

Engineering
Services
Associates, Inc.

Tuesday, May 30, 2023

Anderson and Sons
Mr. Rick Anderson
PO Box 108
Allyn, WA 98524

Geotechnical Engineering Report
LakeLand Village Division 15 Preliminary Plat
Allyn, Washington

Dear Mr. Anderson,

Submitted herewith is a report for the geotechnical engineering investigation and recommendations for the subject project. This geotechnical engineering report was completed in accordance with the requirements outlined in the Mason County Submittal Checklist for a Geotechnical Report. The report presents findings from our geotechnical engineering investigation and provides recommendations for the geotechnical engineering aspects of project design.

Yours Truly,



Pat McCullough, PE



EXPIRES 6-4-24

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APPENDICES

- A** LakeLand Village Division 15 Preliminary Plat
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1 INTRODUCTION

ESA Inc. was retained by Anderson and Sons to conduct a geotechnical engineering investigation for the LakeLand Village Division 15 Preliminary Plat. Geologic assessments have been completed for the property where Division 15 is located, as part of the Division 12 EIS completed in 1992 and the Division 14 and 15 preliminary plats completed in 2017. Summaries of that data will be included in this report. A geotechnical analysis and report for Division 14 and a proposed Division 15 was completed by EnviroSound Consulting in 2008. The EnviroSound report included a slope stability analysis of the steeper slopes in the Division 14 and Division 15 preliminary plats.

1.1 Site Location

The site includes 38.22 acres located west of Allyn, WA in the SE ¼ of Section 18, T22N, R1W, WM. See Appendix A for drawings of the LakeLand Village Division 15 Preliminary Plat. The Mason County Department of Community Development recommended that the Division 15 Preliminary Plat include all of the 38.22 acres owned by Anderson and Sons located east of the Navy railroad tracks. The property east of the railroad tracks has been divided into several tracts. Tracts A through E (16.42 acres) will be part of the Division 15 Development. Tracts E, F, and G (21.27 acres) will be for future development. This geotechnical report is for the entire 38.22 acres located east of the Navy railroad tracks.

1.2 Proposed Construction

LakeLand Village Division 15 will include 21 single family lots and 81 multifamily dwelling units. The structures are expected to be of typical residential construction, wood framed with shallow foundations.

The preliminary design of the roadway and utility infrastructure to service the dwelling units is shown in Appendix B. Both public and private roads will service the development.

1.3 Purpose

The purpose of this soils investigation and soils report is to evaluate the relatively shallow subsurface conditions on the site and to collect into one document the applicable geologic and geotechnical information for the design and permitting of the
Division 15 Preliminary Plat.

2 SITE INVESTIGATION

2.1 Site Description

The site has variable topography. It is relatively flat in the valley bottom with grades up to 20% the east and west sides of the valley bottom. See the site cross sections in Appendix 3. Tract G at the north end of the site slopes to the northwest at 7%. There are 30% slopes on the hillside located directly above the existing irrigation pond on Tract G. There are 20% slopes on the east side of lots 1 through 11 and on the west side of development on Lots 12, 15, 16, and 18. See Appendix 1 and Figures 1, 2, and 3 below.

At the time of onsite subsurface exploration ESA reviewed the site surface conditions for signs of slope movement. Such signs can include hummocky terrain, head scarps, curved tree trunks, tension cracks, seepage of water, and strata of coarse-grained soils over fine grained materials. Thorough on-site inspection revealed no signs of slope instability or movement. There are no known records of landslide activity in the vicinity.

ESA provided construction oversight services for the construction of Divisions 12 and 14 of LakeLand Village. The enlargement of the storm water pond in Tract A was completed with the construction of Division 14 Plat. Division 14 was constructed in 2017, and no soils stability issues developed during the construction or in the last five years since construction.



FIGURE 1: LAKELAND VILLAGE DIV. 15 - PP AERIAL IMAGE

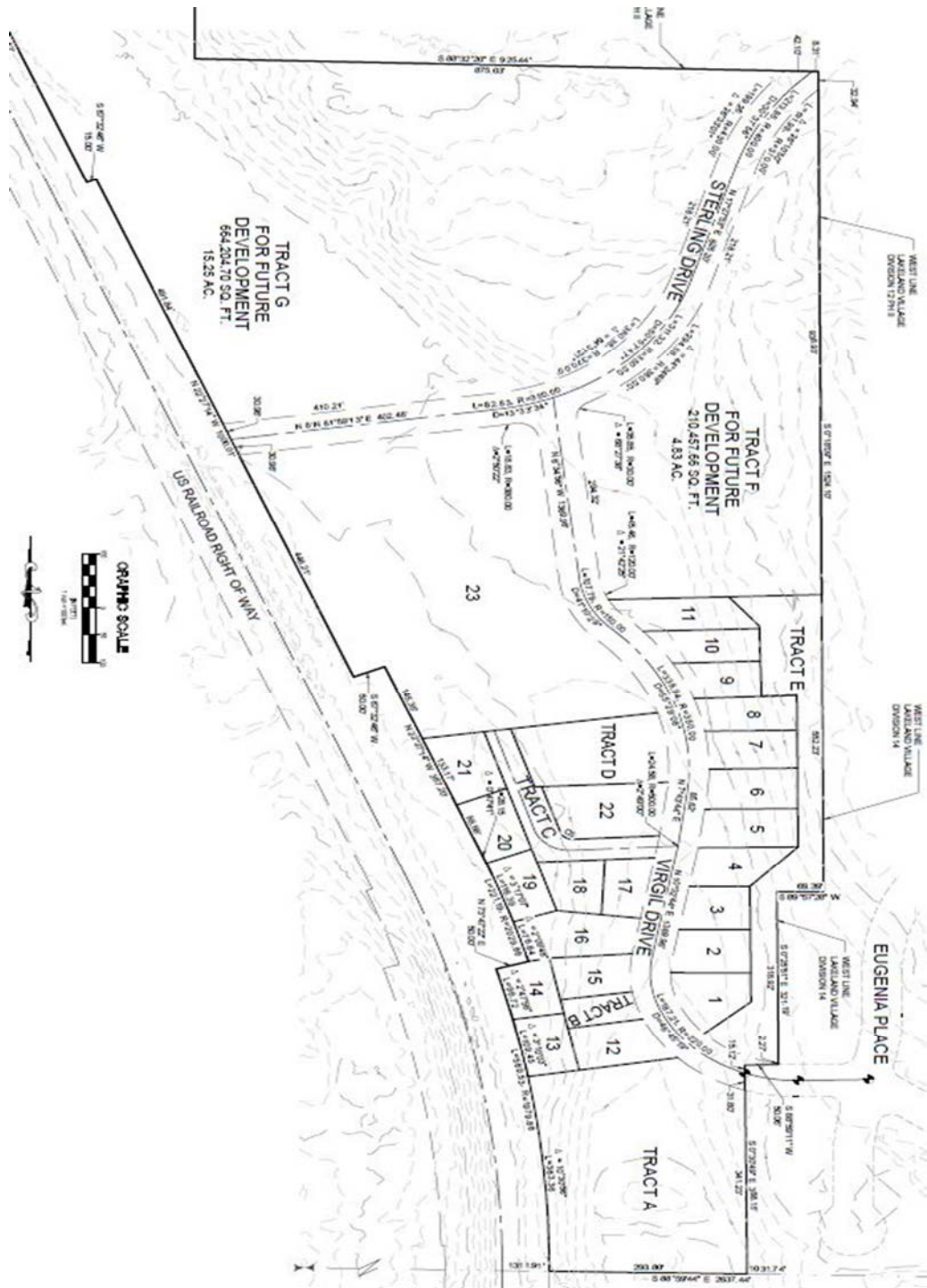


FIGURE 2: LAKELAND VILLAGE PP LAYOUT

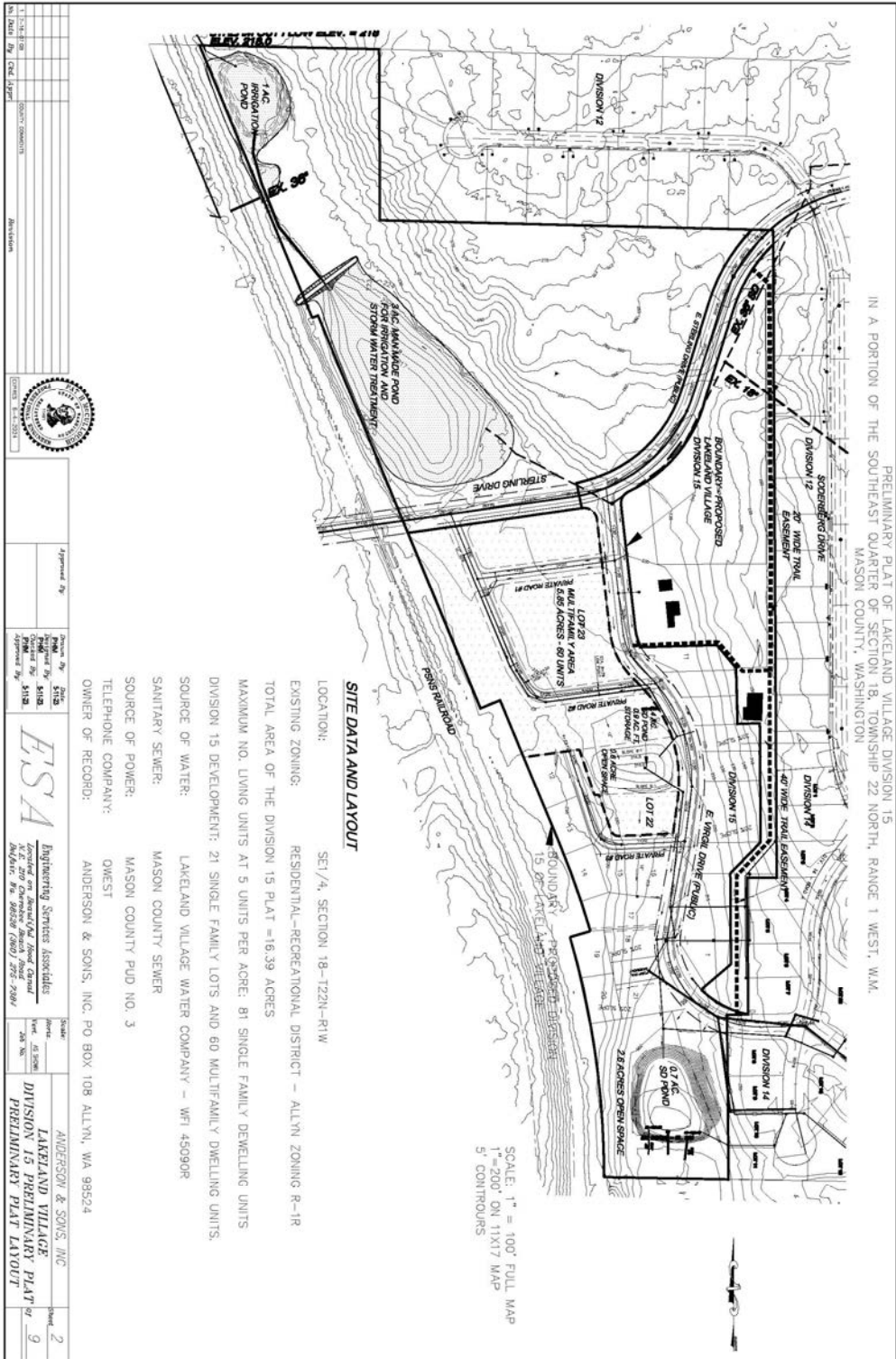


FIGURE 3: DIV. 15 - ROADS AND UTILITIES PLAN

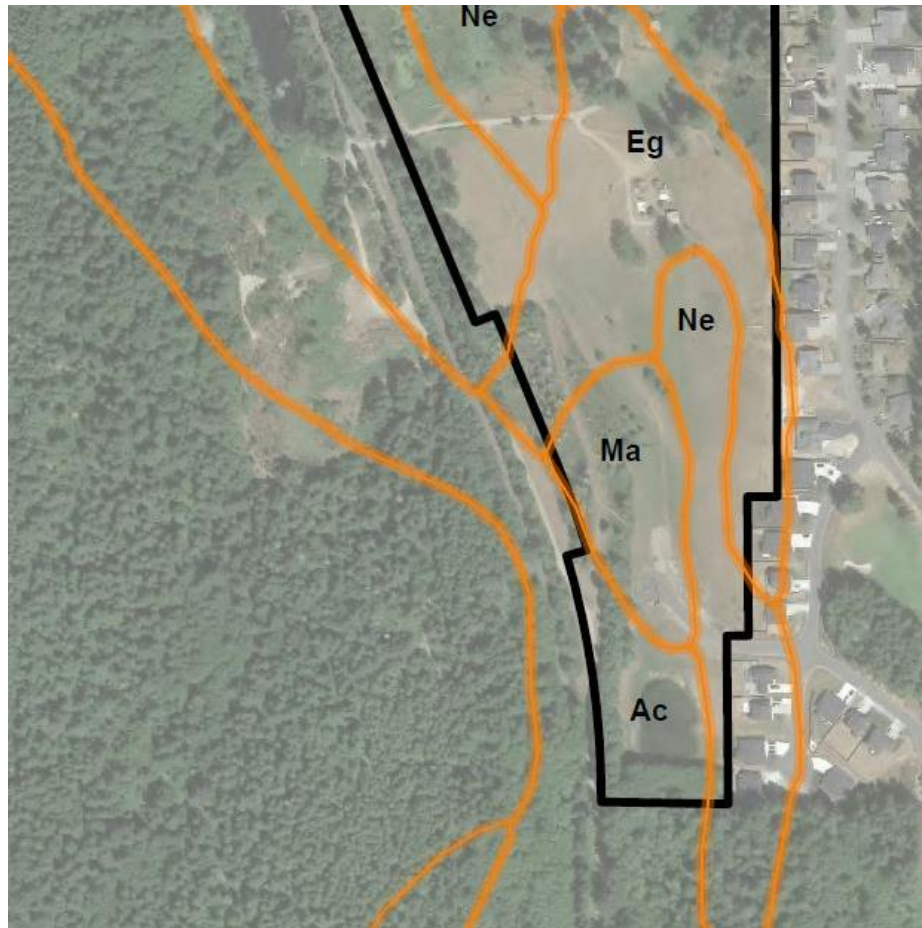
2.2 Geologic Setting and Subsurface Exploration

The 38 acres proposed for the preliminary plat has been part of a farm for the last 150 years. Grading has occurred over the entire site, to construct the pastures, airstrip, two irrigation ponds, and roadways. The site is bordered on the west by a railroad, which was build by the US Navy through the middle of the Anderson property in 1942.

The surface soils vary across the site. See the USDA soil map in Figure 4. Thirteen soil logs were dug on the Division 15 preliminary plat to investigate the soils. Three soil logs were dug in Tract G in the northeast corner of the site. Three soil logs were dug on the steep slopes. Drawings showing the locations of the thirteen soil logs are included in Appendix 3.

The soils encountered on the site are typical of advanced outwash and glacial till. Generally, the soils are gravelly sandy loams with varying amounts of gravel, sands, and silts. No significant amount of clay was encountered in any of the test holes. Typically the soil logs showed 6+inches of organic top soil in the undisturbed areas with 24+to 36+of sandy - gravelly soil underlain by very dense sand and gravel till. The tight silty soils on the valley floor could be classified as hardpan, but is not as dense as the hardpan found at the bottom of the soil logs on Tract G.

The water table across the site varies from 18 to 60 inches depending on the location on the site and the time of year. During the dry season the water table is 24+to 60+ below the surface of the ground. The soil on Division 15 Preliminary Plat site is free draining.



LEGEND:

- Site Boundary
- NRCS Soil Boundary
- Ab** Alderwood gravelly sandy loam, 8 to 15 percent slopes. Not hydric.
- Ac** Alderwood gravelly sandy loam, 15 to 30 percent slopes. Not hydric.
- Ed** Everett gravelly loamy sand, 0 to 5 percent slopes. Not hydric.
- Eg** Everett very gravelly sandy loam, 0 to 8 percent slopes. Not hydric.
- Ma** Made land. Not hydric.
- Ne** Norma silt loam, 0 to 3 percent slopes. Not hydric.

FIGURE 4: DIV. 15 SURFACE SOILS MAP

2.3 Soil

The soil encountered on Division 15 generally consists of medium dense to dense sand with gravel and a trace of silt. The upper layers of soil are generally underlain by native, gray sand with gravel and a trace of silt. No organic material was observed in the excavated soil logs. The Ab soils on Tracts E and F are underlain by very dense hard pan.

2.4 Groundwater

Groundwater was only encountered during the excavation of the test pits for soil logs 6, 7, 8, and 11. No piezometers were installed for long term groundwater monitoring as part of this investigation.

Water table elevations can fluctuate with time. Groundwater levels are typically influenced by seasonal precipitation, irrigation, land use, and climatic conditions, as well as other factors. Groundwater level observations at the time of the field investigation may vary from those encountered during the construction phase of the project.

2.5 Upslope Geomorphology and Wetlands

Upslope geomorphology has to do with natural or manmade river drainage channels that cross the site. There are no natural river or surface drainage channels that cross the Division 15 Preliminary Plat site. Existing 36+ and 18+ diameter storm drains cross Tract E and drain into the irrigation pond on Tract G.

A comprehensive storm drainage plan has been prepared for the proposed development. It is designed to detain and treat all the storm water from existing and future development.

A wetland delineation and study has been completed for the site. There are no wetlands on the site. The existing storm water detention pond on the south end of the site and the irrigation pond on the north end of the site are manmade structures and were not designated wetlands.

3 CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this investigation, it is our opinion that the proposed residential development is feasible. The soils encountered in the test pits are considered suitable for support of typical residential, shallow foundations, provided foundation excavations are observed by a representative of the geotechnical engineer to verify soil conditions. It is also our opinion, based on approximate global slope stability analyses, that the 20% slope on along the east and west sides of the proposed development have adequate factors of safety against global slope failure, provided proper site drainage is maintained.

3.1 Slope Stability

There is no visual evidence of unstable slopes on the site. Sections A-A, B-B, and C-C shown on Sheet 2 of LakeLand Village Division 15 Preliminary Plat Site Cross Sections (Appendix 3) show the 30% slopes on the west side of Tract G. The developer does not plan to build on, or disturb, those slopes. Any structure should have a 25-foot setback from the tops of these slopes. If the developer does plan to disturb those slopes in the future, they should provide additional geotechnical slope stability analysis specific to the proposed construction.

Sections E-E and F-F shown in the above referenced drawing shows 20% slopes on the both the east and west side of the valley floor. The ESC soils report prepared for Division 14 on May 2, 2008 completed a slope stability analysis for the 20% slopes. The report is entitled Geotechnical Engineering Report, LakeLand Subdivision 14 and South Detention Pond Subdivision 15, Allyn, WA. The ESC report completed a slope stability analysis of those slopes using the GSTABL7 and STEDwin Geotechnical Software.

Based on the soil samples and soil test logs, ESC determined a soil weight of 115 pounds for cubic foot and an angle of internal friction of 31 degrees for the slopes on the west side of the valley and a soil weight of 110 pounds per cubic foot and an angle of internal friction of 32 degrees for the soils on the east side of the valley. Based on these values they calculated a Static Factor of Safety for the existing slope configurations of 2.27. A factor of safety of 1.5 is required.

A global factor of safety for global stability for seismic conditions was also computed. Under seismic conditions the factor of safety must be above 1.10. The factor of safety for the existing slopes with a 20%-21% grade under seismic loading was calculated to be 1.39.

3.2 Erosion Control

The soils on the site slopes may erode in the disturbed state or under conditions of channelized water flow. Therefore, best management practices for erosion control including silt fences, hay bales, etc. should be used to prevent sediment from leaving the site and entering storm water sewer systems or surface waters. Water should not be allowed to flow over the slopes in a concentrated manner. Stripping of vegetation on slopes should be minimized as much as possible for the proposed construction. Vegetation should be replanted on the slopes as soon as practical following completion of any grading. Stripped slope areas should be protected from weather with plastic sheeting when construction will not be occurring on them for more than one to two days.

The existing vegetation on the 30% slopes on the west side of Tract G (see Slope Stability above) should not be disturbed. The existing native vegetation on the slope is sufficient to prevent erosion. No buffer beyond the top of the slope is required.

Construction of roads and utilities on the site should be limited to the dryer months of the year - April 15th to October 15th. It is important to avoid any sediment transport into Lake Anderson to the south or Lake Devereaux to the north.

The ditches along Sterling Drive and Private Road No. 3 with ditch grades over 4% should be lined with 3+rock rip rap.

An erosion control plan for construction sites should be prepared before the start of construction. WSDOE best management practices for erosion control should be put into practice. A discussion and details of the proposed erosion control plan has been included on Sheet 9 of LakeLand Village Division 15 Preliminary Engineering of Roads and Utilities Drawing for Preliminary Plat Review plan set. See Appendix B.

A National Pollution Discharge Elimination System (NPDES) permit will be required for this project.

3.3 Drainage

Runoff from any residential buildings and impervious surfaces should be directed into an appropriately designed stormwater disposal system. Ground surfaces should be sloped a minimum of 3 percent for a minimum distance of 10 feet away from structures in accordance with Section 1803.3 of the 2018 International Building Code (IBC). Surface water should be collected by permanent catch basins and drain lines, and be discharged into a storm drain system, which may include the pond at the south end of Division 15. The construction of the pond on Tract D should have no adverse geotechnical impact on Division 15, provided the stormwater system is properly installed.

Design of stormwater disposal systems is primarily the responsibility of a civil engineer. Proper drainage of surface water runoff, in accordance with these recommendations, will be an important factor in maintaining long term stability of the site slopes. Surface water should not be allowed to flow freely over slopes. Slopes should be replanted with suitable vegetation to anchor soils following the completion of construction.

3.4 Foundations

The proposed single family and multifamily residences may be founded on shallow foundation systems bearing on the medium dense to dense in-place fill or the medium dense, native soil. Continuous or isolated footings that bear on the medium dense to dense in place fill or medium dense native soil may be designed for a net allowable bearing pressure of 1,500 pounds per square foot (psf). Any additional structural fill placed in building areas should be compacted to at least 95 percent of the maximum dry density as determined by ASTM Test Method D-1557. An increase of 1/3 may be applied to the allowable bearing pressure value for short duration loads, such as those

associated with wind and seismic conditions. Footing excavations should be observed by a representative of the geotechnical engineer to verify that the foundations will bear on suitable material.

Footings should have adequate embedment for local frost penetration requirements. In the area of this project, the minimum depths are typically 18 inches for exterior footings and 12 inches for interior footings. The footings should be a minimum of 12 inches wide, regardless of the design foundation pressures.

Total foundation settlements should be less than 1 inch for footings that are constructed as recommended. Differential settlement across a distance of 20 feet should be less than ½" inch. The majority of the settlement is expected to occur at the time of construction. Greater than expected post-construction settlement can occur if foundation subgrade soils become saturated.

3.5 Earthwork Considerations

We expect that any additional onsite grading will be limited. During wet weather conditions, which are typically present from October through April, subgrade stability problems and grading difficulties may develop due to high moisture content in the soil, disturbance of sensitive soils, and/or the presence of perched groundwater. Therefore, we recommend that any proposed earthwork activity be performed during the dry season.

3.5.1 Site Preparation

Any additional clearing in required areas should include removal of vegetation, trees and associated root systems, wood, pavement, retaining walls, rubble, and rubbish. Site stripping should extend to a minimum depth of 6 inches, or until all organics in excess of 3 percent by volume or other unsuitable soils are removed. These removed materials will not be suitable for use as fill for roadway or building areas. However, stripped topsoil may be stockpiled and reused in landscape or non structural areas.

Any buried structures encountered during construction should be properly removed and backfilled. Excavations, depressions, or soft and pliant areas extending below planned finish subgrade level should be cleaned to firm, undisturbed soil and backfilled with structural fill to the planned finish subgrade elevation.

3.5.2 Groundwater Concerns

Groundwater was not encountered most of the test pits. We do not expect that significant groundwater will be encountered during construction except in the deeper storm drain and sewer utility trenches in Private Road #2 and on Virgil Drive. Perched groundwater in the near surface soils, particularly at the interface

with less permeable underlying soils, if present, could develop during the wetter portions of the year. If groundwater is encountered, the geotechnical engineer should be contacted for further recommendations. Significant groundwater flow, if encountered during construction, would require modifications in the completion of excavation work.

3.5.3 Excavations & Constructed Slopes

We expect that the planned construction will involve limited excavation depths. It is our opinion that the soils encountered in the test pits are a Type C material as defined by the Washington Industrial Safety and Health Act's (WISHA) regulations on excavation, trenching and shoring. The Type C classification in the medium dense to dense fill material is given, primarily due to the fact that these soils are in place as a constructed fill section. Temporary slopes excavated in Type C material should be inclined no steeper than 1.5H:1V (horizontal: vertical). A representative of our firm should evaluate temporary and permanent slopes to verify that they are appropriate for the soils encountered during the construction.

In areas where it is not possible to maintain the recommended slopes due to space constraints, temporary shoring may be required. Such shoring would need to be properly designed by an engineer.

The Contractor should be familiar with applicable local, state, and federal safety regulations, including the current WISHA regulations on excavation, trenching and shoring. Construction site safety is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations. ESA is providing this information solely as a service to our client. Under no circumstances should the information provided above be interpreted to mean that ESA is assuming responsibility for construction site safety or the Contractor's activities.

The soils to be penetrated by the proposed excavations may vary significantly across the site. ESA's preliminary soil classification is based solely on the materials encountered in the test pits. The Contractor should continually classify the soils that are encountered as excavation progresses with respect to the WISHA system.

3.5.4 Structural Fill

We expect that any additional fill placement will be limited in depth and aerial coverage. The majority of the onsite soils will likely be suitable for use as structural fill; however the fines content does indicate moderate moisture sensitivity. We recommend that any additional earthwork be performed during the normally dry period of the year. If earthwork takes place during wet weather periods, the onsite soils may not be suitable to achieve compaction and moisture content requirements. If the earthwork is to take

place during the normally wet period of the year, provisions should be in place for the possible export of wet, moisture sensitive soil and import of granular structural fill material. Imported structural fill should consist of well-graded gravel and/or sand with a maximum grain size of 1/2 inches and less than 5 percent fines (material passing the U.S. Standard No. 200 Sieve). All material proposed for use as structural fill should be approved by a representative of the geotechnical engineer.

Structural fill should be placed in loose lifts no more than 12 inches thick, moisture conditioned as necessary (moisture content of soil should be within 2 percent of optimum moisture) and compacted to 95 percent of the maximum dry density as determined by ASTM Test Method D-1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable. Note that, although in place density testing of fill is frequently used as the primary criterion for acceptance of fill, it should not be the only criterion. If, in the judgment of the geotechnical engineer or his representative, placed fill is not suitable it should be rejected regardless of in place density test results. As an example, fill that is compacted wet of the optimum moisture content may exhibit "pumping" behavior even if in place density test results indicate greater than 95 percent compaction has been achieved. In such a situation, the fill should be removed and replaced with drier material.

3.5.5 Utility Trench Fill

Excavations for utilities should be completed and maintained during utility installation and backfilling, in accordance with Occupational Safety and Health Administration (OSHA) requirements. The utility contractor should be responsible for maintaining safety within open trenches. Care should be taken to reduce surcharge loads and vibrations adjacent to utility excavations. Groundwater flow into trenches could occur, particularly during or following periods of heavy precipitation.

The subsurface soils at this site generally include medium dense to dense sand with gravel and a trace of silt (fill) and medium dense, native sand with gravel and a trace of silt. The majority of the soils have low cohesive strength. The utility contractor should exercise caution and be prepared to slope excavation sidewalls at gentler angles or install temporary shoring, if conditions indicate that caving may occur. The factors that may influence the potential for caving could include the depth and length of trench that is opened at any one time, along with the length of time the trench is to remain open and surface and groundwater conditions. The utility contractor should be aware of these factors and observe the excavation for signs of possible caving, such as heavy seepage and tension cracks within and above the excavation side walls.

Backfill for utility trenches should consist of suitable material, as described in the Structural Fill section of this report. Utility trench backfill placed beneath building and pavement areas should be compacted to at least 95 percent of the maximum dry density based on ASTM Test Method D-1557. The utility trench backfill placed beneath

pavement areas at depths greater than 2 feet below the final grade may be compacted to a minimum of 90 percent of the maximum dry density, as defined by AS1M Test Method D-1557. The bedding material for utility pipes should be in accordance with the manufacturer's specifications. The utility contractor should use equipment and backfill placement methods that will reduce the possibility of damage to utilities or structures during placement and compaction.

3.5.6 Clearing and Grubbing

The clearing and grubbing boundaries should be staked by a surveyor prior to construction. 90% of 16+ acres of Division 15 Preliminary Plat that is being proposed for development has been cleared. Portion of lots 12 through 15 and parts of lots 18 through 21 must be cleared and grubbed to accommodate residential construction. The clearing and grubbing of the lots will be completed when the homes are built on the lots. Mason County can comment on the clearing and grubbing of the lots when individual permits are issued for home construction.

We have commented on the clearing of the 30% slopes located at the north end of the preliminary plat on Tract G in the slope stability section 3.1. The specifics of how the 30% hillside is cleared and grubbed should be included in the development plans for Tract G.

3.6 On Site and Off Site Impacts

A SEPA Checklist has been prepared for the LakeLand Village Division 15 Preliminary Plat. The SEPA checklist discusses the onsite and offsite impacts of the development. The development of LakeLand Village Division 15 has been in the planning process for 25 years. Comprehensive planning and reports have been completed for the stability and use of the onsite soils, the public and private roadway system, the public water system, the public sewer system, the storm drainage collection and treatment system, and the preservation of water quality in Anderson and Devereaux Lakes. The SEPA checklist references the existing documentation.

The impacts of the development of Tracts F and G will be analyzed when the actual development of the tracts is proposed. SEPA checklists will be prepared as required when additional development proposals are submitted to Mason County for approval.

4 LIMITATIONS

This report has been prepared for Anderson & Sons, Inc. regarding the subject project. Information presented in this report has been collected and interpreted in a manner consistent with the level of care and skill ordinarily exercised by members of the

profession currently practicing under similar conditions; and in accordance with sound and generally accepted principles consistent with normal consulting practice. No other warranty, expressed or implied, including (but not limited to) any warranty or merchantability or fitness for a particular use has been made.

Anderson & Sons, Inc. and ESA discussed the risks and rewards associated with this project, as well as ESA fee for services. Anderson & Sons, Inc. and ESA agreed to allocate certain of the risks so that, to the fullest extent permitted by law, ESA's total aggregate liability to Anderson & Sons, Inc. is limited to \$50,000 or the fee, whichever is greater, for any and all injuries, claims (including any claims for costs of defense or other incurred costs), losses, expenses, or damages whatsoever arising out of or in any way related to ESA's services for this project, from any cause or causes whatsoever, including but not limited to, negligence, errors, omissions, strict liability, breach of contract, breach of warranty, negligent misrepresentation, or other acts giving rise to liability based upon contract tort, or statute.

In the event that change in the nature, design, or location of the proposed construction is made, or any physical changes to the site occur, recommendations are not be considered valid unless the changes are reviewed by ESA and conclusions of this report are modified or verified in writing.

The subsurface exploration logs and related information depicts conditions only at the specific locations and at the particular time designated on the logs. The passage of time may result in a change of subsurface conditions at these exploration locations. Subsurface conditions at other locations may differ from conditions occurring at the exploration locations. The nature and extent of variations of subsurface conditions between explorations are not known. If variations appear during additional explorations or construction, reevaluation of recommendations in this report may be necessary.

Stratification lines designating the interface between soil types in subsurface exploration logs represent approximate boundaries. The transition between materials may be gradual.

Analyses and recommendations provided in this report are based in part upon the data obtained from the subsurface explorations.

This report does not include an assessment of suitability for on-site sewage disposal.

The scope of ESA services did not include an environmental assessment for the presence or absence of hazardous and/or toxic materials, in the soil, groundwater, surface water, or atmosphere. Any statements or absence of statements in this report on any subsurface exploration log regarding staining or odor of soil, groundwater, or surface water, unusual or suspicious items, or conditions observed are strictly descriptive information for Anderson & Sons, Inc.

SITE DATA

LOCATION: SE1/4 18-22-1W
 EXISTING ZONING: RESIDENTIAL - RECREATIONAL DISTRICT - ALLYN ZONING R-1R
 TOTAL AREA: 38.22 ACRES
 SOURCE OF WATER: LAKELAND VILLAGE WATER
 SANITARY SEWER: MASON COUNTY SEWER
 SOURCE OF POWER: MASON CO. PUD NO. 3
 TELEPHONE COMPANY: CENTURYLINK
 OWNER OF RECORD: ANDERSON & SONS, INC.
 PO BOX 108
 ALLYN, WA 98524

SURVEYOR'S NOTES

INTENDED USE OF MAP FOR CIVIL ENGINEERING DESIGN
 CONTOURS DERIVED FROM DIRECT FIELD OBSERVATIONS COMBINED WITH LIDAR DATA.
 NATIONAL MAPPING STANDARDS. ONE-HALF THE CONTOUR INTERVAL
 BOUNDARY INFORMATION BASED ON AFNS 1978-0486637 AND 1998-1010484
 NO SUB-SURFACE UTILITIES LOCATED EXCEPT AS SHOWN
 SURVEY PERFORMED WITH A 3" TOTAL STATION AND/OR GNSS RECEIVER USING FIELD TRAVERSE, GNSS BASED RELATIVE STATIC AND/OR REAL TIME KINEMATIC SURVEY METHODS. SURVEY MEETS OR EXCEEDS ACCURACY REQUIREMENTS CONTAINED IN WAC 332.130.090

SECTION SUBDIVISION

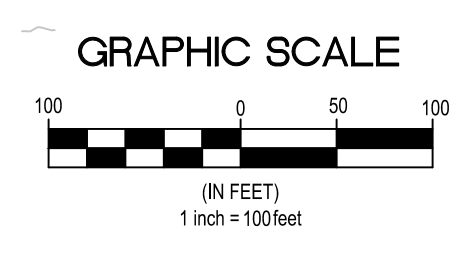
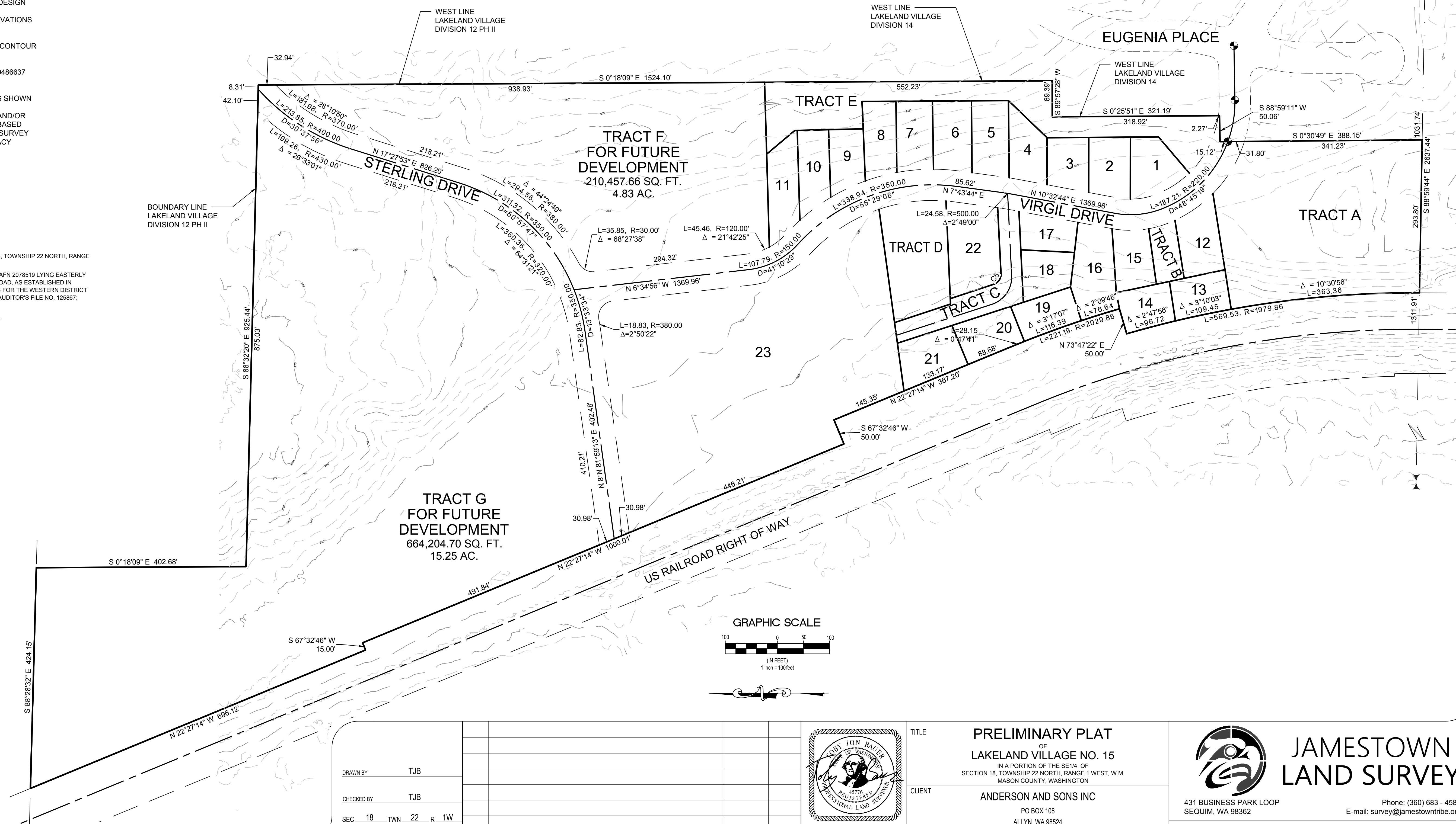
SEE SHEET 2 FOR SECTION SUBDIVISION

LEGAL DESCRIPTION

THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 22 NORTH, RANGE 1 WEST, W.M., DESCRIBED AS FOLLOWS:
 PARCEL 1 OF BLA #07-21 PER AFN 1902615 AND REVISED PER AFN 2078519 LYING EASTERLY OF THE RIGHT-OF-WAY FOR THE UNITED STATES NAVY RAILROAD, AS ESTABLISHED IN ORDER ENTERED IN DISTRICT COURT OF THE UNITED STATES FOR THE WESTERN DISTRICT OF WASHINGTON, CAUSE NO. 619. RECORDED JULY 24, 1948, AUDITOR'S FILE NO. 125867.
 SITUATE IN THE COUNTY OF MASON, STATE OF WASHINGTON.

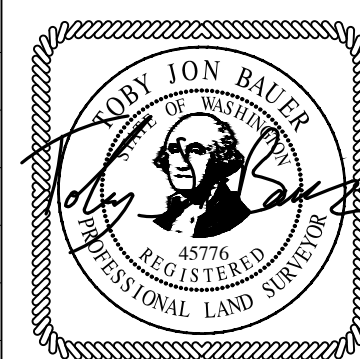
PRELIMINARY PLAT
 OF
LAKELAND VILLAGE NO. 15
 IN A PORTION OF THE SE1/4 OF
 SECTION 18, TOWNSHIP 22 NORTH, RANGE 1 WEST, W.M.
 MASON COUNTY, WASHINGTON

APPENDIX A



File: G:\2022\2022-S-029-ESA - Lakeland Village - 15Surveying-01.dwg Layout: 22-04 SH1-1 Date: 05-23-2023 @ 15:30 Login: bbauef

DRAWN BY	TJB				
CHECKED BY	TJB				
SEC	18	TWN	22	R	1W
SCALE	1" = 100'				
REV.		DESCRIPTION	DATE	BY	
			5/23/2023		

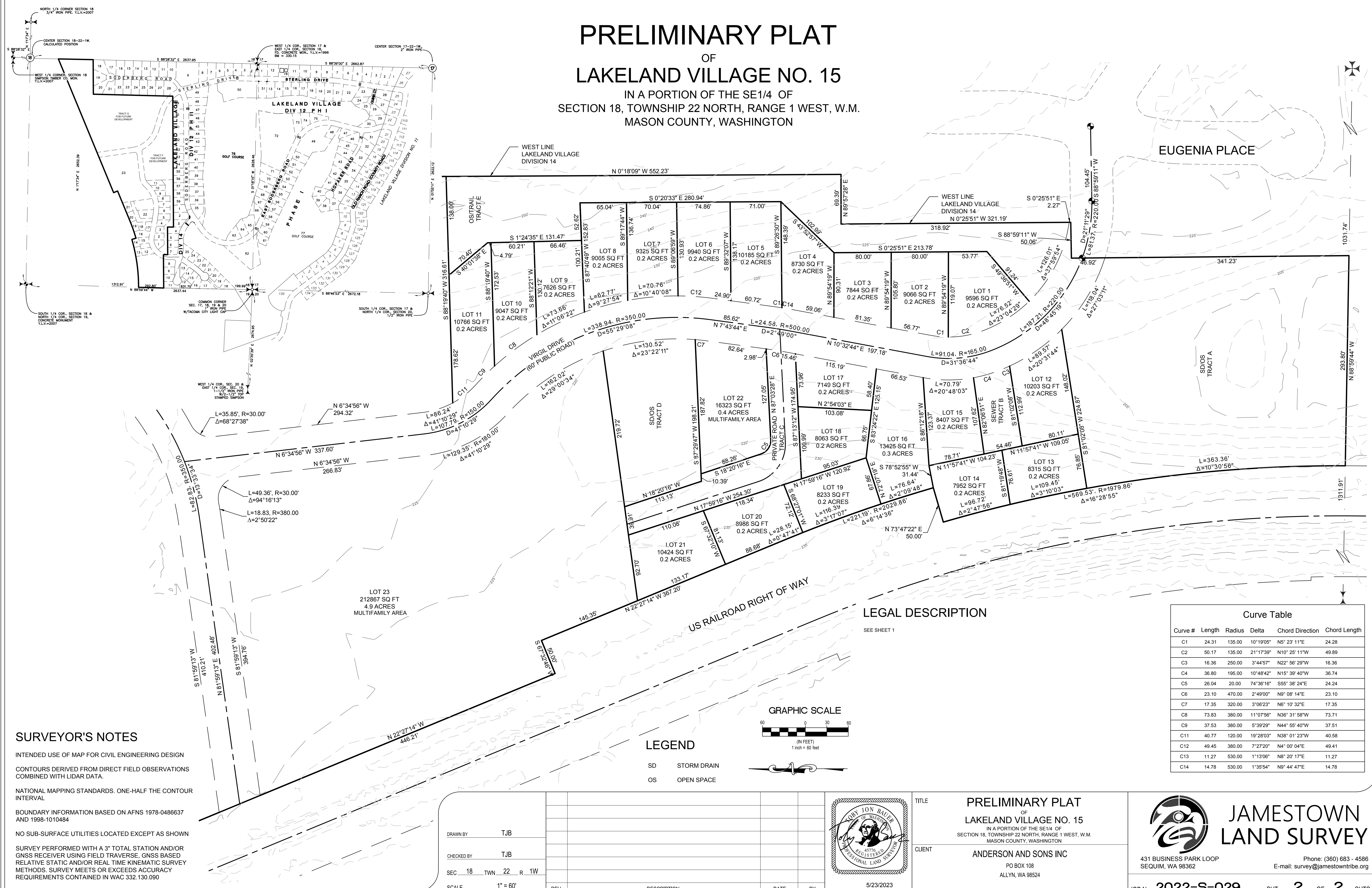


TITLE
PRELIMINARY PLAT
 OF
LAKELAND VILLAGE NO. 15
 IN A PORTION OF THE SE1/4 OF
 SECTION 18, TOWNSHIP 22 NORTH, RANGE 1 WEST, W.M.
 MASON COUNTY, WASHINGTON
 CLIENT
ANDERSON AND SONS INC
 PO BOX 108
 ALLYN, WA 98524

JAMESTOWN LAND SURVEY
 431 BUSINESS PARK LOOP
 SEQUIM, WA 98362
 Phone: (360) 683 - 4586
 E-mail: survey@jamestowntribe.org

PRELIMINARY PLAT

OF
LAKELAND VILLAGE NO. 15
 IN A PORTION OF THE SE 1/4 OF
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 MASON COUNTY, WASHINGTON



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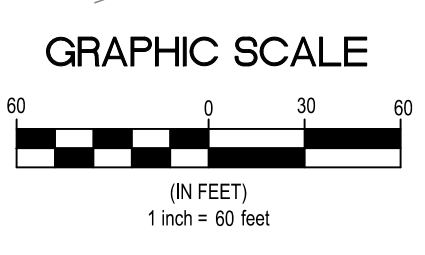
BOUNDARY INFORMATION BASED ON AFNS 1978-0486637 AND 1998-1010484

NO SUB-SURFACE UTILITIES LOCATED EXCEPT AS SHOWN

SURVEY PERFORMED WITH A 3" TOTAL STATION AND/OR GNSS RECEIVER USING FIELD TRAVERSE, GNSS BASED RELATIVE STATIC AND/OR REAL TIME KINEMATIC SURVEY METHODS. SURVEY MEETS OR EXCEEDS ACCURACY REQUIREMENTS CONTAINED IN WAC 332.130.090

LEGEND

- SD STORM DRAIN
- OS OPEN SPACE

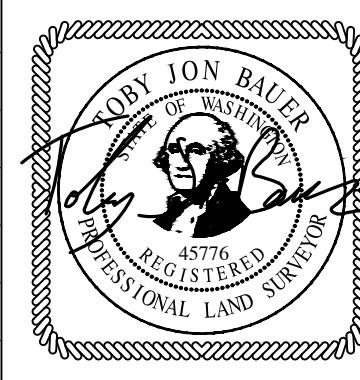


LEGAL DESCRIPTION

SEE SHEET 1

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	24.31	135.00	10°19'05"	N5°23'11"E	24.28
C2	50.17	135.00	21°17'39"	N10°25'11"W	49.89
C3	16.36	250.00	3°44'57"	N22°56'29"W	16.36
C4	36.80	195.00	10°48'42"	N15°39'40"W	36.74
C5	26.04	20.00	74°36'16"	S55°38'24"E	24.24
C6	23.10	470.00	2°49'00"	N9°08'14"E	23.10
C7	17.35	320.00	3°06'23"	N6°10'32"E	17.35
C8	73.83	380.00	11°07'56"	N36°31'58"W	73.71
C9	37.53	380.00	5°39'29"	N44°55'40"W	37.51
C11	40.77	120.00	9°28'03"	N38°01'23"W	40.58
C12	49.45	380.00	7°27'20"	N4°00'04"E	49.41
C13	11.27	530.00	1°13'06"	N8°20'17"E	11.27
C14	14.78	530.00	1°35'54"	N9°44'47"E	14.78

DRAWN BY	TJB	REV.	DESCRIPTION	DATE	BY
CHECKED BY	TJB				
SEC	18	TWN	22	R	1W
SCALE	1" = 60'				



TITLE
PRELIMINARY PLAT
LAKELAND VILLAGE NO. 15
 IN A PORTION OF THE SE 1/4 OF
 SECTION 18, TOWNSHIP 22 NORTH, RANGE 1 WEST, W.M.
 MASON COUNTY, WASHINGTON

CLIENT
ANDERSON AND SONS INC
 PO BOX 108
 ALLYN, WA 98524

5/23/2023

JAMESTOWN LAND SURVEY

431 BUSINESS PARK LOOP
 SEQUIM, WA 98362

Phone: (360) 683 - 4566
 E-mail: survey@jamestowntribe.org

File: G:\2022\2022-S-029-ESA - Lakeland Village - Preliminary Plat.dwg Layout: 22-04 SH1.2 Date: 05-23-2023 @ 15:30 Login: tbaue

APPENDIX B

SE 1/4, SEC 18, TWN 22N, R1W WM

LAKELAND VILLAGE DIVISION 15
 PRELIMINARY ENGINEERING
 ROADWAY AND UTILITY DRAWINGS
 FOR PRELIMINARY PLAT REVIEW

MAY 11, 2023

<u>SHEET NO.</u>	<u>TITLE</u>
1	TITLE SHEET
2	DIVISION 15 PLAT, ROAD, AND UTILITIES LAYOUT
3	PUBLIC ROAD PROFILES
4	PRIVATE ROAD PROFILES
5	STORM DRAINAGE PIPING PROFILES
6	SEWER PIPING PROFILES
7	SEWER SYSTEM DETAILS
8	WATER SYSTEM DETAILS
9	EROSION CONTROL PLAN

1	7-16-07	GB	COUNTY COMMENTS
No.	Date	By	Appr.
			Revision



Approved By:

Drawn By: PHM Date: 5-11-23
 Designed By: PHM Date: 5-11-23
 Checked By: PHM Date: 5-11-23
 Approved By:



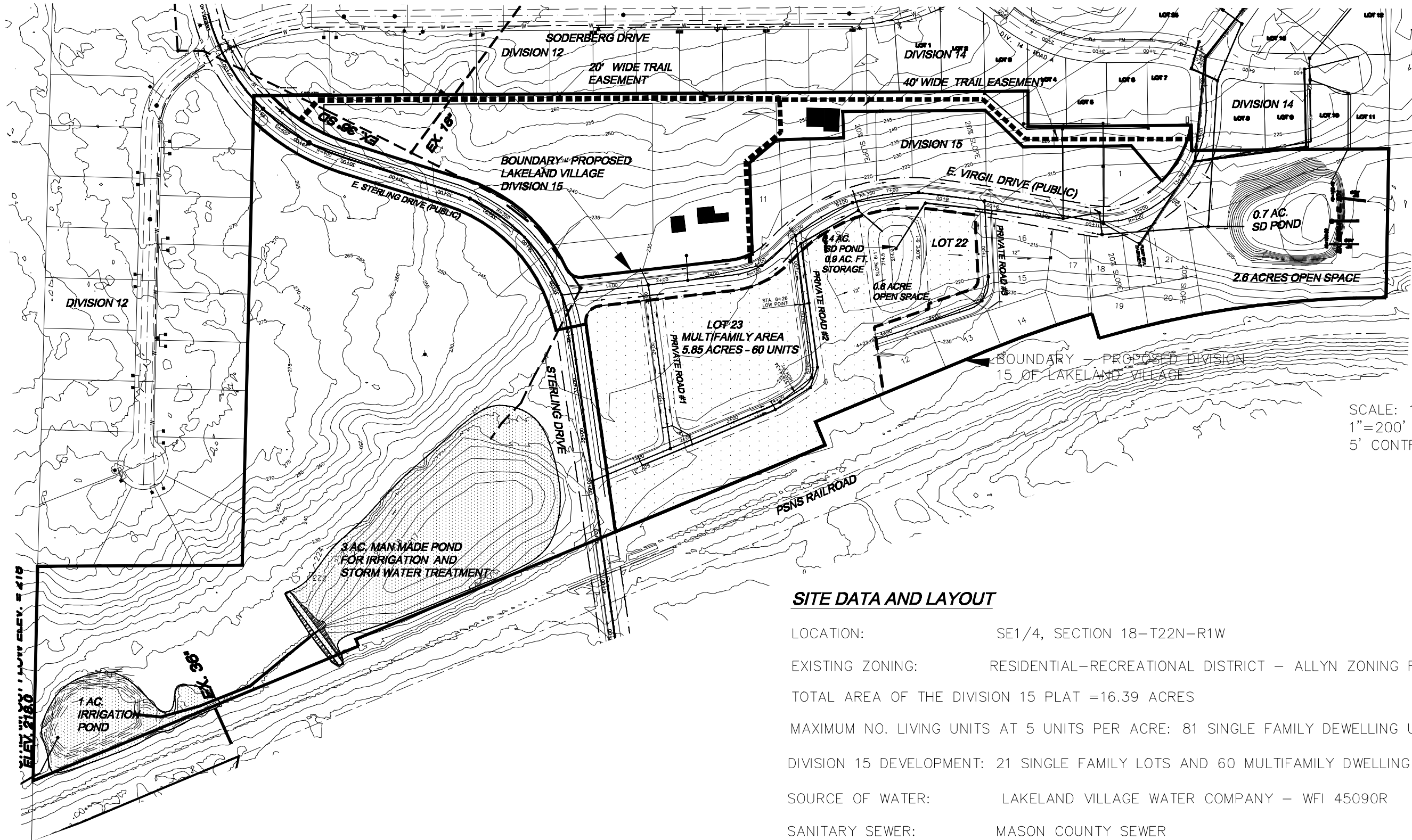
Engineering Services Associates
 Located on Beautiful Hood Canal
 N.E. 210 Cherokee Beach Road
 Belfair, Wa. 98528 (360) 275-7384

Scale:
 Horiz. _____
 Vert. _____
 Job No. _____

ANDERSON & SONS, INC
TITLE SHEET
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY ENGINEERING DESIGN
 FOR PRELIMINARY PLAT REVIEW AND APPROVAL

Sheet 1
 of 9

PRELIMINARY PLAT OF LAKELAND VILLAGE DIVISION 15
 IN A PORTION OF THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 22 NORTH, RANGE 1 WEST, W.M.
 MASON COUNTY, WASHINGTON

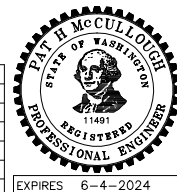


SCALE: 1" = 100' FULL MAP
 1"=200' ON 11X17 MAP
 5' CONTOURS

SITE DATA AND LAYOUT

LOCATION: SE1/4, SECTION 18-T22N-R1W
 EXISTING ZONING: RESIDENTIAL-RECREATIONAL DISTRICT - ALLYN ZONING R-1R
 TOTAL AREA OF THE DIVISION 15 PLAT =16.39 ACRES
 MAXIMUM NO. LIVING UNITS AT 5 UNITS PER ACRE: 81 SINGLE FAMILY DEWELLING UNITS
 DIVISION 15 DEVELOPMENT: 21 SINGLE FAMILY LOTS AND 60 MULTIFAMILY DWELLING UNITS.
 SOURCE OF WATER: LAKELAND VILLAGE WATER COMPANY - WFI 45090R
 SANITARY SEWER: MASON COUNTY SEWER
 SOURCE OF POWER: MASON COUNTY PUD NO. 3
 TELEPHONE COMPANY: QWEST
 OWNER OF RECORD: ANDERSON & SONS, INC. PO BOX 108 ALLYN, WA 98524

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS



Approved By:

Drawn By: PHM Date: 5-11-23
 Designed By: PHM 5-11-23
 Checked By: PHM 5-11-23
 Approved By:

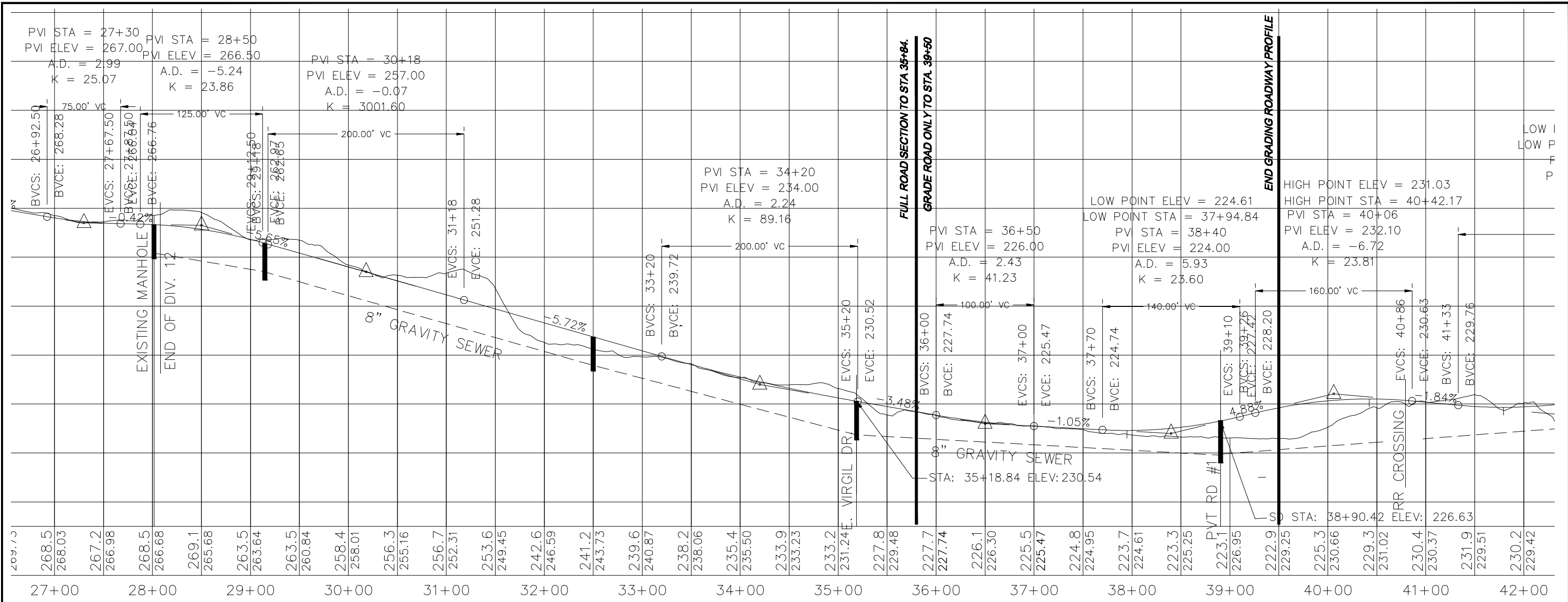


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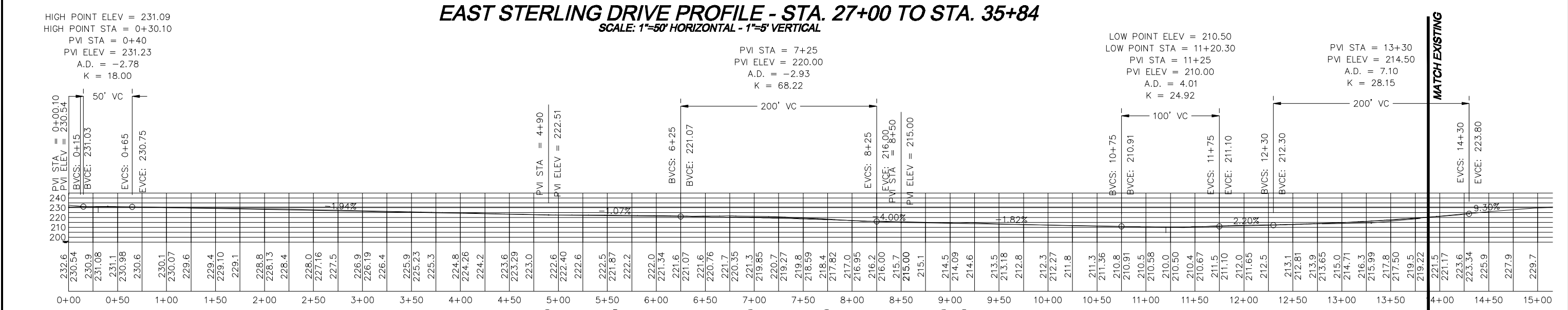
Scale:
 Horiz. _____
 Vert. AS SHOWN
 Job No. _____

ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY PLAT
 PRELIMINARY PLAT LAYOUT

Sheet 2
 of 9

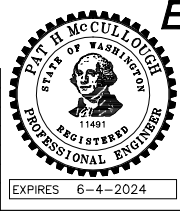


EAST STERLING DRIVE PROFILE - STA. 27+00 TO STA. 35+84
 SCALE: 1"=50' HORIZONTAL - 1"=5' VERTICAL



EAST VIRGIL DRIVE PROFILE - STA. 0+00 TO STA. 13+70
 SCALE: 1" = 50'

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS

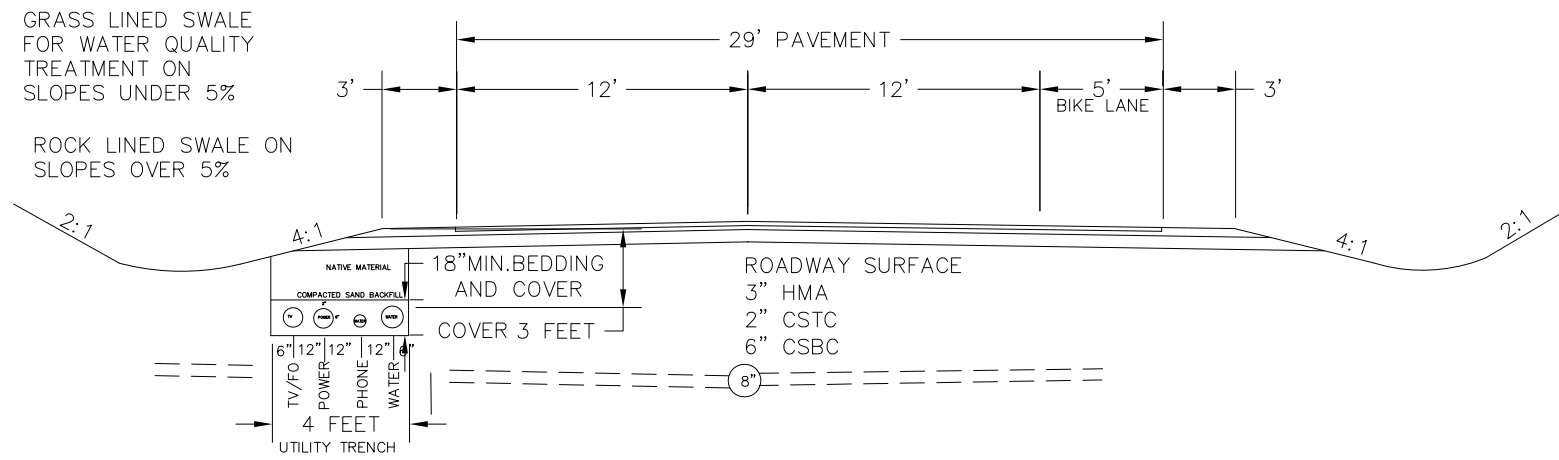


Approved By: _____
 Drawn By: PHM Date: 5-11-23
 Designed By: PHM 5-11-23
 Checked By: PHM 5-11-23
 Approved By: _____

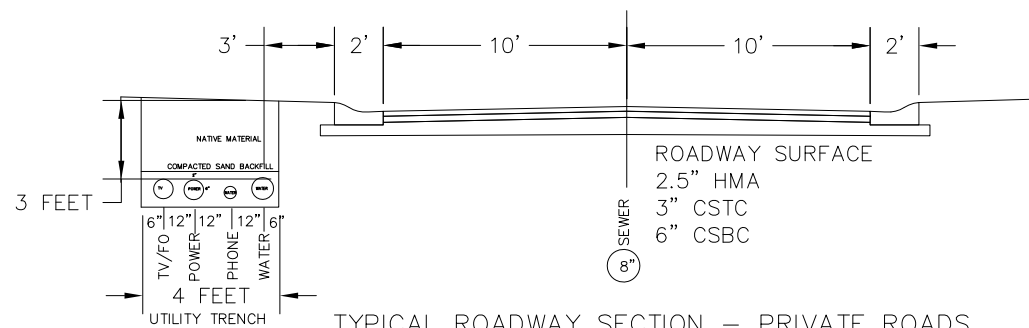
ESA Engineering Services Associates
 Located on Beautiful Hood Canal
 N.E. 210 Cherokee Beach Road
 Belfair, Wa. 98528 (360) 275-7384

Scale:
 Horiz. _____
 Vert. AS SHOWN
 Job No. _____

ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 STERLING DR. AND VIRGIL DR. PROFILES



TYPICAL PUBLIC ROADWAY SECTION

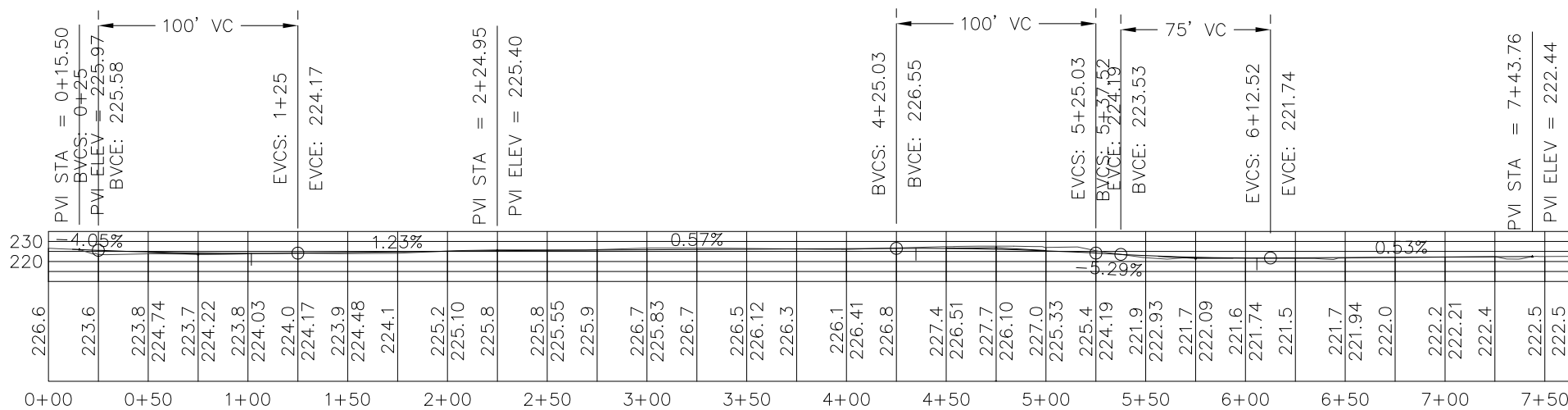


TYPICAL ROADWAY SECTION - PRIVATE ROADS

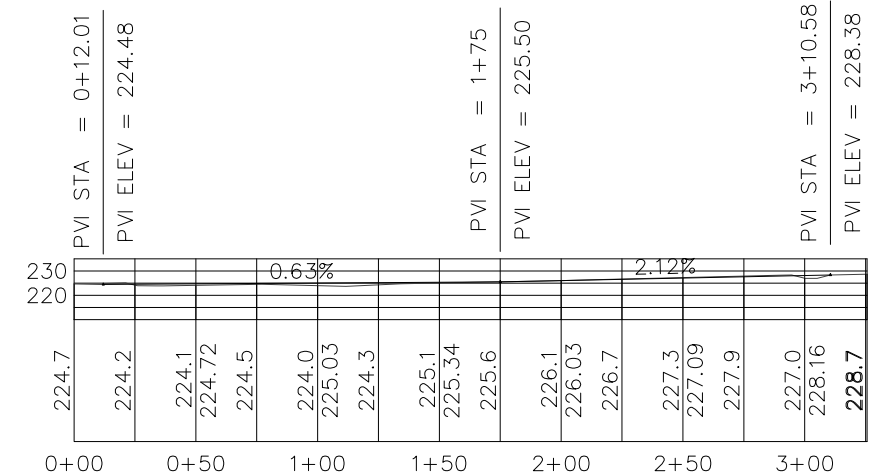
LOW POINT ELEV = 224.03
 LOW POINT STA = 1+01.68
 PVI STA = 0+75
 PVI ELEV = 223.56
 A.D. = 5.28
 K = 18.92

HIGH POINT ELEV = 226.58
 HIGH POINT STA = 4+34.78
 PVI STA = 4+75.03
 PVI ELEV = 226.84
 A.D. = -5.86
 K = 17.06

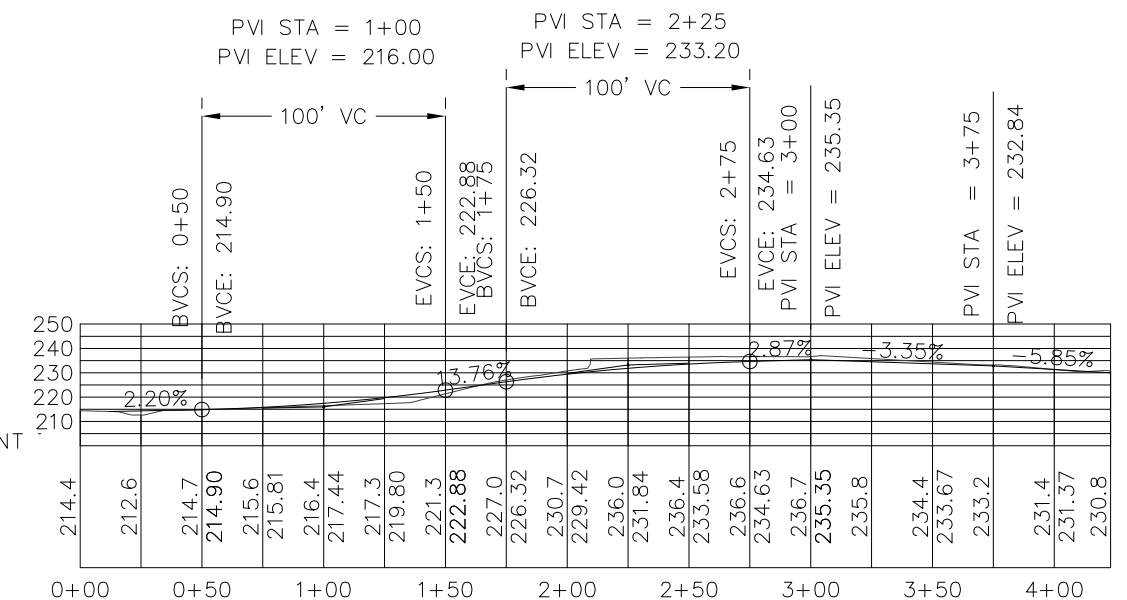
LOW POINT ELEV = 221.73 NOTE: MOVE THE LOW POINT
 EXISTING LOW POINT STA = 6+05.69
 PVI STA = 5+75.02
 PVI ELEV = 221.55
 A.D. = 5.82
 K = 12.89



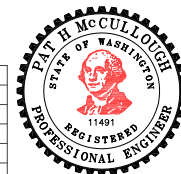
PRIVATE ROAD NO. 2 PROFILE
 SCALE: 1"= 30 FEET



PRIVATE ROAD NO. 1 PROFILE
 SCALE: 1"= 30 FEET



PRIVATE ROAD NO. 3 PROFILE
 SCALE: 1"= 30 FEET



Approved By:

Drawn By: PHM Date: 5-11-23
 Designed By: PHM Date: 5-11-23
 Checked By: PHM Date: 5-11-23
 Approved By:



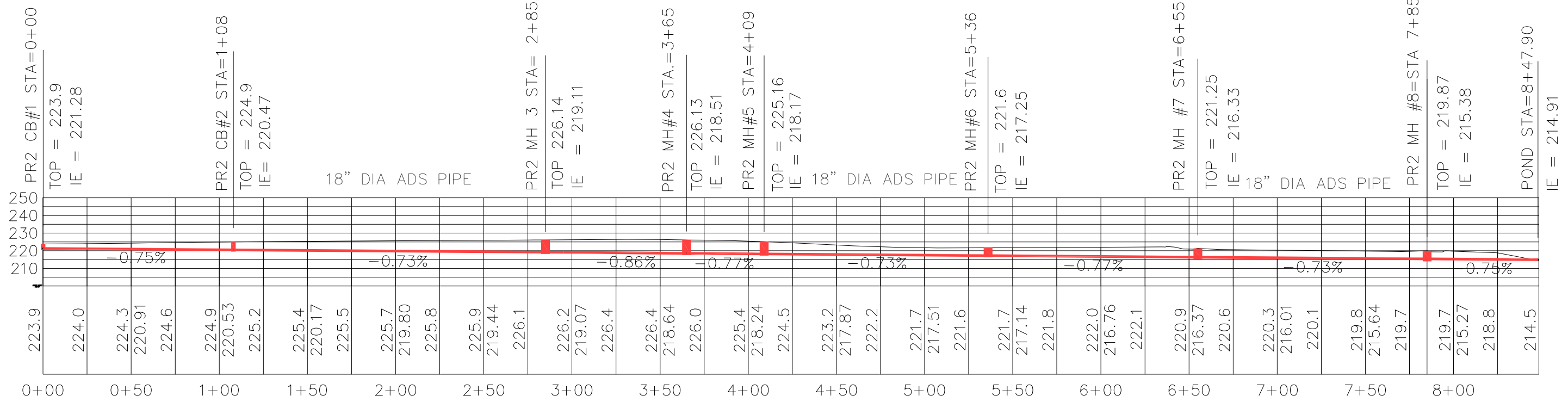
Engineering Services Associates
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Scale:
 Horiz. AS SHOWN
 Vert. _____
 Job No. _____

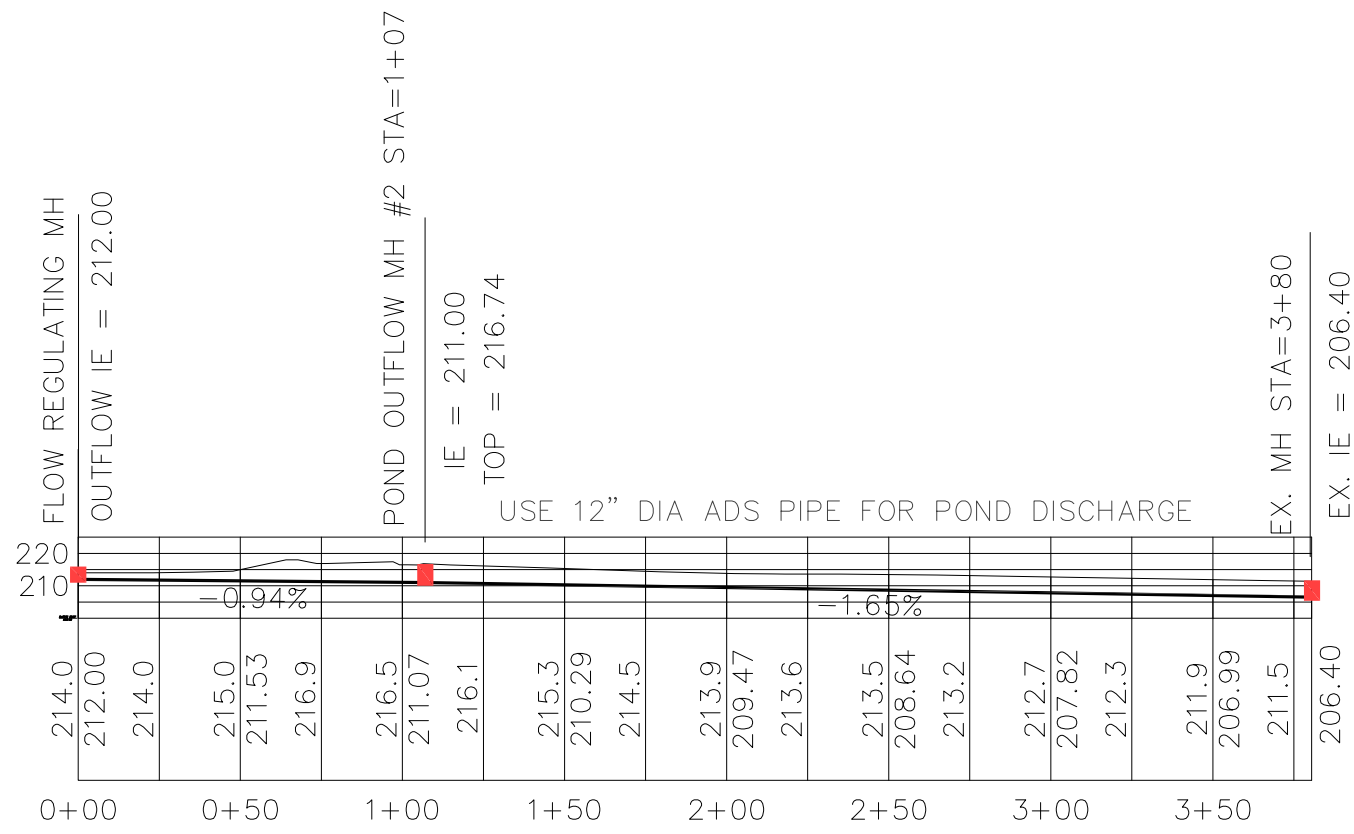
ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 TYP. SECTIONS & PRIVATE ROAD PROFILES

Sheet 4
 of 9

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS

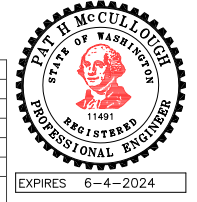


PRIVATE ROAD #2 AND VIRGIL DRIVE STORM DRAINAGE PIPING PROFILE
SCALE: 1"=30'



WATER QUALITY POND DRAINAGE PIPING PROFILE
SCALE: 1" = 30'

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS

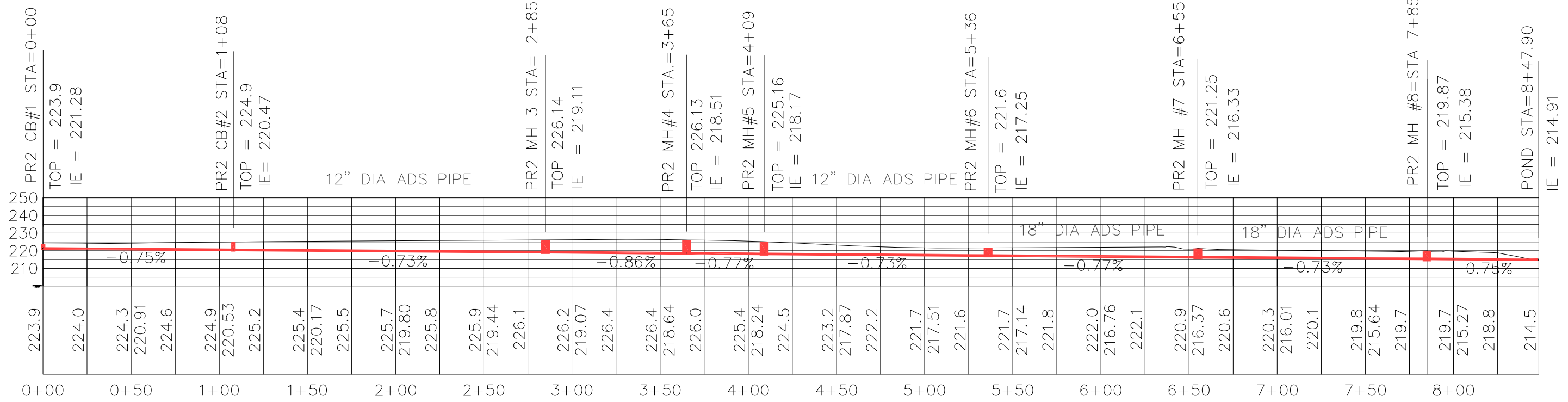


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 Designed By: PHM Date: 5-11-23
 Checked By: PHM Date: 5-11-23
 Approved By: _____

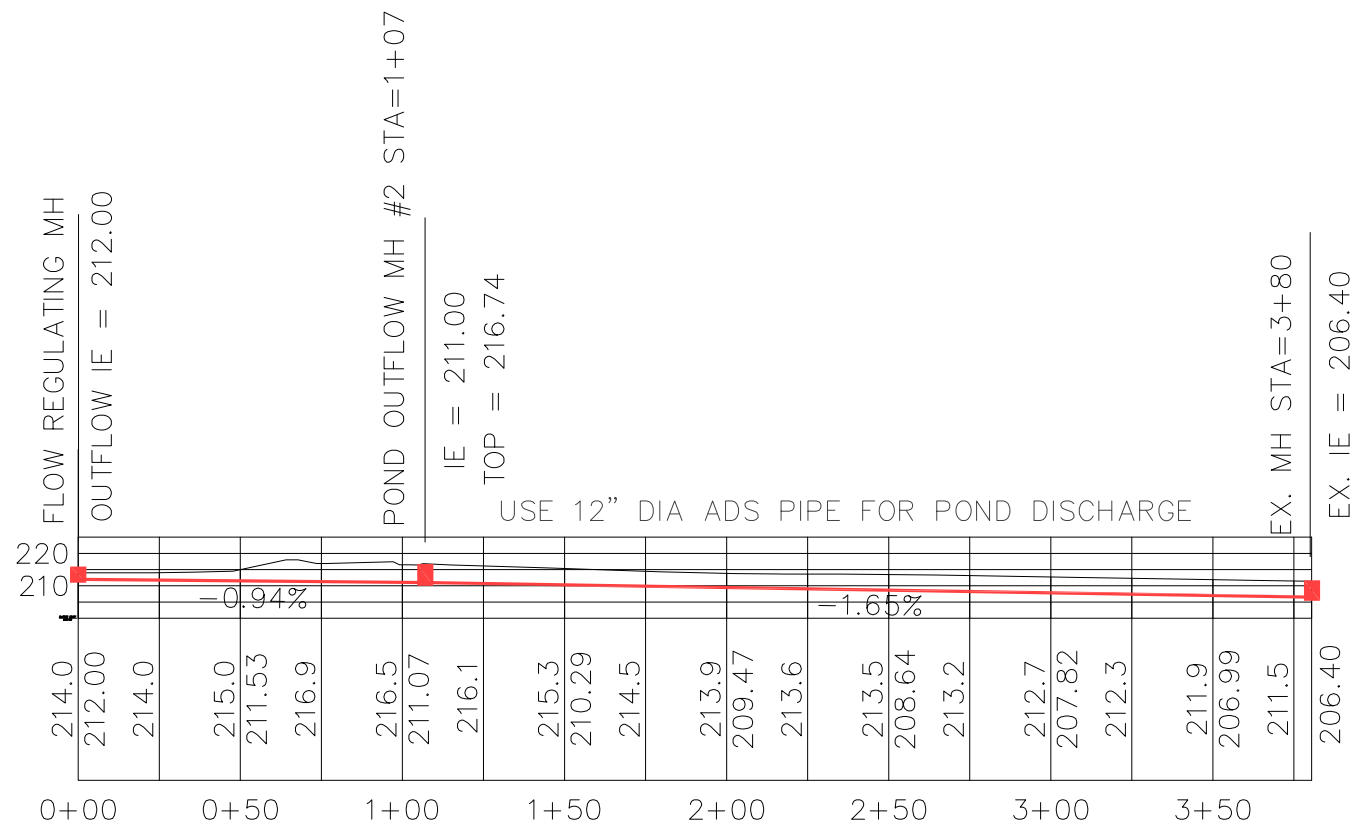
ESA Engineering Services Associates
 Located on Beautiful Hood Canal
 N.E. 210 Cherokee Beach Road
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Scale: _____
 Horiz. _____
 Vert. AS SHOWN
 Job No. _____

ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 STORM WATER PIPING PROFILES

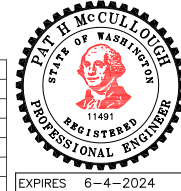


PRIVATE ROAD #2 AND VIRGIL DRIVE STORM DRAINAGE PIPING PROFILE
SCALE: 1"=30'



WATER QUALITY POND DRAINAGE PIPING PROFILE
SCALE: 1" = 30'

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS



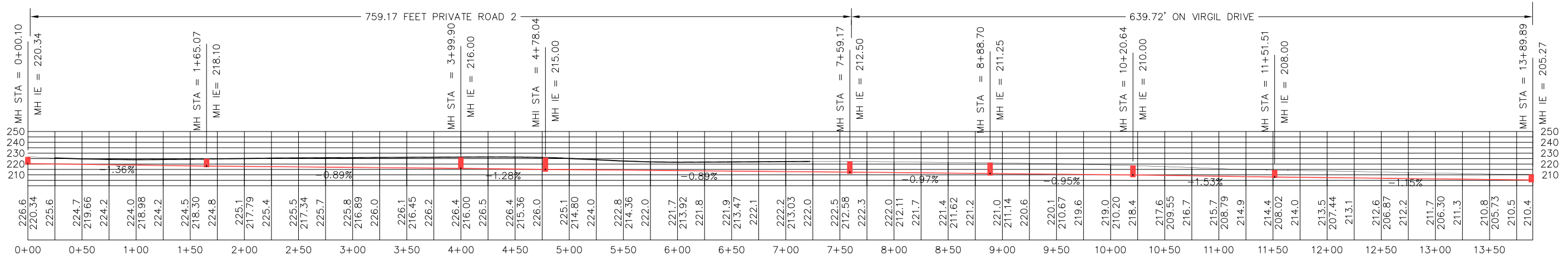
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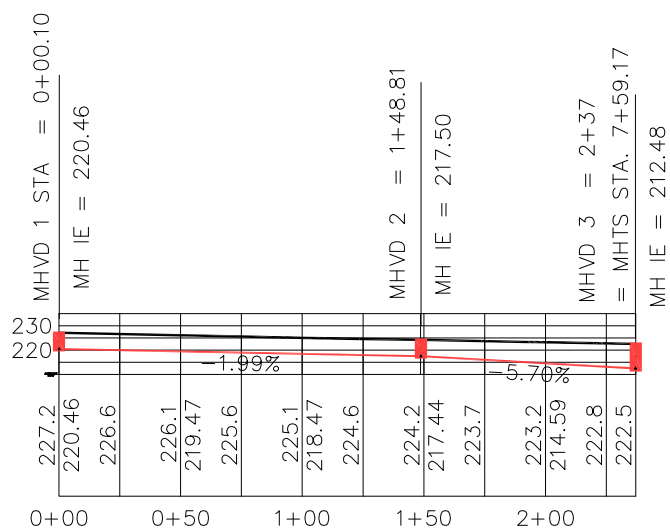
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 Horiz. _____
 Vert. AS SHOWN
 Job No. _____

ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 STORM WATER PIPING PROFILES



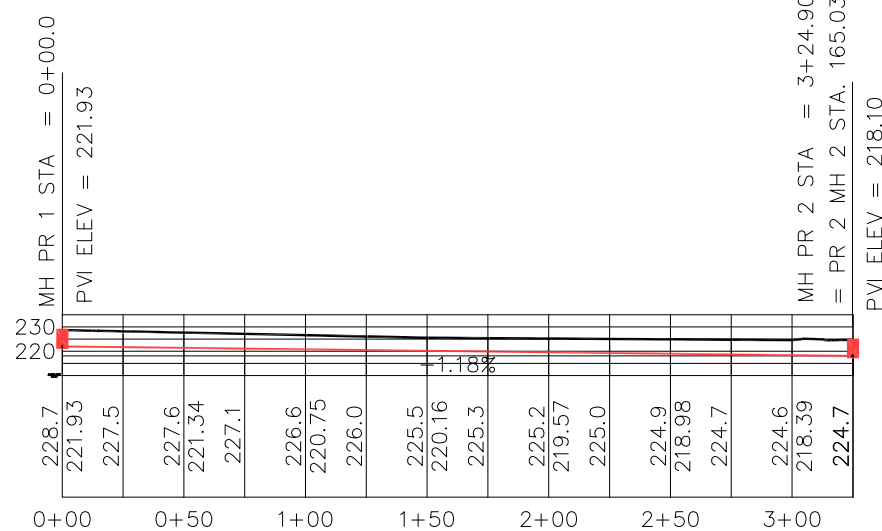
10" SEWER LINE PROFILE - LOCATED IN PRIVATE RD. #2 AND EAST VIRGIL DR.

SCALE: 1" = 50'



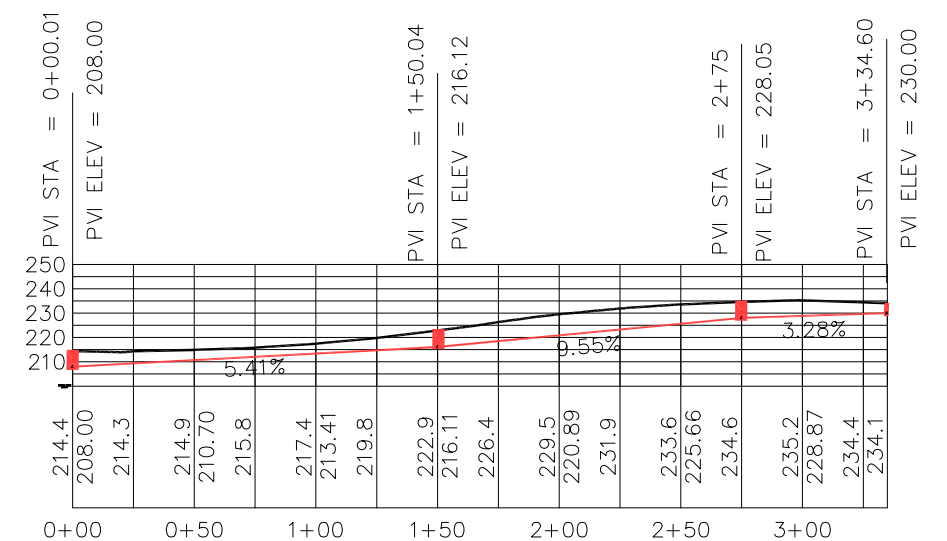
VIRGIL DRIVE NORTH SEWER PROFILE

SCALE: 1" = 40'



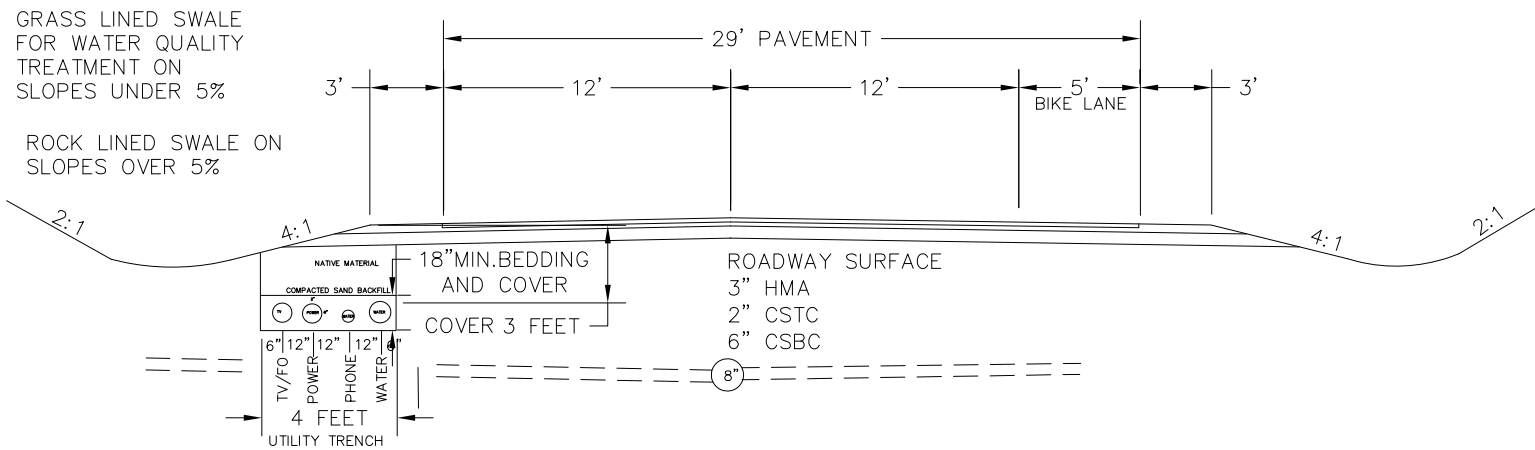
PRIVATE RD. #2 SEWER PROFILE

SCALE: 1" = 40'



PRIVATE RD. #3 SEWER PROFILE

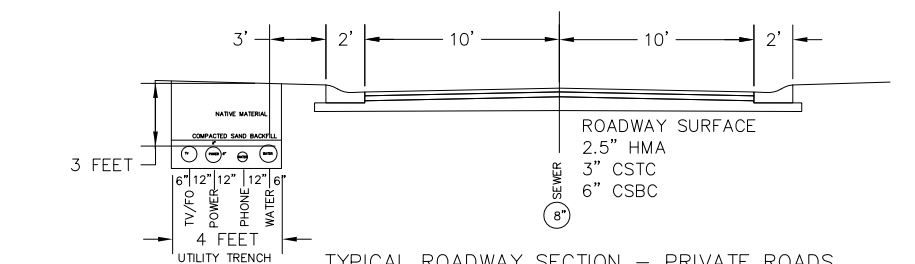
SCALE: 1" = 40'



EAST STERLING DR. AND EAST VIRGIL DRIVE TYPICAL ROADWAY SECTION

SCALE: 1" = 5'

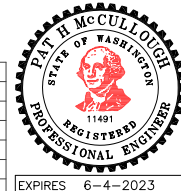
NOTE: FOR STERLING DR. SEWER PROFILE - SEE RD. PROFILE.



PRIVATE ROADS #1, #2, #3 TYPICAL SECTION

SCALE: 1" = 5'

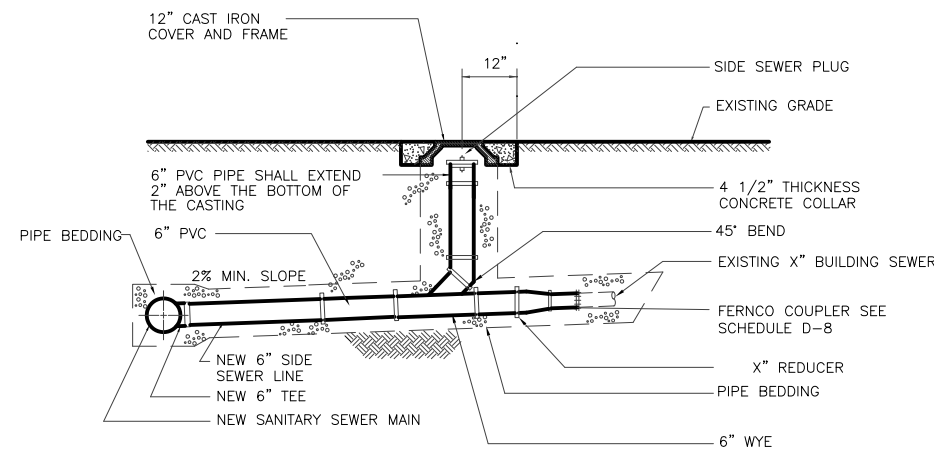
No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS



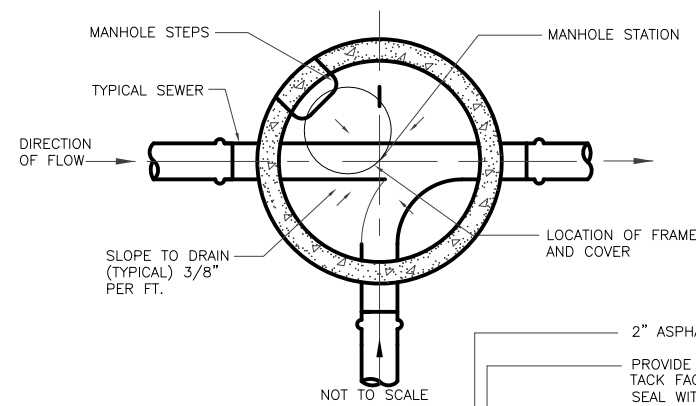
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 Checked By: PHM Date: 5-11-23
 Approved By: _____

ESA Engineering Services Associates
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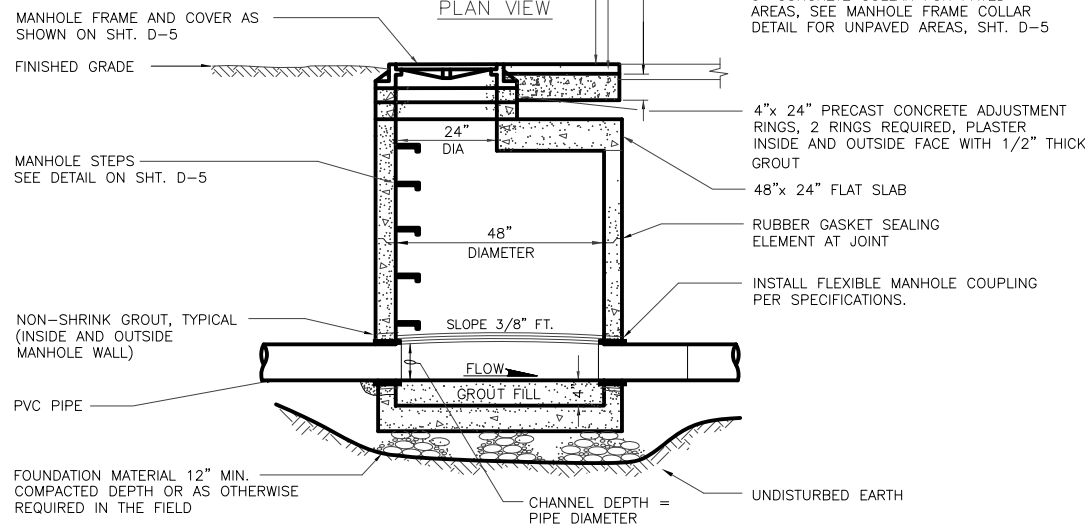
Scale: _____
 Horiz. AS SHOWN
 Vert. _____
 Job No. _____
ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 SEWER PROFILES
 Sheet 6 of 9



SIDE SEWER STUB DETAIL
NOT TO SCALE



PLAN VIEW
NOT TO SCALE



SHALLOW PRECAST MANHOLE
NOT TO SCALE

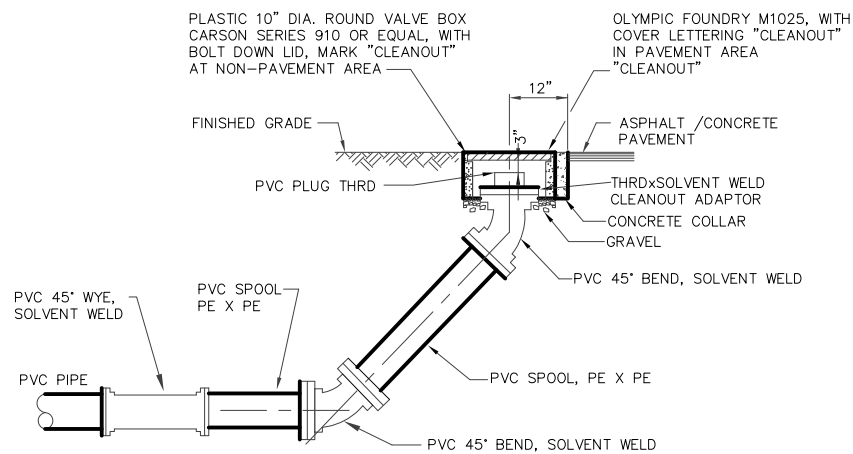
		6", 8", 10" & 12" DIAMETER PIPE											
PIPE DEPTH	A	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'
BOTTOM OF TRENCH PAYMENT WIDTH	B	2'- 6"											
TRANSITION FOR TRENCH PAYMENT WIDTH	C	1.5'	1.5'	1.75'	2.25'	2.75'	3.25'	3.75'	4.25'	4.75'	5.25'	5.75'	6.25'
TOP OF TRENCH PAYMENT WIDTH	D	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'
MAX. SURFACE RESTORATION PAYMENT LIMITS	E	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'

		24" DIAMETER PIPE											
A	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	
B	4'- 0"												
C	1.5'	1.5'	1.75'	2.25'	2.75'	3.25'	3.75'	4.25'	4.75'	5.25'	5.75'	6.25'	
D	7'	7'	7.5'	8.5'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	
E	9'	9'	9.5'	10.5'	11.5'	12.5'	13.5'	14.5'	15.5'	16.5'	17.5'	18.5'	

PAYMENT LIMIT SCHEDULE
GRAVITY SEWER PIPE

NOTE:

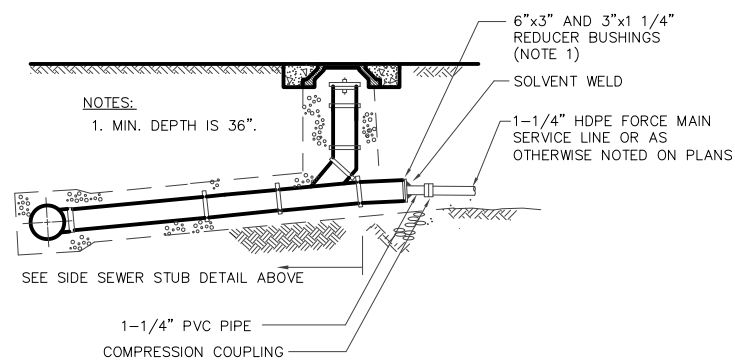
1. THE TRENCH SECTION SHOWN ON THE PLANS ARE FOR THE PAYMENT LIMITS FOR FOUNDATION MATERIAL AND GRAVEL BASE. PAYMENT FOR ALL FOUNDATION MATERIAL AND GRAVEL BASE USED FOR TRENCH BACKFILL SHALL BE PAID BY THE CUBIC YARD AS COMPUTED FROM THE MEASUREMENT OF THE CONSTRUCTED TRENCH SECTION, TO THE MAXIMUM LIMITS AS INDICATED IN THE TABLES
2. THE COSTS OF FURNISHING AND PLACING THE PIPE BEDDING MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PIPE IN PLACE
3. IN THE EVENT THAT A PORTION OF THIS PAYMENT WIDTH FALLS OUTSIDE THE EXISTING PAVEMENT, THEN ONLY THAT WIDTH COVERED BY THE EXISTING PAVEMENT SHALL BE PAID AS ASPHALT PAVEMENT REPAIR.
4. IN THE EVENT THAT A PORTION OF THE PAYMENT WIDTH IS IN A GRAVEL SHOULDER, THEN THAT PORTION SHALL BE PAID AS CRUSHED SURFACING TOP COURSE.
5. WHERE A PAVEMENT REPAIR IS REQUIRED, THE TRENCH SECTION PAYMENT LIMIT LINE WILL BE BOUNDED AT THE TOP BY BOTTOM OF NEW ROAD BALLAST (SUBGRADE)



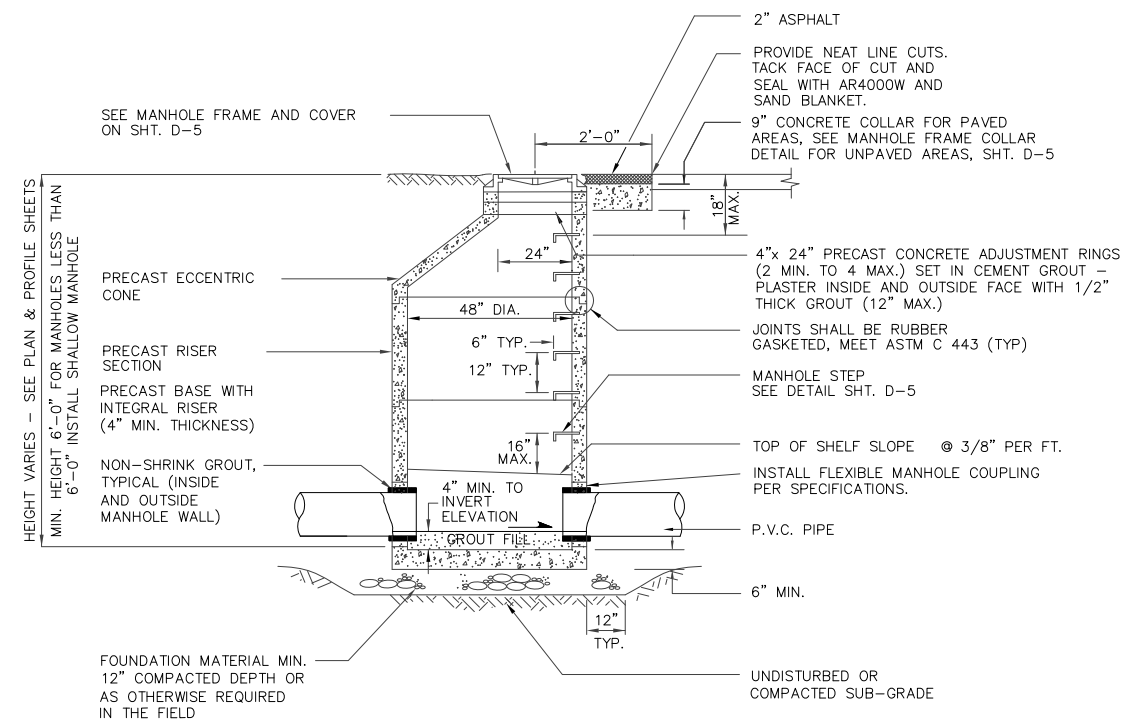
NOTES:

1. 6" TO HAVE 6" CLEANOUT
2. 4" TO HAVE 4" CLEANOUT
3. INSTALLATION TO BE PER TRENCH DETAILS.

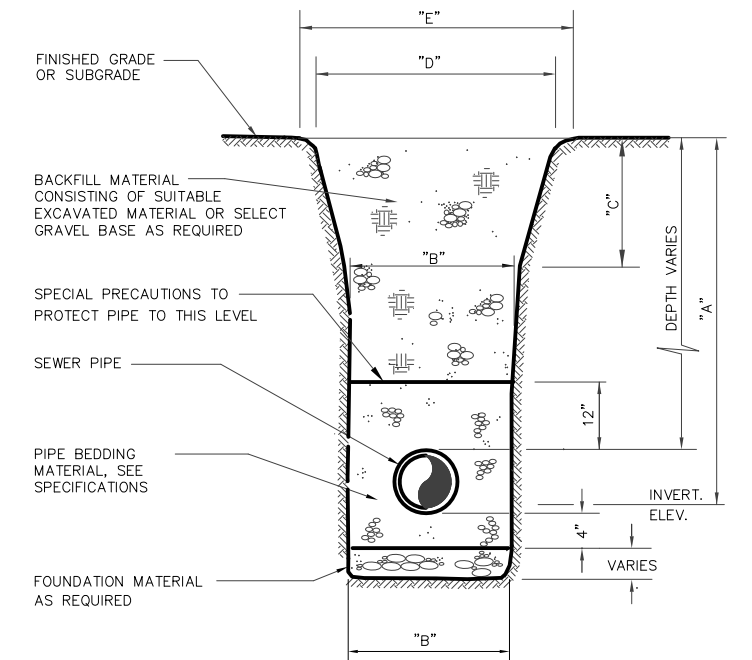
GRAVITY PIPE CLEANOUT
NOT TO SCALE



FORCE MAIN CONNECTION FROM GRINDER PUMP TO GRAVITY SIDE SEWER

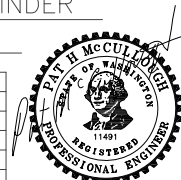


TYPICAL PRECAST MANHOLE - 48" I.D.



GRAVITY SEWER PIPE - TRENCH SECTION
NOT TO SCALE

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS

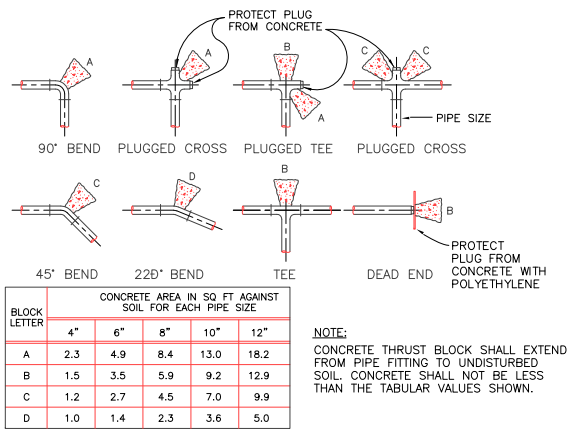


Approved By:	Drawn By:	Date:
	PHM	5-11-23
	Designed By:	
	PHM	5-11-23
	Checked By:	
	PHM	5-11-23
	Approved By:	

ESA Engineering Services Associates
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 N.E. 210 Cherokee Beach Road
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Scale:	AS SHOWN	Sheet	7
Horiz.		of	9
Vert.			
Job No.			

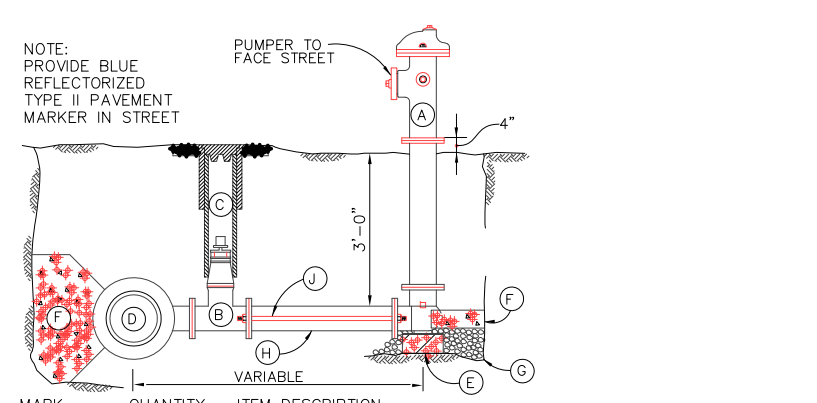
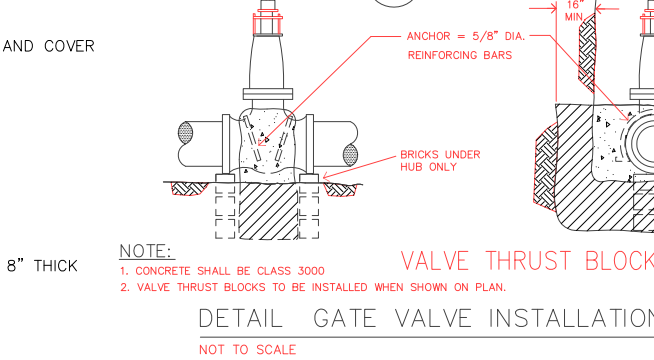
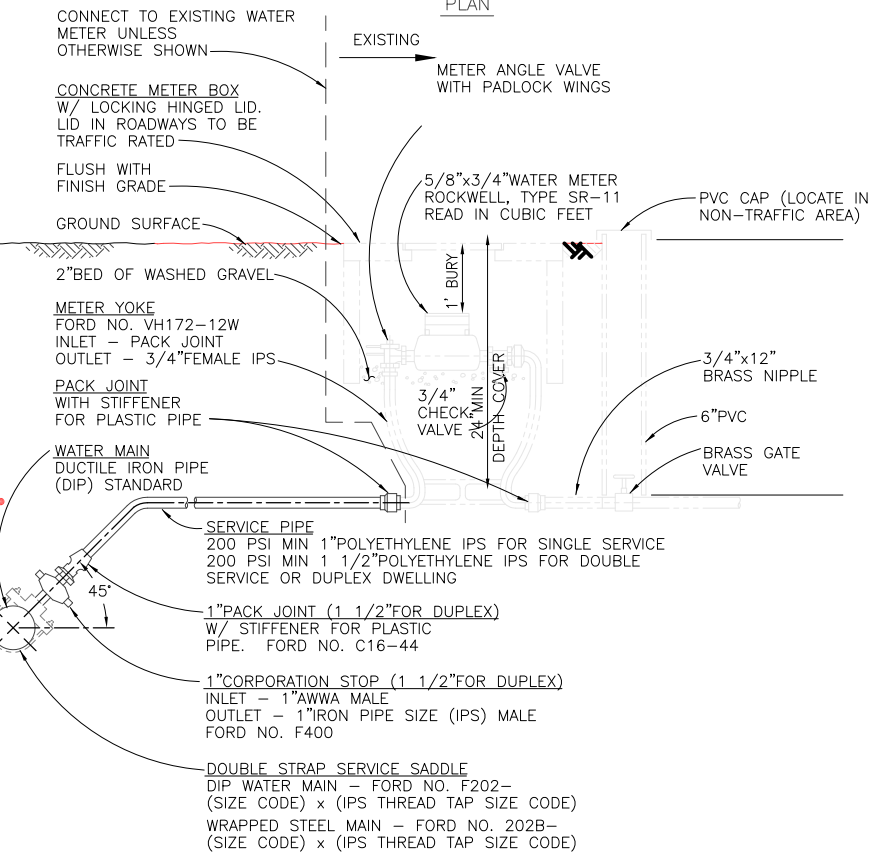
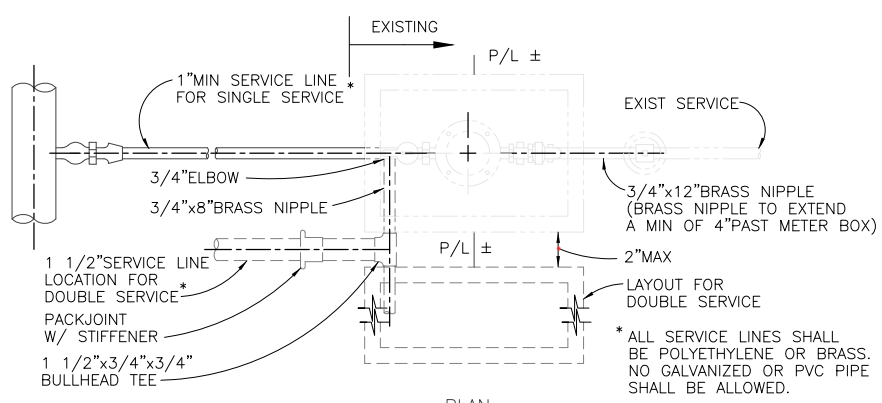
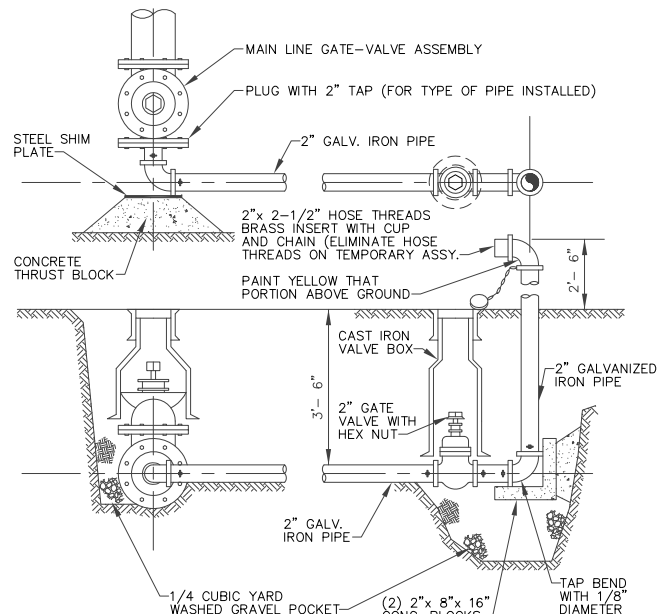
ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 SEWER DETAILS



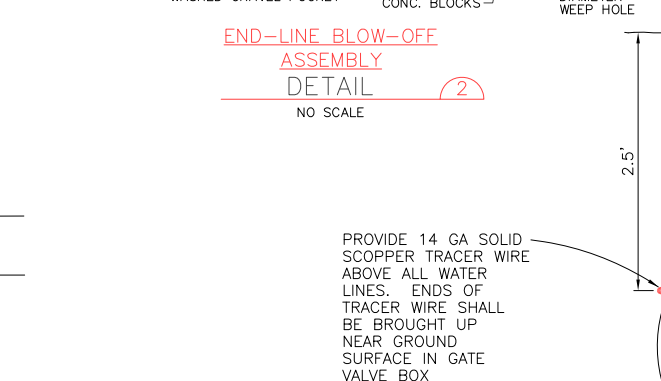
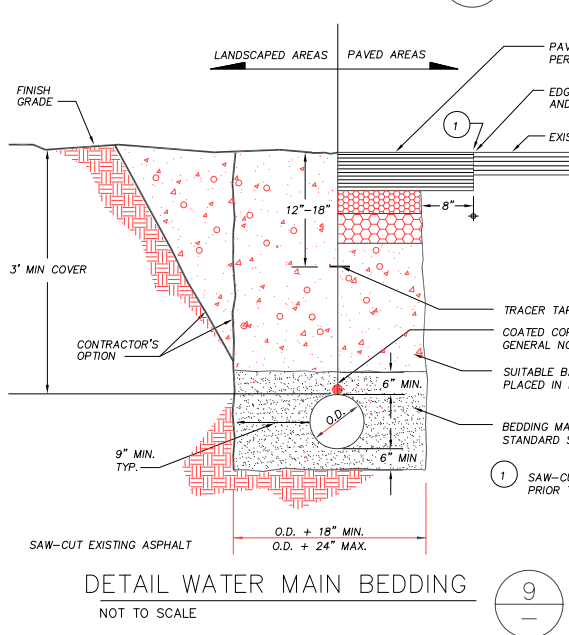
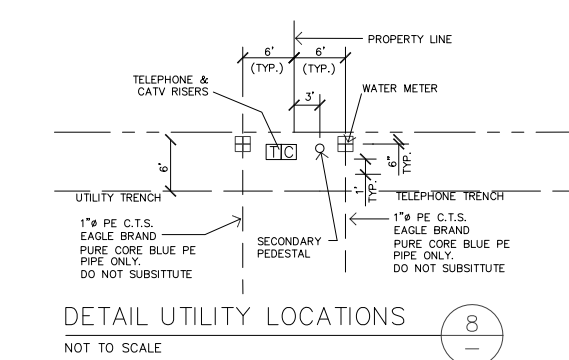
WATER LINE CONCRETE THRUST BLOCK DETAIL

DETAIL 1

NTS



MARK	QUANTITY	ITEM DESCRIPTION
A	1	FIRE HYDRANT: 1-5" PUMPER PORT WITH STORZ (SEATTLE STANDARD THREAD) QUARTER TURN CAP WITH SET SCREW CAP AND CHAIN. 2- 2.5" HOSE NOZZLES-NATIONAL STANDARD THREADS WITH CAPS AND CHAINS. MJ SHOE. PAINT W/ 2 COATS OF RUBBER BASE TRAFFIC RED PAINT. MUELLER CENTURION OR EQUAL OR MATCH EXISTING HYDRANTS.
B	1	AUXILIARY GATE VALVE: 6"-AWWA C500 DOUBLE DISC. PARALLEL SEAT, "O" RING STEM; MJ X FL
C	1	VALVE BOX: SEE DETAIL 4/W-1
D	1	HYDRANT TEE: MJ X FL
E	1	CONCRETE BRICK: 8"X16"X14"
F	1	CONCRETE THRUST BLOCK: POUR IN PLACE; MAINTAIN CLEARANCE FOR DRAIN PORT. SEE CONCRETE THRUST BLOCK DETAIL-90° BEND FOR CONCRETE AREA.
G	1/2 CY	WASHED GRAVEL: 1.5 INCH MINUS
H	VAR	DUCTILE IRON PIPE: 6 INCH, CEMENT MORTAR LINED, CL 52 MIN.
J	2	SHACKLE RODS: PAINT 3/4 INCH DIAMETER SHACKLE RODS OR USE OF MEGA LUG FOLLOWERS IS ACCEPTABLE



AS BUILT DRAWING



Approved By: [Signature]

Drawn By: PHM Date: 5-11-23
 Designed By: PHM Date: 5-11-23
 Checked By: PHM Date: 5-11-23
 Approved By:

ESA Engineering Services Associates
 Located on Beautiful Hood Canal
 N.E. 210 Cherokee Beach Road
 Belfair, Wa. 98528 (360) 275-7384

Scale:
 Horiz. AS SHOWN
 Vert. _____
 Job No. _____

ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 WATER SYSTEM DETAILS

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS

Sheet 8
 of 9

MINIMUM EROSION AND SEDIMENTATION CONTROL REQUIREMENTS

1. STABILIZATION AND SEDIMENT TRAPPING. ALL EXPOSED AND UNWORKED SOILS, INCLUDING SOIL STOCKPILES, SHALL BE STABILIZED BY SUITABLE APPLICATION OF BMPs WHICH PROTECT SOIL FROM THE EROSIIVE FORCES OF RAINDROP IMPACT AND FLOWING WATER. APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO VEGETATIVE ESTABLISHMENT, MULCHING, PLASTIC COVERING, AND THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED. FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 7 DAYS.

AT ALL TIMES OF THE YEAR, THE CONTRACTOR SHALL HAVE SUFFICIENT MATERIALS, EQUIPMENT AND LABOR ON-SITE TO STABILIZE AND PREVENT EROSION FROM ALL DENUDED AREAS WITHIN 12-HOURS AS SITE AND WEATHER CONDITIONS DICTATE.

FROM OCTOBER 1ST TO APRIL 30TH, THE PROJECT ENGINEER SHALL VISIT THE DEVELOPMENT SITE A MINIMUM OF ONCE PER WEEK FOR THE PURPOSE OF INSPECTING THE EROSION AND SEDIMENTATION CONTROL FACILITIES, REVIEWING THE PROGRESS OF CONSTRUCTION, AND VERIFYING THE EFFECTIVENESS OF THE EROSION CONTROL MEASURES BEING UNDERTAKEN. THE PROJECT ENGINEER SHALL IMMEDIATELY INFORM THE DIRECTOR OF ANY PROBLEMS OR POTENTIAL PROBLEMS OBSERVED DURING SAID SITE VISITS, AS WELL AS OF ANY RECOMMENDED CHANGES IN THE EROSION CONTROL MEASURES TO BE UNDERTAKEN. WHEN REQUESTED BY THE DIRECTOR, THE PROJECT ENGINEER SHALL PROVIDE THE DIRECTOR WITH WRITTEN RECORDS OF SAID WEEKLY SITE VISITS, INCLUDING DATES OF VISITS AND NOTED SITE OBSERVATIONS.

IN THE EVENT THAT GROUND ON A PROJECT SITE IS LEFT BARE AFTER SEPTEMBER 30TH, THE COUNTY MAY ISSUE A STOP WORK ORDER FOR THE ENTIRE PROJECT UNTIL SATISFACTORY CONTROLS ARE PROVIDED. IN ADDITION, THE OWNER WILL BE SUBJECT TO THE PENALTIES PROVIDED IN SECTION 10 AND SECTION 11 OF THE MASON COUNTY STORMWATER ORDINANCE.

IN THE EVENT THAT GROUND ON A PROJECT SITE IS LEFT BARE AFTER SEPTEMBER 30TH, AND THE COUNTY IS UNSUCCESSFUL IN CONTACTING THE OWNER OR HIS/HER DESIGNATED EMERGENCY CONTACT PERSON, THE COUNTY MAY ENTER THE PROJECT SITE AND INSTALL TEMPORARY GROUND COVER MEASURES AND BILL THE OWNER FOR ALL EXPENSES INCURRED BY THE COUNTY. THESE COSTS WILL BE IN ADDITION TO ANY MONETARY PENALTIES LEVIED AGAINST THE OWNER.

2. DELINEATION OF CLEARING AND EASEMENT LIMITS. CLEARING LIMITS, SETBACKS, BUFFERS, AND SENSITIVE OR CRITICAL AREAS SUCH AS STEEP SLOPES, WETLANDS AND RIPARIAN CORRIDORS SHALL BE CLEARLY MARKED IN THE FIELD AND INSPECTED BY MASON COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT PRIOR TO COMMENCEMENT OF LAND CLEARING ACTIVITIES.

3. PROTECTION OF ADJACENT PROPERTIES. ADJACENT PROPERTIES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION BY APPROPRIATE USE OF VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OR FILTERS, DIKES OR MULCHING, OR BY A COMBINATION OF THESE MEASURES AND OTHER APPROPRIATE BMPs.

4. TIMING AND STABILIZATION OF SEDIMENT TRAPPING MEASURES. SEDIMENT PONDS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER BMPs INTENDED TO TRAP SEDIMENT ON-SITE SHALL BE CONSTRUCTED AS A FIRST STEP IN GRADING. THESE BMPs SHALL BE FUNCTIONAL BEFORE LAND DISTURBING ACTIVITIES TAKE PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS SHALL BE STABILIZED ACCORDING TO THE TIMING INDICATED IN ITEM (1) ABOVE.

5. SLOPE STABILIZATION. CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. ROUGHENED SOIL SURFACES ARE PREFERRED TO SMOOTH SURFACES. INTERCEPTORS SHOULD BE CONSTRUCTED AT THE TOP OF LONG, STEEP SLOPES WHICH HAVE SIGNIFICANT AREAS ABOVE THAT CONTRIBUTE RUNOFF. CONCENTRATED RUNOFF SHOULD NOT BE ALLOWED TO FLOW DOWN THE FACE OF A CUT OR FILL SLOPE UNLESS CONTAINED WITHIN AN ADEQUATE CHANNEL OR PIPE SLOPE DRAIN. WHEREVER A SLOPE FACE CROSSES A WATER SEEPAGE PLANE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHOULD BE PROVIDED. IN ADDITION, SLOPES SHOULD BE STABILIZED IN ACCORDANCE WITH ITEM (1) ABOVE.

6. CONTROLLING OFF-SITE EROSION. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM EROSION DUE TO INCREASES IN THE VOLUME, VELOCITY, AND PEAK FLOW RATE OF STORMWATER RUNOFF FROM THE DEVELOPMENT SITE BY THE IMPLEMENTATION OF APPROPRIATE BMPs TO MINIMIZE ADVERSE DOWNSTREAM IMPACTS.

7. STABILIZATION OF TEMPORARY CONVEYANCE CHANNELS AND OUTLETS. ALL TEMPORARY ON-SITE CONVEYANCE CHANNELS SHALL BE DESIGNED, CONSTRUCTED AND STABILIZED TO PREVENT EROSION FROM THE EXPECTED FLOW VELOCITY FROM A 2-YEAR FREQUENCY, 24-HOUR DURATION STORM FOR THE POST-DEVELOPMENT CONDITION. STABILIZATION ADEQUATE TO PREVENT EROSION OF OUTLETS, ADJACENT STREAMBANKS, SLOPES AND DOWNSTREAM REACHES SHALL BE PROVIDED AT THE OUTLETS OF ALL CONVEYANCE SYSTEMS.

8. STORM DRAIN INLET PROTECTION. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT. AFTER PROPER WRITTEN APPLICATION, THE REQUIREMENT FOR INLET PROTECTION MAY BE WAIVED BY THE DIRECTOR ON A SITE-SPECIFIC BASIS WHEN THE CONVEYANCE SYSTEM DOWNSTREAM OF THE INLET DISCHARGES TO AN APPROPRIATE SEDIMENT CONTAINMENT BMP AND THE CONVEYANCE SYSTEM CAN BE ADEQUATELY CLEANED FOLLOWING SITE STABILIZATION.

9. UNDERGROUND UTILITY CONSTRUCTION. THE CONSTRUCTION OF UNDERGROUND UTILITY LINES SHALL BE LIMITED, WHERE FEASIBLE, TO NO MORE THAN 500 FEET OF OPEN TRENCH AT ANY ONE TIME. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH. DEWATERING DEVICES SHALL DISCHARGE TO AN APPROPRIATE SEDIMENT TRAP OR POND, PRECEDED BY ADEQUATE ENERGY DISSIPATION, PRIOR TO RUNOFF LEAVING THE SITE.

10. CONSTRUCTED ACCESS ROUTES. WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) ONTO THE PAVED ROAD BY USE OF APPROPRIATE BMPs SUCH AS A STABILIZED CONSTRUCTION ENTRANCE. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY, AS A MINIMUM, AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

11. REMOVAL OF TEMPORARY BMPs. ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPs SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL OF TEMPORARY BMPs SHALL BE PERMANENTLY STABILIZED. THE REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL BMPs MAY NOT BE REQUIRED FOR THOSE PROJECTS, SUCH AS SINGLE FAMILY PLATS, THAT WILL BE FOLLOWED BY ADDITIONAL CONSTRUCTION UNDER A DIFFERENT PERMIT. IN THESE CIRCUMSTANCES, THE NEED FOR REMOVING OR RETAINING THE MEASURES WILL BE EVALUATED ON A SITE-SPECIFIC BASIS.

12. DEWATERING CONSTRUCTION SITES. DEWATERING DEVICES SHALL DISCHARGE INTO AN APPROPRIATE SEDIMENT TRAP OR POND, DESIGNED TO ACCEPT SUCH A DISCHARGE, PRECEDED BY ADEQUATE ENERGY DISSIPATION, PRIOR TO RUNOFF LEAVING THE SITE.

13. CONTROL OF POLLUTANTS OTHER THAN SEDIMENT ON CONSTRUCTION SITES. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM OR SURFACE WATERS. POLLUTANTS OF CONCERN INCLUDE, BUT ARE NOT LIMITED TO, FUELS, LUBRICANTS, SOLVENTS, CONCRETE BI-PRODUCTS AND CONSTRUCTION MATERIALS.

14. MAINTENANCE. ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL MAINTENANCE AND REPAIR SHALL BE CONDUCTED IN ACCORDANCE WITH THE MANUAL. THE APPLICANT SHALL BE RESPONSIBLE FOR ASSURING THAT ANY SUCH FACILITIES DAMAGED DURING FLOODS, STORMS OR OTHER ADVERSE WEATHER CONDITIONS ARE IMMEDIATELY RETURNED TO NORMAL OPERATING CONDITION.

15. FINANCIAL LIABILITY. A PERFORMANCE COVENANT OR PERFORMANCE SURETY, SHALL BE REQUIRED FOR ALL PROJECTS TO ENSURE COMPLIANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, AS OUTLINED IN SECTION 4.0 OF THE MASON COUNTY STORMWATER ORDINANCE.

GENERAL EROSION AND SEDIMENTATION CONTROL NOTES

THE FOLLOWING EROSION AND SEDIMENTATION CONTROL NOTES APPLY TO ALL CONSTRUCTION SITE ACTIVITIES AT ALL TIMES, UNLESS OTHERWISE SPECIFIED ON THESE PLANS:

- APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL PLAN DOES NOT CONSTITUTE AN ACCEPTANCE OF THE PERMANENT ROAD OR DRAINAGE DESIGN.
- THE OWNER AND HIS/HER CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES FOR PREVENTING SILT-LADEN RUNOFF FROM DISCHARGING FROM THE PROJECT SITE. FAILURE BY THE OWNER AND/OR CONTRACTOR CAN RESULT IN A FINE. THE DESIGNATED TEMPORARY CONTACT PERSON NOTED ON THIS PLAN MUST BE AVAILABLE FOR CONTACT BY TELEPHONE ON A 24 HOUR BASIS THROUGHOUT CONSTRUCTION AND UNTIL THE PROJECT HAS BEEN COMPLETED AND ACCEPTED BY THE COUNTY.
- THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE FACILITIES IS THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR FROM THE BEGINNING OF CONSTRUCTION UNTIL ALL CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE COUNTY AND THE SITE IS STABILIZED.
- PRIOR TO BEGINNING ANY WORK ON THE PROJECT SITE, A PRECONSTRUCTION CONFERENCE MUST BE HELD, AND SHALL BE ATTENDED BY THE GENERAL CONTRACTOR, THE PROJECT ENGINEER, REPRESENTATIVES FROM AFFECTED UTILITIES, AND A REPRESENTATIVE OF MASON COUNTY.
- THE EROSION AND SEDIMENTATION CONTROL FACILITIES SHOWN ON THIS PLAN ARE TO BE CONSIDERED ADEQUATE BASIC REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION, DEVIATIONS FROM THIS PLAN MAY BE NECESSARY IN ORDER TO MAINTAIN WATER QUALITY. MINOR DEPARTURES FROM THIS PLAN ARE PERMITTED SUBJECT TO THE APPROVAL OF THE COUNTY INSPECTOR. HOWEVER, EXCEPT FOR EMERGENCY SITUATIONS, ALL OTHER DEVIATIONS FROM THIS PLAN MUST BE DESIGNED BY THE PROJECT ENGINEER AND APPROVED BY MASON COUNTY PRIOR TO INSTALLATION.
- ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY THE OWNER AND/OR CONTRACTOR ON A FREQUENT BASIS AND IMMEDIATELY AFTER EACH RAINFALL, AND MAINTAINED AS NECESSARY TO INSURE THEIR CONTINUED FUNCTIONING. ALL SEDIMENT MUST BE REMOVED FROM SILT FENCES, STRAW BALES, SEDIMENT PONDS, ETC. PRIOR TO THE SEDIMENT REACHING 8-INCHES IN DEPTH.
- AT NO TIME SHALL CONCRETE, CONCRETE BY-PRODUCTS, VEHICLE FLUIDS, PAINT, CHEMICALS, OR OTHER POLLUTING MATTER BE PERMITTED TO DISCHARGE TO THE TEMPORARY OR PERMANENT DRAINAGE SYSTEM, OR TO DISCHARGE FROM THE PROJECT SITE.
- PERMANENT DETENTION/RETENTION PONDS, PIPES, TANKS OR VAULTS MAY ONLY BE USED FOR SEDIMENT CONTAINMENT WHEN SPECIFICALLY INDICATED ON THESE PLANS.

EROSION AND SEDIMENTATION CONTROL MAINTENANCE REQUIREMENTS

- EROSION AND SEDIMENTATION CONTROL FACILITIES SHALL BE INSPECTED AFTER EACH STORM EVENT AND DAILY DURING PROLONGED RAINFALL.
- NECESSARY REPAIRS OR REPLACEMENT OF FACILITIES SHALL BE ACCOMPLISHED PROMPTLY.
- SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT OR WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE HALF THE MAXIMUM POTENTIAL DEPTH.
- SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE ESC FACILITIES ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

GRADING NOTES

- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN THE EVENT OR DISCOVERY OF POOR SOILS, GROUNDWATER OR DISCREPANCIES IN THE EXISTING CONDITIONS AS NOTED ON THE PLANS.
- MAXIMUM SLOPE STEEPNESS SHALL BE 2:1 HORIZONTAL:VERTICAL FOR CUT AND FILL SLOPES.
- UNLESS OTHERWISE SPECIFIED, ALL EMBANKMENTS IN THE PLAN SET SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 2-03.3(14)B OF THE WSDOT STANDARD SPECIFICATIONS. EMBANKMENT COMPACTIONS SHALL CONFORM TO SECTION 2-03.3(14)C, METHOD B OF SAID STANDARD SPECIFICATIONS.
- EMBANKMENTS DESIGNED TO IMPOUND WATER SHALL BE COMPACTED TO 95% MAXIMUM DENSITY PER SECTION 2-03.3(14)C, METHOD C OF WSDOT STANDARD SPECIFICATIONS.
- ALL AREAS RECEIVING FILL MATERIAL SHALL BE PREPARED BY REMOVING VEGETATION, NONCOMPLYING FILL, TOPSOIL AND OTHER UNSUITABLE MATERIAL, BY SCARIFYING THE SURFACE TO PROVIDE A BOND WITH THE NEW FILL, AND WHERE SLOPES ARE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL AND THE HEIGHT IS GREATER THAN 5 FT., BY BENCHING INTO SOUND COMPETENT MATERIAL AS DETERMINED BY A SOILS ENGINEER.

GENERAL NOTES

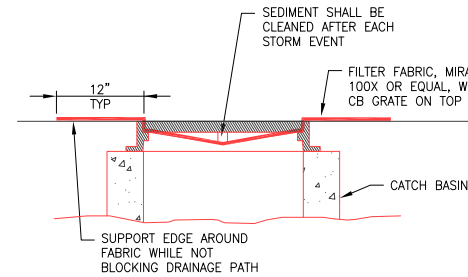
- ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE MOST CURRENT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION PREPARED BY WSDOT AND APWA AS ADOPTED BY THE MASON COUNTY DEPARTMENT OF PUBLIC WORKS (MCDPW).
- ANY REVISIONS TO THE ACCEPTED CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE MCDPW PRIOR TO IMPLEMENTATION IN THE FIELD.
- THE CONTRACTOR SHALL MAINTAIN A SET OF THE ACCEPTED CONSTRUCTION DRAWINGS ON-SITE AT ALL TIMES WHILE CONSTRUCTION IS IN PROGRESS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS FROM THE MCDPW PRIOR TO COMMENCING ANY WORK WITHIN COUNTY RIGHT-OF-WAY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE TRAFFIC CONTROL AT ALL TIMES DURING CONSTRUCTION ALONGSIDE OR WITHIN ALL PUBLIC ROADWAYS. TRAFFIC FLOW ON EXISTING PUBLIC ROADWAYS SHALL BE MAINTAINED AT ALL TIMES, UNLESS PERMISSION IS OBTAINED FROM THE MCDPW FOR ROAD CLOSURE AND/OR DETOURS.
- THE LOCATIONS OF EXISTING UTILITIES ON THIS PLAN IS APPROXIMATE ONLY. THE CONTRACTOR SHALL CONTRACT THE "UNDERGROUND LOCATE" CENTER AT PH: 1-800-424-5555, AND NON-SUBSCRIBING INDIVIDUAL UTILITY COMPANIES 48 HOURS IN ADVANCE OF THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL PROVIDE FOR PROTECTION OF EXISTING UTILITIES FROM DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS.
- ROCKERIES OR OTHER RETAINING FACILITIES EXCEEDING 4 FT. IN HEIGHT REQUIRE A SEPARATE PERMIT FROM THE MASON COUNTY BUILDING DEPARTMENT.

DRAINAGE NOTES

- THE CONTRACTOR SHALL ENSURE THAT THE DRAINAGE IS INSTALLED AND OPERATIONAL PRIOR TO COMMENCEMENT OF PAVING WORK.
- ALL STEEL PIPE AND PARTS SHALL BE GALVANIZED. ALL SUBMERGED STEEL PIPES AND PARTS SHALL BE GALVANIZED AND HAVE ASPHALT TREATMENT #1 OR BETTER.
- DRAINAGE STUBOUTS ON INDIVIDUAL LOTS SHALL BE LOCATED WITH A FIVE FOOT HIGH 2" X 4" STAKE MARKED "STORM". THE STUBOUT SHALL EXTEND ABOVE SURFACE LEVEL AND BE SECURED TO THE STAKE.

MAINTENANCE STANDARDS

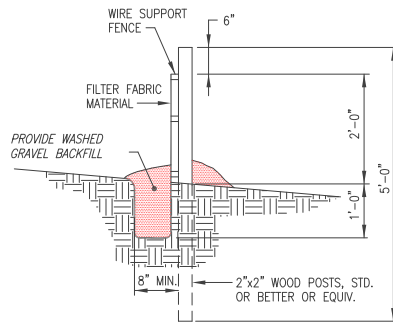
- QUARRY SPALLS (OR HOG FUEL) SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.
- IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH. IF WASHING IS USED, IT SHALL BE DONE ON AN AREA COVERED WITH CRUSHED ROCK, AND WASH WATER SHALL DRAIN TO A SEDIMENT TRAP.
- ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED IMMEDIATELY BY SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON-SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS, THE CONSTRUCTION OF A SMALL SUMP SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP.
- ANY ROCK SPALLS THAT ARE LOOSENED FROM THE PAD AND END UP ON THE ROADWAY SHALL BE REMOVED. IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTRANCE(S), FENCING SHALL BE INSTALLED TO CONTROL TRAFFIC.



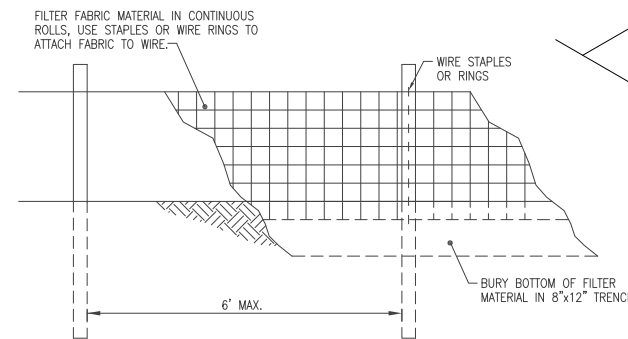
CATCH BASIN PROTECTION

DETAIL 1

SCALE: NTS



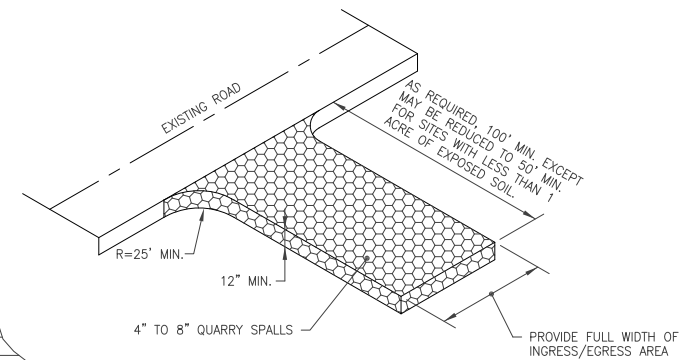
SECTION



SILT FENCE

DETAIL 3

NTS



STABILIZED CONSTRUCTION ENTRANCE

DETAIL 2

NTS



Approved By:

Drawn By: PHM Date: 5-11-23
 Designed By: PHM Date: 5-11-23
 Checked By: PHM Date: 5-11-23
 Approved By:



Engineering Services Associates

Located on Beautiful Hood Canal
 N.E. 210 Cherokee Beach Road
 Belfair, Wa. 98528 (360) 275-7384

Scale:

Horiz. AS SHOWN

Vert.

Job No.

ANDERSON & SONS, INC

LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY DESIGN
 EROSION CONTROL DETAILS

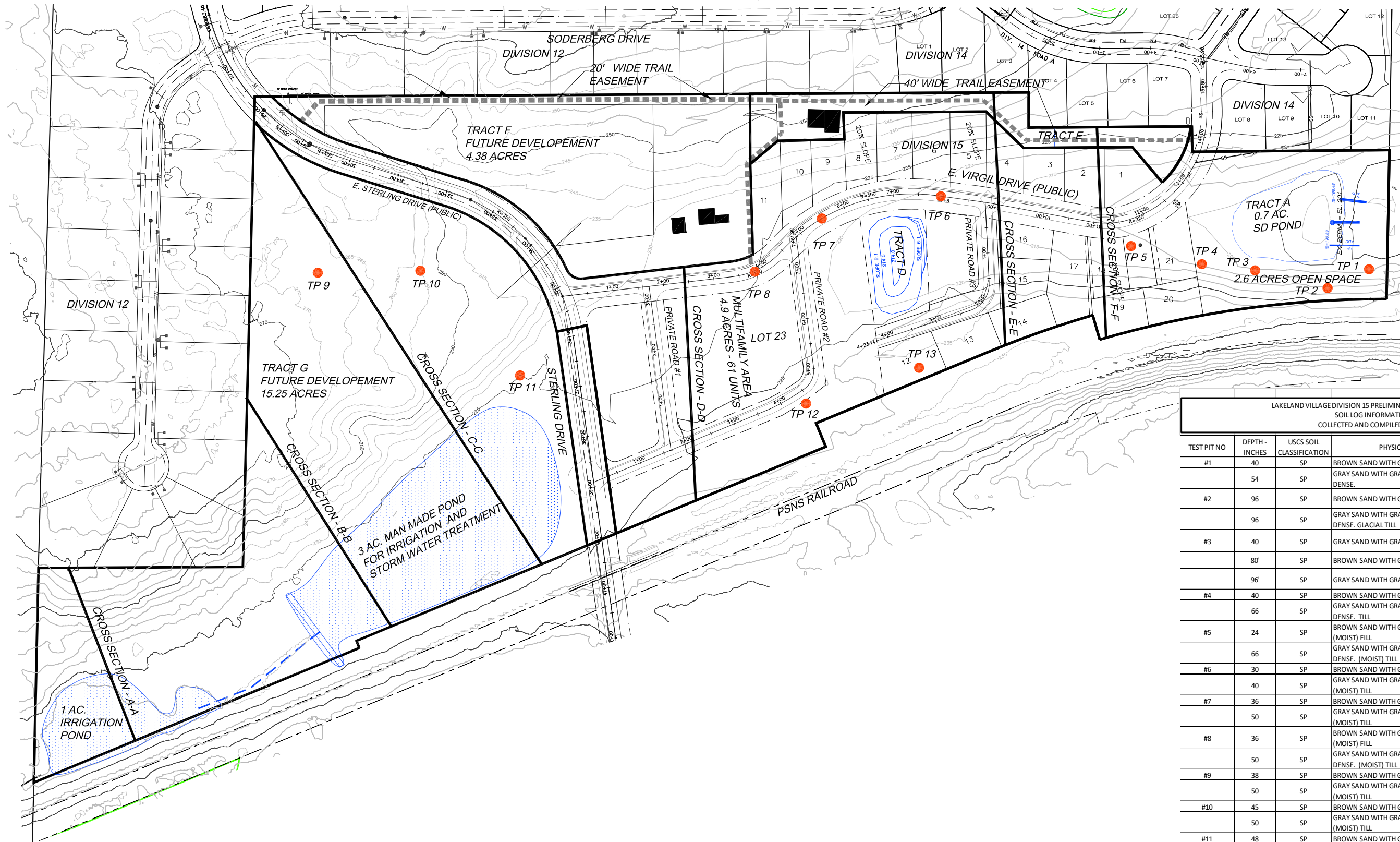
Sheet 9

of 9

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS
EXPIRES 6-4-2024					

PRELIMINARY PLAT OF LAKELAND VILLAGE DIVISION 15
 IN A PORTION OF THE SOUTHEAST QUARTER OF SECTION 18, TOWNSHIP 22 NORTH, RANGE 1 WEST, W.M.
 MASON COUNTY, WASHINGTON

APPENDIX C



LAKELAND VILLAGE DIVISION 15 PRELIMINARY PLAT SOILS REPORT SOIL LOG INFORMATION COLLECTED AND COMPILED 5-26-23				
TEST PIT NO	DEPTH - INCHES	USCS SOIL CLASSIFICATION	PHYSICAL DESCRIPTION	DEPTH TO GROUND WATER
#1	40	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	NONE ENCOUNTERED
	54	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - MEDIUM DENSE.	
#2	96	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT - FILL	NONE ENCOUNTERED
	96	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - MEDIUM DENSE. GLACIAL TILL	
#3	40	SP	GRAY SAND WITH GRAVEL - MEDIUM DENSE - FILL	NONE ENCOUNTERED
	80'	SP	BROWN SAND WITH GRAVEL - MEDIUM DENSE - FILL	
	96'	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - TILL	
#4	40	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT - FILL	NONE ENCOUNTERED
	66	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - MEDIUM DENSE. TILL	
#5	24	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT - (MOIST) FILL	NONE ENCOUNTERED
	66	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - MEDIUM DENSE. (MOIST) TILL	
#6	30	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	36"
	40	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	
#7	36	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT - GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	48"
	50	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	
#8	36	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT - (MOIST) FILL	45"
	50	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - MEDIUM DENSE. (MOIST) TILL	
#9	38	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	NONE ENCOUNTERED
	50	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	
#10	45	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	NONE ENCOUNTERED
	50	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	
#11	48	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	60"
	65	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	
#12	36	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	NONE ENCOUNTERED
	48	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	
#13	48	SP	BROWN SAND WITH GRAVEL - TRACE OF SILT	NONE ENCOUNTERED
	60	SP	GRAY SAND WITH GRAVEL - TRACE OF SILT - DENSE. (MOIST) TILL	

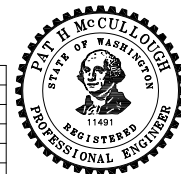
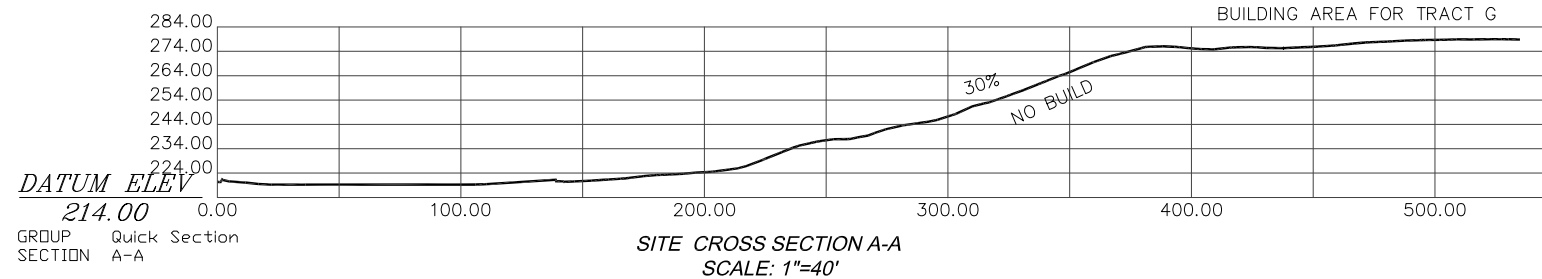
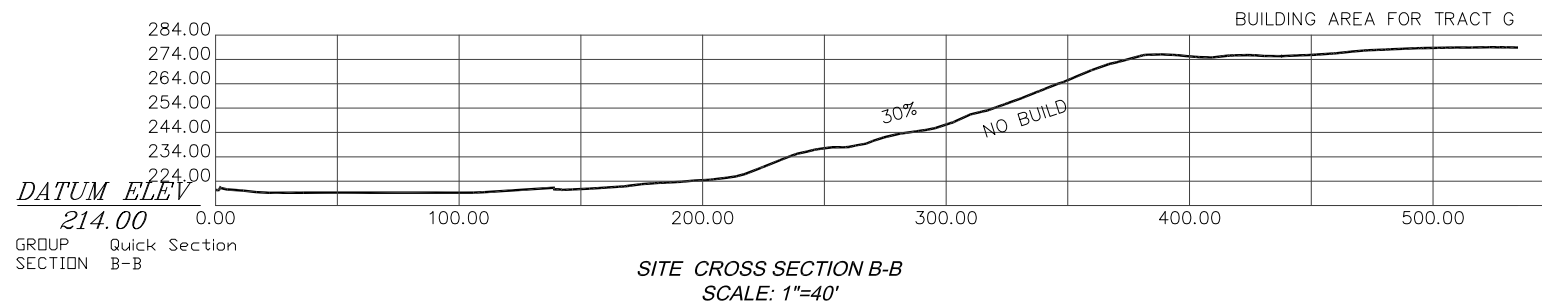
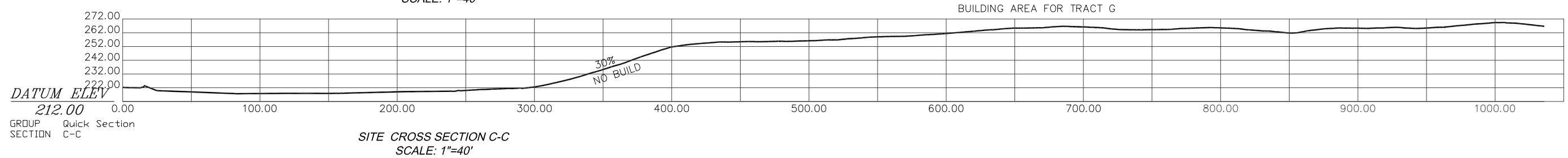
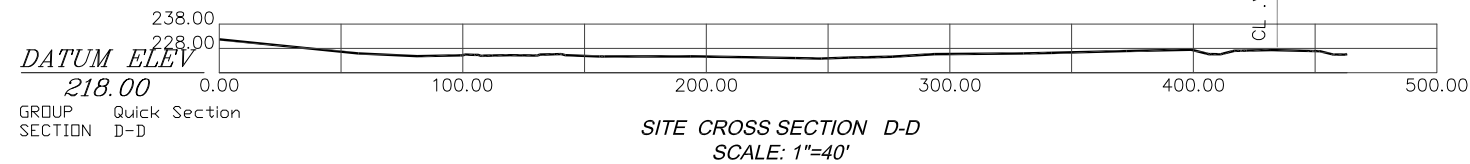
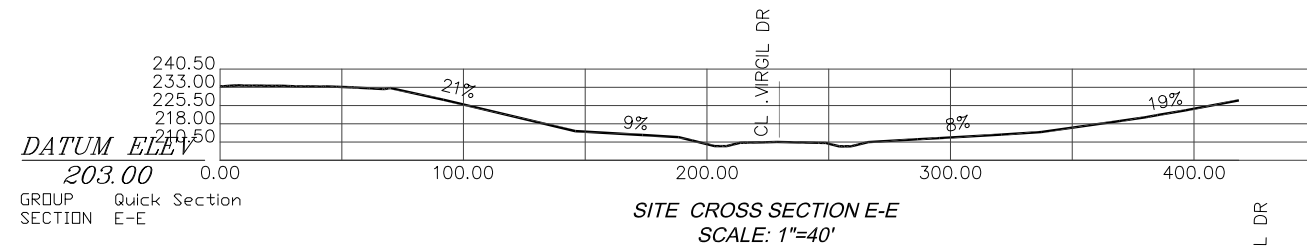
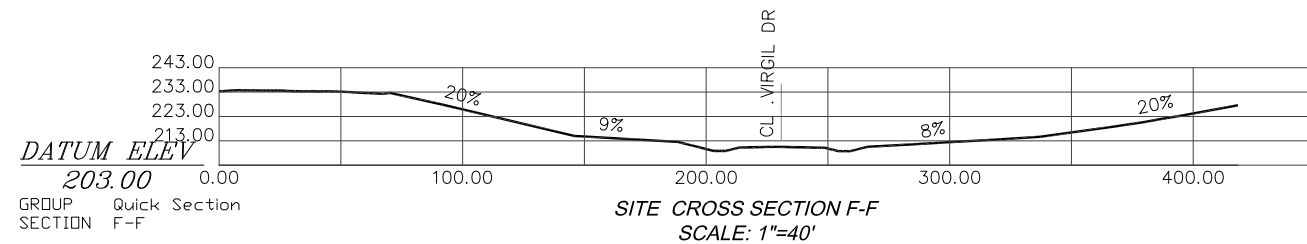


Approved By: _____
 Drawn By: PHM Date: 5-11-23
 Designed By: PHM Date: 5-11-23
 Checked By: PHM Date: 5-11-23
 Approved By: _____

ESA Engineering Services Associates
 Located on Beautiful Hood Canal
 N.E. 210 Cherokee Beach Road
 Belfair, Wa. 98528 (360) 275-7384

Scale: _____
 Horiz. _____
 Vert. AS SHOWN
 Job No. _____
 ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY PLAT
 SOIL LOGS AND SITE X SECTIONS

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS



Approved By:

Drawn By: PHM Date: 5-11-23
 Designed By: PHM Date: 5-11-23
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 Approved By:



Engineering Services Associates
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Scale:
 Horiz. _____
 Vert. AS SHOWN
 Job No. _____

ANDERSON & SONS, INC
 LAKELAND VILLAGE
 DIVISION 15 PRELIMINARY PLAT
 SITE CROSS SECTIONS

Sheet 2 of 2

No.	Date	By	Ckd.	Appr.	Revision
1	7-16-07	GB			COUNTY COMMENTS

APPENDIX D

SEPA Environmental Checklist

- Single Family DNS: \$600.00
- Other DNS: 0 to 9.99 acres: \$730
 10 to 20 acres: \$880
 Over 20 acres: \$1100
- DS / EIS: \$5000 + \$90 per hour

Mason County Permit Center Use:

SEP _____ - _____

Parcel #: _____

Date Rcvd: _____

Purpose of checklist:

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

Instructions for applicants:

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

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

Instructions for Lead Agencies:

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

A. BACKGROUND

1. Name of proposed project, if applicable:

LakeLand Village Division 15 Preliminary Plat.

2. Name of applicant:

Anderson & Sons, Inc.

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

Rick Anderson, P.O. Box 108

Allyn, WA. 98524, Phone 360-275-2474, Cell 360-801-0351

4. Date checklist prepared:

12-26-22 and updated 5-29-2023 to include the revised Division 15 Preliminary Plat, the revised critical areas report, and the revised soils report.

5. Agency requesting checklist:

Mason County DCD

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

January 1, 2024.

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

Yes.

LakeLand Village is an ongoing development that began on 5/2/66 with the development of 150 lots. The property is in the Allyn UGA and zoned for the development of approximately 740 acres. 119 acres remains undeveloped: 38 acres on the east side of the railroad tracks and 81 acres on the west side of the railroad tracks. The land use density for the remaining acreage has been set by Mason County at 5 units per acre.

Mason County strongly encourages developing land at the maximum allowable density if it is serviced by public water and sewer. If the remainder of LakeLand Village develops at five units per acre there will be an additional 595 dwelling units added to the existing development. This development proposal will expand the number of dwelling units in LakeLand village from 942 dwelling units to 1,024 dwelling units. The total number of residential dwelling units in LakeLand at build out will be 1,537 dwelling units.

The LakeLand Village Preliminary Plat includes 38.12 acres. At the request of Mason County DCD, this preliminary plat includes the remainder of the undeveloped land located east of the US Navy railroad. The preliminary plat includes 23 lots and seven tracts - A through G. See Appendix A and Figures 1, 2, and 3. Tracts A and D in the developed area of the plat will be for open space and for storm water detention and treatment ponds. Tract B is the location of the existing Mason County Department of Public Works wastewater pump station. Tract C is for the private road to lots 18 through 21. Tract E is for open space and will be used for a walking trail. Tracts F and G are being set aside for future development. Note that separate SEPA Checklists will be prepared for the development of Tracts F and G when development of those tracts takes place. Lots 1 through 21 will be single family residential lots. Lots 22 and 23 will be developed multifamily for up to sixty-one dwelling units (11.5 units per acre).

Anderson and Sons has completed comprehensive long range planning for utilities, storm drainage, roads, trails, and other services for the development of the entire property in anticipation of the buildout of the development.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. The applicant has submitted electronic copies of

the following documents.

- Appendix A: Proposed Division 15 site development drawings.
- Appendix B: The Division 15 Preliminary Plat drawing and legal description.
- Appendix C: The Final Environmental Impact Statement (EIS) for Division 12. The EIS was published in July 1992. The EIS for Division 12 included the property that is currently proposed for development in Division 15.
- Appendix D: Storm Water Management Plan for LakeLand Village. Published 1-17-07
- Appendix E: Critical Areas Determination: Published May 2, 2023
- Appendix F: Division 15 Preliminary Plat - Soils Report. Published 5-26-23
- Appendix G: LakeLand Village Division 15 Traffic Report
- Appendix H: LakeLand Village Sewer Plan
- Appendix I: Proposed Protective Covenants for Division 15.

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

No - there are no other permit applications pending.

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

Mason County Preliminary Plat Approval.

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

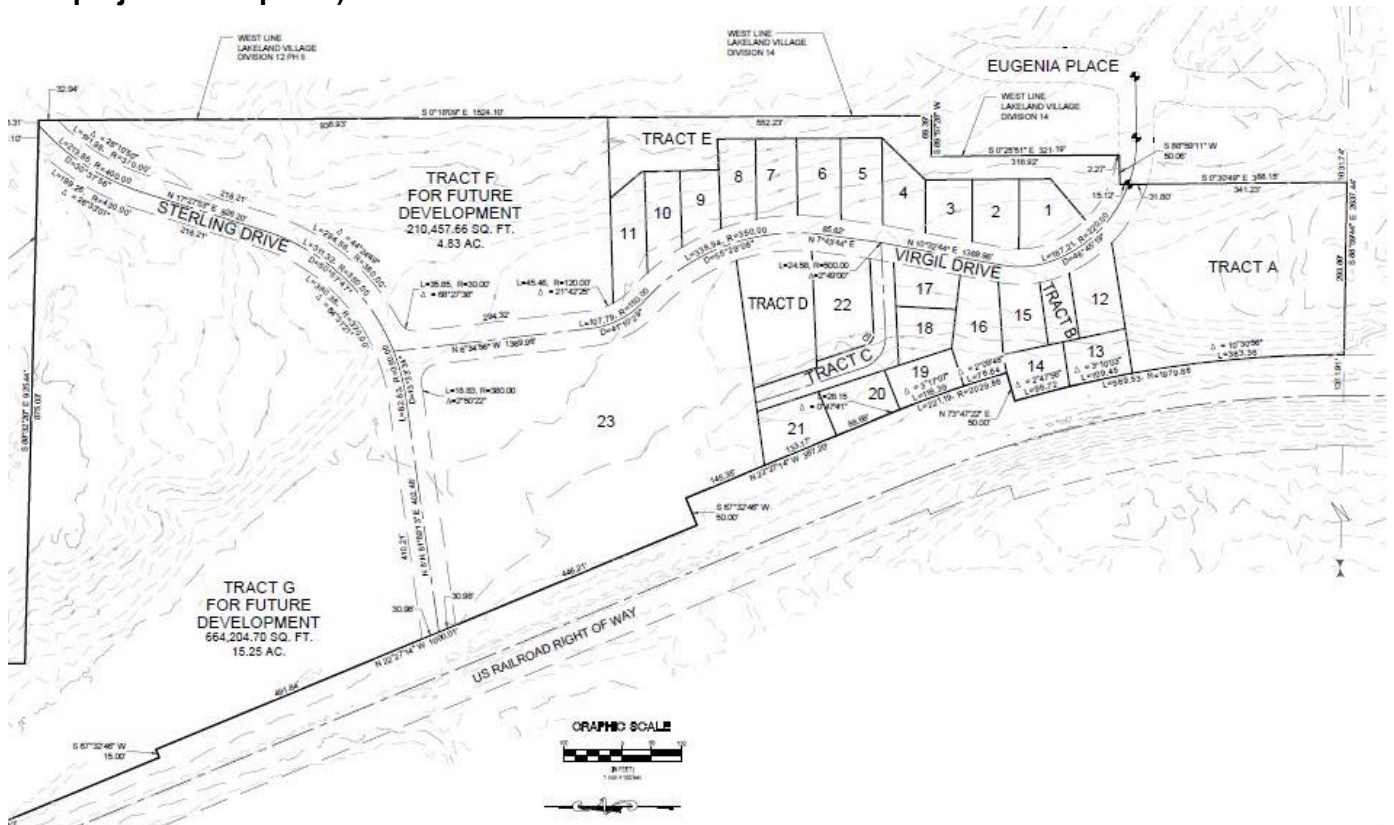


FIGURE 1: LAKELAND VILLAGE DIVISION 15 PROPOSED PRELIMINARY PLAT - SHOWING ALL TRACTS

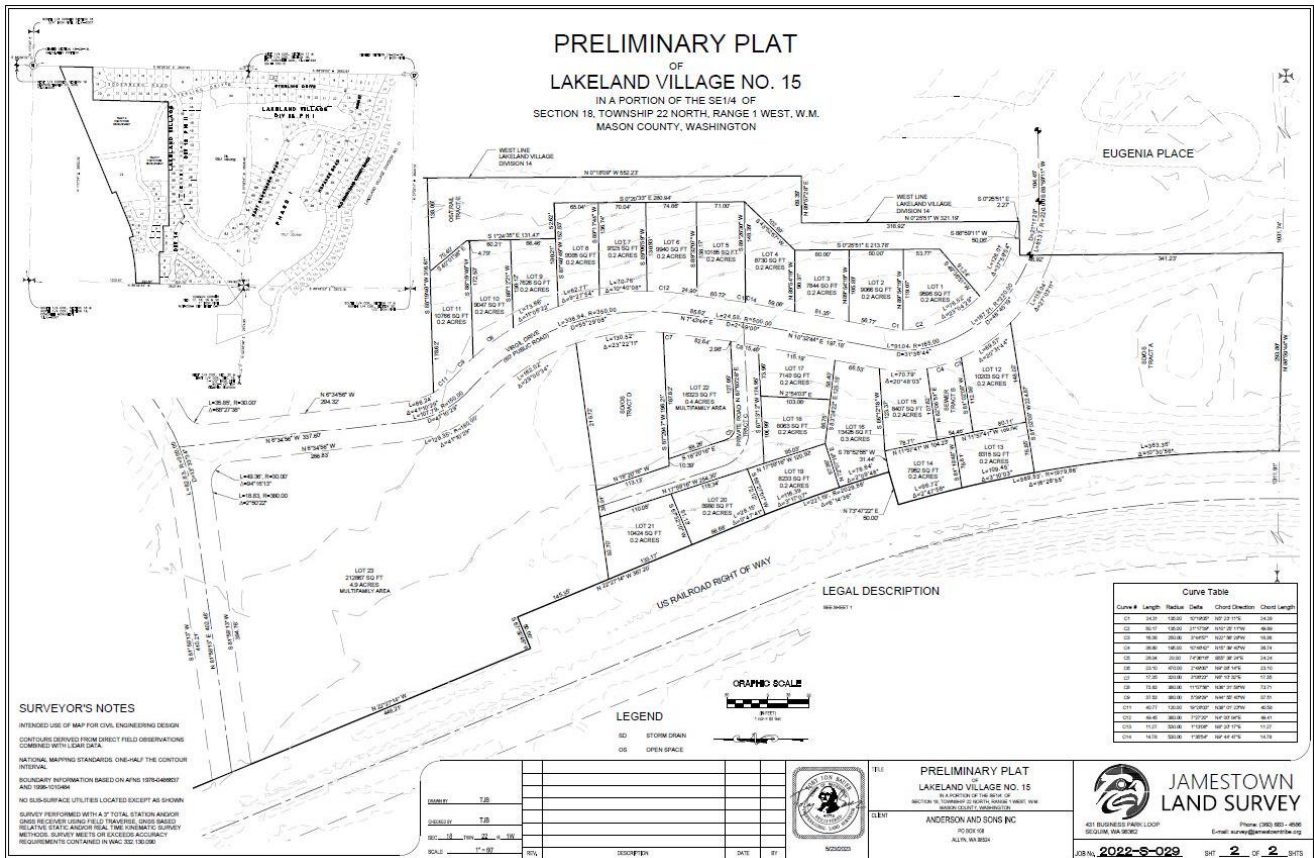
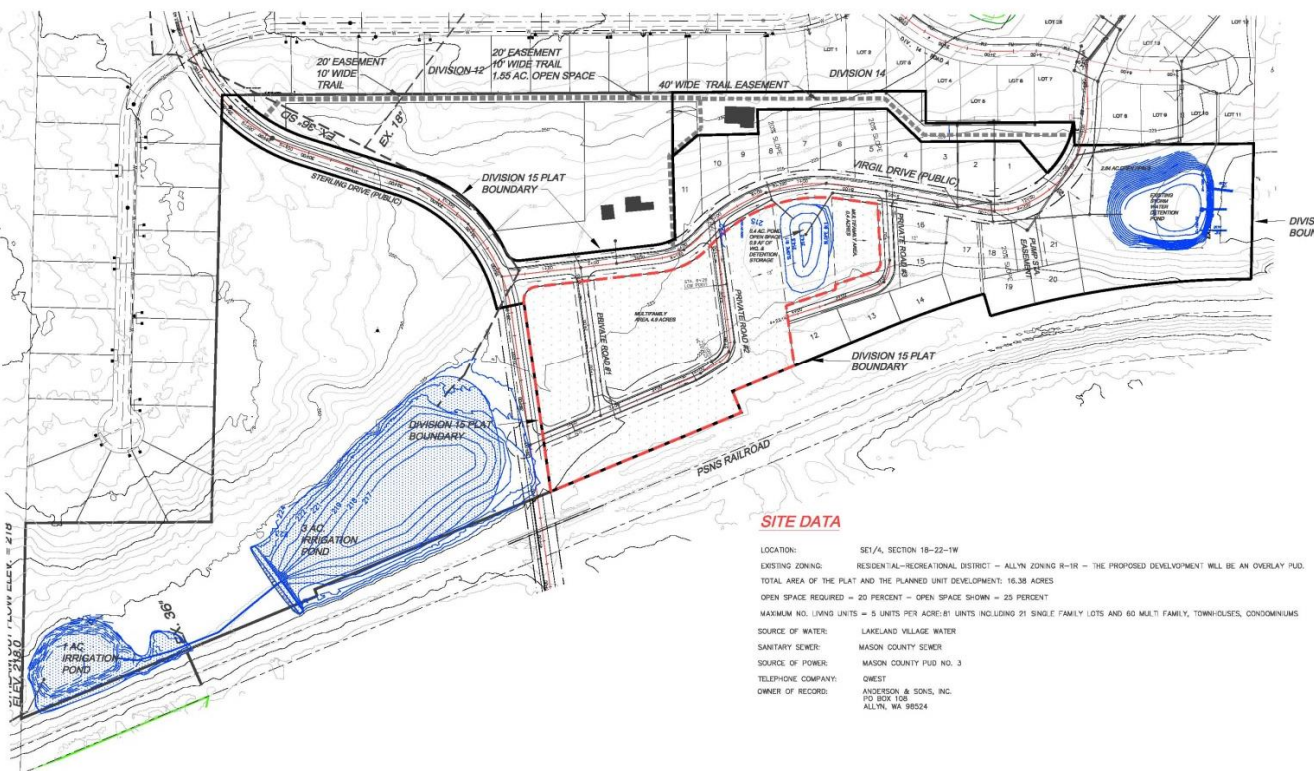


FIGURE 2: LAKELAND VILLAGE DIVISION 15 PROPOSED PRELIMINARY SHOWING THE DEVELOPED PART OF PLAT ONLY



located in the Allyn, WA UGA. The property is zoned for R-1R residential development that allows five units per acre. Five units per acres on 16.34 acres will allow 82 dwelling units.

The proposed plat has two public roads located in 60 foot wide Mason County right of ways. The East Virgil Drive extension is 1,400 feet and East Sterling Drive extension is 810 feet. The plat will be served by Mason County Sewer and a public water supply. The developer plans to provide the easements for a walking trail on the east side of the plat (Tract E). A 0.4 acre pond located in the Tract D open space will be constructed to detain and treat storm water runoff from the development.

5.3 acres of the development has been set aside for multifamily housing. The property set aside for multifamily housing is level rolling land. The remaining 11.04 acres of the development will be residential lots and public and private roads. Nineteen of the lots were designed to provide a building area with 2% to 8% grades that backed by hillside slopes up to 20%. Lots 7 and 8 provide building areas with 13% grade that are backed by upper hillside grades of up to 20%. Construction on or next to the steep hill side slopes has been discussed in the soils report in Appendix F.

Figure 3 illustrates the private roads and utilities located in the multifamily area of the plat. The design of the interior of the multifamily area, including the location of the roads and utilities that service the multifamily units, will vary depending on the layout of the buildings.

The site development team has provided eight documents in the appendices to accompany this check list. Those documents represent most of the study and analysis that went into the design of the Division 15 Preliminary Plat developed area. In reviewing those documents the reader should start with the LakeLand Village Division 12 EIS in Appendix C. Critical to the design and layout of Division 15 developed area is maintaining the water quality of Anderson Lake and the rural character of the LakeLand Village Community.

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

Parcel #(s): 12218-40-00000

Address: 400 E Sterling Dr, Allyn, WA. It is undeveloped land.

Legal Description: See the legal description on the preliminary plat map submitted with this SEPA Checklist in Appendix B.

Twp/Range/Section and/or GPS location: The Project is located in a portion of the SE1/4 of Section 18, Township 22 North, Range 1 West, W.M. - See Figure 1

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. General description of the site.

The majority of the site is flat to rolling. Tract G on the north end of the preliminary plat has slopes up to 30%. The slopes on the east side of Division 15 reach 20%. The slopes on the west side of Division 15 - near the RR grade - reach 20%. All other areas are nearly flat. The soils report for the project addresses slope stability. No issues were found. See soils reports in

Appendix F and the LakeLand Village EIS in Appendix C. See the topography on the preliminary plat drawings.

Highlight one: Flat, **rolling**, hilly, steep slopes, mountainous, other:

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

30%

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

The designation for most of the soils is SP or poorly graded sand and gravel. See the soils report in Appendix F. There are no unstable soils on the site. The soils are excellent for residential construction.

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

No

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

The excavation and fill quantities for the entire project will be approximately 16,386 cubic yards. The disturbed acreage will be approximately 16 acres. All of excavation or fill material will either be used for onsite filling and grading or stored on the owner's property for future use. The applicant has property on the west side of the railroad tracks that has historically been used to store soil material until it is needed for construction. No soils will be taken off the applicant's property.

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

A Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project that will specify the required measures to prevent soil erosion. The project excavation will occur from April 15th to October 15th when heavy rain fall, wet soils, and erosion will be the least likely. A NPDES permit will required (WSDOE) before construction can start.

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

Approximately 35% of the site will be covered with roads, building roofs, parking areas, etc.

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

Soil erosion and control is discussed in Soils Report for the project in Appendix F. Best Management practices recommended by the WSDOE and further prescribed for the project in the Nation Pollution Effluent Discharge Elimination System (NPDES) permit, will be followed during construction.

Anderson Lake is managed by the LakeLand Village Home Owner Association. Peter Nash, the lake manager, has reported that the measures put in place in the LakeLand Village Storm Water Management Plan have been very successful in the preserving the high water quality of Anderson Lake over the last 30 years.

2. Air

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

None . other than the exhaust from the construction equipment and normal residential sources after construction.

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

No

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

None

3. Water

- a. **Surface Water:**

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

95% of storm drainage from the Division 15 area to be developed (16.22 acres) flows into the Farm Drainage that flows into Anderson Lake. Approximately 5% of Division 15 storm drainage flows into Devereaux Lake drainage. Anderson Lake flows into Anderson Creek that flows into Sherwood Creek that flows into Case Inlet (Puget Sound). An unnamed drainage flows into Devereaux Lake that flows into Devereaux Creek that flows in to Hood Canal.

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

No

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

None

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

No

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

No

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

No.

b. Ground Water:

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

No.

Domestic Water will be supplied to the development by the LakeLand Water Company. The LakeLand Water Company has six deep water wells from which they can withdraw 1,345 gallons per minute (GPM) of potable water to use for domestic water supply or for irrigation. The LakeLand Water Company has sufficient water rights to service 1,537 residential homes. No new wells are planned to supply water to Division 15.

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

LakeLand Village is hooked up to the Mason County Sewer System. No onsite septic systems are planned for Division 15.

c. Water runoff (including stormwater):

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

See also section 3a in this environment checklist.

Division 15 includes a 0.4 acre (area) water quality pond that is being constructed to detain and treat the storm water runoff from the more densely developed portion of Division 15. The proposed pond is referred to as FARM POND #1 in TABLE 5 of the LakeLand Village Storm Water Management Plan Report in Appendix D. The pond reduces the 2 year recurrence flow event from 0.62 cubic feet per second to 0.47 cubic feet per second. The pond reduces the 100 year recurrence flow even from 6.12 cubic feet per second to 1.98 cubic feet per second.

Farm Pond 3a located downstream from Farm Pond 1 is a much larger detention and water quality treatment pond. Farm Pond 3a is 0.7 acres in area and detains and treats the storm water runoff from 43 acres of the former Farm drainage that includes Division 15 of LakeLand Village. The two ponds will be detaining and cleaning the storm runoff from LakeLand Village Division 15 drainage before it reaches Anderson Lake.

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

NA

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

No.

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

See the LakeLand Village Storm Water Management Plan report in Appendix D. The recommendations included in the LLV Storm Water Management Report will be implemented.

4. Plants

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

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

VEGETATION ON THE PROJECT SITE

TREES AND SHRUBS

COMMON NAME	SCIENTIFIC NAME
Alder, Red	<i>Alnus rubra</i>
Blackberry, Evergreen	<i>Rubus laciniatus</i>
Blackberry, Himalayan	<i>Rubus discolor</i>
Blackberry, Trailing	<i>Rubus vitifolius</i>
Cascara	<i>Rhamnus purshiana</i>
Cedar, Western Red	<i>Thuja plicata</i>
Dogwood, Pacific	<i>Cornus nuttalli</i>
Douglas Fir	<i>Pseudotsuga menziesii</i>
Hardhack	<i>Spiraea douglasii</i>
Hazelnut	<i>Corylus cornuta</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Holly	<i>Ilex spp.</i>
Huckleberry, Evergreen	<i>Vaccinium ovatum</i>
Huckleberry, Red	<i>Vaccinium parvifolium</i>
Kinnikinnick	<i>Arctostaphylos Uva-ursi</i>
Madrone, Pacific	<i>Arbutus menziesii</i>
Manzanita, Hairy	<i>Arctostaphylos columbiana</i>
Maple, Big Leaf	<i>Acer macrophyllum</i>
Ocean Spray	<i>Holodiscus discolor</i>
Oregon Grape	<i>Mahonia nervosa</i>
Pine, Lodgepole	<i>Pinus contorta latifolia</i>
Pine, Western White	<i>Pinus monticola</i>
Rose	<i>Rosa spp.</i>
Salal	<i>Gaultheria shallon</i>
Salmonberry	<i>Rubus spectabilis</i>
Scotch Broom	<i>Cytisus scoparius</i>
Willow	<i>Salix spp.</i>

VEGETATION ON THE PROJECT SITE

HERBACEOUS

COMMON NAME	SCIENTIFIC NAME
Butterweed, Tansy	<i>Senecio jacobaea</i>
Cinquefoil	<i>Potentilla spp.</i>
Clover, Red	<i>Trifolium pratense</i>
Dandelion, False	<i>Hypochoeris radicata</i>
Everlasting, Pearly	<i>Anaphalis margaritacea</i>
Fern, Bracken	<i>Pteridium aquilinum</i>
Fern Deer	<i>Struthiopteris spicant</i>
Fern, Sword	<i>Polystichum munitum</i>
Fireweed	<i>Epilobium angustifolium</i>
Grass	<i>Graminea spp.</i>
Klamath Weed	<i>Hypericum perforatum</i>
Lettuce, Wall	<i>Lactuca muralis</i>
Lily of the Valley, False	<i>Maianthemum dilatatum</i>
Plantain, Broadleaf	<i>Plantago major</i>
Plantain, English	<i>Plantago lanceolata</i>
Rush, Soft	<i>Juncus effusus</i>
Rush, Spike	<i>Eleocharis spp.</i>
Sedge	<i>Carex spp.</i>
Self-Heal	<i>Prunella vulgaris</i>
Strawberry, Virginia	<i>Fragaria virginiana</i>
Thistle, Bull	<i>Cirsium vulgare</i>

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

The area will be graded to accommodate 21 residential lots and 61 multifamily homes. The grass, trees, and shrubs will remain on most of the steeper slopes on the east and west side of the valley.

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

None

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

The homes and properties will be extensively landscape in the development. The landscaping will be consistent with the rest of LakeLand Village.

e. List all noxious weeds and invasive species known to be on or near the site.

Himalayan Blackberry
 Scotch Broom.

5. Animals

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

birds: hawk, heron, eagle, songbirds, other: _____

mammals: deer, bear, elk, beaver, other: _____

fish: bass, salmon, trout, herring, shellfish, other: _____

MAMMALS OF THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	ON-SITE STATUS
Bear, Black	<i>Ursus americanus</i>	Probable
Bobcat	<i>Lynx rufus</i>	Possible
Chickaree	<i>Tamiasciurus douglasi</i>	Definite
Chipmunk, Townsend	<i>Eutamias townsendi</i>	Probable
Coyote	<i>Canis latrans</i>	Definite
Deer, Black-tailed	<i>Odocoileus hemionus</i>	Definite
Hare, Snowshoe	<i>Lepus americanus</i>	Probable
Marten	<i>Martes americana</i>	Possible
Mink	<i>Mustela vison</i>	Possible
Mole	<i>Scapanus spp.</i>	Definite
Mountain Beaver	<i>Aplodontia rufa</i>	Definite
Mouse, Deer	<i>Peromyscus maniculatus</i>	Probable
Mouse, Pacific Jumping	<i>Zapus trinotatus</i>	Possible
Myotis, Little Brown (Bat)	<i>Myotis lucifugus</i>	Possible
Porcupine	<i>Erethizon dorsatum</i>	Possible
Raccoon	<i>Procyon lotor</i>	Definite
Shrew, Masked	<i>Sorex cinereus</i>	Possible
Shrew, Trowbridge	<i>Sorex trowbridgei</i>	Probable
Shrew, Vagrant	<i>Sorex vagrans</i>	Possible
Skunk, Spotted	<i>Spilogale putorius</i>	Possible
Skunk, Striped	<i>Mephitis mephitis</i>	Possible
Squirrel, Northern Flying	<i>Glaucomys sabrinus</i>	Possible
Vole, Oregon	<i>Microtus oregoni</i>	Possible
Vole, Townsend	<i>Microtus townsendi</i>	Possible
Weasel, Longtail	<i>Mustela frenata</i>	Possible
Weasel, Shorttail	<i>Mustela erminea</i>	Probable

Definite - Actually observed or known to utilize the site.

Probable - Not actually observed on-site but is common on similar habitats of the area and probably occurs on-site.

Possible - Not actually observed on-site but is found on similar habitats of the area and may occur on-site.

REPTILES AND AMPHIBIANS OF THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME	ON-SITE STATUS
Frog, Red-legged	<i>Rana aurora</i>	Definite
Ensatina, Oregon	<i>Ensatina eschschotzi</i>	Possible
Lizard, Northern Alligator	<i>Gerrhonotus coeruleus</i>	Possible
Salamander, Long-toed	<i>Ambystoma macrodactylum</i>	Possible
Salamander, Northwestern	<i>Ambystoma gracile</i>	Possible
Salamander, Western Red-backed	<i>Plethodon vehiculum</i>	Possible
Snake, Northwestern Garter	<i>Thamnophis ordinoides</i>	Probable
Snake, Puget Sound Garter	<i>Thamnophis sirtalis</i>	Definite
Toad, Western	<i>Bufo boreas</i>	Possible
Treefrog, Pacific	<i>Hyla regilla</i>	Definite

Definite - Actually observed or known to utilize the site.

Probable - Not actually observed on-site but is common on similar habitats of the area and probably occurs on-site.

Possible - Not actually observed on-site but is found on similar habitats of the area and may occur on-site.

BIRDS ACTUALLY OBSERVED ON THE PROJECT SITE

COMMON NAME	SCIENTIFIC NAME
Chickadee, Chestnut Backed	<i>Parus rufescens</i>
Crow, American	<i>Corvus brachyrhynchos</i>
Flicker, Northern	<i>Colaptes auratus</i>
Grouse, Ruffed	<i>Bonasa umbellus</i>
Hawk, Red-Tailed	<i>Buteo jamaicensis</i>
Jay, Steller's	<i>Cyanocitta stelleri</i>
Junco, Dark Eyed	<i>Junco hyemalis</i>
Kinglet, Golden-crowned	<i>Regulus satrapa</i>
Nuthatch, Red Breasted	<i>Sitta canadensis</i>
Quail, California	<i>Callipepla californica</i>
Robin, American	<i>Turdus migratorius</i>
Sparrow, Song	<i>Melospiza melodia</i>
Towhee, Rufous-Sided	<i>Pipilo erythrophthalmus</i>
Wren, Winter	<i>Troglodytes troglodytes</i>

NOTE: Due to the seasonal nature of most bird species and the timing of the field investigations, a wider variety of bird species can be expected to utilize the project site than actually observed.

b. List any threatened and endangered species known to be on or near the site.

- ESA listed fish - Puget Sound Chinook, Puget Sound steelhead, Hood Canal/Eastern Strait of Juan de Fuca summer chum, and bull trout (threatened), Dolly Varden (PSAT)
- The USFWS's Information, Planning, and Consultation System Report indicates that the following species might be present in the project area
- Marbled Murrelet *Brachyramphus marmoratus* (threatened)
- Streaked Horned Lark *Eremophila alpestris strigata* (threatened)
- Yellow-billed Cuckoo *Coccyzus americanus* (threatened)
- Monarch Butterfly *Danaus plexippus* (candidate)
- Taylor's (=whulge) Checkerspot *Euphydryas editha taylori* (endangered)
- Golden Paintbrush *Castilleja levisecta* (threatened)

c. Is the site part of a migration route? If so, explain.

None

d. Proposed measures to preserve or enhance wildlife, if any:

None

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

None

6. Energy and natural resources

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

The primary energy source will be electricity from Mason County PUD 3.

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

No

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

The Mason County DCD - Building Codes have enacted energy conservation measures that must be adhered to obtain a building permit.

7. Environmental health

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

No

- 1) Describe any known or possible contamination at the site from present or past uses.

None

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None

- 4) Describe special emergency services that might be required.

None

- 5) Proposed measures to reduce or control environmental health hazards, if any:

None

b. Noise

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

None.

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

There will be noise projected to the residential community located to the east while the project is being constructed. Work hours will be limited to 6 days a week from 8 AM to 5 PM.

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

The contractor's working hours and times will be controlled.

8. Land and shoreline use

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

The current use of the property is undeveloped land. Mason County converted the property from farm land to undeveloped residential property over 10 years ago.

The adjoining residential properties to the east look down on Division 15. Due to the topography of the site, the nearest existing residence will be over 200 feet east of the nearest new home. There will be change in view from residentially developed area to the west. The view from the homes on Soderberg Drive of the mountains to the west will not be altered.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or non forest use?**

The site is currently undeveloped land. The applicant rents the property out for grazing on an intermittent basis. The land has not been used as dedicated farmland for over 20 years. It is not agricultural or forest land, so it will not be converted to other uses. It is not farmland or forest land tax status, so will not be converted to nonfarm or non forest.

- 1. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:**

No.

- c. Describe any structures on the site.**

The only structure in the Division 15 developed area is the Mason County Wastewater Pump Station. The structures on Tracts F and G will be dispositioned when those tracts are developed.

- d. Will any structures be demolished? If so, what?**

No. The structures on Tracts F and G will be dispositioned when those tracts are developed.

- e. What is the current zoning classification of the site?**

The site is zoned under the Allyn UGA as ~~R~~-1R+ Recreational Residential District Overlay. Allowable density of 5 units per acres.

- f. What is the current comprehensive plan designation of the site?**

~~R~~-1R+ Recreational Residential District Overlay.

- g. If applicable, what is the current shoreline master program designation of the site?**

NA

- h. Has any part of the site been classified as a critical area by the city or county? If so, specify.**

No

- i. Approximately how many people would reside or work in the completed project?**

There will be 82 dwelling units. The average density in LakeLand Village is around 2.2 persons per unit. The number of new residents will be approximately 181 people.

j. Approximately how many people would the completed project displace?

None

k. Proposed measures to avoid or reduce displacement impacts, if any:

NA

l. Proposed measures to ensure the proposal are compatible with existing and projected land uses and plans, if any.

The entire project is residential and is in compliance with the zoning. The residential character of Division 15 will match the previous development of LakeLand Village.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

None.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

There will be 82 dwelling units. All the dwelling units will likely be for middle income housing.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None

c. Proposed measures to reduce or control housing impacts, if any:

None beyond compliance with the Mason County development standards.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The typical house will be one and two story or 15 to 30 feet high. The typical multifamily house unit will be two story building at 30 to 35 feet in height. Exterior siding is expected to be wood.

b. What views in the immediate vicinity would be altered or obstructed?

None

c. Proposed measures to reduce or control aesthetic impacts, if any:

The site will be landscaped by the individual lot owners and by the multifamily developers. The proposed covenants will include guidelines and rules regarding the appearance of developed properties. Anderson and Sons will have control and oversight of the multifamily landscaping for five years after the completion of the multifamily housing development. After five years control over the landscaping will go over to the LakeLand Village HOA.

11. Light and glare

- a. **What type of light or glare will the proposal produce? What time of day would it mainly occur?**

None. No street lighting is planned in the residential lot area. Street lighting may be included in the multifamily area for safety reasons. If street lighting is provided it will be low glare.

- b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No

- c. **What existing off-site sources of light or glare may affect your proposal?**

None

- d. **Proposed measures to reduce or control light and glare impacts, if any:**

Low glare street lighting will be used.

12. Recreation

- a. **What designated and informal recreational opportunities are in the immediate vicinity?**

1. 27 hole golf course with a club house.
2. Four parks on Lake Anderson.
3. Two Tennis courts.
4. The LakeLand Village Community Club.
5. Walking Trails. The developer has reserved 1190 feet of 40 foot wide and 964 feet of 20 foot wide easement for future walking paths and utilities along the east boundary of Division 15 in Tract E.
6. A 5qwide paved bike lane has been included on the East Sterling Drive and East Virgil Drive extension.

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

No

- c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

Continue to work with the HOA to develop new recreational opportunities.

13. Historic and cultural preservation

- a. **Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.**

The only structure in the Division 15 developed area is the Mason County Wastewater Pump Station, which is of recent construction. The structures on Tracts F and G are older, but are unlikely to be eligible for listing in historic registers. That determination will be made when those tracts are developed.

- b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.**

No. The Washington State Department of Historical Preservation (DAHP) had no interest in the Division 14 development because of the extreme disturbance of the land prior development. We have assumed that the DAHP will not be concerned about Division 15 development for the same reason.

The contract specification for the construction of the site will require immediate cessation of excavation if historical artifacts are found.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archaeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

None

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

None

14. Transportation

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

The developer will extend East Virgil Drive over to East Sterling Drive. They will construct East Sterling Drive down to East Virgil Drive. A traffic impact analysis has been prepared for the project by Heath and Associate, Inc. See Appendix G. The Summary from traffic impact study is included below:

TRAFFIC REPORT SUMMARY

Lakeland Division 15 is a proposed residential development comprising of either, scenario one which includes 21 single-family dwelling units and 56 multifamily dwelling units or scenario 2 which includes 61 single family lots. The subject site is located within the Allyn Urban Growth Area (UGA) of Mason County situated at tax parcel #: 122184000000. All existing structures on-site are to be demolished prior to new construction. Site ingress/egress is proposed via two new roadway extensions. The first is a northern extension of the existing E Virgil Drive and the second is a southwest extension of the existing E Sterling Drive. All new intersections shall be designed so as to allow sufficient entering sight distance and adhere to county and AASHTO engineering standards. Refer to Figure 2 which highlights the access configuration.

Existing level of service at the study intersections of SR-3 & E Homestead Drive and E Old Ranch Rd & E Homestead Drive are shown to operate with LOS C conditions or better during the critical PM peak hour. Scenario two for the incoming project is anticipated to generate approximately 575 average weekday daily trips with 43 trips (11 inbound / 32 outbound) occurring during the AM peak hour and 57 trips (36 inbound / 21 outbound) occurring during the PM peak hour. As scenario two yields a higher number of trips to and from the site when compared to scenario one, forecast 2027 volumes are based on scenario two, which would be the worst case scenario in terms of traffic. Future delay analysis consisted of a five-year horizon of 2027 which includes the scenario two trip generation and a background growth rate of three percent per year to the existing volumes shown in Figure 4. Table 5 summarizes forecast 2027 PM peak hour delays at the outlying study intersections, which are shown to operate with LOS C conditions or better with the addition of project generated traffic, meeting WSDOT and county level of service standards. A

left-turn lane was analyzed at the study intersection of SR-3 & E Homestead Drive with the addition of project generated traffic and was found not warranted.

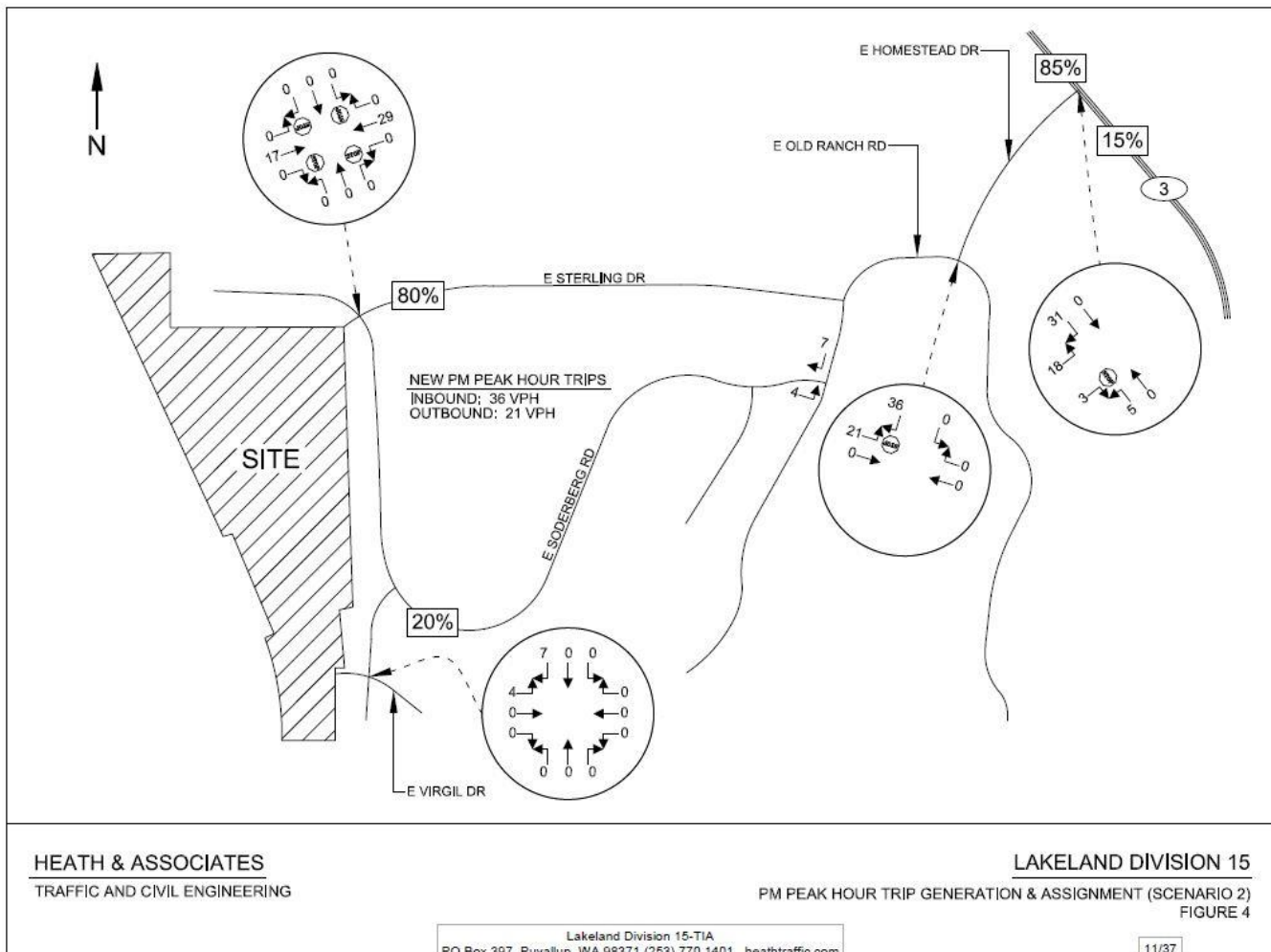
Based on the analysis above, no mitigation is recommended at this time.

Figure 4 taken from the traffic report shows the traffic distribution on East Sterling Drive and East Virgil Drive.

Table 5: Forecast 2027 PM Peak Hour Level of Service

Delays given in seconds per vehicle

Intersection	Control	<u>Without Project</u>		<u>With Project</u>	
		LOS	Delay	LOS	Delay
SR-3 & E Homestead Dr	Stop	C	19.8	C	21.8
E Old Ranch Rd & E Homestead Dr	Stop	A	9.1	A	9.4



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

No.

- c. How many additional parking spaces would the completed project or non-project proposal have? None. How many would the project or proposal eliminate?

None

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

No.

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

The US Navy railroad right of way and tracks are located on the western boundary of the preliminary plat. The train passes through the area twice a day.

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

See Table 3 below. See the traffic study in Appendix in Appendix G.

Table 3: Project Trip Generation (Scenario 1)

Land Use	Dwelling Units	ADT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Multi-Family – LUC 220	60	360	5	17	22	18	11	29
Single Family – LUC 210	21	198	4	11	15	12	8	20
Total Trips		558	9	28	37	30	19	49

Based on scenario one, the project would be estimated to generate a site total of 535 average weekday daily trips with 37 trips (9 inbound / 28 outbound) occurring during the AM peak hour and 49 trips (30 inbound / 19 outbound) in the PM peak hour.

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

No.

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

None required beyond complying with Mason County development standards.

15. Public services

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

The addition of the 82 dwelling units and 181 new residents will increase the needs for more public services in LakeLand Village.

It is estimated that the property tax value of the new development will be between \$42,000,000 and \$50,000,000 at today's real estate values. Property taxes are generally approximately 1% of the assessed value; therefor the property tax income to state and local government will be between \$420,000 and \$500,000 a year. The additional property tax

revenue to state and local governments should be more than sufficient to fund the public services needed for the developed portion of the Preliminary Plat of Division 15 of LakeLand Village.

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

The LakeLand Village Home Owner Association provides Security Services (Patrols).

The North Mason School District requires a fee of \$450 per dwelling unit for schools. The school assessment will be \$36,500.

16. Utilities


a. Utilities currently available at the site: electricity, water, refuse service, telephone, sanitary sewer, other: internet

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

Water - LakeLand Water Company
Sewer - Mason County
Electricity and Internet - Mason County PUD 3
Refuse - Mason County Garbage
Fire Protection: Mason County Fire District No. 5
Police - Mason County Sheriff
Roads - Mason County Department of Public Works.
Schools - North Mason School District

C. SIGNATURE

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

Signature: _____

Date Signed: 5-30-2023

Print Name of Signee: Rick Anderson

If applicable, Position and Agency/Organization: Anderson and Sons, Inc.

Date the Revised SEPA Checklist is Submitted: 5-30-2023