



REQUEST FOR PROFESSIONAL SERVICES

WHATCOM COUNTY RURAL BROADBAND DARK FIBER PROJECT
--

Objective

The Port of Bellingham (Port) is soliciting responses from qualified firms interested in providing professional telecommunication design engineering and consulting services, including permitting, telecommunication pole design, route planning design, surveying services, and other associated consultation work for the design and later construction of a proposed broadband dark fiber optic network from Bellingham to Glacier and to Limestone Junction, which is referred to as Segment 1; Figure 1 shows the anticipated route extents.

In 2018, the Port in partnership with the Public Utility District (PUD) of Whatcom County commissioned a feasibility study to determine the gaps and need for broadband in our rural communities. The final results determined there were communities that were unserved or underserved. It identified many homes and businesses lacked access to broadband coverage as defined by Washington state (25 mbps/3 mbps) throughout our county. The study also identified three segments for construction (study is attached at the end of the RFPS). The Port of Bellingham is currently in the pre-design and pre-construction phase of Segment One of the Whatcom County Rural Broadband Dark Fiber Network (Project).

The goal is to build an open access dark fiber carrier grade network that will be publicly owned by the Port of Bellingham and will accommodate the current and future needs of rural Whatcom county. The goal of the project for which this RFPS is addressing is the completion of Segment 1. Segment one is approximately 40.6 miles long with approximately 37 miles being aerial and the remainder being bored or buried.

Selection Criteria

Responses to this RFPS will be evaluated using a point system as shown in the Response Requirement Section. A selection committee comprised of Port Staff and stakeholder partners will complete the evaluation.

Selection of a respondent will be based on the evaluation of all responses received prior to or on the RFPs due date; selection is based on qualifications only. After evaluation of responses the Port will determine which, if any, respondents will be interviewed. During an interview, the respondents will be given the opportunity to discuss their proposal, qualifications, past experience in more detail. Following selection of a proposal and respondent, the Port and the selected respondent will negotiate a Professional Services Agreement (PSA).

If the Port chooses to interview any respondent(s), the interviews are anticipated to be held the week of February 3, 2020.

Anticipated Time Line

This project includes creating route and pole designs, permitting, and franchise and right of ways application document development. The Port anticipates the following schedule for this project:

Milestones	Date
Responses due to Port (before 12pm)	2/03/2020
Selection by Port anticipated	2/10/2020
Agreed Scope and Fee Date (on or before)	3/9/2020
PSA Approved by Port Commission	3/17/2020
Contracting completed before	3/20/2020
Contract work beginning on or before	3/20/2020
Draft design of Segment 1	4/20/2020
Permitting phase initiated	4/20/2020
Construction phase initiated	8/20/2020

Response Requirements

Responses should address the following evaluation criteria:

1. Qualifications and Experience (50 points possible):
 - a. Demonstrate recent (in the last five years) and relevant telecommunication engineering experience related to fiber networks design, including: route design, geotechnical investigations, land surveying, City/State/Federal permitting including rights of way and franchise applications, pole designs, make ready, network integration with roadways and bridge crossings, construction support experience, and other network design elements.

- b. Demonstrate experience in applying for pole leases and franchise applications with utilities. Experience working with stakeholders, which include, but may not be limited to: City of Bellingham, Whatcom County, Department of Natural Resources (DNR), United States Forest Service (USFS), Puget Sound Energy (PSE) and Washington State Department of Transportation (WSDOT) and their processes.
 - c. Demonstrate relevant experience in successfully managing multiple-disciplinary project teams and sub-consultants (if applicable) for similar projects.
 - d. Provide examples of relevant projects; include contact information for clients and other professional references related to such projects.
 - e. Demonstrate your familiarity with Whatcom County and the project's stakeholders.
 - f. Identify technical skills that make the respondent uniquely qualified for this work.
2. Proposed Project Work Plan and Approach (40 points possible):
- a. Detailed narrative of the project approach.
 - b. Detailed project plan and timeline to complete the project through design, permitting, and up to construction.
 - c. List how the specific tasks and subtasks will be accomplished fulfilling goals, objectives, and scope of work.
 - d. Approach to data collection and documentation of the project from concept to completion.
 - e. Approach to developing preliminary and design fiber routes; describe methods and sources for collecting and assembling relevant data, how the data will be analyzed (e.g., GIS, CAD, other software platform), and which data are anticipated to be collected, assembled, and analyzed.
 - f. Approach to developing route design engineer drawings.
 - g. Proposed project team, roles, and responsibilities.
3. References and Availability (10 points possible):
- a. Provide contact information for clients and other professional references for similar projects.
 - b. Confirm that the Consultant team has the ability to complete the project within the timeframe described, herein. Provide brief resume/work experience.

Direct all inquiries on this Request for Professional Services to Gina Stark, Economic Development Project Manager, at 360-715-5117 or ginas@portofbellingham.com. Answers will be posted on the RFP website at <https://www.portofbellingham.com/bids.aspx>. The Port shall not be liable for any claim based on ambiguity of which an interested party knew and did not inform the Port of or of which an interested party should have reasonably known. It is the sole responsibility of interested parties to visit the website throughout the solicitation process for any changes to the RFP documents issued by the Port; interested parties agree that the Port shall not be liable for any claim based on the interested party's failure to monitor the website for changes.

Responses are due 12:00 PM (noon) on 2/03/2020.

Responses shall not exceed 30 single-sided pages or 15 double-sided pages. Relevant project summaries are not counted towards overall page count. Submit three (3) hard copies and one (1) electronic copy on a flash drive in PDF format to:

Port of Bellingham
Gina Stark
Economic Development Project Manager

Physical Address:
1801 Roeder Avenue
Bellingham, Washington
98225

Mailing Address:
PO Box 1677
Bellingham, Washington
98227

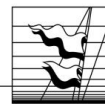
The Port of Bellingham reserves the right to reject any and all responses submitted. This RFPS and the selected respondent's response, including all promises, warranties, commitments, and representations made in the successful proposal (as accepted by the Port), shall be binding and incorporated by reference in the Port's contract with the Consultant.

Consultants shall submit their response with the understanding that the selected respondent will be required to execute the Port's Standard Agreement for Professional Services (attached) without modification.

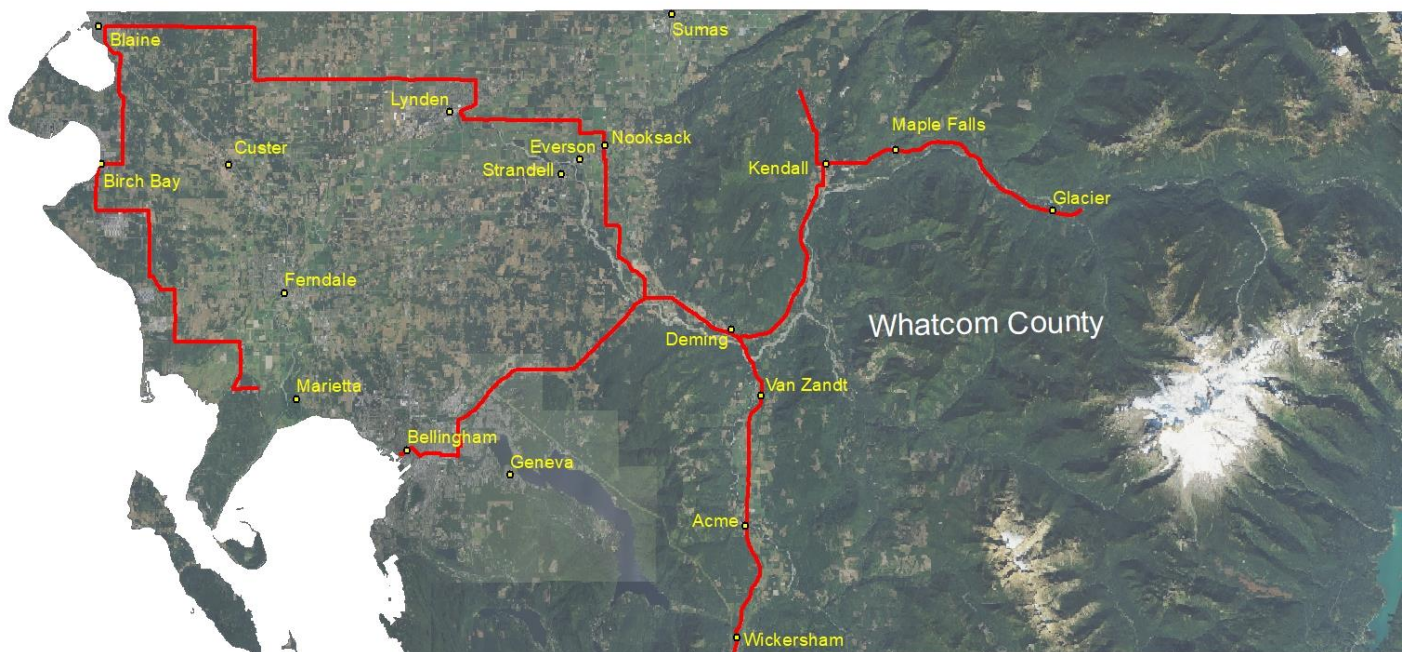
FEBRUARY 2019

BROADBAND FEASIBILITY STUDY FOR RURAL WHATCOM COUNTY

Prepared for



PORT OF BELLINGHAM
Washington State



Prepared by



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EXECUTIVE SUMMARY

The Port of Bellingham has commissioned this study to evaluate the need for further broadband investments in Whatcom County, with a focus on rural economic development. Ascent GIS performed a survey of existing provider networks and service coverage in Whatcom County, an analysis of the current market for telecom services, and a study of Whatcom County demographics. A proposed fiber optic backbone route was identified through the county connecting the Bellingham urban core with rural communities to the east and north. In addition, the study identified a fiber segment connecting the proposed Whatcom County network with Skagit County to the south along Highway 9, where the Port of Skagit and Skagit PUD are currently building a fiber optic network. Detailed route maps were prepared for the study, along with construction cost estimates and a detailed financial analysis of the proposed network.

Whatcom County, in general, has a higher than average adoption rate for broadband internet use. More than 91 percent of households in the county have a computer and nearly 85 percent have a broadband internet subscription. In addition, three providers in the county report offering services of at least 25 Mbps download and 3 Mbps upload speeds. Despite these reports, however, stakeholder outreach suggests that significant portions of rural Whatcom County still lack adequate access to affordable, reliable high speed internet.

Implementation of a dark fiber open access network in Whatcom County would allow multiple providers to access these communities on a competitive basis. The network could be managed with minimal additional staffing initially using a contract management model, possibly in coordination with the Port of Skagit and Skagit PUD in Skagit County. This model would provide an economy of scale for both networks and would allow providers to access a greater service area on a common platform.

The construction cost estimate for this network is \$4,328,896.22. Construction of the Highway 9 connector to Skagit would cost an additional \$2,508,302.64 to build, for a total cost of \$6,837,198.86. A financial assessment of the proposed network indicates a positive return on investment in 16 years without the addition of grant funding. With an estimated \$2,000,000 in grant funding, the return period is reduced to 9 years.

The project presents a significant opportunity for the Port of Bellingham to strengthen the economy of rural Whatcom County by deploying more broadband infrastructure and reducing barriers to entry for telecom providers.

CHAPTER 1 INTRODUCTION

Broadband infrastructure is essential to the delivery of high speed internet access to end users and has rapidly become a necessary ingredient to the economic health and growth of communities. In a 2016 brief to the White House, the Council of Economic Advisors detailed the economic benefits of adequate internet access to communities¹. Positive impacts include increased access to labor markets, as well as wage and employment growth, leading to higher household incomes and lower unemployment rates on average. Broadband internet also supports improved socio-economic opportunities for communities, including increased access to medical care and education.

Despite the well-documented societal benefits of broadband internet, a significant digital divide still exists in the U.S., particularly in rural areas. In 2018, the Pew Research Center found that a quarter of rural Americans still lack adequate, affordable broadband internet access². This disparity perpetuates a “haves and have-nots” scenario with inequitable economic opportunities for rural communities. More than 20 years ago, the 1996 Telecommunication Act sought to create competition and incentivize private sector investment in telecom markets. Results have been mixed with most private investment pushed to profitable urban markets, leaving rural communities behind. The federal government, together with private telecommunications companies and local governments, have sought solutions for this challenge for years. Public entities, including municipalities, ports, and public utility districts (PUDs) have increasingly become involved in broadband infrastructure in rural communities where private sector investment alone has not realized adequate broadband infrastructure.

STUDY BACKGROUND

This study has been commissioned by the Port of Bellingham (Port) to evaluate the need for broadband infrastructure investment in rural Whatcom County. In consideration of that purpose, the study includes a review of existing broadband infrastructure, evaluates the market demand for services, and provides a review of potential business models and role of the Port in supporting the deployment of broadband infrastructure.

¹ 2016, March. Issue Brief. The Digital Divide and Economic Benefits of Broadband Access. Council of Economic Advisors to the White House.

² 2018, September. Anderson, Monica. About a Quarter of Rural Americans Say Access to High-Speed Internet a Major Problem. Pew Research Center.

Strategic goals of this project include ensuring the provision of a countywide fiber optic network that:

1. Is carrier grade and open access.
2. Provides consumer choice.
3. Provides community members and businesses access to affordable high speed internet throughout the county.
4. Supports and promotes growth for economic development, education, public health and safety.

STUDY AREA

Whatcom County is located in northwestern Washington State and is bordered by Skagit County to the south, Okanogan County to the east, and the Canadian border to the north. The county's western border is formed by Puget Sound. The City of Bellingham is the county seat and the largest population center in the county. The county includes several smaller cities, towns, unincorporated urban growth areas (UGAs), and other unincorporated rural communities, including Blaine, Everson, Ferndale, Lynden, Nooksack, Sumas, Birch Bay, Deming, Maple Valley, Glacier, and Sudden Valley. The area is also home to two Indian tribal communities, including the Lummi Nation and the Nooksack Tribe. The study focused on rural communities located along population corridors between Bellingham and Glacier to the east, Nooksack to the northeast, and Blaine/Birch Bay to the northwest. Figure 1 depicts the Study Area.

Figure 1: Study Area



PORT OF BELLINGHAM

Formed in 1920, the Port of Bellingham serves as an economic driver for its community. The Port district extends throughout Whatcom County except for federal lands to the east.

The Port's mission statement is as follows:

To promote sustainable economic development, optimize transportation gateways, and manage publicly owned land and facilities to benefit Whatcom County.

The Port acts in a lead role, in partnership with Whatcom County and the City of Bellingham, as the Associate Development Organization (ADO) for Whatcom County. The Port utilizes various tools in pursuit of its mission, including physical infrastructure such as Bellingham International Airport, two marinas, a working waterfront in Bellingham, and industrial properties. In addition, the Port provides financial, planning, and technological expertise to help industries succeed in Whatcom County.

The Port was an early adopter of building fiber optic cable in Washington State. In the mid-1990's, the Port built fiber optic infrastructure throughout the downtown Bellingham area. Service providers on this network sold T1 Internet to the Port, hotels, and other businesses in the downtown area. The Port has also collaborated with local broadband providers for fiber to the Port's remote facilities.

PUBLIC UTILITY DISTRICT NO. 1 OF WHATCOM COUNTY

The Port is conducting its broadband planning assessment in partnership with the Public Utility District No. 1 of Whatcom County (PUD). The PUD operates a water and power utility in rural Whatcom County with the following mission statement:

Public Utility District No. 1 of Whatcom County is a steward of water and energy resources providing locally controlled utility services and resource protection for the benefit of the residents, businesses and agricultural community of greater Whatcom.

The PUD installs and manages fiber optic cable for internal purposes for the operation of its SCADA system.

BROADBAND AUTHORITY

Both the Port and the PUD have the statutory authority to offer wholesale telecommunications services in Washington State. The applicable statutes are as follows:

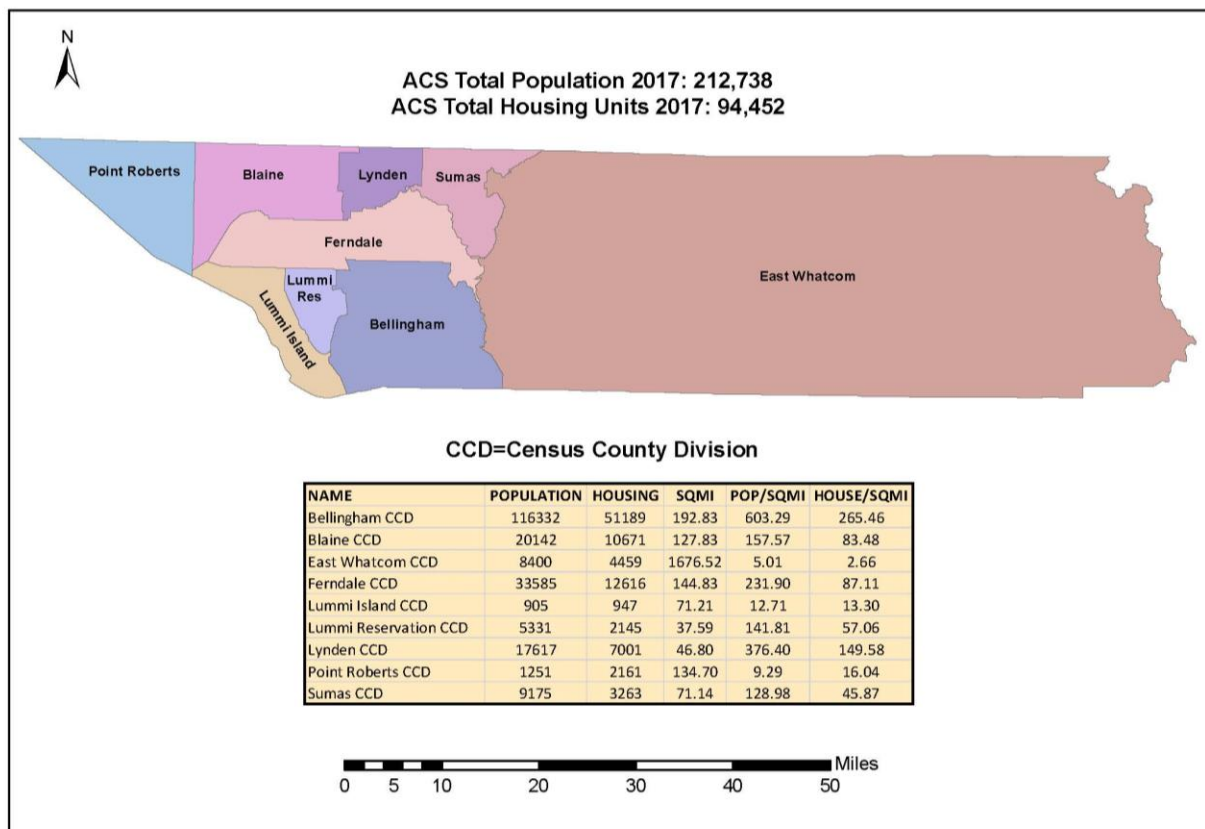
Port telecom statute - RCW 53.08.370

Appendix A provides the complete text of each statute.

WHATCOM COUNTY PROFILE

Whatcom County is approximately 2,154 square miles in size, 62 percent of which is federal land. As of 2017, Whatcom County's population totaled 212,738 with 94,452 total housing units [Figure 2 – Population and Housing Whatcom County]. The median household income in the county is \$56,419. More than 91 percent of households in the county have a computer and nearly 85 percent have a broadband internet subscription.

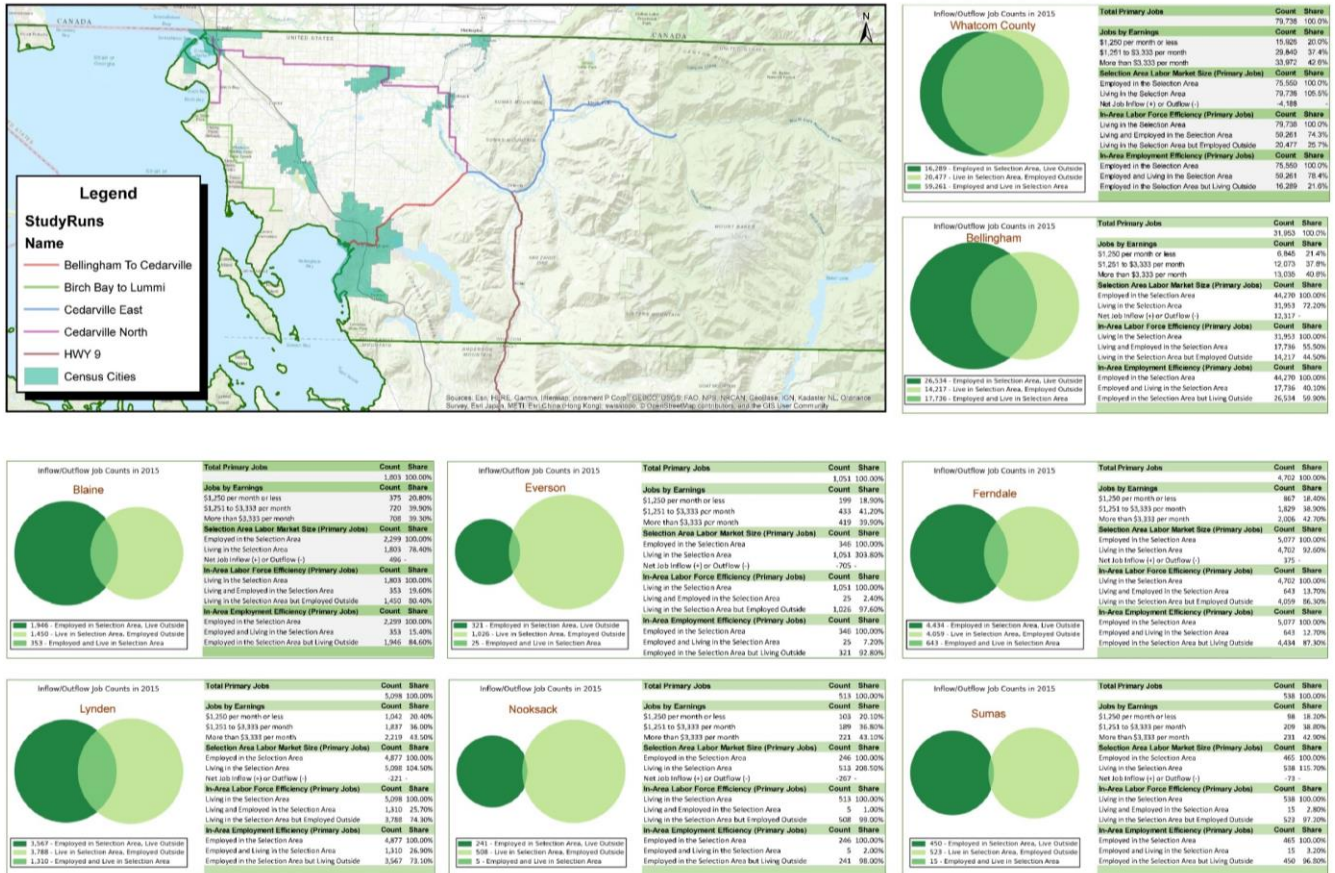
Figure 2: Whatcom County Housing and Population Data



The county is home to diverse industries from healthcare, hospitality, education, and recreation, to manufacturing and high tech industries. The Washington State Employment Security Department recorded total employment counts of 109,428 workers as of December 2018. The county's unemployment rate stands at approximately 5 percent. Figure 3 shows employment dynamics for Whatcom County in key communities. The county overall is balanced in terms of in-

commuting and out-commuting trends. The distance from the Seattle/King County metro area makes Whatcom County, in general, less of a bedroom community than its neighbors in Skagit County and Snohomish County to the south. However, smaller communities in Whatcom County, such as Everson and Nooksack, lack the employment opportunities of larger cities, and have a trend toward greater out commuting than communities such as Blaine and Bellingham.

Figure 3: Employment Data



CHAPTER 2 DEMAND ASSESSMENT

BROADBAND NEEDS IN WHATCOM COUNTY

Population growth in Whatcom County over the last 30 years has been driven by the in-migration of people from outside the county seeking jobs, quality of life, and other amenities available in the area. In the last 20 years, the trend has been to concentrate population in cities and see less growth in rural communities.

Access to affordable broadband services can support job creation and retention in these rural communities. Small businesses require access to reliable internet service to sell products online and/or support a digital presence for marketing and communications purposes. Telecommuting opportunities are also supported by broadband access.

The Port's focus in this study is to better understand the need for broadband infrastructure in Whatcom County's rural communities. These include Nooksack, Kendall, Maple Falls, Glacier, Deming, Lynden, and Blaine along with several smaller communities along the same primary highway routes.

MARKET RESEARCH SUMMARY

The market for broadband services in rural Whatcom County includes small businesses, particularly in the recreational and tourism industries along the Mount Baker Highway, public institutions including school districts and fire districts, and support infrastructure for fixed wireless and cellular network facilities. In remote areas like rural Whatcom County, support infrastructure for fixed wireless services is becoming increasingly important to the delivery of broadband services to communities.

The study area encompasses a range of potential customers for broadband services that include governmental organizations, schools, tribal facilities, and private businesses. These entities constitute the base of last mile service connections that would potentially be served with high speed internet services in the study area. Of these potential customers, a total of 54 are government institutions including fire districts, county offices, port facilities, and other public facilities, a total of 52 are schools, a total of 5 are tribal facilities, and 75 are private businesses.

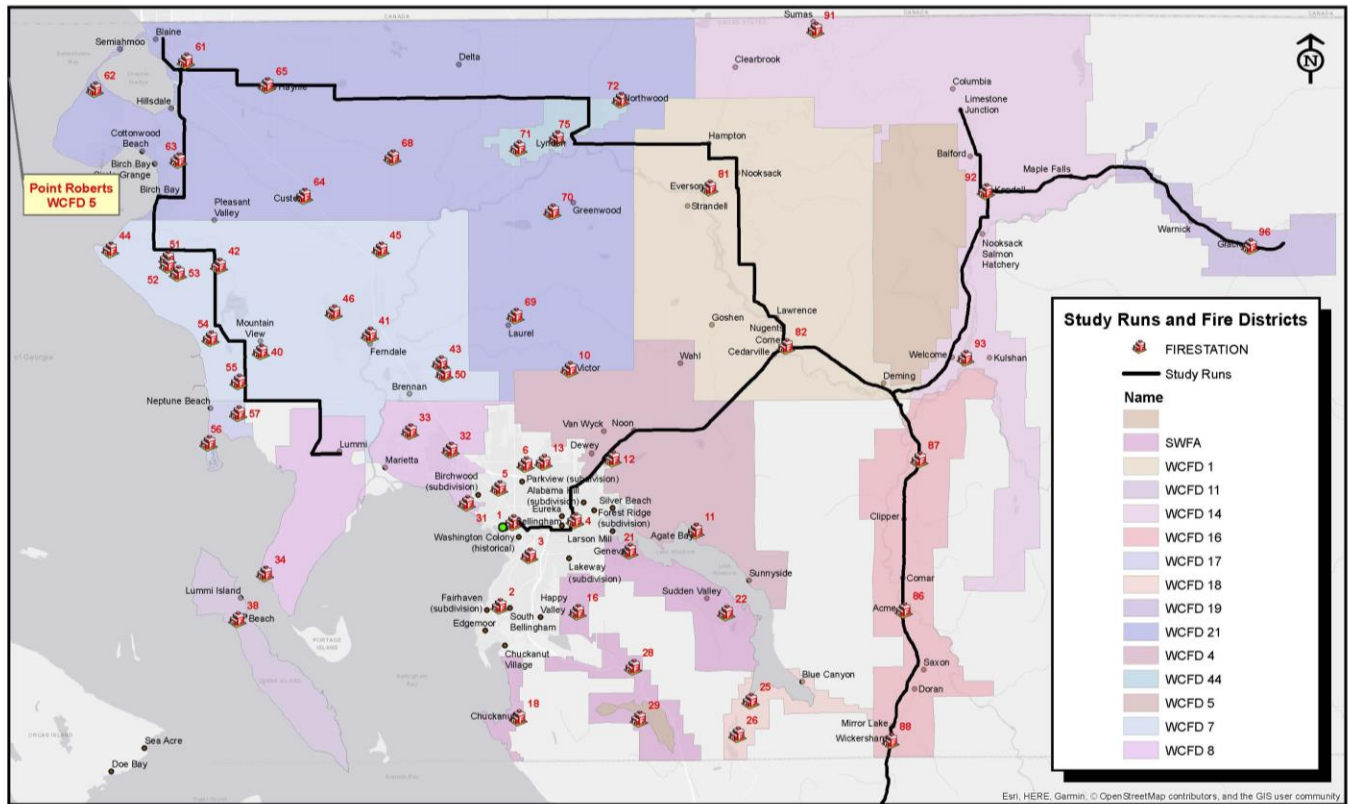
A breakdown is provided in Table 1.

Table 1. Summary of End User Service Connections by Category and Study Run

Study Run	Government	Schools	Tribal	Private	Total
Bellingham to Cedarville	25	25	0	8	58
Birch Bay to Lummi	7	1	1	9	12
Cedarville East	7	8	4	4	23
Cedarville North	17	16	0	45	78
Highway 9 Deming to Sedro-Woolley	4	2	0	9	15
Totals	54	52	5	75	186

There are 14 fire districts in rural Whatcom County.

Figure 4: Proposed Fiber and Fire Districts



There are 7 school districts in Whatcom County.

Figure 5: Proposed Fiber and School Districts

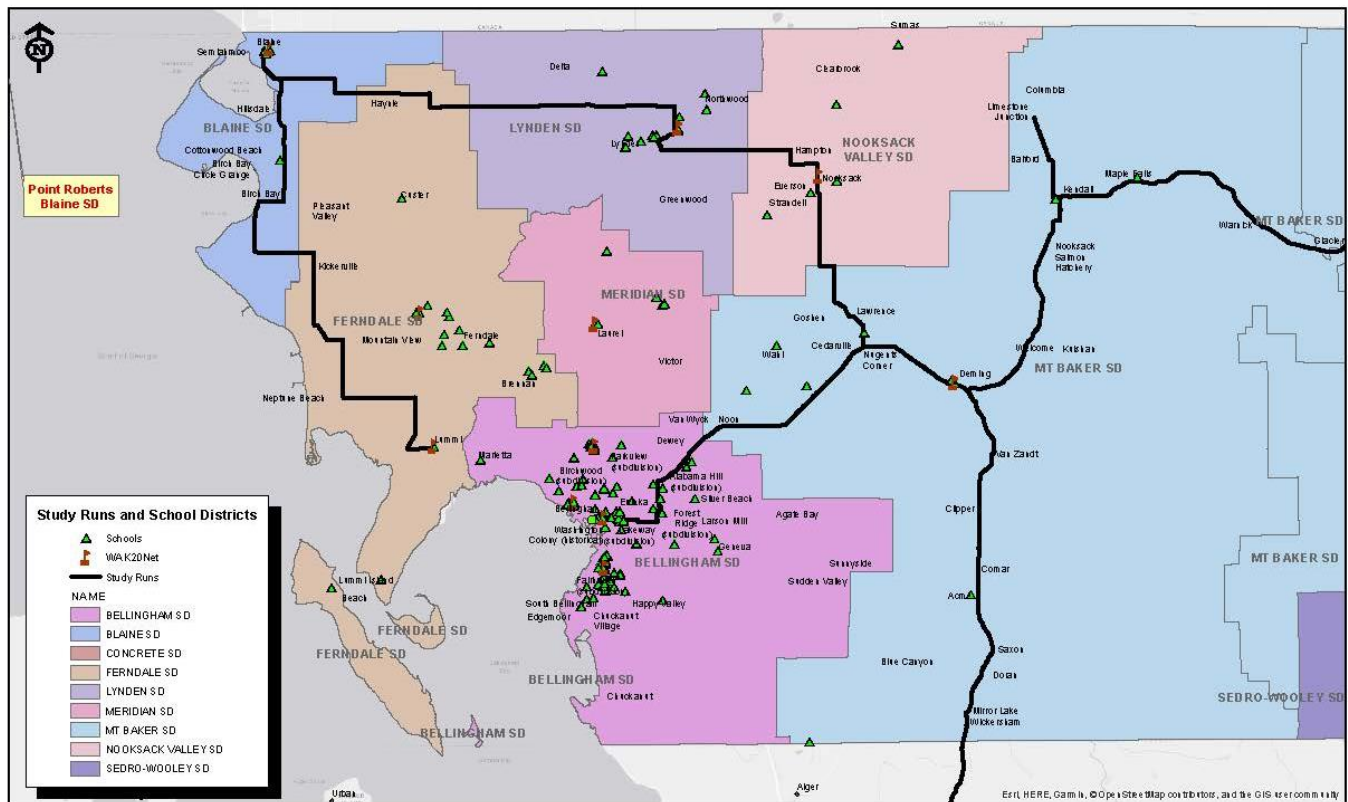


Figure 6 shows the location of FCC cell licenses and registered antennas in the county. These facilities also require connection to fiber optic infrastructure.

Figure 6: FCC Cell Licenses and Antennas



BROADBAND COVERAGE IN WHATCOM COUNTY

An assessment of existing broadband infrastructure was conducted by driving routes through the study area and making physical observations. In addition, provider data was obtained through publicly available sources. Information on publicly owned fiber optic infrastructure was obtained through communications with the City of Bellingham and Whatcom PUD directly.

Several telecommunications companies own and operate broadband infrastructure in Whatcom County. These include Frontier Communications, Wave Broadband, and Zayo. Maps of existing networks in Whatcom County as well as broadband coverage maps by census block are provided in Appendix F.

Several companies provide 4G LTE cell phone coverage in Whatcom County. These include AT&T, Verizon, Sprint, and T Mobile. Appendix G shows cellular 4G LTE coverage in Whatcom County.

In addition to privately held broadband infrastructure, both the City of Bellingham and Whatcom PUD own fiber optic networks in Whatcom County.

The FCC reports more than three broadband providers throughout Whatcom County providing broadband service of at least 25 Mbps download and 3 Mbps upload speeds. Based on stakeholder outreach within the study area, the FCC data may over represent the actual availability of broadband service in many rural areas throughout Whatcom County and does not address the affordability of such options if they do exist.

STAKEHOLDER OUTREACH

A quantitative and qualitative analysis was done on the needs and service available for schools, emergency services, businesses, and to the community. This was achieved through surveys, meetings, and one-on one-conversations.

SCHOOL DISTRICTS OUTREACH

Port staff met with superintendents of school districts and surveyed teachers and faculty members in the Mt. Baker, Lynden, and Kendall School District. Survey results showed inadequate speeds at some of the schools that affected the teacher's ability to plan and teach. A summary of survey results is provided in Table 2 below. Students have challenges completing assignments at home due to a lack of internet and many families do not have access due to affordability or services not being offered. A sample of comments received is provided below.

"Best case scenario-if I plan a lesson with internet, I might lose 10 minutes getting all the students to get on the site because of the slow internet. Worst case scenario-a lesson is

planned with the internet and the internet crashes from having 30 students on it at once.” - 7th grade teach Lynden School District.

“...there are many students impacted by lack of access to internet. This hinders their access to education and impact their grades greatly. If they are unable to do the research which is assigned for homework due to no internet accessibility, this puts the student at a major disadvantage.” - 9-12 grade teacher Lynden School District.

Table 2. School District Outreach Survey Results

Survey Question	Yes	No
1. Does the lack of internet or slow internet have an impact on your job?	99%	1%
2. Have you experienced or know of instances where students have difficulties completing homework or tasks due to no internet or lack of internet?	100%	N/A Gave out paper homework or no homework
3. Do you know of students who do not have access to internet at home due to affordability?	99%	1%
4. Do you know of students/families who do not have access to internet at home due to service not being offered?	68%	19%

FIRST RESPONDERS OUTREACH

Port staff met with Whatcom County fire chiefs and Emergency Management Services coordinators and surveyed fire stations within the study area. Fire stations are generally served with internet connection; however, first responders rely on cell service when responding to calls in rural areas and service is severely lacking in those areas throughout the county. The lack of cell coverage makes it challenging when responding to calls and limits community members access to 911. Areas of greatest need where cell service is lacking include Highway 9, the Mount Baker Highway towards the community of Glacier, and along H Street east of Blaine. Cell towers not connected to fiber add to the limited cell coverage. One fire station has a cell tower just over two blocks away but it is not connected to a fiber network and therefore provides no service.

BUSINESS OUTREACH

The study identified 75 private businesses located within the study area. These include services such as gas stations/mini-marts, financial institutions, automotive shops, and manufacturing businesses. These businesses report internet service that is very expensive with limited options.

One small business owner has an IT business out of his home located just outside of Blaine and pays \$160 a month for satellite internet. Service is not adequate and he often goes into town or directly to his clients to complete the job.

COMMUNITY OUTREACH

Many community members lack reliable and/or affordable internet. Residents report monthly fees ranging between \$50.00 and \$200.00 a month for internet service. Some pay for data package plans for set amounts of downloads/uploads and once used they either have no internet or it becomes very slow to the equivalent of dial up.

A community member who lacks internet commented:

“When others hear you don’t have internet they really don’t believe you. When contacting a business, they will always say to look up on the internet and then you get to wait on hold often up to 30 minutes to talk with an operator and sometimes never. Often you have to use the internet elsewhere.” Community member, Acme.

CHAPTER 3 ROUTE PLANNING

The Port identified rural broadband needs as its priority focus area for this study. The study then focused on two primary highway corridors extending east and north throughout the county. The first of these corridors, denoted as Segment 1, extends a total of 40.6 miles from the City of Bellingham east to Cedarville and then continuing east along the Mount Baker Highway corridor to the community of Glacier [Figure 7]. The second corridor, denoted as Segment 2, totals 64.8 miles and extends east to Cedarville and then north to Lynden, west to Blaine, and south to Lummi [Figure 8]. A third corridor, Segment 3, was also reviewed in this study and extends 21.7 miles south along the Highway 9 corridor from Deming to Sedro-Woolley [Figure 9].

Segments 1 and 2 form a mid-mile backbone through rural Whatcom County, connecting smaller cities and towns with key broadband infrastructure on the I-5 corridor and in the urban core of downtown Bellingham. Segment 3 provides a strategic opportunity to connect fiber optic infrastructure in Whatcom County with fiber optic infrastructure in Skagit County and eventually south to the Westin Exchange in downtown Seattle.

Complete route maps for each segment are provided in Appendix C.

Figure 7. Segment 1 – Bellingham to Cedarville/East

Segment 1 Construction Costs (40.6 Miles)

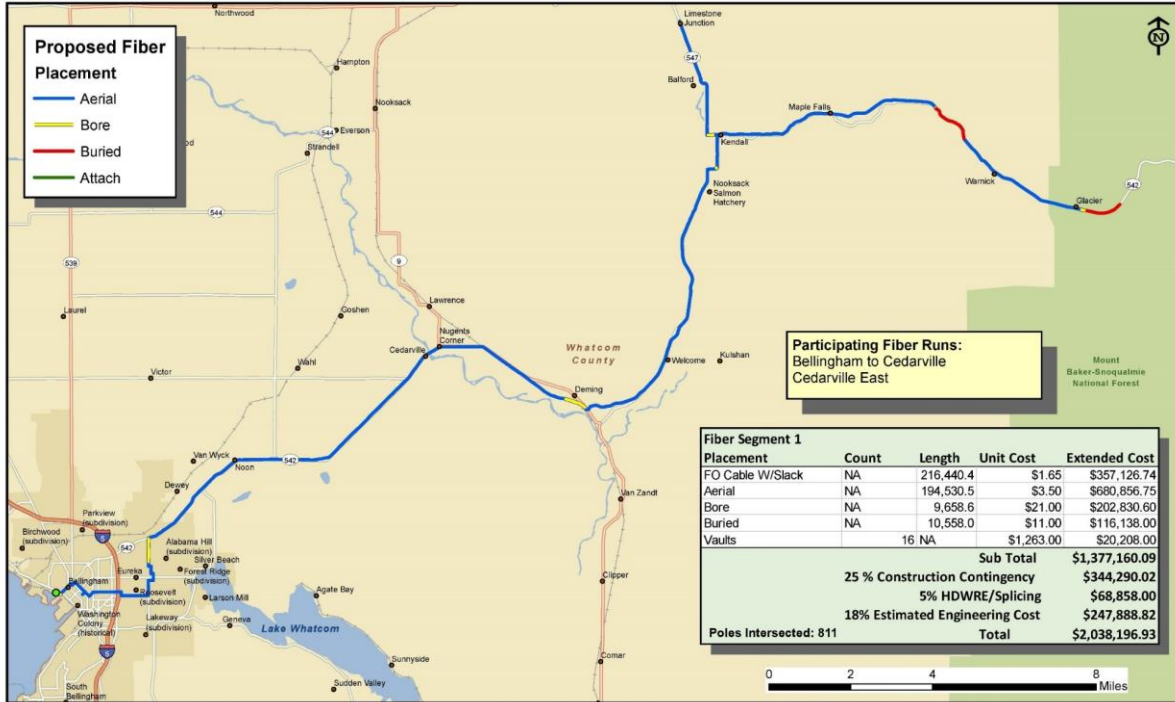


Figure 8. Segment 2 – Bellingham to Cedarville/North

Segment 2 Construction Costs (64.8 Miles)

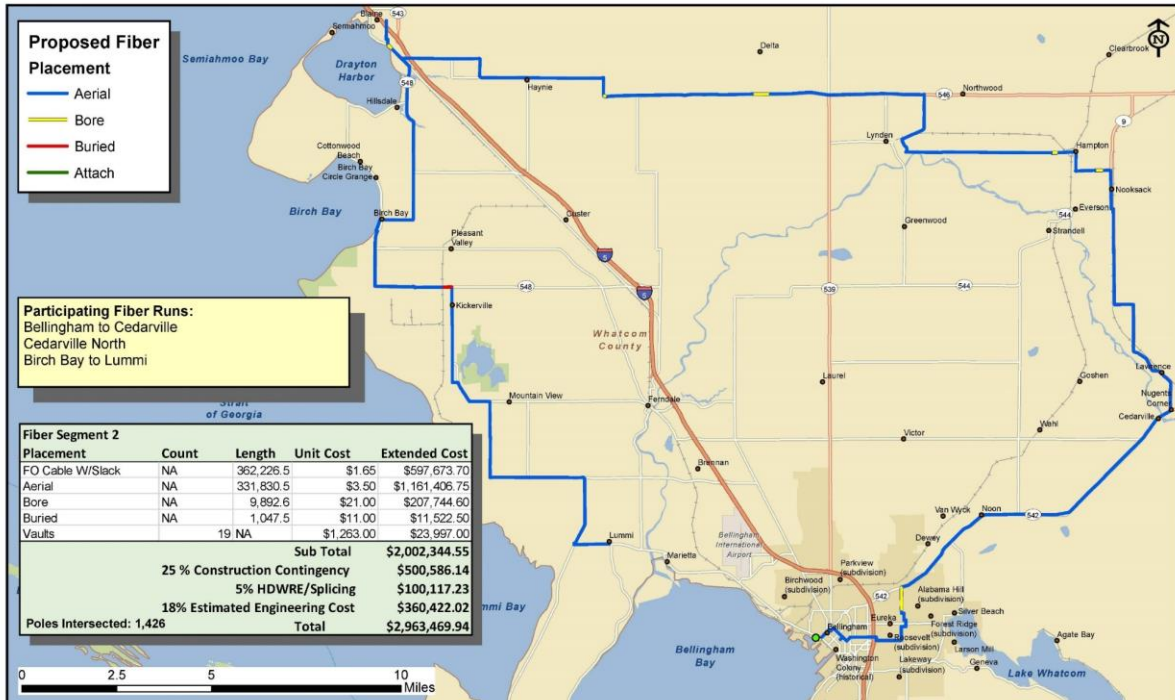
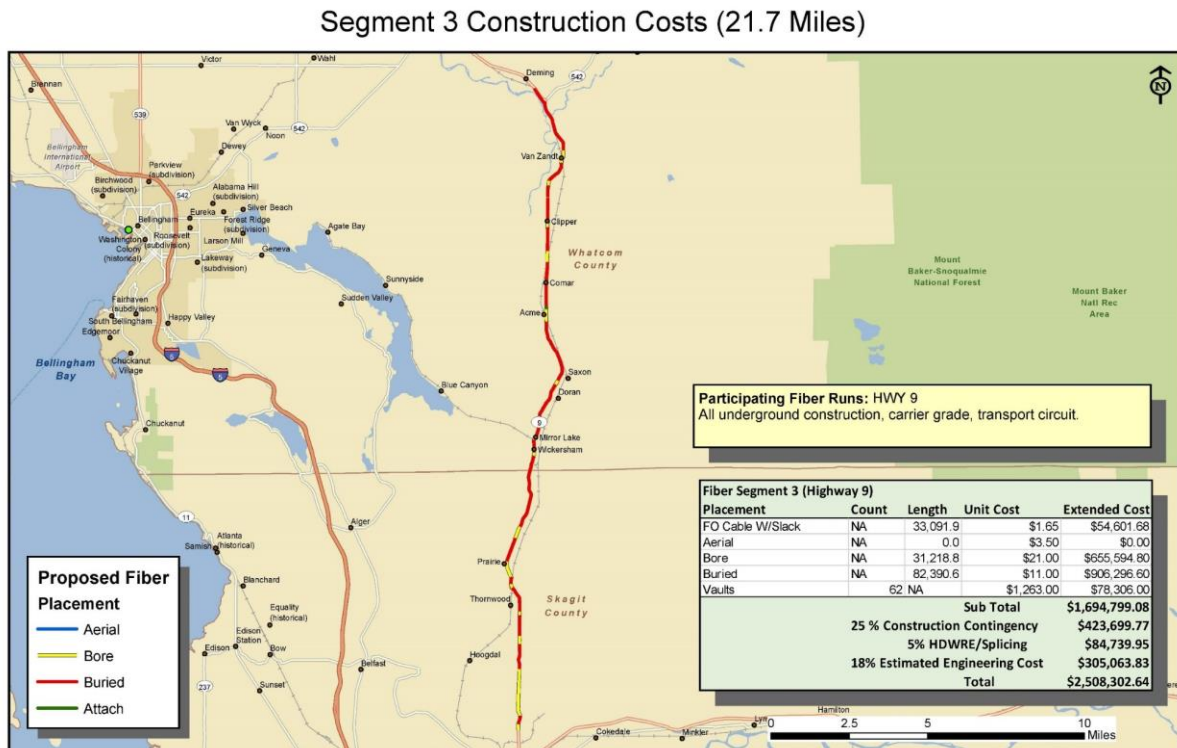


Figure 9. Segment 3 – Highway 9



CHAPTER 4 REGULATORY FRAMEWORK

The proposed routes through Whatcom County will require a variety of entitlements to construct. These include federal, state, and local land use and environmental permits, private utility permits, franchise agreements, and private easements with landowners. The following entitlements apply to the proposed routes.

LOCAL REGULATIONS

COUNTY RIGHT-OF-WAY AND ROAD PERMITTING

Construction of fiber optic infrastructure within Whatcom County right-of-way (ROW) will require a ROW encroachment permit during construction. The permit will require a traffic control plan and will dictate what and how fiber optic cable and related appurtenances such as pole anchor points will need to be constructed and placed within ROW.

FRANCHISE AGREEMENTS

Franchise agreements for use of ROW may be required by Whatcom County and the individual cities located within the county where fiber infrastructure is to be placed. Franchise agreements will dictate how utility relocations are conducted in conjunction with road projects that may require moving power poles and other infrastructure located within ROW. The franchise agreement determines who is responsible for conducting utility moves and who bears the cost for such moves. In addition, jurisdictions may impose franchise fees on utility owners. A typical fiber optic franchise fee for retail internet service providers is equivalent to six percent of gross revenues.

CRITICAL AREAS ORDINANCES

Whatcom County has a critical areas ordinance that governs work near wetlands and other sensitive aquatic areas. Any fiber optic installation that requires earth disturbance in or near a wetland or stream, including underground stream crossings, will require a critical areas review by Whatcom County. Critical areas reviews are typically triggered with the application for a building or grading permit. A professional wetland consultant can identify these features within the proposed fiber optic route and recommend project alternatives to avoid or minimize impacts to aquatic features.

STATE REGULATIONS

STATE ENVIRONMENTAL POLICY ACT (SEPA)

Projects and plans proposed by the Port will be subject to SEPA analysis. The Port is authorized by state law to act as its own lead agency. This means that whenever the Port requests a land use permit (such as a shoreline permit), it will be required to fulfill the environmental documentation requirements of SEPA. The Port is authorized to prepare and submit to Ecology either an environmental checklist or an environmental impact statement, depending upon the complexity of the project. The preparation of SEPA documentation is required for a plan or a permit application.

WASHINGTON DEPARTMENT OF ECOLOGY 401 WATER QUALITY CERTIFICATION

The 401 water quality certification for in-water projects is typically issued in conjunction with the United States Army Corps of Engineers (USACE) permit process described below. Upland issues associated with 401 water quality certification are handled directly by Ecology on an individual basis.

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW) HYDRAULIC PROJECT APPROVAL

Any forms of work that use, divert, obstruct, or change the natural flow or bed of any freshwater or saltwater of the state require a hydraulic project approval (HPA) from WDFW. Activities requiring an HPA include the placement of utility lines below the ordinary high water mark (OHWM) in freshwater and waterward of the MHHW line in saltwater. (See Chapter 220-110 WAC.)

A Joint Aquatic Resource Permit Application (JARPA) will be required for in-water utility projects. Drawings of the proposed project are submitted along with the JARPA form to WDFW for review and permit issuance.

WSDOT RIGHT-OF-WAY

As with county ROW, any installation located within ROW of a state highway or any crossing of a state highway will require authorization from the Washington State Department of Transportation (WSDOT). WSDOT will issue a permit or a franchise agreement for the construction. Permits are issued for lateral crossings and longitudinal installations no longer than 300 feet. Franchise agreements are issued for longitudinal installations longer than 300 feet.

FEDERAL REGULATIONS

UNITED STATES ARMY CORPS OF ENGINEERS

Any work that causes the discharge of fill material to a wetland or other water of the US requires a Section 404 permit from the USACE. Utility projects with minimal and temporary impacts to waters of the US qualify for a Nationwide 12 permit. This is an abbreviated permit process with no notice procedures and programmatic approval provided the project complies with USACE requirements to restore the site to preexisting conditions post construction.

If the project affects waters that support salmon species listed under the Endangered Species Act (ESA) or other listed species, the USACE must consult with the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the United States Fish and Wildlife Services (USFWS) prior to issuing a permit. In this case, the permit applicant will also be required to prepare a biological evaluation (BE) as part of the permitting documentation to USACE.

PRIVATE AUTHORIZATIONS

POLE ATTACHMENTS

Pole attachment agreements are required by Puget Sound Energy, Frontier Communications, and the City of Blaine for any communications infrastructure attached to a privately-owned utility pole. PSE is the majority owner of all poles along the planned routes. A limited number of city-owned poles exist along the route in the City of Blaine.

PSE requires a Pole Attachment Agreement to cover the general terms of all pole attachments on the network. The agreement will prescribe yearly rental fees for each pole. These fees can range from \$18 to \$25 per pole per year. The agreement will also specify the terms of relocation costs, should a pole need to be replaced or moved, specifications for attachment, and terms for the performance of work. Each new pole attachment must also be reviewed by PSE for construction specifications and make ready work. Any make ready work required to accommodate the attachment will be paid for by the permittee.

RAIL CROSSINGS

Any work across or along an active railway corridor will require a License for Communication Line, Television Cable, and/or Fiber Optic Line Across or Along Railway Property. The license will prescribe insurance requirements for working in railway property, along with specifications for the construction and maintenance of infrastructure within railway property.

EASEMENTS

Linear utility installations such as fiber optic cable often require the acquisition of privately held easements. Easements will be required for any underground installation of fiber optic cable that occurs outside public ROW. In addition, anchor points for pole down guys, vaults, telecommunications huts, and other network appurtenances may need to be located on private property and may require privately held easements to locate.

CHAPTER 5 BUSINESS MODEL

BUSINESS MODEL CASE STUDIES

The Port can consider several approaches to providing broadband infrastructure in Whatcom County.

DARK FIBER MID MILE FOCUS

In this scenario, the Port builds mid mile fiber optic infrastructure and leases it to private telecommunications providers. The provider builds to end user premises from the Port-owned backbone. The mid-mile infrastructure can be used by providers to gain backhaul services and provide redundancy to existing networks. The infrastructure can be used to supplement existing privately held networks, allowing providers to focus investment on last mile connections and possibly expand into areas that would not have been financially feasible to enter previously.

This model supports provider efforts to deploy additional resources in communities by supplementing existing networks and focusing resources on areas in the greatest need of additional infrastructure. The disadvantage of this model is that it perpetuates existing barriers to entry for providers and limits competition in communities. This model does not create an open access environment. Because a provider controls access to the end user customer, consumers must pay an additional installation fee if they wish to switch to a different provider. In rural areas, the infrastructure required to access the premises will often make it cost prohibitive to offer consumer choice in providers.

Case Study: The Commonwealth of Kentucky is currently investing in a statewide mid-mile network designed to accelerate last-mile investment in communities.

DARK FIBER OPEN ACCESS FOCUS

In this model, the Port owns the fiber optic system to a demarcation point on every premises. Dark fiber is leased on a non-discriminatory basis to providers offering services on a competitive platform. This model creates a true open access environment. Providers can lease fiber to customers and compete for services. An open access colocation facility is required to allow providers to stage electronics on the network. The Port owns the fiber optic cable, vaults, and splice cases on the network, along with the colocation facility. Fiber is terminated in each premises such that a provider can initiate new service to a customer by making the connection at the colocation facility without need for a new installation charge. The service provider owns the electronics housed at the colocation facility.

This model removes barriers to entry for providers in Whatcom County and makes it possible for more providers to compete for business on a competitive basis. The introduction of additional providers can help diversify the telecom economy in Whatcom County and hedge against consolidation in the industry. In eastern Washington, the Port of Whitman owns and operates an open access dark fiber system that is currently used by 16 service providers and licensed exchange carriers providing service in the area.

Case Study: The Port of Whitman in Washington State has built more than 300 miles of fiber between Spokane, Washington and Lewiston, Idaho.

LIT FIBER OPEN ACCESS FOCUS

A final model requires the entity to light fiber on the system. In this model, the entity creates a lit fiber optic environment and sells access on the system to providers. Ports do not have legislative authority to provide lit services. This model requires that the entity owns all electronics necessary to light the network. This creates more risk and capital outlay for the entity.

Case Study: NoaNet, a consortium of PUDs in Washington State is an example of a public entity providing a lit network with bandwidth sold to telecom providers on a wholesale basis.

Types of internet connectivity

4G: The term for 4th generation wireless telecommunications standards usually with network speeds greater than 1 Mbps.

5G: The term for emerging 5th generation wireless telecommunications standards usually associated with network speeds of up to 1 Gbps or more.

WiFi (Wireless Fidelity): A technology that uses radio transmissions to enable electronic devices to connect to a wireless local area network (LAN).

DSL (Digital Subscriber Line): A form of technology that utilizes a two-wire copper telephone line to allow users to simultaneously connect to and operate the Internet and the telephone network without disrupting either connection.

PREFERRED BUSINESS MODEL

This study recommends the Port pursue a dark fiber open access business model. Public ports are well equipped to build and manage dark fiber infrastructure. Provisioning the physical infrastructure required to form the foundation of an economy is the core work of port districts. Where airports and marine terminals provide essential infrastructure for the movement of cargo and freight, fiber optic cable is essential to the movement of data in a digital economy.

This model allows the port to focus on its core competency, management of physical infrastructure, and leaves the provisioning of electronics and other required elements of a telecommunications network to the private sector, which is better suited to driving innovation in response to market demand.

OPERATIONAL MANAGEMENT MODELS

The proposed infrastructure can be operated with various management models. The Port may elect to develop the staffing and equipment resources in-house to manage the network or may elect to contract for services. Some combination of these approaches would also work. A summary of required roles and responsibilities is provided in Table 3 below with recommended approach.

Table 3. Summary of Operational Roles

Role	Description	Recommended Approach
Business Development and Network Planning	Work with providers and stakeholders in the area to define network expansion needs and direct long-term capital investment.	Develop in-house expertise and manage internal to the Port.
Outside Plant Design	Engineering design for network	Contract for services with qualified design firm.
Network Construction	Construction of fiber optic backbone segments and line extensions	Handle construction project management in-house and contract for construction through public works bidding process.
Installation/termination of fiber at premises	Construction of service installations to the premises in coordination with service provider.	Can be addressed through small works contracting or with trained in-house staff.
Non-recurring charge estimates	Develop cost estimate for service installations.	Contract for services with a qualified design firm.
Maintenance and Repair	Perform needed maintenance and repair on infrastructure.	Trained staff technician and/or one or more on-call contracts with qualified contractor(s).
Emergency Restoration Services	Perform emergency response in the event of an outage.	Contract for services with a qualified Network Operating Center.

Locates	Provided one-call locate services	Contract for services.
Network Operating Center	Provided 24/7 network operating center services including outage reporting.	Contract for services.
Network mapping and splice cut sheet management	As-built mapping and record keeping for splice points and customer circuits.	Contractor as-builts required with all construction. Contract for network mapping and cut sheet management.
Customer Billing	Monthly lease billings to providers.	Contract for services or integrate into in-house accounts receivable system.

CHAPTER 6 FINANCIAL ANALYSIS

CONSTRUCTION COST ESTIMATE

Appendix D provides a detailed financial analysis of the overall project including a breakdown of the construction costs for Segments 1 and 2 and the Segment 3 Highway 9 connector. A summary of those costs by segment is provided in Table 4 below. If Segments 1 and 2 were both constructed, the total cost estimate would be \$4,328,896.22. If only Segment 1 was constructed, the total cost would be \$2,038,196.93. If only Segment 2 was constructed, the total cost to construct would be \$2,963,469.94. For purposes of estimating the cost to build both Segments 1 and 2, fifty percent (50%) of the cost of the run from Bellingham to Cedarville was assigned to each segment.

The Segment 3 Highway 9 connector would add an additional \$2,508,302.64 to the project, for a total cost of \$6,837,198.86 should the Port elect to build all three segments.

Table 4. Construction Cost by Segment

Segment	Miles of Fiber	Individual Cost Estimate	Combined Cost Estimate
Segment 1 - Bellingham to Cedarville/East	40.6	\$2,038,196.93	\$1,701,811.60
Segment 2 - Bellingham to Cedarville/North	64.8	\$2,963,469.94	\$2,627,084.61
Total Construction Cost Segments 1 and 2		N/A	\$4,328,896.22*
Segment 3 - Highway 9 Connector	21.7	\$2,508,302.64	\$2,508,302.64
Total Construction Cost w/Highway 9			\$6,837,198.86

*Segment 1 and 2 combined cost estimate allocates 50% of the shared construction cost of the run from Bellingham to Cedarville to each segment.

PROPOSED FEE STRUCTURE

The fiber will be priced on a unit basis. Different fiber designs will be priced separately. A retail provider that is leasing fiber from the Port that is used as a long haul will be charged differently than a fiber to the home model where a cost per month segment is charged. The following are examples that are used in the financial modeling for the communities and routes in this feasibility study.

End mile business applications .02 cents per foot, one mile minimum. This would be an A to Z location monthly charge for fiber to the premise.

An end mile segment charge. This would be a monthly charge for an A to Z premise charge. This is used when the A location is not in an equitable placement for all customers to be treated fairly in a community. A charge of \$125.00 to \$200.00 per month would be charged in place of the .02 cents per foot circuit charge.

A premise hooked up per month charge. In the fiber to the premise designs a \$20.00 to \$25.00 per month charge is assessed for each premise that a retail provider has a customer on in a community.

A per mile charge is commonly used for mid mile and long haul fiber applications. A monthly charge between \$15.00 to \$25.00 per month per strand is a normal rate in the pacific NW. Agreements that are based on an Irrevocable Right of Use (IRU) are usually done for long term usage and can involve a discount for the value of money if the agreement terms are paid at the time of contract for the length of term. Example: 100 miles of fiber is leased for \$20.00 per month per mile. One strand would lease for \$2,000.00 per month. If the term of the IRU was 10 years the value of the whole contract would be \$240,000. The customer would request a time value of money cash discount if the contract was paid up front.

REVENUES AND EXPENSE PROJECTION

Table 5 includes annual revenue and expense estimates for the network.

Table 5. Revenue and Expense Projection

----- Annual Revenue Projections -----				Annual Operating Expense
	Mid Mile	Last Mile	Total	
Segment 1	\$47,606.36	\$73,872.00	\$121,478.36	\$20,964.22
Segment 2	\$58,426.88	\$134,976.00	\$193,402.88	\$36,022.99
Segment 3	\$13,008.00	\$13,680.00	\$26,688.00	\$3,873.07

Revenue estimates are based on leasing both mid mile and last mile fiber optic cable. Mid mile revenues are derived from leasing fiber optic strands on a per-mile basis over the length of the run at a rate of \$25 per strand per mile per month. The study assumes the following mid mile leases: two competitive licensed exchange carriers (CLEC) and two internet service providers will lease fiber on Segment 1; one CLEC and two ISPs will lease fiber on Segment 2; and one CLEC and one ISP will lease fiber on Segment 3. These assumptions are based on lease modelling from similar sized communities in the Port of Whitman's service area.

Last mile revenues are derived from leasing fiber optic strands from a centrally located colocation facility in each community to the end user premises at a rate of \$205 per circuit per month, where each circuit consists of 2 strands of fiber optic cable from the colocation facility to the premises. The number and type of potential end user service connects is included in Table 1 above. The study assumes that the network achieves 40% penetration of potential service connections at full build out. Revenues are stepped in over the first five years of service until the full 40% customer penetration rate is reached. See Appendix D for a full breakdown of revenue projections.

Operating expenses on the network are assumed to include annual pole attachment fees and on-call locate costs. Flow through expenses that are balanced by a revenue stream are not included in this estimate. These include NOC charges for colocation facility monitoring and power requirements. These expenses will be off-set by usage fees for the colocation facility. Staffing costs are also not included in this assessment. True staffing costs for the network will vary greatly with the chosen operational management model and compensation plans of the contributing organization.

ROI ANALYSIS

Table 6 summarizes return on investment projections 10 and 20 years into operation of the proposed network. Segments 1 and 2 combined realize a positive return approximately 16 years after construction. If the initial capital cost can be off-set with \$2,000,000 in grant funding, the projected return is realized in Year 9.

Segment 3, the Highway 9 connecting section does not realize a positive return in the study period of 20 years. The value of this segment, however, is not in its ability to cash flow the infrastructure cost, but is in the opportunity to connect the proposed network in Whatcom County with the network currently under construction by the Port of Skagit and Skagit PUD in Skagit County. Connecting these two networks would provide the opportunity for more providers to do business regionally across a common business platform.

Table 6. Return on Investment Projections

		Year 10		Year 20	
	Estimated Capital Investment	Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI
Segment 1	\$ (1,921,399.43)	\$ 121,478.36	-20.19%	\$ 121,478.36	1.15%
Segment 2	\$ (2,841,891.07)	\$ 193,402.88	-8.80%	\$ 193,402.88	1.80%
Segments 1 and 2 Combined	\$ (4,090,225.04)	\$ 314,881.24	-7.13%	\$ 314,881.24	2.98%
Segment 3 Hwy 9	\$ (2,309,065.51)	\$ 26,688.00	-27.78%	\$ 26,688.00	-11.30%

PROJECT REPORTING AND REVIEW

KEY DATA

Key data used to track network performance over time includes the following:

- Return on investment will be tracked for the initial construction and each service connection.
- Private sector jobs supported in maintaining and operating the network.

- Number of providers on the network.
- Service coverage and available internet service speeds.

APPENDICES

APPENDIX A. BROADBAND STATUTES

APPENDIX B. SCHOOL DISTRICT OUTREACH SURVEY

APPENDIX C. DETAIL ROUTE MAPS

APPENDIX D. DETAIL FINANCIAL ANALYSIS

APPENDIX E. MASTER OPTICAL FIBER AND FACILITIES LEASE

APPENDIX F. EXISTING NETWORKS AND BROADBAND COVERAGE BY CENSUS BLOCK

APPENDIX G. EXISTING 4G LTE NETWORKS IN WHATCOM

APPENDIX A

BROADBAND STATUTES

PORT TELECOMMUNICATIONS STATUTE

RCW [53.08.370](#)

Telecommunications facilities—Construct, purchase, acquire, etc.—Purposes—Limitations—Eminent domain.

(1) A port district in existence on June 8, 2000, may construct, purchase, acquire, develop, finance, lease, license, handle, provide, add to, contract for, interconnect, alter, improve, repair, operate, and maintain any telecommunications facilities within or without the district's limits for the following purposes:

(a) For the district's own use; and

(b) For the provision of wholesale telecommunications services within the district's limits. Nothing in this subsection shall be construed to authorize port districts to provide telecommunications services to end users.

(2) A port district providing wholesale telecommunications services under this section shall ensure that rates, terms, and conditions for such services are not unduly or unreasonably discriminatory or preferential. Rates, terms, and conditions are discriminatory or preferential when a port district offering such rates, terms, and conditions to an entity for wholesale telecommunications services does not offer substantially similar rates, terms, and conditions to all other entities seeking substantially similar services.

(3) When a port district establishes a separate utility function for the provision of wholesale telecommunications services, it shall account for any and all revenues and expenditures related to its wholesale telecommunications facilities and services separately from revenues and expenditures related to its internal telecommunications operations. Any revenues received from the provision of wholesale telecommunications services must be dedicated to the utility function that includes the provision of wholesale telecommunications services for costs incurred to build and maintain the telecommunications facilities until such time as any bonds or other financing instruments executed after June 8, 2000, and used to finance the telecommunications facilities are discharged or retired.

(4) When a port district establishes a separate utility function for the provision of wholesale telecommunications services, all telecommunications services rendered by the separate

function to the district for the district's internal telecommunications needs shall be charged at its true and full value. A port district may not charge its non-telecommunications operations rates that are preferential or discriminatory compared to those it charges entities purchasing wholesale telecommunications services.

(5) A port district shall not exercise powers of eminent domain to acquire telecommunications facilities or contractual rights held by any other person or entity to telecommunications facilities.

(6) Except as otherwise specifically provided, a port district may exercise any of the powers granted to it under this title and other applicable laws in carrying out the powers authorized under this section. Nothing in chapter 81, Laws of 2000 limits any existing authority of a port district under this title.

(7) A port district that has not exercised the authorities provided in this section prior to June 7, 2018, must develop a business case plan before exercising the authorities provided in this section. The port district must procure an independent qualified consultant to review the business case plan, including the use of public funds in the provision of wholesale telecommunications services. Any recommendations or adjustments to the business case plan made during third-party review must be received and either rejected or accepted by the port commission in an open meeting.

(8) A port district with telecommunications facilities for use in the provision of wholesale telecommunications in accordance with subsection (1)(b) of this section may be subject to local leasehold excise taxes under RCW [82.29A.040](#).

[[2018 c 169 § 2](#); [2000 c 81 § 7](#).]

PUD TELECOM STATUTE

RCW [54.16.330](#)

Telecommunications facilities - Purposes - Limitations - Provision of wholesale telecommunications services - Eminent domain.

(1) A public utility district in existence on June 8, 2000, may construct, purchase, acquire, develop, finance, lease, license, handle, provide, add to, contract for, interconnect, alter, improve, repair, operate, and maintain any telecommunications facilities within or without the district's limits for the following purposes:

(a) For the district's internal telecommunications needs; and

(b) For the provision of wholesale telecommunications services within the district and by contract with another public utility district.

Nothing in this subsection shall be construed to authorize public utility districts to provide telecommunications services to end users.

(2) A public utility district providing wholesale telecommunications services shall ensure that rates, terms, and conditions for such services are not unduly or unreasonably discriminatory or preferential. Rates, terms, and conditions are discriminatory or preferential when a public utility district offering rates, terms, and conditions to an entity for wholesale telecommunications services does not offer substantially similar rates, terms, and conditions to all other entities seeking substantially similar services.

(3) A public utility district providing wholesale telecommunications services shall not be required to but may establish a separate utility system or function for such purpose. In either case, a public utility district providing wholesale telecommunications services shall separately account for any revenues and expenditures for those services according to standards established by the state auditor pursuant to its authority in chapter [43.09](#) RCW and consistent with the provisions of this title. Any revenues received from the provision of wholesale telecommunications services must be dedicated to costs incurred to build and maintain any telecommunications facilities constructed, installed, or acquired to provide such services, including payments on debt issued to finance such services, until such time as any bonds or other financing instruments executed after June 8, 2000, and used to finance such telecommunications facilities are discharged or retired.

(4) When a public utility district provides wholesale telecommunications services, all telecommunications services rendered to the district for the district's internal telecommunications needs shall be allocated or charged at its true and full value. A public utility district may not charge its non-telecommunications operations rates that are preferential or discriminatory compared to those it charges entities purchasing wholesale telecommunications services.

(5) A public utility district shall not exercise powers of eminent domain to acquire telecommunications facilities or contractual rights held by any other person or entity to telecommunications facilities.

(6) Except as otherwise specifically provided, a public utility district may exercise any of the powers granted to it under this title and other applicable laws in carrying out the powers authorized under this section. Nothing in chapter 81, Laws of 2000 limits any existing authority of a public utility district under this title.

APPENDIX B
SCHOOL DISTRICT OUTREACH SURVEY



This questionnaire will contribute to our rural broadband feasibility study needs/gaps assessment and the construction of an open access dark fiber broadband system in our rural communities. The feasibility study will enable the Port of Bellingham to apply for grants to begin construction of network. Please return responses by February 1, 2019 to ginas@portofbelllingham.com

Rural Broadband Needs/ Gaps Survey Questions

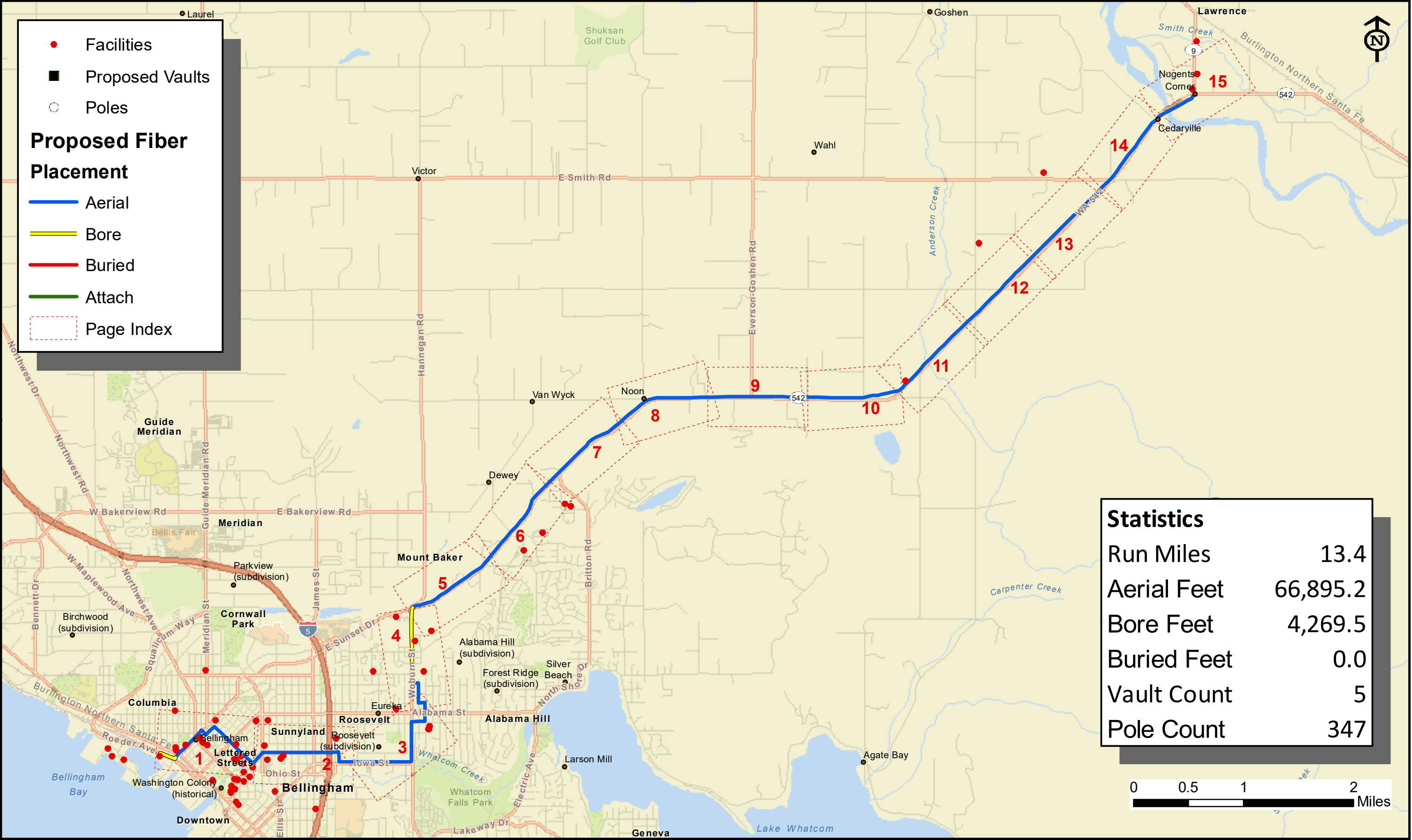
School District _____ What grade do you teach? _____

1. How important is fast reliable internet to the education of students?
2. Does lack of internet or slow internet have an impact on your job? If yes, how?
3. Have you experienced or know of instances where students have difficulties completing homework or tasks due to no internet or slow internet at home?
4. Do you know of student who do not have access to internet at home due to affordability?
5. Do you know of students/families who do not have access to internet at home due to service not being offered?
6. In your opinion how would affordable reliable internet benefit the community, businesses, faculty and students/families?
7. Do you have slow or no internet at your home?
8. If you do have internet who is your provider?
9. Other comments, thoughts, stories?

Thank you for taking the time to fill out this questionnaire and your commitment to the community. For questions please contact:

Gina Stark
Port of Bellingham
Economic Development Project Manager
ginas@portofbelllingham.com or 360-715-5117

Bellingham to Cedarville Map Book Page Index





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Bellingham to Cedarville

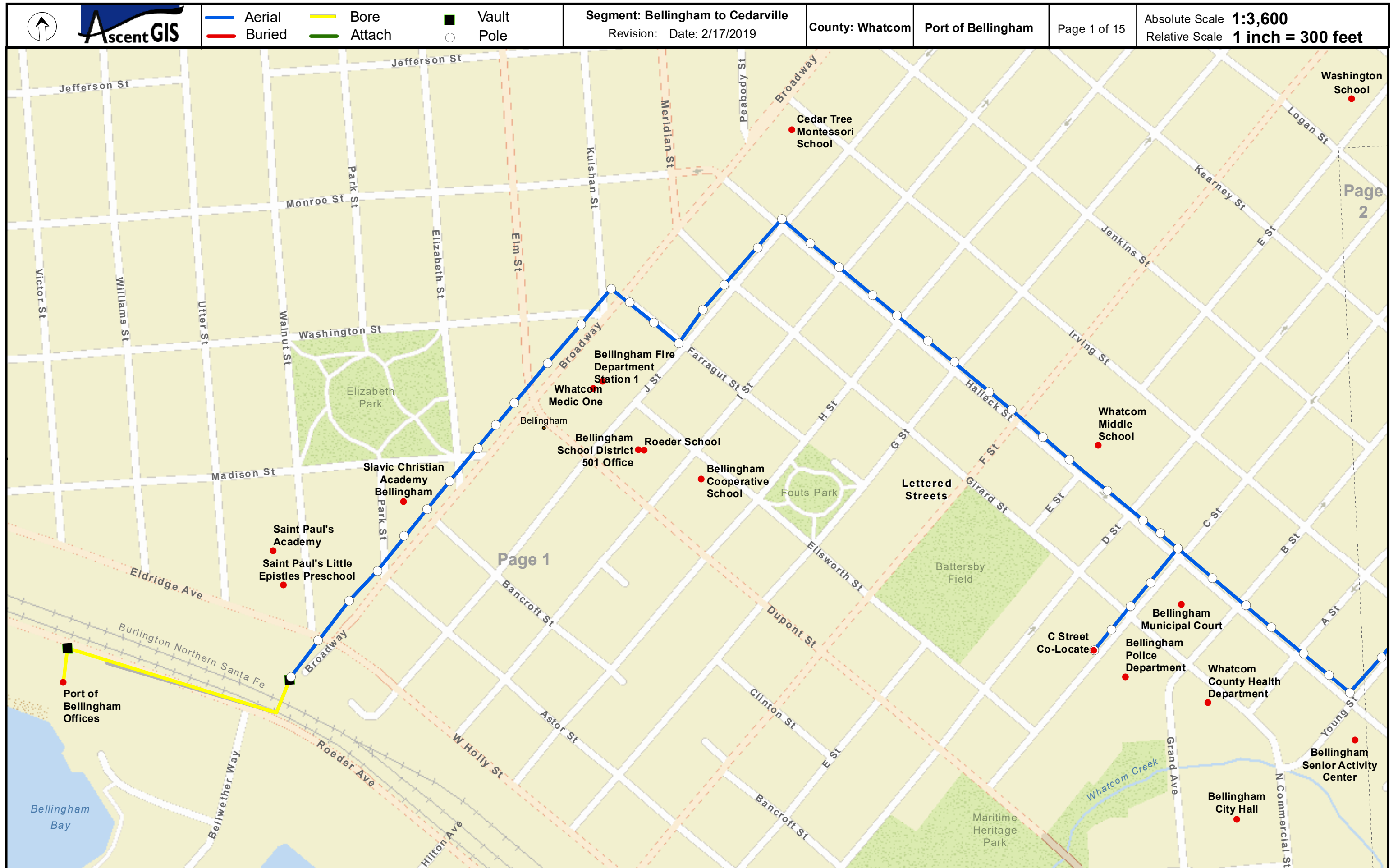
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Port of Bellingham

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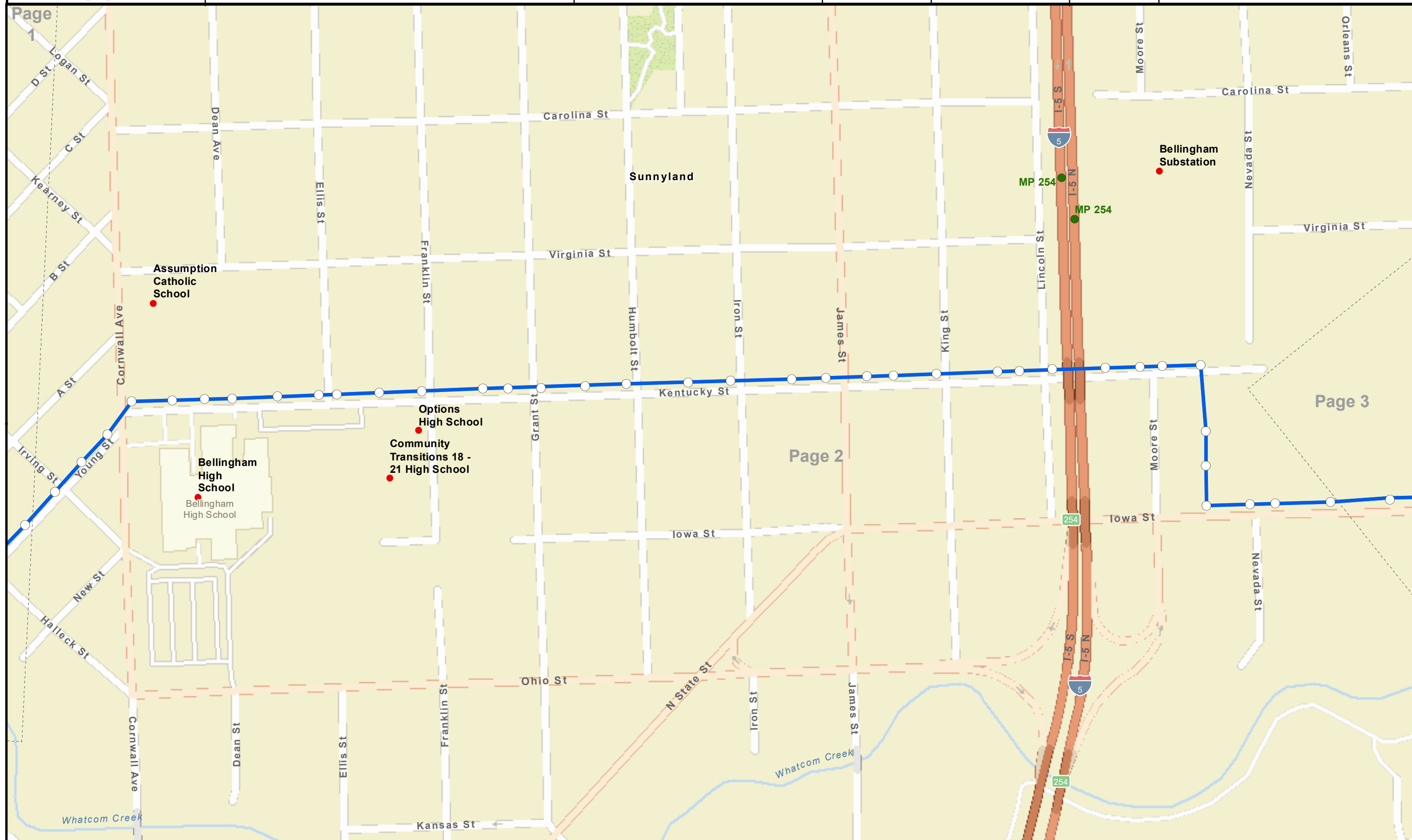
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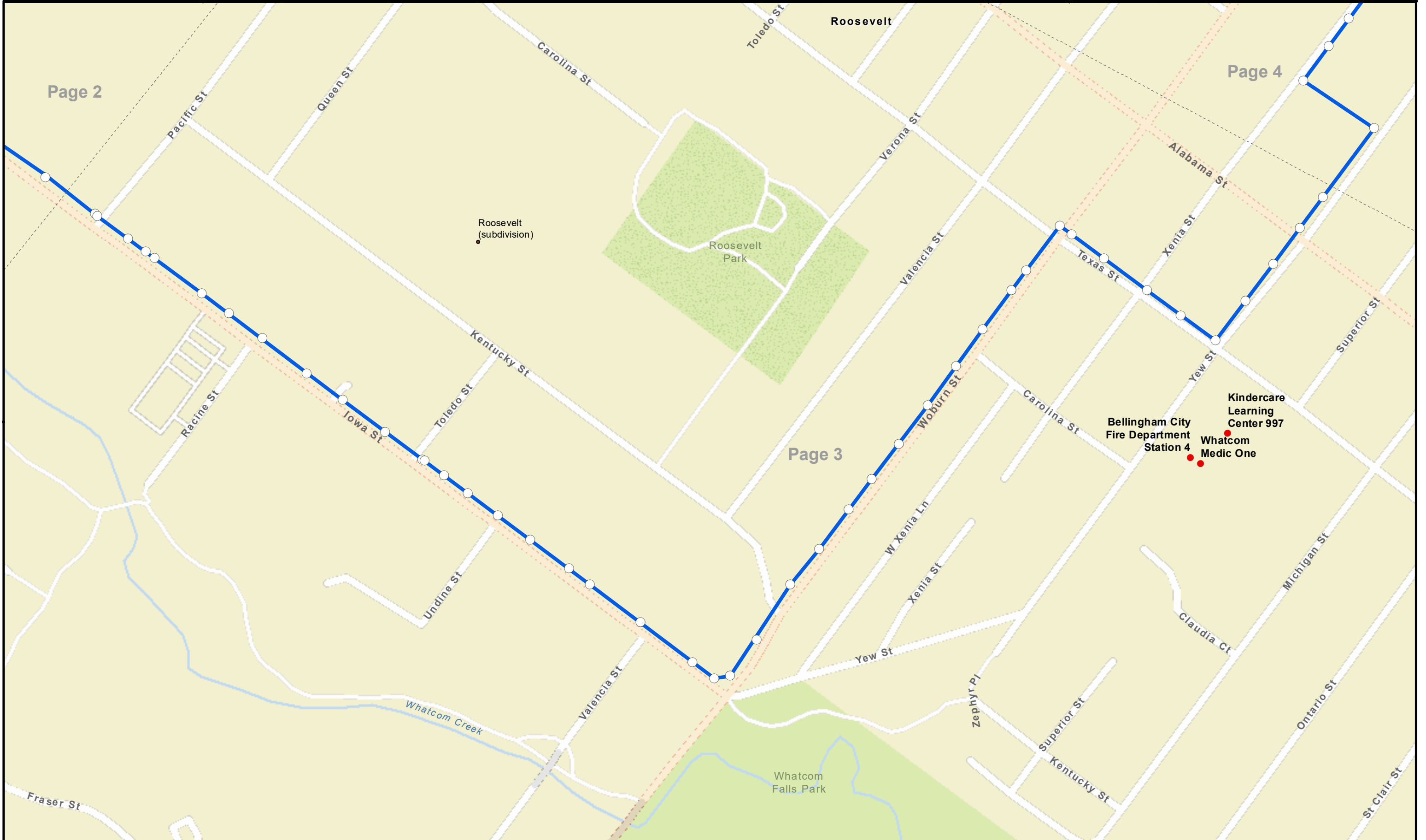
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Port of Bellingham

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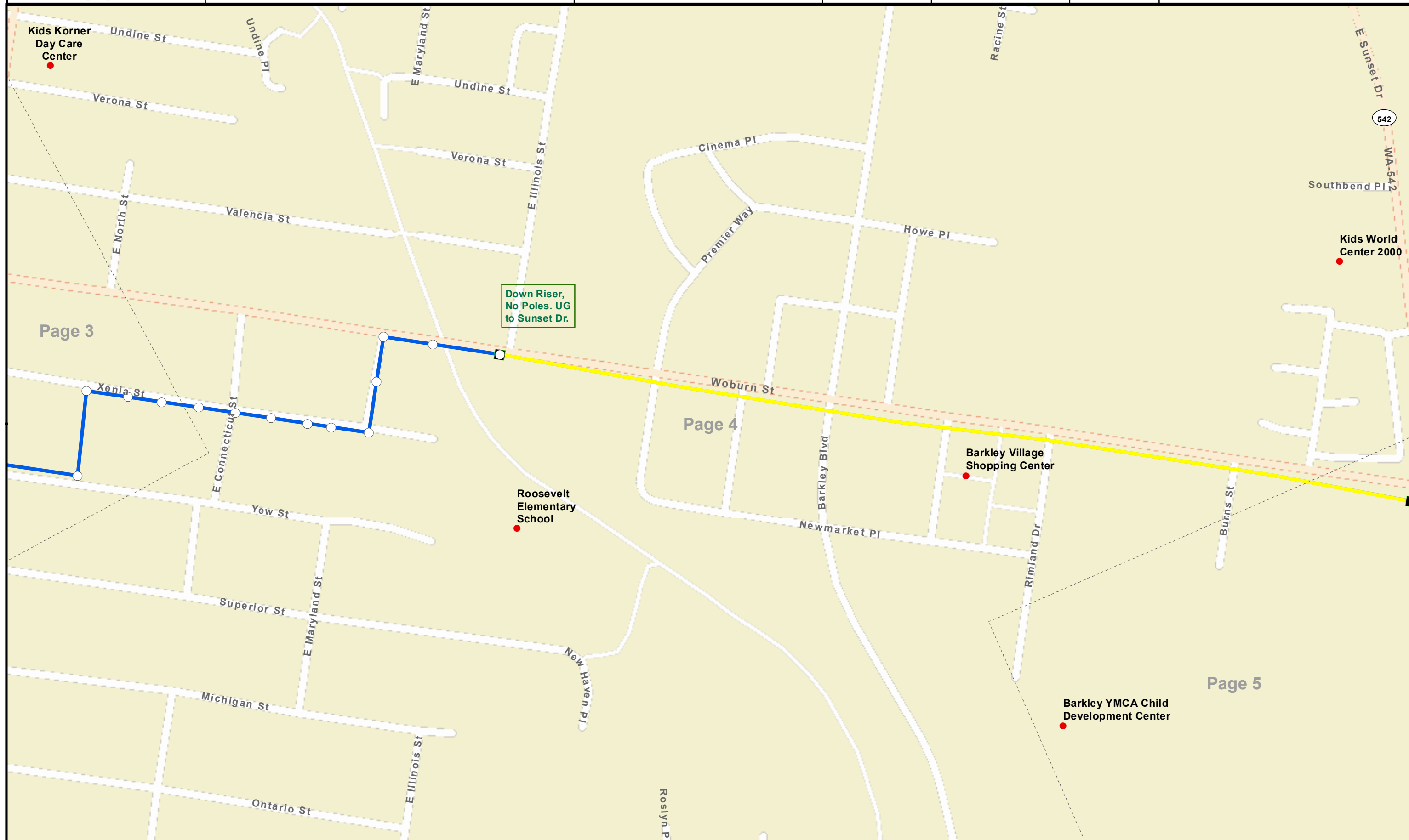
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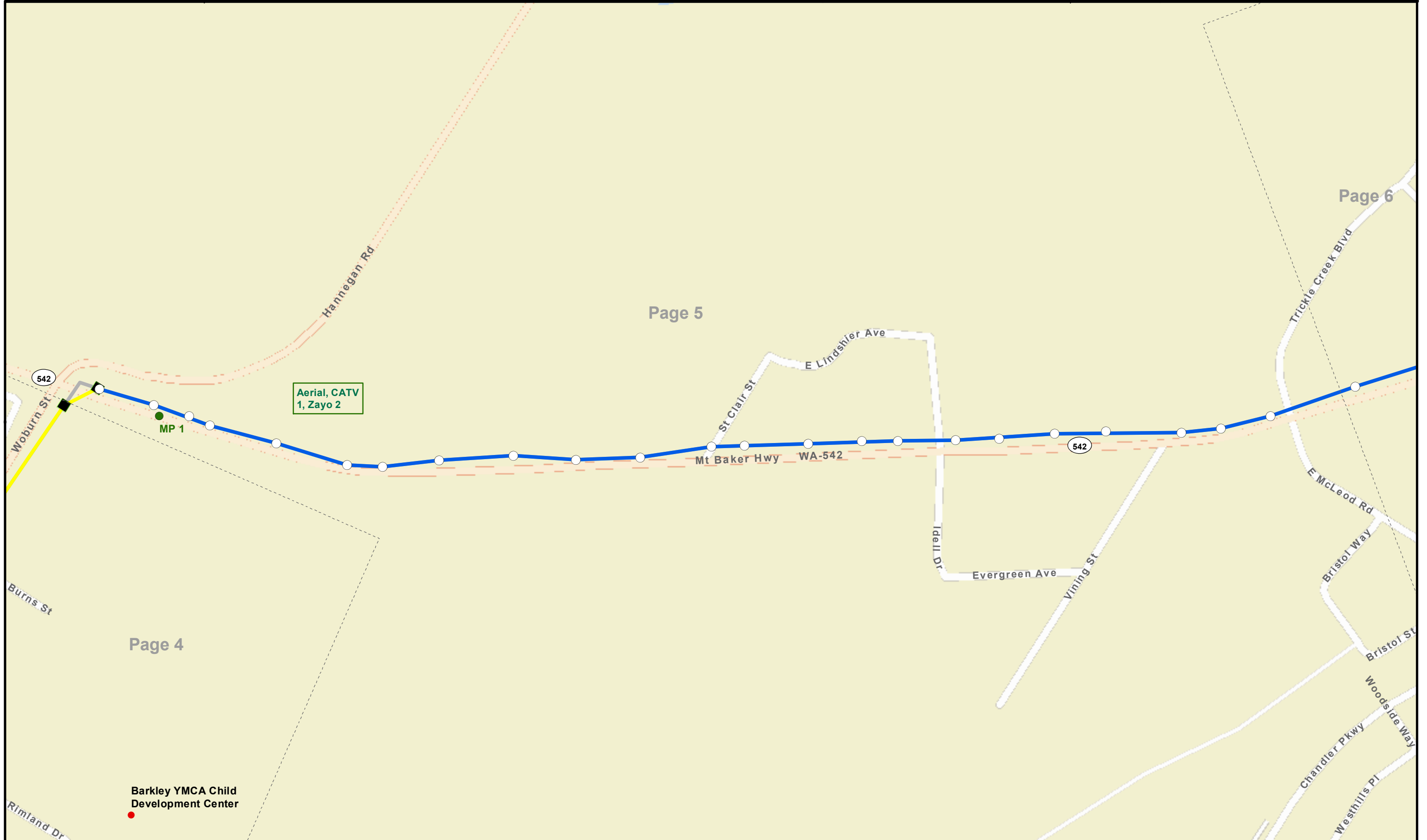
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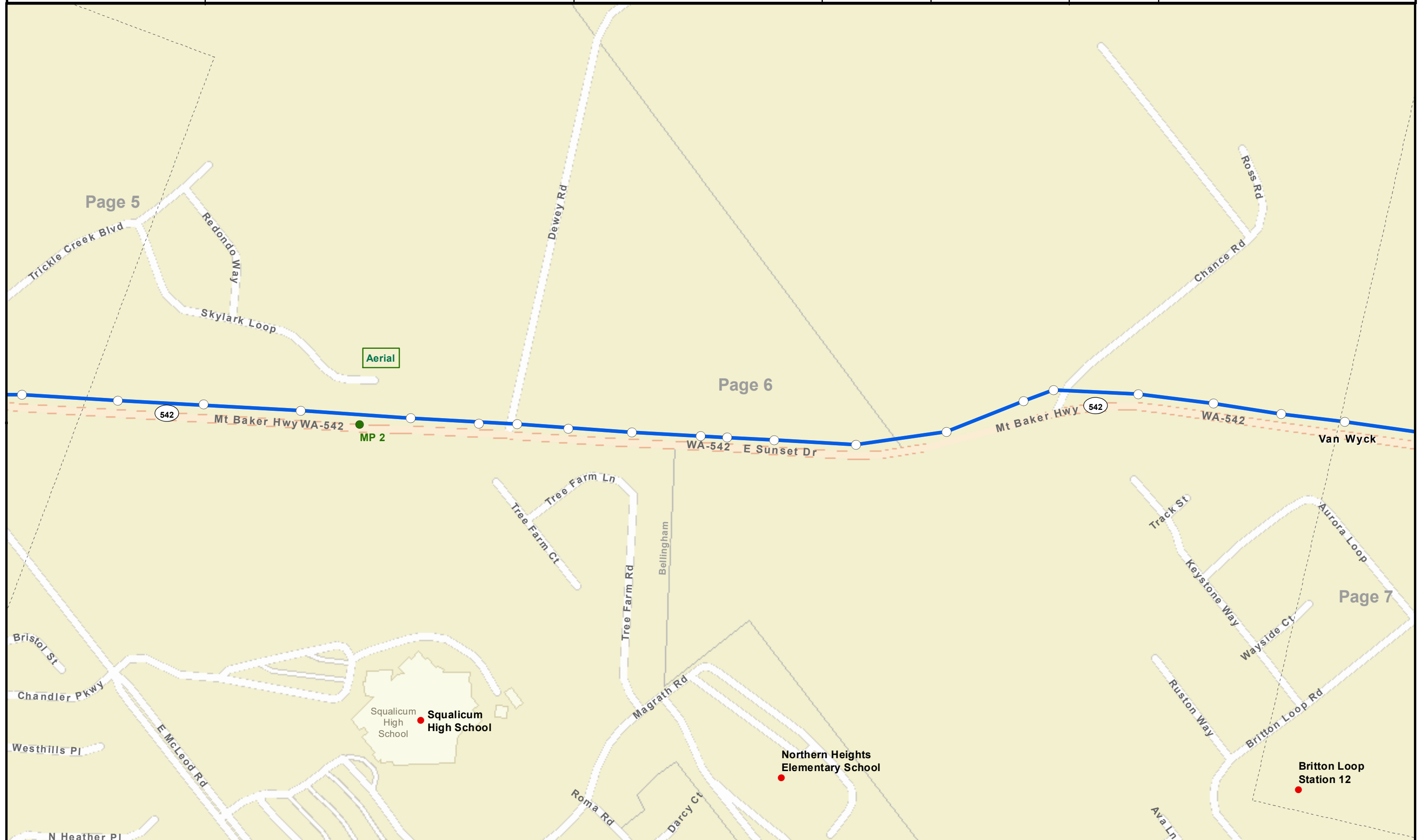
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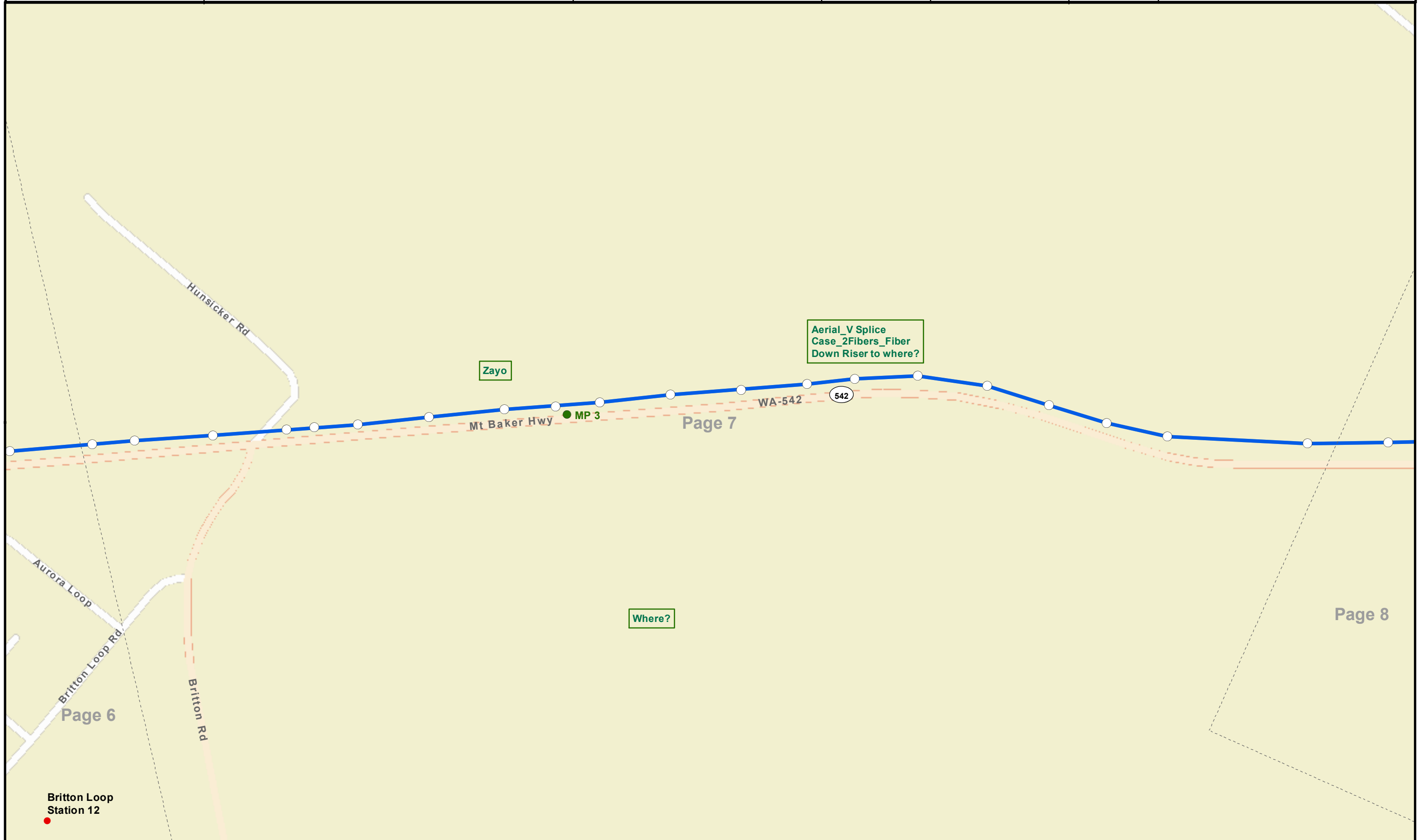
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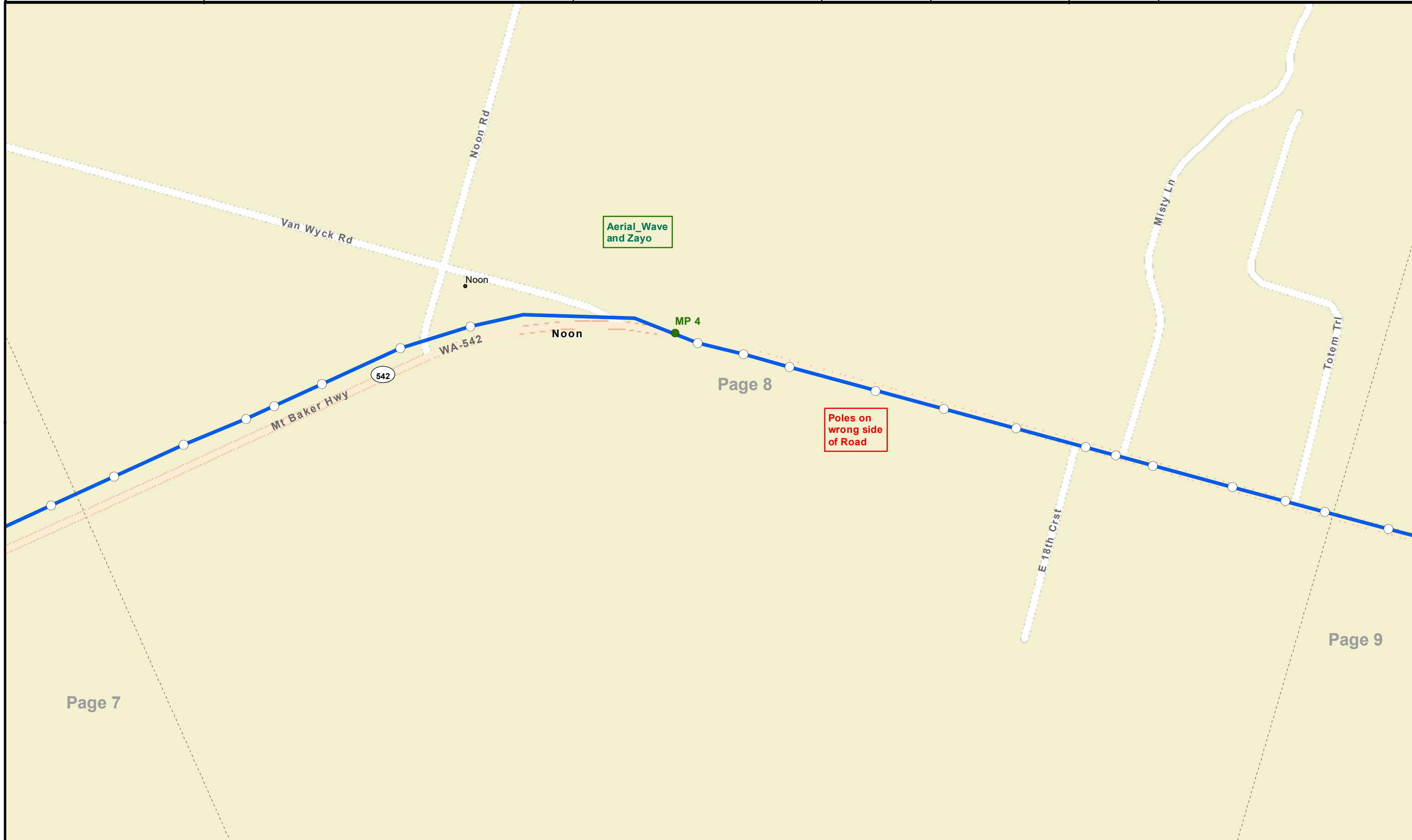
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Segment: Bellingham to Cedarville

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Pole on
correct side
of road

Fiber
Running
North

Collapse
Back Down

New Poles
Running East

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Page 8

Saddlestone Dr

Mt Baker Hwy

542

WA-542

MP 5

Squalicum Creek Dr

E 23rd Ave



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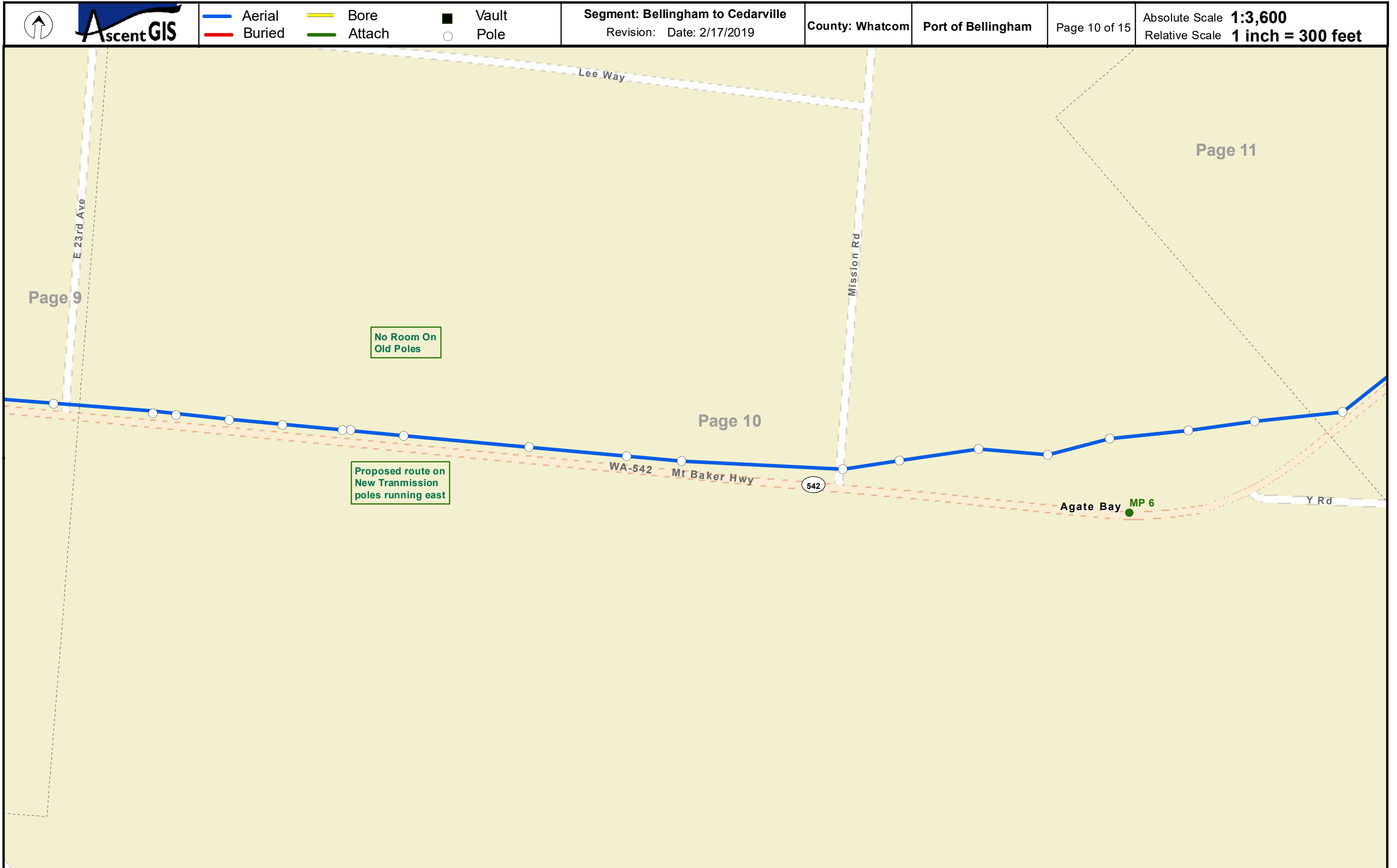
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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

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PSE
Substation

AerieI_CATV1,
Fiber2

Mt Baker Hwy

542

WA-542

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MP 7

Y Rd

Squalicum Lake Rd

Anderson Creek

Sand Rd

Lilly Ln



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Bore
Attach

Vault
Pole

Segment: Bellingham to Cedarville

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Port of Bellingham

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Sand Rd

Page 12

Kelly Rd

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Mt Baker Hwy WA-542

542



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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

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Page 14

MP 8

542

Mt Baker Hwy WA-542

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E Smith Rd



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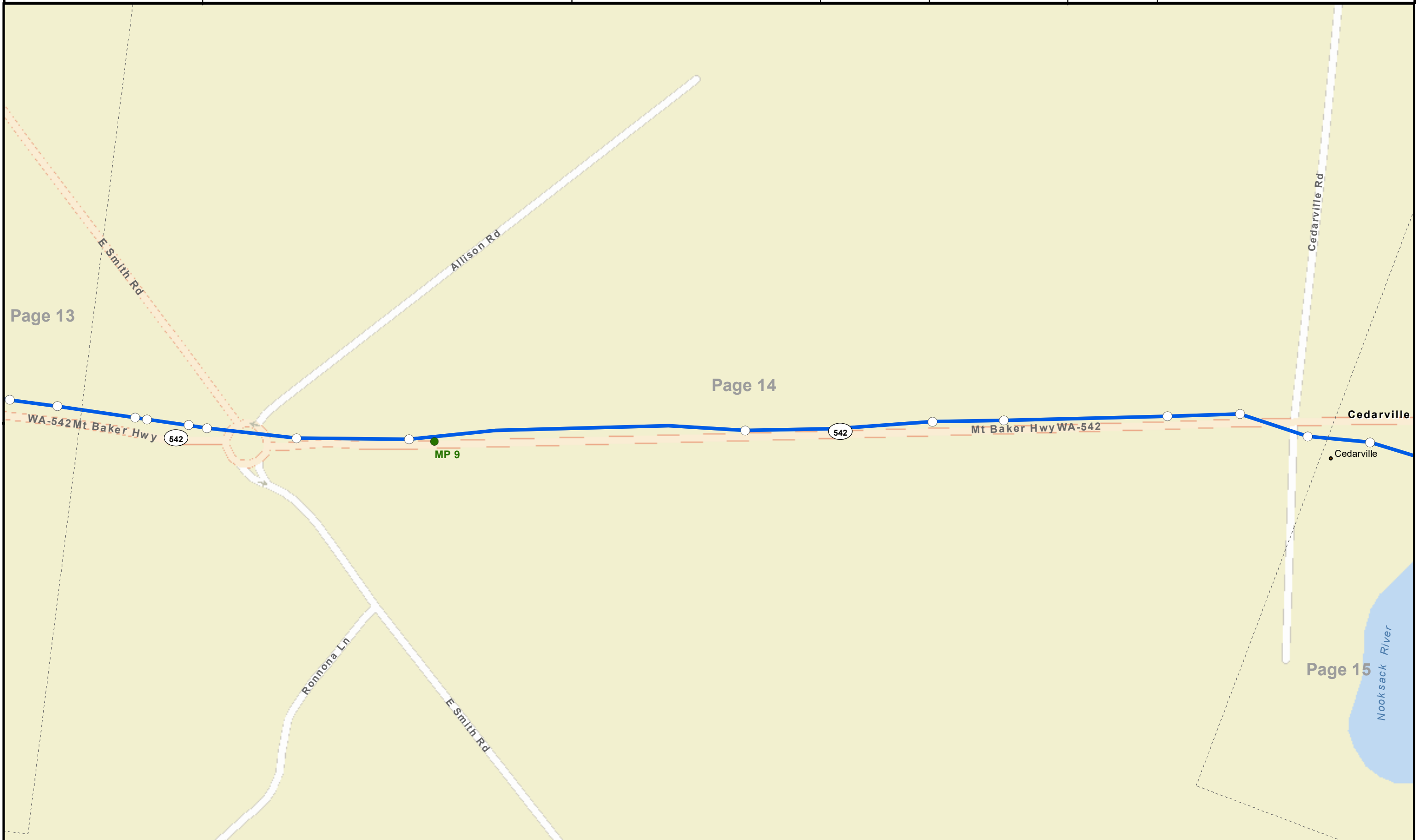
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Port of Bellingham

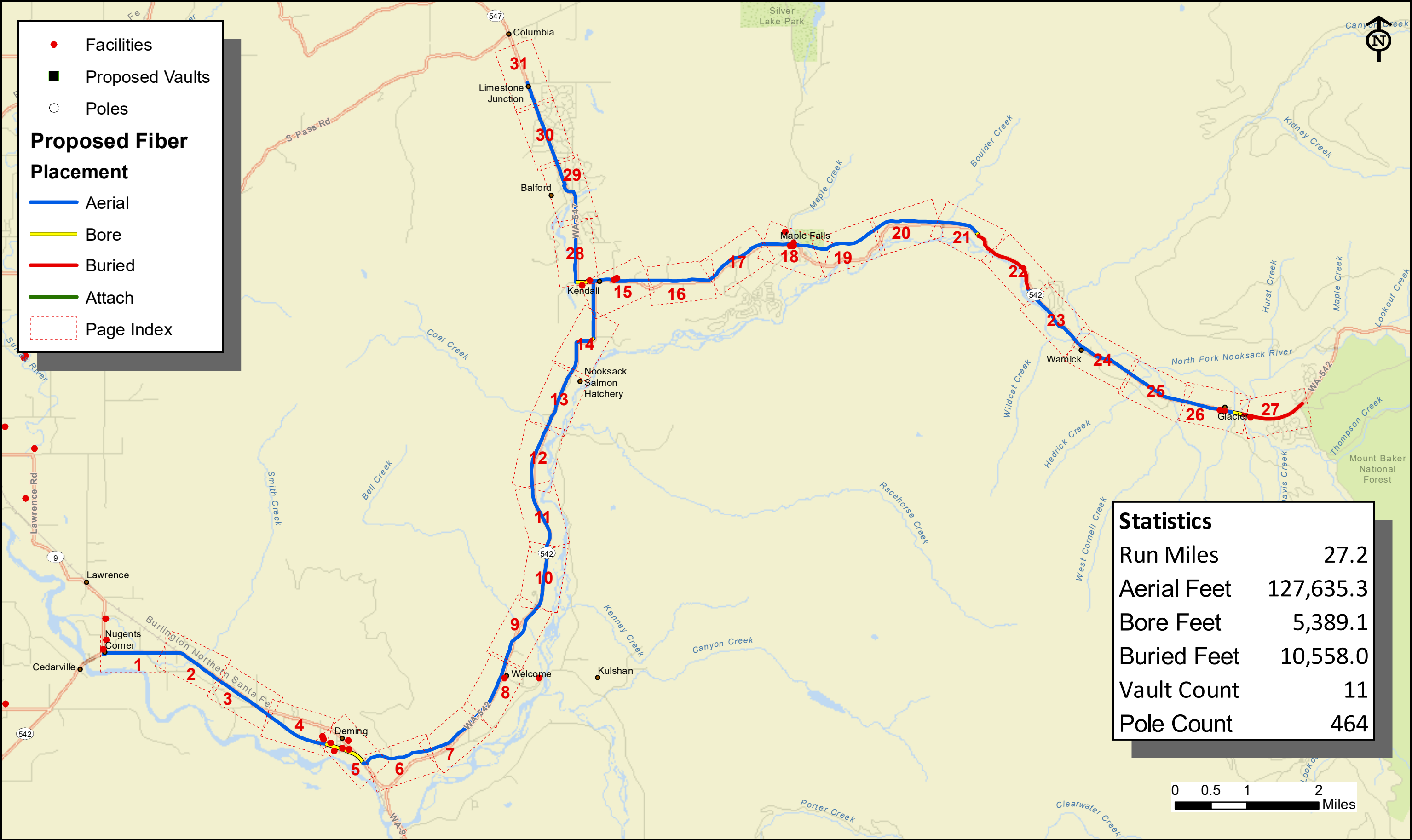
Page 14 of 15

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Cedarville East Map Book Page Index





 Bore
 Attach

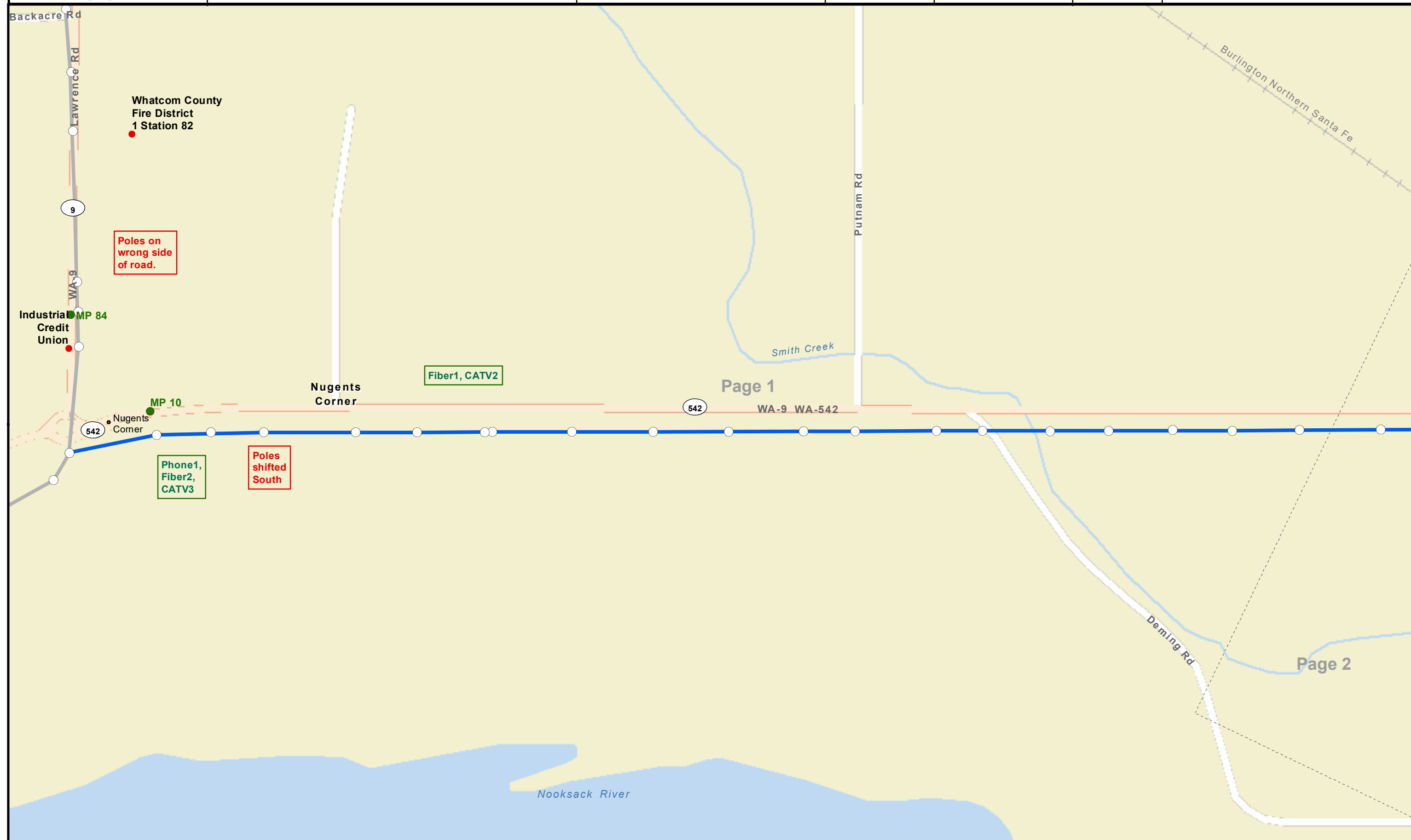
 Vault
 Pole

County: Whatcom

Port of Bellingham

Page 1 of 31

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

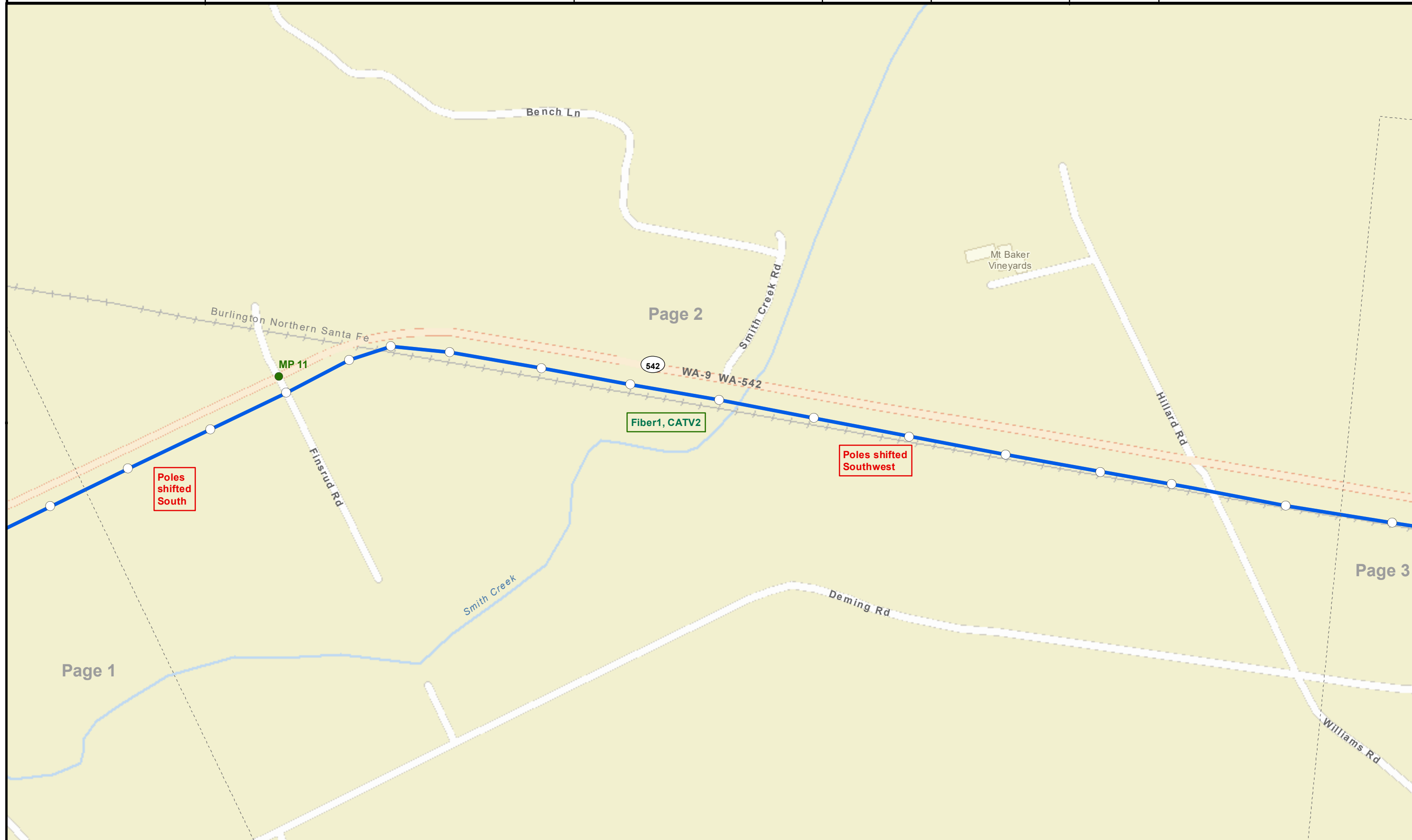
Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

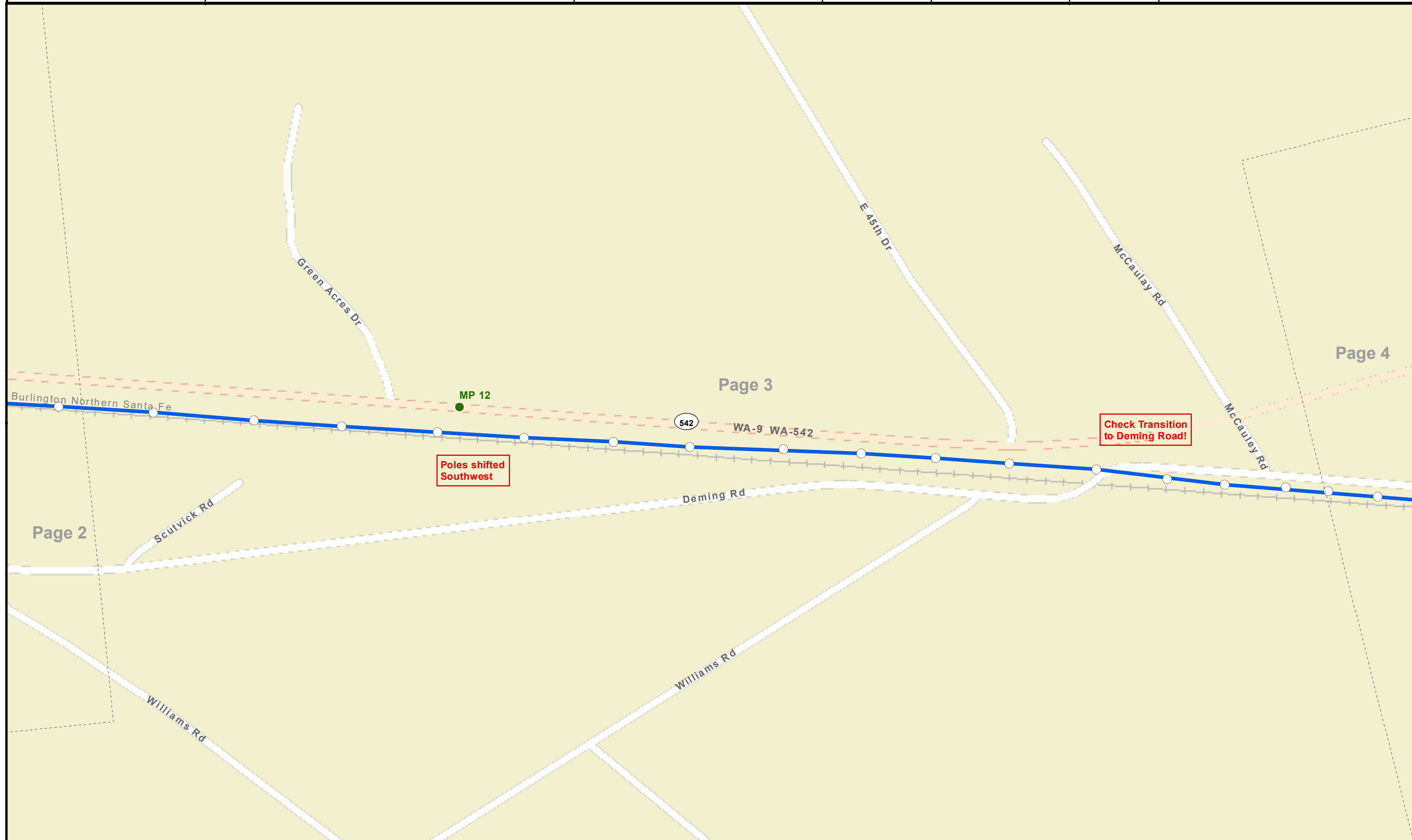
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 3

Scarlett Way

542

WA-542 WA-9
MP 13

Pebbley Rd

Page 4

Mitchell Rd

Mount Baker
Junior High
School

Mount Baker
High School

Page 5

Pole
shifted
south

Burlington Northern Santa Fe

Deming Rd

Burlington Northern Santa Fe

UG, No room
on poles.





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

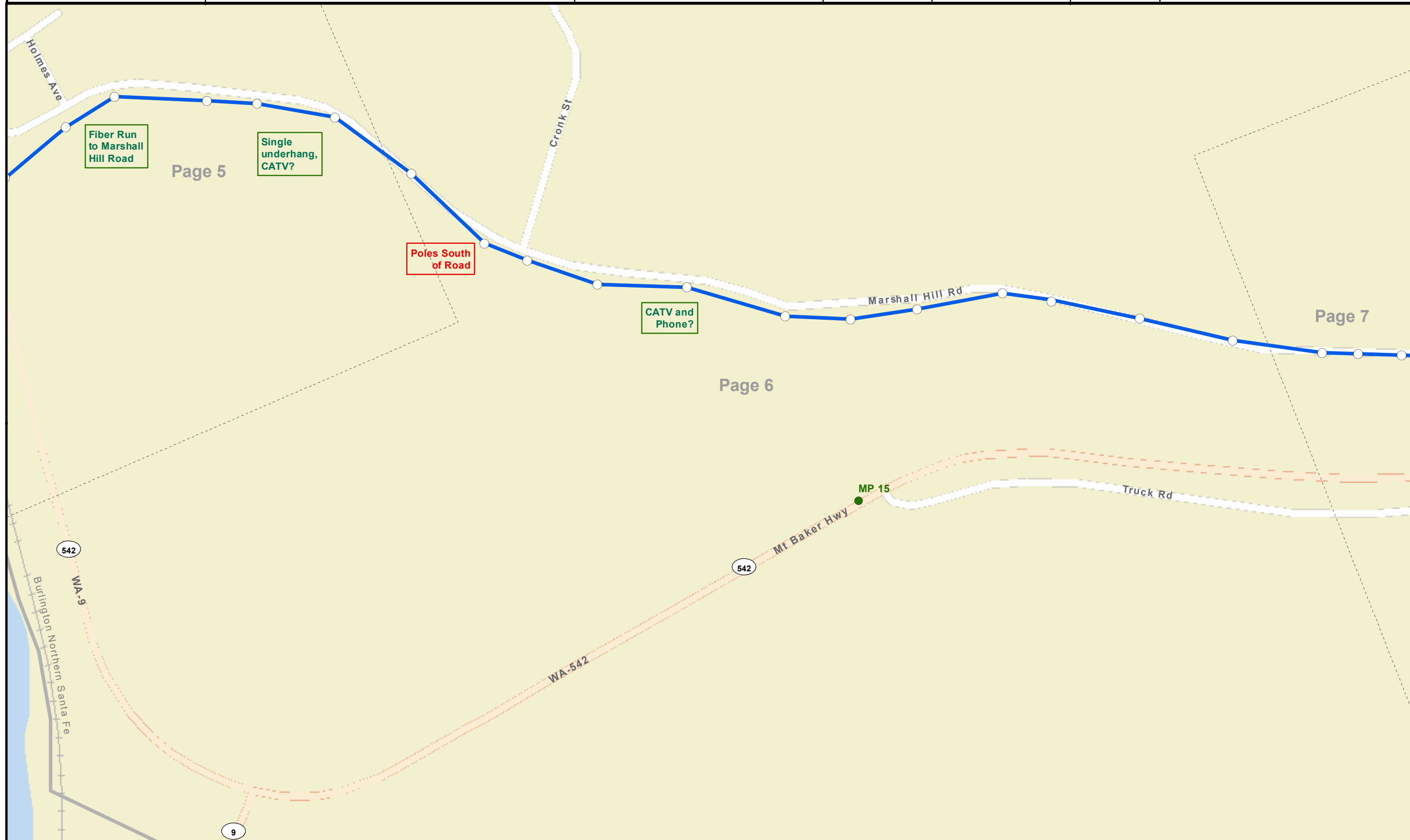
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

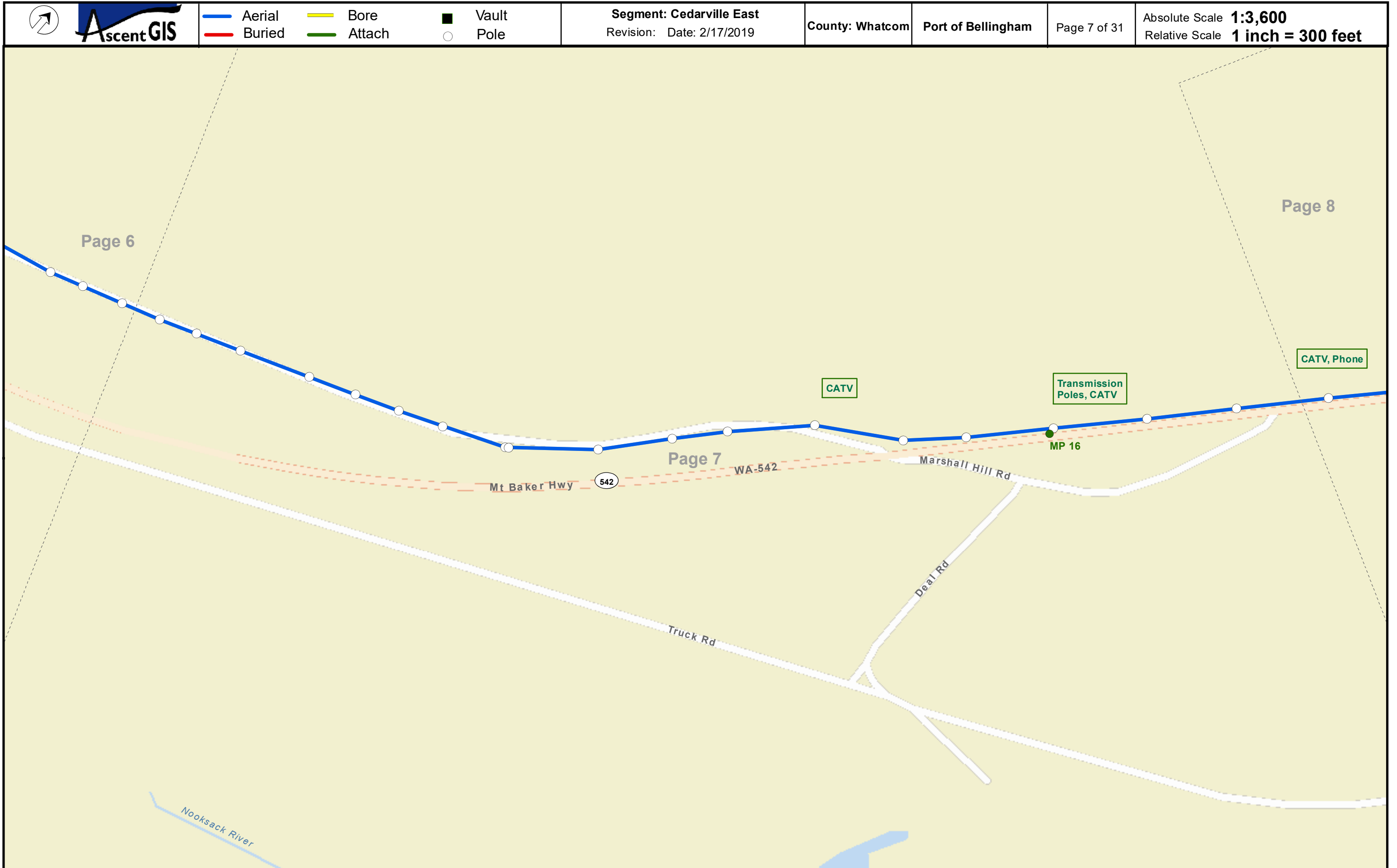
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 7

CATV, Phone

Page 8

Mt Baker Hwy WA-542

542

CATV

MP 17

Page 9

Welcome
Grange Hall

Welcome

Welcome

Mosquito Lake Rd

Truck Rd



Aerial
Buried

Bore
Attach

Vault
Pole

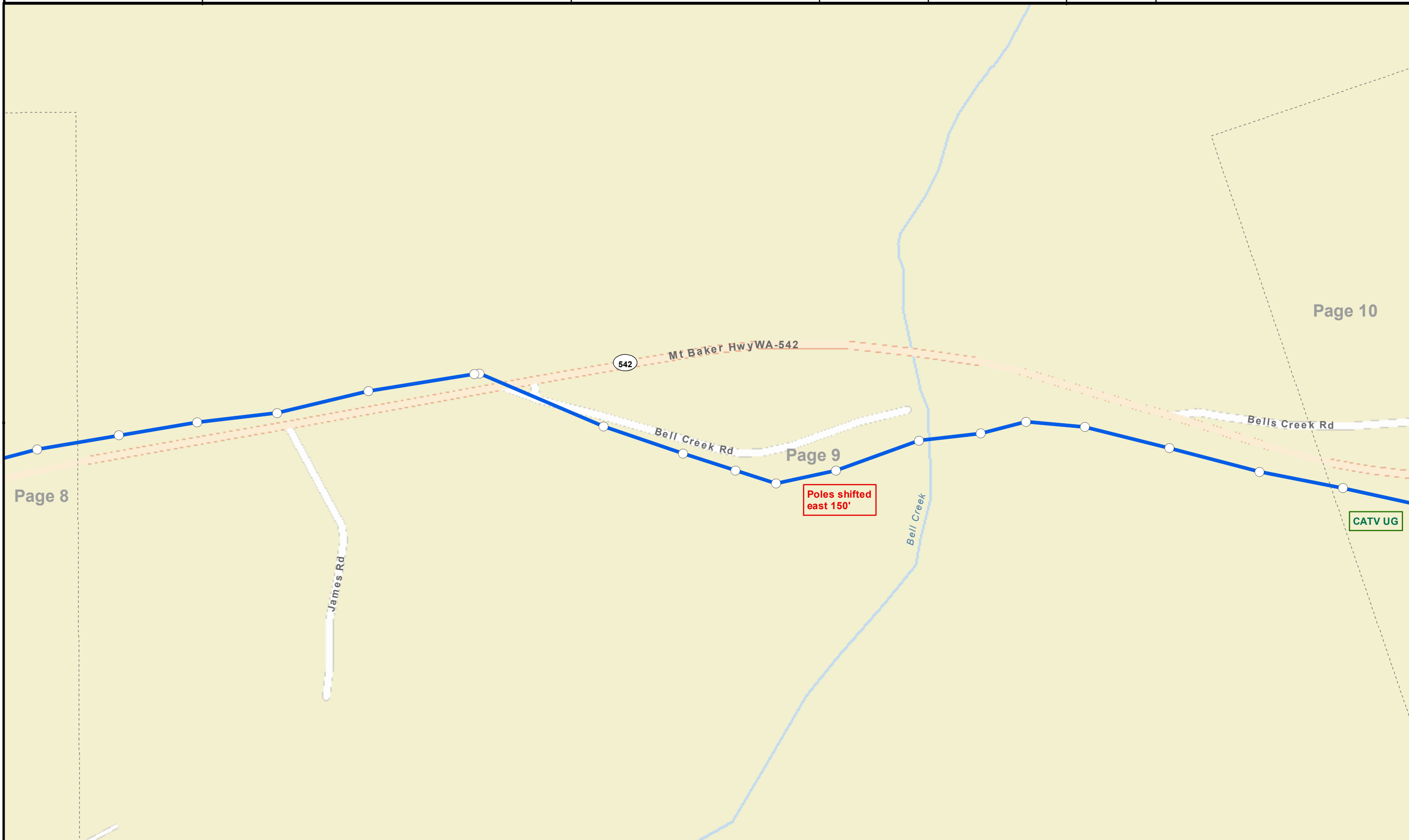
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 9

Page 11

Bells Creek Rd

CATV UG

MP 18

Transmission
Lines

CAT with
Fiber
Overlash

WA-542 Mt Baker Hwy

542

Page 10

North Fork Nooksack River



Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 10

Page 11

Page 12

Pole shifed
west, wrong
side of HWY

MP 19

WA-542

CATV

Mt Baker Hwy

North Fork Nooksack River

N Fork Rd



Aerial
Buried

Bore
Attach

Vault
Pole

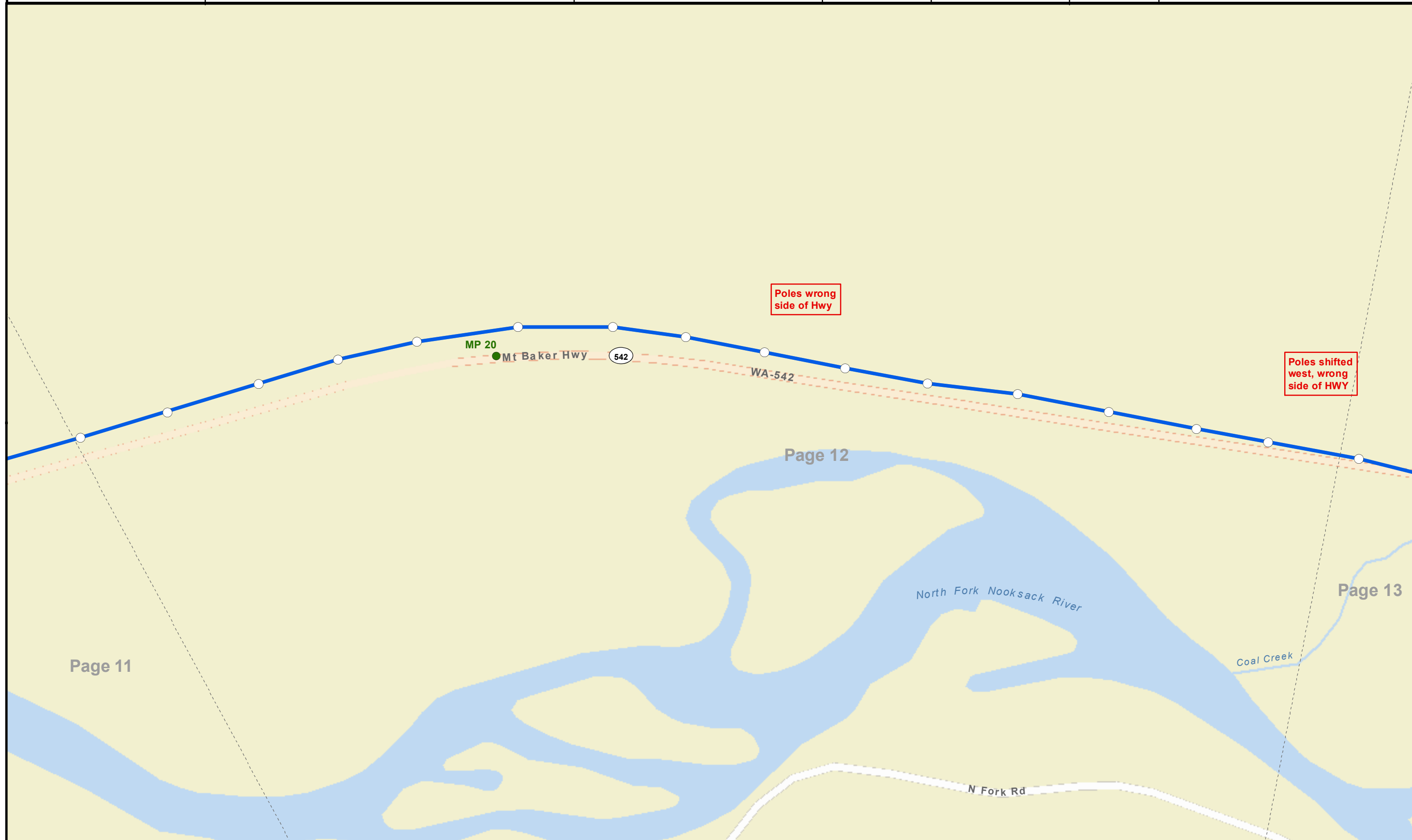
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County: Whatcom

Port of Bellingham

Page 12 of 31

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

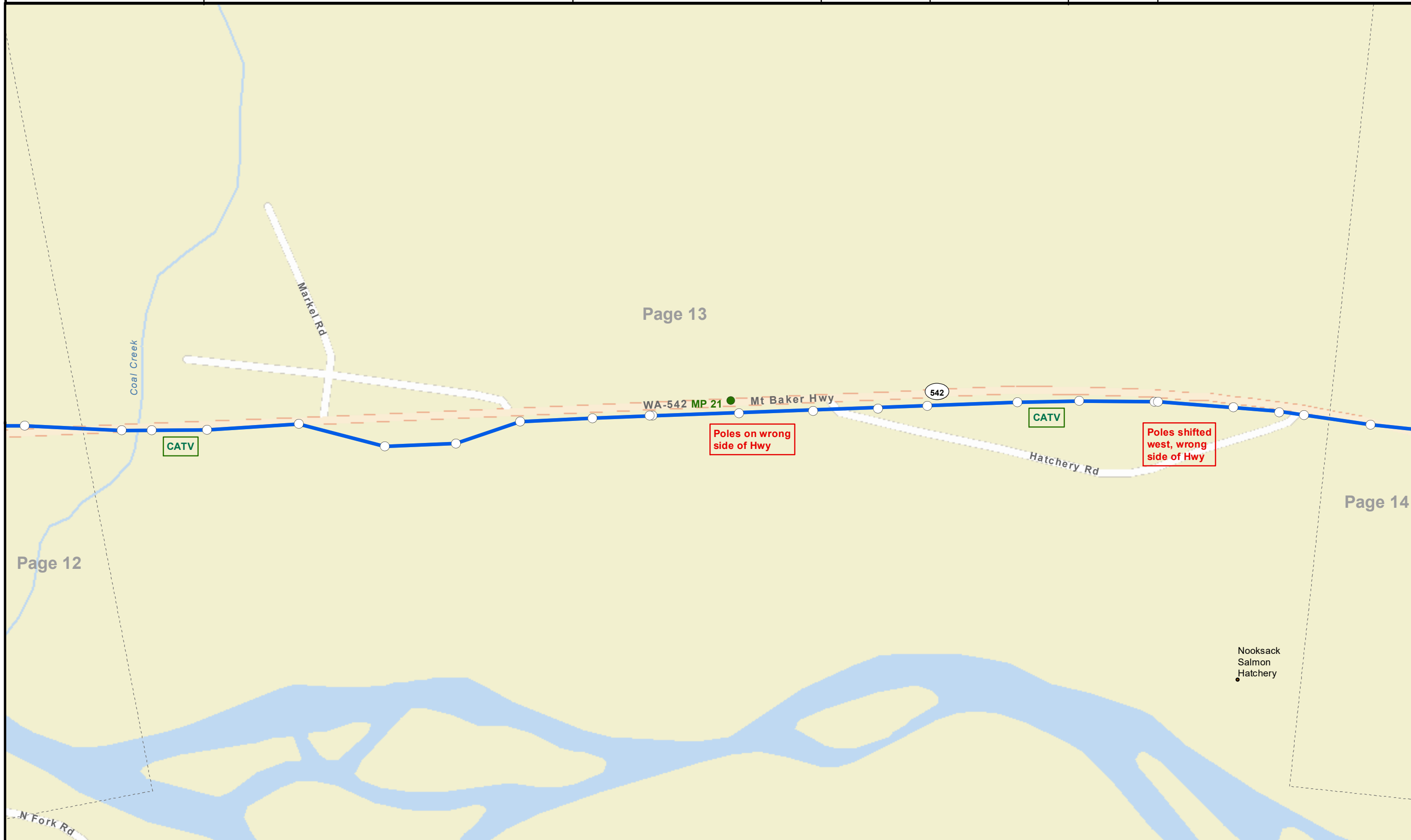
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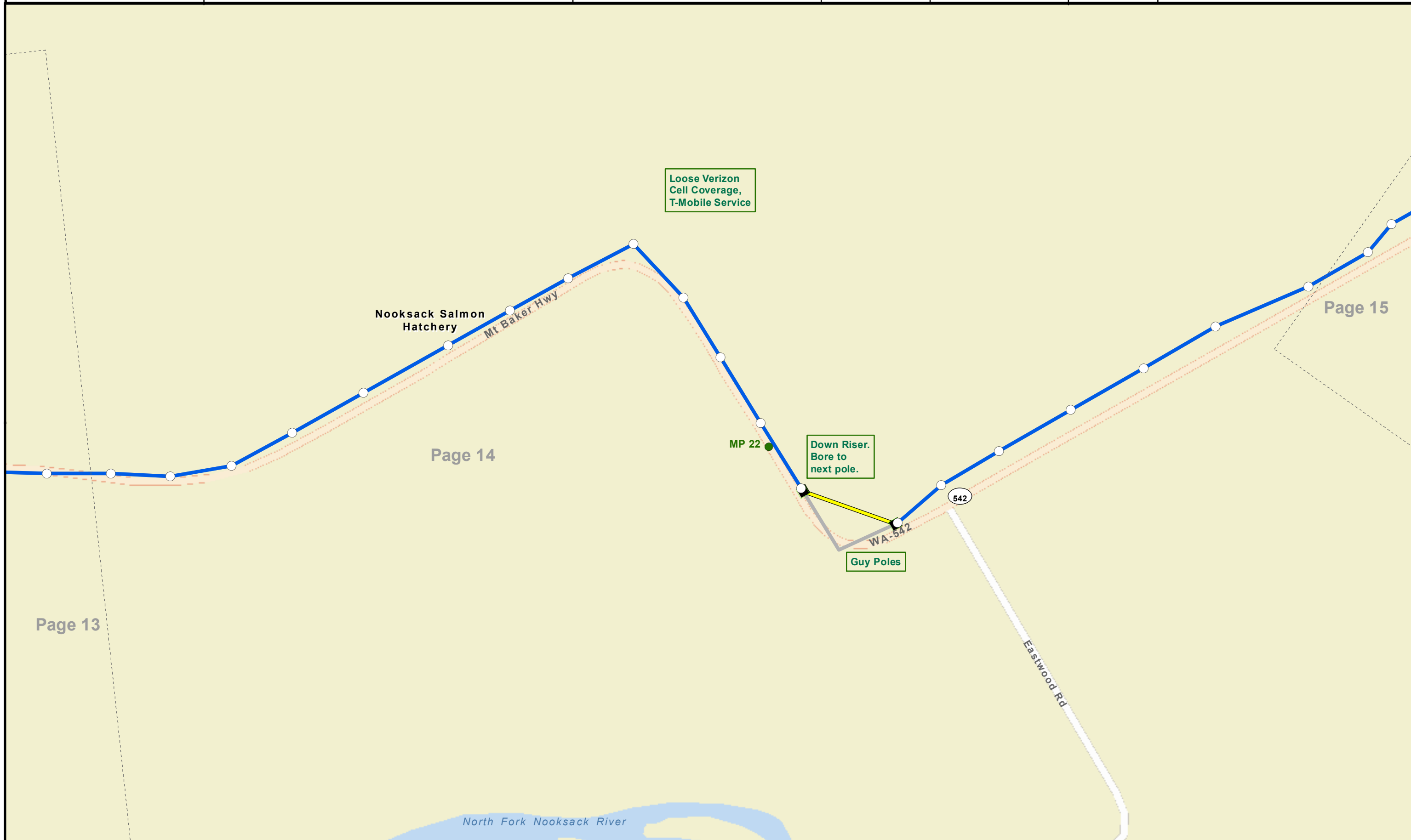
County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**







— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

Page 15 of 31

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Kendall
Elementary
School

End Power Run
down riser. Bore
to next pole.

Whatcom County Fire
District 14 Station
92 Kendell

Page 28

Kendall

MP 23
Kendall

PSE
Substation Cell Tower

Page 15

WA-542 Mt Baker Hwy

Mt Baker Hwy

WA-542

542

Page 14

Page 16



Aerial
Buried

Bore
Attach

Vault
Pole

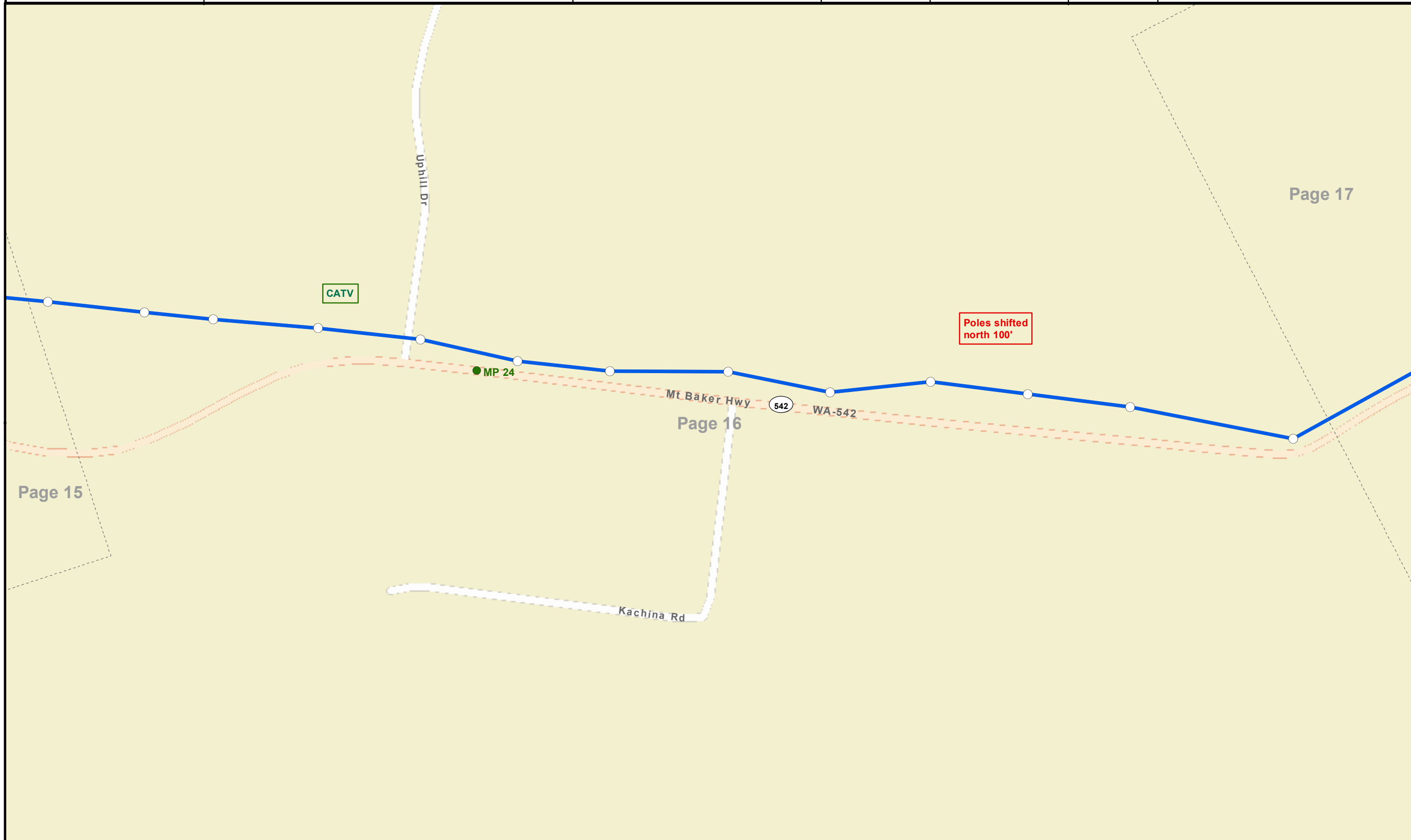
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County: Whatcom

Port of Bellingham

Page 16 of 31

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

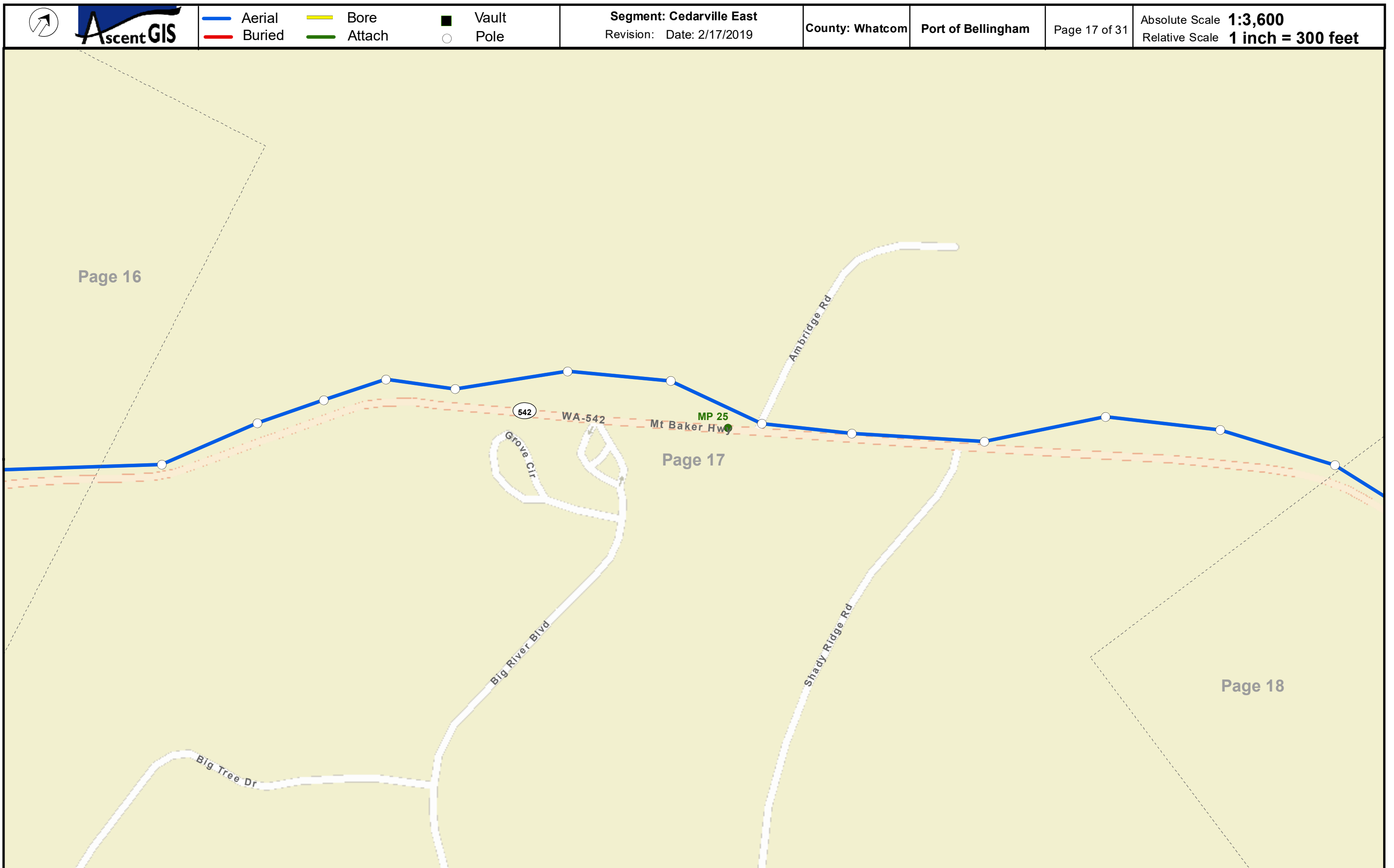
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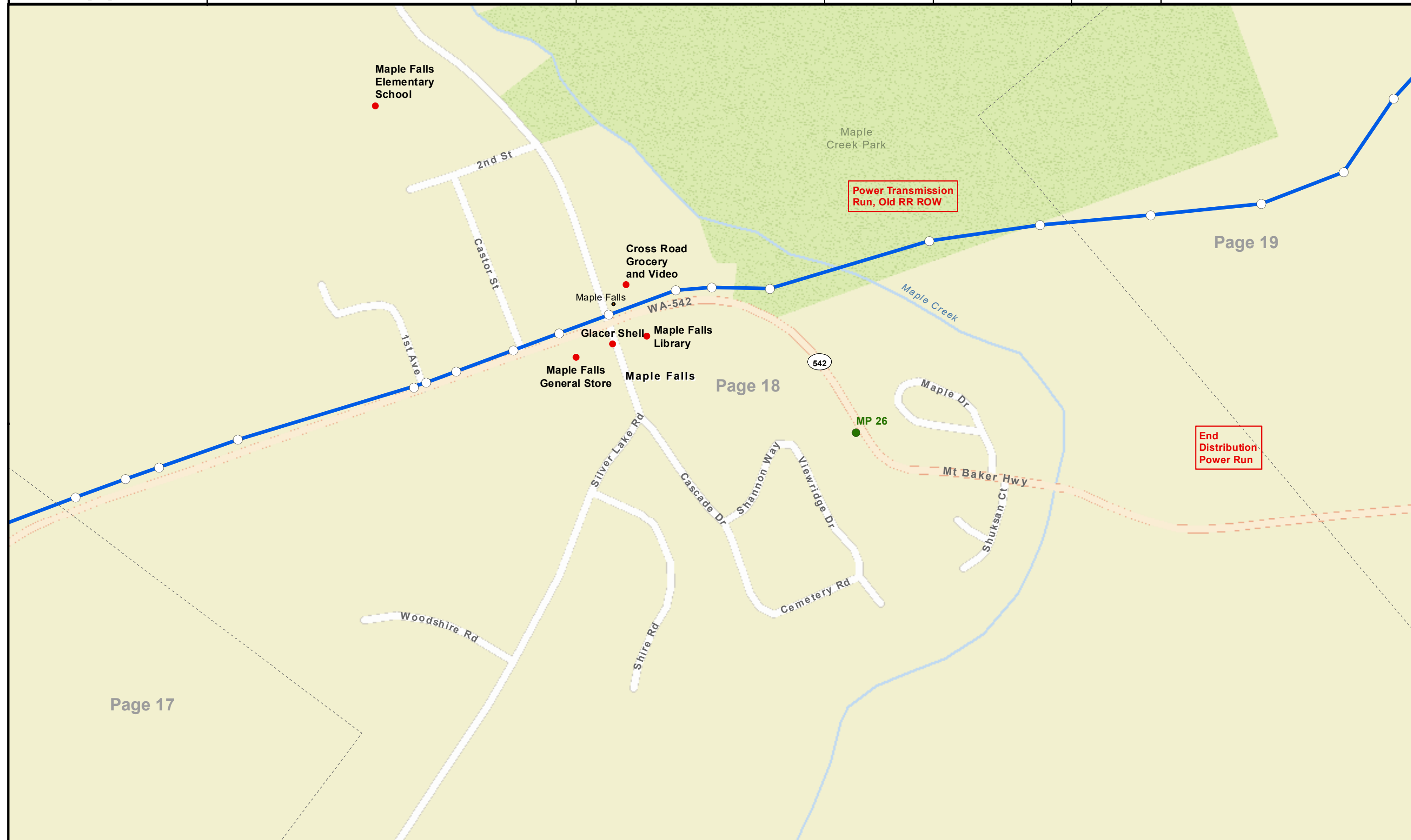
Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

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Page 17

Page 18







Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Maple
Creek
Park

Page 18

Page 19

Page 20

North Fork Nooksack River

Mt Baker Hwy

542

WA-542

MP 27



Aerial
Buried

Bore
Attach

Vault
Pole

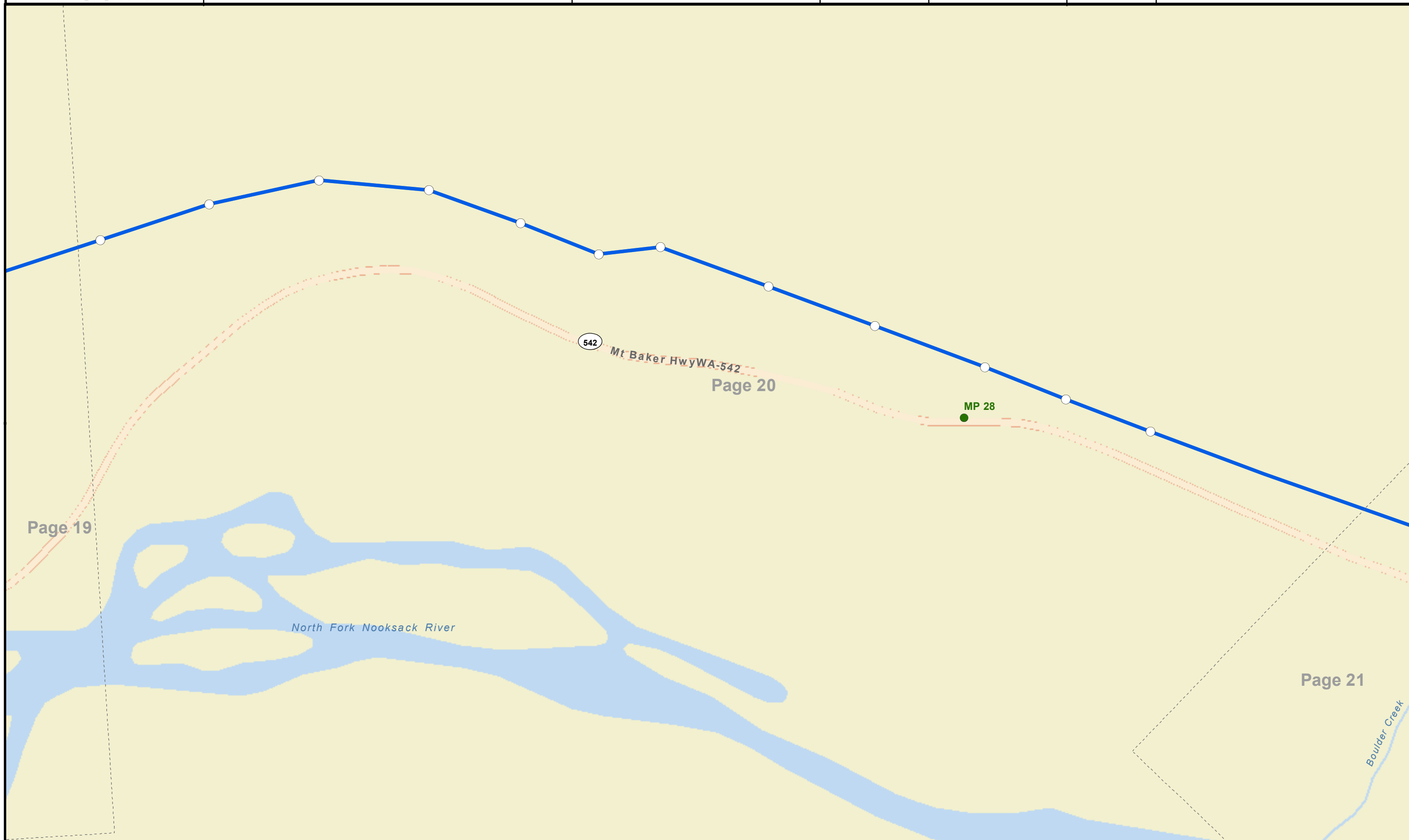
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Port of Bellingham

Page 20 of 31

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

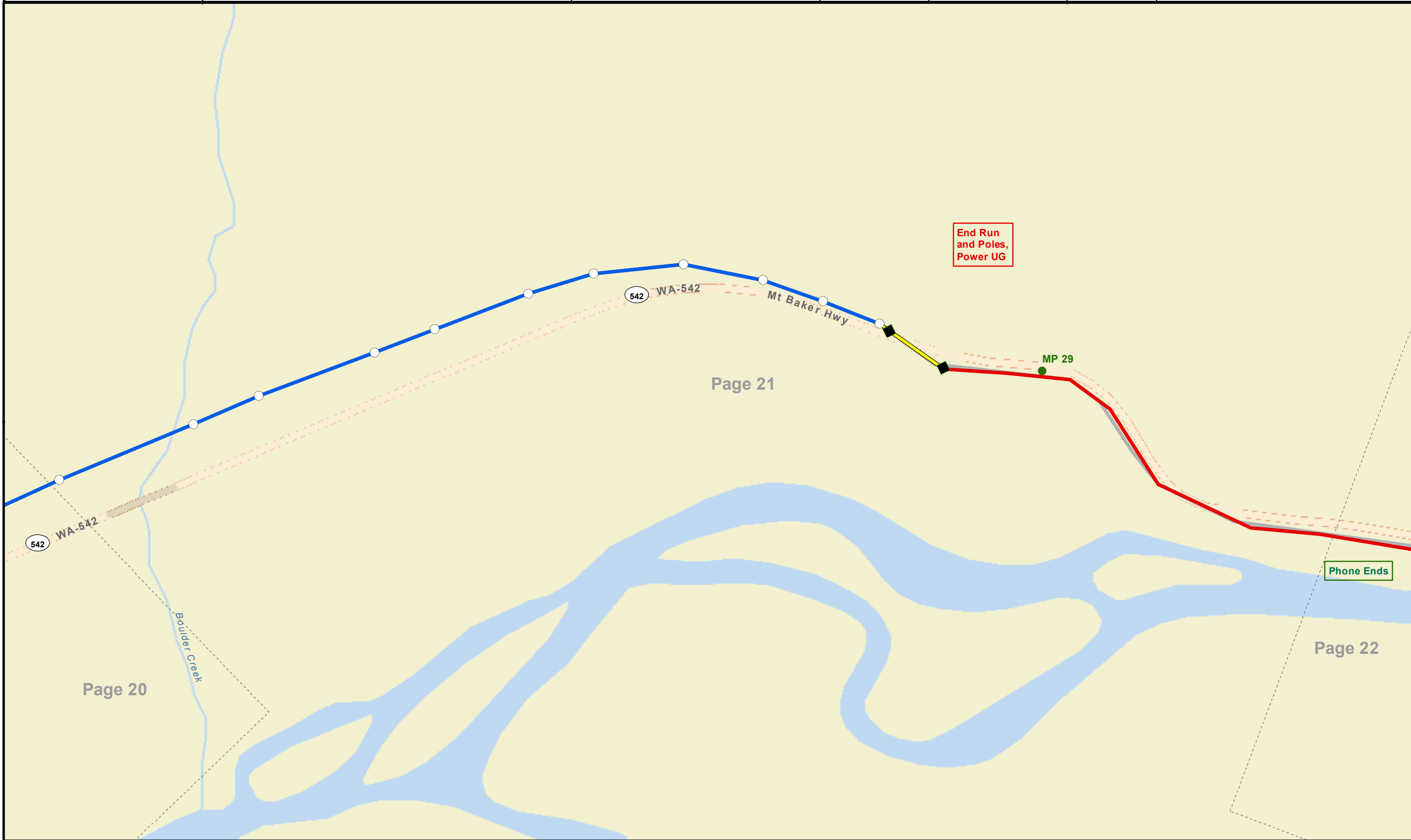
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County: Whatcom

Port of Bellingham

Page 21 of 31

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

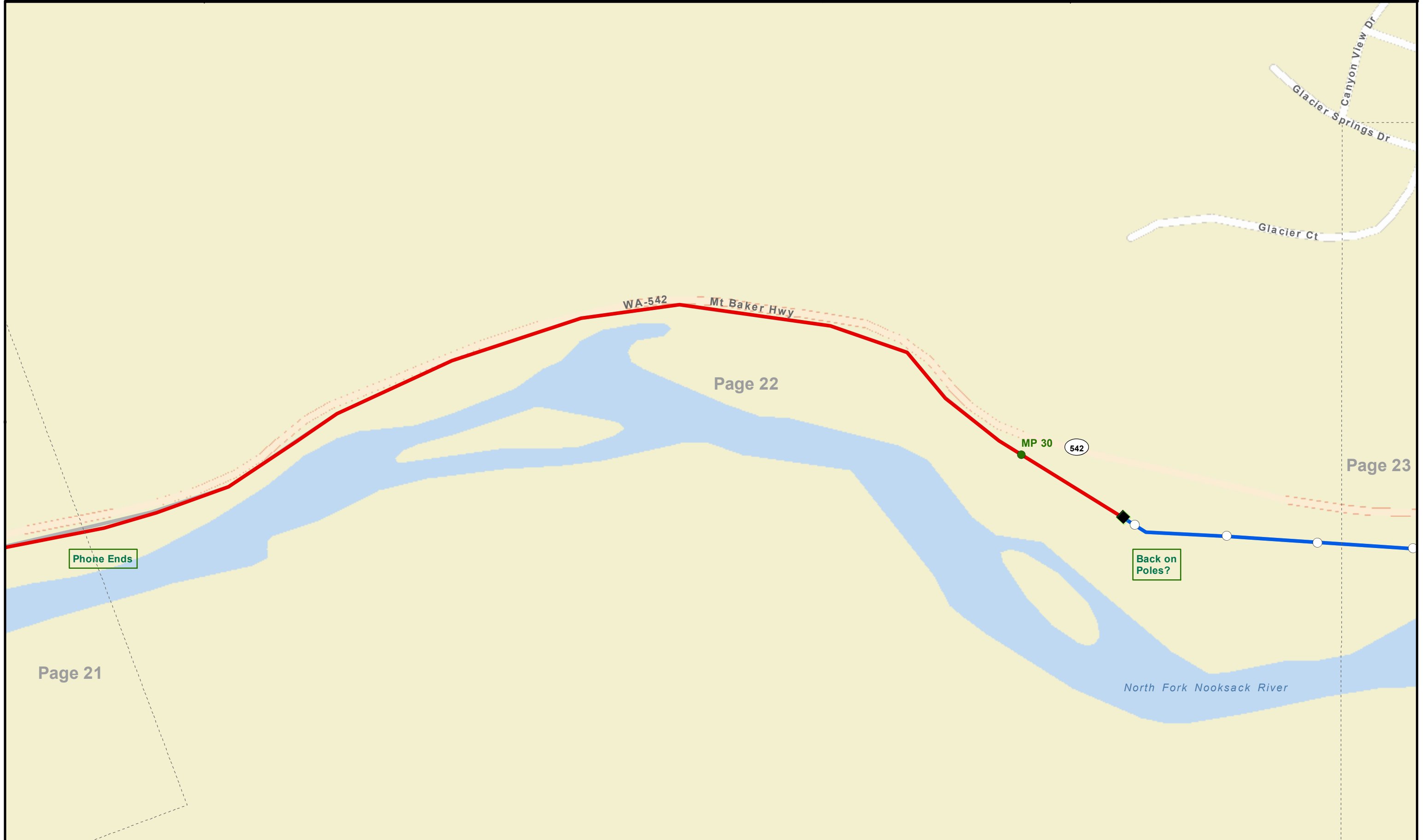
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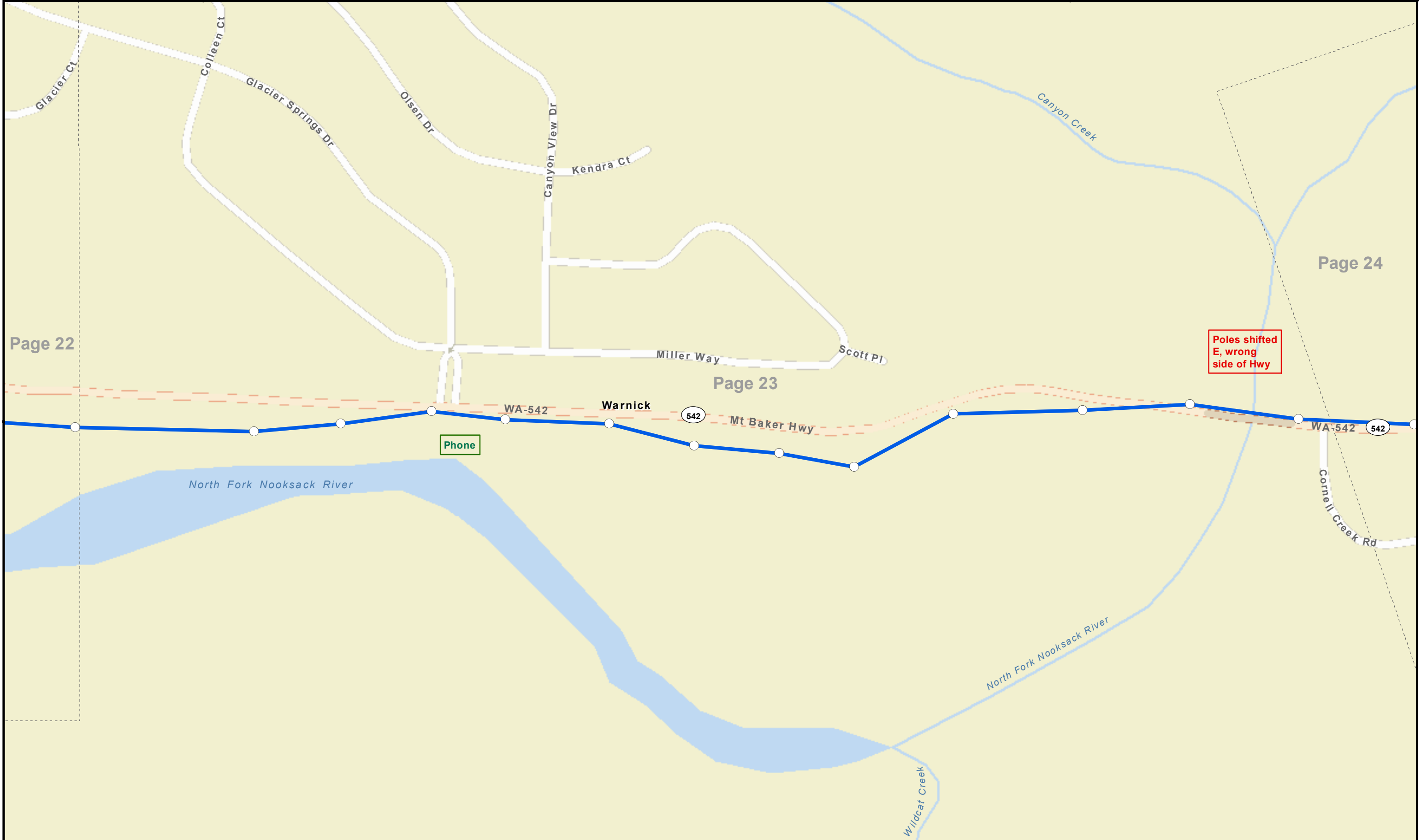
County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**







Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 23

Poles shifted
NE, Wrong
side of Road

Page 24

Page 25

MP 31

Warnick

Diamond Rd

Mt Baker Hwy

542

WA-542

North Fork Nooksack River

Rivers Edge Ln

Cornell Creek Rd



Aerial
Buried

Bore
Attach

Vault
Pole

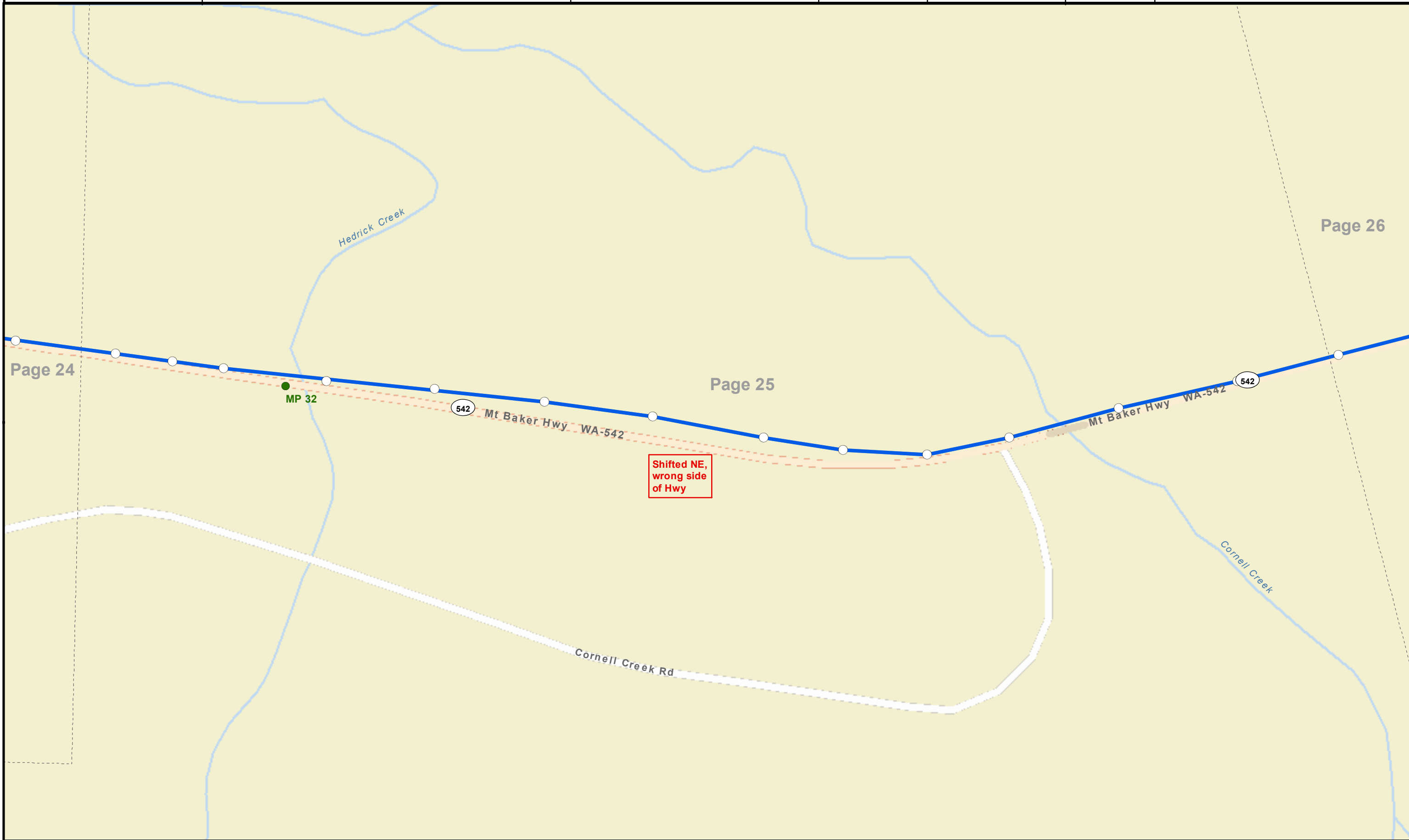
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County: Whatcom

Port of Bellingham

Page 25 of 31

Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

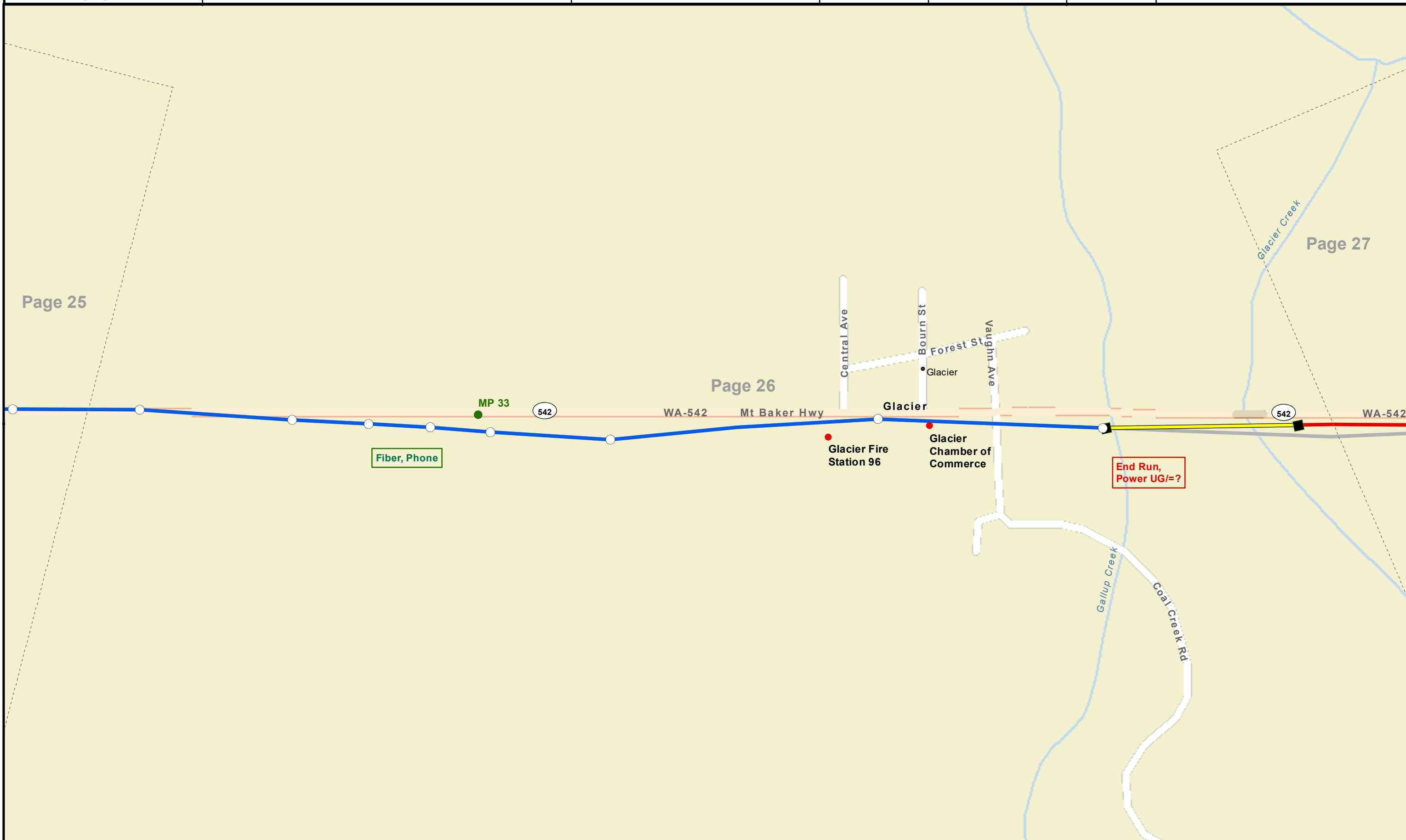
Segment: Cedarville East
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 26

Page 27

Glacier Public
Service Center

MP 34

542

Mt Baker Hwy WA-542

NF-37

Mount Baker
National Forest

Meadow Ln

Mission Ln

Whistler Ln

Vail Ln

Jagged Ln

Alpine Rd

Cedar Cir

Grouse Ln

Shuksan Rim Dr

Chimney Ln

Canyon Ln

Tower Ln

Pinnacle Rd

Denny Mountain Pl

Baker Cir

Shuksan Arm

Snoqualmie Pl

Pinnacle Pl

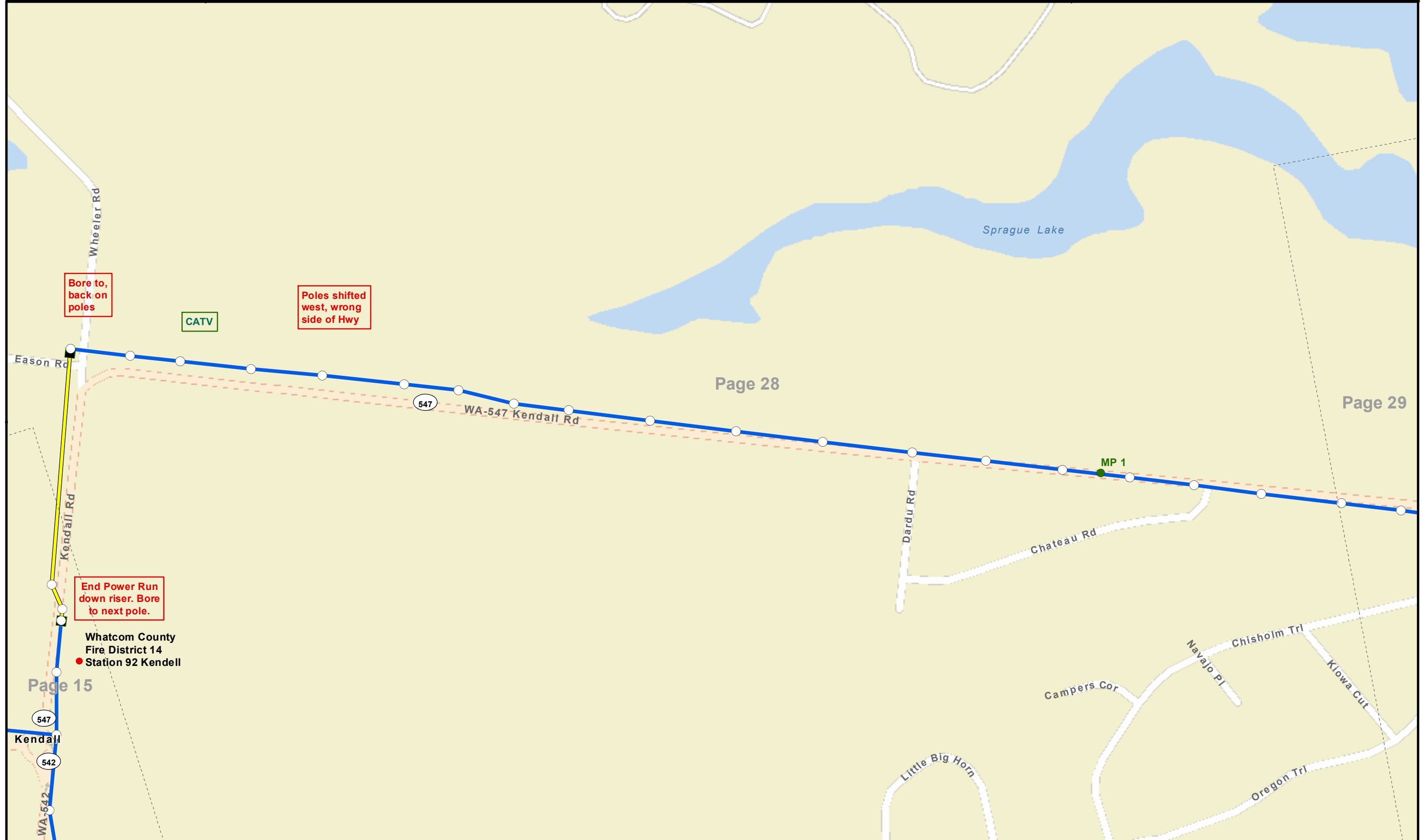
Chair Peak

Adams Pl

Glacier Creek Rd

Glacier Creek

Little Creek





- | | | |
|--------|--------|-------|
| Aerial | Bore | Vault |
| Buried | Attach | Pole |

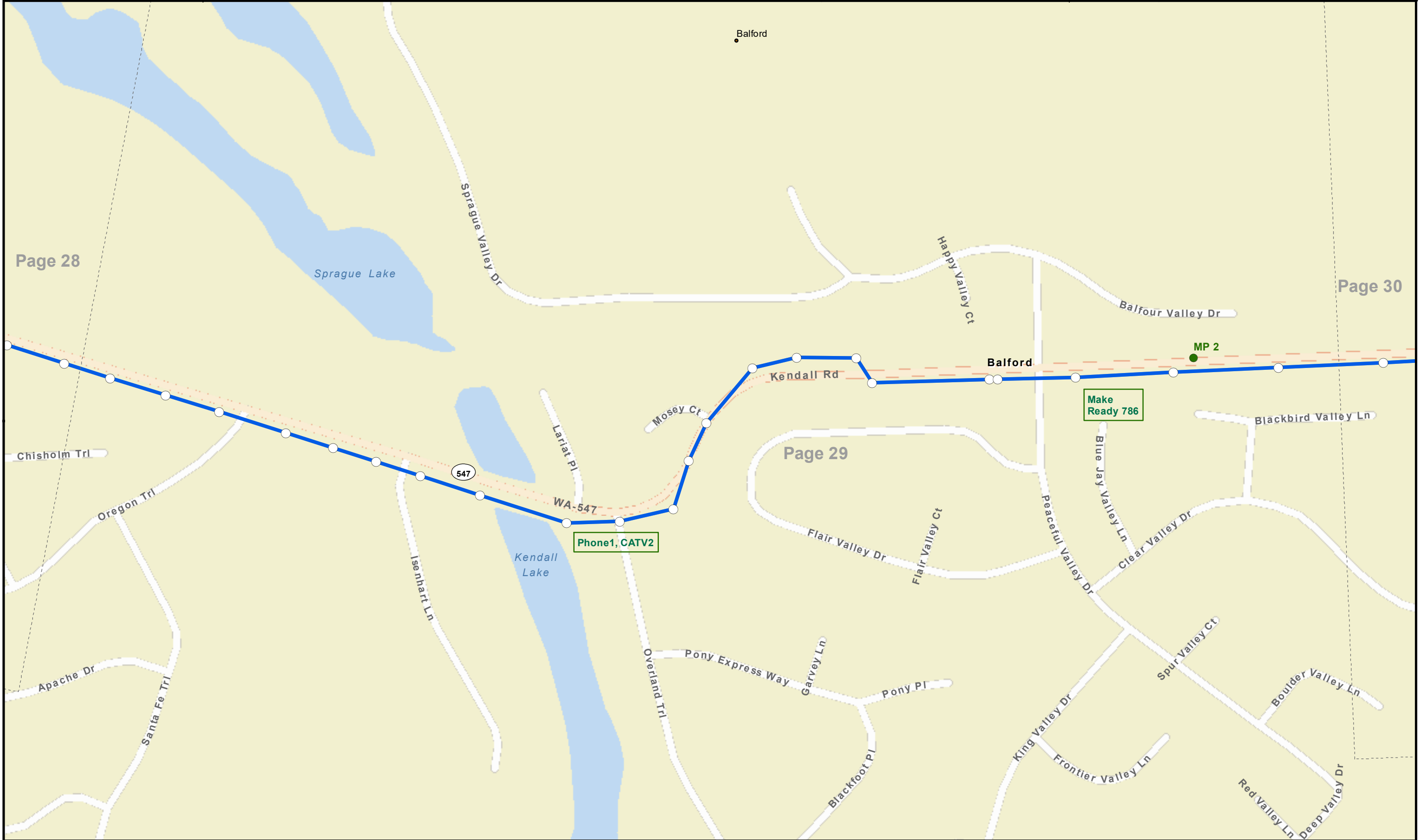
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 29

Page 30

Page 31

WA-547 Kendall Rd

547

Phone, CATV

Dogwood Dr

Alder Ln

Birch Ln

Tower Rd

Maple Ln

Exit Rd

Fall Valley Ln

Golden Valley Dr

Beaver Ct

Olive Way

Dolphin Way

Chestnut Dr

Cedar Ln

Cherry Ln

Cimarron Way

Hazel Ct

Azure Way

Fir Ln

Poppy Ln

Poppy Ct

Beech Pl

Juniper Pl

Shamrock Rd

Golden Valley Dr

Linden Ct

Ash Pl

Clear Valley Dr

Holly Ln

Juniper Ln

Ivy Ct

Bluebell Ct



Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville East
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 30

MP 3

Limestone
Junction

Limestone
Junction

547

WA-547 Kendall Rd

Page 31

Linden Ct

Willow Pl

Golden Valley Dr

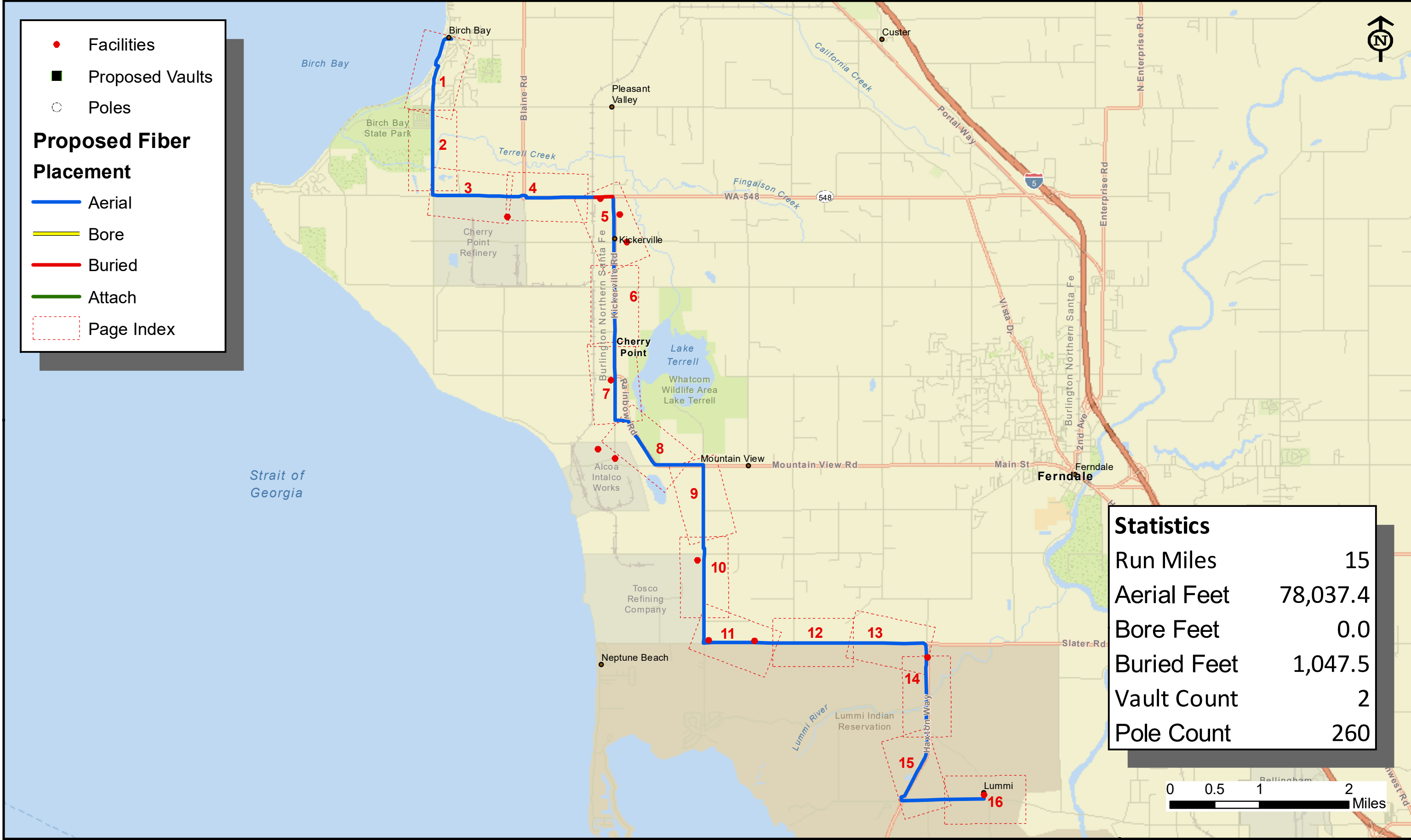
Hawthorne Pl

Limestone Rd

Windon Ln

Silver Spruce Way

Birch Bay to Lummi Map Book Page Index







Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

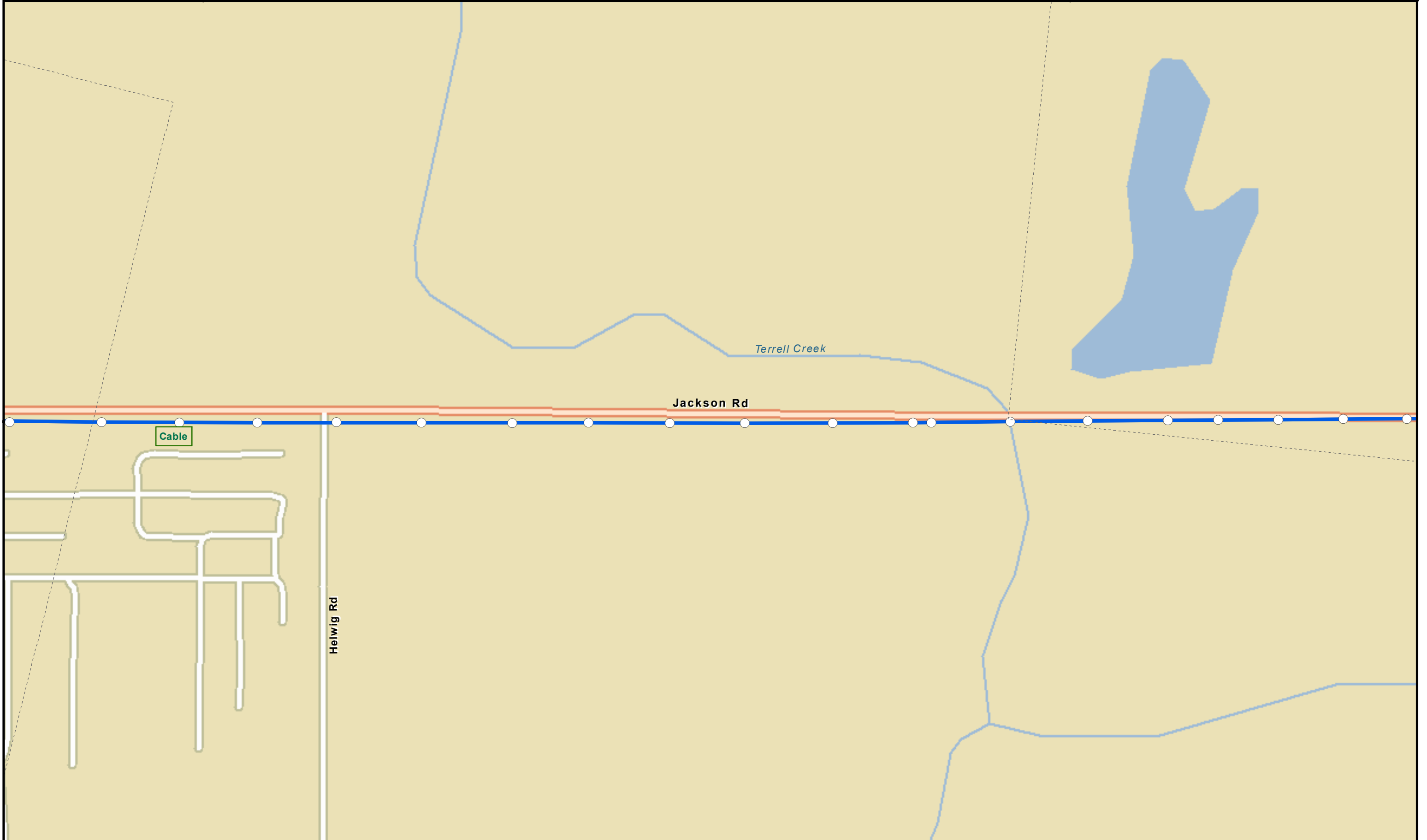
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County: Whatcom

Port of Bellingham

Page 2 of 16

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

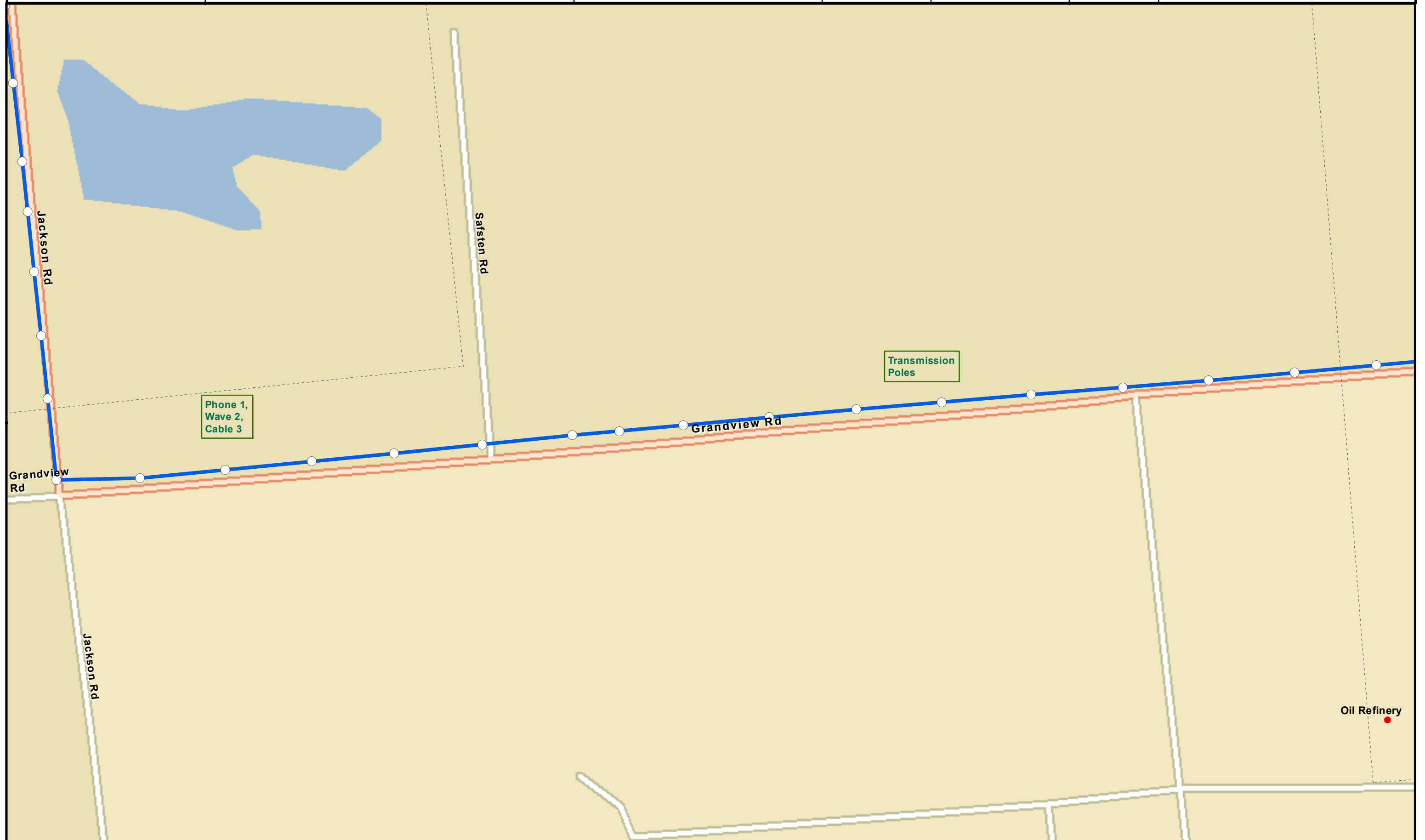
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

MP 6

Blaine Rd

Grandview Rd

548

Transmission
Poles, No
undrhangs

Oil Refinery



— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

Segment: Birch Bay to Lummi

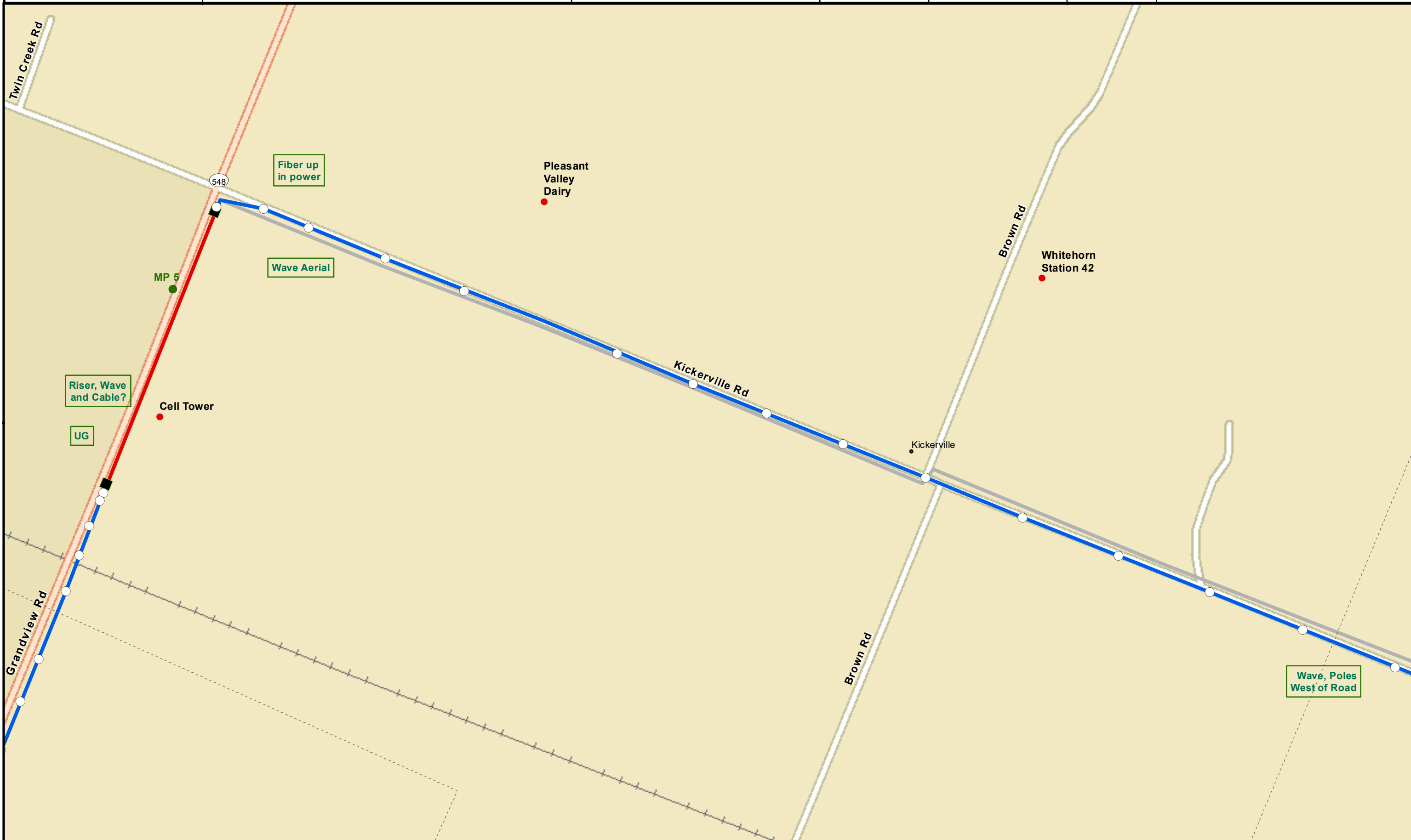
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

Segment: Birch Bay to Lummi

Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Aldergrove Rd

Point Whitehorn Rd

Lonse th Rd

Kickerville Rd

Kickerville Rd

Wave, Poles
West of Road

Power both
sides of
road?



Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Lake Terrell
St Game
Refuge

Guy Pole

Poles not
in database

Rainbow Rd

Mountain View Rd

Kickerville Rd

Phone 1,
Wave 2,
Zayo 3?



Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

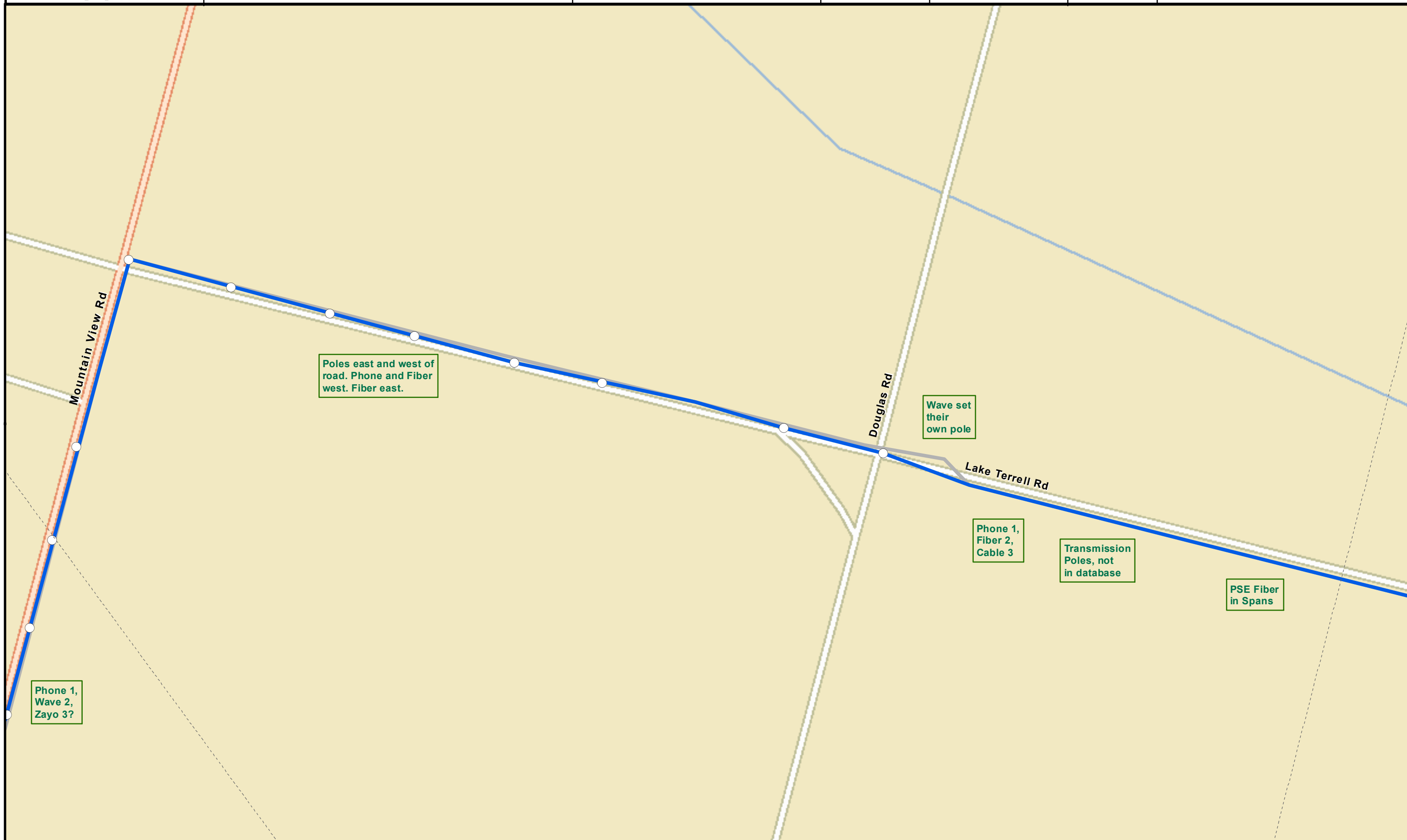
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

Segment: Birch Bay to Lummi

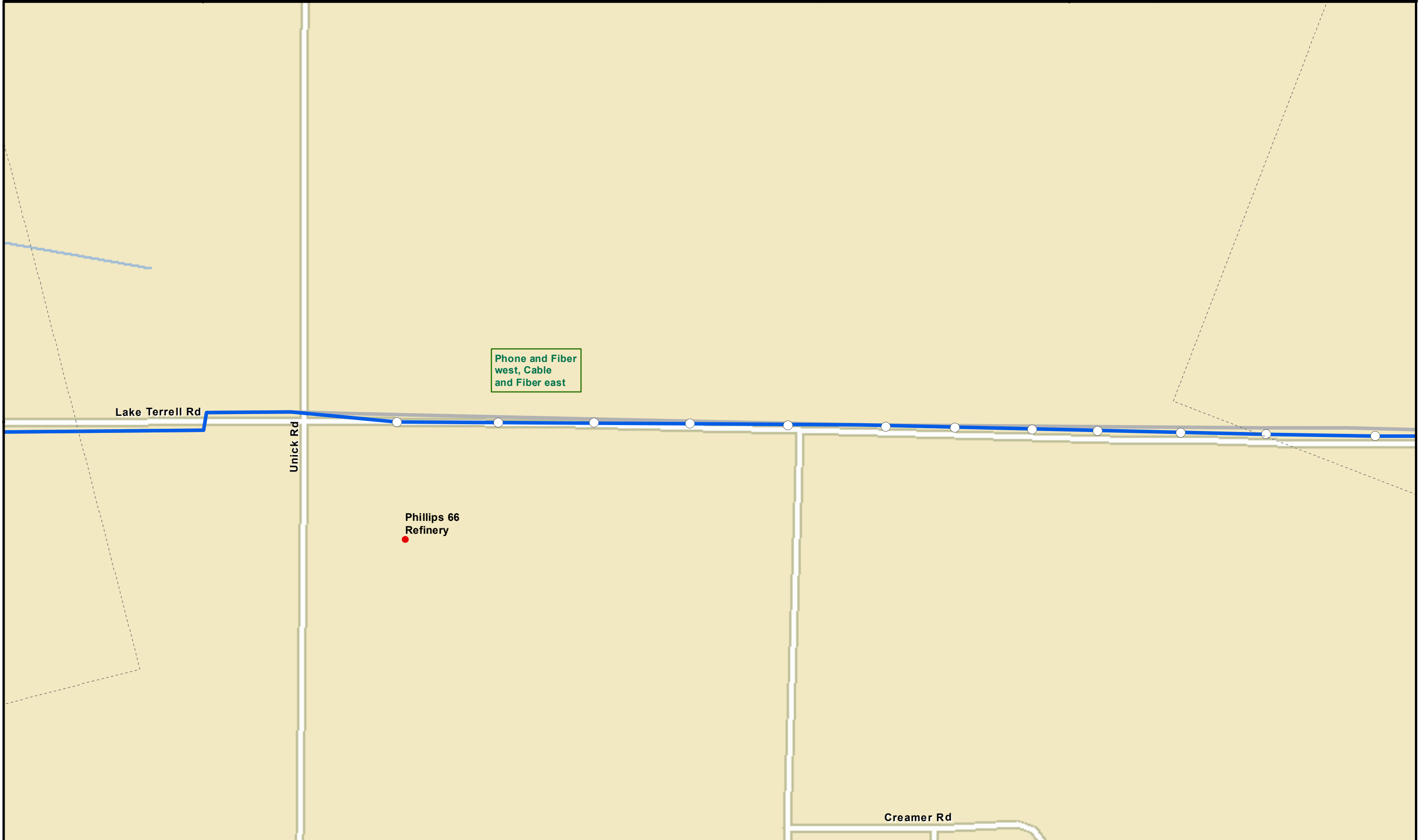
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Walltine Rd

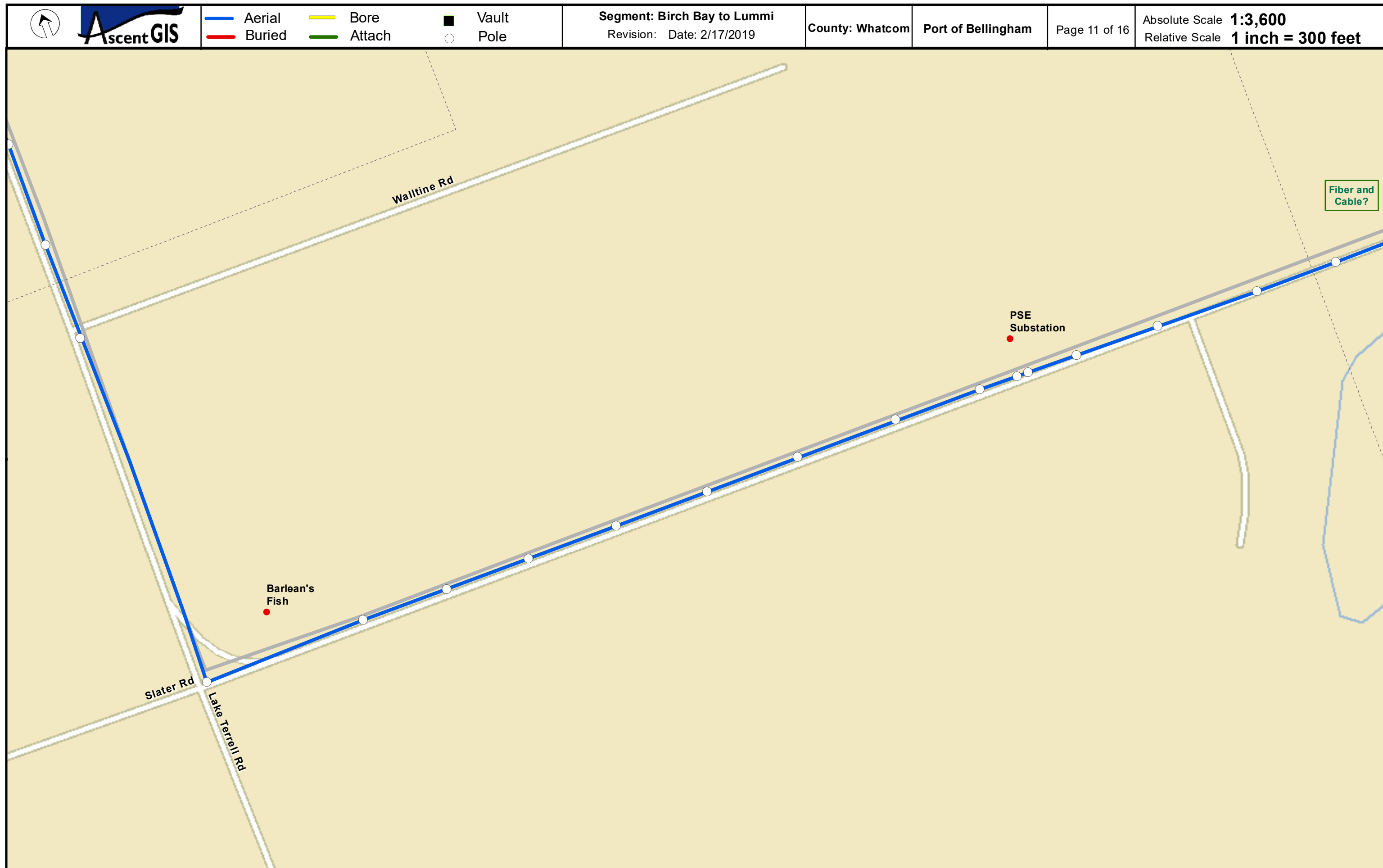
PSE
Substation

Barlean's
Fish

Slater Rd

Lake Terrell Rd

Fiber and
Cable?





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

Segment: Birch Bay to Lummi

Revision: Date: 2/17/2019

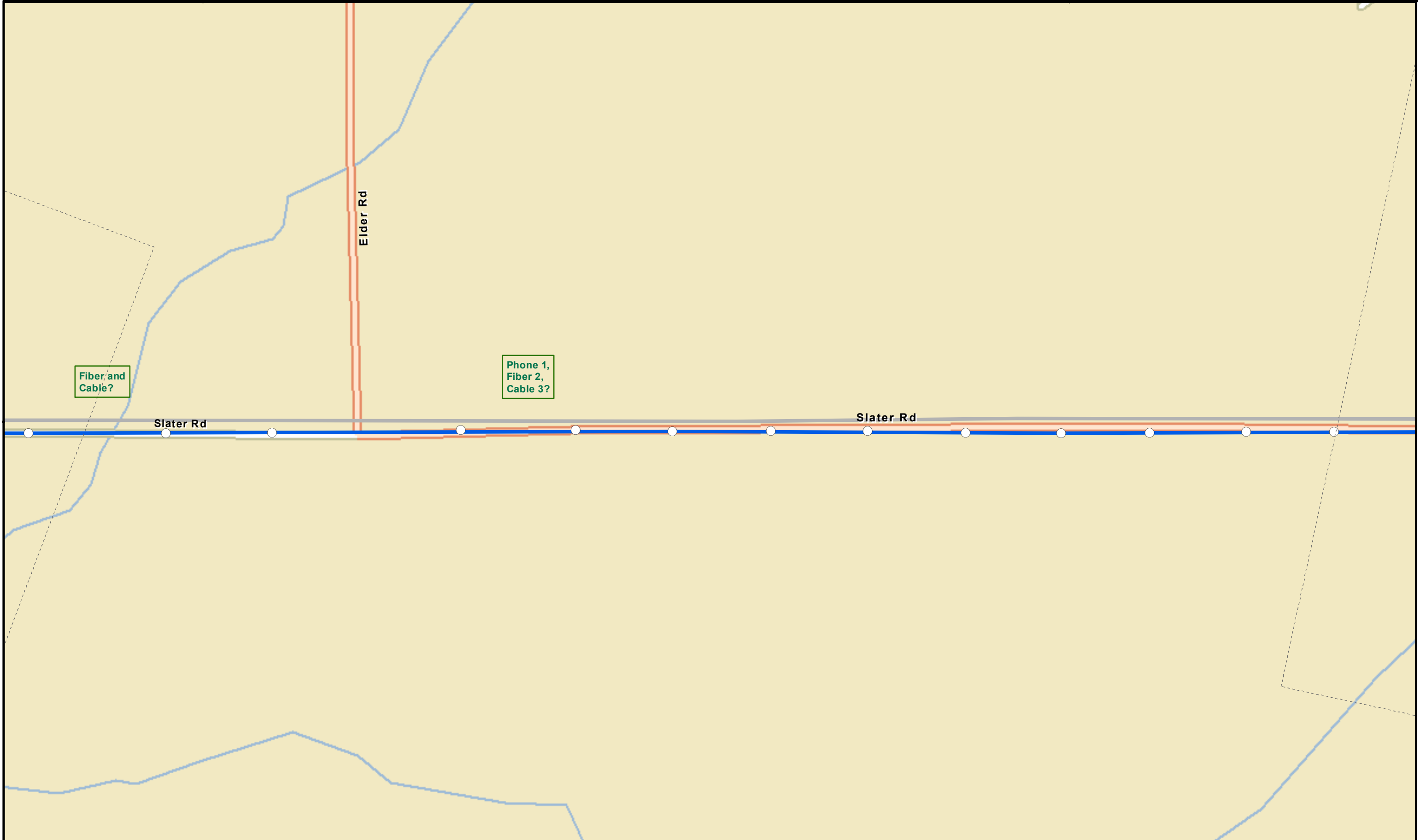
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Port of Bellingham

Page 12 of 16

Absolute Scale **1:3,600**

Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

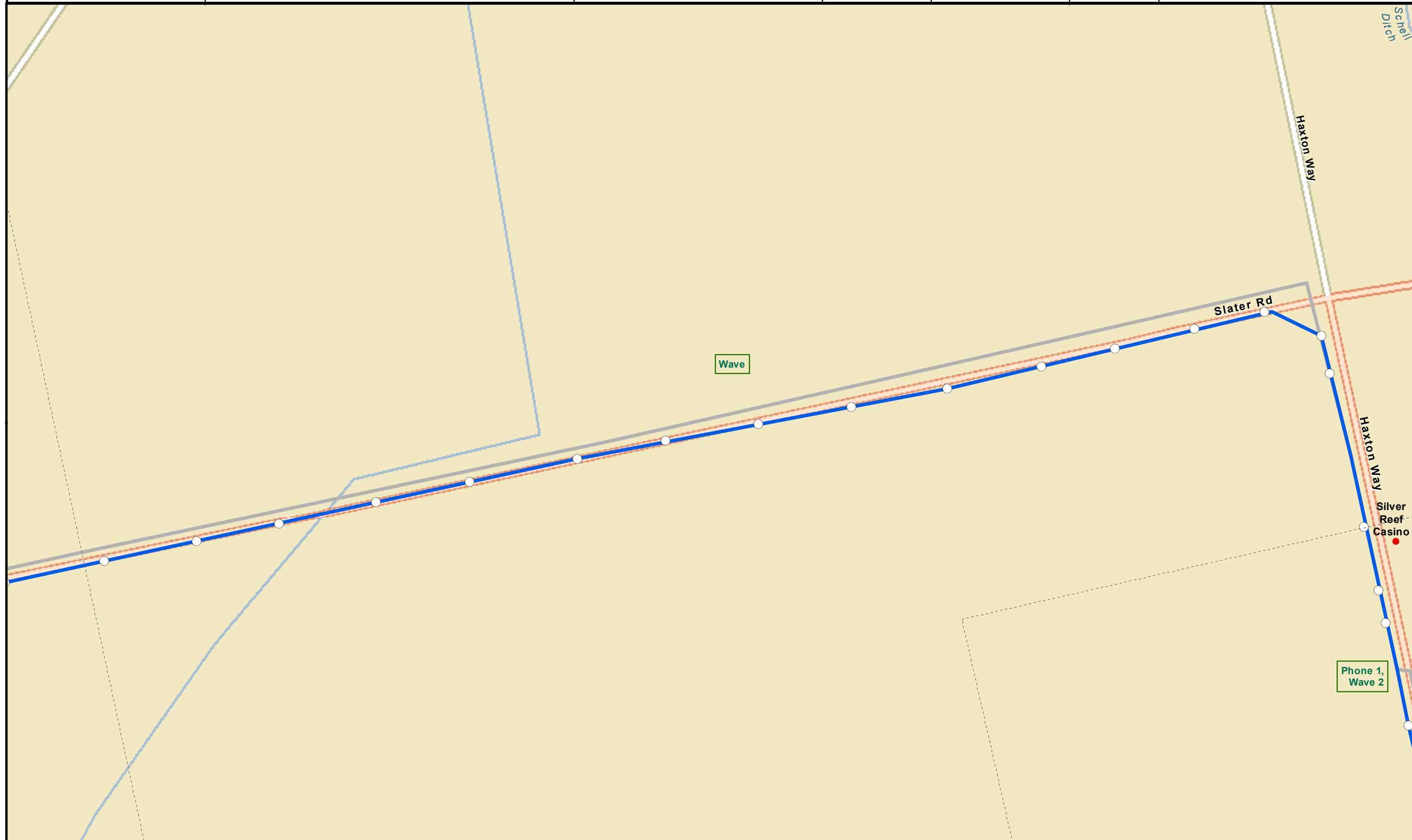
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

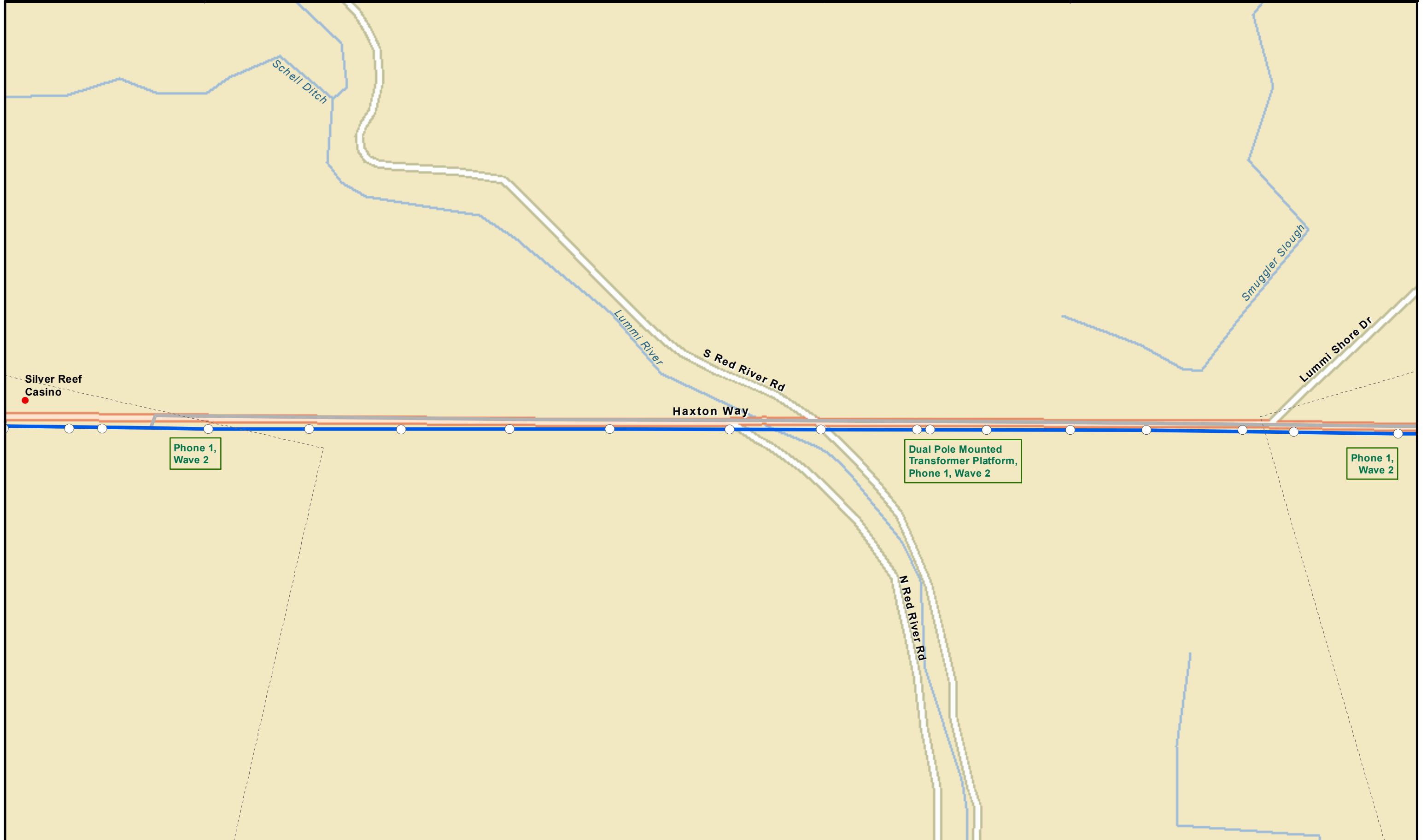
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

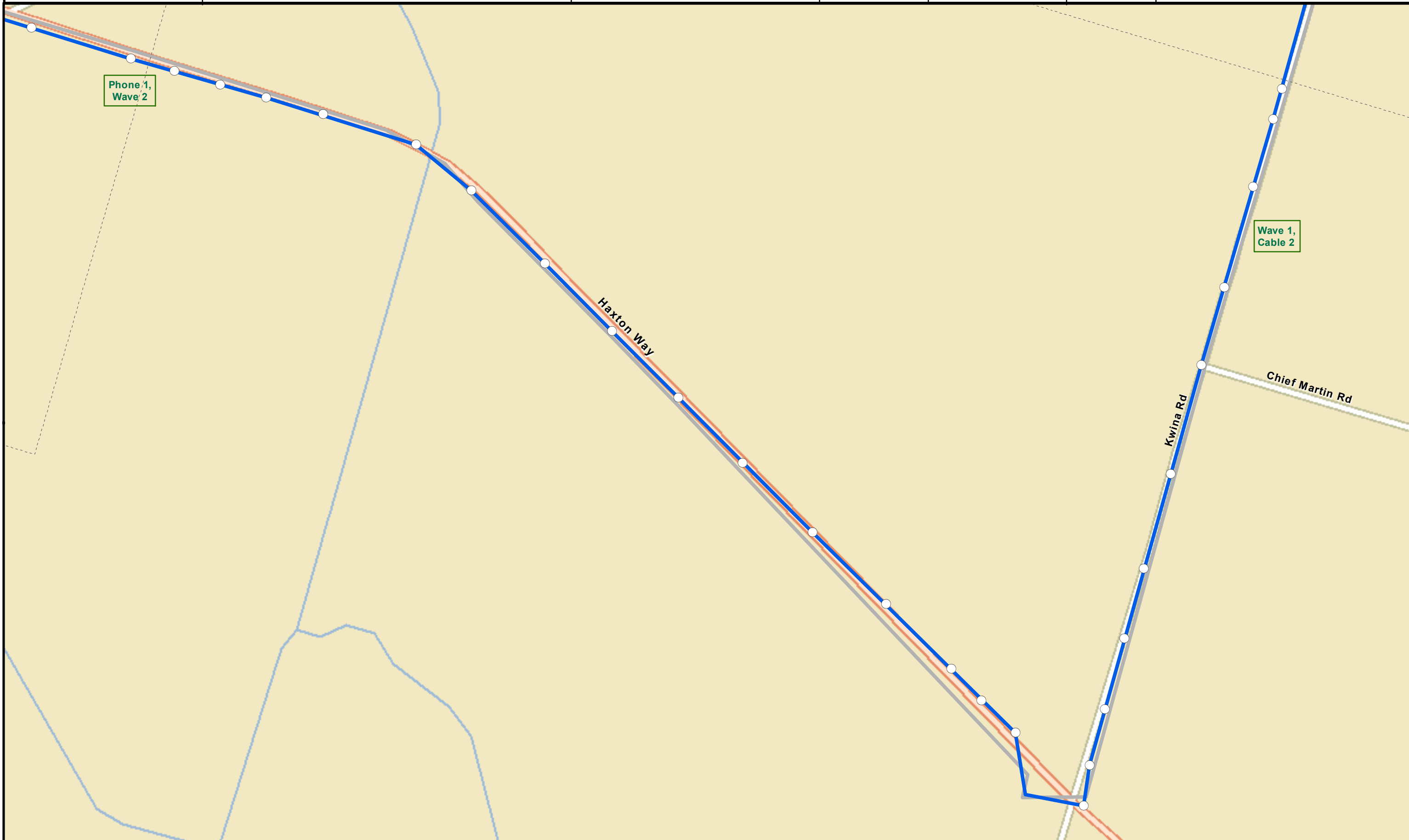
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County: Whatcom

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Birch Bay to Lummi

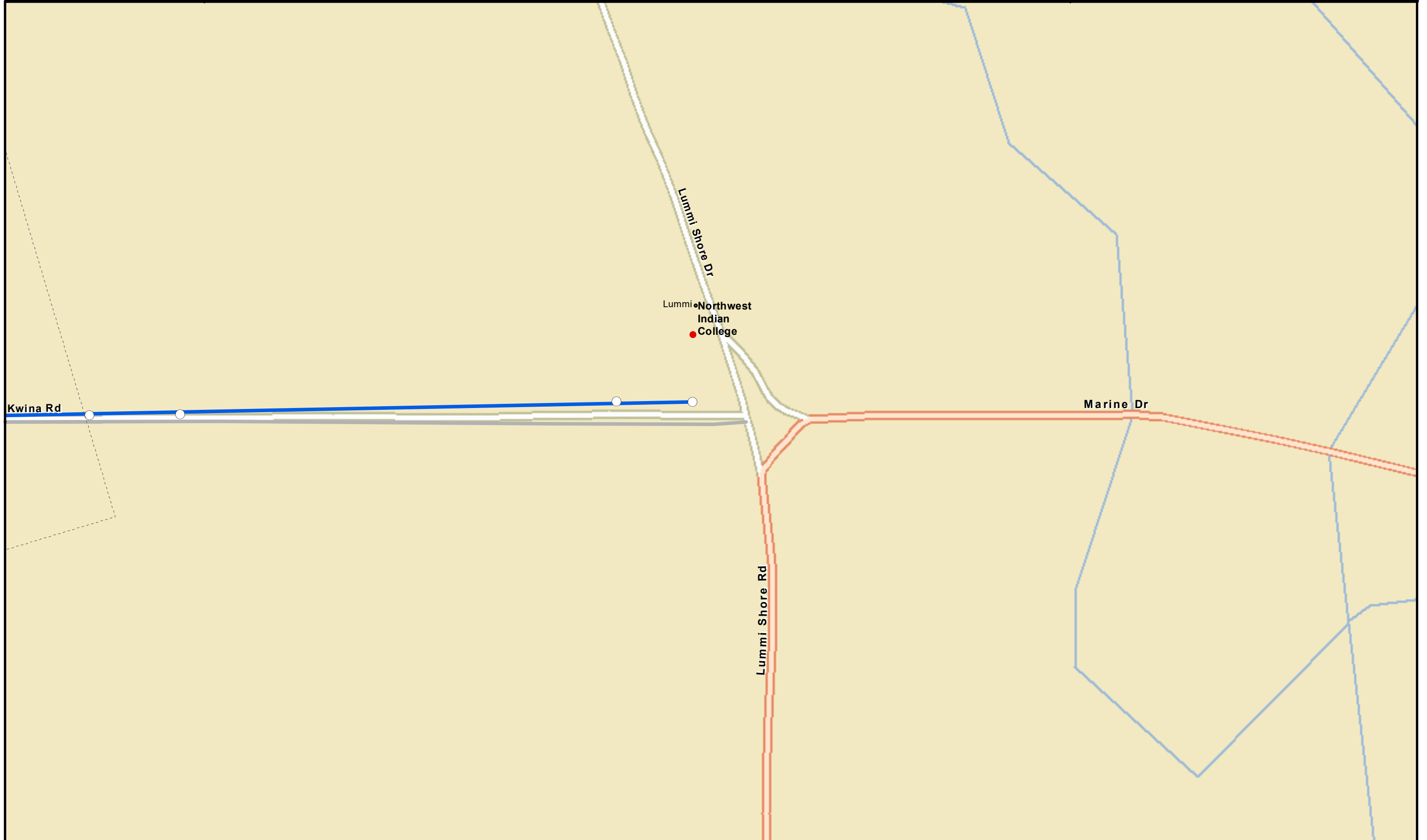
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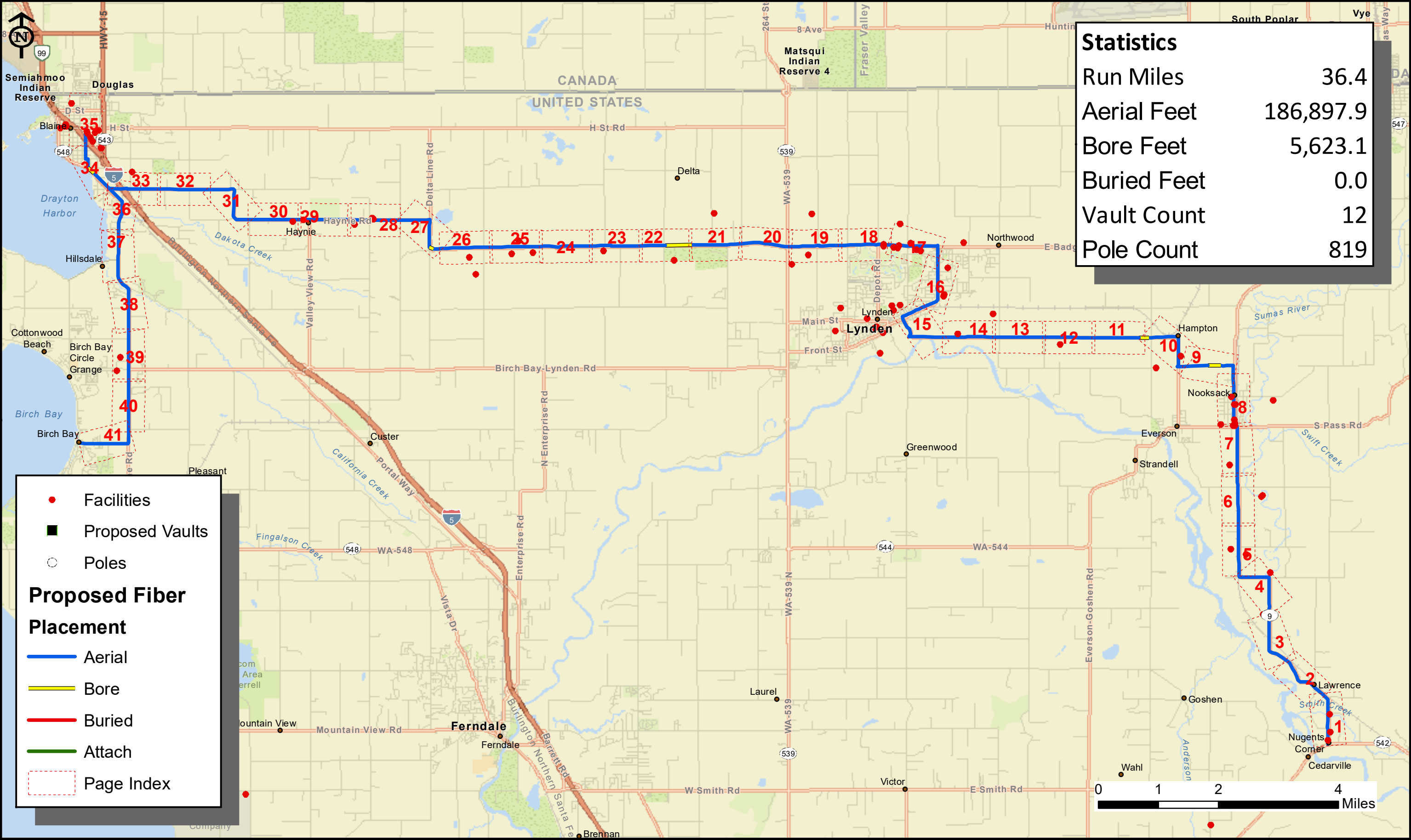
Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**



Cedarville North Map Book Page Index





Aerial
Buried

Bore
Attach

Vault
Pole

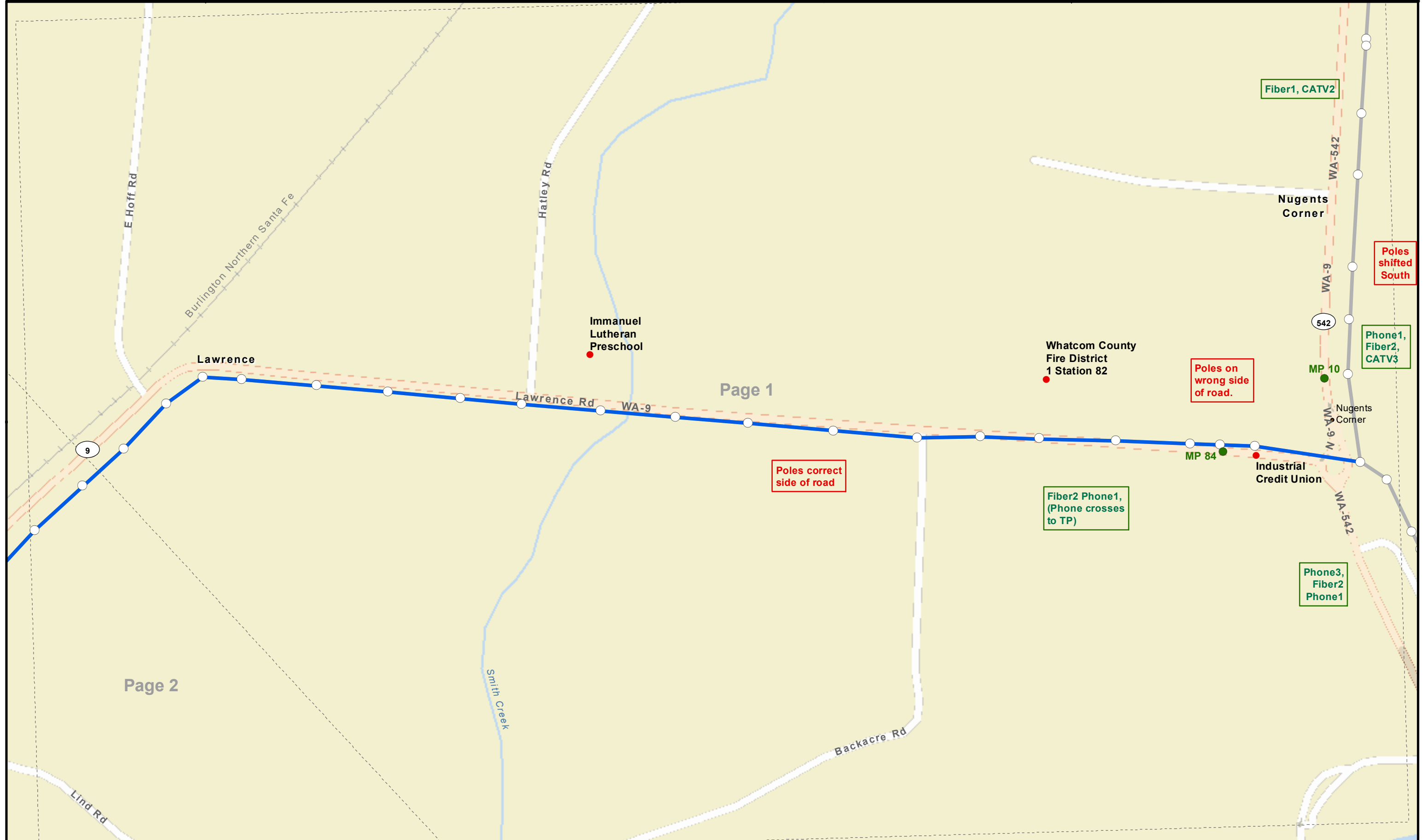
Segment: Cedarville North
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

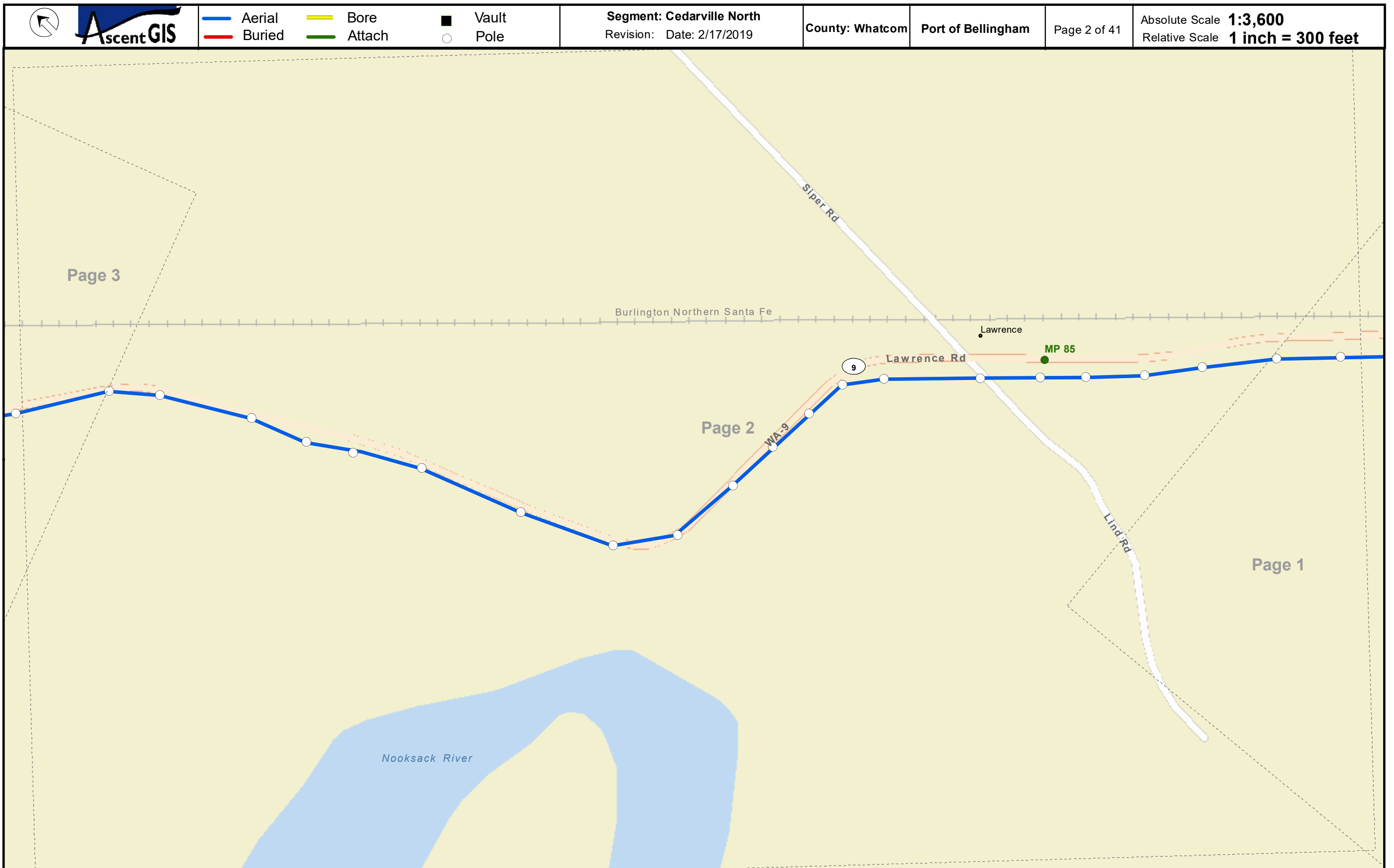
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

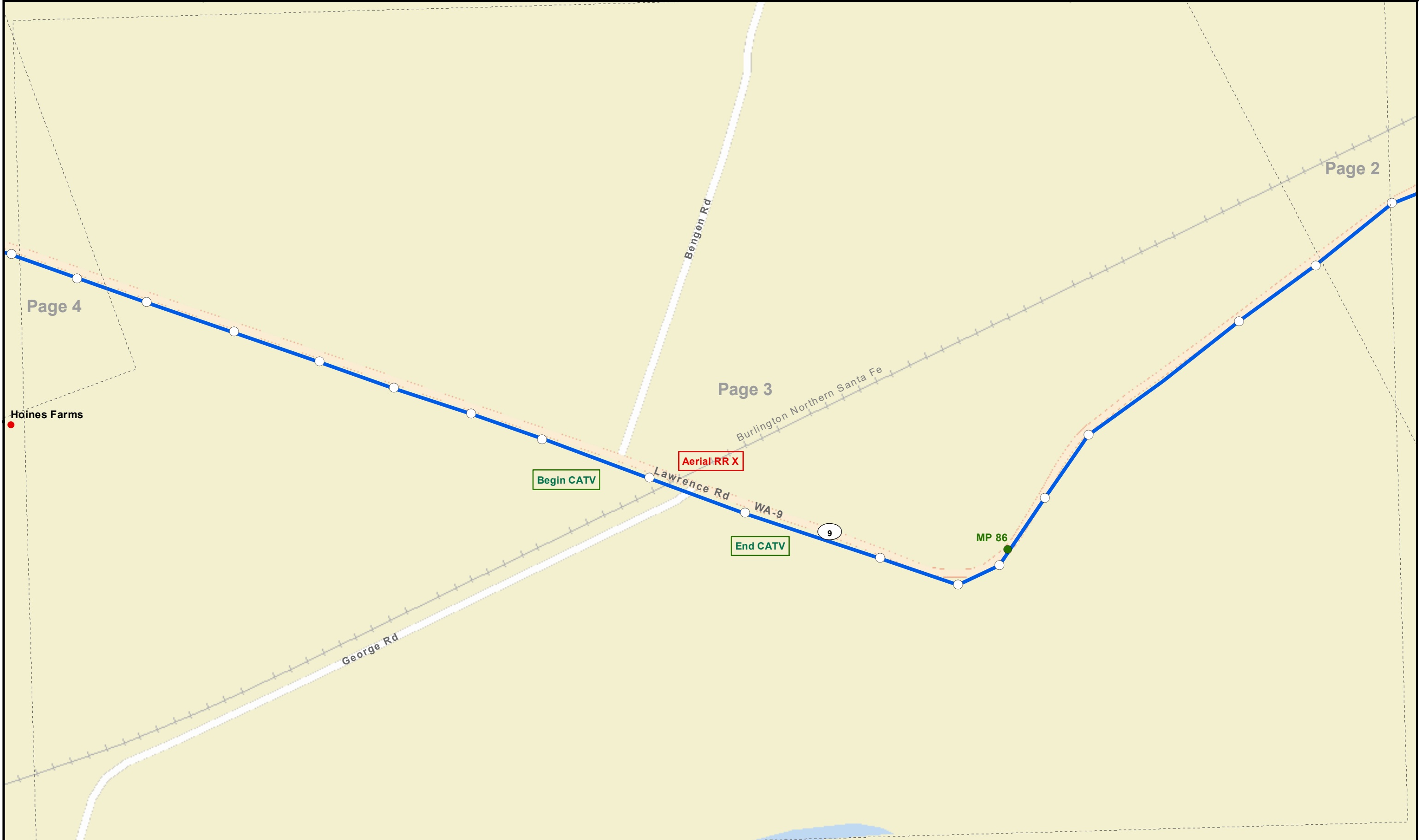
Segment: Cedarville North
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

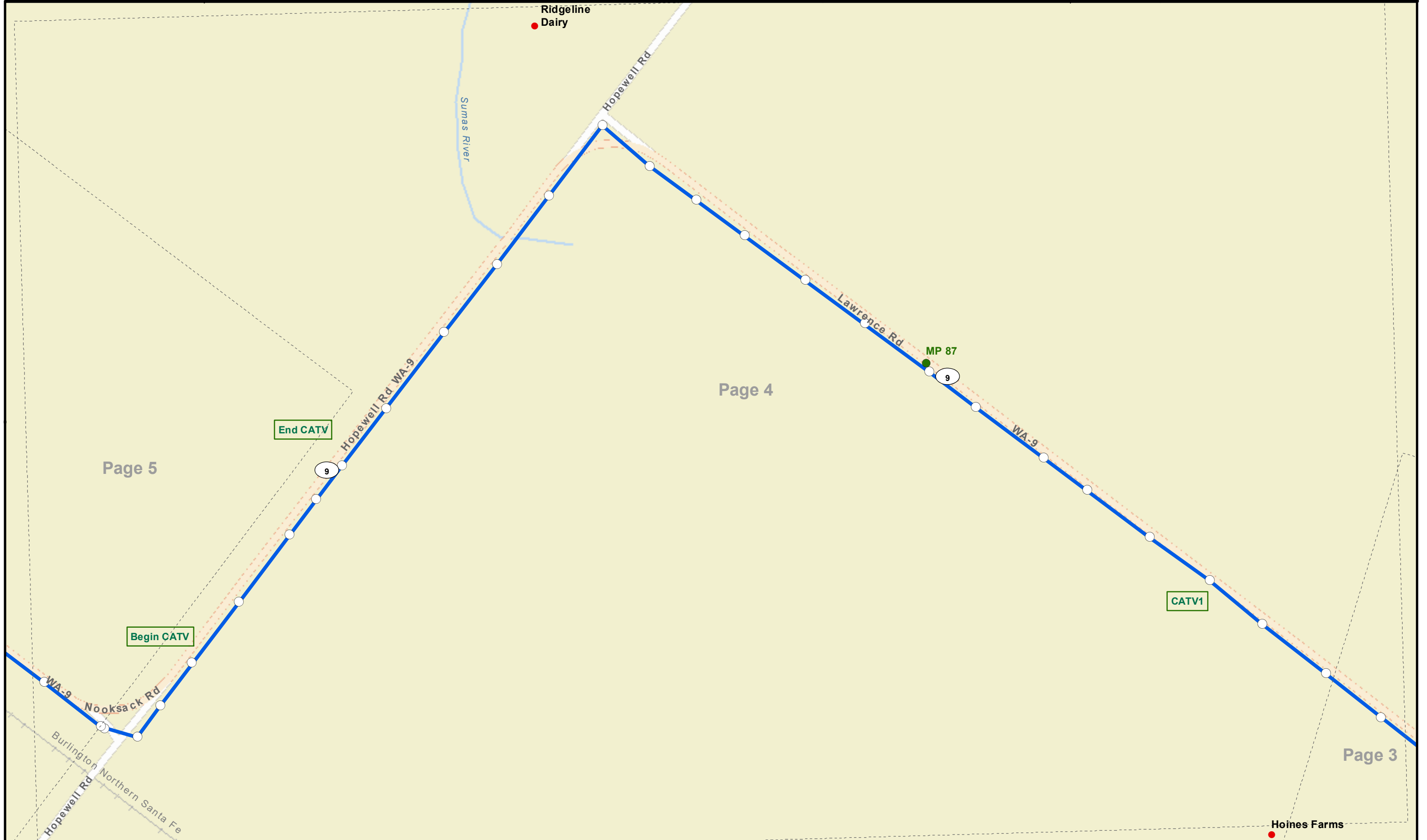
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

Page 4 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

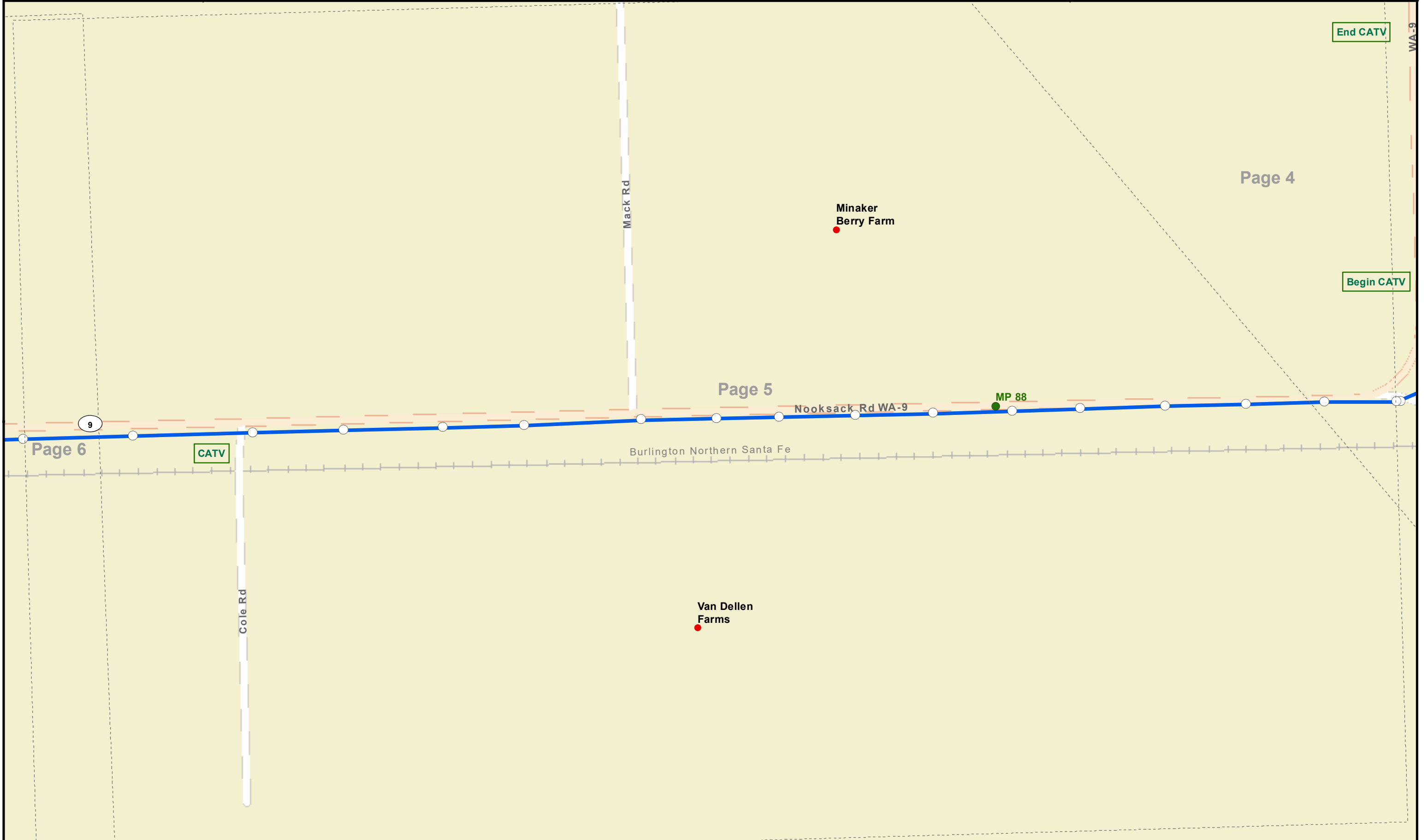
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

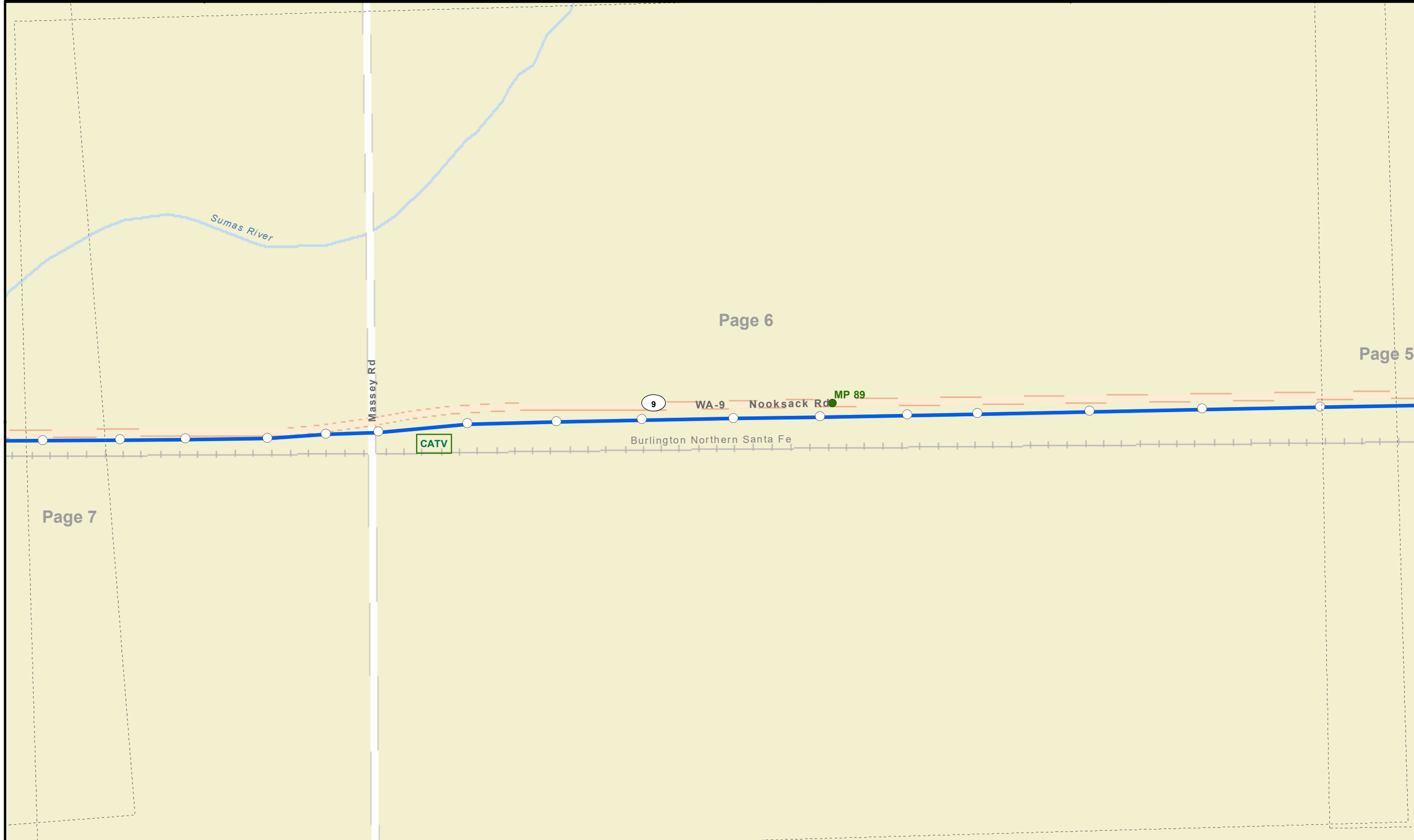
Segment: Cedarville North
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County: Whatcom

Port of Bellingham

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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

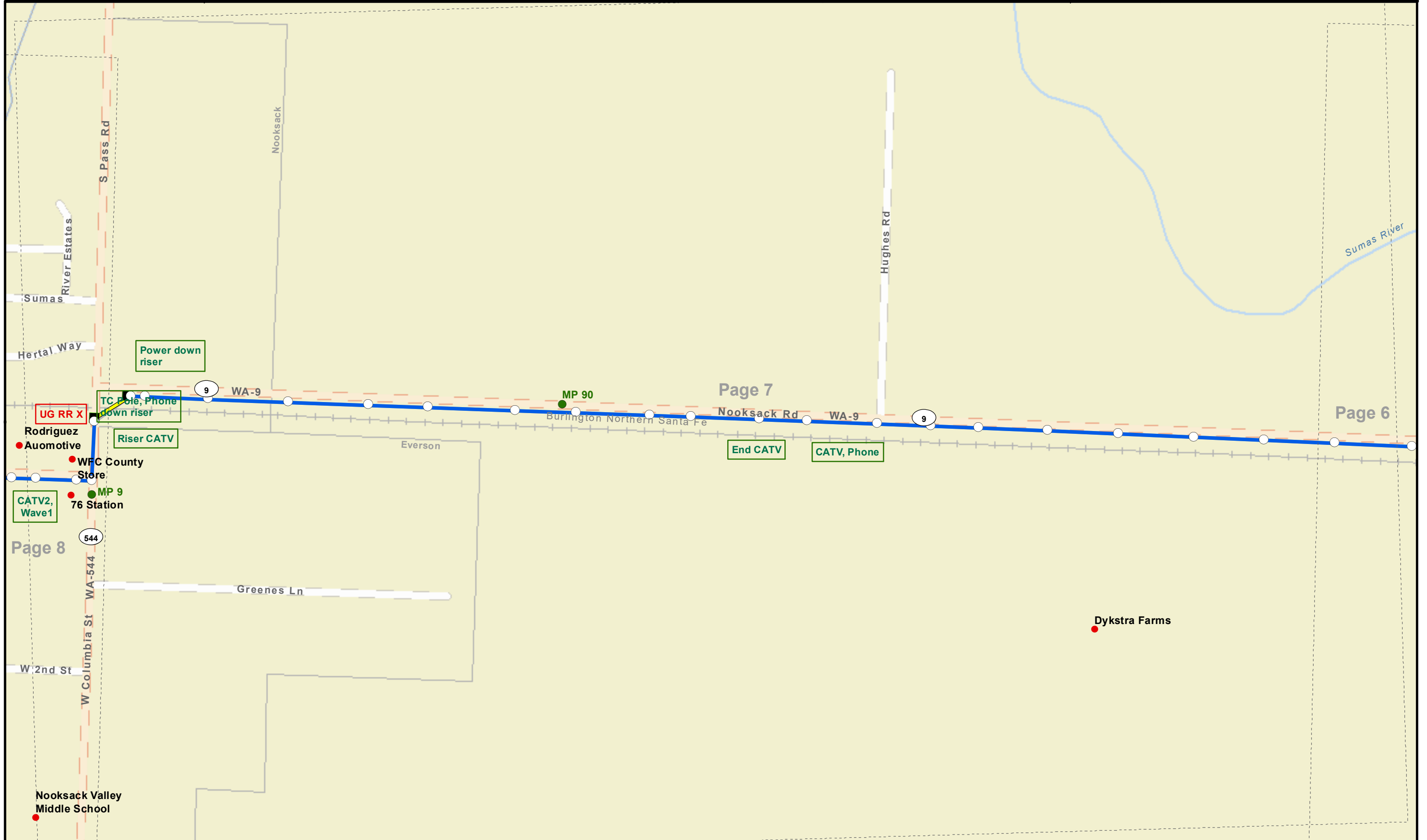
Segment: Cedarville North
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County: Whatcom

Port of Bellingham



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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





 Bore
 Attach

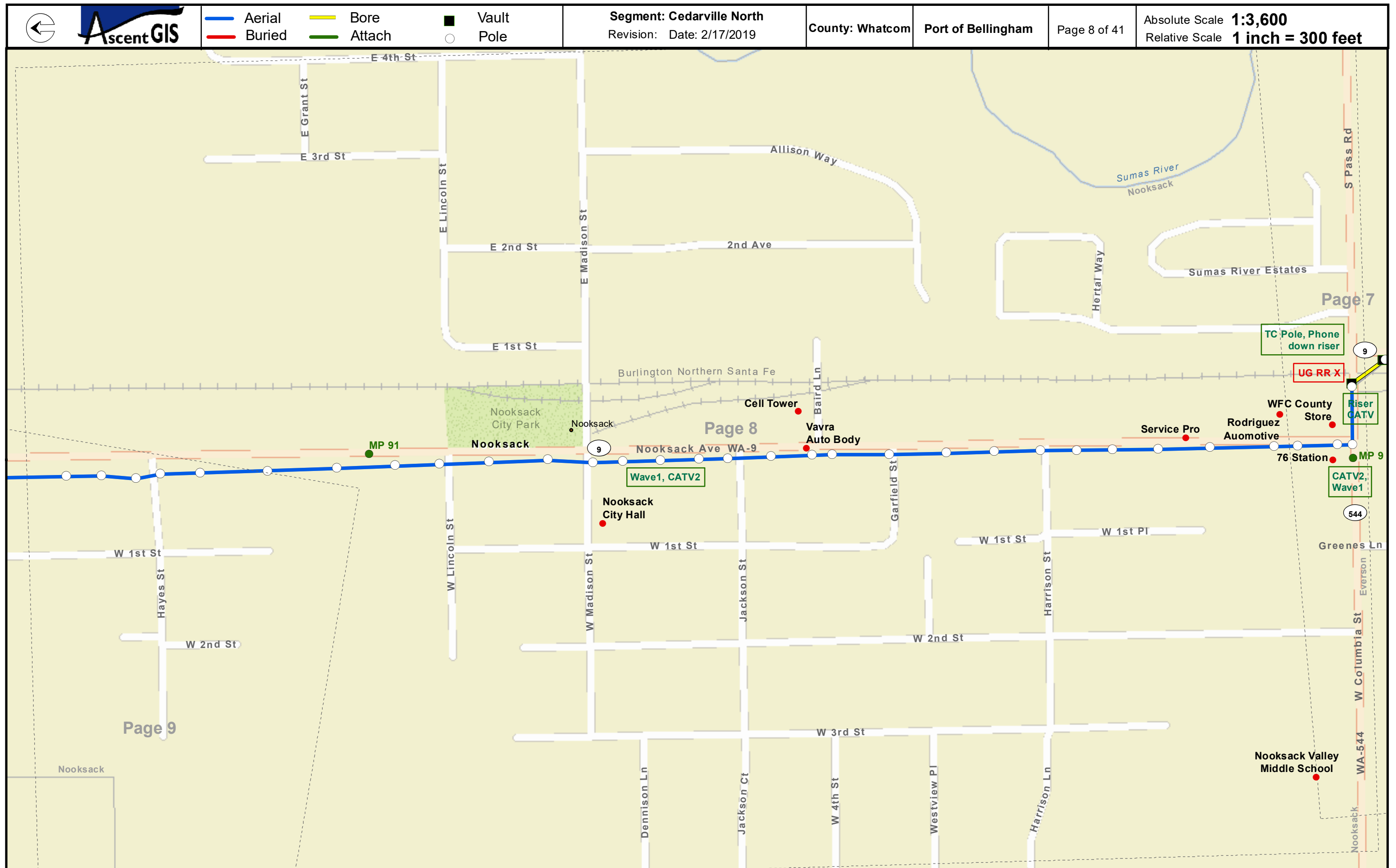
 Vault
 Pole

County: Whatcom

Port of Bellingham

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Absolute Scale	1:3,600
Relative Scale	1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 10

Poles wrong side
of road. Tel
North. Power South

Riser,
Wave1
Phone2

1.145 ft Span

Page 9

Poles wrong side
of road. Tel
North. Power South

Wave Poles,
Zayo UG

Page 8

Hayes St

W 2nd St

W 1st St

WA-9
Nooksack Ave

Burlington Northern Santa Fe



Aerial
Buried

Bore
Attach

Vault
Pole

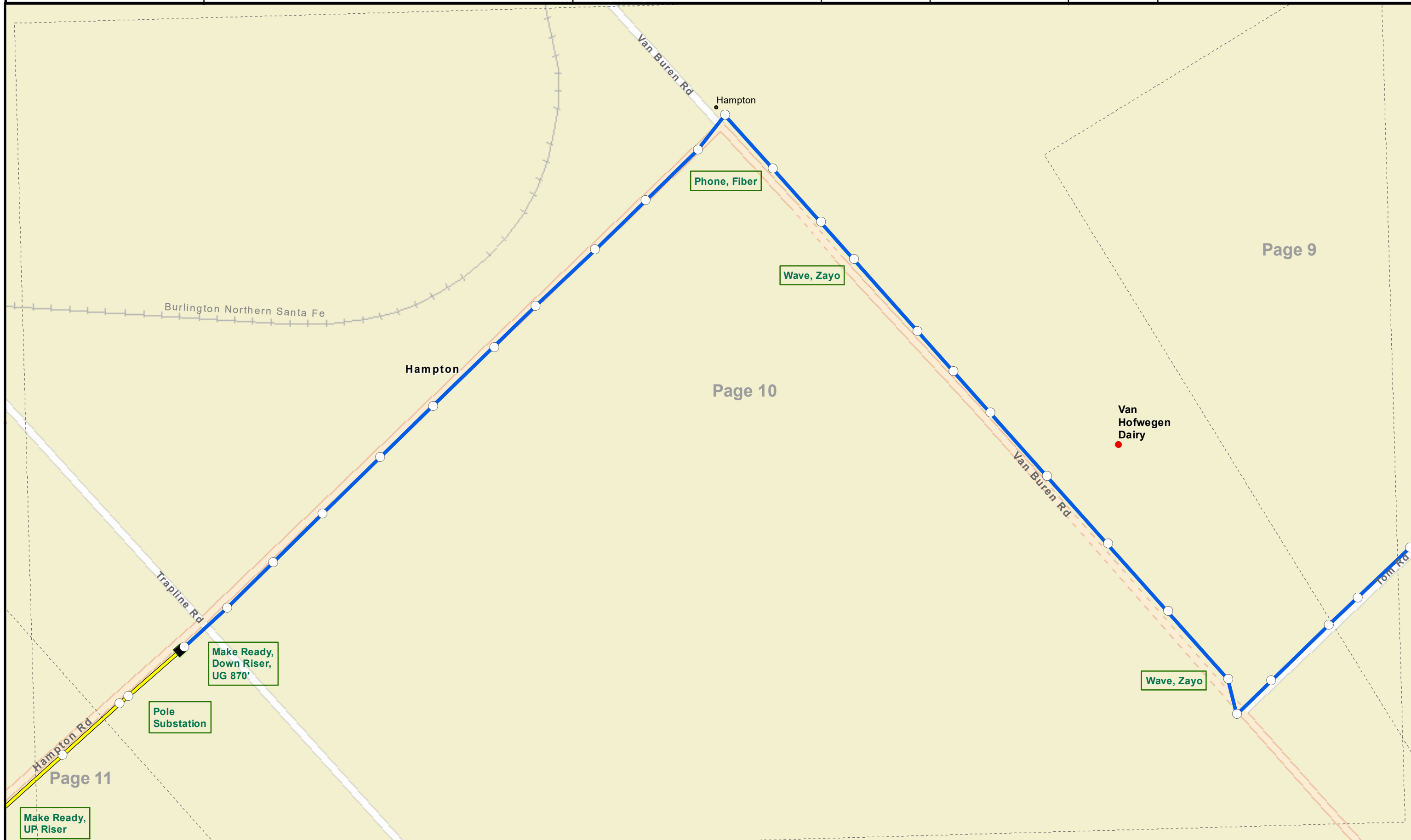
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Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

Page 10 of 41

Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





 Bore
 Attach

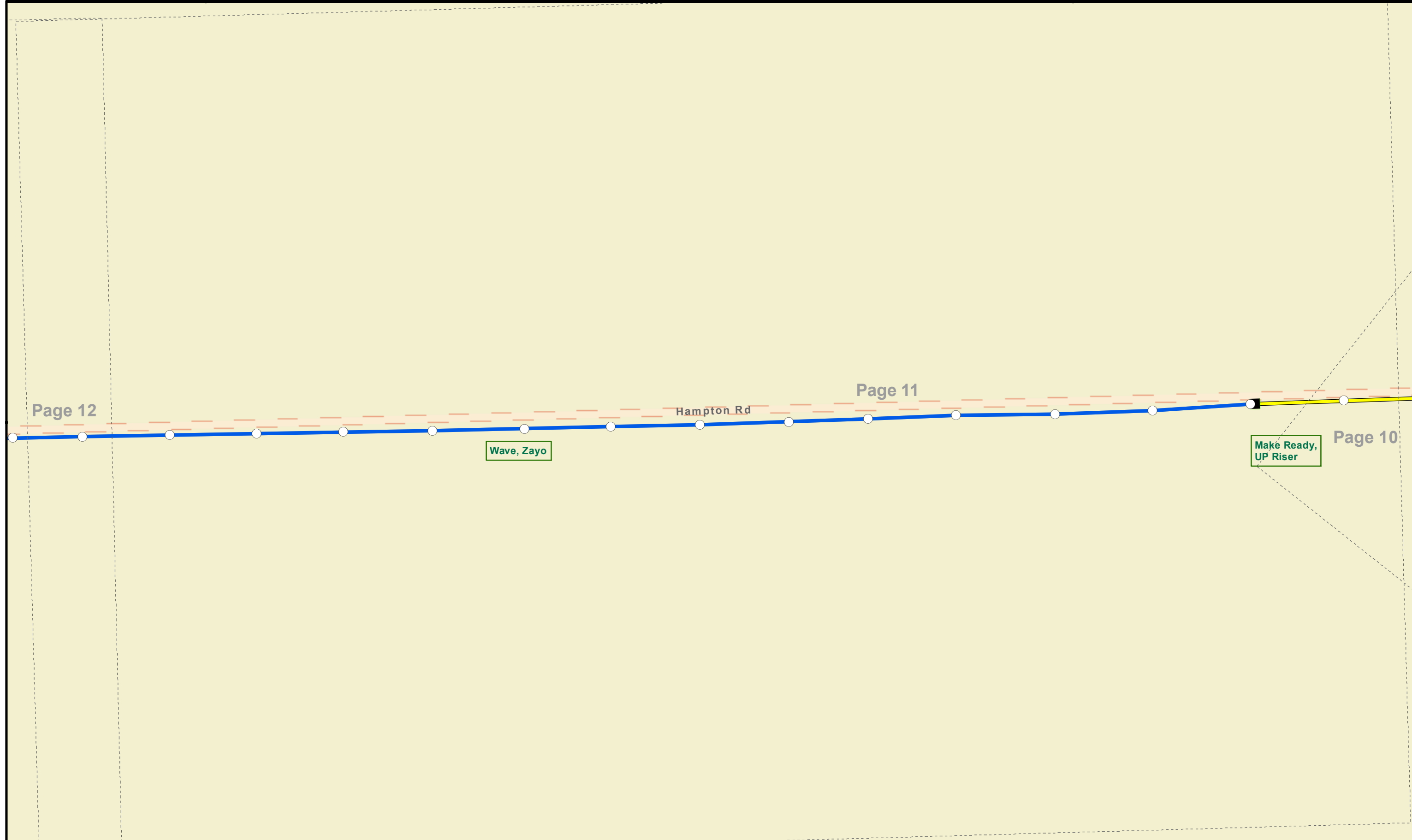
 Vault
 Pole

County: Whatcom

Port of Bellingham

Page 11 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

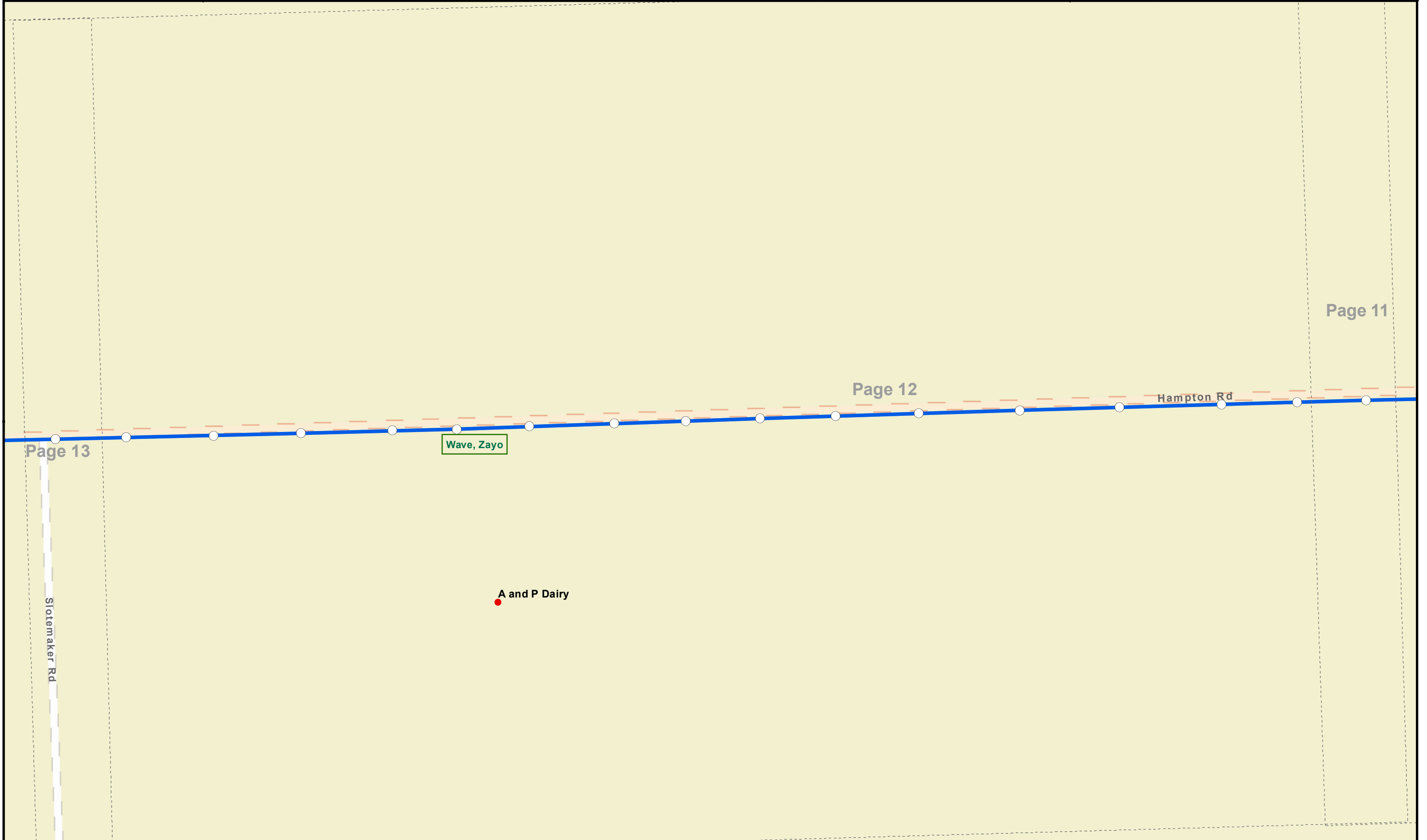
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

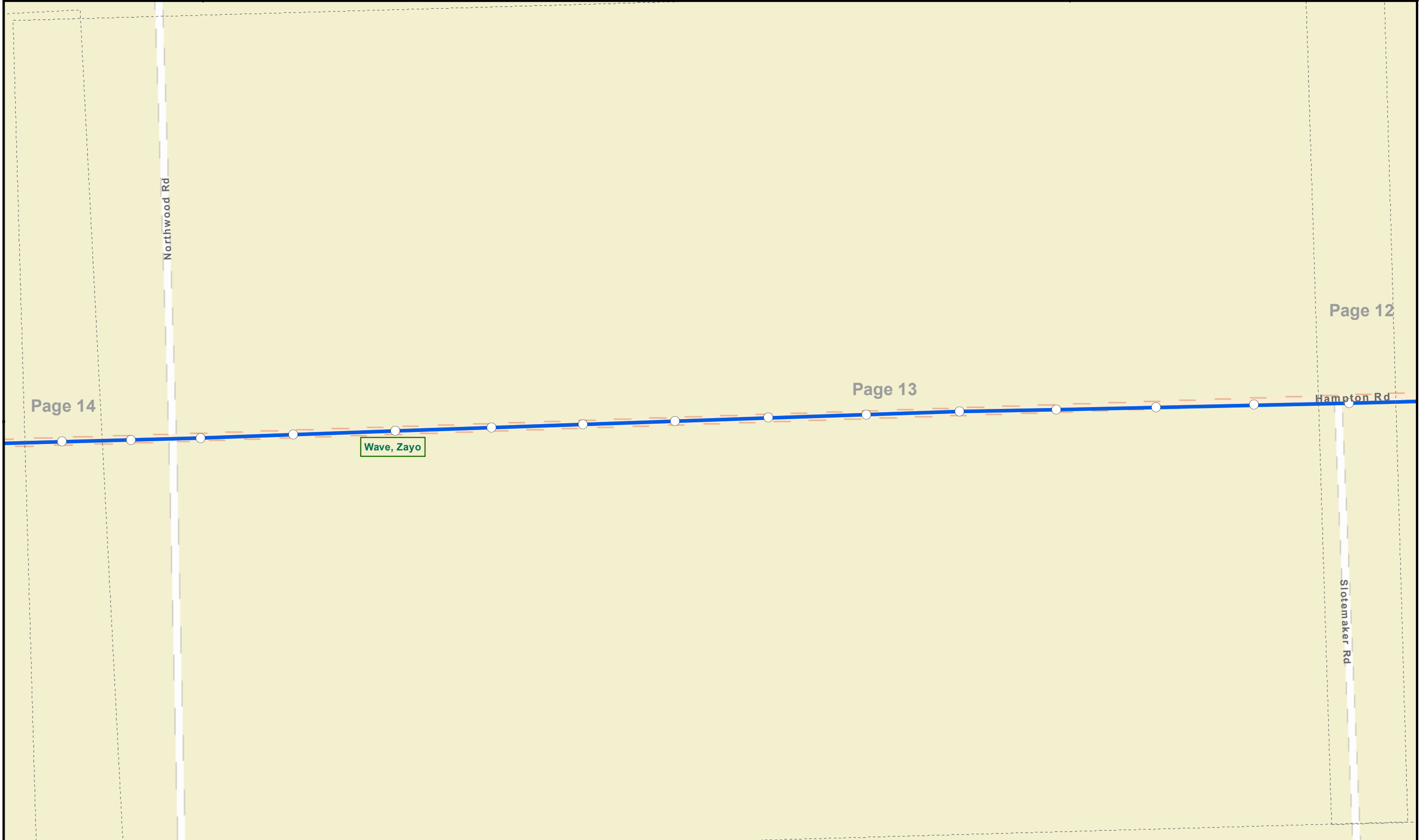
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Molendyk
Dairy

Hampton Rd

Page 14

Page 13

Page 15

Nooksack River



Aerial
Buried

Bore
Attach

Vault
Pole

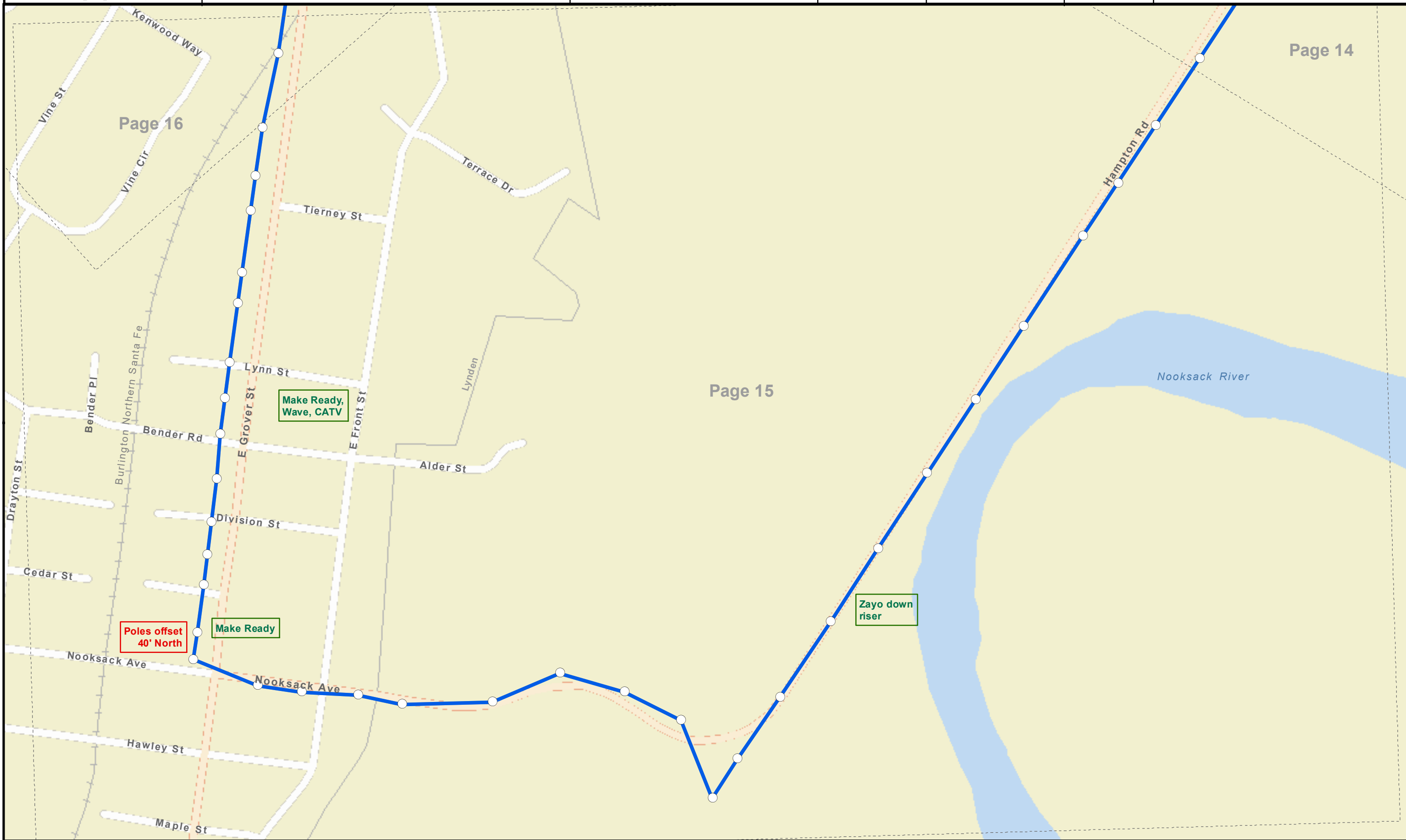
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

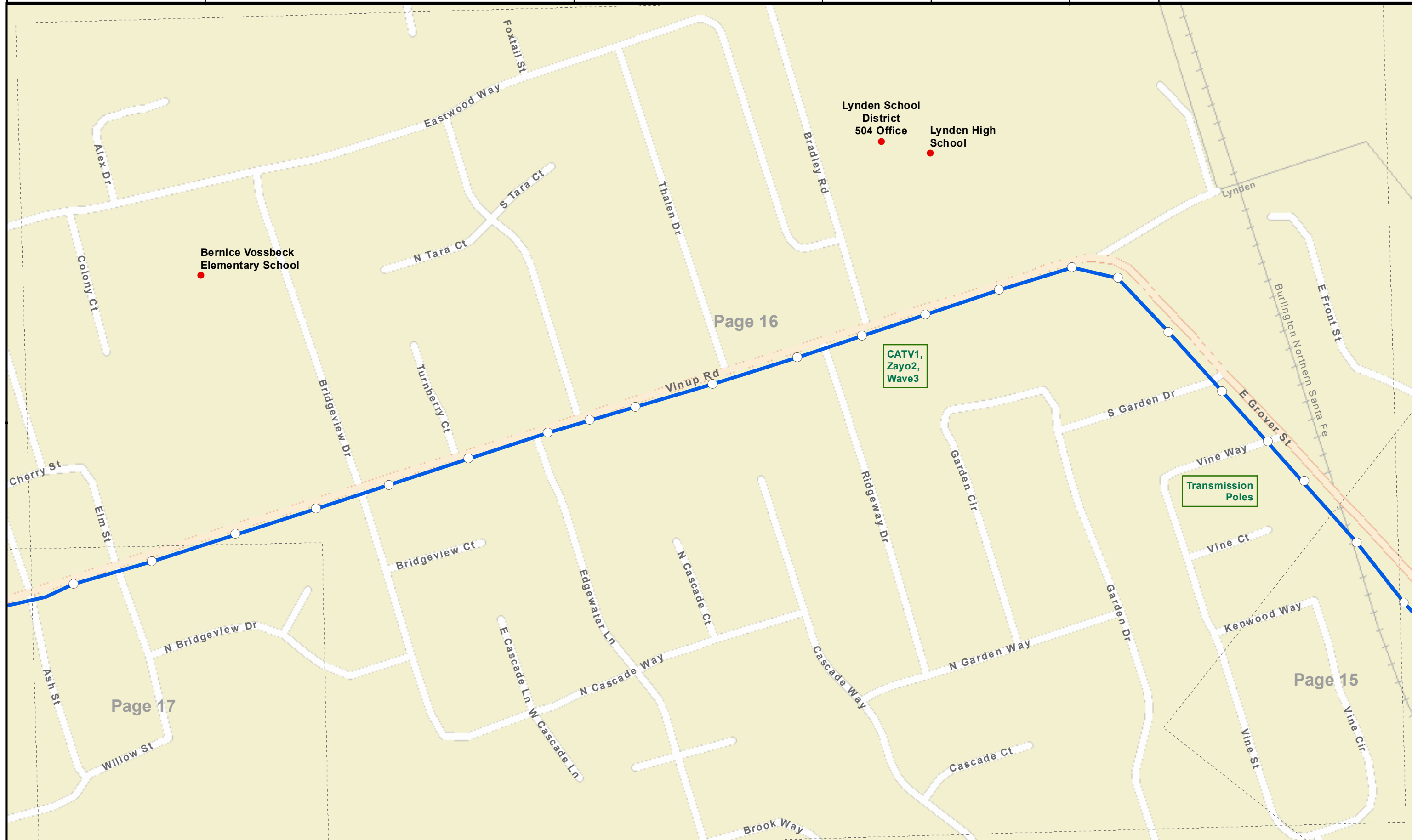
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Port of Bellingham

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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

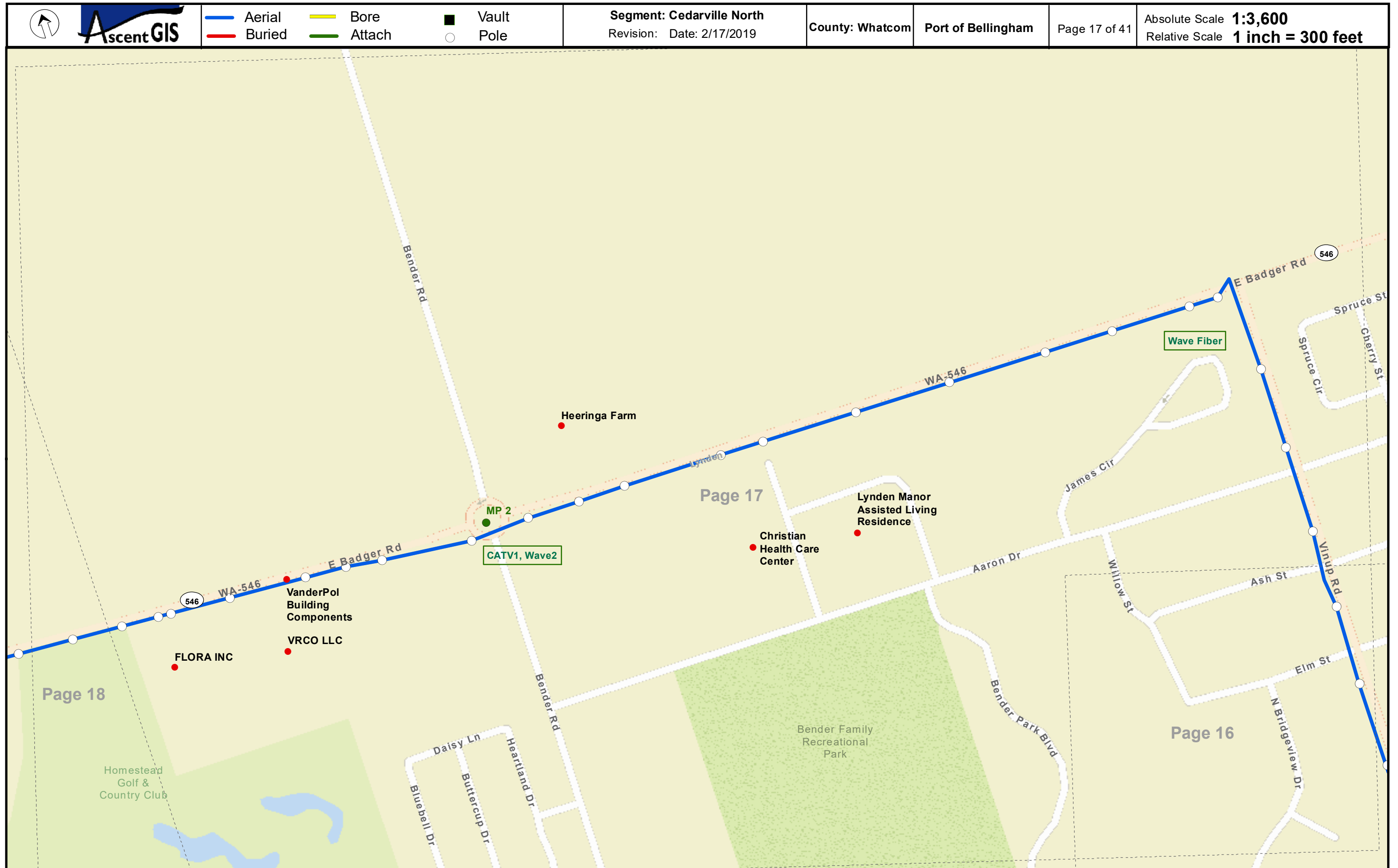
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County: Whatcom

Port of Bellingham

Page 17 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

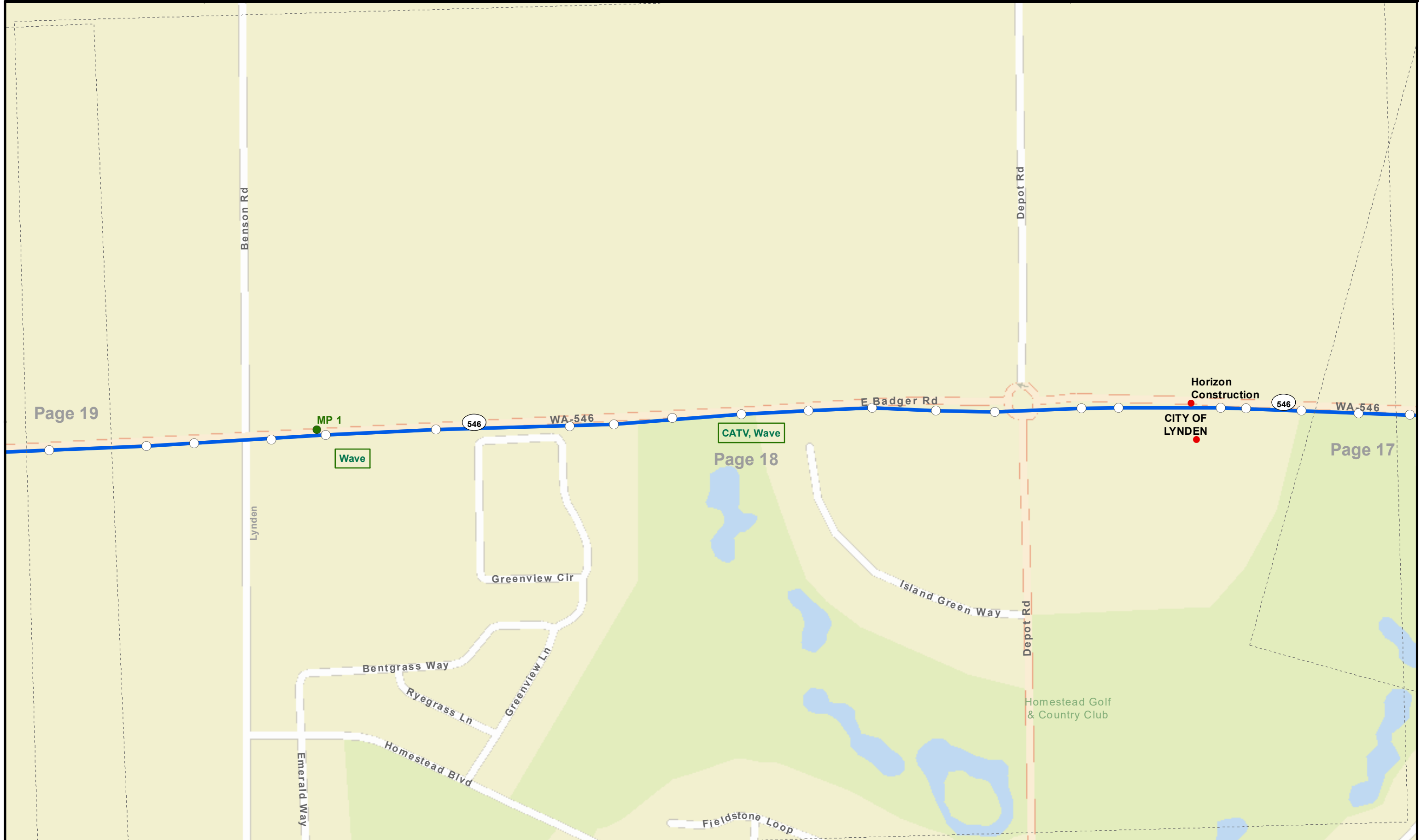
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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

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Pole

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 20

No Underhangs

Page 19

Page 18

WA-546

546

E Badger Rd

Double Ditch Rd

Vande
Garde
Dairy



Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

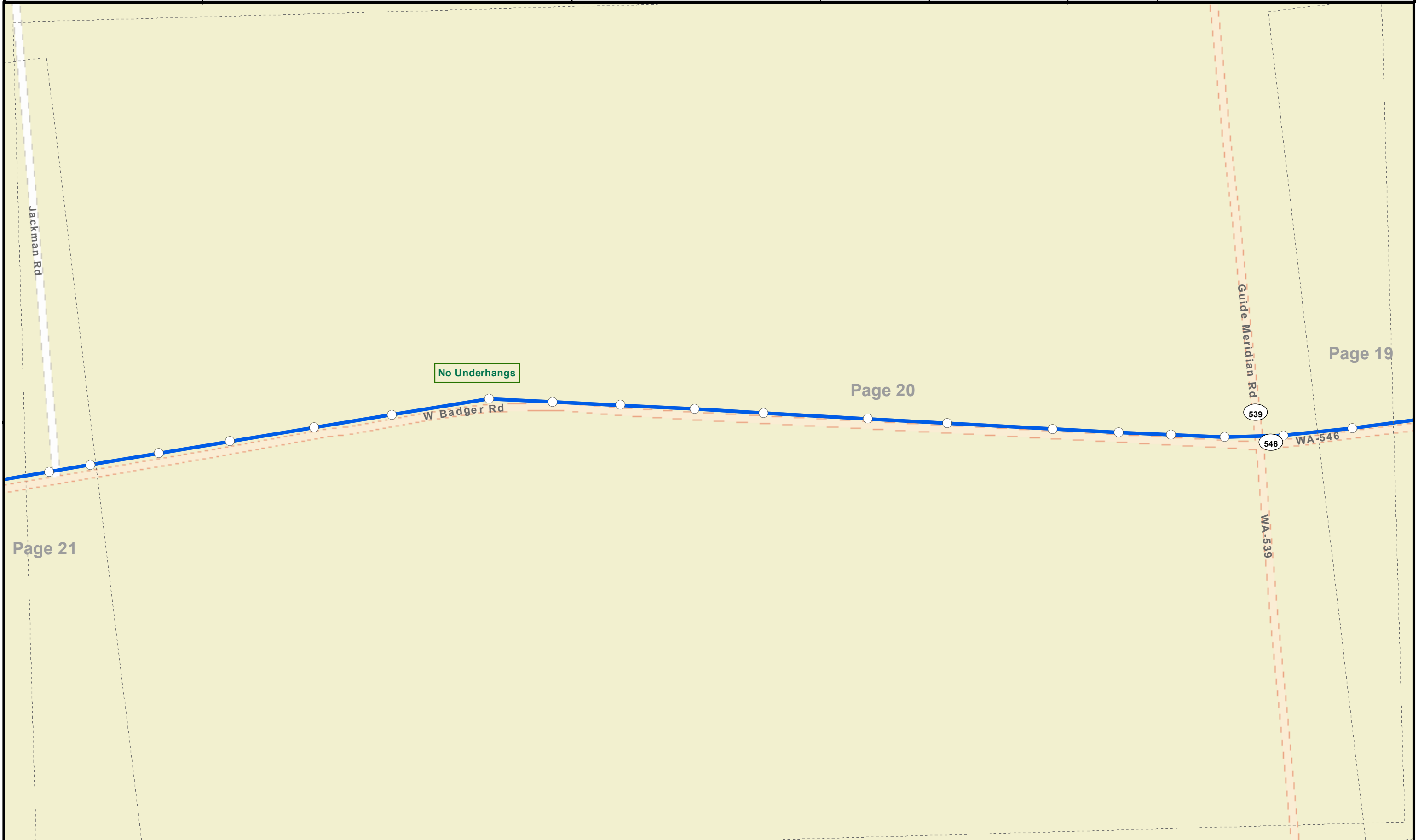
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County: Whatcom

Port of Bellingham

Page 20 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

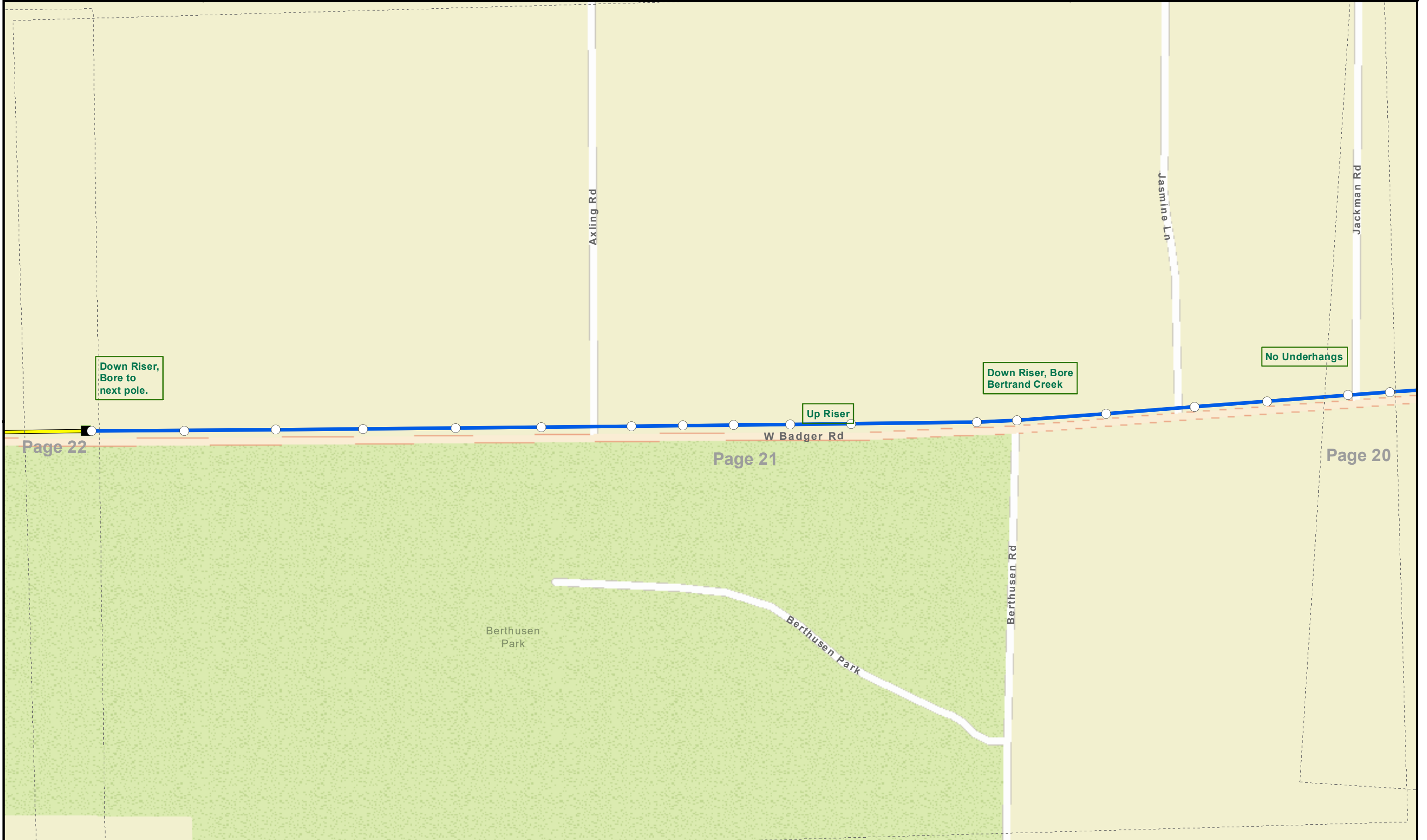
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

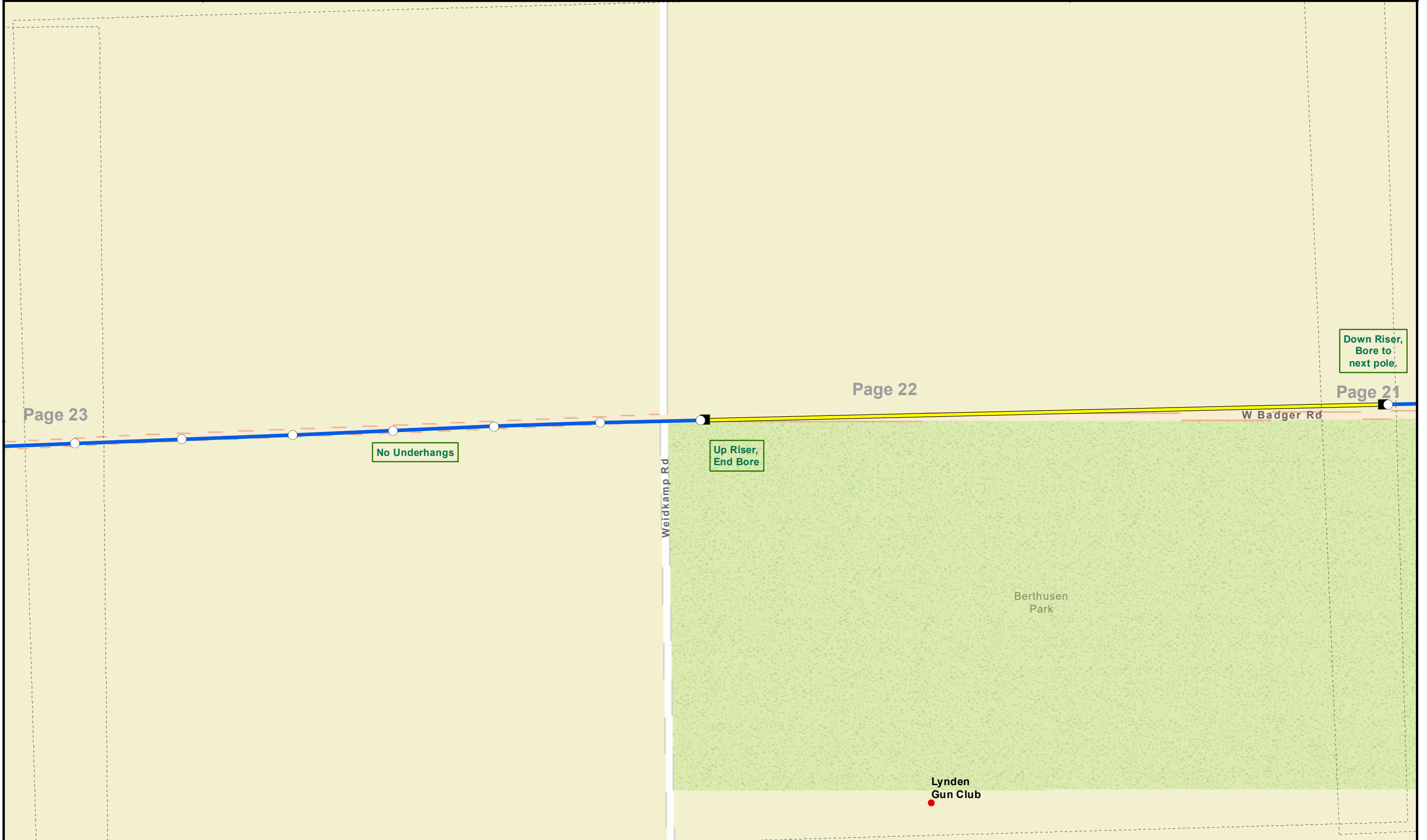
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Markworth Rd

W Badger Rd

Glendale Rd

Phone up riser,
spans Glendale
to short pole

Delanges
Dairy

Page 24

Page 23

Page 22



Aerial
Buried

Bore
Attach

Vault
Pole

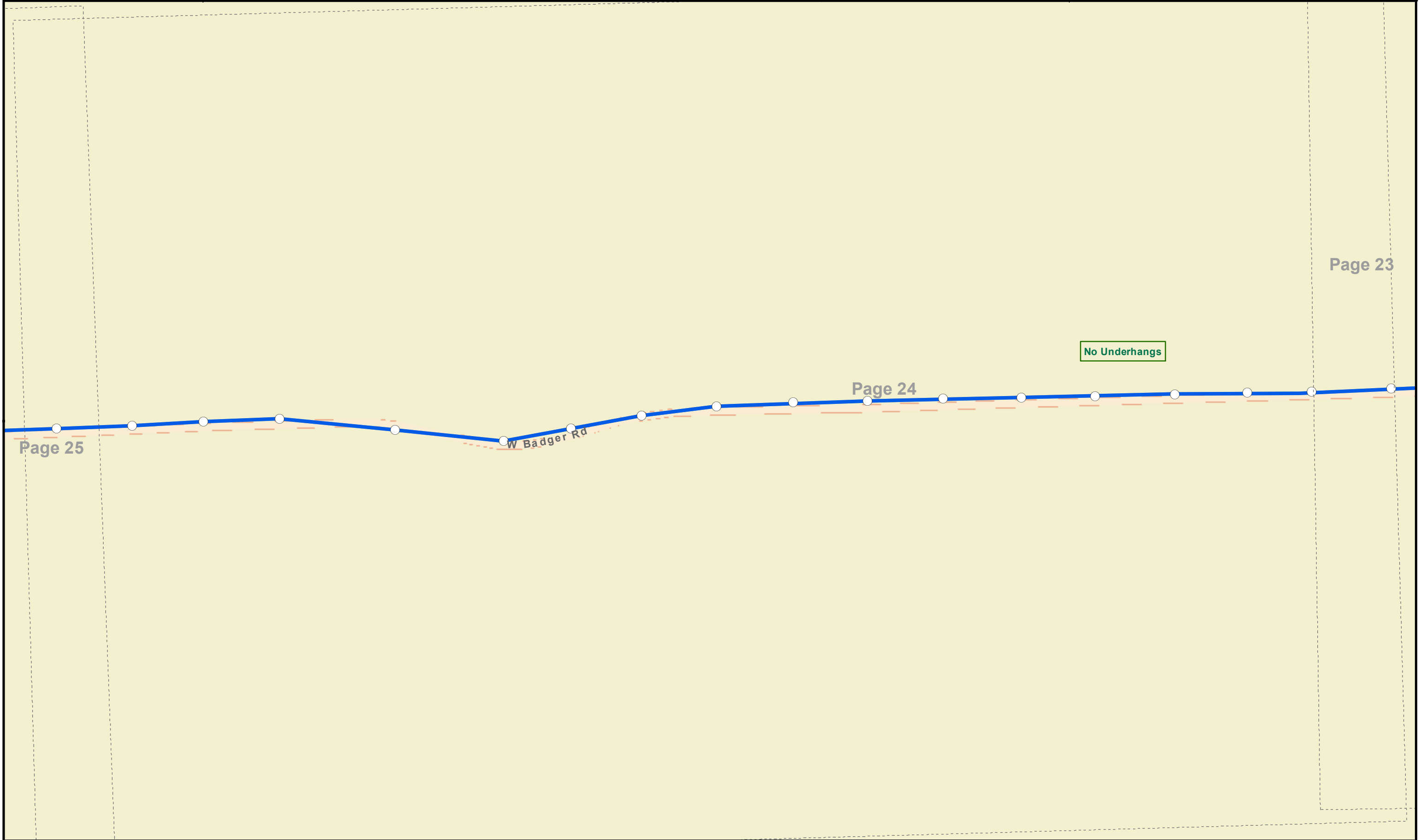
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Port of Bellingham

Page 24 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

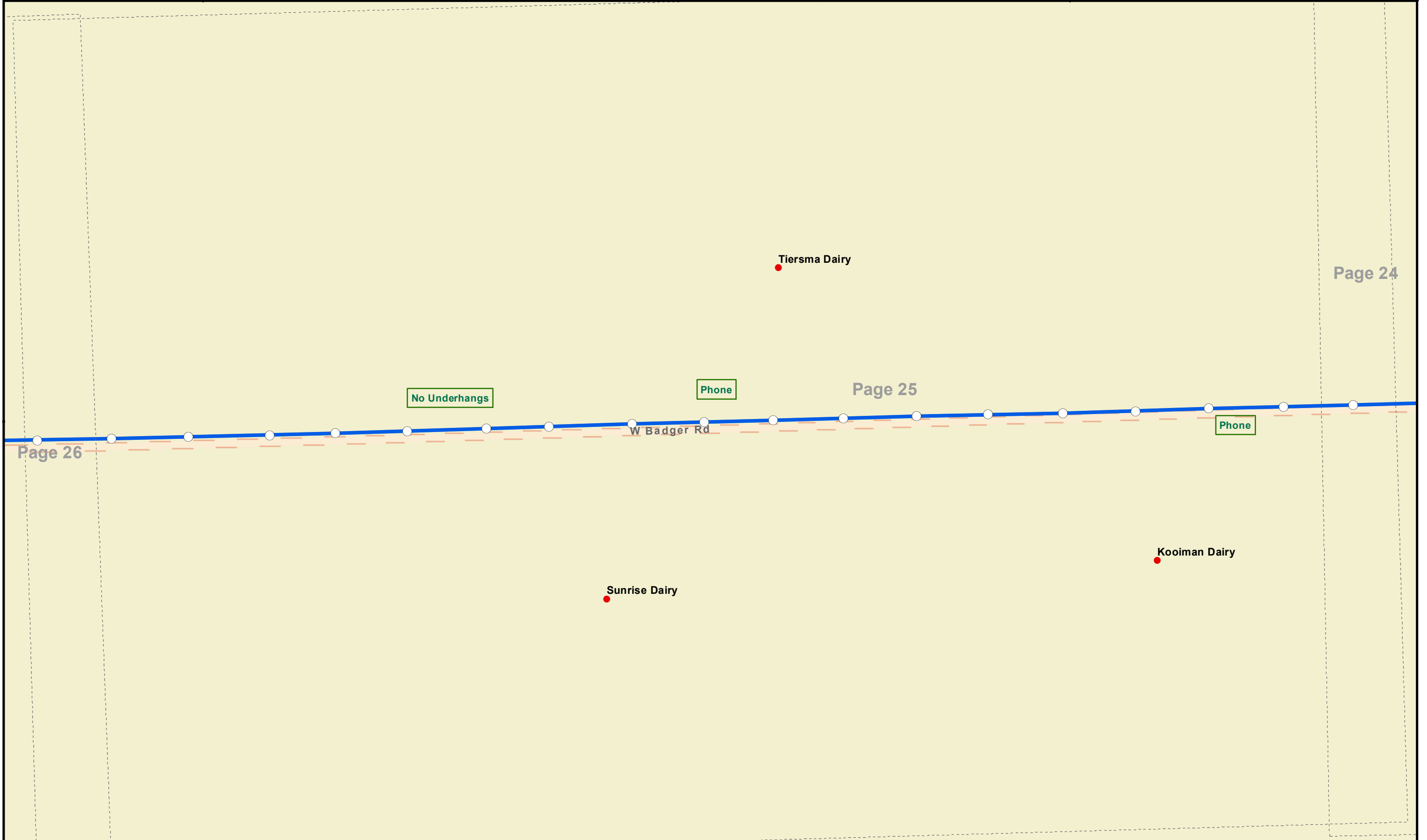
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Port of Bellingham

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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

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Page 25

W Badger Rd

Phone

Sunrise Rd

RT J Farms



Aerial
Buried

Bore
Attach

Vault
Pole

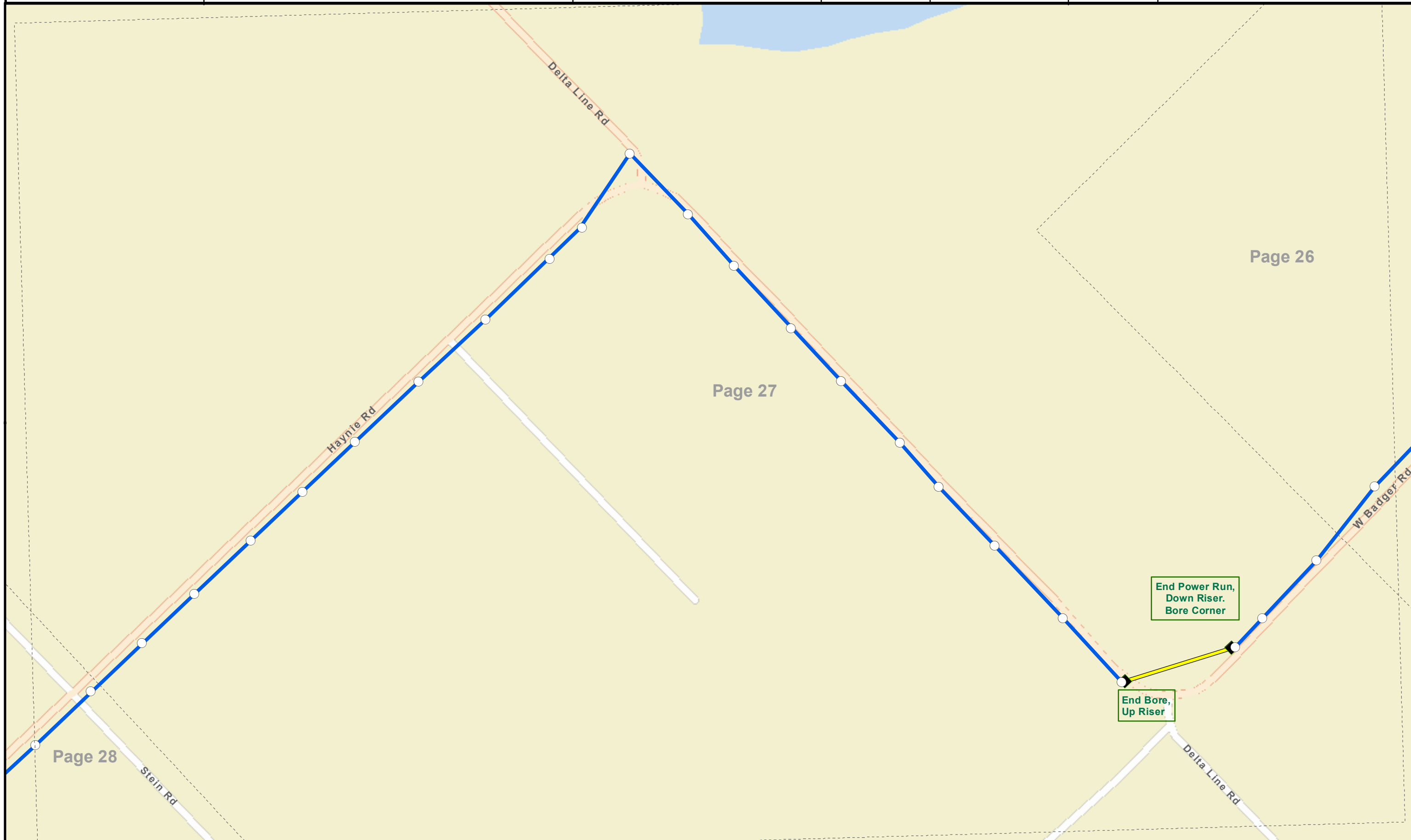
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

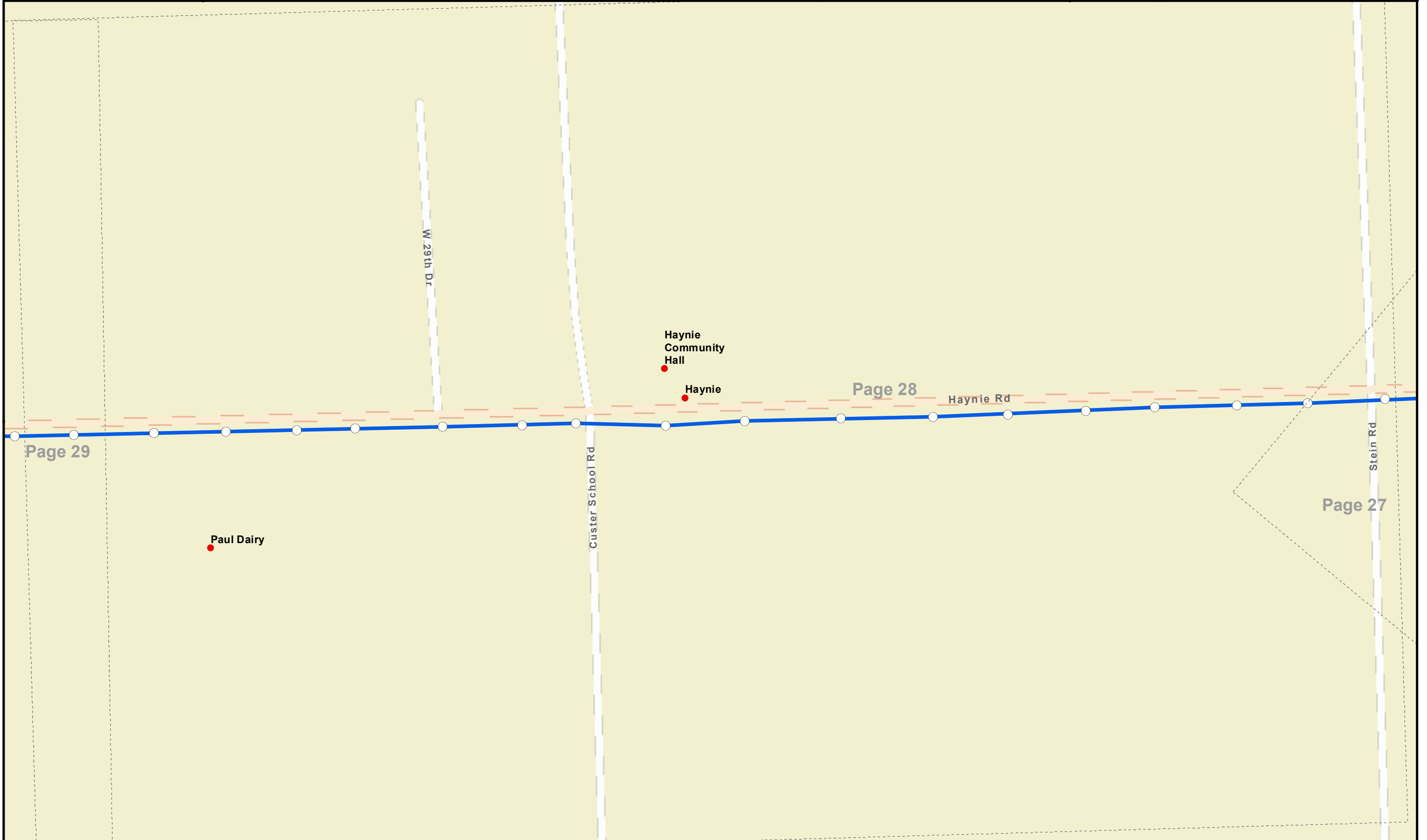
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

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Port of Bellingham

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Absolute Scale 1:3,600

Relative Scale 1 inch = 300 feet

Dakota Creek
Golf Course

Page 28

Haynie Rd

Haynie Grange

Haynie

Valley View Rd

Velvet Ln

Page 30

Page 29



Aerial
Buried

Bore
Attach

Vault
Pole

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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Page 31

Page 29

Page 30

Haynie Rd

North Whatcom
Fire and Rescue
Station 65 Haynie

W 34th Ave

Giles Rd



Aerial
Buried

Bore
Attach

Vault
Pole

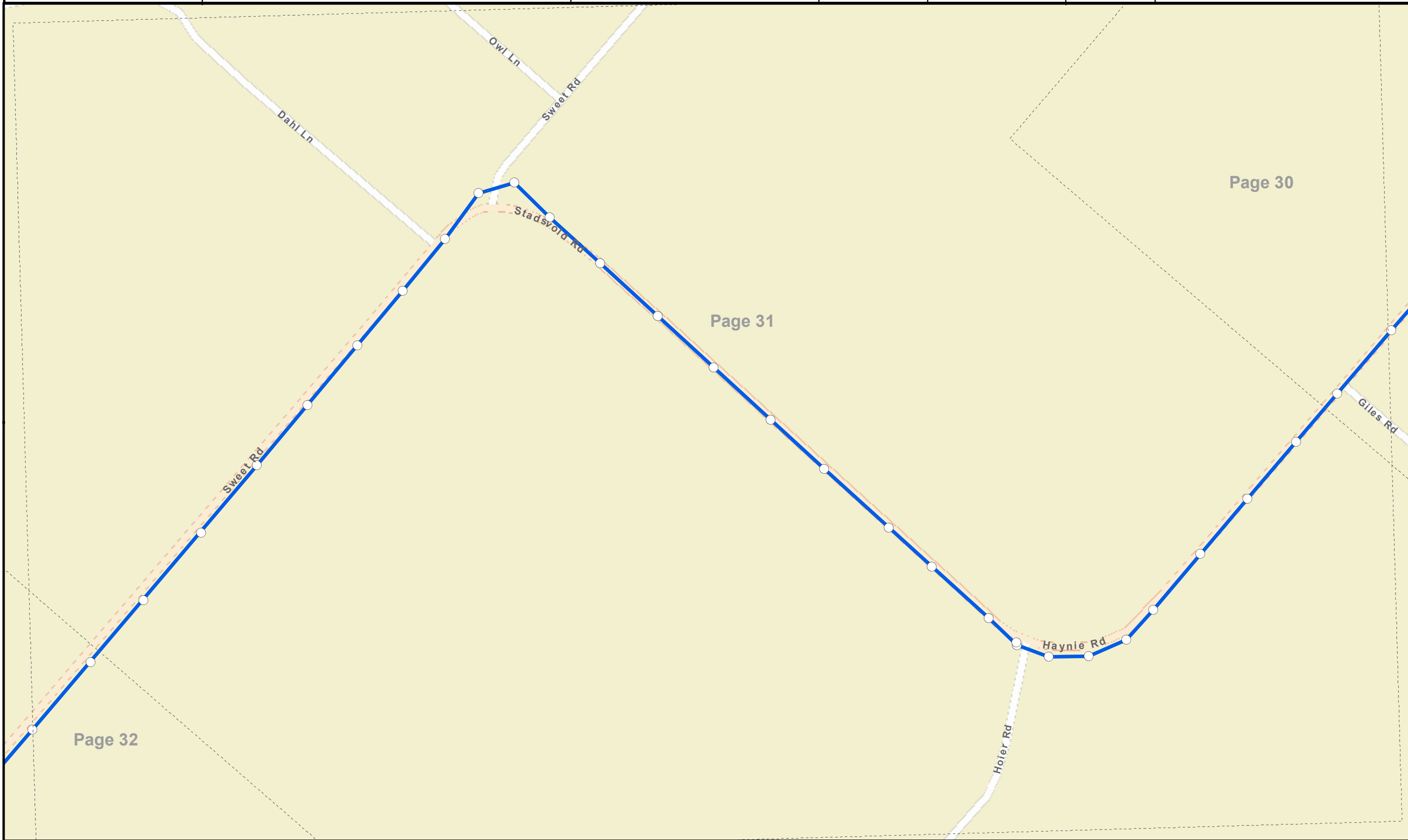
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County: Whatcom

Port of Bellingham

Page 31 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Pipeline
Athletic
Complex

Welkers Rd

Spooner Creek Ln

Page 33

Sweet Rd

Page 32

Harvey Rd

Page 31



Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

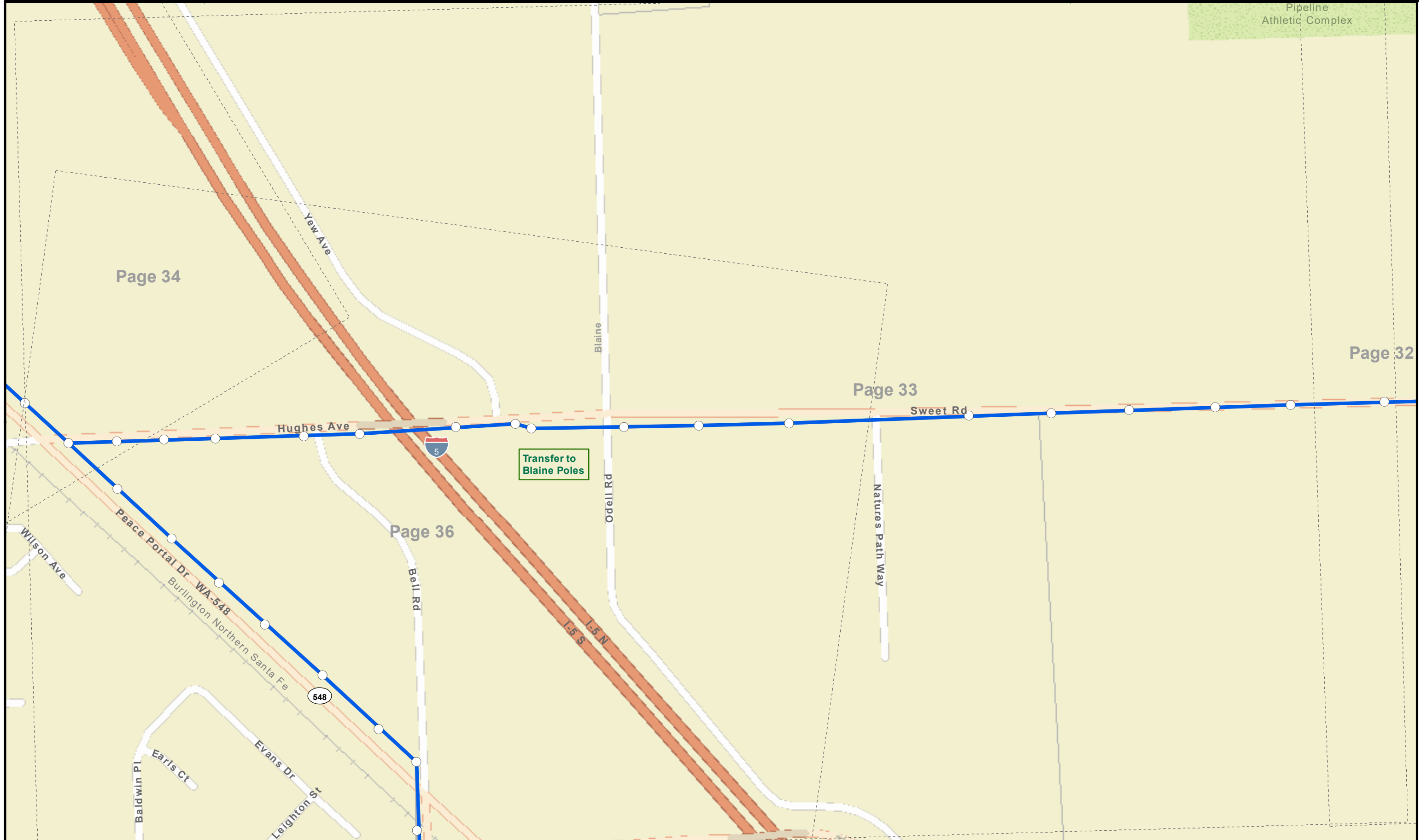
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County: Whatcom

Port of Bellingham

Page 33 of 41

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North
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County: Whatcom

Port of Bellingham

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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet

Border Cargo
Services Inc.

Meridian
Towing

MP 275

MP 275

Page 33

Page 36

Page 34

Power run
ends. Bore to
Pole #12035

WA-548

548

Burlington Northern Santa Fe

Donald
Montfort
Park

Drayton
Harbor



Aerial
Buried

Bore
Attach

Vault
Pole

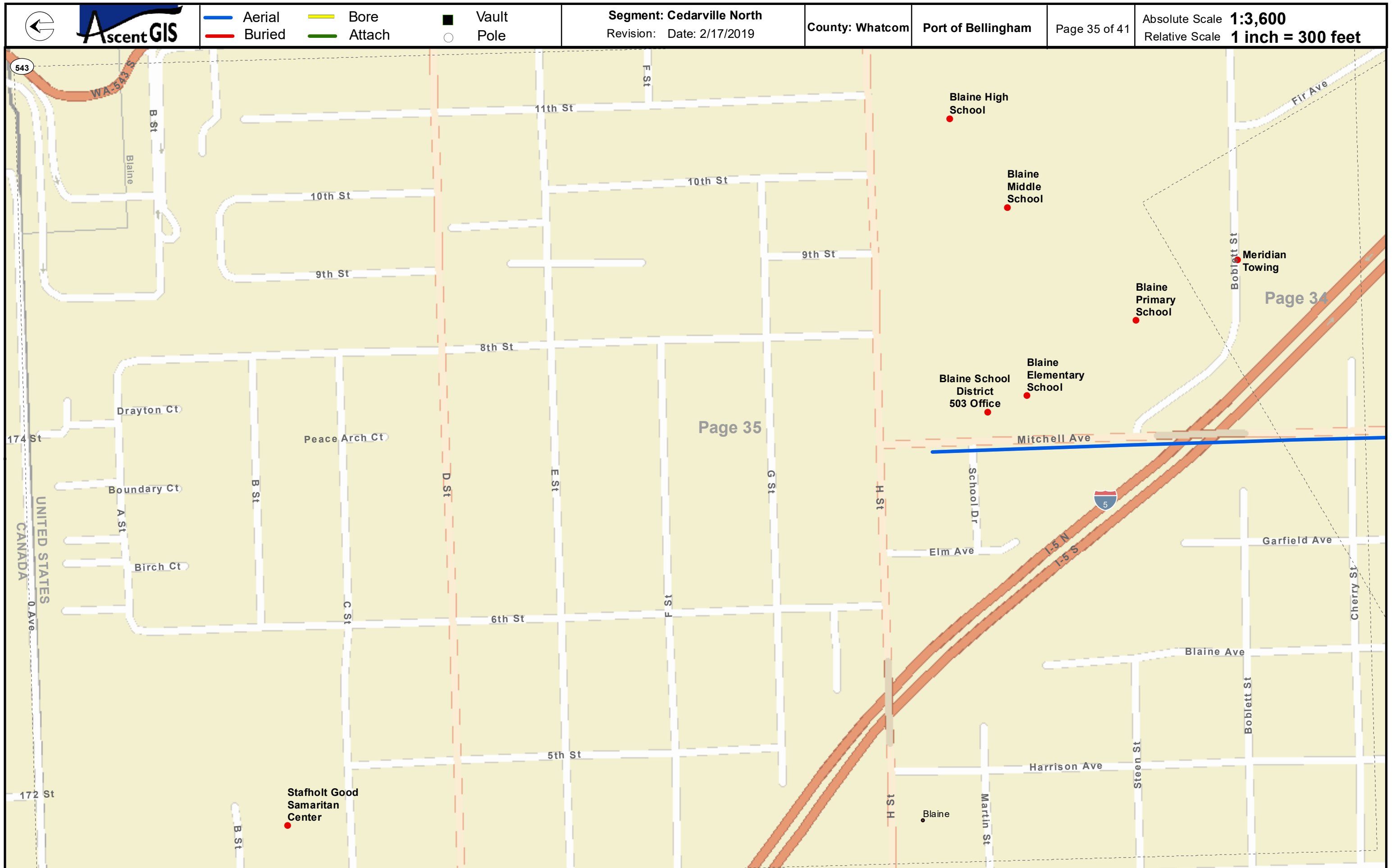
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County: Whatcom

Port of Bellingham

Page 35 of 41

Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

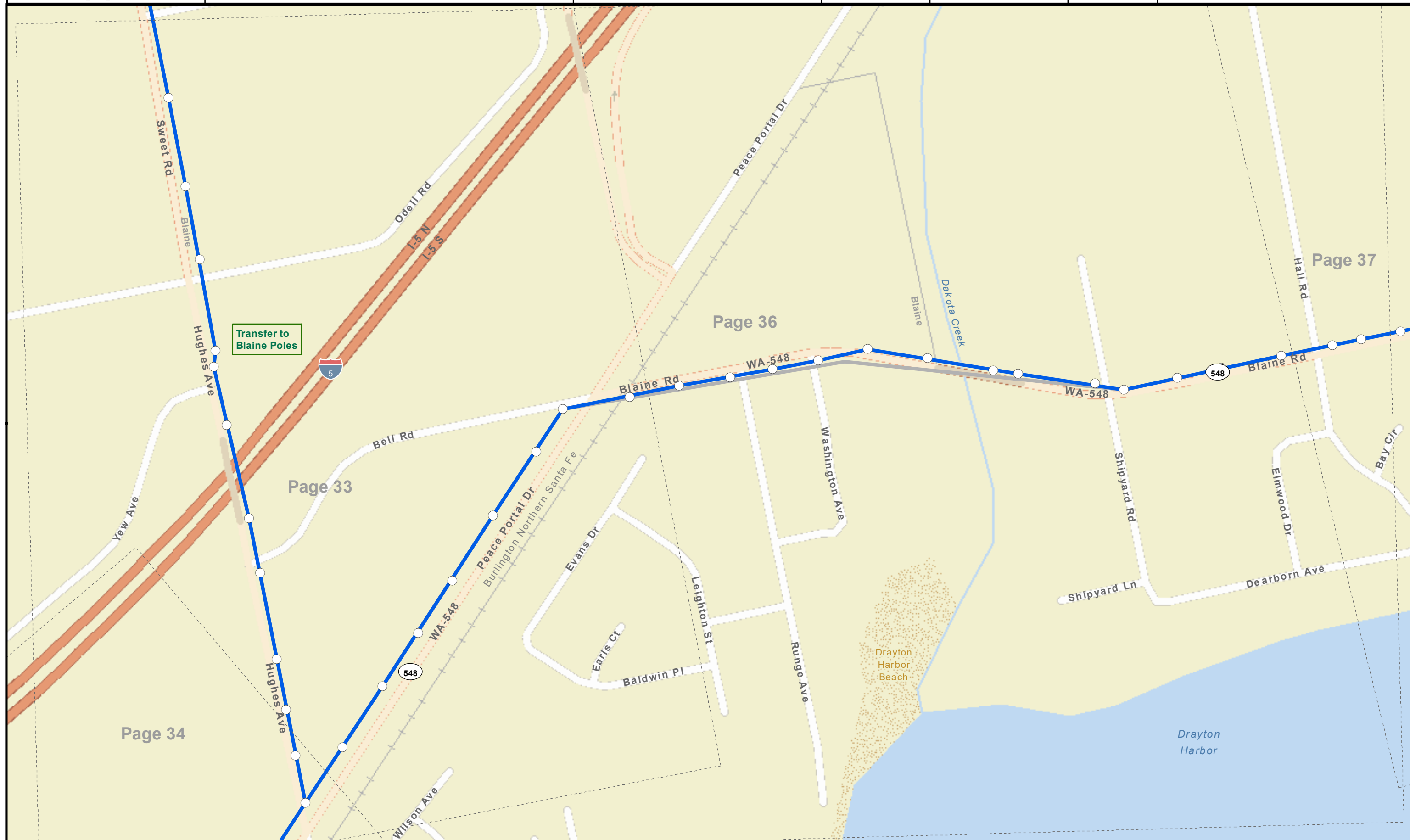
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Port of Bellingham

Page 36 of 41

Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

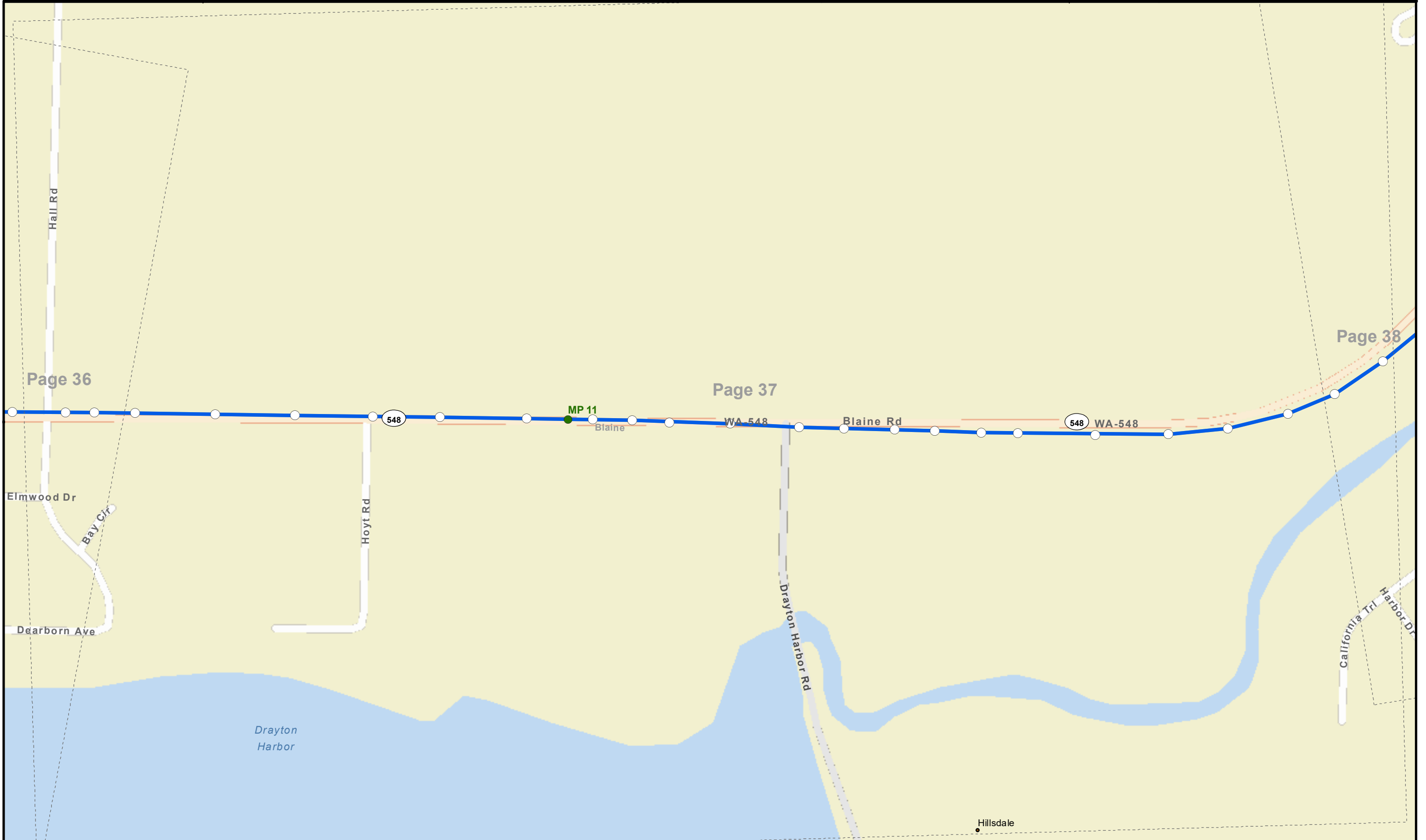
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County: Whatcom

Port of Bellingham

Page 37 of 41

Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

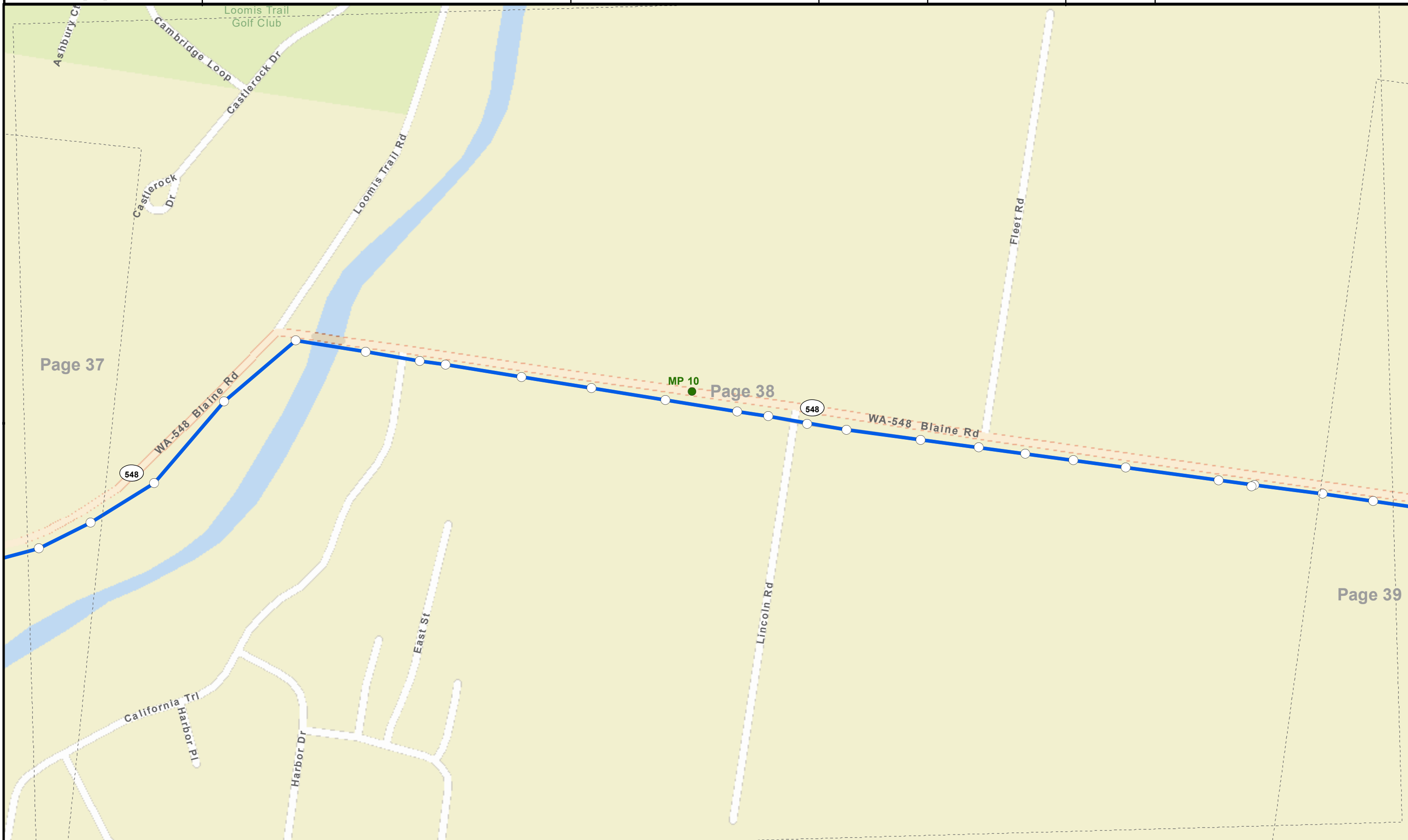
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Port of Bellingham

Page 38 of 41

Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

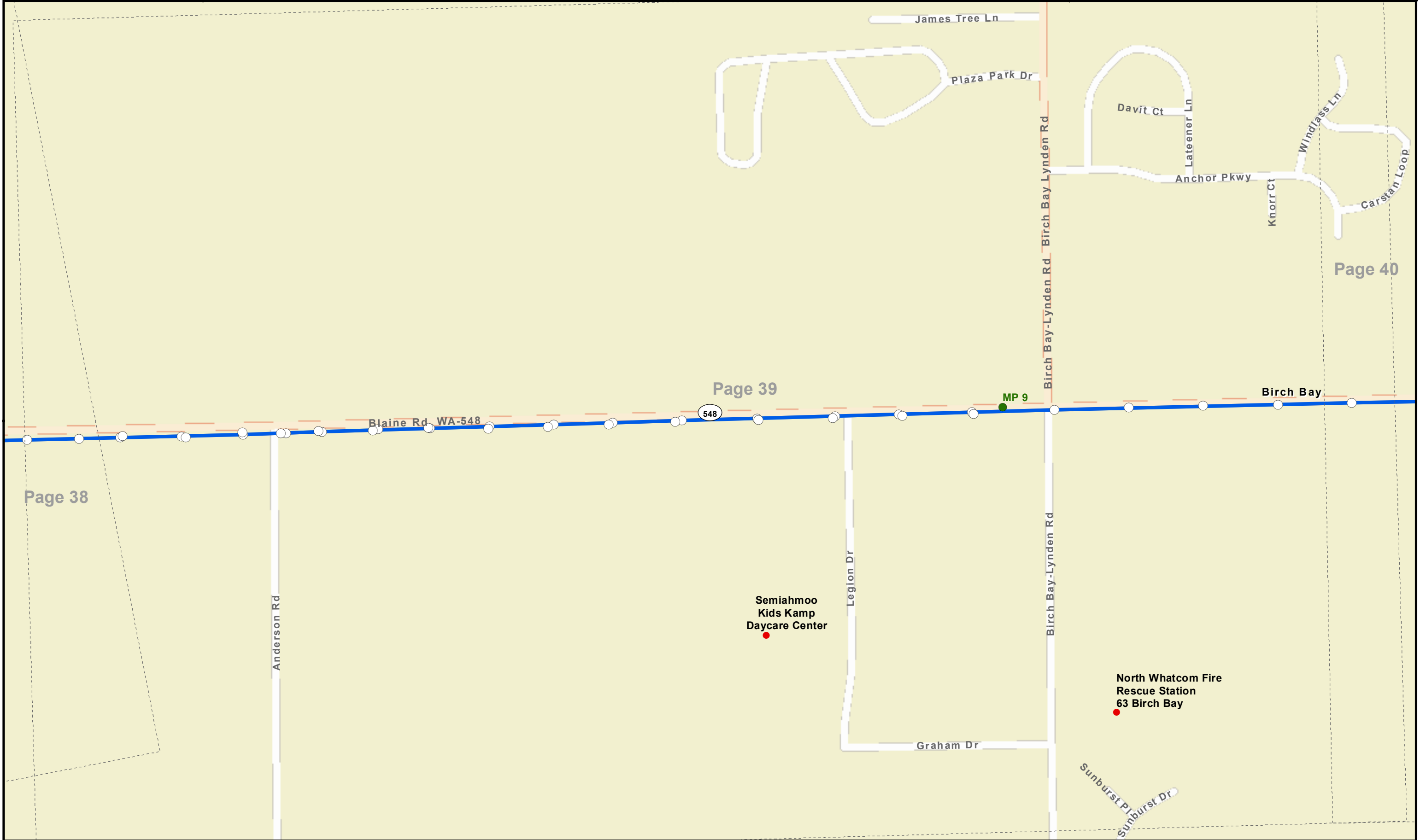
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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Cedarville North

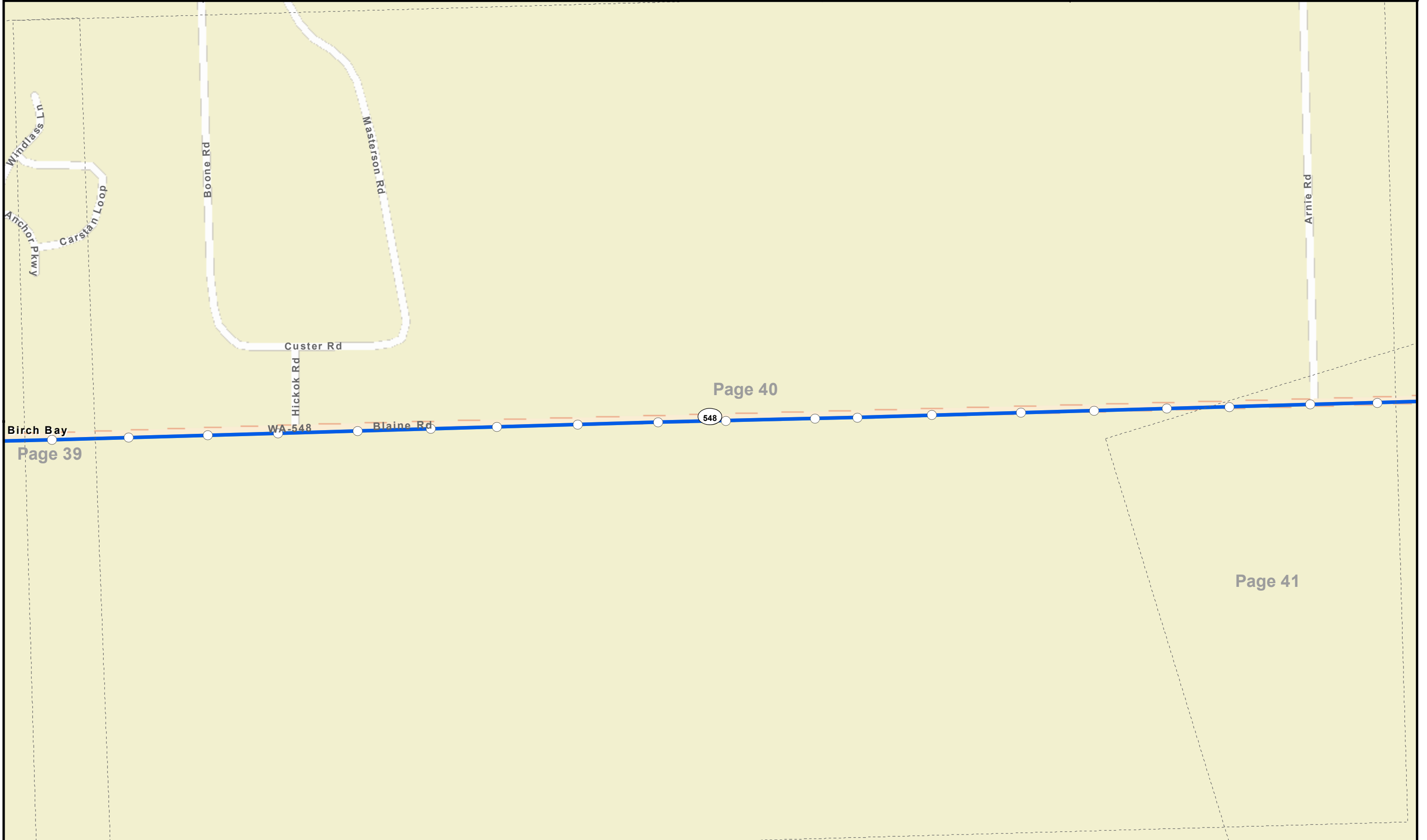
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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





— Aerial
— Buried

— Bore
— Attach

■ Vault
○ Pole

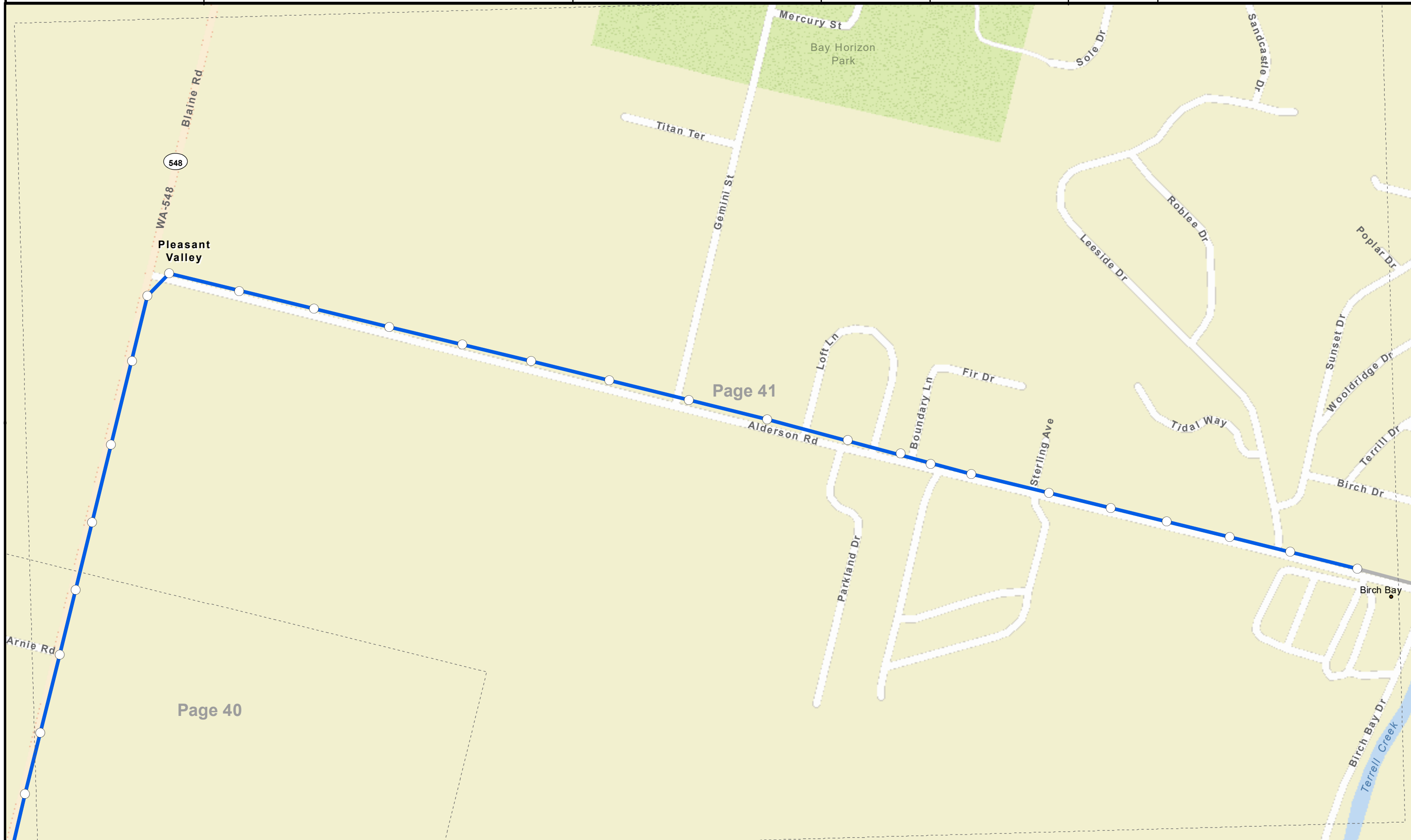
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County: Whatcom

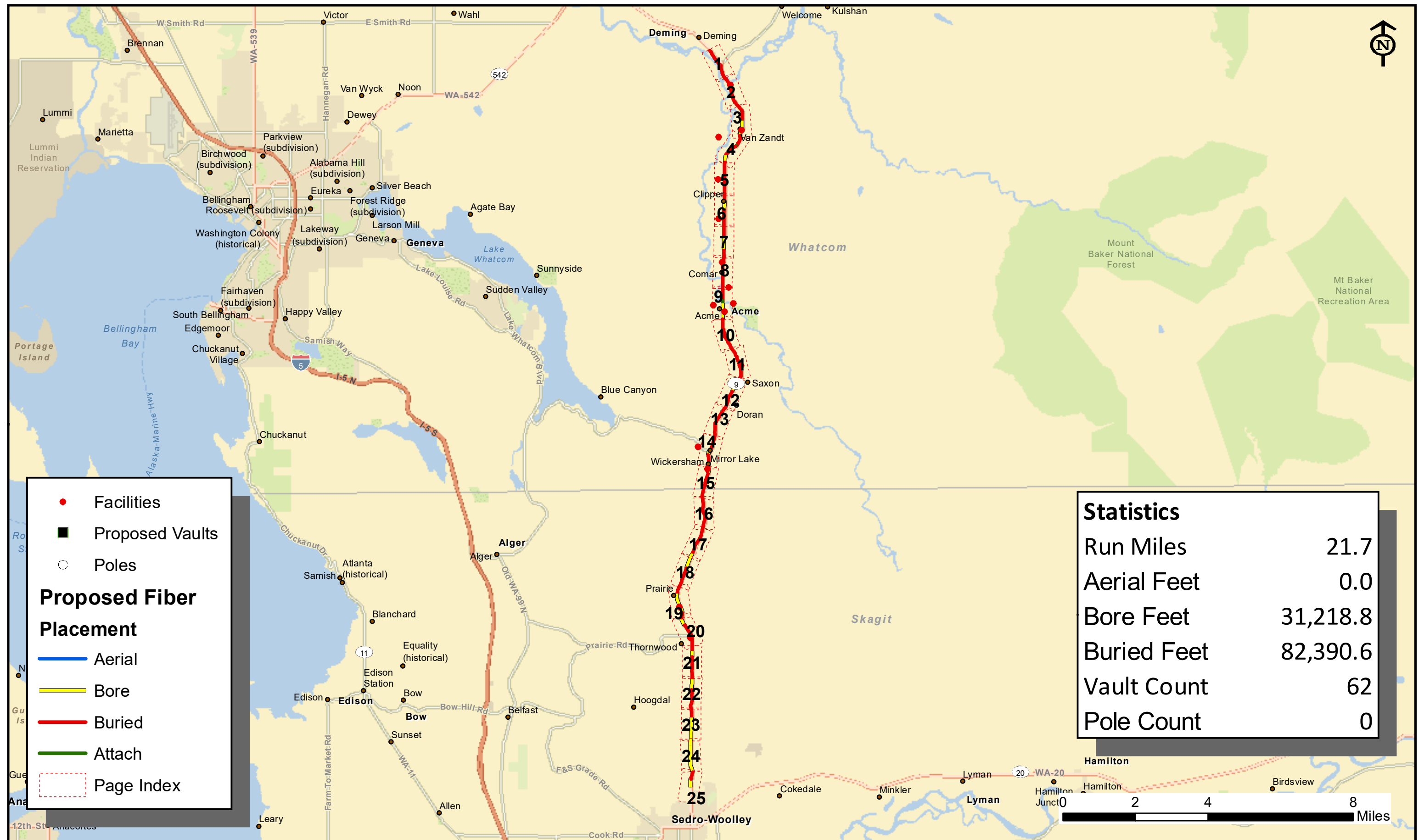
Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**



Highway 9 Map Book Page Index





Aerial
Buried

Bore
Attach

Vault
Pole

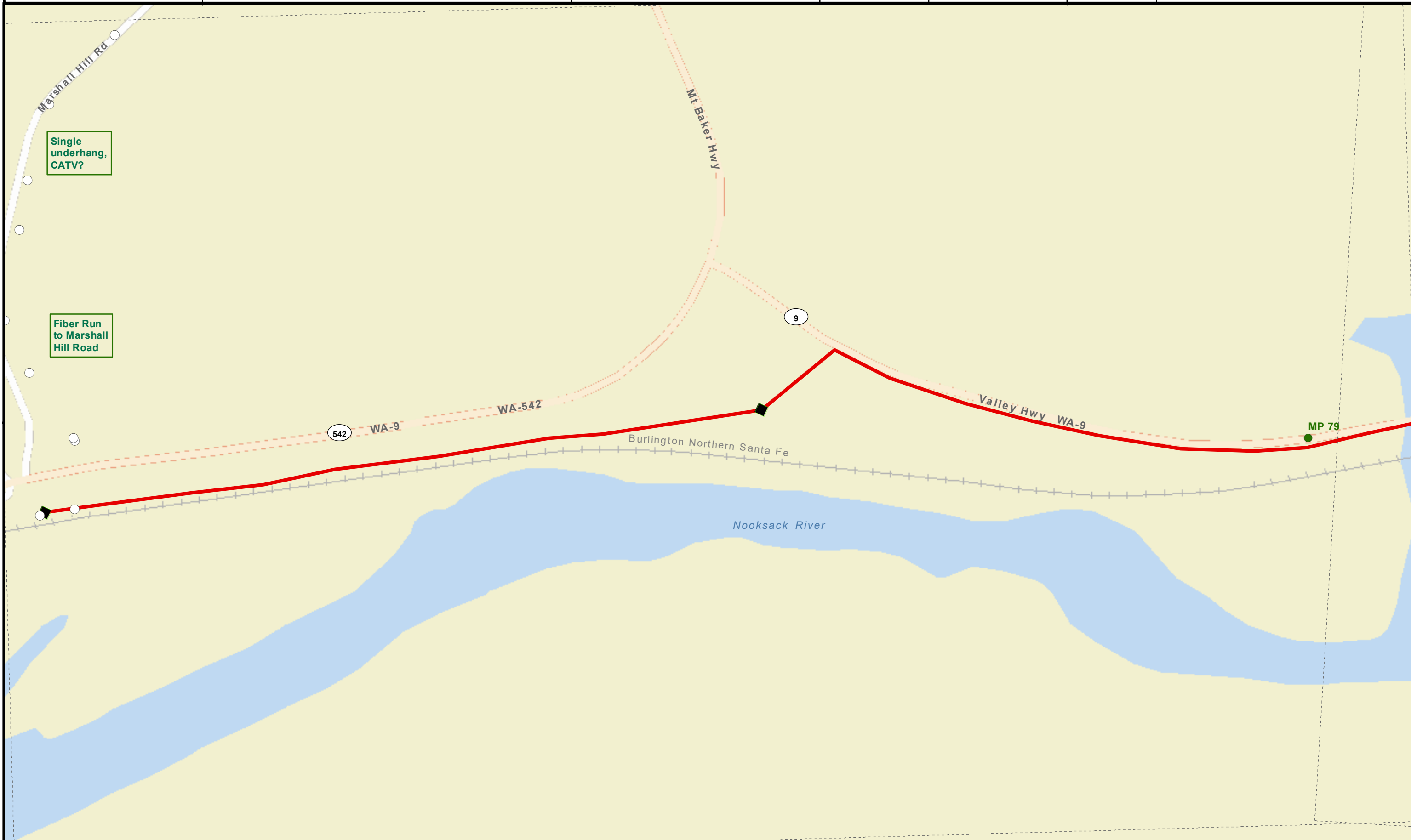
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Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

Page 1 of 25

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

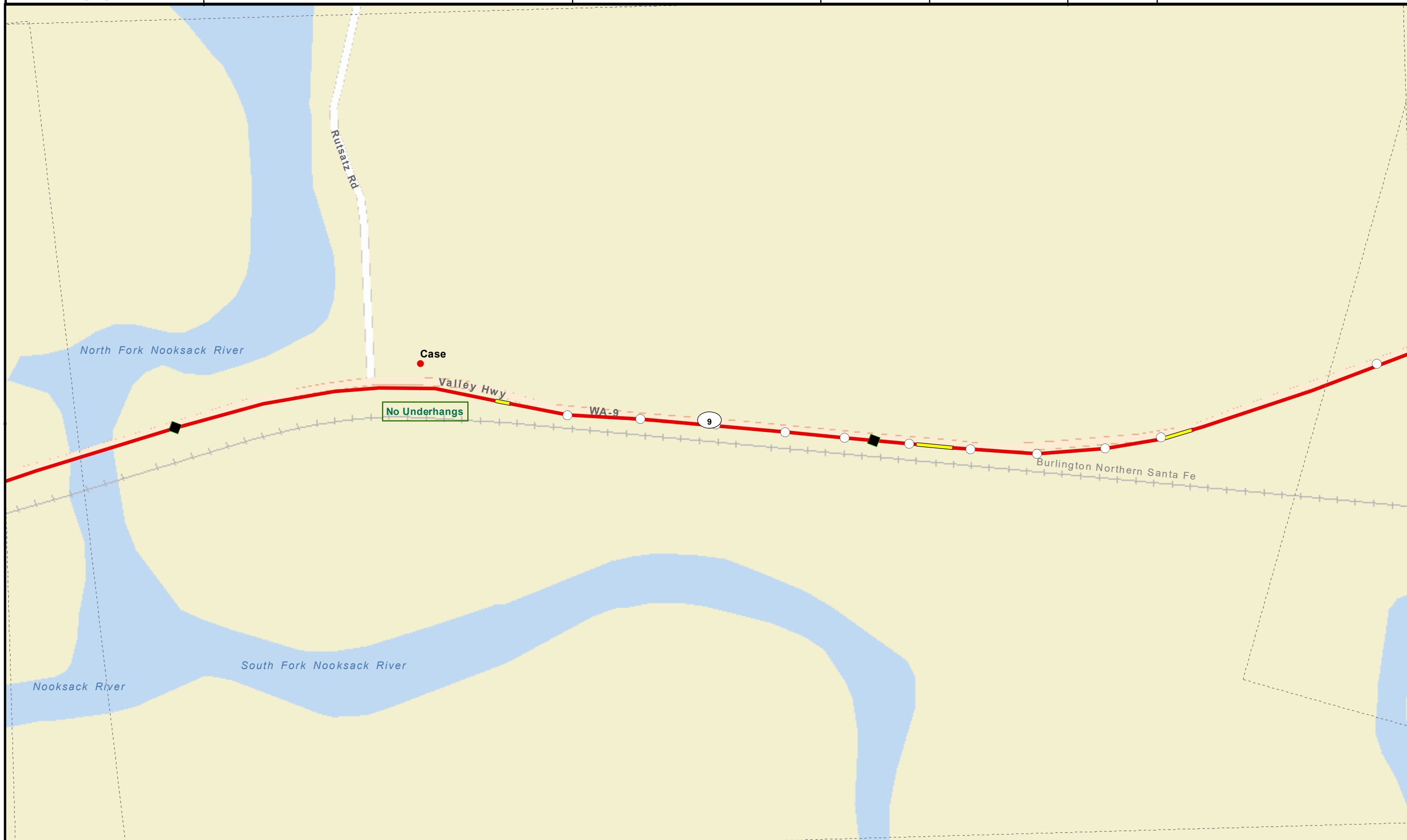
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County: Whatcom

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Highway 9
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Port of Bellingham

Page 3 of 25

Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

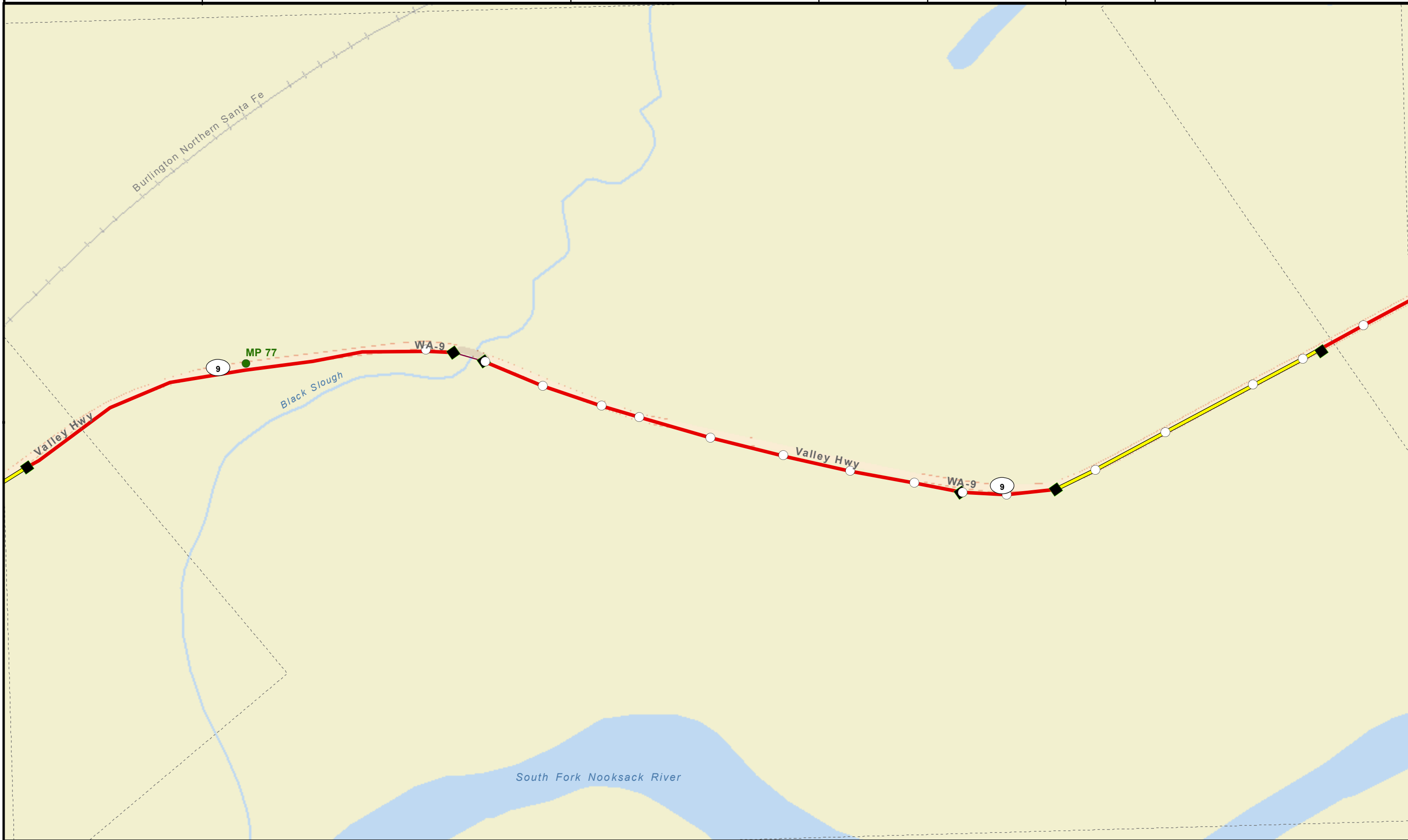
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Port of Bellingham

Page 4 of 25

Absolute Scale **1:3,600**
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Aerial
Buried

Bore
Attach

Vault
Pole

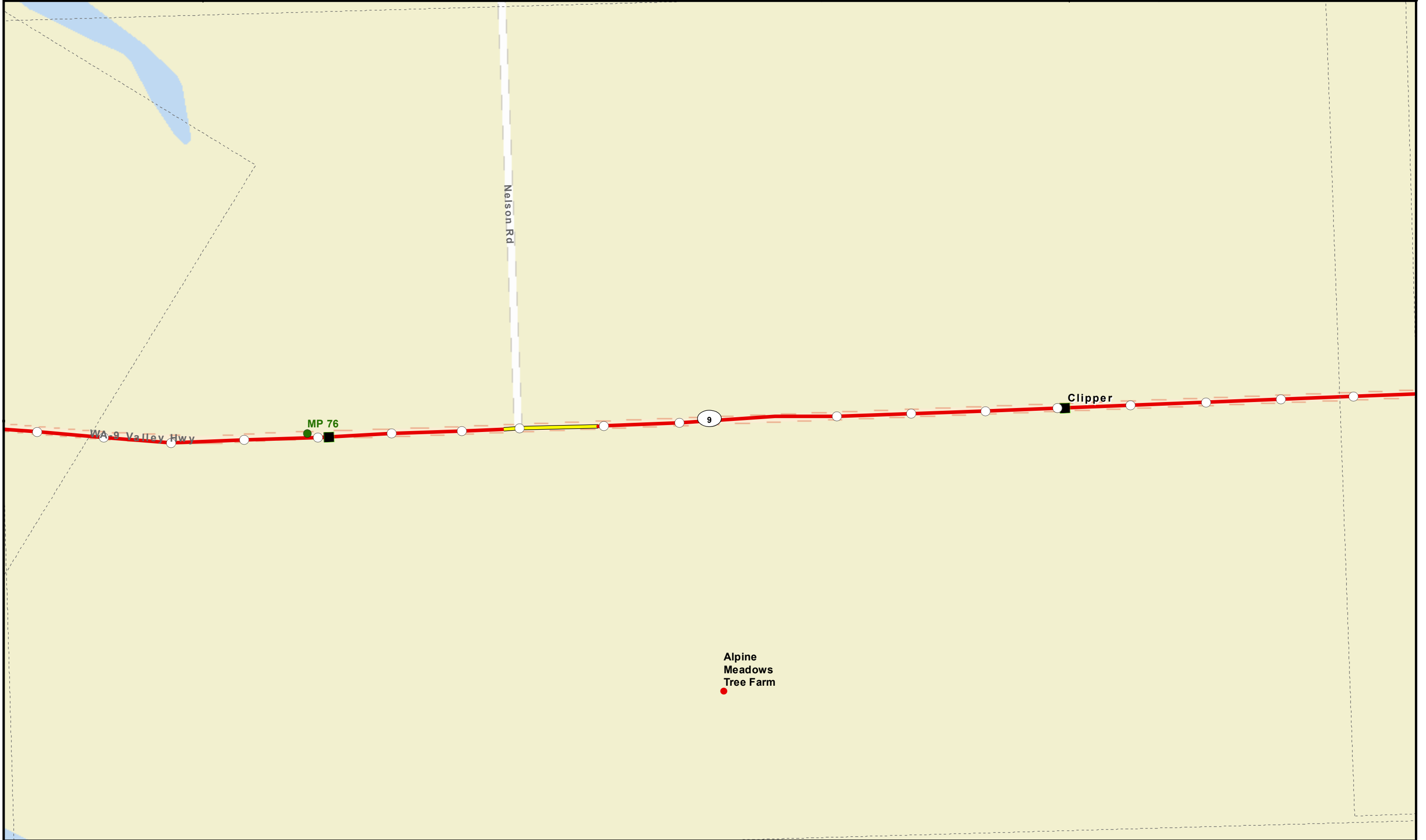
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Absolute Scale **1:3,600**
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Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Highway 9
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County: Whatcom

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Absolute Scale 1:3,600
Relative Scale 1 inch = 300 feet

Strand Rd

Burlington Northern Santa Fe

Black Slough

Standard Rd

MP 75

9

WA-9

Valley Hwy

Standard

• Clipper

Strachila
Farm



Aerial
Buried

Bore
Attach

Vault
Pole

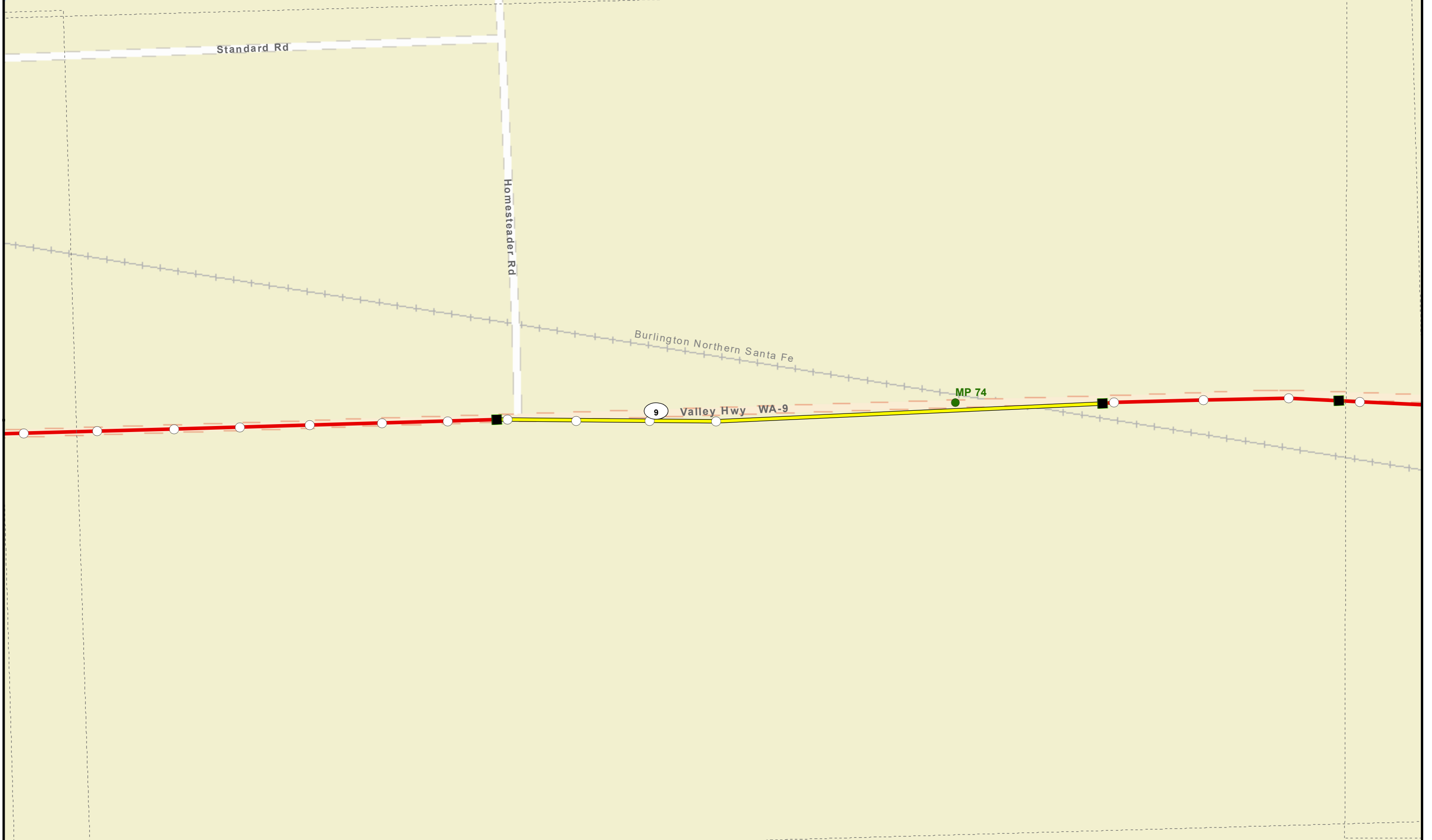
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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Highway 9
Revision: Date: 2/17/2019

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Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**

Wild Rose Ln

Kalsbeek
Dairy

9

Valley Hwy
Comar

WA-9

Comar

MP 73

Coldstream
Farm

Burlington Northern Santa Fe



Aerial
Buried

Bore
Attach

Vault
Pole

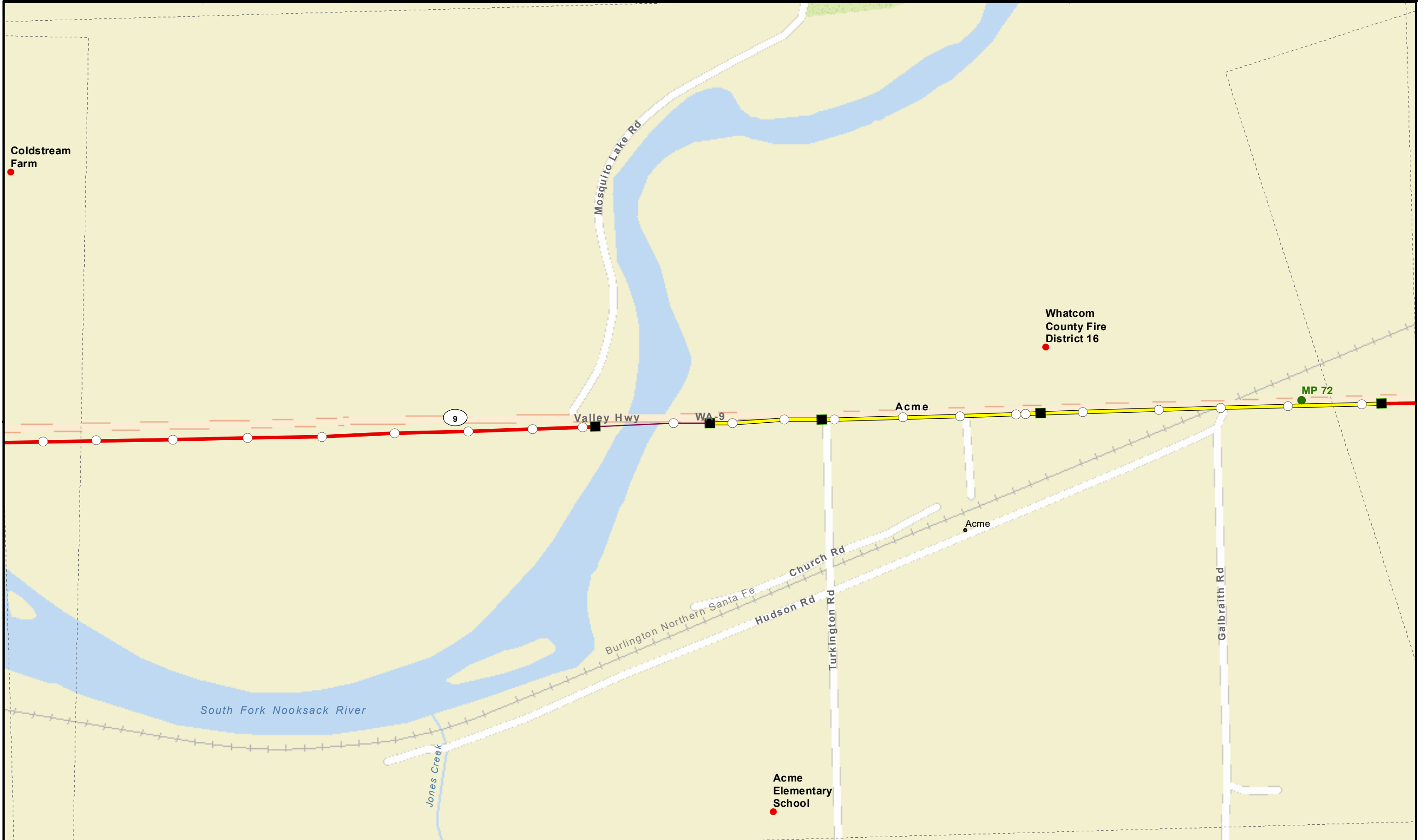
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Absolute Scale **1:3,600**
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Buried

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Vault
Pole

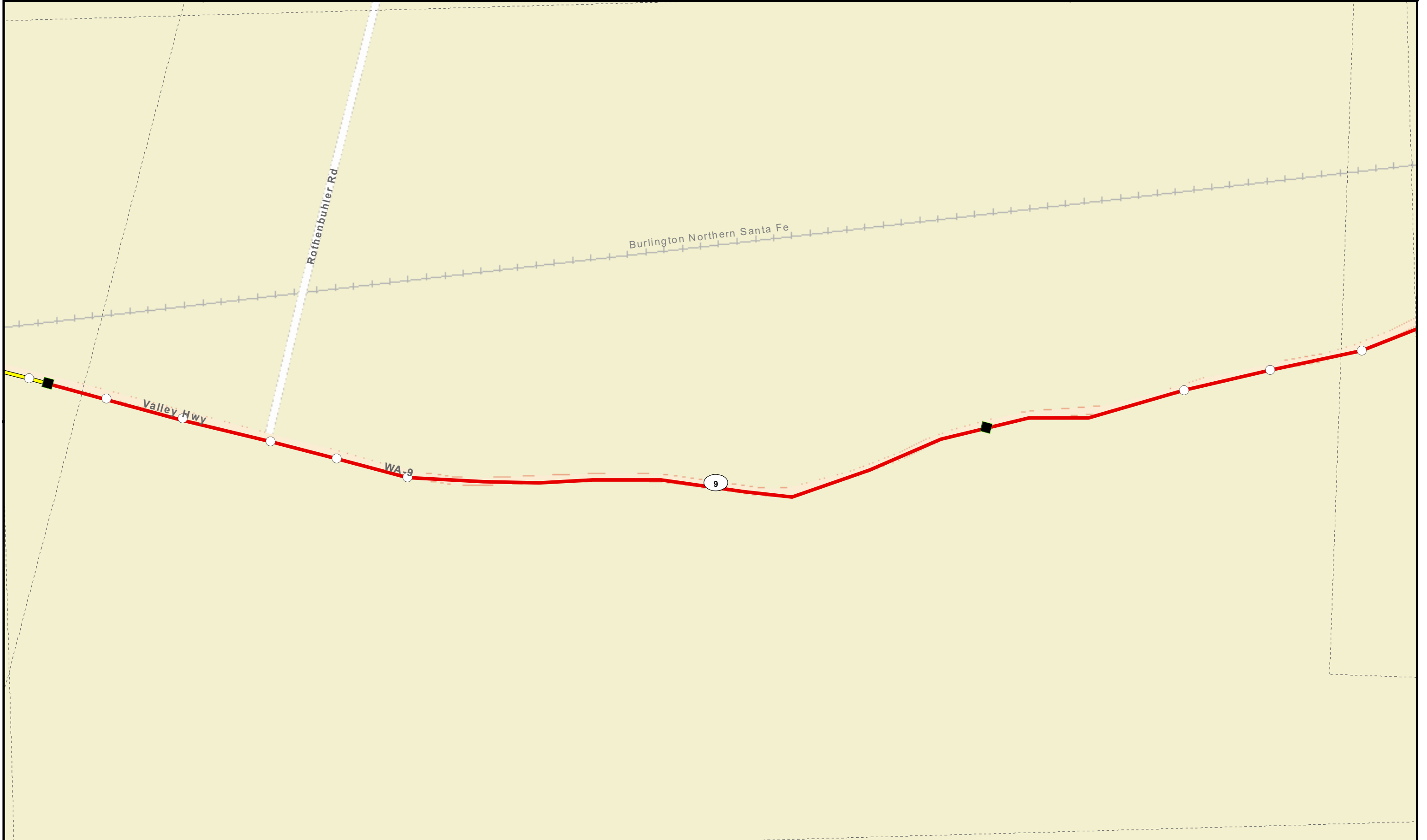
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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





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Buried

Bore
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Vault
Pole

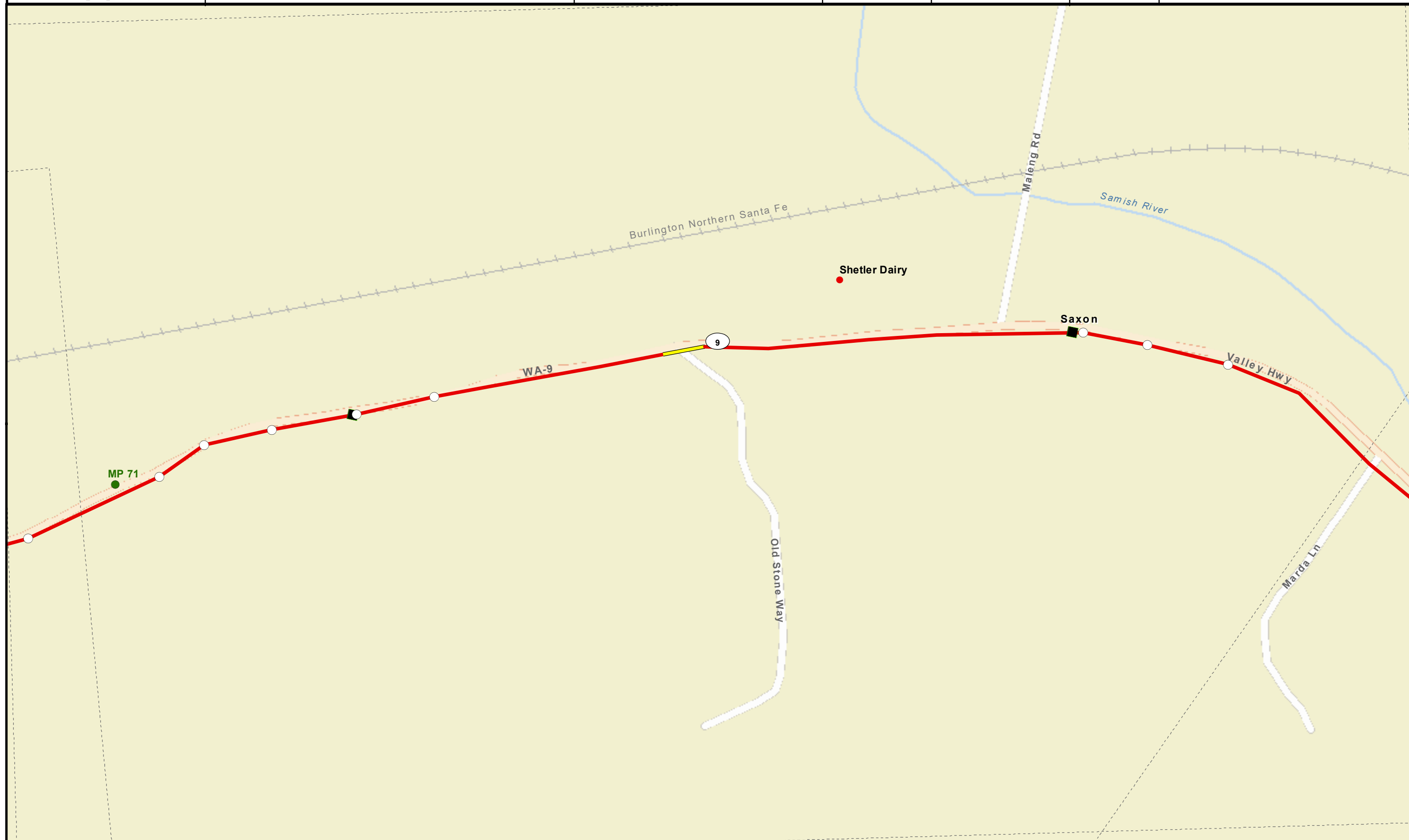
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County: Whatcom

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

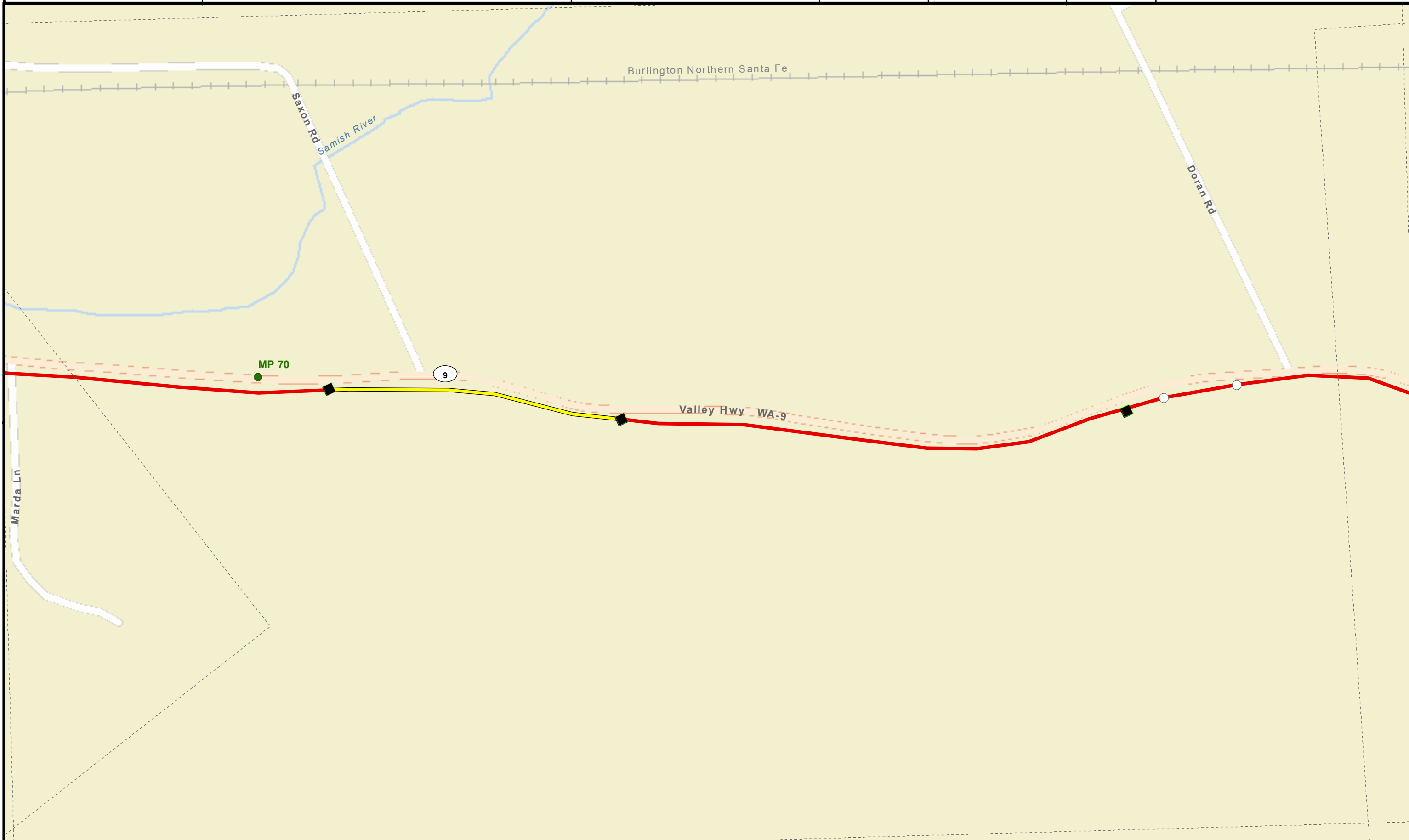
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County: Whatcom

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Absolute Scale **1:3,600**
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Aerial
Buried

Bore
Attach

Vault
Pole

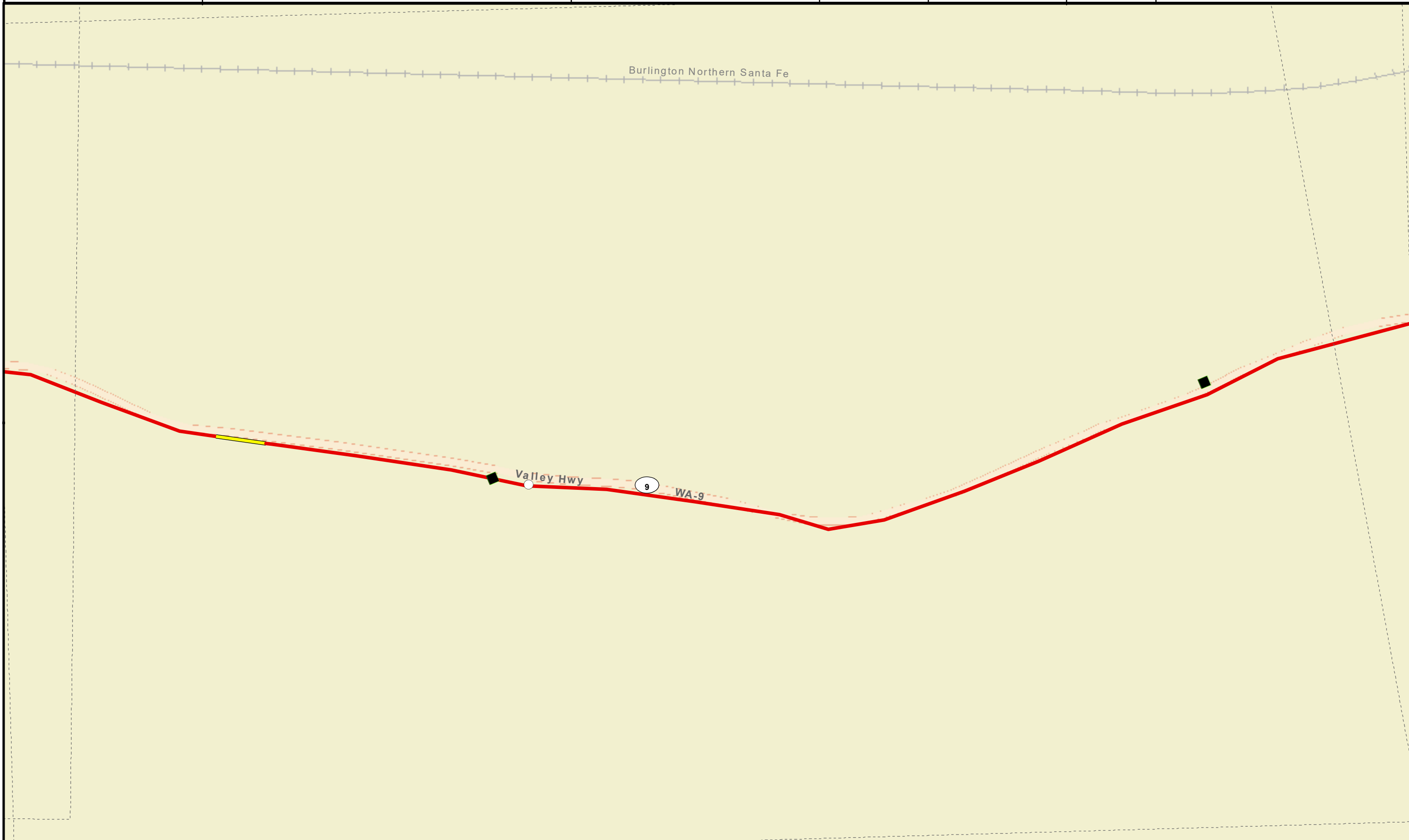
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Absolute Scale **1:3,600**
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Attach

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Pole

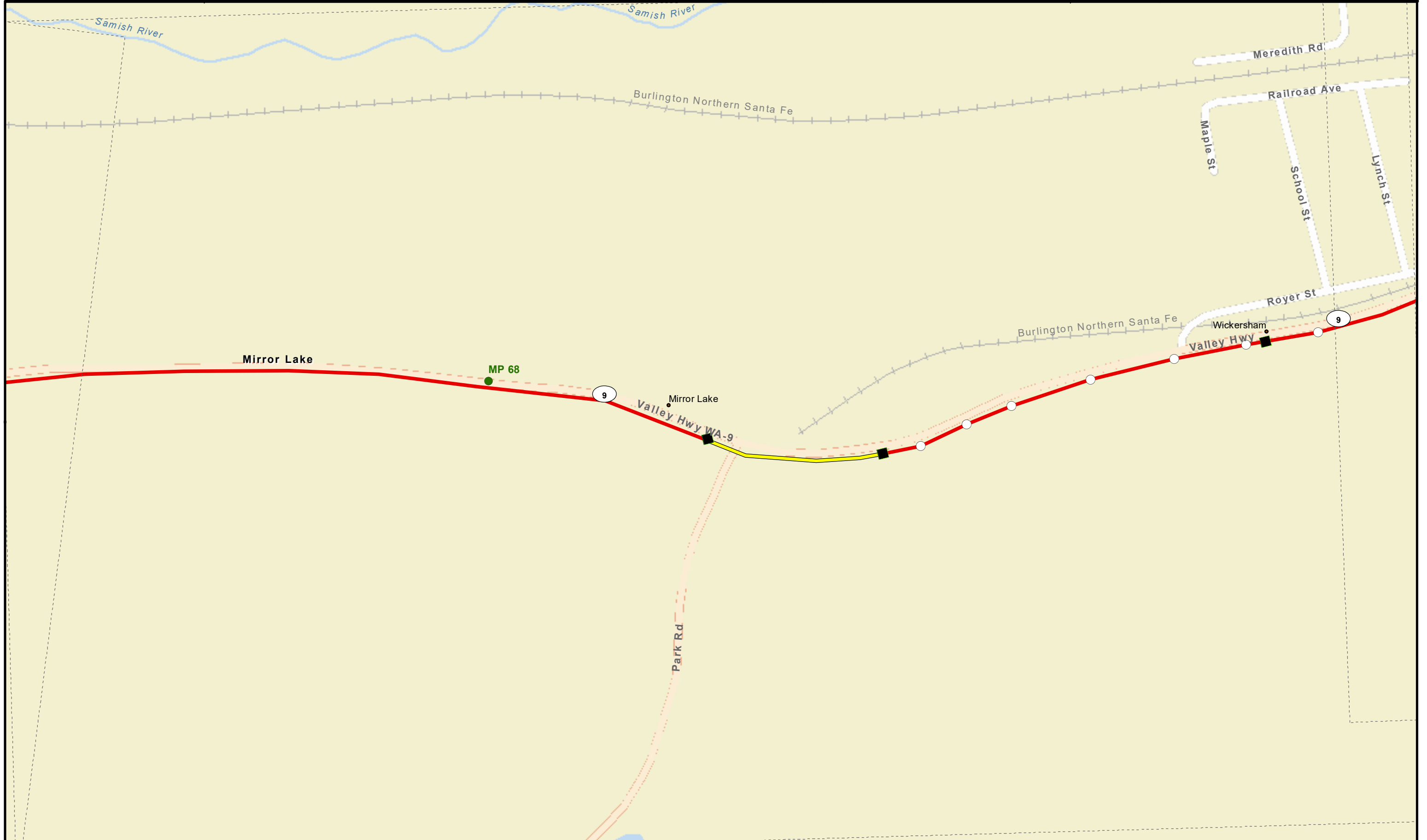
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County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

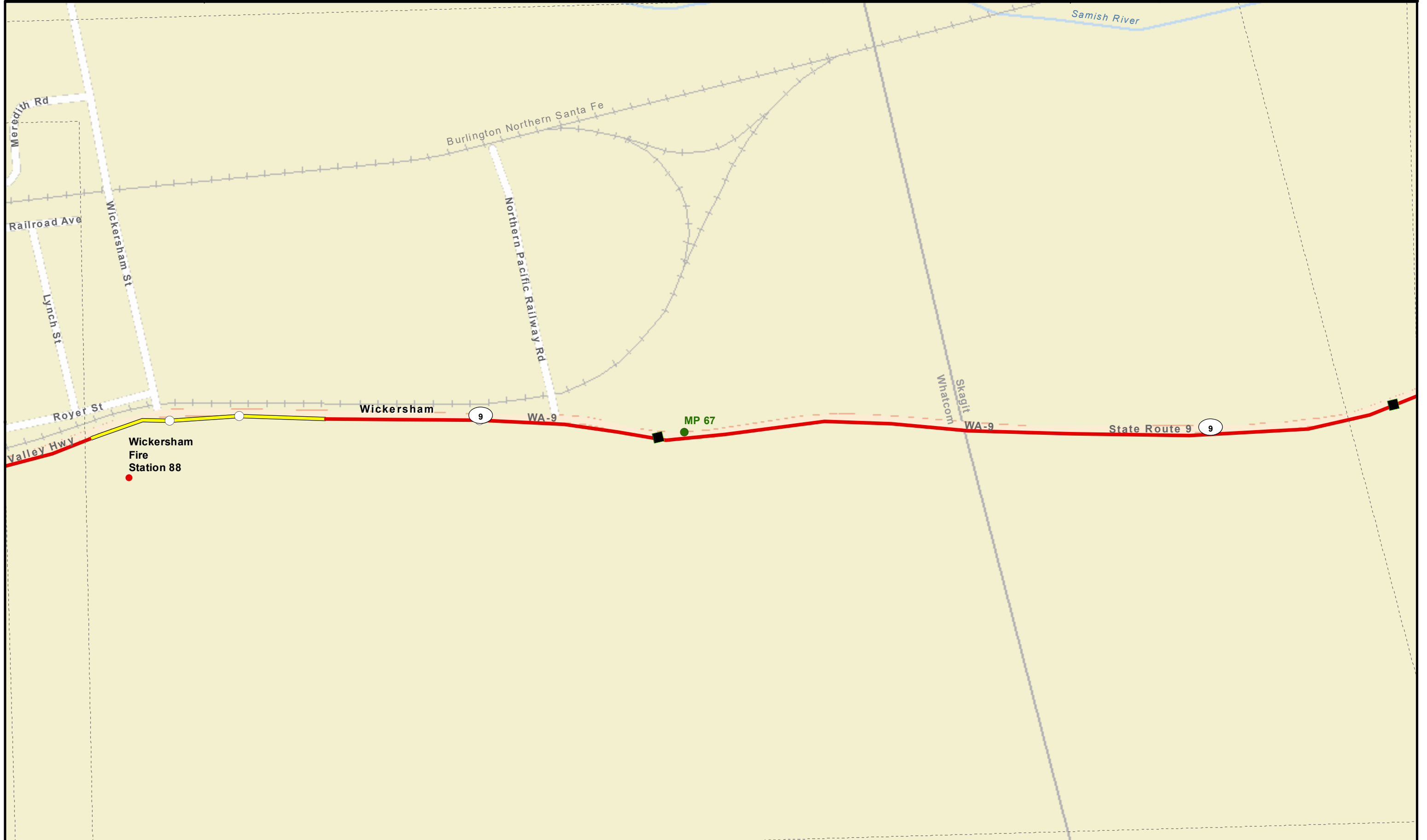
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

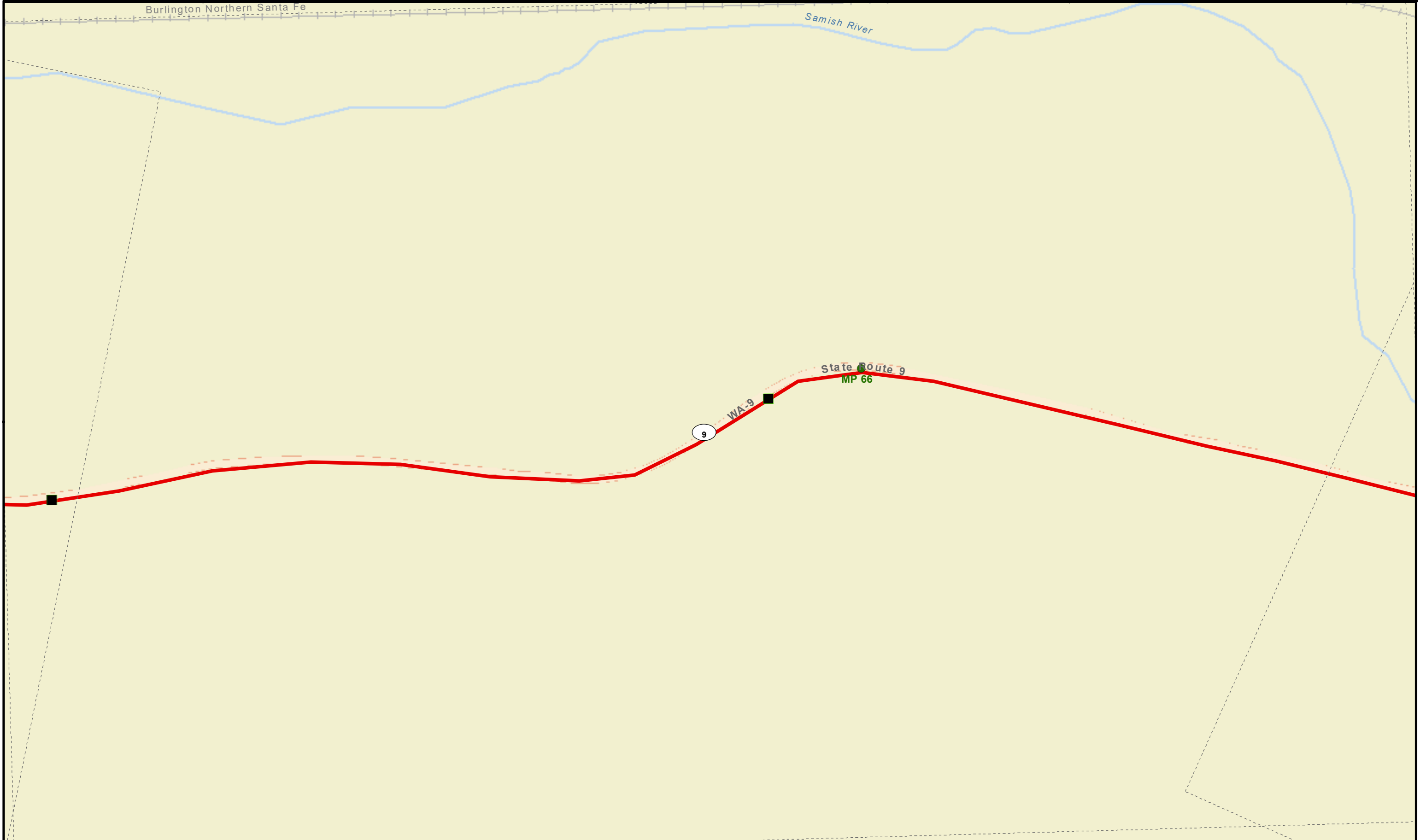
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

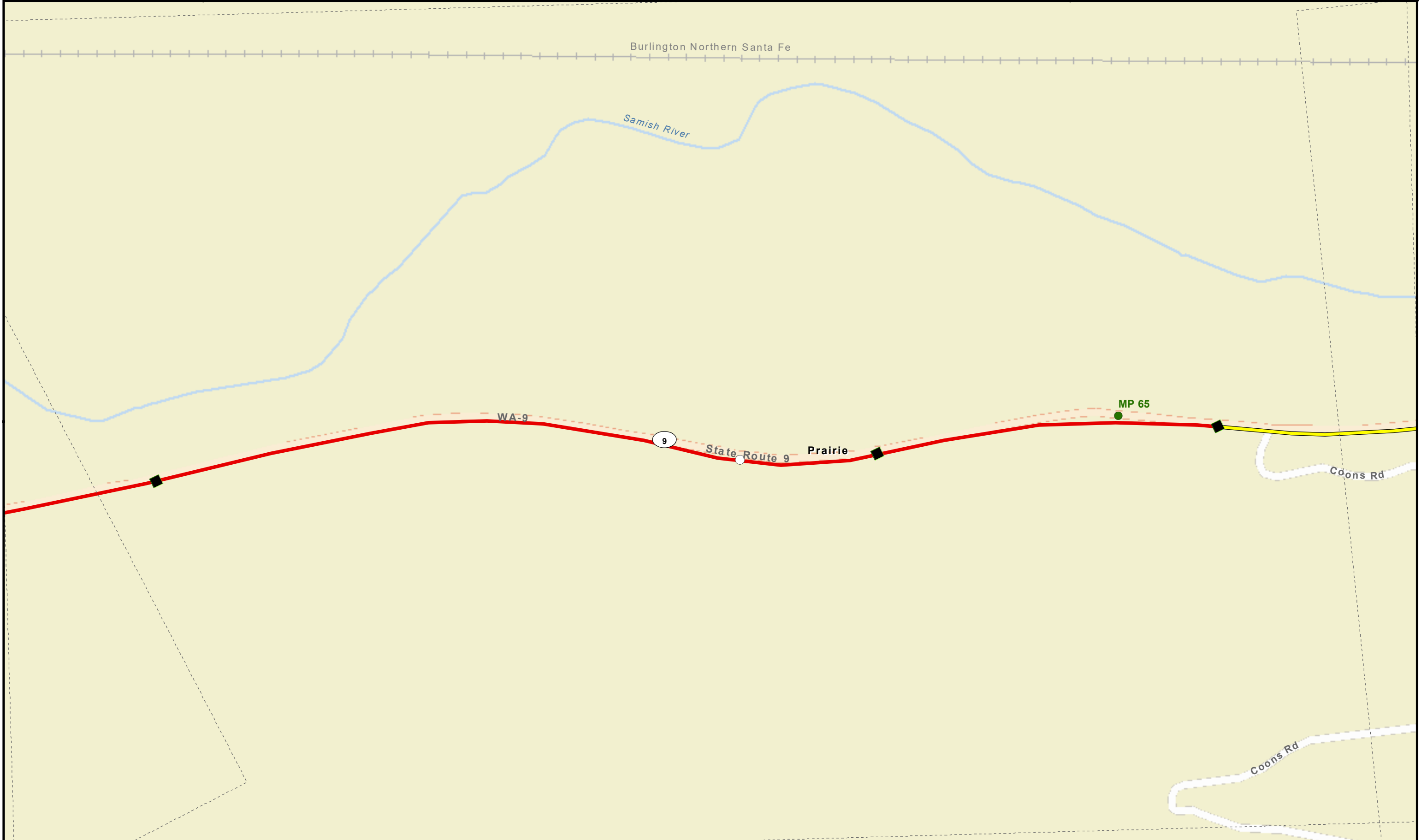
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

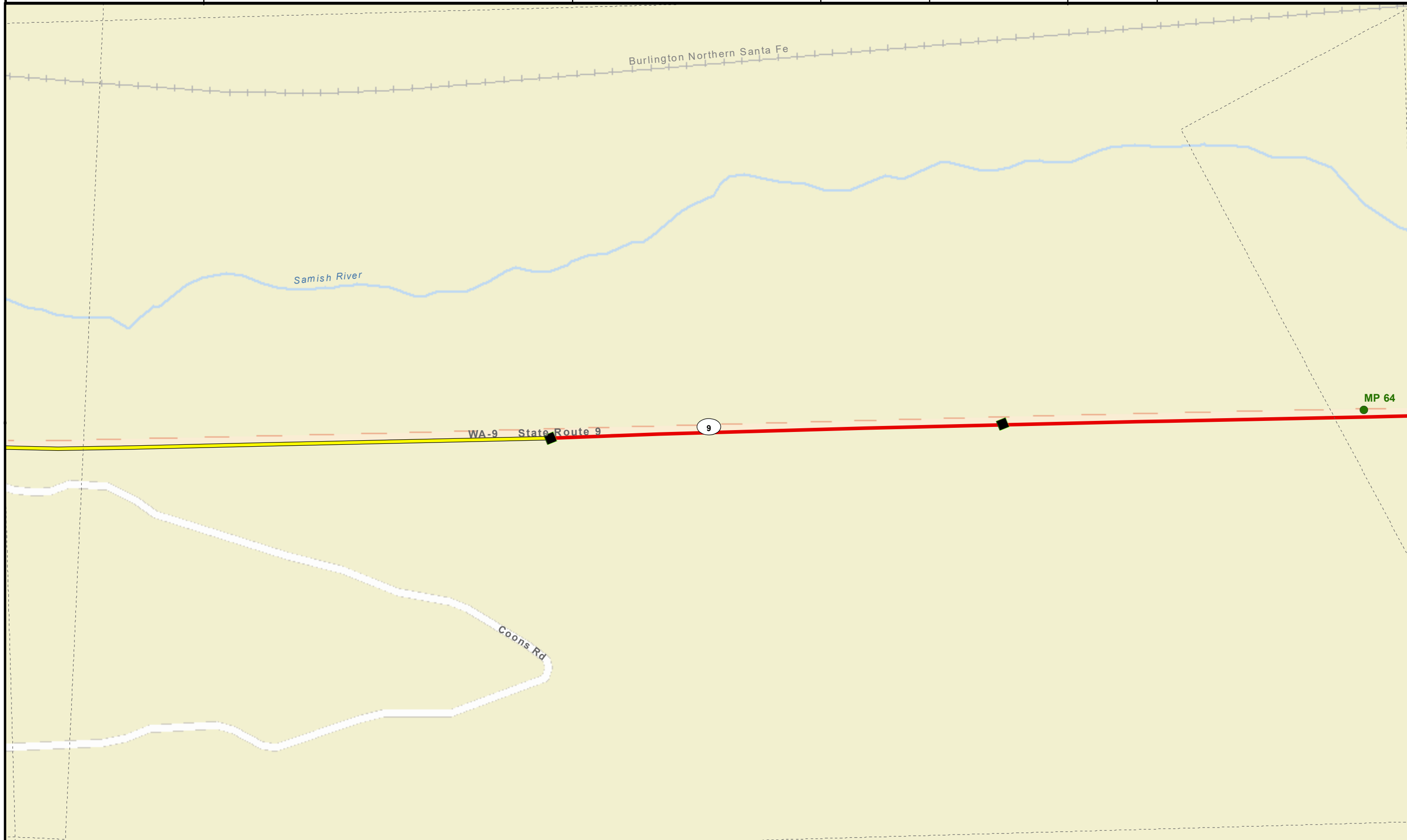
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

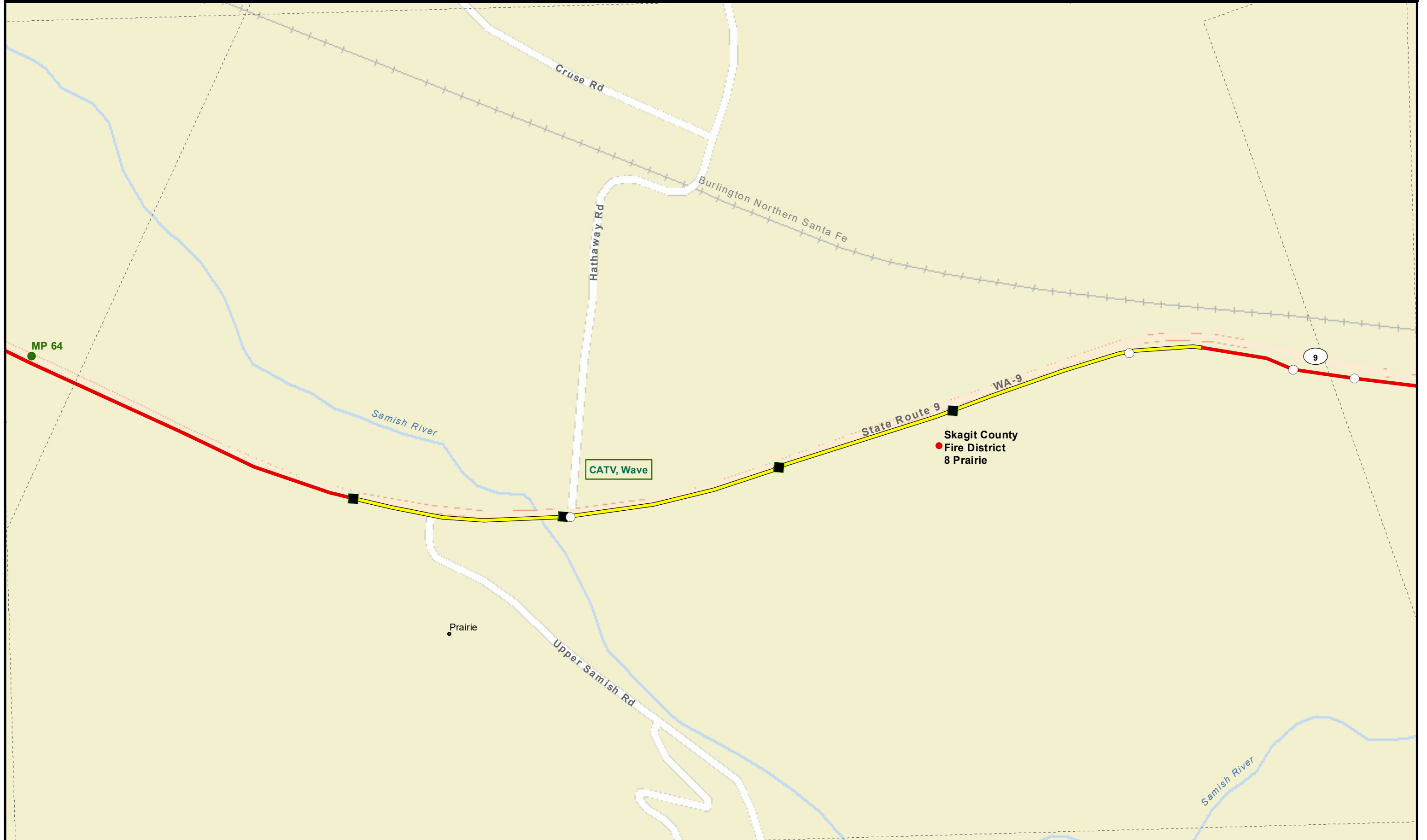
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

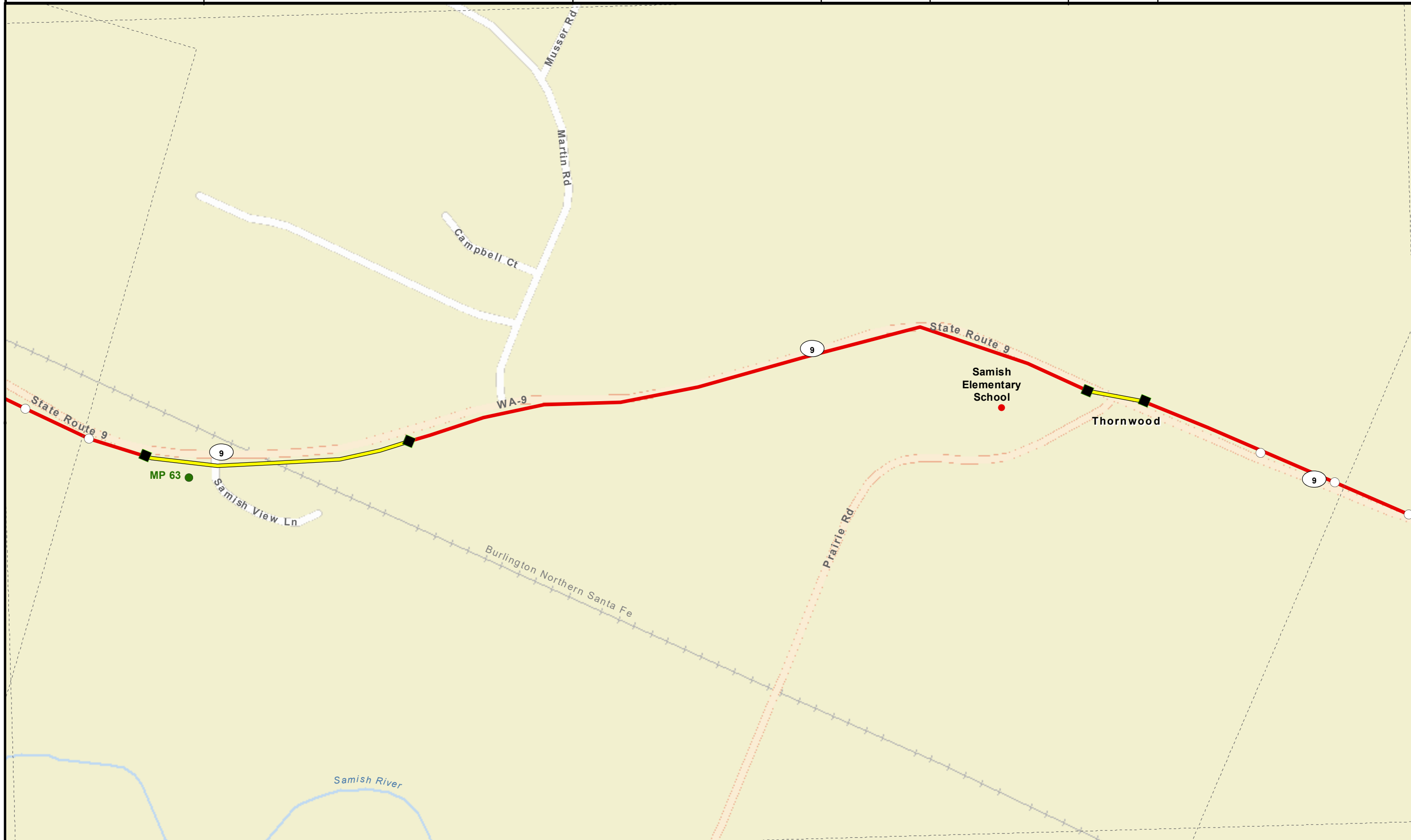
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

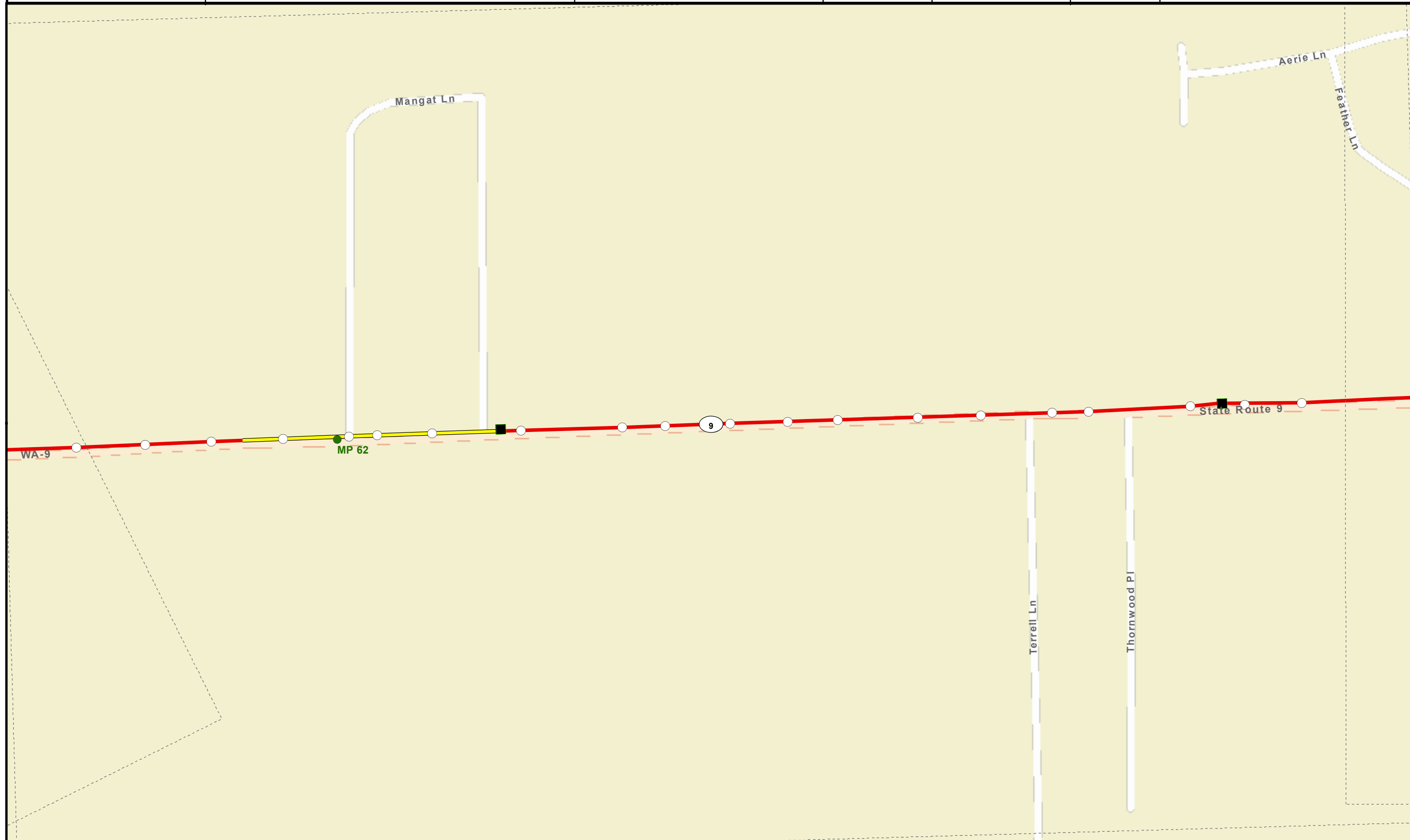
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

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Vault
Pole

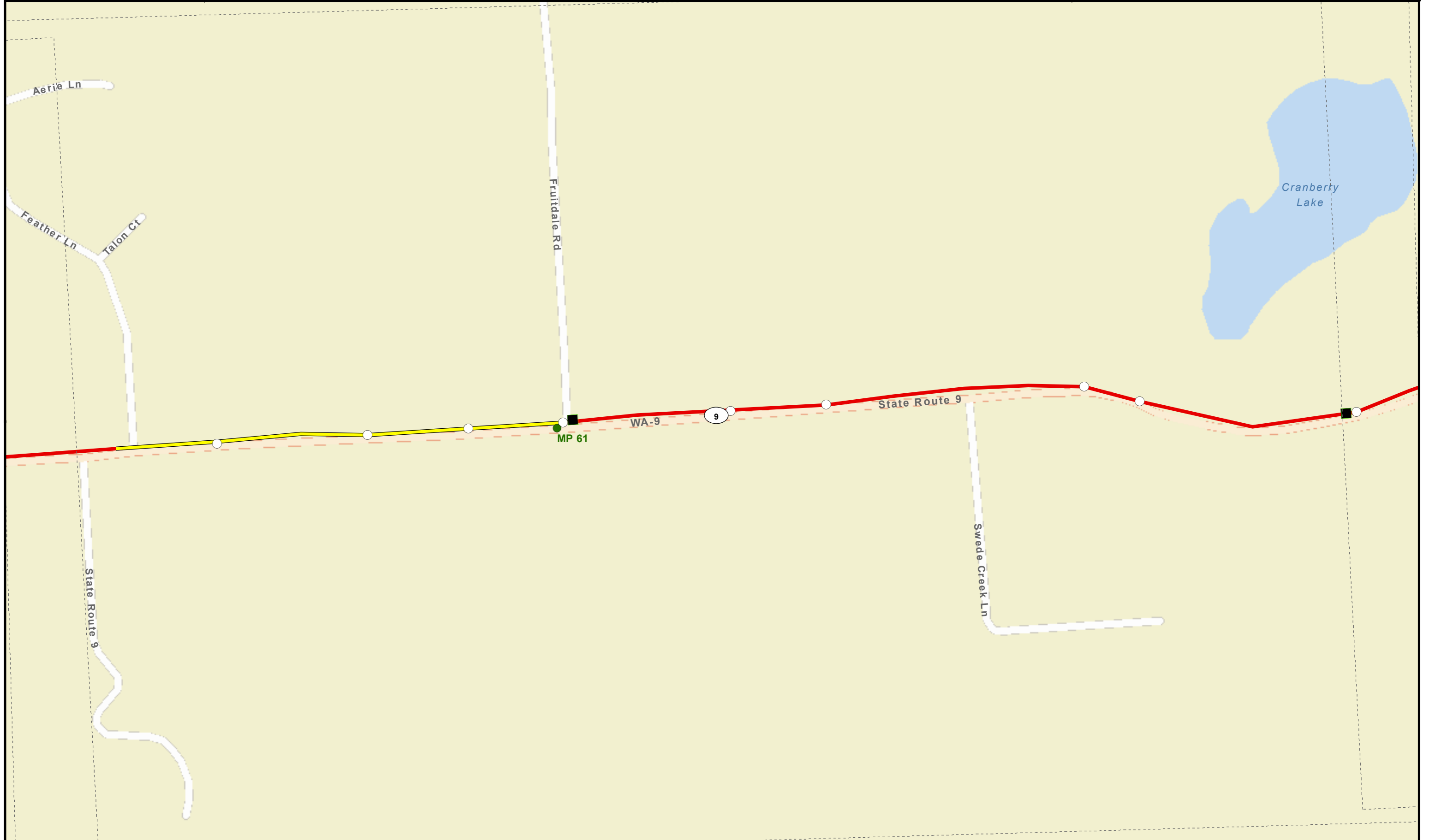
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

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Vault
Pole

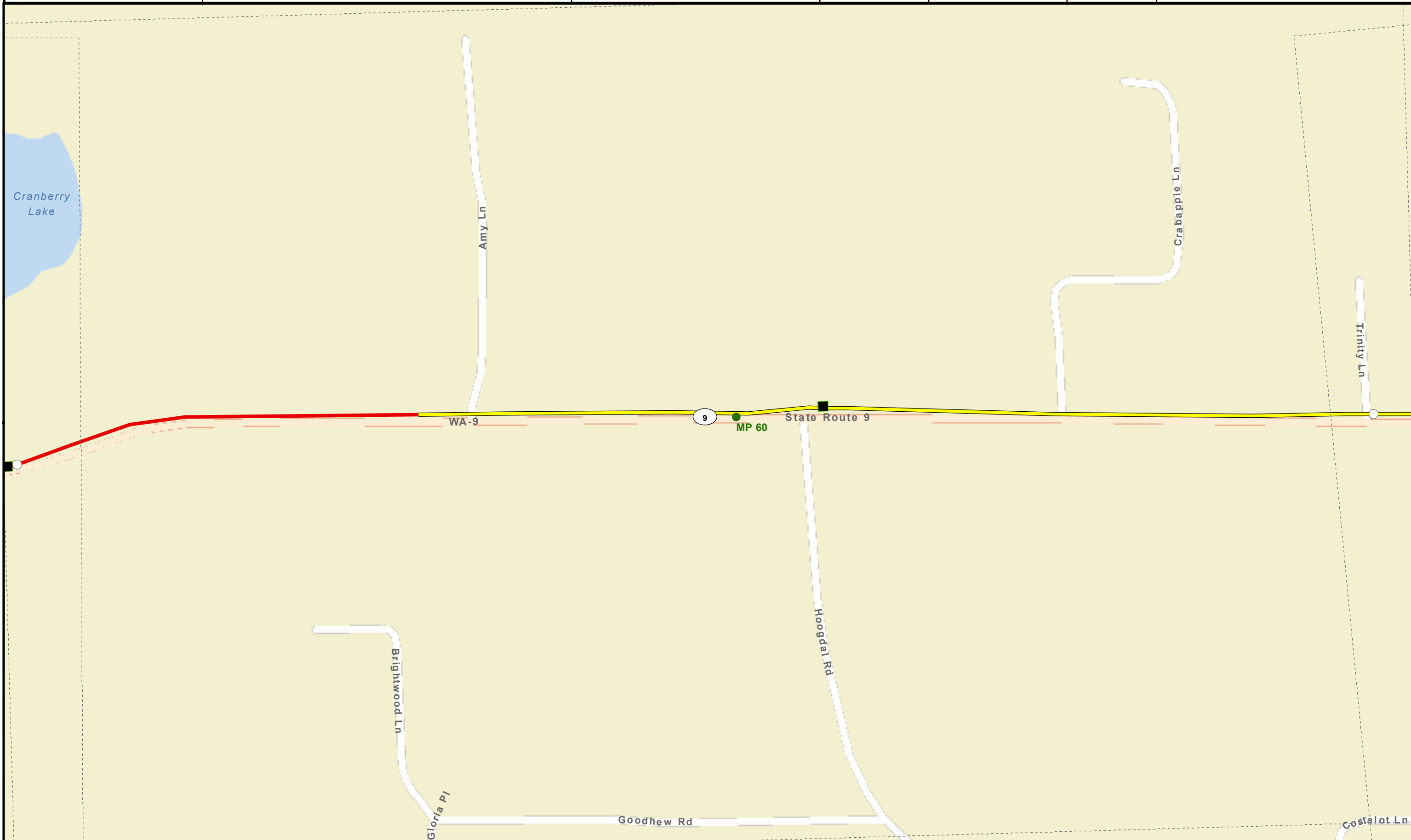
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

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Vault
Pole

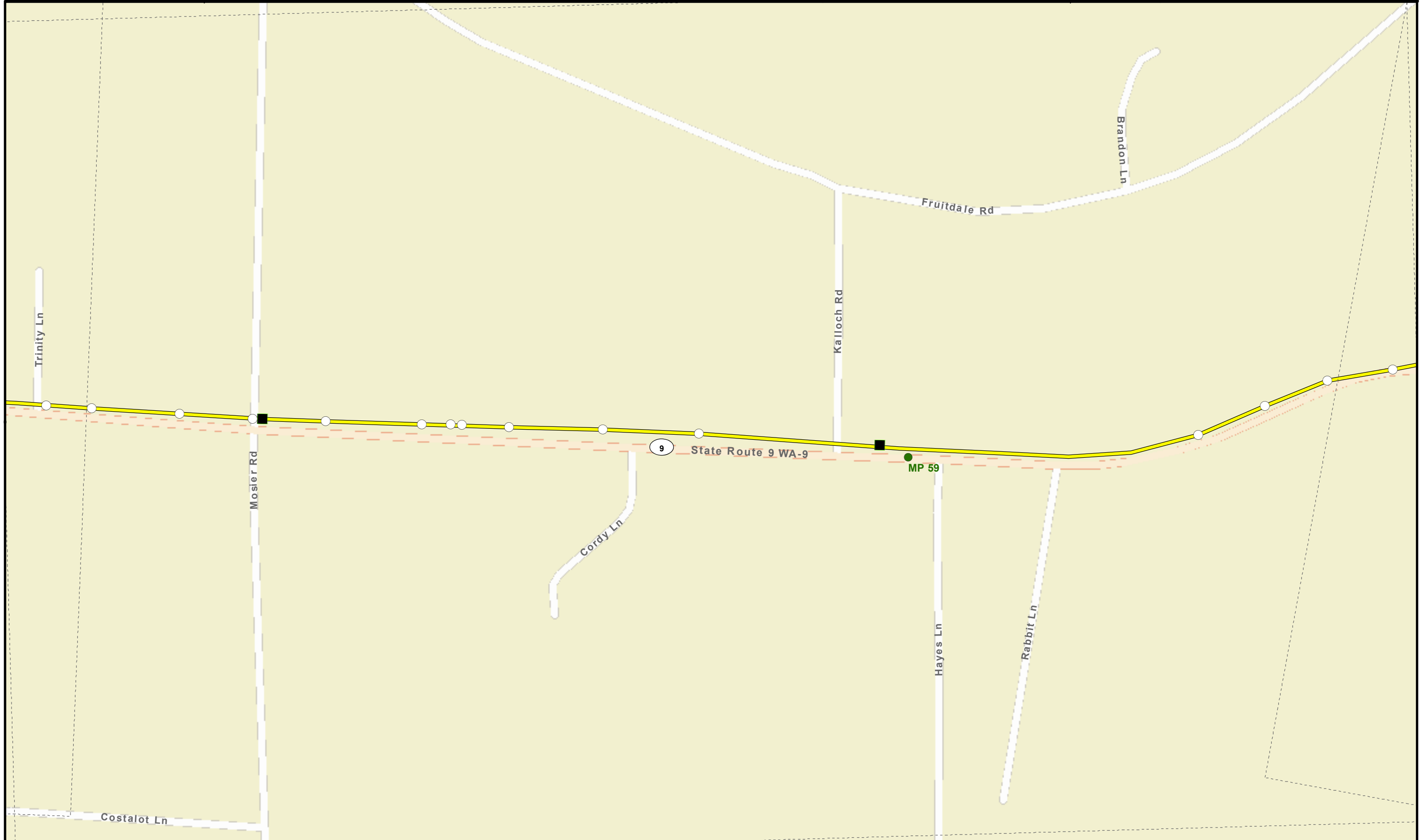
Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**





Aerial
Buried

Bore
Attach

Vault
Pole

Segment: Highway 9
Revision: Date: 2/17/2019

County: Whatcom

Port of Bellingham

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Absolute Scale **1:3,600**
Relative Scale **1 inch = 300 feet**



APPENDIX D - DETAIL FINANCIAL ANALYSIS ASSUMPTIONS

Bellingham to Cedarville run is split 50/50 in capital cost estimate for the revenue model

Revenue Model - Each Run includes all costs/revenues for Cedarville East and Cedarville North runs independent of each other. Cost for the Bellingham to Cedarville segment is included in each model (duplicated).

Financial Model does not include network operating center (NOC) revenues or expenses and other pass through costs

Loaded revenue model includes a 30% management fee for contracted management services.

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
CONSTRUCTION COST ESTIMATE SUMMARY**

Segment	Individual Cost Estimate	Combined Cost Est.
Segment 1 - Bellingham to Cedarville/East	\$2,038,196.93	\$ 1,701,811.60
Segment 2 - Bellingham to Cedarville/North	\$2,963,469.94	\$ 2,627,084.61
Total Construction Cost	N/A	\$ 4,328,896.22

*Allocates 50% of the cost of Bellingham to Cedarville run to each segment

Segment 3 - Highway 9 Connector \$2,508,302.64

Total Construction Cost w/Seg 3 Hwy 9	\$6,837,198.86
--	-----------------------

Segment 1 - Fiber Run - Bellingham to Cedarville/East				
Placement	Count	Length	Unit Cost	Extended Cost
FO Cable W/Slack	NA	216,440.4	\$1.65	\$357,126.74
Aerial	NA	194,530.5	\$3.50	\$680,856.75
Bore	NA	9,658.6	\$21.00	\$202,830.60
Buried	NA	10,558.0	\$11.00	\$116,138.00
Vaults	16	NA	\$1,263.00	\$20,208.00
Sub Total				\$1,377,160.09
25% Construction Contingency				\$344,290.02
5% HDWRE/Splicing				\$68,858.00
18% Estimated Engineering Cost				\$247,888.82
Total				\$2,038,196.93

Segment 2 - Fiber Run - Bellingham to Cedarville/North				
Placement	Count	Length	Unit Cost	Extended Cost
FO Cable W/Slack	NA	362,226.5	\$1.65	\$597,673.70
Aerial	NA	331,830.5	\$3.50	\$1,161,406.75
Bore	NA	9,892.6	\$21.00	\$207,744.60
Buried	NA	1,047.5	\$11.00	\$11,522.50
Vaults	19	NA	\$1,263.00	\$23,997.00
Sub Total				\$2,002,344.55
25% Construction Contingency				\$500,586.14
5% HDWRE/Splicing				\$100,117.23
18% Estimated Engineering Cost				\$360,422.02
Total				\$2,963,469.94

Segment 3 - Fiber Run - Highway 9 Deming to Sedro-Woolley				
Placement	Count	Length	Unit Cost	Extended Cost
FO Cable W/Slack	NA	33,091.9	\$1.65	\$54,601.68
Aerial	NA	0.0	\$3.50	\$0.00
Bore	NA	31,218.8	\$21.00	\$655,594.80
Buried	NA	82,390.6	\$11.00	\$906,296.60
Vaults	62	NA	\$1,263.00	\$78,306.00
Sub Total				\$1,694,799.08
25% Construction Contingency				\$423,699.77
5% HDWRE/Splicing				\$84,739.95
18% Estimated Engineering Cost				\$305,063.83
Total				\$2,508,302.64

APPENDIX D - DETAIL FINANCIAL ANALYSIS
ANNUAL REVENUE & EXPENSE SUMMARY

	----- Annual Revenue Projections -----			Annual Operating Expense	
	Mid Mile	Last Mile	Total		
Segment 1	\$ 47,606.36	\$ 134,976.00	\$ 182,582.36	\$	20,964.22
Segment 2	\$ 58,426.88	\$ 73,872.00	\$ 132,298.88	\$	36,022.99
Segment 3 Hwy 9	\$ 13,008.00	\$ 13,680.00	\$ 26,688.00	\$	3,873.07

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
ROI SUMMARY**

Without Grant Funding

	Estimated Capital Investment	Year 5		Year 10		Year 15		Year 20	
		Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI	Estimated Revenues	Estimated ROI
Segment 1	\$ (1,921,399.43)	\$ 121,478.36	-34.37%	\$ 121,478.36	-20.19%	\$ 121,478.36	-2.14%	\$ 121,478.36	1.15%
Segment 2	\$ (2,841,891.07)	\$ 193,402.88	-33.48%	\$ 193,402.88	-8.80%	\$ 193,402.88	-1.39%	\$ 193,402.88	1.80%
Segments 1 and 2 Combined	\$ (4,090,225.04)	\$ 314,881.24	-31.38%	\$ 314,881.24	-7.13%	\$ 314,881.24	-0.02%	\$ 314,881.24	2.98%
Segment 3 Hwy 9	\$ (2,309,065.51)	\$ 26,688.00	-55.14%	\$ 26,688.00	-27.78%	\$ 26,688.00	-16.87%	\$ 26,688.00	-11.30%

APPENDIX D - DETAIL FINANCIAL ANALYSIS
REVENUE MODEL - SEGMENT 1 and SEGMENT 2 SEPARATE

Segment 1 - Bellingham to Cedarville East						Segment 2 - Bellingham to Cedarville/North					
		Cost/Return						Cost/Return			
Year	Mid Mile	Last Mile	\$ (1,127,973.44) ROI			Year	Mid Mile	Last Mile	\$ (2,142,242.75) ROI		
1	2019	\$11,901.59	\$11,080.80	\$22,982.39		2019	\$19,475.63	\$20,246.40	\$39,722.03		
2	2020	\$23,803.18	\$22,161.60	\$45,964.78		2020	\$38,951.25	\$40,492.80	\$79,444.05		
3	2021	\$47,606.36	\$33,242.40	\$80,848.76		2021	\$58,426.88	\$60,739.20	\$119,166.08		
4	2022	\$47,606.36	\$44,323.20	\$91,929.56		2022	\$58,426.88	\$80,985.60	\$139,412.48		
5	2023	\$47,606.36	\$73,872.00	\$121,478.36	-25.35%	2023	\$58,426.88	\$134,976.00	\$193,402.88	-28.80%	
6	2024	\$47,606.36	\$73,872.00	\$121,478.36	-17.30%	2024	\$58,426.88	\$134,976.00	\$193,402.88	-20.54%	
7	2025	\$47,606.36	\$73,872.00	\$121,478.36	-11.72%	2025	\$58,426.88	\$134,976.00	\$193,402.88	-14.79%	
8	2026	\$47,606.36	\$73,872.00	\$121,478.36	-7.68%	2026	\$58,426.88	\$134,976.00	\$193,402.88	-10.59%	
9	2027	\$47,606.36	\$73,872.00	\$121,478.36	-4.64%	2027	\$58,426.88	\$134,976.00	\$193,402.88	-7.41%	
10	2028	\$47,606.36	\$73,872.00	\$121,478.36	-2.30% *	2028	\$58,426.88	\$134,976.00	\$193,402.88	-4.94%	
11	2029	\$47,606.36	\$73,872.00	\$121,478.36	-0.47%	2029	\$58,426.88	\$134,976.00	\$193,402.88	-2.99%	
12	2030	\$47,606.36	\$73,872.00	\$121,478.36	1.00%	2030	\$58,426.88	\$134,976.00	\$193,402.88	-1.42% *	
13	2031	\$47,606.36	\$73,872.00	\$121,478.36	2.19%	2031	\$58,426.88	\$134,976.00	\$193,402.88	-0.14%	
14	2032	\$47,606.36	\$73,872.00	\$121,478.36	3.16%	2032	\$58,426.88	\$134,976.00	\$193,402.88	0.91%	
15	2033	\$47,606.36	\$73,872.00	\$121,478.36	3.96%	2033	\$58,426.88	\$134,976.00	\$193,402.88	1.79%	
16	2034	\$47,606.36	\$73,872.00	\$121,478.36	4.64%	2034	\$58,426.88	\$134,976.00	\$193,402.88	2.53%	
17	2035	\$47,606.36	\$73,872.00	\$121,478.36	5.20%	2035	\$58,426.88	\$134,976.00	\$193,402.88	3.16% *	
18	2036	\$47,606.36	\$73,872.00	\$121,478.36	5.69% *	2036	\$58,426.88	\$134,976.00	\$193,402.88	3.70%	
19	2037	\$47,606.36	\$73,872.00	\$121,478.36	6.10%	2037	\$58,426.88	\$134,976.00	\$193,402.88	4.16%	
20	2038	\$47,606.36	\$73,872.00	\$121,478.36	6.45%	2038	\$58,426.88	\$134,976.00	\$193,402.88	4.56%	
21	2039	\$47,606.36	\$73,872.00	\$121,478.36	6.75%	2039	\$58,426.88	\$134,976.00	\$193,402.88	4.90%	
22	2040	\$47,606.36	\$73,872.00	\$121,478.36	7.02%	2040	\$58,426.88	\$134,976.00	\$193,402.88	5.20%	

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
REVENUE MODEL - SEGMENTS 1 & 2 COMBINED**

Segment 1 and 2 Combined					
	Year	Mid Mile	Last Mile	Cost/Return	
				\$ (2,528,964.53)	ROI
1	2019	\$31,377.22	\$31,327.20	\$62,704.42	
2	2020	\$62,754.43	\$62,654.40	\$125,408.83	
3	2021	\$106,033.24	\$93,981.60	\$200,014.84	
4	2022	\$106,033.24	\$125,308.80	\$231,342.04	
5	2023	\$106,033.24	\$208,848.00	\$314,881.24	-22.82%
6	2024	\$106,033.24	\$208,848.00	\$314,881.24	-14.77%
7	2025	\$106,033.24	\$208,848.00	\$314,881.24	-9.27%
8	2026	\$106,033.24	\$208,848.00	\$314,881.24	-5.31%
9	2027	\$106,033.24	\$208,848.00	\$314,881.24	-2.37%
10	2028	\$106,033.24	\$208,848.00	\$314,881.24	-0.13%
11	2029	\$106,033.24	\$208,848.00	\$314,881.24	1.63%
12	2030	\$106,033.24	\$208,848.00	\$314,881.24	3.01%
13	2031	\$106,033.24	\$208,848.00	\$314,881.24	4.13%
14	2032	\$106,033.24	\$208,848.00	\$314,881.24	5.04%
15	2033	\$106,033.24	\$208,848.00	\$314,881.24	5.79%
16	2034	\$106,033.24	\$208,848.00	\$314,881.24	6.41%
17	2035	\$106,033.24	\$208,848.00	\$314,881.24	6.93%
18	2036	\$106,033.24	\$208,848.00	\$314,881.24	7.37%
19	2037	\$106,033.24	\$208,848.00	\$314,881.24	7.75%
20	2038	\$106,033.24	\$208,848.00	\$314,881.24	8.06%
21	2039	\$106,033.24	\$208,848.00	\$314,881.24	8.34%
22	2040	\$106,033.24	\$208,848.00	\$314,881.24	8.57%

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
REVENUE MODEL - SEGMENT 3 HIGHWAY 9**

Hwy 9					
		Cost/Return			
Year	Mid Mile	Last Mile	\$ (1,563,285.37) ROI		
1	2019	\$6,504.00	\$2,052.00	\$8,556.00	
2	2020	\$13,008.00	\$4,104.00	\$17,112.00	
3	2021	\$13,008.00	\$6,156.00	\$19,164.00	
4	2022	\$13,008.00	\$8,208.00	\$21,216.00	
5	2023	\$13,008.00	\$13,680.00	\$26,688.00	-50.99%
6	2024	\$13,008.00	\$13,680.00	\$26,688.00	-42.78%
7	2025	\$13,008.00	\$13,680.00	\$26,688.00	-36.47%
8	2026	\$13,008.00	\$13,680.00	\$26,688.00	-31.47%
9	2027	\$13,008.00	\$13,680.00	\$26,688.00	-27.43%
10	2028	\$13,008.00	\$13,680.00	\$26,688.00	-24.12%
11	2029	\$13,008.00	\$13,680.00	\$26,688.00	-21.36%
12	2030	\$13,008.00	\$13,680.00	\$26,688.00	-19.04%
13	2031	\$13,008.00	\$13,680.00	\$26,688.00	-17.06%
14	2032	\$13,008.00	\$13,680.00	\$26,688.00	-15.36%
15	2033	\$13,008.00	\$13,680.00	\$26,688.00	-13.89%
16	2033	\$13,008.00	\$13,680.00	\$26,688.00	-12.61%
17	2033	\$13,008.00	\$13,680.00	\$26,688.00	-11.48%
18	2033	\$13,008.00	\$13,680.00	\$26,688.00	-10.48%
19	2033	\$13,008.00	\$13,680.00	\$26,688.00	-9.60%
20	2033	\$13,008.00	\$13,680.00	\$26,688.00	-8.81%
21	2033	\$13,008.00	\$13,680.00	\$26,688.00	-8.10%
22	2033	\$13,008.00	\$13,680.00	\$26,688.00	-7.46%

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
MID MILE REVENUE BY SEGMENT**

Fiber Segment 1 - Bellingham to Cedarville/East						
Provider	Footage	Mileage	Unit Cost	Total Mont	Total Annual	
CLEC	209468	39.67197	25	\$991.80	\$11,901.59	
CLEC	209468	39.67197	25	\$991.80	\$11,901.59	
ISP	209468	39.67197	25	\$991.80	\$11,901.59	
ISP	209468	39.67197	25	\$991.80	\$11,901.59	
Total				\$3,967.20	\$47,606.36	

Fiber Segment 2 - Bellingham to Cedarville/North						
	Footage	Mileage	Unit Cost	Total Mont	Total Annual	
CLEC	342771	64.91875	25	\$1,622.97	\$19,475.63	
ISP	342771	64.91875	25	\$1,622.97	\$19,475.63	
ISP	342771	64.91875	25	\$1,622.97	\$19,475.63	
Total				\$4,868.91	\$58,426.88	

Total Annual Revenue - Mid Mile Segments					\$106,033.24	
---	--	--	--	--	---------------------	--

Fiber Segment 3 - Hwy 9						
	Footage	Mileage	Unit Cost	Total Mont	Total Annual	
CLEC	342771	21.68	25	\$542.00	\$6,504.00	
ISP	342771	21.68	25	\$542.00	\$6,504.00	
Total				\$1,084.00	\$13,008.00	

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
LAST MILE REVENUE BY SEGMENT**

Segment 1 - Bellingham to Cedarville/East		
Participating Runs	Monthly Revenue	Yearly Revenue
Bellingham to Cedarville	\$4,408	\$52,896
Cedarville East	\$1,748	\$20,976
Total	\$6,156	\$73,872

Segment 2 - Bellingham to Cedarville/North		
Participating Runs	Monthly Revenue	Yearly Revenue
Bellingham to Cedarville	\$4,408	\$52,896
Cedarville North	\$5,928	\$71,136
Birch Bay to Lummi	\$912	\$10,944
Total	\$11,248	\$134,976

Segment 3 - Hwy 9		
Participating Runs	Monthly Revenue	Yearly Revenue
Hwy 9	\$1,140	\$13,680
Total	\$1,140	\$13,680

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
LAST MILE SERVICE SUMMARY**

Study Run	Government	Schools	Tribal	Private	Total	
Bellingham to Cedarville	25		25	0	8	58
Birch Bay to Lummi	1		1	1	9	12
Cedarville East	7		8	4	4	23
Cedarville North	17		16	0	45	78
Highway 9 Deming to Sedro-Woolley	4		2	0	9	15
Totals	54		52	5	75	186

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
NON-STAFF OPERATING EXPENSES**

Pole Attachment Annual Fees	Count	Unit Cost	Extended Cost
Segment 1 - Bellingham to Cedarville/East	811	\$ 25.00	\$ 20,275.00
Segment 2 - Bellingham to Cedarville/North	1426	\$ 25.00	\$ 35,650.00
Total	2237	25	\$ 55,925.00

One Call System and Locates Costs	Buried Feet	Miles	Per Month Cost @ \$15/mile/month	Annual Cost
\$15.00 per mile, per month				
Segment 1 - Bellingham to Cedarville/East	20217	3.83	\$ 57.43	\$ 689.22
Segment 2 - Bellingham to Cedarville/North	10941	2.07	\$ 31.08	\$ 372.99
Segment 3 - Hwy 9	113610	21.52	\$ 322.76	\$ 3,873.07

**APPENDIX D - DETAIL FINANCIAL ANALYSIS
NRC TEMPLATE**

LABOR & MATERIAL LIST				
Name:			Project No.	
QTY	UOM	Description	Unit Price	Total
0	Lineal Foot	Trench & Place up to 4' Depth	\$ 11.00	\$ -
0	Lineal Foot adder to BTP Unit	Trench and Place Additional 1' Depth Increments over 4' Depth	\$ 2.50	\$ -
0	Lineal foot	Trench and Relocate Fiber	\$ 18.50	\$ -
0	Lineal Foot	Rock Breaking or Sawing up to 3' depth	\$ 16.50	\$ -
0	Lineal Foot adder to BRP Unit	Rock Breaking or Sawing Additional 1' Depth Increments over 3'	\$ 5.00	\$ -
0	Lineal Foot	Hand trenching	\$ 11.50	\$ -
0	Lineal Foot	Plow & Place 4' Depth	\$ 2.50	\$ -
0	Lineal Foot	Directional Bore up to 2" hole	\$ 15.50	\$ -
0	Lineal Foot	Directional Bore up to hole size 4"	\$ 27.00	\$ -
0	Lineal Foot	Directional Bore Rock up to 2" hole	\$ 85.00	\$ -
0	Lineal Foot	Directional Bore Rock, hole size 4"	\$ 106.00	\$ -
0	Lineal Foot	Jack / Push / Dry Bore up to 4" Steel Casing	\$ 31.00	\$ -
0	Lineal Foot	Concrete Encasement	\$ 13.00	\$ -
0	Each	Handhole Placement	\$ 265.00	\$ -
0	Each	Vault placement	\$ 511.00	\$ -
0	Each	Handhole Relocation	\$ 522.00	\$ -
0	Each	Vault Relocation	\$ 776.00	\$ -
0	Square Foot.	Asphalt Restoration	\$ 12.00	\$ -
0	Square Foot.	Concrete Remove & Restore	\$ 18.00	\$ -
0	Wall to Wall	Rod and Rope Conduit	\$ 0.78	\$ -
0	Wall to Wall	Pull Fiber thru Duct	\$ 1.00	\$ -
0	Lineal Foot	Blow Fiber Cable thru Duct	\$ 1.00	\$ -
0	Per Attachment	Pole Transfer (Straight)	\$ 125.00	\$ -
0	Per Location	Pole Transfer (Angle)	\$ 275.00	\$ -
0	Per Location	Pole Transfer (Dead End)	\$ 375.00	\$ -
0	Per Anchor	Anchor Placement New	\$ 185.00	\$ -
0	Per Location	Anchor Transfer and or Removal	\$ 225.00	\$ -
0	Per Strand Foot	Place Strand & Overhead Guys	\$ 2.00	\$ -
0	Per Strand Foot	Lash Fiber Optic Cable	\$ 1.50	\$ -
0	Fiber Cable Ft	Delash & Relash Fiber Cable	\$ 1.00	\$ -
0	Fiber Cable Ft	ADSS Fiber Relocation	\$ 2.00	\$ -
0	Fiber Cable Ft	ADSS Fiber Placement	\$ 1.75	\$ -
0	Fiber Cable Ft	Aerial or UG Fiber Wreckout	\$ 1.00	\$ -
0	Per Strand Foot	Wreckout Stand, Hardware and X-Arms	\$ 1.25	\$ -
0	Per Location	Place New or Transfer X-Arms (Wood)	\$ 65.00	\$ -
0	Per Location	Place New or Transfer Fiber glass Arm	\$ 50.00	\$ -
0	Each	Place New Riser up to 4"	\$ 150.00	\$ -
0	Each	Transfer Existing Riser up to 4"	\$ 350.00	\$ -
0	Each	Removal of Existing Riser.	\$ 200.00	\$ -
0	Each Closure	Placement of New Fiber Optic Enclosure	\$ 200.00	\$ -
0	Each Closure	Splice Closure Re-entry of exiting case	\$ 200.00	\$ -
0	Each Splice	Splice and Test Fiber Cable, 48 fiber and less per W.O.	\$ 35.00	\$ -
0	Each Splice	Splice and Test Fiber Cable, 49 fibers and Above per W.O.	\$ 30.00	\$ -
0	Each Closure	Ring Cut or Mid-Entry Prep	\$ 200.00	\$ -
0	Each Splice	Splicing Hot-Cut	\$ 48.00	\$ -
0	Fiber end tested	Test Fiber, Acceptance Testing	\$ 25.00	\$ -
0	Per Foot	Private Property Fiber Drop in Conduit	\$ 1.25	\$ -
0	Per Foot	Building Fiber Cable Placement	\$ 1.75	\$ -
0	Per Foot	Building Fiber Cable Placement EMT	\$ 1.50	\$ -
0	Each	Core Drill, Building Penetration	\$ 500.00	\$ -
0	Each	Charles Cell Site Cabinet	\$ 900.00	\$ -
0	Each	Remobilization Fee	\$ 1,500.00	\$ -

0	Crew Hour	Traffic Control	\$ 123.00	\$ -
		Construction Services Sub-Total		\$ -
		Engineering and Related Services:		
0	Each	Easement and Consent Acquisition	\$ 1,940.00	\$ -
0	Each	City / County R/W Permits	\$ 176.00	\$ -
0	Each	WSDOT Permits	\$ 2,295.00	\$ -
0	Each	Railroad Utility Crossing Permits	\$ 1,825.00	\$ -
0	Each	Utility Pole Data Collection & Application 1 to 10 Poles	\$ 259.00	\$ -
0	Each	Utility Pole Data Collection & Application 11 to 100 Poles	\$ 100.00	\$ -
0	Each	Field Engineer, Design, CAD up to 2,500 ft	\$ 2,470.00	\$ -
0	Per Foot	Field Engineer, Design, CAD 2,501' to 5,000 ft	\$ 0.82	\$ -
0	Per Foot	Field Engineer, Design, CAD up to 5,001' to 25,000 ft	\$ 0.65	\$ -
0	Per Hour	Pre-fielding, 1 OSP Engineer and Vehicle, Under Owner Req.	\$ 95.00	\$ -
		Field Design		\$ -
		Engineering and Related Services Sub-Total		\$ -
		Major Materials:		
0	Foot	Fiber include slack	\$ 0.500	\$ -
0	Foot	Misc conduit.	\$ 0.50	\$ -
0	Each	Fiber Patch Panel	\$ 200.00	\$ -
0	Each	Splice Case w/ splice tray	\$ 500.00	\$ -
0	Each	HandHole	\$ 750.00	\$ -
0	Each			\$ -
0	Each	Gravel Restoration		\$ -
		Contractor Provided Materials		\$ -
		Subtotal Estimate of Probable Costs		\$ -
		Contingency 10%		\$ -
		TOTAL ESTIMATE OF PROBABLE COSTS		\$ -

APPENDIX E

MASTER OPTICAL FIBER AND FACILITIES LEASE

PORT OF BELLINGHAM

THIS LEASE AND AGREEMENT, EFFECTIVE as of the date it is fully executed (the "Effective Date") by and between the PORT OF BELLINGHAM (hereinafter referred to as the "PORT" or "OWNER"), and _____, a _____ corporation, organized under the laws of the State of Washington, (hereinafter referred to as the "COMPANY").

RECITALS:

The PORT owns and maintains an optical fiber system and facilities, (herein the "System") within and without the PORT district for the purposes of providing wholesale telecommunication services within the district.

The COMPANY is authorized to provide telecommunication services to the general public and internet service providers and will not be the end user of the PORT's optical fiber and facilities leased to it.

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements set forth in this Lease, the Parties hereto do hereby covenant and agree as follows:

1. OVERVIEW:

This Lease states the general terms, covenants and conditions by which the PORT will lease to the COMPANY optic fiber and facilities and provide services, identified and detailed in the associated Service Order Summary. This Lease is intended to cover any and all

facilities and services to be provided by the PORT to the COMPANY. COMPANY may use the PORT's fiber and facilities only for authorized and lawful purposes.

2. PAYMENT AND USE (SERVICE ORDER SUMMARY):

The COMPANY covenants and agrees to accept and pay for, and the PORT agrees to provide the facilities and fiber and services specified in each Service Order Summary, for the term specified therein. The COMPANY'S use of the System shall include the sale of telecommunication services within the PORT district. The PORT reserves the right to limit the manner in which any portion of its System and facilities are used to protect the technical integrity of the System.

3. FIBER SYSTEM SPECIFICATIONS:

3.1 Optical Fiber Specifications: Optical fiber within the System will meet the specifications set forth below and measurable by optical time domain reflectometer ("OTDR"):

<u>Parameter</u>	<u>Specifications</u>	<u>Units</u>
Maximum attenuation,	1310nm (A1)	.50 dB/km
Maximum attenuation,	1550nm (A2)	.40 db/km
Cladding diameter	125 +-3	nm
Cutoff Wavelength	1250 +-100	nm
Zero dispersion wavelength	1310 +-12	nm
Maximum dispersion	(1285-1330nm) 3.5 ps/nm km	

Reference: EIA RS-455 test method

3.2 The COMPANY shall have the right at its expense to test the leased fiber any time three (3) days prior to the commencement of use for compliance with the technical specifications set forth above. Upon completion of testing, the COMPANY shall either send an acceptance notice to the PORT acknowledging the acceptance of the Leased Fibers as tested or notify the PORT that the Leased Fibers do not comply with the technical specifications. By sending an acceptance notice, the COMPANY acknowledges that the Leased Fibers listed in the notice comply with the applicable technical specifications. If the COMPANY fails to provide any notice within the three (3) days provided, then the COMPANY shall be deemed to have accepted the fibers.

3.3 In the event the result of any test performed in accordance with Section 3.2 herein shows that the fiber(s) are not operating in accordance with the technical specifications, the PORT shall promptly take action that is reasonable to bring the fiber(s) into compliance and shall notify the COMPANY when the PORT believes that the fiber(s) comply with the technical specifications. The COMPANY shall have ten (10) days following such notice to retest the fiber(s) and again notify the PORT that the fiber(s) are accepted or do not comply in accordance with the procedures set forth in section 3.2. If following said notice, the PORT is unable or chooses not to bring the fiber(s) into compliance, this Lease shall then terminate as to such fiber(s).

3.4 In no event shall the unavailability, incompatibility, delay in installation, or other impairment of any of the COMPANY's interconnection facilities, including

COMPANY's suppliers (e.g., a local access telephone service provider) be used as a basis for rejecting any fiber(s).

4. FIBER SYSTEM MAINTENANCE:

4.1 All maintenance and repair to the Leased Fiber and system facilities (other than equipment or facilities installed by the COMPANY), but not limited to, conduit, inner-duct, poles and equipment, shall be the responsibility of the PORT; provided the PORT shall retain the right to subcontract for maintenance and repair. Maintenance shall be performed in accordance with standard industry practices.

4.2 For routine and scheduled work affecting service on the System, the PORT will make reasonable efforts to schedule maintenance that will result in as little disruption of service as reasonably possible, during off peak hours, and at such times and dates that will provide the COMPANY with ten (10) business days notice. The PORT will provide notice to the COMPANY by the method provided in the most recent Service Order Summary, or by the method requested by the COMPANY in writing superseding the method provided in the most recent Service Order Summary.

4.3 Emergency work arising from unscheduled disruption of service or from the eminent threat of disruption of service may be conducted at any time without prior notice.

4.4 In the event of unscheduled disruption of service, or emergency, the COMPANY may utilize the emergency contact information to be provided to the COMPANY by the PORT. The PORT's contact information may be revised and updated from time-to-time by notice in writing to the COMPANY by letter, facsimile, or electronic transmission.

4.5 Each Party shall maintain the capability to accept process and dispatch personnel on trouble reports, without delay after the performance of appropriate tests and attempts to isolate the trouble remotely. If testing and remote trouble isolation procedures are ineffective, each Party will assist the other in efforts to isolate the trouble. If the trouble is isolated to a Party's facilities, equipment or switching equipment, such Party shall take all necessary steps to clear the trouble and restore the services as quickly as possible.

5. TERM:

5.1 Initial Term: The initial term for this Lease will commence with the execution of this Lease and Agreement, and terminate as to the fiber and facilities and on the dates specified in each Service Order Summary unless automatically renewed as hereinafter set forth; provided, in the event, a Service Order Summary has not been signed and delivered to the PORT within ninety (90) days from the execution hereof, this Lease and Agreement shall automatically terminate.

5.2 Renewal: This Lease shall automatically renew for successive terms of one (1) year each as to the fiber and facilities specified in each Service Order Summary unless terminated earlier, by notice in writing delivered by either party to the other thirty (30) days prior to the end of the term specified, including any renewal term.

5.3 The same terms, covenants and conditions as specified in this Lease shall apply to all renewal terms, unless otherwise specifically modified by the parties in writing. Upon termination of this Lease for any reason, the COMPANY's rights for use of the PORT's fiber and facilities, and the obligation of the PORT to provide services to the COMPANY, shall cease.

6. FEES AND PAYMENT TERMS:

6.1 All applicable fees and charges, including without limitation, power usage fees, rack fees, early disconnect charges, and other non-recurring charges, shall be based on and commenced as specified in each Service Order Summary.

6.2 Invoicing: The PORT shall bill the COMPANY monthly, in advance, for all fees and charges, provided power charges shall be added to each invoice as usage occurs. All amounts shall be due within thirty (30) days of invoice.

6.3 Fee Adjustment: Rates, fees and charges may be adjusted or modified from time-to-time as specified in each Service Order Summary.

6.4 Taxes: In addition to all of the charges the COMPANY shall be pay all applicable taxes, franchise, license and permit fees (hereinafter collectively referred to as "Taxes") assessed against it for the conduct of its business as a telecommunications service provider arising out of the use of the Leased Fibers during the Term of this Lease. The COMPANY shall indemnify and hold the PORT harmless from any such taxes, including all penalties, interest and costs and reasonable attorney's fees, resulting from the failure to pay any such taxes or resulting from any proceeding contesting the imposition of any such taxes. In the event of any refund, rebate, reduction or abatement to the COMPANY of any such Taxes, the COMPANY shall be entitled to receive the entire benefit of such refund, rebate, reduction or abatement.

The COMPANY shall pay all applicable leasehold excise taxes or taxes imposed in lieu of leasehold excise tax. In the event the PORT is any way prohibited by law from requiring the COMPANY to pay any such tax and by reason thereof the PORT does pay any such tax, then, and in that event, the PORT shall be entitled to increase without regard to the limit on any Index increases allowed hereunder, the amount of the rate payable by the COMPANY to the PORT by the amount of any tax so paid and by the amount of any increased tax required to be paid because of any increase in the rate which may arise pursuant to this paragraph.

6.5 Past Due Amounts: All past due amounts due pursuant to the provisions of this Lease shall bear interest at the rate of twelve percent (12%) per annum.

7. LIMITATION OF LIABILITY/IDEMNIFICATION:

Each Party undertakes and agrees to indemnify and hold harmless the other Party and all of its officers and employees, and, at the option of the indemnified Party, defend the indemnified Party, and any and all of its Boards, officers, agents, representatives, employees, affiliates, assigns and successors in interest from and against any and all suits and causes of action, claims, charges, damages, demands, judgments, civil fines and penalties, or losses of any kind or nature whatsoever, for death, bodily injury or personal injury to any person, including the indemnifying Party's employees and agents, or damage or destruction to any property of either Party hereto, or third persons in any manner arising from the negligent acts, errors, omissions or willful misconduct incident to the performance of this contract on the part of the indemnifying Party, or the indemnifying Party's officers, agents, employees, or subcontractors of any tier.

Except to the extent each Party has agreed to indemnify and hold harmless the other for its acts or failure to act as specified herein, neither Party shall be liable for any indirect, special, punitive or consequential damages arising under this Lease or from any breach or partial breach of the provisions of this Lease or arising out of any act or omission hereto, its employees, servants, contractors and/or agent.

8. FORCE MAJEURE:

Neither Party shall be liable to the other for any failure of performance under this Lease due to causes beyond its control (except for the fulfillment of payment obligations as

set forth herein), including, but not limited to: acts of God, fire, flood, earthquake or other catastrophes; material or facility shortages or unavailability not resulting from such Party's failure to timely place orders therefore; lack of transportation; the imposition of any governmental codes, ordinances, laws, rules, regulations or restrictions; national emergencies; insurrections; riots, wars; or third party strikes, lockouts, work stoppages or other labor difficulties (collectively, "Force Majeure Events"). The COMPANY shall not pay for services not rendered during a Force Majeure Event.

9. EVENTS OF TERMINATION

9.1 Condemnation: If at any time during the Term of this Lease, all or any significant portion of the System shall be taken for any public or quasi-public purpose by any lawful power or authority by the exercise of the right of condemnation or eminent domain, either Party may elect to terminate this Lease upon giving the other Party sixty (60) days prior written notice. In the event this Lease is terminated in accordance with this section, both Parties shall be entitled to participate in any condemnation proceedings to seek to obtain compensation via separate awards for the economic value of their respective interest in the System.

9.2 Damage or Destruction of System: If at any time during the Term of this Lease, all or any significant portion of the System shall be damaged or destroyed beyond feasible repair, both Parties shall be entitled to seek to recover the economic value of their respective interest in the System (i) under any insurance policy carried by either

Party or any third Party, or (ii) seek recovery from any third party which may be legally responsible for causing such damage or destruction.

9.3 Catastrophic Outage: If at any time during the Term of this Lease the ability of the Leased Fibers to transmit telephone, telecommunications and video services shall be interrupted or degraded below a minimum of .25 DBM (Decibels per Millivolt) attenuation per splice as established by OTDR (Optical Time Domain Reflectometer): (i) in the case of a Force Majeure Event, for thirty (30) consecutive days, or (ii) in the case of a non-Force Majeure Event, for five (5) consecutive days, then either Party may elect to terminate this Lease without liability upon giving thirty (30) days written notice to the other Party.

9.4 Default: Either Party may terminate this Lease upon the failure of the other Party to cure an Event of Default before the expiration of the applicable cure period, if any, as required in Section 16. In the event either Party fails to cure an Event of Default within the applicable cure period, the aggrieved party may pursue any legal or equitable remedy available to it under applicable law.

10. ASSIGNMENT:

No assignment hereof or sublease, assignment or licensing (hereinafter collectively referred to as a "Transfer") of any rights or obligations hereunder shall be valid for any purpose without the prior written consent of the PORT of which consent shall not be unreasonably withheld; provided, nothing herein shall prohibit the PORT from selling or

offering telecommunication services over the Leased Fibers to customers in the ordinary course of business. Notwithstanding the foregoing, the COMPANY may assign this Lease without prior written consent (a) to any affiliate, successor through merger, or acquirer of substantially all of its assets which has the capacity to fulfill the requirements set forth in this Lease, or (b) if necessary to be in compliance with the rules and/or regulations of any regulatory agency, governmental agency, legislative body or court of competent jurisdiction.

The COMPANY shall remain liable for all obligations of this Lease in the event of any assignment or transfer without the PORT's written consent. unless: (a) the PORT consents to release the COMPANY, by written instrument from such obligations, and (b) the assignee or transferee shall have affirmatively assumed in writing all of the obligations of the COMPANY.

11. WAIVER OF TERMS OR CONSENT TO BREACH:

No term or provision of this Lease shall be waived and no breach excused, unless such waiver or consent shall be in writing and signed by a duly authorized officer of the Party claimed to have waived or consented to such breach. Any consent by either Party to, or waiver of, a breach by the other Party shall not constitute a waiver of or consent to any subsequent or different breach. If either Party shall fail to enforce a breach of this Lease by the other Party, such failure to enforce shall not be considered consent to or a waiver of said breach or any subsequent breach for any purpose whatsoever.

12. FREEDOM OF ACTON:

Nothing in this Lease shall restrict the PORT in the conduct of its business, and the PORT may use the remainder of the System, without limitation, for any purpose whatsoever;

provided, no such use unreasonably interferes with the use of the Leased Fibers by the COMPANY as granted.

13. COMPLIANCE WITH LAW:

Each Party agrees that it will perform its respective rights and obligations hereunder in accordance with all applicable local, state and federal laws, rules and regulations.

14. RELOCATION OF THE FACILITIES:

The COMPANY recognizes that, from time to time, the PORT may elect or be required to relocate the System or a portion thereof. The PORT shall be solely responsible for all costs incurred in relocating the System and shall use reasonable efforts to do so in a manner that will not cause any material interruption in the COMPANY's use thereof. The PORT agrees to give the COMPANY at least three (3) weeks prior written notice of any elected relocation. The COMPANY shall have no claims for direct damages against the PORT for disruption of service arising out of relocation.

The PORT shall deliver to the COMPANY updated drawings with respect to the relocated Fibers, including Route Miles specified in the drawings, within ninety (90) days following the completion of such relocation.

Relocation pursuant to this section shall not affect the Term of the lease of the fiber and facilities affected by such relocation, provided the COMPANY may elect to terminate this lease as to the fiber and facilities affected, by notice in writing provided to the PORT no later than ten (10) days following the receipt by the COMPANY of the notice from the PORT regarding the planned relocation.

15. INSURANCE:

The COMPANY shall at all times during the Term of this Lease, at its own cost and expense, carry and maintain the insurance coverage listed below with insurers authorized to do business in the state(s) of operation. The COMPANY shall require its subcontractors and agents to maintain the same insurance:

(a) Commercial General Liability Insurance covering claims for bodily injury, death, personal injury or property damage (including loss of use) occurring or arising out of the license, use or occupancy of any premises in connection with this Lease by the COMPANY, including coverage for premises-operation, products/completed operations and contractual liability with respect to the liability assumed by the COMPANY hereunder. The limits of insurance shall not be less than:

Each Occurrence	\$ 2,000,000
General Aggregate	\$ 3,000,000
Products/Completed Operations	\$ 2,000,000
Personal & Advertising Injury	\$ 2,000,000

(b) Workers' Compensation Insurance with statutory limits as required in the state(s) of operation; and providing coverage for any employee entering onto any premises in connection with this Lease, even if not required by statute. Employer's Liability or "Stop Gap" insurance with limits of not less than \$100,000 each accident.

(c) Comprehensive Automobile Liability Insurance covering the ownership, operation and maintenance of all owned, non-owned and hired motor vehicles used

in connection with this Lease, with limits of at least \$1,000,000 per occurrence for bodily injury and property damage.

(d) Any other insurance coverages specifically required of the COMPANY pursuant to the PORT's right-of-way Leases with railroads or other third parties.

During the term hereof, or during any renewal term, the PORT may increase the required limits of coverage otherwise specified herein, to amounts consistent with the limits of coverage required by the PORT in subsequent or pending fiber optic leases. Said increase shall take effect following written notice by the PORT to the COMPANY, on the termination or renewal date of the policies then in effect.

16. DEFAULT:

If (a) the COMPANY fails to make a timely payment of the Lease Fees or any other amount it is obligated to pay, including interest due on all past due amounts, within thirty (30) days after written notice from the PORT, or (b) if either Party ("Defaulting Party") fails to perform a nonmonetary obligation and such failure shall continue for a period of thirty (30) days after the other Party shall have delivered written notice of such failure, (unless in the case of nonmonetary default such failure cannot be reasonably cured within such thirty (30) day period, and the Defaulting Party is diligently pursuing such cure), then the Defaulting Party shall be in default hereunder and the other Party at its sole option may (a) terminate this Lease upon written notice, in which event the other Party shall have no further duties or obligations hereunder or, (b) pursue all legal remedies it may have relating to such default.

If either Party shall file a petition in bankruptcy or for reorganization or for an arrangement pursuant to any present or future federal or state bankruptcy law or under any similar federal or state law, or shall be adjudicated as bankrupt or insolvent, or shall make a general assignment for the benefit of its creditors, or shall admit in writing its inability to pay its debts generally as they become due, or if any involuntary petition proposing the adjudication of either Party as a bankrupt or its reorganization under any present or future federal or state bankruptcy law or any similar federal or state law shall be filed in any court and such petition shall not be discharged or denied within ninety (90) days after the filing thereof, or if a receiver, trustee or liquidator of either Party of all or substantially all of the assets of either Party shall be appointed in any proceeding brought by either Party, and shall consent to or acquiesce in such appointment, then the other Party, its sole option, may immediately terminate this Lease upon written notice.

17. RELATIONSHIP NOT A PARTNERSHIP OR AN AGENCY:

The relationship between the COMPANY and the PORT shall not be that of partners or agents for one another and nothing contained in this Lease shall be deemed to constitute a partnership, joint venture or agency agreement between the Parties hereto. The COMPANY and the PORT in performing any of their obligations hereunder shall be independent contractors or independent parties and shall discharge their contractual obligations as such and at their own risk.

18. NO THIRD-PARTY BENEFICIARIES:

This Lease is for the sole benefit of the Parties hereto and their respective permitted successors and assigns, and shall not be construed as granting rights to any person or entity,

other than the Parties, including, but not limited to, any customer of the COMPANY, or imposing on either Party obligations to any person or entity other than a Party.

19. SEVERABILITY:

In the event any term, covenant or condition of this Lease, or the application of such term, covenant or condition, shall be held invalid as to any person or circumstances by any court having jurisdiction, all other terms, covenants and conditions of this Lease and their application shall not be affected thereby, but shall remain in force and effect unless a court holds that the invalid term, covenant or condition is not separable from all other terms, covenants and conditions of this Lease.

20. GOVERNING LAW/VENUE:

This Lease shall be interpreted in accordance with the laws of the State of Washington and venue for any action brought hereunder shall be in Whatcom County, Washington.

21. USE OF THE SYSTEM:

21.1 The COMPANY shall have exclusive control over its provisioning of telephone, telecommunications, or other services including, without limitation, sales and marketing, electronics maintenance and monitoring, and billing and collection.

21.2 The COMPANY hereby certifies that it will not be the "end user" of the fiber and facilities leased hereby, but is in the business of providing telecommunication services and that it is authorized to provide telecommunication services within the territory covered by the Service Order Summary and that such services can be provided on fiber optic cable systems such as that owned by the PORT.

22. PLURALS:

In construction of this Lease, words used in the singular shall include the plural and the plural the singular, and or is used in the inclusive sense, in all cases where such meanings would be appropriate.

23. COUNTERPARTS:

This Lease may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument, and any of the Parties hereto may execute this Lease by signing any such counterparts.

24. TITLE:

The COMPANY agrees that all right, title, and interest in the System provided by the PORT hereunder shall at all times remain exclusively with the PORT.

25. ENTIRE AGREEMENT:

This Lease constitutes the entire Agreement between the COMPANY and the PORT with respect to the subject matter hereof; all prior agreements, representations, statements, negotiations and undertaking are hereby superseded.

26. PUBLIC RECORDS AND CONFIDENTIALITY:

26.1 The COMPANY acknowledges that information submitted to the PORT is subject to the Washington Public Records Act (RCW 42.56.001 *et seq.*) and is open to public inspection to the extent required by the law.

26.2 The COMPANY may identify information that the COMPANY believes is non-disclosable by the PORT, including, but not limited to, trade secrets and financial

information, submitted to the PORT as confidential. The COMPANY shall prominently mark any information for which it claims confidentiality with the mark "Confidential," prior to submitting such information to the PORT. The PORT shall treat any information so marked as confidential except as provided below.

26.3 If the PORT receives a request for disclosure of confidential information so marked, or otherwise intends to disclose said information, the PORT shall provide the COMPANY with written notice of the request or intent, including a copy of the request or other basis for the intent to disclose. The COMPANY shall have five (5) working days within which to provide a written response to the PORT, by statutory or other legal authority identifying the information it claims as exempt, and specify by citation to the statutory or other legal authority which is the basis for the claimed exemption. The PORT shall retain the right to determine whether it is required to release or disclose the confidential information under applicable law. If, after considering the COMPANY's written response, the PORT determines that it is required to release or disclose all or some portion of the information, the PORT shall provide the COMPANY written notice to that effect a minimum of five (5) business days prior to releasing or disclosing the information; thereafter the PORT may release or disclose said information unless prohibited by court order. The COMPANY agrees that the PORT shall not be liable for any loss or damage from disclosure of information arising out of a good faith effort to comply with the Public Records Act (RCW

42.56.060) and agrees nothing herein shall be considered a waiver of the PORT's immunity thereunder.

27. NO PERSONAL LIABILITY:

27.1 Each action or claim against any Party arising under or relating to this Lease shall be made only against such Party as a corporation, and any liability relating thereto shall be enforceable only against the corporate or limited liability company assets of such Party. No Party shall seek to pierce the corporate or limited liability company veil or otherwise seek to impose any liability relating to, or arising from, this Lease against any official, shareholder, employee, affiliate, officer or director of the other Party.

28. NOTICES:

Any written notice under this Lease shall be deemed properly given if sent by registered or certified mail, postage prepared, or by nationally recognized overnight delivery service or by facsimile to the address specified below, unless otherwise provided for in this Lease, (notice relating to service and operation shall be governed as provided in section 4, herein):

If to the COMPANY:

ATTN: _____
PHONE: _____
FAX: _____

If to PORT:

PORT OF BELLINGHAM

ATTN: _____
PHONE: _____
FAX: _____

IN WITNESS WHEREOF, the parties hereto have caused this Lease to be executed by their respective duly authorized representatives as of the day and year first above written.

PORT OF BELLINGHAM, a Washington public
port district

By _____

THE COMPANY

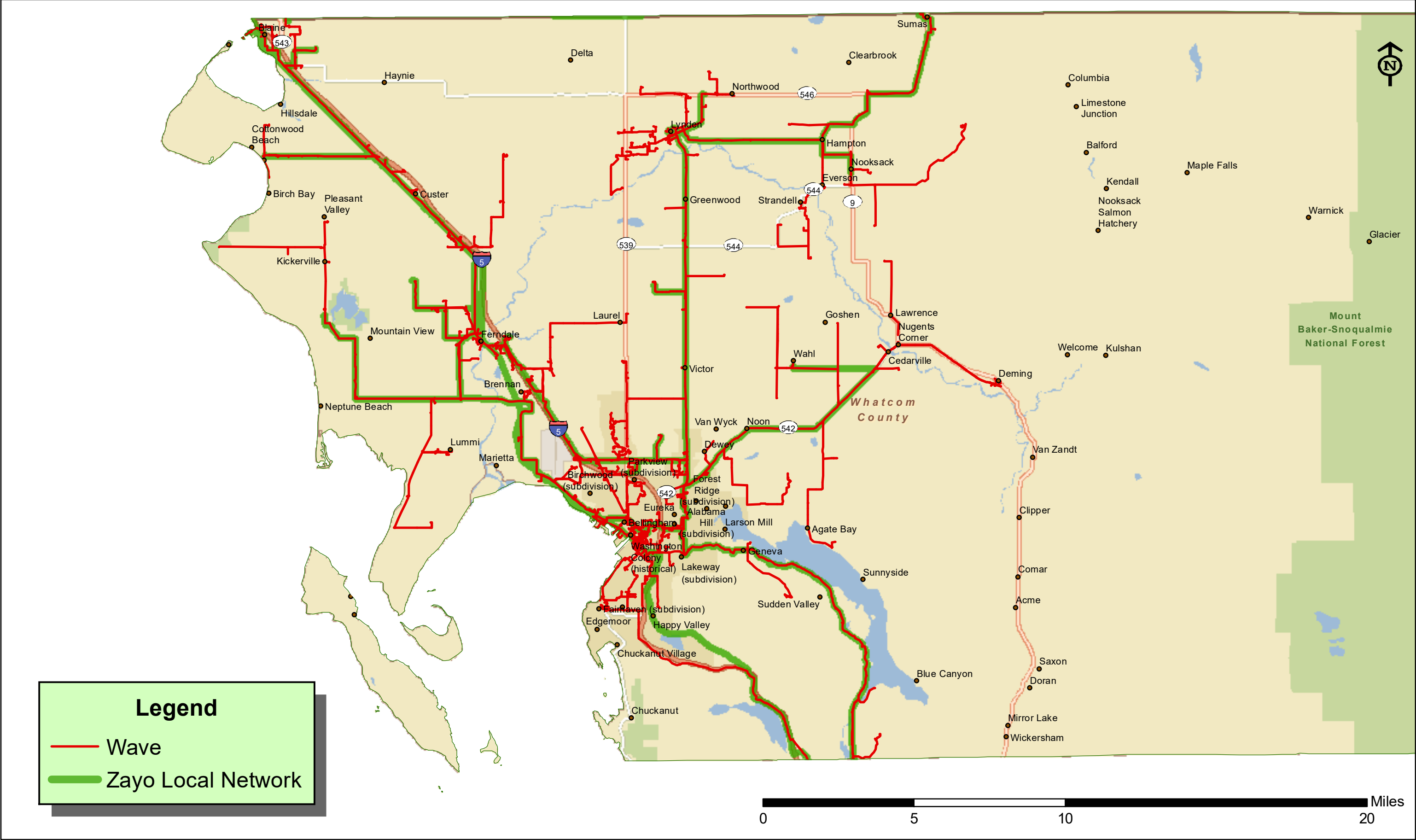
By _____
President

ATTEST:

By _____
Secretary

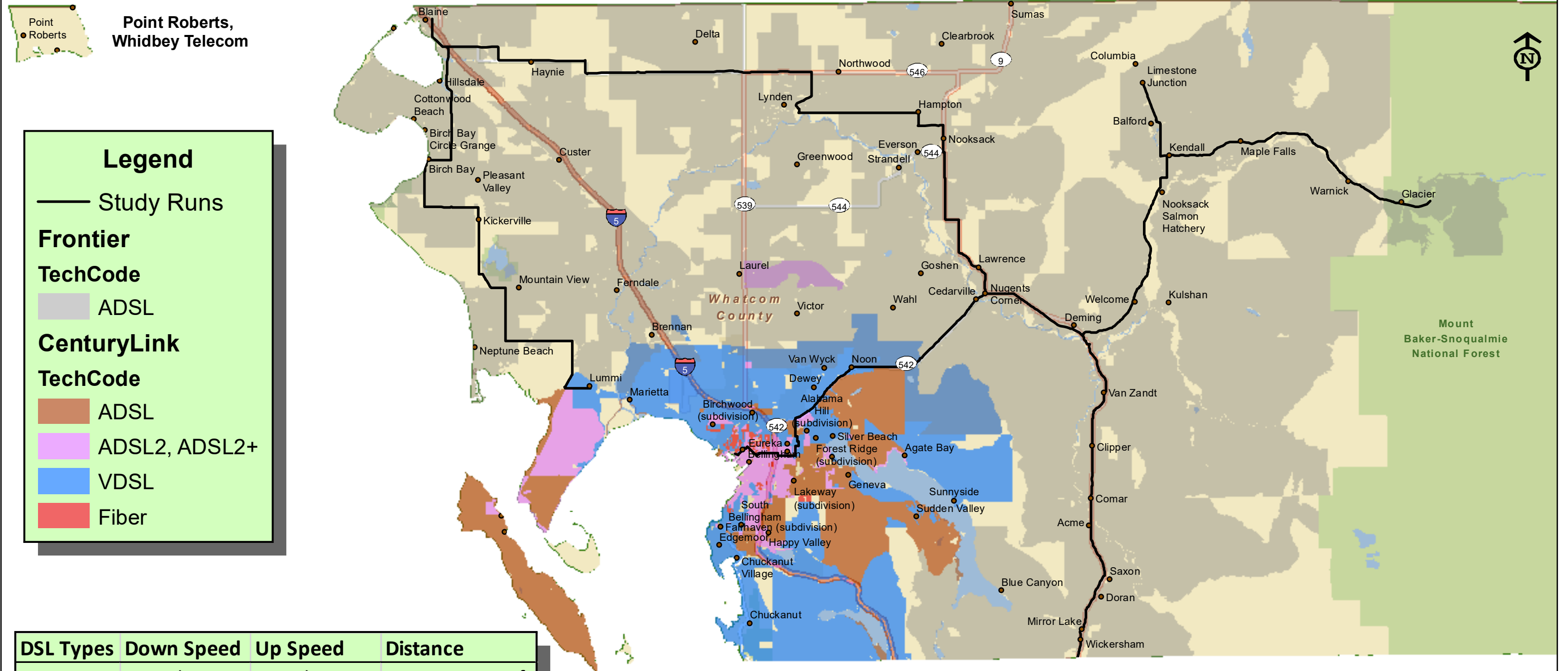
APPENDIX F

Private Fiber Networks



FCC Form 477: Broadband Coverage by Census Block

Telephone Companies, Whatcom County



DSL Types	Down Speed	Up Speed	Distance
ADSL	6-8 Mbps	640 Kbps	12,000-18,000 ft
ADSL2	12 Mbps	1 Mbps	6,000 ft
ADSL2+	27 Mbps	1 Mbps	3,000 ft
VDSL	13-52 Mbps	1.5-2.3 Mbps	4,500 ft
VDSL2	200 Mbps	200 Mbps	6,600 ft

Fiber Network Speed 1 Gbps and Up

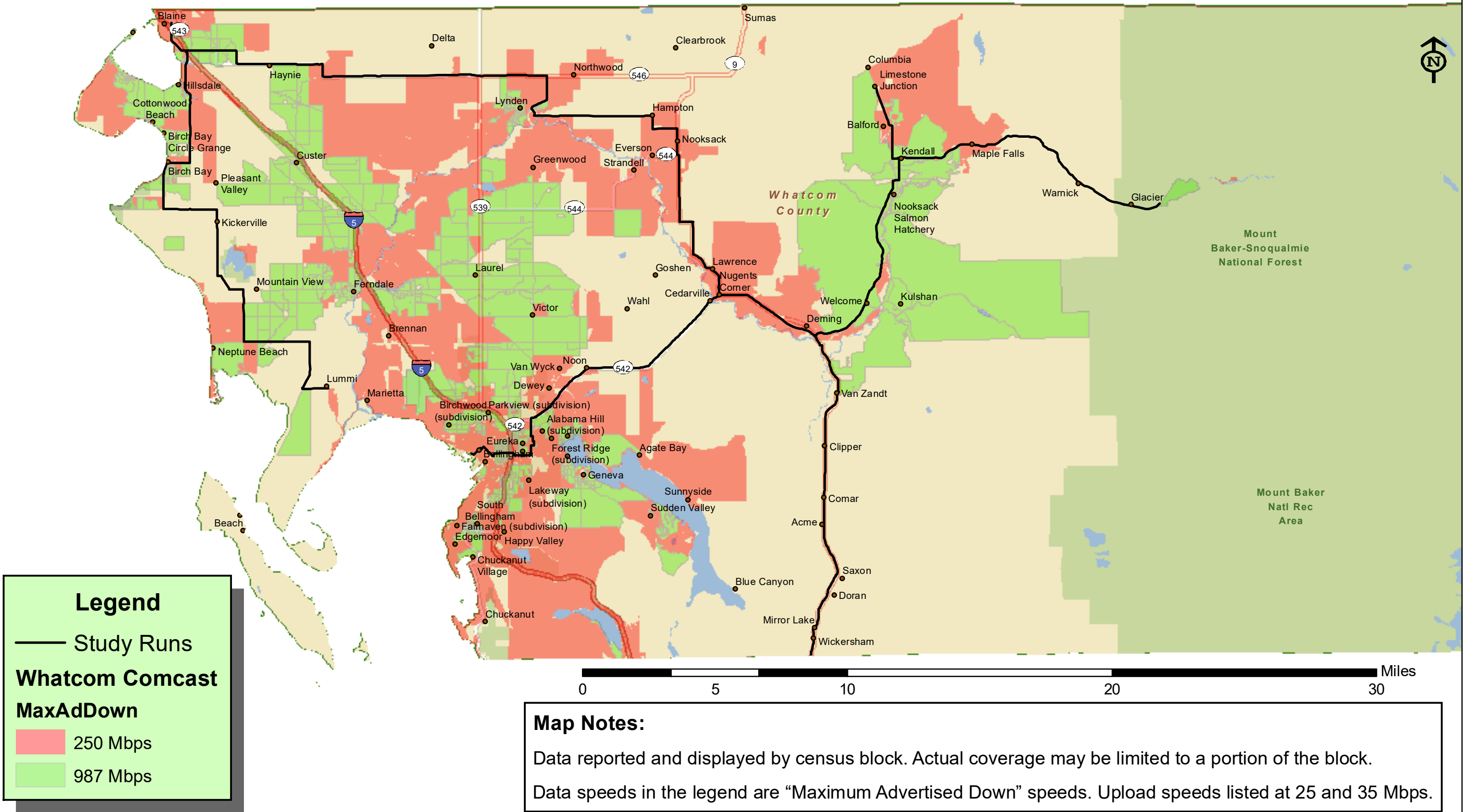
Map Notes:

Data reported and displayed by census block. Actual coverage may be limited to a portion of the block.

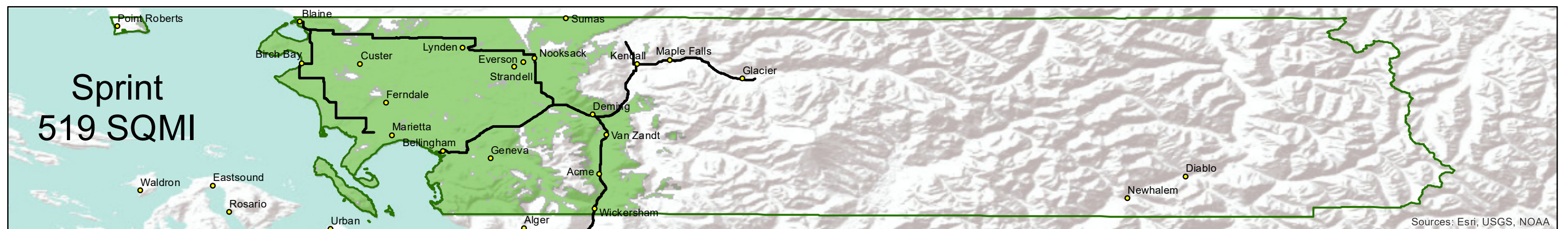
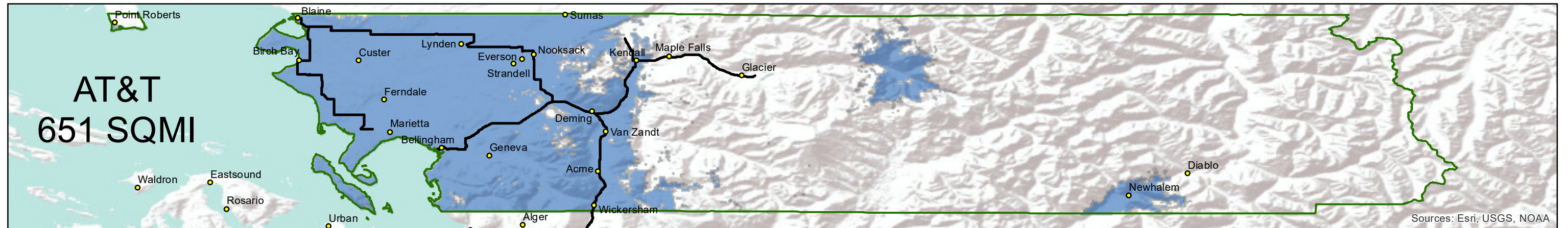
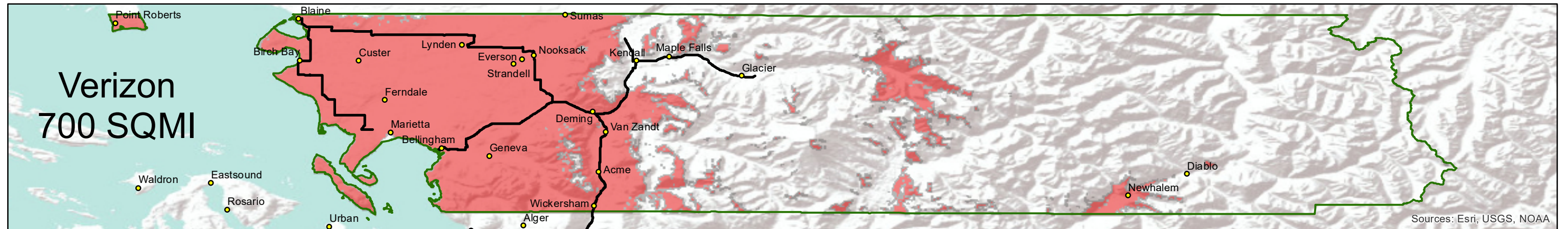
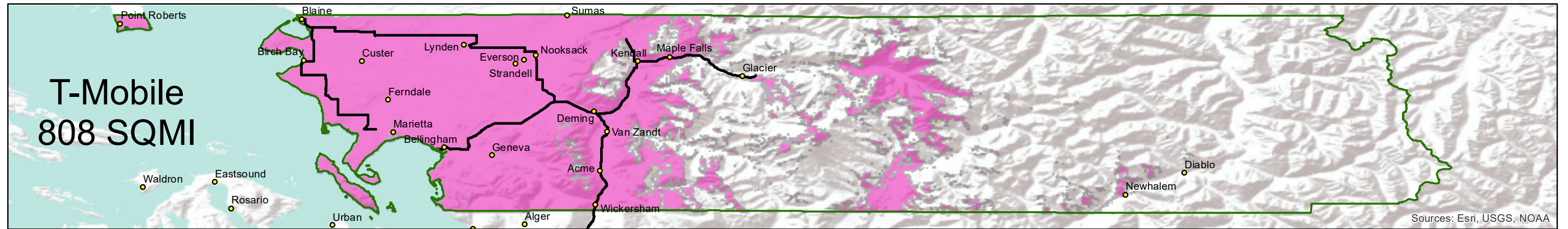
CenturyLink fiber is fiber to the end user. Does not include "fiber to the curb".

FCC Form 477: Broadband Coverage by Census Block

Comcast Cable, Whatcom County



APPENDIX G - Whatcom County 4G LTE Coverage and Proposed Fiber Runs



PORT OF BELLINGHAM
STANDARD AGREEMENT FOR PROFESSIONAL SERVICES

Port of Bellingham: 1801 Roeder Avenue, P.O. Box 1677, Bellingham, WA 98227

Project Name: _____

Project Location: Bellingham, WA

Consultant: _____

Address: _____

Consultant Contact: _____ Contact Phone: _____

● **CONSULTANT'S SCOPE OF WORK:**

The Consultant's Scope of Work is incorporated herein and attached as Exhibit "A". In the event of a conflict between any provision of the Port of Bellingham's General Provisions and the attached Exhibit "A", the Port of Bellingham's General Provisions shall prevail.

● **TERM OF AGREEMENT:**

The term of this Agreement shall commence with the execution of this document and will terminate when all tasks associated with the scope of work herein and as modified by written Amendment have been completed by the Consultant on or before _____. This Agreement may be extended for multiple terms at the sole discretion of the Port. If so extended, all of the terms and conditions herein shall apply to such extension.

● **COMPENSATION:**

The Consultant shall be compensated on the basis of the attached Exhibit "A". The Consultant shall not adjust any compensation rates without written authorization from the Port. **See attached Exhibit "A"**

<u>This Agreement is limited to a total expenditure of \$0.00.</u>

Services covered by this Agreement shall be performed in accordance with the General Provisions and any attachments or schedules. This Agreement supersedes all prior agreements and understandings and may only be changed by written amendment executed by both parties.

THIS AGREEMENT IS SUBJECT TO THE GENERAL PROVISIONS ATTACHED HERETO AND INCORPORATED HEREIN.

● **DATE OF EXECUTION:**

This Agreement is made and entered into on _____.

CONSULTANT:

Signature: _____

Name: _____

Title: _____

PORT OF BELLINGHAM:

Signature: _____

Name: _____

Title: _____

GENERAL PROVISIONS

1. Selection. The Consultant was chosen after a process that complied with all provisions of federal, state, and local law concerning selection of professional services.

2. Termination for Cause. This Agreement may be terminated by either party upon seven (7) days' written notice should one party fail to perform in accordance with its terms through no fault of the other. In the event the party that fails to perform is the Consultant, the determination of "fail to perform in accordance with its terms" shall be in the sole judgment of the Port. In the event of termination, the Consultant shall be compensated for satisfactory services performed prior to the termination date. In no case, however, shall such compensation exceed the original amount of the Agreement as approved or as amended by the Port. Any work product generated by the Consultant prior to such termination shall be the sole property of the Port, and the Consultant agrees to provide the Port with all such materials as a condition of receiving final payment.

3. Termination Without Cause. Further, this Agreement may be terminated by the Port at any time for any reason whatsoever, at the sole discretion of the Port, with seven (7) days' written notice. In the event of such termination, compensation shall be paid as provided in Paragraph 2 above.

4. Consultant Services. Consultant's services shall meet the standard for similar services performed by licensed professionals performing work in the Puget Sound region.

5. Charges for Additional Services. The Consultant shall obtain the written approval of the Port for any charges for additional services performed by the Consultant, the additional services of others retained by Consultant, or the furnishing of additional supplies, materials or equipment. The Consultant shall not be entitled to compensation for any such additional charges incurred in violation of this paragraph without prior written Amendment to the Agreement.

6. Monthly Progress Statements. The Consultant shall submit monthly statements of services rendered to the Port in a form acceptable to the Port. The Port shall make prompt monthly payments for work completed to the Port's satisfaction. In no event shall the Port be charged interest on payments due under this Agreement.

7. Applicable Law. All federal, state and local

laws applicable in the rendering of the services by the Consultant shall be complied with in all respects by the Consultant as shall all rules and regulations of the Port and any other applicable governmental agency. The Consultant shall register to do business in the State of Washington and upon request provide proof of the same to the Port. By executing this Agreement Consultant further certifies that neither it nor its principals is presently debarred, suspended, proposed for debarment, or declared ineligible or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal or acceptance of this Agreement that it will include this clause without modification in all lower tier transactions, solicitations, proposals, agreements, contracts, and subcontracts. Where the offeror/consultant or any lower tier participant is unable to certify to this statement it shall attach an explanation to this Agreement. The Port reserves the right to require Consultant to replace a sub-consultant or lower tier participant who cannot meet the foregoing certification requirements.

8. Deviations from Scope of Work. The Port may at any time issue written directions within the general scope of this Agreement. If any such direction causes an increase or decrease in the cost of this Agreement or otherwise affects any other provision of this Agreement, the Consultant shall immediately notify the Port. The Port may modify the amount spent for identified tasks within the scope of work providing the total amount of the Agreement, or as modified by written Amendment, is not exceeded. Any work done in violation of this paragraph shall be at the sole expense of the Consultant.

9. Port Review of Title Documents and Permit Documents. Prior to the submission of any documents related to any permits or the execution or recordation of any documents effecting title to any property, the said document shall be reviewed by the Port. The Port shall be responsible for all costs associated with such review.

10. Conflict of Interest. Consultant covenants that it presently has no interest and shall not acquire an interest, directly or indirectly, which would conflict in any manner or degree with its performance under this Agreement. Consultant further covenants that in the performance of this Agreement, no person having such interest shall be employed by it or any of its sub-consultants.

11. Insurance. Consultant, concurrently with the

execution of this Agreement, shall provide the Port with evidence that Consultant has obtained and is maintaining the insurance listed as follows:

(a) Workers' Compensation Insurance as required by law.

(b) Employers' Liability Insurance (bodily injuries) with a limit of One Hundred Thousand Dollars (\$100,000) per occurrence with an insurance company authorized to write such insurance in all states where the Consultant will have employees located in the performance of its work covering its common law liability to such employees.

(c) Commercial General Liability Insurance and Automobile Liability Insurance covering all owned and non-owned automobiles or vehicles used by or in behalf of Consultant with a Five Hundred Thousand Dollar (\$500,000) combined single limit for bodily injury and/or property damage per occurrence and an annual aggregate limit of One Million Dollars (\$1,000,000).

_____[Initial if applicable]: Consultant represents that Consultant will not perform any driving as part of this Agreement. Based on this representation, Consultant shall maintain automobile liability insurance but shall be permitted to maintain lower limits provided that such limits meet the State of Washington minimum insurance coverage. All other terms of this Agreement relating to insurance (including but not limited to subsection d) shall apply to this insurance.

(d) Professional Liability Insurance covering Errors and Omissions of the Consultant in the amount of not less than Two Million Dollars (\$2,000,000) per claim.

(e) Except with regard to Professional Liability Insurance and Workers' Compensation Insurance, each of the policies required herein **shall name the Port as an additional insured**. Furthermore, each policy of insurance required herein shall (i) be written as a primary policy; (ii) expressly provide that such insurance may not be materially changed, amended or canceled with respect to the Port except upon thirty (30) days' prior written notice from the insurance company to the Port; (iii) contain an express waiver of any right of subrogation by the insurance company against the Port and its elected officials, employees, or agent; (iv) expressly provide that the insurance proceeds of any loss will be payable notwithstanding any act or negligence of Consultant which might otherwise result in a forfeiture of said insurance; and (v) in regard to physical property damage coverage, expressly provide that all proceeds shall be paid jointly to Consultant and Port.

(f) With regard to the Professional Liability

Insurance, the Consultant shall maintain the same in full force and effect during the term of this Agreement and for a period of one year thereafter.

(g) The Consultant shall furnish the Port with two (2) copies of Certificates of Insurance, including endorsements, evidencing policies of insurance required herein. **A Blanket Additional Insured Endorsement is not acceptable. The Certificate of Insurance shall specifically identify the name of the project.** The Consultant shall maintain these policies as identified above for itself and its sub-consultants for the term of this Agreement and for a period of one year thereafter. Except with regard to the Professional Liability Insurance, such Certificates shall specifically state that the insurance company or companies issuing such insurance policies shall give the Port at least thirty (30) days' written notice in the event of insurance company's or companies' cancellation or material changes in any of the policies.

If Unmanned Aerial Vehicles (UAVs or Drones) are to be used during the project, Consultant 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 ownership, maintenance or use of UAVs. This insurance shall include limits of no less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate and shall name the Port of Bellingham as an additional Insured. The Consultant shall furnish the Port with original Certificates of Insurance including all required additional insured endorsements or copies of the applicable policy language effecting coverage as required by this clause, and a copy of the Declarations and Endorsement Page of the policy listing all policy endorsements.

12. Indemnification. The Consultant shall defend (with legal counsel satisfactory to the Port), indemnify and hold the Port, its elected officials, agents and employees (collectively "Port") harmless from and against all liabilities, obligations, fines, claims, damages, penalties, lawsuits, governmental proceedings, judgments, costs and expenses (including, without limitation, all attorneys' fees, costs and expenses of litigation):

- Arising out of any negligent act or omission of Consultant, its directors, officers, consultants, agents and/or employees (collectively "Consultant") in connection with the services provided pursuant to this Agreement provided, however, that in the event of concurrent negligence of the Consultant and the Port, then this defense and indemnification shall apply only to the extent of the Consultant's negligence; and/or

- Arising from a breach of this Agreement by Consultant; and/or
- Arising out of or due to any failure on the part of Consultant to perform or comply with any rule, ordinance or law to be kept and performed.

The Port will inform Consultant of any such claim or demand that alleges liability based in whole or in part on any act or omission of Consultant, its directors, officers, agents, or employees. Thereafter the Consultant shall (i) reasonably cooperate in the defense of such claim and (ii) pay its defense of such claim as incurred, whether or not such claim is ultimately successful. In this regard, the Port will reasonably cooperate with Consultant in allowing Consultant to jointly select, with the Port, attorneys to defend the Port and Consultant provided that Consultant confirms its obligation to pay the Port's defense costs.

12.1 In the event of concurrent negligence by the Port and Consultant then at the conclusion of the action (e.g., judgment, arbitration award or settlement) the attorneys' fees and costs incurred in defending the Port shall be apportioned to the parties based on their respective fault as provided by RCW 4.24.115.

12.2 The foregoing indemnification obligation shall include, but is not limited to, all claims against the Owner by an employee or former employee of the Consultant or any sub-consultant or service provider. For this purpose, the Consultant expressly waives, as respects the Owner only, all immunity and limitation on liability under any industrial insurance Act, including Title 51 RCW, or other workers compensation act, disability act, or other employees benefits of any act of any jurisdiction which would otherwise be applicable in the case of such a claim. **BY INITIALING BELOW THE OWNER AND CONSULTANT CERTIFY THE WAIVER OF IMMUNITY SPECIFIED BY THIS PROVISION WAS MUTUALLY NEGOTIATED.**

Consultant:

By:

Port of Bellingham

By:

13. Confidentiality. Any reports, documents, questionnaires, records, information or data given to or prepared or assembled under this Agreement shall be kept confidential unless a specific written waiver is obtained from the Port and shall not be

made available by the Consultant to any individual or organization without prior written approval of the Port except as may be ordered by a court of competent jurisdiction. The provisions of this section shall survive the expiration or earlier termination of this Agreement.

14. Plans, etc. Property of Port. All original plans, drawings and specifications prepared by the Consultant and any and all sub-consultants for the Port and funded by the Port are and shall remain the property of the Port whether or not the Project for which they are made is executed. This shall not apply to proprietary software or documentation that may be provided to the Port and that was developed independent of funding by the Port. The Consultant assumes no liability for any use of the Drawings and Specifications other than that originally intended for this Project. Originals, including electronic forms of the data prepared by the Consultant and funded by the Port shall become the property of the Port. No reports, records, questionnaires, software programs provided by Port or other documents produced in whole or in part by the Consultant under this Agreement shall be the subject of an application for copyright by or on behalf of the Consultant.

As part of the project close-out, the **Consultant** is responsible for providing the Port with a FINAL RECORD drawing set that incorporates all of the Contractor's as-built redlines into the CAD file. Consultant shall deliver the following as part of the close-out to Port Engineering:

- CAD files (all)
- PDF (1 file of all pages combined)
- Bound hard copy 11x17 (1)
- Contractors original paper redline

15. Public Disclosure Request. Correspondence, reports and other written work that is generated during the course of the relationship created by this Agreement, may be requested by third parties pursuant to the Washington State Public Disclosure Act (RCW 42.56 *et. seq.*). The parties agree that in the event that such a request is filed, the party with whom the request is filed will promptly notify all other parties to this Agreement. The parties further agree that they will not disclose any such requested material until at least ten (10) business days after providing notification to all other parties to this Agreement. The intent of this clause is to provide all parties the opportunity to seek injunctive relief pursuant to RCW 42.56 so as to protect the vital functions of those entities. This clause shall survive the termination or expiration of this Agreement.

16. Electronic File Compatibility. All electronically-transmitted output must be compatible with existing Port software. The Port currently operates Microsoft Office, AutoCad 2012 and Adobe Acrobat. Consultants shall check with the Port for software application and system compatibility. Consultant shall transfer data via drawings saved as zip files using etransmit to bundle CAD support files accompanied by Adobe .pdf files. Large files can be transmitted via CD or in DVD format.

17. Pollution. Port acknowledges that the Consultant is not responsible for the creation or presence of contamination or pollution, if any, at the property except to the extent that such a discharge, release or escape is caused by the negligent act or failure to act of the Consultant. For the purpose of this clause, contamination conditions shall mean the actual or alleged existence, discharge, release or escape of any irritant, pollutant, contaminant, or hazardous substance into or upon the atmosphere, land, groundwater, or surface water of or near the property. The Consultant will promptly notify the Port of contamination conditions, if identified. Notwithstanding the foregoing, the Port does not herein waive any cause of action for damages resulting from the Port's reliance on any misrepresentation (made either knowingly or negligently) by the Consultant with regard to the presence of any contamination or pollution.

18. Payment of Sub-Consultants. Markup on work performed by first tier Sub-consultants shall not exceed four (4%) percent; markups are not allowed on work performed by lower tier Sub-consultants. The Port may request the Consultant certify that it has paid its sub-consultants in full for all work encompassed by invoices that the Port has paid. The Consultant shall be solely responsible for the performance of and payment to its sub-consultants. All such sub-consultants shall possess all licenses and insurance as required by the laws of the State of Washington.

19. Non-Discrimination. In connection with the performance of this Agreement, the Consultant shall not discriminate against any employee or applicant for employment because of race, color, creed, religion, sex, sexual orientation, national origin, age, marital status, genetic information, honorably discharged veteran or military status, presence of a sensory, mental or physical disability, or use of a trained dog guide or service animal. The Consultant shall take affirmative action to ensure that applicants are employed and the employees are treated during employment without regard to their race, color, creed, religion, sex,

sexual orientation, national origin, age, marital status, genetic information, honorably discharged veteran or military status, presence of a sensory, mental or physical disability, use of a trained dog guide or service animal or any other protected class.

20. Jurisdiction. This Agreement is made and delivered in the State of Washington and shall be construed and enforced in accordance with the laws thereof. All claims concerning or arising out of this Agreement shall be resolved in the Superior Court for Whatcom County, Washington. Consultant expressly waives the right of removal to federal court. Both parties hereby waive the right to a jury trial in any such dispute.

21. Entire Agreement. This is the entire agreement between the parties. It may not be altered or modified except by a written amendment to this Agreement that references the intent of the parties to amend this Agreement. There is no other oral or written understanding between the parties concerning this matter. The Consultant specifically understands that no Port employees other than the designated Port representative or their supervisors are authorized to direct the work of the Consultant. This agreement may be executed in counterparts, which may be transmitted via email or other electronic transmittal, each of which shall constitute an original, and all of which will be deemed a single document. Signature of an email or other electronic transmittal copy of this agreement, and transmission of a signature page by email or other electronic transmittal, shall bind the signing party to the same degree as delivery of a signed original.

22. Signing Authority. Anyone signing this Agreement on behalf of the Consultant personally certifies that they have the authority to execute said document on behalf of the Consultant and that their signature is binding upon the Consultant.