing contract for residential recycling:

- Expires June 30, 2022
- Currently operating under 6-month extension
- Stakeholder engagement:
 - RSWSSC
 - SWAC

▶ New Contract

- Contract negotiations completed
- Target start date July 1st, 2022

▶ Interlocal Agreements

- The current agreement with Town of Yacolt expires with new contract



Residential Recycling Contracts



Clark County

- Procures services
- Negotiates
- Manages



Cities with Interlocal Agreements

- Battle Ground
- LaCenter
- Yacolt



Cities who contract directly

- Camas
- Washougal
- Ridgefield
- Vancouver



Current Contract



Curbside collection of recyclable materials from single-family and multi-family residences



Recycling collection service levels



Outreach and education staff



Establishes a formal list of recyclable materials to be collected and processed



Customer service expectations



Expectations for trucks, carts, and other equipment required for service



Free collection of recyclables from Clark County facilities and parks

Contract Updates

1 Every other week collection of recyclables in urban services area

Benefit

- Efficient routes
- Reduced impacts to roads and air quality
- Rolled out with automated garbage service

2 Free recycling services for *all* government facilities and parks

Benefit

- Reduced costs for governments

3 Solid Waste Outreach Plan

Benefit

- Improved coordination among outreach and education partners



No additional cost to ratepayers

Contract updates continued

4 Formalize Recycling Advocates positions and funding

Benefit

- Identify contamination in recycling carts
- Engage with residents

5 Electric Truck Pilot

Benefit

- Inform future efforts to develop a cleaner and cost-effective fleet



Next steps

February

- **Finalize Contract**
 - Update with member feedback

March

- **Finalize Contract**
 - Update with member feedback
 - Internal legal review

April

- **Finalize Contract**
 - Clark County Council Approval
 - County Manager signature
- **Interlocal Agreements**

May

- **Interlocal Agreements Continued**

June

- **Implement Changes**



PROs & Cons of Every Other Week Recycling Collection

PROS

- No Price Increase
- EOW Service = Fewer Trucks on Rd
- EOW Collection is a “leaner system” which can be more resilient in these challenging times (tight labor market, fuel costs, reduced value in some recyclable items).
- Free Recycling Collection services from Yacolt Town buildings and Parks

CONS

- \$2:00-\$2.50 increase/month (est.)
- New trucks required
- Ave truck costs have increased \$330k/unit to \$540k/unit (2022)
- Ave wage Rate for CDL drivers increased from \$15.34 (2009) to \$25.36, these are Union Contracts and Benefits
- Potential Customer Confusion in making the switch to EOW Recycling Collection





Town of Yacolt Request for Council Action

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Clerk Stephanie Fields

Group Name:

Address: 202 W. Cushman
Yacolt, WA 98675

Phone: 360-686-3922

Email Address: clerk@townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Extension of Jackson Civil Engineering Contract

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Decide on whether to extend our contract with Jackson Civil Engineering

Proposed Motion: "I move that the Town of Yacolt extends its contract with Jackson Civil Engineering for another year, at their current rates."

Summary/ Background: Our contract for services by Jackson Civil Engineering has expired, and we need to have an engineer working with the Town for various construction and civil projects, including the upcoming Transportation Improvement Plan and our Growth Management Update, which are both coming due. Jackson Civil Engineering is a local company who is very familiar with Yacolt and its codes. We have been working with them since 2017, and are in the middle of projects such as the Railroad-Hoag Subdivision, in addition to the 2 projects mentioned above. We have 2 alternatives: to advertise a Request for Qualifications for a new Engineering firm, which will take a month or two to place ads, receive responses, and hire a new firm, or extend our contract with Jackson. The Town has been very happy with Jackson's work. A copy of our current contract with them is attached is attached, as well as their new prices.

Staff Contact(s): Clerk Stephanie Fields

Mayor Katelyn Listek

clerk@townofyacolt.com

mayorlistek@townofyacolt.com

(360) 686-3922

AGREEMENT FOR ENGINEERING SERVICES

THIS AGREEMENT is by and between the Town of Yacolt, a municipal corporation located in the County of Clark, State of Washington, (hereinafter referred to as the "Town"), and Jackson Civil Engineering, LLC, a Washington licensed limited liability company, (hereinafter referred to as the "Engineer").

The parties recite and declare that:

1. The Town is in need of an engineer to perform and render engineering services to the Town.
2. The Engineer employs persons who, through education and experience, possess the requisite skills to provide competent engineering services for the Town.
3. The Town is, therefore, desirous of engaging the services of the Engineer.
4. The Town performed a qualifications-based public competitive bidding and procurement process pursuant to RCW 39.80, and found the Engineer best met the qualifications required by the Town for the Town's forecasted engineering needs.

For the reasons set forth above and in consideration of the mutual covenants and promises of the parties hereto, the Engineer and the Town agree as follows:

Section One – Acceptance of Contractual Relationship:

The Town hereby retains the Engineer as its Town Engineer to perform and render engineering services as described in Section Five, below.

Section Two – Character of Contractual Relationship:

The Engineer is an independent contractor and not a Town employee. As the Engineer is customarily engaged in an independently established trade which encompasses the specific services provided to the Town hereunder, no agent, employee, representative or sub-consultant of the Engineer shall be or shall be deemed to be the employee, agent, representative or sub-consultant of the Town. In the performance of the work, the Engineer is an independent contractor with the ability to control and direct the performance and details of the work, the Town being interested only in the results obtained under this Agreement. None of the benefits provided by the Town to its employees, including, but not limited to, compensation, insurance, and unemployment insurance, are available from the Town to the employees, agents, representatives, or sub-consultants of the Engineer. The Engineer may not sign any contract on behalf of the Town, and may not obligate the Town in any way without the Town's express written consent.

Section Three – Duration and Scope of Relationship:

The term of this Agreement shall be from January 1, 2020, continuing thereafter through December 31, 2021, unless and until terminated pursuant to Section Eight, below. This Agreement may be extended for additional periods of time upon the mutual written agreement of the Town and the Engineer.

The Town reserves the right to contract with other engineers for project-specific engineering as required by Washington public contracting requirements, or as the Town deems appropriate.

Section Four - Place of Work:

It is understood that the Engineer's service will be rendered largely at the Engineer's office in Washougal, but that the Engineer will, on request and as work requires, come to the Yacolt Town Hall or such other places as designated by the Town, to work on Town projects and meet with the Town's representatives.

Section Five - Nature of Duties:

As Town Engineer, the Engineer shall perform engineering services as requested by the Town, manage and oversee construction contracts, prepare engineering and project estimates, prepare documents necessary and proper in connection with the business of the Town, and, in general, to render such engineering services of every kind and nature as the Town shall require or deem proper in its business. The Engineer shall exercise the degree of skill and diligence normally employed by professional engineers engaged in the same profession, and performing the same or similar services at the time such services are performed. The Engineer warrants that it has the requisite training, skill, and experience necessary to provide the engineering services and is appropriately accredited and licensed by all applicable agencies and governmental entities.

Section Six - Compensation:

The Town agrees to pay the Engineer:

- A. \$160.00 per hour for all services rendered by Devin Jackson Principal, in increments of ¼ hour.
- B. \$130.00 per hour for all services rendered by Civil Engineer, in increments of ¼ hour.
- C. \$90.00 per hour for all services rendered by Senior Engineering Technician, in increments of ¼ hour.
- D. \$84.00 per hour for all services rendered by Engineering Technician, in increments of ¼ hour.
- E. \$165.00 per hour for all services rendered by 2-person crew, in increments of ¼ hour.
- F. Invoice amount plus 15% for all subcontractors rendering services on behalf of Jackson Civil Engineering, LLC.
- G. If Jackson Civil Engineering, LLC hires additional employees, the rate of compensation for services rendered by those employees shall be determined by mutual written agreement between the Town and Jackson Civil Engineering, LLC prior to the performance of work.
- H. In addition to the compensation set forth above, the Town shall reimburse the Engineer for all reasonable and necessary expenses which may be paid or incurred by Engineer on behalf of the Town, subject to Town review and audit of receipts in support thereof.

Section Seven - Other Employment:

The Engineer shall devote all time reasonably necessary to the business of the Town but shall not

by this retainer be prevented or barred from taking other employment of a similar or other character by reason of the contractual services herein specified.

Section Eight – Termination:

This Agreement may be terminated by either party at any time on thirty (30) days' prior written notice to the other party.

Section Nine – Modification:

No modification or waiver of this Agreement or of any covenant, condition, or provision herein contained shall be valid unless in writing and duly executed by the party to be charged therewith.

Section Ten - Indemnification / Insurance:

The Engineer shall defend, indemnify and hold the Town, its officers, officials, employees, agents and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or resulting from the acts, errors or omissions of the Engineer in performance of this Agreement, except for injuries and damages caused by the sole negligence of the Town.

Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Engineer and the Town, its officers, officials, employees, agents and volunteers, the Engineer's liability, including the duty and cost to defend, hereunder shall be only to the extent of the Engineer's negligence.

It is further specifically and expressly understood that the indemnification provided herein constitutes the Engineer's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

A. Insurance Term:

The Engineer shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Engineer, its agents, representatives, or employees.

B. No Limitation:

The Engineer's maintenance of insurance as required by this Agreement shall not be construed to limit the liability of the Engineer to the coverage provided by such insurance, or otherwise limit the Town's recourse to any remedy available at law or in equity.

C. Minimum Scope of Insurance:

The Engineer shall obtain insurance of the types and coverage described below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form providing equivalent liability coverage.
2. Commercial General Liability insurance shall be at least as broad as ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, stop-gap independent contractors and personal injury and advertising injury. The Town shall be named as an additional insured under the Engineer's Commercial General Liability insurance policy with respect to the work performed for the Town using an additional insured endorsement at least as broad as ISO CG 20 26.
3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.
4. Professional Liability insurance appropriate to the Engineer's profession.

D. Minimum Amounts of Insurance:

The Engineer shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of \$1,000,000 per accident.
2. Commercial General Liability insurance shall be written with limits no less than \$1,000,000 each occurrence, \$2,000,000 general aggregate.
3. Professional Liability insurance shall be written with limits no less than \$1,000,000 per claim and \$1,000,000 policy aggregate limit.

E. Other Insurance Provision:

The Engineer's Automobile Liability and Commercial General Liability insurance policies are to contain, or be endorsed to contain a provision that they are primary insurance with respect to the Town. Any Insurance, self-insurance, or self-insured pool coverage maintained by the Town shall be in excess of the Engineer's insurance and shall not contribute with it.

F. Acceptability of Insurers:

Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.

G. Verification of Coverage:

The Engineer shall furnish the Town with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Engineer before commencement of the work.

H. Notice of Cancellation:

The Engineer shall provide to the Town any written notice of any policy cancellation within two business days of its receipt of such notice.

I. Failure to Maintain Insurance:

Failure on the part of the Engineer to maintain the insurance as required shall constitute a material breach of this Agreement, upon which the Town may, after giving five business days' notice to the Engineer to correct the breach, immediately terminate the Agreement, and/or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the Town on demand, or at the sole discretion of the Town, offset against funds due the Engineer from the Town.

J. Full Availability of Engineer's Limits:

If the Engineer maintains higher insurance limits than the minimums shown above, the Town shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Engineer, irrespective of whether such limits maintained by the Engineer are greater than those required by this contract or whether any certificate of insurance furnished to the Town evidences limits of liability lower than those maintained by the Engineer.

Section Eleven - Notice:

Any notice required under this Agreement shall be deemed sufficient if made in writing and personally delivered or sent by certified mail to either party at the following addresses, or such other address as may hereafter be specified by either party in writing:

Mailing Addresses:	Town of Yacolt P.O. Box 160 Yacolt, WA 98675	Jackson Civil Engineering, LLC P.O. Box 1748 Battle Ground, WA 98601-4687
Physical Addresses:	202 W. Cushman St. Yacolt, WA 98675	704 E Main Street, Suite 103 Battle Ground, WA 98604

Section Twelve – Title VI of the Civil Rights Act of 1964:

Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Section Thirteen - Access to Records Clause:

The Town and other authorized representatives of the state and federal governments shall have access to any books, documents, papers, and records of the Engineer which are directly pertinent to the Agreement for the purposes of making audit, examination, excerpts, and transcriptions.

The Engineer agrees to maintain such records and follow such procedures as the Town may prescribe. In general, such records will include information pertaining to the Agreement, obligations and unobligated balances, assets and liabilities, outlays, equal opportunity, labor standards (as appropriate), and performance.

All such records and all other records pertinent to this Agreement and work undertaken under this Agreement shall be retained by Engineer for a period of three (3) years, unless a longer period is required to resolve audit findings or litigation. In such cases, Town shall request a longer period of record retention.

Section Fourteen – Section 109 of the Housing and Community Development Act of 1974, as amended:

No person in the United States shall, on the grounds of race, color, national origin, or sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

Section Fifteen - Public Law 101-336, Americans with Disabilities Act of 1990:

Subject to the provisions of this title, no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity.

Section Sixteen – Age Discrimination Act of 1975, as amended:

No person shall be excluded from participation, denied program benefits, or subjected to discrimination on the basis of age under any program or activity receiving federal funding assistance [42 U.S.C. 610 *et. seq.*]

Section Seventeen – Section 504 of the Rehabilitation Act of 1973, as amended:

No otherwise qualified individual shall, solely by reason of his or her handicap, be excluded from participation (including employment), denied program benefits, or subjected to discrimination under any program or activity receiving federal funds [29 U.S.C. 794]

Section Eighteen - Complete Agreement:

This written Agreement embodies the whole agreement between the parties and there are no inducements, promises, terms, conditions or obligations made or entered into by either the Town or the Engineer other than contained herein.

Section Nineteen – Confidentiality:

The Engineer may, from time to time, receive information which is deemed by the Town to be confidential. The Engineer shall not disclose such information without the prior express written consent of the Town or upon order of a court of competent jurisdiction.

Section Twenty - Applicable Laws and Standards:

The Parties, in the performance of this Agreement, agree to comply with all applicable federal, state, and local laws and regulations. The Engineer warrants that its designs, construction documents, and services shall conform to all applicable federal, state and local statutes and regulations.

The law of the State of Washington shall apply in interpreting this Agreement. Venue for any lawsuit arising out of this Agreement shall be in the Superior Court of the State of Washington, in and for Clark County.

Jackson Civil Engineering 2022 Price Schedule

Principal Engineer	\$200/hr.
Civil Engineering	\$140/hr.
Engineer-in Training	\$110/hr.
Project Administrator	\$90/hr.
2-Person Field Crew	\$180/hr.
Mileage	Federal rate
Printing/Production	Cost



Town of Yacolt Request for Council Action

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Clerk Stephanie Fields

Group Name:

Address: 202 W. Cushman
Yacolt, WA 98675

Phone: 360-686-3922

Email Address: @townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: ARPA Funding Choice

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Decide whether you'd like to have the Town of Yacolt opt for to claim their ARPA Funds as "Lost Public Sector Revenue".

Proposed Motion: "I move that we exercise our option to claim our ARPA Funds as Lost Public Sector Revenue."

Summary/ Background: The Coronavirus State and Local Fiscal Recovery Funds are being distributed by the US Treasury per the American Rescue Plan Act. Use of these funds is highly regulated and requires very strict reporting procedures. Recently, Treasury published a document which states that if an entity claims the funds as Lost Public Sector Revenue, they may use a more streamlined expenditure reporting system, and the spending restrictions are broader, as long as the funds are used toward general government services. (See attached quotes from the recent US Treasury Publication called "Coronavirus State & Local Fiscal Recovery Funds: Overview of the Final Rule".) At the February Council Meeting, Council already determined that they wanted to spend a chunk of the ARPA Funds we receive on Stormwater Infrastructure repairs and improvements. We have already received our first allotment of ARPA Funds last summer, and by the end of this summer should receive the 2nd of 2. This will bring our total SLFRF (ARPA) funds to just over \$500,000.

Staff Contact(s): Clerk Stephanie Fields

clerk@townofyacolt.com

Mayor Katelyn Listek

mayorlistek@townofyacolt.com

Overview of the Program

The Coronavirus State and Local Fiscal Recovery Funds (SLFRF) program provides substantial flexibility for each jurisdiction to meet local needs within the four separate eligible use categories. This Overview of the Final Rule addresses the four eligible use categories ordered from the broadest and most flexible to the most specific.

Recipients may use SLFRF funds to:

- Replace lost public sector revenue, using this funding to provide government services up to the amount of revenue loss due to the pandemic.
- Recipients may determine their revenue loss by choosing between two options:
- A standard allowance of up to \$10 million in aggregate, not to exceed their award amount, during the program;

Recipients may use funds up to the amount of revenue loss for government services; generally, services traditionally provided by recipient governments are government services, unless Treasury has stated otherwise.

- Invest in water, sewer, and broadband infrastructure, making necessary investments to improve access to clean drinking water, to support vital wastewater and **stormwater infrastructure**, and to expand affordable access to broadband internet.
- Recipients may fund a broad range of water and sewer projects, including those eligible under the EPA's Clean Water State Revolving Fund, EPA's Drinking Water State Revolving Fund, and certain additional projects, including a wide set of lead remediation, stormwater infrastructure, and aid for private wells and septic units.

Under the SLFRF program, funds must be used **for costs incurred on or after March 3, 2021**. Further, funds must be **obligated by December 31, 2024**, and **expended by December 31, 2026**.

Replacing Lost Public Sector Revenue

The Coronavirus State and Local Fiscal Recovery Funds provide needed fiscal relief for recipients that have experienced revenue loss due to the onset of the COVID-19 public health emergency. Specifically, SLFRF funding may be used to pay for "government services" in an amount equal to the revenue loss experienced by the recipient due to the COVID-19 public health emergency.

Government services generally include any service traditionally provided by a government, including **construction of roads and other infrastructure**, provision of public safety and other services, and health and educational services. **Funds spent under government services are subject to streamlined reporting and compliance requirements.**

In order to use funds under government services, recipients should **first determine revenue loss. They may, then, spend up to that amount on general government services.**

DETERMINING REVENUE LOSS

Recipients have two options for how to determine their amount of revenue loss. Recipients must choose

one of the two options and cannot switch between these approaches after an election is made. **Recipients may elect a “standard allowance” of \$10 million to spend on government services through the period of performance.**

Under this option, which is newly offered in the final rule **Treasury presumes that up to \$10 million in revenue has been lost due to the public health emergency and recipients are permitted to use that amount (not to exceed the award amount) to fund “government services.”**

The standard allowance provides an estimate of revenue loss that is based on an extensive analysis of average revenue loss across states and localities, and offers a simple, convenient way to determine revenue loss, **particularly for SLFRF’s smallest recipients.**

All recipients may elect to use this standard allowance instead of calculating lost revenue using the formula below, including those with total allocations of \$10 million or less. Electing the standard allowance does not increase or decrease a recipient’s total allocation.

SPENDING ON GOVERNMENT SERVICES

Recipients can use SLFRF funds on government services **up to the revenue loss amount**, whether that be the standard allowance amount or the amount calculated using the above approach. **Government services generally include any service traditionally provided by a government**, unless Treasury has stated otherwise. Here are some common examples, although this list is not exhaustive:

- ✓ Construction of schools and hospitals
- ✓ Road building and maintenance, and other infrastructure
- ✓ Health services
- ✓ General government administration, staff, and administrative facilities
- ✓ Environmental remediation
- ✓ Provision of police, fire, and other public safety services (including purchase of fire trucks and police vehicles)

Government services is the most flexible eligible use category under the SLFRF program, and funds are subject to streamlined reporting and compliance requirements. Recipients should be mindful that certain restrictions, which are detailed further in the Restrictions on Use section and apply to all uses of funds, apply to government services as well.



Town of Yacolt Agenda Request

CONTACT INFORMATION FOR PERSON/GROUP/DEPARTMENT REQUESTING COUNCIL ACTION:

Name: Ronald Homola

Group Name:

Address: N/A

Phone:(360) 686-3922

Email Address: Ronald.homola@townofyacolt.com

Alt. Phone:

ITEM INFORMATION:

Item Title: Alternative to National Night Out

Proposed Meeting Date: April 11, 2022

Action Requested of Council: Hear Ronald's and North Country EMS' suggestions for a collaborative alternative to the National Night Out

Proposed Motion: Maybe

Summary/ Background: National Night Out first originated as a way to pull the community and its emergency services personnel together, to help reduce crime, and help keep community members healthy and safe. As our representative to the North Country EMS Board, Councilmember Ronald Homola was asked to see if the Town would like to participate in a different sort of event than what we have done for the past few years. Ronald will present their proposal.

Staff Contact(s): Stephanie Fields, Town Clerk
Katelyn Listek, Mayor
(360) 686-3922