Van Asselt School Addition Project

Draft SEPA Checklist

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For questions and more information about this document, please contact the following:

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While the Van Asselt School Addition Project Draft State Environmental Policy Act (SEPA) Checklist is accessible and ADA compliant, the attached figures and appendices which support the checklist contain complex material that are not accessible. The following is a description of what is contained in the figures and appendices:

- Figure 1 – Van Asselt School Site Vicinity Map
  Figure 1 is a vicinity map that shows the Van Asselt School campus and the surrounding neighborhood in the site vicinity. The school campus site is outlined in red on the map.

- Figure 2 – Van Asselt School Aerial Map
  Figure 2 is an aerial map of the Van Asselt School campus and the surrounding neighborhood in the site vicinity. The school campus site is outlined in red on the map.

- Figure 3 – Proposed Site Plan
  Figure 3 is a site plan of the proposed project. The entire school campus is shown on the plan. The proposed new building addition and other proposed project site features are labeled on the site.

- Appendix A – Geotechnical Engineering Report
  Appendix A consists of the Geotechnical Report that was prepared by Wood Environment and Infrastructure Solutions, Inc. The report presents the results of the subsurface information review, subsurface explorations, summarizes groundwater conditions and potential geologic hazards, and provides geotechnical conclusions and engineering recommendations. Field exploration procedures and logs, laboratory testing procedures and results, and seismic design parameters are included as appendices to this report.

- Appendix B – Construction Best Management Practices
  Appendix B consists of construction best management practices that could be implemented during the construction of the project.

- Appendix C – SEPA Greenhouse Gas Emissions Worksheet
  Appendix C consists of the Greenhouse Gas Emissions Worksheet for the project. This worksheet provides a calculation of the greenhouse gas emissions that would be anticipated to be generated with the development of the proposed project.

- Appendix D – Arborist Report
  Appendix D consists of the Arborist Report and Tree Inventory that was prepared for the project by Tree Solutions, Inc. The report provides an inventory of the existing trees on the site and trees on neighboring properties are also documented if they extend over the property line or may be affected by construction access. Recommendations and tree protection measures are provided. A Table of Trees is included as part of the report which describes the characteristics and measurements for each tree. A map documenting the location of each tree is also provided.

- Appendix E – Hazardous Materials Summary Report

  Appendix E consists of the Hazardous Materials Summary Report for the project, which was prepared by PBS Engineering and Environmental, Inc. The report describes the results of the inspection of the existing building which included the testing of suspect asbestos-containing materials, collection of paint chip samples for lead paint, inspection of fluorescent lamps for PCB containing ballasts and mercury containing light tubes. Recommendations are provided in the report and appendices are included regarding sampling information.

- Appendix F –Cultural Resources Assessment Report

  Appendix F consists of the Cultural Resources Assessment Report for the project that was prepared by Perteet. The report details the background research and onsite investigations that were completed as part of the assessment and provides recommendations for the project. Due to the confidential nature of archaeological materials discussed in the report, a full copy of the report is not included in this electronic version. However, a non-confidential version of the report is available upon request from Seattle Public Schools.

- Appendix G – Transportation Technical Report

  Appendix G consists of the Transportation Technical Report for the project that was prepared by Heffron Transportation, Inc. The report provides a description and analysis of background transportation conditions for the area surrounding the site, including traffic volumes, traffic operations (level of service), parking, transit, and non-motorized facilities. The report analyzes and addresses potential impacts with the proposed project on those same transportation conditions and provides recommendations and mitigation measures. The document includes level of service definitions and parking utilization study data as appendices to the report.

This concludes the description of the draft SEPA checklist figures and appendices for the Van Asselt School Addition Project.

DRAFT ENVIRONMENTAL CHECKLIST

for the proposed

Van Asselt School Addition Project

prepared by

SEATTLE
PUBLIC
SCHOOLS

March 2021

EA Engineering, Science, and Technology, Inc., PBC
Wood Environmental Infrastructure Solutions
Tree Solutions, Inc.
PBS
Perteet
Heffron Transportation, Inc.

PREFACE

The purpose of this Draft Environmental Checklist is to identify and evaluate probable environmental impacts that could result from the ***Van Asselt School Addition Project*** and to identify measures to mitigate those impacts. The ***Van Asselt School Addition Project*** is intended to expand the capacity of the school to allow the school to serve as an interim site for middle schools and elementary schools in the southeast portion of the school district. The proposed project would include the renovation of the existing 1909 building on the site and a new building addition that would be located to the west and south of the existing 1909 building; minor interior modifications to the existing one-story main 1950 building would also occur. The project would add approximately 62,000 gsf of new permanent building space on the campus and would increase the student capacity from an existing capacity of approximately 350 students (including portable building space) to a new capacity of approximately 1,000 students.

The State Environmental Policy Act (SEPA)[1] requires that all governmental agencies consider the environmental impacts of a proposal before the proposal is decided upon. This Draft Environmental Checklist has been prepared in compliance with the State Environmental Policy Act; the SEPA Rules, effective April 4, 1984, as amended (Chapter 197-11, Washington Administrative Code); and the Seattle City Code (25.05), which implements SEPA.

This document is intended to serve as SEPA review for site preparation work, building construction, and operation of the proposed development comprising the ***Van Asselt School Addition Project.*** Analysis associated with the proposed project contained in this Environmental Checklist is based on plans for the project, which are on-file with Seattle Public Schools. While not construction-level detail, the plans accurately represent the eventual size, location and configuration of the proposed project and are considered adequate for analysis and disclosure of environmental impacts.

This Environmental Checklist is organized into three major sections. *Section A* of the Checklist (starting on page 1) provides background information concerning the *Proposed Action* (e.g., purpose, proponent/contact person, project description, project location, etc.). *Section B* (beginning on page 6) contains the analysis of environmental impacts that could result from implementation of the proposed project, based on review of major environmental parameters. This section also identifies possible mitigation measures. *Section C* (page 42) contains the signature of the proponent, confirming the completeness of this Environmental Checklist.

Appendices to this Environmental Checklist include: the *Geotechnical Engineering Report* (Wood, 2020), *Summary of Construction Best Management Practices*, the *Greenhouse Gas Emissions Worksheet* (EA Engineering, 2019), the *Tree Inventory and Arborist Report* (Tree Solutions, Inc., 2019), the *Preliminary Hazardous Materials Survey Report* (PBS, 2020), the *Cultural Resources Assessment* (Perteet, 2021), and the *Transportation Technical Report* (Heffron Transportation, Inc., 2021).

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[1] Chapter 43.21C. RCW

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PURPOSE

The State Environmental Policy Act (SEPA), Chapter 43.21 RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. The purpose of this checklist is to provide information to help identify impacts from the proposal (and to reduce or avoid impacts, if possible) and to help Seattle Public Schools to make a SEPA threshold determination.

A. BACKGROUND

1. Name of Proposed Project:

Van Asselt School Addition Project

2. Name of Applicant:

Seattle School District No. 1 (Seattle Public Schools)

3. Address and Phone Number of Applicant and Contact Person:

Vince Gonzales
Senior Project Manager
Seattle Public Schools
2445 3rd Avenue S
Seattle, WA 98134
206-252-0151

4. Date Checklist Prepared

March 12, 2021

5. Agency Requesting Checklist

Seattle School District No. 1
2445 – 3rd Avenue South
MS 22-332, P.O. Box 34165
Seattle, WA 98124-1165

6. Proposed Timing or Schedule (including phasing, if applicable):

The ***Van Asselt School Addition Project*** that is analyzed in this Draft Environmental Checklist involves site preparation work, construction, and operation of the project. Site preparation and construction could begin in approximately June 2022 with building occupancy in approximately September 2023.

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

No future plans for further development of the project site are proposed at this time.

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

The following environmental information has been prepared for the project and is included as appendices to this Checklist:

- *Geotechnical Engineering Report* (Wood Environment and Infrastructure Solutions, Inc., June 29, 2020);
- *Greenhouse Gas Emission Worksheet* (EA Engineering, February 2021);
- *Tree Inventory and Arborist Report* (Tree Solutions, June 2020);
- *Preliminary Hazardous Materials Survey Report* (PBS, August 24, 2020);
- *Cultural Resources Assessment* (Perteet, March 11, 2021)[2];
- *Transportation Technical Report* (Heffron Transportation, March 8, 2021);

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:

To provide additional capacity for Kimball Elementary (which will utilize the site for the 2021-2022 school year), the District may add or relocate portables to accommodate students.

There are no known other applications that are pending approval for the ***Van Asselt School Addition Project*** site.

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

City of Seattle

- *Seattle Department of Construction and Inspections (SDCI)*

  Permits/approvals associated with the proposed project[3], including:
  - Building Permit
  - Mechanical Permits
  - Electrical and Fire Alarm Permits
  - Drainage and Side Sewer Permit
  - Comprehensive Drainage Control Plan Approval

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[2] The Cultural Resources Assessment is on-file with SPS.

[3] Pursuant to discussions with SDCI staff, no departures are anticipated to be necessary for the proposed project.

  - Drainage Control Plan with Construction Best Management Practices, Erosion and Sediment Control Approval

- *Seattle Department of Transportation (SDOT)*
  - Street Use and Construction Use Permit (temporary – construction related)
  - Street Use and Utility Permit
  - Street Improvement Permit

- *Seattle Department of Neighborhoods*
  - Certificate of Approval (Landmarks Preservation Board)

King County

- Plumbing Permit
- Sewer Treatment Capacity Charge Approval
- Health Department Approval

Puget Sound Clean Air Agency

- Air Quality Permit – Demolition

Washington State Department of Ecology

- NPDES Construction Stormwater General Permit

11. Give a 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.

Existing Site Conditions

The proposed ***Van Asselt School Addition Project*** site is located within Seattle's South Beacon Hill neighborhood (see **Figures 1** and **2**). The school campus is generally bounded by S Myrtle Street to the north, Beacon Avenue S to the east, existing residences to the south, and existing residences and I-5 to the west.

The existing Van Asselt School site currently serves as an interim site for Seattle Public Schools. The Van Asselt School site is comprised of several buildings. The primary building on the site was constructed in 1950 and contains approximately 48,125 gross sq. ft. (gsf) of building space; two double portable buildings are also located to the southeast of the 1950 building and contain four classrooms. This building and the existing portables currently house Wing Luke Elementary while a new building is being constructed for that school and will house Kimball Elementary for the 2021-2022 school year after Wing Luke Elementary leaves the site. The site also contains an existing building that was constructed in 1909 (with an associated 1940 addition and 2002 addition) that is closed and not currently utilized by the school; however, the 1909 portion of the building was designated as a landmark by the City of Seattle Landmarks Board.

A hard surface play area, playground, and covered play areas are located to the west of the existing building. An artificial turf field and track are located further to the west. Existing grass areas are located north and east of the 1950 building and surrounding the artificial turf field. Approximately 60 regulated trees (six inches in diameter at standard height) are located within the perimeter of the site, including four exceptional trees.

A parking lot with space for approximately 16 vehicles (including one ADA space) is located to the northwest of the existing building; additional parking for approximately seven vehicles (including one ADA stall) is located to north of the building within an existing loading area. An unmarked gravel and paved area accessed from the church driveway on Beacon Avenue S surrounds the historic original school building on the south end of the site and has also been used for parking. Aerial imagery from 2015 indicates that five spaces were striped adjacent to the building, while the remainder of the area has also been informally used for parking.

The school has an existing capacity for approximately 315 students (approximately 351 students when including the existing portable buildings). The enrollment for Wing Luke Elementary during the most recent school year (2019-2020) was approximately 311 students.

Proposed Project

The proposed ***Van Asselt School Addition Project*** is intended to expand the capacity of the school and upgrade the quality of the student learning environment to allow the school to serve as an interim site for up to 1,000 elementary or middle school students in the southeast portion of the school district. It is anticipated that the initial schools that would utilize the site upon the completion of the project would include Asa Mercer International Middle School (from approximately 2023-2025), Aki Kurose Middle School (from approximately 2025-2027), and Washington Middle School (after 2027 and subject to project funding).

The proposed project would add approximately 62,000 gsf of new permanent building space and renovate portions of the existing 1909 building (approximately 8,400 gsf of renovated building space). The proposed building addition would be located to the west and south of the existing 1909 building (see **Figure 3** for the proposed site plan) and would include 26 classrooms, a new gymnasium, learning commons areas, administrative space, and support space (restrooms, custodial spaces, etc). The proposed renovation to the 1909 building would include four new classrooms, storage space, and student locker areas.

The proposed project would include minor modifications to the existing one-story main building (built 1950) to accommodate a middle school program. This work would include replacing some plumbing fixtures, adding toilet rooms, subdividing spaces and adding special education classrooms, converting the existing gym into a music room, creating an art room and kiln room, adding bike racks and ADA upgrades to the existing entry ramp. The proposed project would also include interior modifications to the existing elementary school portables to accommodate a middle school program (such as school-based health center, fitness room, offices for counselors and community partners) and relocation of one or more portables within the site.

With completion of the project, the school would contain approximately 118,525 gross sq. ft. of permanent building space. The proposed project would increase the student capacity of the school from an existing capacity of approximately 350 students (including portable building space) to a new capacity of approximately 1,000 students. The project would be funded by the BEX V levy.

The existing parking lot located in the northwest portion of the building would be expanded as part of the project to provide space for approximately 59 vehicles (including three ADA spaces). Additional parking would be provided in the southeast portion of the site and would include space for approximately six vehicles (including two ADA spaces); the proposed loading dock area would also have three parking stalls (including one ADA space). The existing bus load/unload area along Beacon Avenue S would be retained as part of the project. Parent vehicle load/unload would be provided within the existing center median right-of-way area of Beacon Avenue S and could also occur within the onsite circulation loop in the southeast portion of the site.

The proposed project would retain a majority of the existing recreational space on the site, including the existing artificial turf field/track and a large portion of the existing hard surface play areas located to the west of the existing building. As part of the project, approximately 8,500 square feet of existing recreation space would be removed from the site, including hard surface play areas, a covered play area, and playground equipment. The proposed project would add approximately 2,200 square feet of new outdoor learning area space adjacent to the proposed building addition. In total, recreation space on the site would be reduced from approximately 124,800 square feet to approximately 118,500 square feet.

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. If a proposal would occur over a range of area, provide the range or boundaries of the site(s).

The proposed ***Van Asselt School Addition Project*** site is located at 7201 Beacon Avenue S within Seattle's South Beacon Hill neighborhood (a portion of the SE Quarter of Section 285, Township 24, and Range 4). The school campus is generally bounded by S Myrtle Street to the north, Beacon Avenue S to the east, existing residences to the south, and existing residences and I-5 to the west (see **Figures 1** and **2**). The site of the proposed building addition is located to the west and south of the existing 1909 building.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one):
[✓ Flat,] rolling, hilly, steep slopes, mountainous, other:____

The Van Asselt School campus is generally flat and gradually slopes from an elevation of approximately 240 feet at the north end of the campus to an elevation of approximately 233 feet at the southeast end of the campus. A slope area is located adjacent to the western edge of the school campus and descends to the west towards I-5.

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

According to the City of Seattle's Environmentally Critical Areas (ECA) Maps, an ECA steep slope area is located adjacent to the western edge of the school campus and descends to the west toward I-5; this area is also designated as a landslide-prone area and a steep slope erosion hazard (*City of Seattle, 2020*).

In accordance with SMC 25.09.080 and 25.09.090, a steep slope buffer of 15 feet would extend from the top of the slope to the east and onto the school campus. Based on the proposed plans for the project, the proposed building addition would be located approximately 80 feet or more from the west edge of the campus and outside of the steep slope buffer. The proposed expansion of the parking lot in the northwest corner of the campus would also be located out of the steep slope buffer area (*Wood, 2020*). See **Appendix A** for further details.

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.

A geotechnical report was completed for the project site by Wood Environment and Infrastructure Solutions, Inc. and included six site exploration borings as part of onsite investigations. Borings were completed to a depth of 15 to 21.5 feet deep. The soils encountered on the site generally consisted of fill of varying thickness overlaying unweathered sandstone (bedrock) weathered sandstone, and completely weathered sandstone that transitioned into residual soil. Areas in the southeast portion of the campus also contained Pre-Fraser non-glacial deposits (see **Appendix A**).

The proposed project site does not contain agricultural land areas of commercial significance.

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

There are no indications or history of unstable soils on the site or adjacent to the site and no evidence of landslide activity or unstable soils was observed during the preparation of the Geotechnical Report (see **Appendix A**).

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

Approximately 6,800 cubic yards of material would be excavated from the site during construction activities and approximately 300 cubic yards of structural fill would be imported to the site. The specific source of fill material is not known at this time but would be obtained from a source approved by the City of Seattle.

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

Temporary erosion is possible in conjunction with any construction activity. Site work would expose soils on the site, but the implementation of a Temporary Erosion Sedimentation Control (TESC) plan that is consistent with City of Seattle standards and the implementation of best management practices (BMPs) during construction would mitigate any potential impacts.

Once the project is operational, no erosion is anticipated.

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

Approximately 43 percent of the school campus is currently covered with impervious surfaces, including buildings, paved play areas, walkways, parking areas and other impervious surfaces. The site of the proposed addition is generally comprised of existing paved surfaces and grass area.

With the completion of the addition project, approximately 51 percent of the campus would be covered with impervious surfaces. New impervious surfaces would primarily consist of the proposed building addition and paved walkways, driveways and parking areas.

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

The proposed project would comply with City of Seattle regulations, including providing a Temporary Erosion and Sedimentation Control (TESC) Plan and Best Management Practices (BMPs). **Appendix B** also provides a summary of Construction BMPs that are typically utilized by Seattle Public Schools during the construction process. The following measures would be implemented during construction to control erosion:

- Design and construction of the proposed project shall comply with the recommendations of the Geotechnical Engineer (see **Appendix A**);
- Provide storm drain inlet protection;
- Route surface water away from work areas;
- Keep staging areas and travel areas clean and free of track-out;
- Cover work areas and stockpiled soils when not in use; and,
- Complete earthwork during dry weather and site conditions, if possible.

2. Air

a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Construction of the ***Van Asselt School Addition Project*** could result in temporary increases in localized air emissions associated with particulates and construction-related vehicles. It is anticipated that the primary source of temporary, localized increases in air quality emissions would result from particulates associated with demolition, on-site excavation and site preparation. While the potential for increased air quality emissions could occur throughout the construction process, the timeframe of greatest potential impact would be at the outset of the project in conjunction with the site preparation and excavation/grading activities. However, with the implementation of a TESC plan and construction BMPs, air quality emission impacts are not anticipated to be significant.

Temporary, localized emissions associated with carbon monoxide and hydrocarbons would result from diesel and gasoline-powered construction equipment operating on-site, construction traffic accessing the project site, and construction worker traffic. However, emissions from these vehicles and equipment would be small and temporary and are not anticipated to result in a significant impact.

Upon completion of the project, the primary source of emissions would be from vehicles travelling to and from the site, including buses and commuter vehicles. As an interim school site, most of these trips would be relocated from another existing site in the southeast region of the school district, and as such, significant new vehicle emissions would not be anticipated. Seattle Public Schools maintains an anti-idling policy for buses which minimizes potential emissions. As a result, significant adverse air quality impacts would not be anticipated.

Another consideration with regard to air quality and climate relates to Greenhouse Gas Emissions (GHG). In order to evaluate climate change impacts of the proposed project relative to the requirements of the City of Seattle, a Greenhouse Gas Emissions Worksheet has been prepared (see **Appendix C** of this Environmental Checklist). This Worksheet estimates the emissions from the following sources: embodied emissions; energy-related emissions; and, transportation-related emissions. In total, the estimated lifespan emissions for the proposed new building addition would be approximately 64,820 $MTCO_2e$[4]. Based on an assumed building life of 62.5 years[5], the proposed building addition project would be estimated to generate approximately 1,040 $MTCO_2e$ annually. For reference, the Washington State Department of Ecology threshold for potential significant GHG emissions is 25,000 $MTCO_2e$ annually. Therefore, the proposed project would not be anticipated to generate a significant amount of GHG emissions.

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

The primary off-site source of emissions in the site vicinity is vehicle traffic on surrounding roadways, including I-5, Beacon Avenue S and S Myrtle Street; Boeing Field is also located to the west and is a source of emissions. There are no known offsite sources of air emissions or odors that may affect the proposed project.

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

The following measure would be provided to reduce/control air quality impacts during construction:

- Construction activities would be required to comply with Puget Sound Clean Air Agency (PSCAA) regulations, including Regulation I, Section 9.11 (prohibiting the emission of air

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[4] $MTCO_2e$ is defined as Metric Ton Carbon Dioxide Equivalent and is a standard measure of amount of CO_2 emissions reduced or sequestered.

[5] According to the Greenhouse Gas Emissions Worksheet, 62.5 years is the assumed building life for educational buildings.

contaminants that would be injurious to human health) and Regulation I, Section 9.15 (prohibiting the emission of fugitive dust, unless reasonable precautions are employed). Additional mitigation measures to minimize air quality impacts during construction are identified in **Appendix B**.

3. Water

a. Surface:

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.

There is no surface water body on or in the immediate vicinity of the ***Van Asselt School Addition Project*** site. The nearest surface water body is the Duwamish River, which is located approximately 1.1 miles to the west of the project site (see **Figure 1**).

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.

The proposed project would not require any work over, in, or adjacent (within 200 feet) to any water body.

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.

No fill or dredge material would be placed in or removed from any surface water body as a result of the proposed project.

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

The proposed project would not require any surface water withdrawals or diversions.

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

The proposed project site does not lie within a 100-year floodplain and is not identified as a flood prone area on the City of Seattle Environmentally Critical Areas map (*City of Seattle, 2020)*.

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.**

There would be no discharge of waste materials to surface waters.

b. **Ground:**

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

No groundwater would be withdrawn or water discharged to ground water as part of the proposed project. Geotechnical investigations that were conducted in May 2020 did not encounter any groundwater in their site excavation borings. Soil samples from borings located to the east of the proposed building addition encountered wet soils; however, no free water or saturated conditions were observed. The wet soils suggest that downward infiltrating surface water could become temporarily perched on less pervious silt layers (*Wood, 2020*). Construction dewatering may be required during development of the project and could be accomplished with ditches and sumps (see **Appendix A**).

2) **Describe waste material that will be discharged into the ground from septic tanks or other sources; 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.**

Waste material would not be discharged into the ground from septic tanks or other sources as a result of the proposed project.

c. **Water Runoff (including storm water):**

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.**

Approximately 43 percent of the existing Van Asselt School campus is comprised of impervious surfaces, including existing buildings and paved surfaces (parking areas, play areas, walkways, etc.). The site of the proposed addition is generally comprised of existing paved surfaces and grass areas. The existing stormwater system for the school is combined with the sanitary sewer system and consists of a series of catch basins, manholes and pipes that convey stormwater from the site to Beacon Avenue S and S Myrtle Street. Water quality treatment is not provided on the site as part of the existing stormwater system.

With completion of the ***Van Asselt School Addition Project***, approximately 51 percent of the campus would be comprised of impervious surfaces. The site stormwater design for the project would be consistent with the City of Seattle's 2017 storm water manual. Bioretention cells would be installed onsite to provide water quality treatment for the new and replaced impervious surfaces. New stormwater pipes, catch basins and manholes would be constructed to replace the existing combined system and would convey stormwater to the existing public stormwater system in Beacon Avenue S and S Myrtle Street. With the implementation of the proposed stormwater facility and measures, no significant stormwater runoff impacts would be anticipated.

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

The proposed stormwater management system for the site would continue to ensure that waste materials would not enter ground or surface waters as a result of the proposed project.

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

The proposed project would not alter or otherwise affect drainage patterns in the site vicinity.

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

The following measures would be implemented to control surface, ground and runoff water impacts:

- A Temporary Erosion and Sedimentation Control (TESC) Plan and Construction Best Management Practices (BMPs) would be implemented during construction to reduce erosion and minimize impacts to water resources.

- Stormwater management for the proposed project would comply with applicable City requirements, including the City's Stormwater Code (*SMC 22.800*).

4. Plants

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

X_deciduous tree:
X_evergreen tree:
X_shrubs
X_ grass
__ pasture
__ crop or grain
__ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__ water plants: water lily, eelgrass, milfoil, other
_ other types of vegetation

A tree inventory and assessment (**Appendix D**) was completed for the project by Tree Solutions, Inc. Approximately 60 regulated trees (greater than six inches in diameter at standard height) are located on the school campus, including Eastern flowering dogwood, Rhododendron, Cedar of Lebanon, European beech, Japanese camellia, Flowering cherry, European white birch, Kousa dogwood, Lawson cypress, Black cottonwood, Burr oak, Bigleaf maple, Douglas-fir, Pear, Lyland cypress, Norway maple, Homestead elm, Apple, Common hawthorn, Western red cedar, Gray birch, Autumn flowering cherry, Dove tree, and Red alder. The trees range in size from 6 inches in diameter to 54 inches in diameter. Four of the trees on the school campus meet the City of Seattle's criteria for an exceptional tree (*City of Seattle Director's Rule 16-2008*), including a Flowering cherry, a Kousa dogwood, a Lawson cypress, and a Burr oak.

In addition, 26 trees located adjacent to the site were also documented, including 15 trees that are located in the public right-of-way and are regulated by the Seattle Department of Transportation (SDOT). Three of the trees located adjacent to the south and west of the site were identified as exceptional trees.

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

All exceptional trees on the campus would be retained and protected during construction by following tree protection measures that are outlined in **Appendix D**; off-site exceptional trees that are located adjacent to the campus would also be retained and protected, as necessary. A total of 12 existing trees would be removed from the project site as part of the ***Van Asselt School Addition Project***; all other trees would be retained and protected.

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

No known threatened or endangered species are located on or proximate to the project site.

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

New landscaping would be provided on the site as part of the ***Van Asselt School Addition Project***, including bioretention planting areas that would help meet the onsite stormwater management requirements for the project. These areas would be planted with a mix of rushes, sedges, perennials, and shrubs. Proposed parking areas would also be landscaped with trees and groundcovers, consistent with SMC 23.51B.002. Additional landscaped areas would be provided on the site to enhance the school campus and outdoor learning areas but are not required by City Code.

Consistent with City of Seattle regulations (SMC 25.11.090), approximately 30 new replacement trees would also be provided on the site to replace those trees that would be removed as part of the construction process. All retained trees on the school campus would be protected during construction by following tree protection measures that are outlined in **Appendix D**.

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

Noxious weeds or invasive species that could be present in the vicinity of the site include giant hogweed, English Ivy and Himalayan blackberry.

5. Animals

a. Circle (underlined) any birds and animals that have been observed on or near the site or are known to be on or near the site:

birds: **songbirds,** hawk, heron, eagle**, other:** **seagulls**, **pigeons,**
mammals: deer, bear, elk, beaver**, other:** **squirrels**, **raccoons**, **rats**, **mice**, **opossum**
fish: bass, salmon, trout, herring, shellfish**, other:** **None.**

Birds and small mammals tolerant of urban conditions may use and may be present on and near the ***Van Asselt School Addition Project*** site. Mammals likely to be present in the site vicinity include: raccoon, eastern gray squirrel, mouse, rat, and opossum.

Birds common to the area include: European starling, house sparrow, rock dove, American crow, seagull, western gull, Canada goose, American robin, and house finch.

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

The following are listed threatened or endangered species that could be affected by development on the site or surrounding vicinity based on data from the U.S. Fish and Wildlife Service: marbled murrelet, streaked horned lark, yellow-billed cuckoo, bull trout, grey wolf and north american wolverine[6]. However, it should be noted that none of these species have been observed at the site and due to the urban location of the site, it is unlikely that these animals are present on or near the site.

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

The proposed project site is not located within a specific migration route. However, in general, the entire Puget Sound area is within the Pacific Flyway, which is a major north-south flyway for migratory birds in America—extending from Alaska to Patagonia. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or travelling to overwintering sites.

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

New landscaping would be provided as part of the project within bioretention planting areas, proposed parking areas and outdoor learning spaces, as well as surrounding the proposed building addition. New trees would also be planted on site to replace those trees that would be removed during construction. The project is not anticipated to have a substantial impact on wildlife located in the vicinity of the site.

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

There are no known invasive animal species on or adjacent to the project site; however, invasive species known to be located in King County include European starling, house sparrow and eastern gray squirrel.

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[6] U.S. Fish and Wildlife Service. IPaC. https://ecos.fws.gov/ipac/location/index. Accessed August 2020.

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.

Electricity and natural gas are currently utilized by the existing school buildings and would continue to be the primary source of energy that would serve those building. The proposed ***Van Asselt School Addition Project*** would only utilize electricity for heating, as well as lighting and electronics.

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

The proposed project would not affect the use of solar energy by adjacent properties.

d. 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 proposed project would be required to meet or exceed the requirements of the City of Seattle Energy Code, as well as the Washington Sustainable Schools Protocol. Energy conservation features that could be provided as part of the project include: separate hydronic heating and ventilation systems, air-to-water heat pumps, electric boilers, displacement ventilation, heat recovery, and innovative controls such as energy metering/monitoring.

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.

The Washington State Department of Ecology website was reviewed to identify any potential contaminated soils on or in the vicinity of the site, as well as potential issues related to the former Tacoma Asarco Smelter Plume. There are no records of any contaminated soils on the project site and the site is located in an area where levels of arsenic and lead associated with the smelter plume are anticipated to be below state cleanup levels.

A former gas station site to the east of the Van Asselt School campus was listed as a cleanup site by Ecology; however, in 2011, the site received a determination of No Further Action Required (*Washington State Department of Ecology, 2020*). As with any construction project, accidental spills of hazardous materials from equipment or vehicles could occur; however, a spill prevention plan would minimize the potential of an accidental release of hazardous materials into the environment.

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

A Preliminary Hazardous Materials Survey was completed for the site by PBS (*PBS, 2020*). Portions of the existing buildings were inspected for asbestos-containing materials (ACMs), lead-containing paint (LCP), PCB-containing light ballasts, and mercury-containing fluorescent lamps. ACM was found within the 1909 Building and the 1950 Building, and include straight run pipe insulation, hard mudded fitting insulation, vibration joint cloth, flange gaskets and window putty. All ACM that would be impacted by the proposed project would be removed prior to construction activities by a qualified, licensed asbestos abatement contractor in accordance with applicable local, state and federal regulations.

Seven representative painted coatings were sampled for lead content and five of those samples were found to contain lead. Additionally, five previously sampled painted coatings were also found to contain lead. Impact of painted surfaces with detectable lead concentrations require that construction activities be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-155). Additionally, all impacts to lead-based paint shall be in accordance with 40 CFR Part 745.

All fluorescent light tubes within the buildings are presumed to contain mercury. Representative fluorescent light ballasts were also inspected within the buildings. Light fixture ballasts were observed to be electronic; however, all ballasts should be inspected, and any magnetic ballasts should be presumed to contain PCBs. All fluorescent light tubes shall be carefully handled and recycled/disposed of in accordance with applicable regulations during demolition activities. All light ballasts should also be inspected prior to disposal and any magnetic ballasts should be presumed to contain PCBs and removed and disposed of in accordance with WAC 173-303 and 40 CFR Part 761 Subpart D (see **Appendix E** for details).

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.**

As described above, the existing buildings contain ACM, LCP, and are presumed to include mercury-containing fluorescent lamps. These materials that would be impacted by the project would be removed and disposed of in accordance with applicable local, state and federal regulations.

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.

During construction, gasoline and other petroleum-based products would be used for the operation of construction vehicles and equipment.

During the operation of the school, chemicals that would be used on the site would generally be limited to cleaning supplies and would be stored in an appropriate and safe location.

4) Describe special emergency services that might be required.

No special emergency services are anticipated to be required as a result of the project. As is typical of urban development, it is possible that normal fire, medical, and other emergency services may, on occasion, be needed from the City of Seattle.

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

A spill prevention plan would be developed and implemented during construction to minimize the potential for an accidental release of hazardous materials into the environment.

In accordance with the hazardous materials survey for the project (see **Appendix E**), all impacted ACM and assumed ACM would be removed and disposed of in accordance with applicable regulations prior to any demolition or construction activities. Construction activities that could impact areas of detectable lead concentrations would be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-155). Additionally, all impacts to lead-based paint would be in accordance with 40 CFR Part 745. All fluorescent light tubes would also be disposed of in accordance with applicable regulations.

b. Noise

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

Noise associated with airplanes from Boeing Field and traffic noise associated with adjacent roadways (I-5, Beacon Avenue S, and S

Myrtle Street) are the primary sources of noise in the vicinity of the project site. Existing noise in the site vicinity is not anticipated to adversely affect the proposed ***Van Asselt School Addition Project***.

In accordance with WAC 246-366-030 and 246-366110, an environmental noise analysis was completed to ensure that noise levels within proposed classrooms on the site would meet acceptable levels. Based on measured and predicted noise levels, and selected special construction assemblies in selected areas of the building, the interior allowable limit of 45 dBA (Leq, 30 seconds) at any student location in the proposed classrooms could be met by the project (*A3 Acoustics, 2020*).

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 site.**

Short-Term Noise

Temporary construction-related noise would occur as a result of on-site construction activities associated with the project. Existing residential land uses surrounding the school would be the most sensitive noise receptors and could experience occasional noise-related impacts throughout the construction process. Pursuant to Seattle's Noise Code (SMC, Chapter 25.08), maximum sound levels in residential communities shall not exceed 55 dBA. However, per SMC 25.08 and based on the SF 5000 zoning for the site, construction activities are allowed to exceed the maximum noise levels between 7 AM and 10 PM on weekdays and 9 AM to 10 PM on weekends. Construction equipment may exceed the sound level limits during construction periods by 25 dB(A) and portable powered equipment may exceed the limits by 20 dB(A).

The proposed project would comply with provisions of Seattle's Noise Code (*SMC, Chapter 25.08*) as it relates to construction-related noise to reduce noise impacts during construction. Contractors are aware of the City of Seattle Noise Ordinance requirements and are contractually required by Seattle Public Schools to abide by them.

Long-Term Noise

The proposed ***Van Asselt School Addition Project*** and associated increase in student capacity would likely result in a potential minor increase in noise from human voices and vehicles travelling to and from the site, particularly during the school day and during student drop-off and pickup. The potential increase in noise is anticipated to be minor and would not extend beyond 10 PM. Further, the location of the proposed building addition would serve as a buffer between adjacent residences to the south and would block some of the noise from students at the outdoor recreation areas. As a result, no significant noise impacts would be anticipated.

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

The following measures would be provided to reduce noise impacts:

- As noted, the project would comply with provisions of the City's Noise Ordinance (*SMC 25.08*); specifically: construction hours would be limited to standard construction hours (non-holiday) from 7 AM to 10 PM and Saturdays and Sundays from 9 AM to 10 PM.

- To reduce noise impacts during construction, contractors would comply with all local and state noise regulations. Contractors may also implement the following measures to further reduce or control noise impacts during construction:
    - Construction would likely occur between 7 AM and 5 PM on weekdays, although, per SMC 25.08, construction is allowed to occur between 7 AM and 10 PM on weekdays and 9 AM to 10 PM on weekends and holidays.
    - Minimize idling time of equipment and vehicle operation.
    - Operate equipment only during hours approved by the City of Seattle.
    - Use well-maintained and properly functioning equipment and vehicles.
    - Locate stationary equipment away from receiving properties.

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 site would continue to be utilized as a school and would not be anticipated to affect current land uses on adjacent properties.

The Van Asselt School campus is comprised of the existing one-story building (constructed in 1950) which is located on the north and east side of the campus; an additional three-story building (constructed in 1909) is located to the south of the one-story building but is currently not utilized by the school. An existing surface parking lot is located in the northwest portion of the site and contains space for approximately

16 vehicles; additional parking for approximately 7 vehicles is located in a loading area to the north of the existing building. Existing play areas, a playground, and a field are located in the west portion of the campus. The school currently serves as the interim location for Wing Luke Elementary.

The site of the proposed ***Van Asselt School Addition Project*** is located adjacent to the 3-story 1909 building in the south portion of the site. The site of the proposed addition is currently comprised of grass and paved areas (see **Figure 2** for an aerial photo of the existing site and **Figure 3** for the proposed site plan of the project).

Adjacent land uses to the north, south and northwest of the school campus are generally comprised of one- to three-story single family residences and townhome residences; the Beacon Avenue Church of God is also located immediately to the southeast of the site. Single family residences and multifamily residences (currently under construction) are located to the east, beyond Beacon Avenue S. I-5 is located immediately to the west and approximately 80 feet below the school campus. The Van Asselt Community Center and Playground is located to the northeast.

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

The project site has no recent history of use as a working farmland or forest land.

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:

The project site is located in an urban area and would not affect or be affected by working farm or forest land; no working farm or forest land is located in the vicinity of this urban site.

c. Describe any structures on the site.

The one-story Van Asselt School 1950 building is constructed of brick, glass and wood siding. This building is currently utilized as an interim school site for Wing Luke Elementary. The existing three-story 1909 building is constructed of wood and glass and is not currently utilized by the school.

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

Portions of the existing additions to the three-story building would be demolished as a result of the proposed project to allow for development of the proposed addition and internal connections between the existing building and proposed addition. All demolition activities would be in compliance with the Certificate of Approval process to ensure that the existing Landmarked features of the building are maintained. The two existing portable buildings would be relocated to new areas on the school campus.

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

The site is currently zoned as Single Family 5000 (SF 5000). The SF 5000 zone is generally intended for single family residential uses. Public schools are also a permitted use in the SF 5000 zone.

The surrounding areas to the immediate north, south, and west of the campus are also currently zoned as SF 5000. Areas to the immediate east of the site are zoned as Neighborhood Commercial 1 (NC1-40).

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

The current comprehensive plan designation for the site is Single Family Residential (*City of Seattle, 2018*).

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

The project site is not located within the City's designated shoreline boundary.

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

As noted in Section 1b, an ECA steep slope area is located adjacent to the western edge of the school campus and descends to the west toward I-5; this area is also designated as a landslide-prone area and a steep slope erosion hazard (*City of Seattle, 2020*). Proposed development would be located outside of the steep slope buffer area (*Wood, 2020*).

No other environmentally critical areas are located on or adjacent to the project site.

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

The proposed ***Van Asselt School Addition Project*** would not provide any residential opportunities. Upon completion, the proposed project would create new classroom space for interim school site uses to accommodate schools whose primary facilities are scheduled for replacement/modernization. The proposed project would increase the student capacity for the school to approximately 1,000 students (current capacity is approximately 350 students, including the existing portables).

Currently, Wing Luke Elementary utilizes the site as an interim use and includes approximately 69 full-time and part-time employees. It is anticipated that the proposed addition and use of the school as an interim site for middle schools would provide space for approximately 108 employees at the school.

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

The proposed project would not displace any people.

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

No displacement impacts would occur and no mitigation measures are necessary.

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

The proposed project is compatible with existing land uses and plans.

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

The project site is not located near agricultural or forest lands and no mitigation measures are necessary.

9. Housing

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

No housing units would be provided as part of the ***Van Asselt School Addition Project***.

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

No housing presently exists on the site and none would be eliminated.

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

No housing impacts would occur and no mitigation would be necessary.

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 existing three-story building is the tallest building on the campus and is approximately 51 feet tall at its tallest point of the building. The proposed two-story addition would be intended to closely match the levels of the existing building in order to allow for internal connections between the proposed addition and the existing building. However, the proposed addition would be shorter at its tallest point (approximately 38 feet tall) than the existing three-story building. The exterior building materials for the proposed ***Van Asselt School Addition Project*** would include concrete, glass, and metal wall panel. The design would be intended to complement the existing building materials of the three-story 1909 building.

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

Views of the site would generally continue to be reflective of the existing school uses on the site. Views of the proposed addition would primarily be available from areas that are proximate to the east and south boundaries of the school campus (see **Figure 3** for the proposed site plan). The proposed addition would increase the amount of building area on the site, but as noted above, the proposed height of the addition would be shorter than the existing three-story 1909 building. Existing, retained mature trees and proposed landscaping would provide a partial buffer/screen that would obscure some of the proposed building addition along the southern portion of the site.

The City's public view protection policies are intended to "protect public views of significant natural and human-made features: Mount Rainier, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of specified viewpoints, parks, scenic routes, and view corridors identified in Attachment 1 to the SEPA code[7]. However, there are no SEPA protected view sites on or in the vicinity of the ***Van Asselt School Addition Project*** site.

View protection from City-designated Scenic Routes is encouraged[8]. According to documentation from the City of Seattle, S Myrtle Street (located immediately north of the campus) is designated as a scenic route by the City. Building development from the proposed ***Van Asselt School Addition Project*** would be located at the south portion of the school campus (approximately 500 feet from S Myrtle Street) and would not impact the east-west views that are available along this scenic route.

Views of designated historic structures are also a consideration[9] and the existing three-story 1909 building that is located on the site is designated as a Landmark by the City of Seattle. With development of the proposed addition, the landmarked portions of 1909 building would still remain visible from Beacon Avenue S. In addition, as part of the permitting process, the proposed ***Van Asselt School Addition Project*** would be required to obtain a Certificate of Approval from the City of Seattle (Department of Neighborhoods) to ensure that the proposed project would not compromise the landmark status of the building. The Certificate of Approval requires review and approval by the City of Seattle Landmarks Preservation Board (see section B.13 for further details).

There are no designated views of the Space Needle on or adjacent to the project site[10].

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

No significant impacts are anticipated with regard to aesthetic impacts and no measures are proposed.

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[7] Seattle Municipal Code Chap. 25.05.675 P.2.a.i. and the accompanying *Seattle Views: An Inventory of 86 Public View Sites Protected under SEPA (May 2002)* document.

[8] Ord. #97025 (Scenic Routes Identified by the Seattle Engineering Department's Traffic Division) and Ord. #114057 (Seattle Mayor's Recommended Open Space Policies).

[9] Seattle Municipal Code Chapter 25.05.675 P.2.b.i.

[10] Seattle Municipal Code Chap. 25.05.675 P. and Seattle DCLU, 2001

11. Light and Glare

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

Short-Term Light and Glare

At times during the construction process, area lighting of the job site (to meet safety requirements) may be necessary, which would be noticeable proximate to the project site. In general, however, light and glare from construction of the proposed project are not anticipated to adversely affect adjacent land uses.

Long-Term Light and Glare

Under the proposed ***Van Asselt School Addition Project***, there would be an increase in light and glare with the proposed building addition which would be proximate to the south property line and adjacent residential uses. Light and glare sources would primarily consist of interior and exterior building lighting, as well as lights from vehicles travelling to and from the site; glare from building materials (e.g., window glazing or other building materials) could also occur during certain times of day. Exterior building lighting would be designed to focus light on the site and minimize impacts to adjacent properties. The presence of existing trees and vegetation along the south property line would help to provide a buffer between the proposed addition and existing off-site uses and minimize light and glare toward adjacent properties. Measures to further minimize light spillage on adjacent properties are also identified below and significant light and glare impacts would not be anticipated.

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

Light and glare associated with the proposed project would not be expected to cause a safety hazard or interfere with views.

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

No off-site sources of light or glare are anticipated to affect the proposed project.

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

Interior and exterior building lighting would be programmed as part of the building facilities system to limit the amount of light utilized when the building is not in use and all exterior lighting would be shielded and directed toward the site to minimize light spillage. Evening activities/events currently occur periodically during the school year and increase light during the evening on those days; however, the number of evening events is not anticipated to substantially change with the proposed addition and the amount of light would not be anticipated to result in a significant impact. Existing mature trees and proposed new landscaping along the south edge of the site would also provide a partial buffer and screen to reduce light spillage from the proposed building addition.

12. Recreation

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

The Van Asselt School campus includes recreation areas that are generally located to the west of the existing buildings and include an artificial turf field and track, hard surface play areas, covered play areas with basketball hoops, and playground equipment. In total, approximately 124,800 sq. ft. of recreation space is currently located on the campus.

There are also several parks and recreation areas in the vicinity of the project site (approximately 1.0 mile), including:

- <u>Van Asselt Community Center and Playground</u> is located immediately to the northeast of the site.
- <u>John C. Little, Sr Park</u> is located approximately 0.4 miles to the east of the site.
- <u>The East Duwamish Greenspace</u> is located approximately 0.4 miles to the south.
- <u>Othello Park</u> is located approximately 0.7 miles to the east.
- <u>The Maple School Ravine</u> is located approximately 0.7 miles to the northwest.
- <u>Brighton Playfield</u> is located approximately 0.9 miles to the northeast.
- <u>Dearborn Park</u> is located approximately 1.0 miles to the north.

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

The proposed project would retain the majority of the existing recreational space on the site, including the existing artificial turf field/track and a large portion of the existing hard surface play areas located to the west of the existing building. As part of the project, approximately 8,500 square feet of existing recreation space would be removed from the site, including hard surface play areas, a covered play area, and playground equipment. However, the proposed project would also add approximately 2,200 square feet of new outdoor learning area space adjacent to the proposed building addition. In total, recreation space on the site would be reduced from approximately 124,800 square feet to approximately 118,500 square feet.

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

The proposed project would result in a reduction in overall recreation space on the campus when compared to the existing conditions, primarily due to the removal of two playground equipment areas and one of the covered play areas. The existing artificial turf field/track and the majority of the hard surface play area would be retained. As noted above, outdoor learning areas would be provided adjacent to the proposed building addition to create new outdoor and recreation space in the south portion of the campus. New landscaped areas would also be provided on the campus that could serve as gathering areas for students, staff and the community.

No additional impacts to recreation would occur and no additional mitigation is necessary.

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 original Van Asselt School building is a three-story structure that was constructed in 1909 and is located in the south portion of the campus; additions to this building were also constructed in 1940 and 2002. This building was designated as a City of Seattle Landmark in May 2019 and features of the landmark that were identified to be preserved included the site and the exterior and interior of the 1909 building. The 1940 and 2002 additions to the original Van Asselt School building were not identified in the landmark determination as features to be preserved. The single-story 1950 school building located on the east and north portions of the site was specifically excluded from the landmark process of the 1909 building and is not identified as a City of Seattle Landmark.

According to the Washington State Department Archaeology and Historic Preservation's (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD), the closest listed structures are the Maple Donation Claim (located approximately 0.3 miles to the northeast and listed on the Washington Heritage Register [WHR]) and the Jimmie and Betty Eng House (located approximately 0.7 miles to the southeast and listed on the WHR and the National Register of Historic Places [NRHP]).

According to the City of Seattle Landmarks Map and Database (*City of Seattle, 2020*), the closest listed City of Seattle Landmarks are the Old Georgetown City Hall (located approximately 1.0 mile to the northwest of the project site) and the Rainier Cold Storage/Ice/Seattle Brewing/Malting Co. Building (located approximately 1.1 miles to the northwest of the project site)

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.

The project site is not located within an area that is designated as the Government Meander Line Buffer area in the City of Seattle and only properties located within that area are required to prepare an archaeological investigation as part of the SEPA and MUP processes.

However, a cultural resources assessment was completed for the project site (*Perteet, 2021*) and included an analysis of the natural and cultural setting, a discussion of previous cultural resource investigations in the site vicinity, review of geotechnical investigations on the site, and an on-site investigation. Prior to conducting onsite field work, letters were sent on July 9, 2020 to local Tribes (including the Duwamish Tribe, Suquamish Tribe, Muckleshoot Tribe, Stillaguamish Tribe, and Snoqualmie Tribe) to solicit concerns and inform the Tribes of the upcoming onsite cultural resource investigation.

The onsite investigations were conducted on the project site, including a pedestrian survey of the site and three shovel probe subsurface investigations. Recent fill atop glacial sediment was encountered in all shovel probe locations. Fill was identified by its massive structure, its relatively compact texture, and the presence of post-contact cultural objects such as plastic and glass fragments; such materials were encountered in all three soil probe locations, always mixed in fill material. Parent glacial materials were generally poorly-sorted light brown fine sandy silts with sub-angular to sub-rounded pebbles comprising roughly 5-15% of sediment volume. Glacial material was encountered immediately below fill. No potentially-significant historic materials were encountered during soil probe excavations; historic materials encountered were generally modern, non-diagnostic, and limited to fill deposits. Glass fragments encountered did not have patterned flake scars that could indicate knapping or prior use as tools. No pre-contact cultural materials or features were found during this survey. No buried soils were encountered; fill was directly atop glacial sediment. Former ground surfaces with potential for pre-contact human occupation are therefore unlikely in the project area

Because no potentially-significant cultural material was observed during the field survey and extant buried surfaces are highly unlikely within the project area, it is anticipated that there is a low probability of encountering intact pre-contact cultural deposits during planned ground disturbing activity. Although small quantities of later historic or modern cultural material was recovered from shovel probes in the northwest portion of the site, they were dispersed in a fill deposit in an area that was previously cut, based on comparison of modern lidar and historical topography. However, it is likely that in the southeast portion of the site, historic features remain that were not accessible to probe survey, especially the subsurface remnants of the 1911 toilet facility to the west of the 1909 building. If still present, such historic features are highly likely to be disturbed during construction of the new building in the southeast portion of the project site. Therefore, it is recommended that a project-specific monitoring and inadvertent discovery plan (MIDP) be prepared for use during the construction process (*Perteet, 2021*). See section B.13.d below and **Appendix F** for further details.

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

The DAHP website, WISAARD, and City of Seattle Landmarks website were consulted to identify any potential historic or cultural sites in the surrounding area, as well as the potential for encountering archaeological resources in the area.

In addition, a Cultural Resources Assessment was completed for the school site (*Perteet, 2021*). The assessment included a review of existing documentation on the natural, cultural and historic setting of the site and surrounding area; a review of previous studies that were conducted in the project area; and, on-site surface and subsurface investigations.

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.**

Due to the City Landmark status of the existing 1909 building, the proposed ***Van Asselt School Addition Project*** would be required to obtain a Certificate of Approval from the City of Seattle Landmarks Preservation Board as part of the permit process to ensure that the proposed project would not compromise the landmark features of the existing building.

The Cultural Resources Assessment (*Perteet, 2021*) included the recommendation for the preparation of a project-specific monitoring and inadvertent discovery plan (MIDP). The MIDP is included as part of the Cultural Resources Assessment (see **Appendix F**) and specifies the areas and depths of excavation that would be monitored, provides detail on the historic context of these areas, and establishes protocols to be followed in the event of an inadvertent discovery including contacts with local tribes (Duwamish, Muckleshoot, Snoqualmie, Stillaguamish, and Suquamish Tribes). Affected local tribes would also be notified in advance of monitored ground disturbance activities in order to allow tribal monitors to observe those activities as well.

14. Transportation

A Transportation Technical Report for the ***Van Asselt School Addition Project*** was prepared by Heffron Transportation, Inc. (*Heffron Transportation, 2021)*. Information from the technical report is summarized in this section. See **Appendix G** for the full technical report.

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

Van Asselt School is located at 7201 Beacon Avenue S in the Beacon Hill neighborhood of Seattle. The school site is bounded on the east by Beacon Avenue S and on the north by S Myrtle Street. The site is bounded by Interstate-5 (I-5) on the west, but there is no direct access in the vicinity.

Three areas on the site are used for parking. The northwest lot has 16 striped spaces accessed from the west driveway on S Myrtle Street. The recycling/trash/loading area located in the northeastern corner of the site was previously striped with 7 spaces (striping has faded) and is accessed from the eastern driveway on S Myrtle Street. An unmarked gravel and paved area is accessed from a driveway on Beacon Avenue S owned by the Beacon Avenue Church of God. The paved/gravel area surrounds the historic original school building on the south end of the site and is currently used for automobile load/unload of students and some staff parking. Aerial imagery from 2015 indicates 5 spaces were striped adjacent to the building, while the remainder of the area has been used for parking. Google Earth's historical imagery also suggests that parking has occurred on the hard surface play area between the main school building and playfield (such as for special events). The hard-surface play area and the gravel/paved area to the south were used for parking by 70 or more vehicles.

The northeastern site frontage along Beacon Avenue S is signed for school bus loading from 7:00 a.m. to 4:00 p.m.

As part of the ***Van Asselt School Addition Project,*** the parking lot at the northwest corner of the site would be expanded to 59 spaces, and the northeast recycling/trash/loading area would be slightly reconfigured and striped with 3 parking spaces. A small new parking lot with 6 spaces and circulation loop would be constructed at the southeast corner of the site. This area would be accessed from the existing Beacon Avenue Church of God access driveway which SPS has agreed to improve and establish a formal shared-access agreement with the church. The access would remain restricted to right-in / right-out movements on Beacon Avenue S.

In coordination with SDOT, the project would reconfigure the existing Beacon Avenue S median strip adjacent to the school site to create a school load/unload zone for automobiles. This median reconfiguration would consist of several elements:

- The existing angle parking spaces would be converted to about 10 parallel load/unload/parking spaces, to accommodate passenger vehicle load/unload for students;
- An additional mid-block crosswalk would be added extending across both directional segments of Beacon Avenue S, aligned with the school's existing main entrance (about 275 feet southeast of S Myrtle Street);
- Both crosswalks would be raised to curb height within the median;
- ADA-compliant ramps would be added for the new and existing mid-block crosswalks across both segments of Beacon Avenue S; and
- Speed cushions would be added approaching both crosswalks in both directions.

SPS would work with SDOT to sign this median segment area for student load/unload during the morning arrival and afternoon dismissal periods, with the space available for general parking during the other times of day.

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

Yes. King County Metro Transit (Metro) provides bus service in the site vicinity. Transit stops are located directly adjacent to the school site at the at S Myrtle Street / Beacon Avenue S intersection. The stops are served by Metro Routes 36 and 107. Route 36 provides all-day service seven days per week between Downtown Seattle, Beacon Hill and Rainier Beach, with weekday headways (time between consecutive buses) of 8 to 10 minutes. Route 107 provides all-day service seven days per week between Beacon Hill, Georgetown, Rainier Beach, and Renton, with weekday headways of 15 to 30 minutes.

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

As noted in the response to Section 14.a, the existing site currently contains a parking lot in the northwest corner of the site with space for approximately 16 vehicles (including one ADA space; additional parking for approximately seven vehicles (including one ADA stall) is located to north of the building within an existing loading area. An unmarked gravel and paved area accessed from the church driveway on Beacon Avenue S surrounds the historic original school building on the south end of the site and has also been used for parking.

With the proposed project, the parking lot at the northwest corner of the site would be expanded to accommodate 59 spaces, and the northeast recycling/trash/loading area would be slightly reconfigured and striped with 3 parking spaces. A small new parking lot with 6 spaces and circulation loop would be constructed at the southeast corner of the site. In total, the site would provide 68 striped parking spaces for regular school-day use.

SPS will establish a shared-use agreement with the Beacon Avenue Church of God that will allow school use of the church's parking lot (about 14 spaces) for school/community events, as scheduled with the church (school will avoid conflicts with church services). The hard-surface play area west of the main school building may also be used for occasional evening or weekend event parking. Historical aerial imagery indicates and plans for fire access indicate that 35 to 40 or more vehicles could park in that area for events depending on the placement of portables and their access ramps.

As required by SDOT as part of the Beacon Avenue S median reconfiguration, the project would convert existing 25 angle parking spaces to about 10 parallel spaces for passenger vehicle load/unload for students. This would result in a reduction of 15 parking spaces within that section of the median.

An analysis of existing parking conditions and the expected change in parking demand due to the project was completed as part of the *Transportation Technical Report* for the project; the analysis was completed in accordance with the City's preferred methodology and requirements (see **Appendix G**). On-street parking in the vicinity of the site was found to be approximately 31% occupied in the early morning and 24% occupied during the school day with more than 160 unused spaces. Based on the expected number of employees at the planned enrollment capacity, the school may generate peak demand of 91 to 133 parked vehicles with variations likely depending on the number of part-time staff and visitors/volunteers on site at any given time. Of these, 68 vehicles could be accommodated on site. The school is estimated to generate demand of 23 to 65 vehicles in on-street spaces surrounding the site midday on school days. Overall school-day utilization is expected to remain between 31% and 50%, which is acceptable parking utilization by the City and school impacts would not be considered significant.

The on-street parking survey results indicated an average of 171 unused on-street parking spaces in the school vicinity on evenings without events at the school. With the reduction resulting from the Beacon Avenue S median reconfiguration, this number would be reduced to 156 spaces. Up to 122 additional spaces could be utilized while still maintaining 85% occupancy, which is the level at which the City considers parking to be effectively full. (see **Appendix G**). The available off-street parking supply (68 on-site spaces, 35 to 40 temporary spaces on hard-surface play area, 14 at the church, and 122 on-street spaces) would be sufficient to accommodate occasional events with attendance of between 700 and 850 people before on-street parking utilization reaches 85% occupied.

It is recommended that the District development an Event Management Plan to reduce parking impacts during events that have potential attendance of 700 or more people.

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).

Yes. In coordination with SDOT, the project would reconfigure the existing parking area within the Beacon Avenue S median strip adjacent to the school site to create a school load/unload zone for automobiles. This median reconfiguration would consist of the elements listed below.

- The existing angle parking spaces would be converted to about 10 parallel load/unload/parking spaces, to accommodate passenger vehicle load/unload for students. During the morning arrival and afternoon departure periods, these spaces would be signed for School Load Only, but could be available for parking at other times of day.
- An additional mid-block crosswalk would be added extending across both directional segments of Beacon Avenue S and aligned with the school's existing main entrance (about 275 feet southeast of S Myrtle Street).
- Both the existing and new crosswalk would be raised to curb height within the median.
- ADA-compliant ramps would be added for the new and existing mid-block crosswalks across both segments of Beacon Avenue S.

- Speed cushions would be added approaching both crosswalks in both directions.

To mitigate the potential impacts of the worst-case interim school use (1,000 students by Mercer Middle School for two years), SPS has coordinated with SDOT to modify and optimize the signal operations. Changes would be dependent on the status of the Beacon Avenue Protected Bicycle Lane (PBL), but modifications examined include changes to the cycle length (increasing from 100 seconds to 110 or 120 seconds) and optimization of phase splits. SDOT may select shorter cycle lengths (e.g., 110 seconds or maintaining the existing 100 second cycle) and tolerate vehicular delays in the LOS E range in order to maintain better operations for pedestrian and bicycle movements through the intersections. Signal timing could be re-evaluated when lower-enrollment schools occupy the site.

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

The project would not use or occur in the immediate vicinity of water, rail, or air transportation.

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

The traffic analysis conducted for this SEPA Checklist reflected conditions with the modernized school at its planned enrollment capacity of 1,000 students. Based on daily trip generation rates published for middle schools by the Institute of Transportation Engineers, the Van Asselt School could generate up to about 2,130 trips per day (1,065 in, 1,065 out). The peak traffic volumes are expected to occur in the morning just before classes begin (between 8:00 and 9:00 a.m.) and in the afternoon around dismissal (between 3:15 and 4:15 p.m.).

Based on school bus estimates provided by the District's Transportation staff and typical service and delivery needs for schools, the number of school-bus and delivery truck trips is expected to comprise about 5 percent of the total daily trips.

For more information about the anticipated school traffic generation, refer to **Appendix G**.

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.

There are no agricultural or forest product uses in the immediate site vicinity and the project would not interfere with, affect or be affected by the movement of agricultural or forest products.

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

Measures have been identified as part of the transportation analysis to reduce adverse impacts during short-term construction and long-term operations of Van Asselt School with the proposed addition and planned interim school use. With these measures the project would not be anticipated to result in significant adverse transportation impacts (see **Appendix G** for further details).

Short-Term Conditions – Construction

A. **Construction Transportation Management Plan (CTMP):** The District would require the selected contractor to develop a Construction Transportation Management Plan (CTMP) that addresses traffic and pedestrian control during construction of the new facility. It would define truck routes, lane closures, walkway closures, and parking or load/unload area disruptions, as necessary. To the extent possible, the CTMP would direct trucks along the shortest route to arterials and away from residential streets to avoid unnecessary conflicts with resident and pedestrian activity. The CTMP may also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite.

B. **Interim Transportation Management Plan (TMP):** Prior to construction, the District and Kimball Elementary School (next interim occupant of the Van Asselt School site) would establish or modify an existing Transportation Management Plan (TMP) to educate parents and students about the preferred access and circulation during site construction. It would encourage carpooling and school bus ridership for those eligible. For students living within the walk-zone for the interim site, the TMP would encourage supervised walking (such as walking school buses). The plan would define clear procedures and travel routes and preferred load/unload locations and identify staffing requirements to manage load/unload activities.

C. **Engage Seattle School Traffic Safety Committee (SSTSC):** The District would continue its ongoing engagement with the

SSTSC (led by SDOT) to review walk routes and to confirm crossing guard locations for crosswalks on Beacon Avenue S and at the S Myrtle Street / Beacon Avenue S intersections, as needed.

D. **Update right-of-way and curb-side signage:** The District would work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school-bus load zone on Beacon Avenue S and the passenger-vehicle load/unload zone in the reconfigured Beacon Avenue S median.

E. **Interim Neighborhood Communication Plan for School Events:** Prior to construction, the District and Kimball Elementary School administration should develop a neighborhood communication plan to inform nearby neighbors of large events each year the school is located at the Van Asselt site. The plan should be updated annually (or as events are scheduled) and should provide information about the dates, times, and rough magnitude of large-attendance events. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events.

Long-Term Conditions – Operations

F. **Signal optimization at S Myrtle Street / Beacon Avenue S:** To mitigate the potential impacts of the worst-case interim school use (1,000 students by Mercer Middle School for two years), SPS would coordinate with SDOT to modify and optimize the signal operations. Changes would be dependent on the status of the Beacon Avenue PBL, but modifications may include changes to the cycle length (increasing from 100 seconds to 110 or 120 seconds) and optimization of phase splits. SDOT may select shorter cycle lengths (e.g., 110 seconds or maintaining the existing 100 second cycle) and tolerate vehicular delays in the LOS E range in order to maintain better operations for pedestrian and bicycle movements through the intersections. Signal timing could be re-evaluated when lower-enrollment schools occupy the site.

G. **Initial Middle School Transportation Management Plan (TMP):** Prior to opening the expanded school for interim use by Mercer Middle School, the District would establish a robust Transportation Management Plan (TMP) designed to minimize automobile trips to and from the site and to educate parents and students about the preferred access and circulation patterns for the interim school. The TMP would include the following key components:

    1. ***Enhanced bus transportation options for students*** – SPS would explore options to increase transportation eligibility for students during the interim occupancy period(s). This could occur by temporarily reducing eligibility distance from 2 miles and/or making more students eligible

for ORCA cards during the interim occupancy period to take advantage of the adjacent Metro stop. It is noted that this component would require review and approval based on transportation standards in effect at the time (updated annually) and ensuring equity issues are addressed.

2. ***Communication of transportation options to families*** – The TMP would provide information about transportation options, including walking and biking to and from the site. As noted, the site is located adjacent to an existing shared-use trail along Beacon Avenue S, which is planned to be upgraded by SDOT. The Van Asselt project would add new secure and covered bicycle parking (192 spaces) that could be used by students and staff. Families and students would be encouraged to walk or bike to and from school as frequently as possible or to drop-off and pick-up students one or more blocks from the school to avoid typical peak period congestion near the school site.

3. ***Communication of ride-sharing opportunities*** – The TMP would include information about ride sharing and carpooling options for families such as King County Metro Transit's School-Based Trip Management program—SchoolPool. SchoolPool is designed to reduce vehicle trips linked to commuting to school by introducing ridesharing modes like carpooling, walking, biking, busing, and rolling combined with its Safe-Routes-To-School Toolkit to reduce car trips to and from schools and decrease greenhouse gas emissions.

4. ***Directions for load/unload and parking procedures*** – The TMP would provide written transportation guidelines to families that explain the load/unload procedures and queuing limitations. Parking guidelines would be provided, as well as reminders about observing speed limits and City parking rules on public streets. The TMP would include directions to family drivers prohibiting vehicle queuing in the travel lanes on Beacon Avenue S and S Myrtle Street. Families would be instructed that as they approach the school by vehicle that, if they see that the loading area queue is full, they would proceed around the block (and/or wait at a safe location off site) and re-enter the load zone a few minutes later. Family drivers may also park and wait in available legal on-street parking spaces in the school vicinity.

5. ***Crossing guard stations and load/unload assistance*** – The TMP would identify crossing guard locations and locations where staff would be stationed at the loading areas to assist student load/unload to reduce the likelihood that queues spill over into Beacon Avenue S.

6. ***School bus staging and load/unload procedures*** – If the number of school buses is greater than can be simultaneously accommodated in the bus load zone on Beacon Avenue S, SPS would stage school bus arrivals to ensure that they do not exceed the available space. The District would develop a school-bus staging plan and include information in the TMP about the staging plan with instructions to students and staff on locations and times for school bus boarding and alighting.

H. **Subsequent Middle School TMPs:** Prior to occupancy for interim use by Aki Kurose or Washington Middle Schools, the District would update the Middle School Transportation Management Plan (TMP) to reflect reduced enrollment and more distant enrollment area. School bus staging may be needed if most students qualify based on distance from the site.

I. **Event Management Plan:** Prior to each school year, the District would work with each school principal to develop an Event Management Plan to reduce parking impacts during large evening events (those expected to have 700 or more attendees/participants). Measures could include: 1) separating large events by grade to reduce overall attendance on any given evening; 2) holding large events at an off-site location; and/or 3) securing additional off-site parking.

J. **Engage Seattle School Traffic Safety Committee:** The District would continue its ongoing engagement with the SSTSC (led by SDOT) to review walk routes and to confirm crossing guard locations for crosswalks on Beacon Avenue S and at the S Myrtle Street / Beacon Avenue S intersections, as needed.

K. **Develop Neighborhood Communication Plan for School Events:** The District and school administration would develop a neighborhood communication plan to inform nearby neighbors of events each year. The plan would be updated annually (or as events are scheduled) and would provide information about the dates, times, and rough magnitude of attendance. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events. SPS would coordinate the Neighborhood Communication Plan with each principal prior to occupation by their school.

L. **Update right-of-way and curb-side signage:** The District would work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school-bus load zone on Beacon Avenue S and the passenger-vehicle load/unload zone in the reconfigured Beacon Avenue S median.

M. **Coordinate with Metro Transit:** The District would coordinate with Metro Transit to confirm the ORCA eligibility for middle school students during the interim occupancy periods and confirm transit service availability and capacity.

15. Public Services

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

While the ***Van Asselt School Addition Project*** would add student capacity to the school site, it is not anticipated to generate a significant increase in the need for public services since these students would be temporarily relocated to the site from other schools within the southeast portion of the school district. To the extent that emergency service providers have planned for gradual increases in service demands, no significant impacts are anticipated.

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

The increase in capacity of the school and number of students and staff on the site may result in incrementally greater demand for emergency services; however, it is anticipated that adequate service capacity is available within the South Beacon Hill area to preclude the need for additional public facilities/services.

16. Utilities

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

All utilities are currently available at the site.

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 immediate vicinity that might be needed.

Natural gas (Puget Sound Energy) and telephone/internet (Comcast) would continue to be provided to the school and service to the proposed addition would be provided from existing onsite connections.

Water service is currently provided to the site by Seattle Public Utilities. A new six-inch combination water service line would be constructed on the site to provide water service to the proposed addition.

Sewer service is also provided by Seattle Public Utilities and service for the proposed addition would be provided through a connection to the existing sanitary sewer connection located to the east of the existing building near Beacon Avenue S.

Electricity to the site is provided by Seattle City Light. There are two existing electric services on the site that serve the current building. One is located on the north side of the building off of S Myrtle Street, the other is located on the south side and goes underneath the existing building. The proposed project would abandon the existing primary feeder that routes under the south portion of the building. The existing underground transformer vault would remain, and a new primary feeder would be provided from Beacon Avenue S to restore the connection to the existing transformer vault and feed a new transformer for the proposed addition.

C. SIGNATURES

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

Signature:

Vincent R.Gonzales

Name of Signee:

Vincent R. Gonzales

Position and Agency/Organization:

Senior Project Manager, Seattle Public Schools

Date:

March 12, 2021

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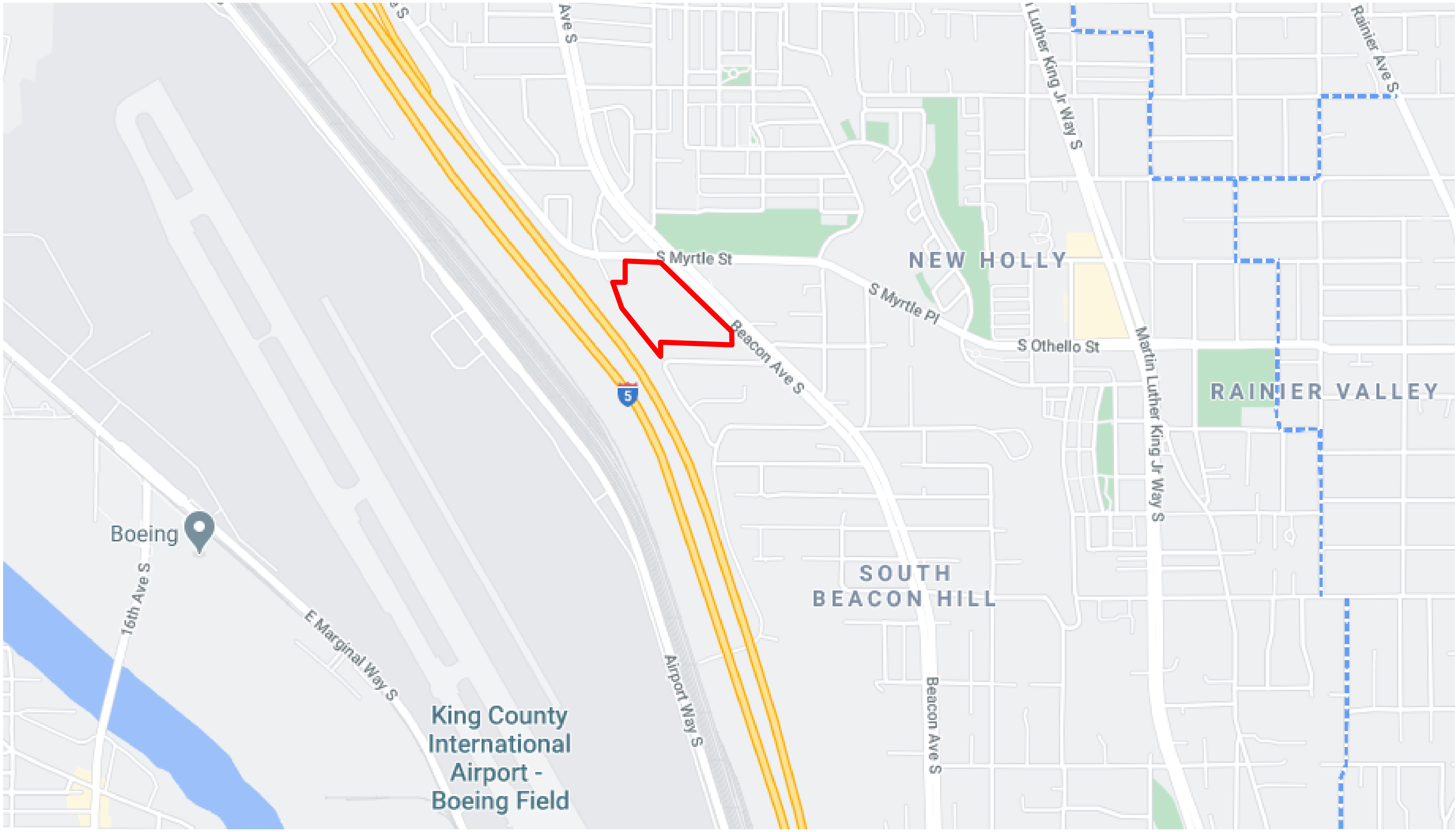
Figures

Van Asselt School Addition Project
Environmental Checklist



🟥 Project Site

Note: This figure is not to scale.

North

Source: Google Maps and EA Engineering, 2020

EA Engineering, Science, and Technology, Inc., PBC

Figure 1

Vicinity Map

Van Asselt School Addition Project
Environmental Checklist

🟥 Project Site

Note: This figure is not to scale.

North

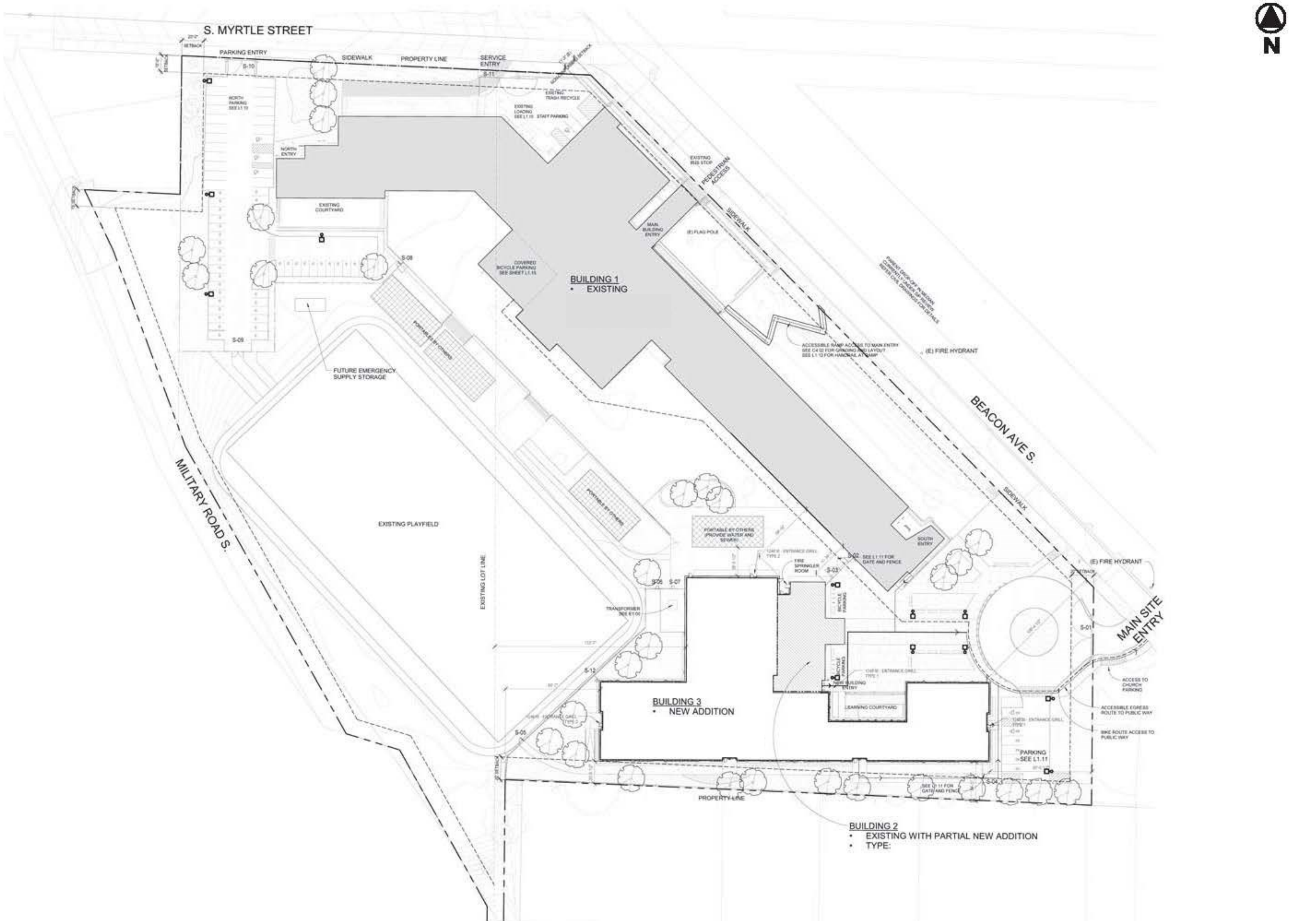
Source: Google Maps and EA Engineering, 2020

EA Engineering, Science, and Technology, Inc., PBC

Figure 2

Aerial Map

Van Asselt School Addition Project
Environmental Checklist



Note: This figure is not to scale.

Source: Bassetti Architects, 2021

EA Engineering, Science, and Technology, Inc., PBC

Figure 3

Site Plan

Appendix A

GEOTECHNICAL REPORT

Preliminary Geotechnical Engineering Report

Van Asselt School
Seattle, Washington
Project Number PS20203710

Prepared for:

Seattle Public Schools
C/o Shiels Obletz Johnson, Inc - 101 Yesler Way #606, Seattle, WA 98104

June 29, 2020

Preliminary Geotechnical Engineering Report

Van Asselt School
7201 Beacon Avenue South
Seattle, Washington
Project Number PS20203710

Prepared for:

Seattle Public Schools
C/o Shiels Obletz Johnson, Inc - 101 Yesler Way #606, Seattle, WA 98104

Prepared by:

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June 29, 2020

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1.0 Site and project description

The project site is the Van Asselt Elementary School campus at 7201 Beacon Avenue South in Seattle, Washington, as shown on Figure 1. The school property is approximately 9 acres in size and identified by the King County Assessor office as parcel numbers 2824049028 and 5129000050. The school property boundaries are generally defined by South Myrtle Street to the north, Beacon Avenue South to the east, single family homes to the south and an 80-foot high steep slope that drops down to Interstate I-5 on the school campus west side. The site was originally developed in 1909 with the construction of the original school building located in the southeast area of the campus. The 1909 school building and surrounding grounds had multiple building additions and site improvements between 1909 and 1942. In the 1950's, a new 20-room school building was constructed along the campus east side which parallels Beacon Avenue South and South Myrtle Street. In 2005 / 2006 the athletic field east of the new school building was upgraded from natural turf to a synthetic turf that included a subsurface drainage system. The 1909 school building still resides at its original location on the school campus.

Development plans call for construction of a three-story school building, gymnasium, expanded parking, drop-off, portables and other associated infrastructures which would be independent of the existing 1950 school building. When we prepared our subsurface program multiple conceptual plans concerning building layout other permanent structures were being considered. A preferred conceptual plan was selected the day before we executed our subsurface exploration program. The preferred conceptual plan shows a three-story school building (with gymnasium) located along the south side of the campus. Vehicles would access the campus from Beacon Avenue South with a new drop-off loop located between the 1950 school building and new school building and a new parking lot on the east side of the new school building. A fire lane will be located between the new school building and south property line. The parking lot in the northwest corner of the school campus will be expanded towards the south. Four double-portables are to be installed west of the 1950 school building. Only the 1940's and 2002 elevator additions to the 1909 school building will be demolished to accommodate the new development plans. Figure 2 illustrates the proposed building layout, location of the new bus loop, parking lots and fire lane.

2.0 Exploratory methods

Wood explored surface and subsurface conditions at the project site on May 19 and May 26, 2020. Our exploration and testing program comprised the following elements:

- A visual surface reconnaissance of the site;
- Six borings (designated B-1 through B-6);
- Laboratory testing, which consisted of:
  - Ten moisture content determinations,
  - Five grain-size distribution analyses; and
  - Five 200-wash determinations.
- A review of published geologic maps and seismic information in the site vicinity.

Table 1 summarizes the approximate locations, surface elevations, and termination depths of the subsurface explorations performed for this investigation, and Figure 2 depicts the locations of these explorations. Appendix A includes the boring logs and describes the field exploration procedures, and Appendix B presents the laboratory testing procedures and results.

Table 1: EXPLORATION LOCATIONS, ELEVATIONS, AND DEPTHS

Exploration	Location at Proposed Facility	Surface Elevation[1] (feet)	Termination Depth (feet)
B-1	School Building Southwest Corner	~240.5	20.5
B-2	School Building Northwest Side	~240.5	18
B-3	North Side of Gymnasium	~236	15
B-4	School Building South Side	~234.5	15.5
B-5	Near School Building Southeast Corner	~233	21.5
B-6	Parking Area East of School Building East End	~234.5	18

Note

Elevation datum: NAVD88 (Vertical) and NAD83/11 (Horizontal) per Topographic Survey – Old Van Asselt Elementary School by Reid Middleton, dated May 1, 2020

Bassetti Architects selected the boring locations based on the conceptual plans and potential building layout. Wood selected the specific locations and depths of explorations based on the constraints of surface access, underground utility conflicts, and budget. We estimated the relative location of each exploration by measuring from existing features and scaling these measurements from the boring location plan provided by Bassetti Architects and the topographic surveys plan provided to us by Shiels Obletz Johnsen. We then estimated their elevations by interpolating between contour lines shown on the topographic survey plan. Consequently, the data listed in Table 1 and the locations depicted on Figure 2 should be considered accurate only to the degree permitted by our data sources and implied by our measuring methods.

3.0 Site conditions

This section presents Wood's observations, measurements, findings, and interpretations regarding development, surface, soil, groundwater, and seismic conditions at the project site.

3.1 Surface conditions

The 1950 school building is located on the east side of the campus and parallels Beacon Avenue South except for building northern most portion that runs parallel to South Myrtle Street. West of the school building is a paved play area and athletic field. South of the 1950 school building is the 1909 school building. The ground surface around the 1909 building is paved. East of the 1909 building are two portables within a grassy area which are in the southeast corner of the campus. A small parking lot is in the northwest of the campus directly west of the 1950 school building.

The ground surface in the vicinity of the 1950 school building, 1909 school building and portable at the southeast corner of the campus dips gently toward the south from an approximate elevation of 240 feet at the north end of the 1950 school building to elevation 233 at the campus southeast corner. The athletic field along the west side of the school campus is flat-lying at approximate elevation 240.5 feet. West of the 1909 school building is a small graded slope that rises from elevation 236 feet up to elevation 240 feet at the south end of the athletic field. West of the athletic field in the vicinity of the property line is an approximately 80-foot high 40-percent or greater steep slope that drops down to Interstate I-5 below.

3.2 Soil conditions

According to the USGS geologic map "The Geologic Map of Seattle" (Troost, 2005), the site is characterized as Blakely Formation Sandstone (Tb), Advance Outwash (Qva) and Glacial Till (Qvt). Wood advanced six borings (B-1 through B-6) to depths of 15 to 21.5 feet below the ground surface (bgs) on the project site. Our borings did not encounter any advance outwash or glacial till deposits but did encounter fill, unweathered sandstone (bedrock) weathered sandstone, and completely weathered sandstone that has transitioned into residual soil. Two borings at the south east corner of the site encountered a sandy SILT / silty SAND deposit we interpret to be Pre-Fraser Non-Glacial Deposits. Figure 2 shows the approximate location of each exploration boring.

Borings B-1 and B-2 advanced west of the new school building encountered 1 foot of grass / topsoil over 3.5 to 4.5 feet of loose to medium dense fill. Below the fill was 2.5 to 4 feet of loose to medium dense fine sandy silt / silty fine sand (residual soil) over 3.5 to 6 feet of silty fine sand (weathered sandstone) that was underlain by very dense unweathered sandstone from 13 feet bgs to termination at 15 to 20 feet bgs. Boring B-3 encountered 4.5 feet of medium dense to dense fine sandy silt / silty sand (residual soil) over 2.5 feet of very dense silty fine sand (weathered sandstone) underlain by very dense unweathered sandstone from 7 to 15 feet bgs.

Boring B-4 advanced south of the new school building encountered 1 foot of grass / topsoil over 6.5 feet of medium dense to dense fine sandy silt / silty fine sand (residual soil) over 2.5 feet of very dense silty fine sand (weathered sandstone) that was underlain by very dense unweathered sandstone from 9 to 15 feet bgs.

Boring B-5 advanced in the new parking area east of the new school building encountered 1 foot of grass and topsoil over 17 feet of medium dense to dense fine sandy silt / silty fine sand (Pre-Fraser deposit) underlain by very dense fine sandy silt / silty fine sand (residual soil) at 17 to 21.5 feet bgs.

Boring B-6 advanced on the northeast side of the new school building encountered 7 feet of medium dense silty fine sand (Pre-Fraser deposit) over 6.5 feet of very dense fine sandy silt / silty fine sand (residual soil) underlain by very dense unweathered sandstone from 13.5 to 18 feet bgs.

The unweathered sandstone bedrock we encountered was extremely difficult to drill. Any future planned excavation within the unweathered sandstone bedrock will be very difficult or nearly impossible with conventional construction excavators.

The exploration logs included in Appendix A provide a detailed description of the soil strata encountered in our subsurface explorations. Table 2 summarizes the approximate thicknesses and depths of the soil layers encountered in exploration borings.

Table 2: APPROXIMATE THICKNESSES AND DEPTHS OF SOIL LAYERS ENCOUNTERED IN EXPLORATIONS

Exploration	Thickness of Existing Fill (feet)	Depth to Medium Dense Soil (feet)	Depth to Dense or Very Dense Soil (feet)	Depth to Dense or Very Dense Weathered Sandstone (feet)	Depth to Unweathered Sandstone Bedrock (feet)
B-1	5.5	7.0	NE	9.5	13
B-2	4.5	4.5	NE	7.0	13
B-3	0.5	0.5	2.5	4.5	7.0

Exploration	Thickness of Existing Fill (feet)	Depth to Medium Dense Soil (feet)	Depth to Dense or Very Dense Soil (feet)	Depth to Dense or Very Dense Weathered Sandstone (feet)	Depth to Unweathered Sandstone Bedrock (feet)
B-4	1.0	1.0	5.0	6.5	9.0
B-5	1.0	1.0	7.0	NE	NE
B-6	0.5	0.5	7.0	13.5	NE

Abbreviations

NE = not encountered

Geotechnical laboratory tests revealed that all the soils tested had a high fines (silt and clay) content and moisture content. The fill soil had a measured fines content of 44 to 45 percent and moisture content of 13 to 19 percent. The residual soil (completely weathered sandstone) had a fines content of 38 to 81 percent with a moisture content of 16 to 21 percent. The Pre-Fraser sandy silt / silty sand deposit had a fines content of 28 to 65 percent and moisture content of 15 to 16percent. We interpret the site soils in their current condition are at or above optimum moisture contents for compaction and highly moisture sensitive. The laboratory testing sheets presented in Appendix B show the laboratory test results and Table 3 summarizes those results.

Table 3: LABORATORY TEST RESULTS

Boring and Sample Number ID	Depth (Feet)	Soil Type	Moisture Content (percent)	Grain Size Analysis		
				Gravel (percent)	Sand (percent)	Silt/Clay (percent)
B-1 / S-1	2.5 – 4.0	Fill	13	NT	NT	44
B-1 / S-3	7.5 – 9.0	Residual Soil	21	1	61	38
B-2 / S-1	2.5 – 4.0	Fill	19	9	46	45
B-2 / S-3	7.5 – 8.3	Residual Soil	18	NT	NT	49
B-3 / S-1	2.5 – 4.0	Residual Soil	16	NT	NT	81
B-4 / S-1	2.5 – 4.0	Residual Soil	19	1	24	75
B-5 / S-1	2.5 – 4.0	Pre-Fraser Deposit	16	NT	NT	37
B-5 / S-3	7.5 – 9.0	Pre-Fraser Deposit	15	1	34	65
B-6 / S-1	2.5 – 4.0	Pre-Fraser Deposit	15	1	71	28
B-6 / S-3	7.5 – 9.0	Residual Soil	16	NT	NT	69

Abbreviations
NT = not tested

3.3 Groundwater conditions

At the time of our subsurface explorations (May 26, 2020), no groundwater was encountered in any of our borings. We noted that soil samples retrieved from borings B-5 and B-6 (on the east end of the proposed new building) were described as wet, however no free water or saturated conditions were observed. Mottling and oxidation staining were noted within the weathered sandstone and overlying residual soil indicating perched groundwater could be encountered resting on the weathered sandstone or silt layers within the residual soil overlying the weathered sandstone during or after wet weather periods. The wet soils and mottled coloration suggest downward infiltrating surface water becomes temporarily perched on less pervious silt layers. Throughout the year, groundwater and perched groundwater levels would likely fluctuate in response to changing precipitation patterns, construction activities, and site utilization.

3.4 Critical areas – geologic hazards

Wood reviewed the City of Seattle Municipal Code (SMC) section Title 25, Chapter 25.09 concerning Environmentally Critical Areas (ECA). Wood also accessed the City of Seattle GIS portal for ECA mapped locations. Based on City of Seattle GIS portal, the approximately 80-foot high steep slope descending to Interstate I-5 along the west property line has an inclination of 40-percent or greater, and is mapped as an ECA Steep Slope / Landslide-prone area. The slope meets the definition for Landslide-prone areas as provided in SMC 25.09.012.A3, as well as a Steep Slope Erosion Hazard per SMC 25.09.012.A4. Based on our review there are no other mapped ECA Geologic Hazards on or near the site (such as Liquefaction Prone, Known Slides, Historic Landfills or Peat Settlement Prone Areas).

Wood reviewed SMC 25.09.80 (Landslide-prone areas) and SMC 25.09.090 (Development standards for steep slope hazard areas) and based on our understand of the SMC's, it appears the steep slope buffer extending from the top of steep slope eastward onto the site is 15 feet wide. Based on the conceptual and architectural plans provided the new school building west end appears to be is approximately 80 feet or more east from the from the property west fence line which appears to be along the top of the steep slope. The conceptual plans also indicate the paved parking lot in the property northwest corner will be expanded south and the emergency vehicle turnaround located on the west side of the new school building will also both be 15 feet or more away from the property west fence line. Based on our understanding of the SMC's ECA codes and review of the conceptual plans it appears the proposed development will not encroach into the steep slope buffer.

Based on our reconnaissance of site conditions, we did not observe any physical indication of ground cracking, disturbance or settlement that would suggest any instability related to the steep slope area. In our opinion, assuming the recommendations of this report are followed, the proposed development will not adversely affect the stability of the steep slope area or buffer.

It should be noted that both SMC 25.09.80.G and SMC 25.09.090.C1 do state the City of Seattle can require a geotechnical report to verify slope conditions, evaluate impacts of the development to a steep slope and at their discretion, City of Seattle can require a greater steep slope buffer that would require a critical area study to be completed. Our preliminary geotechnical report scope of work did not include a critical area study. If required by the City of Seattle during preliminary permitting review of the project Wood can provide a proposal for completing a critical area study if required.

3.5 Seismic design parameters

Wood assumes that the proposed new elementary school building will be designed in accordance with the 2015 International Building Code (ICC, 2014) and Seattle Building Code. Based on our review the soils and weathered bedrock are determined to be Site Class C.

Seismic parameters for the site latitude and longitude were determined using the ASCE 7 Hazard Tool (2020). The assumed inputs and the ASCE 7 Hazards Report is provided in Appendix C.

Based on our review of groundwater conditions and soil type, the risk of liquefaction at this site is considered to be very low.

4.0 Conclusions and recommendations

This section presents our preliminary geotechnical engineering conclusions and recommendations concerning site preparation, foundations, floors, stormwater infiltration, and structural fill. ASTM International (ASTM) specification codes cited herein refer to the most current applicable ASTM manual. Seattle Standard Specifications (2017) are referenced for mineral aggregates and controlled density fill. Washington State Department of Transportation (WSDOT) specification codes cited herein refer to the current *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT, 2018).

4.1 Site preparation

Preparation of the project site for construction of any potential buildings and associated infrastructure would include temporary erosion and sediment control, demolition of existing structures, paved surfaces, sidewalks, removal or abandonment of utilities, clearing, stripping, grading, and subgrade compaction.

Erosion control measures: Prior to disturbing the ground surface with earthwork, temporary erosion and sediment controls should be implemented. The project civil engineer should prepare plans and specifications to prevent erosion and runoff during construction complying with City of Seattle standards. The contractor would need to understand that design plans and specifications represent the minimum requirements and additional measures and modifications may be needed throughout the construction period that are specific to the construction activities and the weather.

Demolition: One of the first steps in site preparation would consist of demolishing the 1940 and 2002 additions on the 1909 school building. Demolition of any paved surfaces, concrete sidewalks, and existing structures that may be in the way of proposed site improvements will also need to be completed. Any associated underground structural elements or utilities, such as old footings, stemwalls, and drainpipes, should be exhumed as part of this demolition operation. Excavations created during demolition should be backfilled and compacted with structural fill in accordance with the recommendations contained herein. Pipes less than 2 feet below any future structures or infrastructure should be removed, and pipes deeper than 2 feet below structures should be filled with concrete or Controlled Density Fill (CDF) and left in place if the overlying trench backfill meets project specifications.

As will be discussed further, the 1940 addition of the 1909 building has an existing basement area which will be demolished. Backfilling of the basement areas should be planned to provide uniform and suitable bearing for new foundations, floors and other structures. If basement floors and stem walls are to remain, they should be cut off at least 2 feet below the bottom of any new foundation element. No collapsed concrete or loose fill should remain in the excavation. The resulting basement cavity should be backfilled with compacted structural fill or controlled density fill depending on the design allowable bearing capacity.

Temporary dewatering: As noted there was some evidence of intermittent perched groundwater at the site during portions of the year. The contractor should be prepared to provide temporary dewatering should such perched seepage be encountered. We anticipate any such dewatering can be handled by sump and pump methods.

Clearing and stripping: After temporary erosion and sediment controls are in place, construction areas should be cleared and stripped of all vegetation, sod, topsoil, debris, asphalt, and concrete. Our explorations disclosed approximately 1-foot of sod/topsoil, but the thickness of these layers could vary across the site. Furthermore, it should be noted if stripping operation proceeds during wet weather, a generally greater stripping depth might be necessary to remove disturbed, wet soils; therefore, stripping would best be performed during a period of dry weather.

Excavation conditions: The upper site soils and weathered sandstone can be excavated with conventional earthmoving equipment. Additional effort is expected to be required to excavate into the unweathered bedrock at greater depths. This may require use of hydraulic points to break the bedrock in advance of excavation, or similar methods. Blasting is not recommended at this site due to the risk of vibration damage to existing facilities.

Subgrade compaction: Exposed subgrades for footings, floors, pavements, structures, and excavations should be compacted with a large, smooth-drum vibratory roller or hoe-pack compactor to a dense, unyielding state. Any localized zones of loose granular soils observed within a subgrade should be compacted to a density commensurate with the surrounding soils. In contrast, any organic, soft, or pumping soils observed within a subgrade should be over-excavated and replaced with a suitable structural fill.

On-site soils: We offer the following evaluation of the on-site soils relative to potential use as structural fill:

- *Organic-rich soils:* The sod, topsoil, and organic-rich soils mantling the unpaved area of the site or any relic topsoil or organic rich layers encountered below the surface would not be suitable for use as structural fill under any circumstances, due to their long-term compressibility. Consequently, these materials could be used only for non-structural purposes, such as in landscaped areas.
- *Existing fill soils:* The loose to slightly medium dense fill soil encountered at the site generally consisted of fine grained silty sand or sandy silt and above their soil optimum moisture content in current conditions. The existing fill soils would be difficult or impossible to reuse during wet weather because of their high fines content.
- *Residual and Pre-Fraser soils:* The loose to dense residual soil and deeper deposits of Pre-Fraser soil consisted of a sandy silt to silty sand that was at or over the optimum moisture content for these soils. The sandy portions of these native soils could potentially be reused as structural fill if near optimum moisture content. To accomplish this, these soils would likely need to be aerated during warm weather to reduce moisture content to near optimum moisture content. During the warm weather periods the soil may become too dry and may need to be moisture conditioned to near optimum moisture for use as structural fill. Overall, these native deposits would be very difficult to impossible to reuse as structural fill during wet weather conditions.
- *Weathered sandstone:* The weathered sandstone is composed of sandy silt and silty sand, and appeared friable and excavatable. The weathered sandstone could potentially be reused as structural fill if near optimum moisture content. Any excavated intact chunks of weathered sandstone greater than 6-inch in size would need to be crushed to an acceptable size to be used as structural fill. The weathered sandstone would be very difficult to impossible to reuse as structural fill during wet weather conditions
- *Unweathered sandstone:* The unweathered sandstone is basically bedrock and very difficult to excavate. The unweathered sandstone excavated pieces would not be suitable for reuse as structural fill unless crushed to provide chunks not greater than 6 inches in diameter.

Wet-weather considerations: As discussed above, the majority of on-site soils would be difficult to use as structural fill during wet weather due to a high fines content. Consequently, the project specifications should include provisions for importing clean, granular fill in case site filling must proceed during wet weather. For general structural fill purposes, we recommend using a well-graded sand or gravel, such as Selected Backfill (Mineral Aggregate Type 17) per City of Seattle 9-03.10 or Shoulder Ballast (Mineral Aggregate Type 13) per City of Seattle 9-03.7(2).

Utility trench backfill: None of the explorations encountered utility trench backfill. As such, the depths, lengths, alignment, or density of any utility trench backfill intersecting the proposed building footprint were not determined as part of this study. In general, granular backfill would not adversely affect site development, unless excavations or foundations are required adjacent to pea gravel or similar materials that would tend to ravel. Utility trench backfill under any new building footings or structures may require over-excavation and replacement with structural fill that is compacted to project specifications.

Permanent slopes: All permanent cut slopes and fill slopes should be adequately inclined to minimize long-term raveling, sloughing, and erosion. We generally recommend that no slopes be steeper than 2H:1V (Horizontal: Vertical). For all soil types, the use of flatter slopes (such as 3H:1V) would further reduce long-term erosion potential and facilitate vegetation growth.

Slope protection: We recommend that a permanent berm, swale, or curb be constructed along the top edge of all permanent slopes to intercept surface flow. Also, a hardy vegetative groundcover should be established as soon as feasible to further protect the slopes from erosion due to runoff water. In no case should any temporary or permanent runoff be directed toward the Steep Slope Hazard area west of the site.

Temporary cut slopes: Temporary open cuts can be made where adequate lateral space is available, and excavation sidewalls should be adequately sloped back to minimize sloughing and erosion. Cut slopes with workers below are required to adhere to the Occupational Safety and Health Administration/ Washington Industrial Safety and Health Act (OSHA/WISHA) requirements. Table 4 presents our interpretation of soil types and corresponding OSHA/WISHA cut slope inclinations when workers are below. However, appropriate inclinations will ultimately depend on the actual soil conditions exposed during earthwork.

Table 4: SOIL TYPES AND SLOPE INCLINATIONS FOR TEMPORARY EXCAVATIONS

Soil Type	Typical Depth Interval (feet)	OSHA/WISHA Soil Type	Maximum Inclination
Loose to medium dense fill, residual soil and Pre-Fraser soil	0.5 to 5.5 (Fill) 0.5 to 13.5 (Residual Soil) 0.5 to 7.0 (Pre-Fraser)	C	1.5H:1V
Dense Pre-Fraser soil	7.0 to 18 (Athletic Field)	B	1H:1V
Very dense residual soil, weathered sandstone and unweathered sandstone	7.0 to 13.5 (Residual Soil) 4.5 to 13.0 (Weathered Sandstone) 7.0 to 21.5 (Unweathered Sandstone)	A	0.75H:1V

Abbreviations
OSHA = Occupational Safety and Health Administration
WISHA = Washington Industrial Safety and Health Act
H = horizontal
V = vertical

4.2 Foundations

In our opinion, conventional spread footings will provide adequate support for the proposed construction if the subgrades are properly prepared. We offer the following comments and recommendations for the purposes of footing design and construction.

Footing depths and widths: For frost and erosion protection, the bottoms of all exterior footings should bear at least 18 inches bgs, whereas the bottoms of interior footings need bear only 12 inches below the surrounding slab surface level. To minimize post-construction settlements, continuous (wall) and isolated (column) footings should be at least 18 inches and 24 inches wide, respectively.

Bearing subgrades: The following types of subgrade soils are anticipated, depending on location and elevation:

- *Fill soils:* The loose to medium dense fill soil at the south end of the existing athletic field is considered to be uncontrolled fill in a variable state of consolidation and therefore not suitable to support foundation bearing loads in their current condition.
- *Residual soils:* The intact, medium dense native residual soils would support moderate bearing pressures while the residual soil in a dense to very dense state would support higher bearing pressures. However, the loose residual soil at the south end of the athletic field are not suitable to support foundation bearing loads in their current condition.
- *Pre-Fraser soil deposits:* The intact, medium dense native Pre-Fraser soils would support moderate bearing pressures while the Pre-Fraser soil in a dense to very dense state would support higher bearing pressures.
- *Weathered and unweathered sandstone:* The intact, native, very dense weathered and unweathered sandstone deposits identified at the site would support higher bearing pressures.
- *Structural fill:* Newly placed structural fill that has been properly compacted would provide a suitable subgrade.
- *Controlled density fill:* Where higher bearing capacity foundations are required, the excavation should be backfilled full depth with Controlled Density Fill for Structure Backfill per City of Seattle 2-10.2(3)A3.

Over-excavations: Loose, soft, organics or unsuitable soils encountered below structures should be over-excavated and replaced with structural fill that is properly placed and compacted. Because foundation stresses are transferred outward as well as downward into the bearing soils, over-excavation should extend horizontally outward from the edge of each footing a distance equal to the excavation depth, effectively creating a 1H:1V prism outward from all sides of the footing.

Protective footing subgrade cap: Due to the high fines content of the majority of site soils and weathered sandstone encountered across the site and in preparation for any wet weather work that may be planned, we recommend a 4-inch protective cap of clean compacted granular fill, such as 1.5-inch crushed gravel (Mineral Aggregate Type 21) per City of Seattle 9-03.9. This protective cap would protect footing subgrades from softening due to water accumulation or degradation from construction activities, such as construction equipment or foot traffic, during footing forming and rebar installation.

Bearing capacities: Preliminary bearing capacities are provided below. Once the locations, sizes, and elevations of foundations have been determined, we could provide more specific bearing pressures for specific footing locations:

- *Structural fill:* Properly placed and compacted structural fill would provide an allowable bearing pressure of 2,500 pounds per square foot (psf).
- *Native Medium dense soils:* The various undisturbed native medium dense soils encountered at the site would provide an allowable bearing of at least 2,500 psf.
- *Native dense to very dense soils and sandstone deposits:* The various undisturbed native dense to very dense soils, weathered sandstone and unweathered sandstone deposit identified at the site would provide an allowable bearing pressure of 5,000 psf.
- *Controlled Density Fill:* Foundations bearing on Controlled Density Fill for Structure Backfill per City of Seattle 2-10.2(3)A3 when placed directly above the native dense to very dense soils and sandstone deposits will also provide an allowable bearing capacity of 5,000 psf.

For seismic design, these pressures may be increased by one third.

Footing settlements: We estimate that total post-construction settlements of properly designed footings, would be less than 1 inch and differential settlement between new foundations would be less than ½ inch. These settlements would be reduced if the actual design bearing pressures are lower than our recommended pressures.

Subgrade verification: We recommend all footing subgrades be verified by a wood employee. Wood also recommends any over-excavation and backfill placed be verified by a Wood representative before any concrete is placed on the prepared footing subgrade. Footings should never be cast on loose, soft, or frozen soil; slough; debris; existing uncontrolled fill; or surfaces covered by standing water.

Footing and stemwall backfill: To provide erosion protection and lateral load resistance, we recommend all footing excavations be backfilled and compacted on both sides of the footings and stemwalls after the concrete has cured. The excavations should be backfilled with structural fill and compacted to a density of at least 90 percent (based on ASTM D-1557).

Lateral resistance: Footings and stemwalls that have been properly backfilled as described above would resist lateral movements by means of passive earth pressure and base friction.

4.3 Slab-on-grade floors

In our opinion, soil-supported slab-on-grade floors can be used in the proposed buildings if the subgrades are properly prepared. We offer the following comments and recommendations concerning this floor type.

Floor subbase: All soil-supported slab-on-grade floors should bear on at least medium dense soils or structural fill. Localized over-excavation and replacement of loose or organic rich soils may be needed, depending on the location of the floor slabs. The condition of subgrade soils should be evaluated by a Wood representative in case over-excavation of unsuitable soils is needed.

Capillary break: To reduce the upward wicking of water from the soil subgrade, it is important that a capillary break be placed over the subgrade soils. The capillary break should consist of a minimum 4-inch-thick layer of washed, crushed gravel, such as 1.5-inch crushed gravel (Mineral Aggregate Type 21) per City of Seattle 9-03.9 . The angular shape of the specified gravel would provide some surface support strength for temporary construction activities. It would also tend to distribute surface loads and reduce the potential for differential settlement of the subgrade fill soils. An alternate capillary break material can be considered consistent with the architect's recommendations for a vapor retarder system.

Vapor barrier: We recommend a vapor barrier at least 10 mils thick be placed directly above the capillary break to impede moisture from migrating upward through the slab. During subsequent casting of the concrete slab, the contractor should exercise care to avoid puncturing this vapor barrier. The identification of alternatives to prevent vapor transmission is outside of our expertise. A qualified architect or building envelope consultant can make recommendations for reducing vapor transmission through the slab, based on the building use and flooring specifications.

Vertical deflections: Soil-supported slab-on-grade floors can deflect downward when vertical loads are applied, due to elastic compression of the subgrade. In our opinion, a subgrade reaction modulus of at least 200 pounds per cubic inch can be used to estimate such deflections.

4.4 Backfilled walls

This section presents our recommendations for permanent cast-in-place concrete walls, such as site walls supporting grade changes at the site, and underground vaults.

Footing Depths: For frost and erosion protection, concrete retaining wall footings should bear at least 18 inches bgs. However, greater depths might be necessary to develop adequate passive resistance and/or bearing resistance in certain cases.

Curtain Drains: To preclude hydrostatic pressure development behind the backfilled retaining wall, we recommend a curtain drain be placed behind the walls. This curtain drain should consist of pea gravel, washed rock, or some other clean, uniform, well-rounded gravel, extending outward a minimum of 12 inches from the wall and extending upward from the footing drain to within about 12 inches of the ground surface. The curtain drain should connect to a 4-inch-diameter perforated drain pipe behind the heel of the wall, which then discharges away from the wall.

Backfill Soil: Ideally, all retaining wall backfill placed behind the curtain drain would consist of clean, free-draining, granular material, such as Selected Backfill (Mineral Aggregate Type 17) per City of Seattle 9-03.10 .

Backfill Compaction: Because soil compactors place significant lateral pressures on retaining walls, we recommend only small, hand-operated compaction equipment be used within 3 feet of a backfilled wall. In addition, all backfill should be compacted to a density as close as possible to 90 percent of the maximum dry density (based on ASTM D-1557); a greater degree of compaction closely behind the wall would increase the lateral earth pressure, whereas a lesser degree of compaction might lead to excessive post-construction settlements.

Grading and Capping: To retard infiltration of surface water into backfill soils, we recommend the backfill surface of exterior walls be adequately sloped to drain away from the wall. Ideally, the backfill surface directly behind the wall would be capped with asphalt, concrete, or 12 inches of low-permeability (silty) soils to minimize or preclude surface water infiltration

Applied Loads: Overturning and sliding loads applied to retaining walls can be classified as static pressures and surcharge pressures. We offer the following specific values for design purposes:

- Static Pressures: Yielding (cantilever) retaining walls should be designed to withstand an appropriate active lateral earth pressure, whereas restrained building walls should be designed to withstand an appropriate at-rest lateral earth pressure. These pressures act over the entire back of the wall and vary with the backslope inclination. Assuming a level backslope, we recommend using active and at-rest pressures of 32 pounds per cubic foot (pcf) and 55 pcf, respectively.

- _Seismic Pressures_: A uniform seismic increment of 14H should be used in combination with an active earth pressure. For example, for a retaining wall that is 10 feet high apply 140 pounds per square foot of uniformly distributed pressure in addition to active pressure.
- _Surcharge Pressures_: Static lateral earth pressures acting on a retaining wall should be increased to account for surcharge loadings resulting from any traffic, construction equipment, material stockpiles, or structures located within a horizontal distance equal to the wall height. For simplicity, a traffic surcharge can be modeled as a uniform horizontal pressure of 75 pcf.
- _Hydrostatic Pressures:_ If adequate drainage is provided with a curtain drain, hydrostatic pressures will *not* develop. However, if groundwater is allowed to collect behind the wall, an additional hydrostatic pressure of 62.5 pcf would act on the wall.

Resisting Forces: Static pressures and surcharge pressures are resisted by a combination of passive lateral earth pressure, base friction, and subgrade bearing capacity. Passive pressure acts over the embedded front of the wall (neglecting the upper 1 foot for paved foreslopes, or the upper 2 feet for soil foreslopes) and varies with the foreslope declination, whereas base friction and bearing capacity act along the bottom of the footings. Assuming a level foreslope at the wall location, we recommend using the following design values, which incorporate static and seismic safety factors of at least 1.5 and 1.1, respectively. Table 5 provides recommended passive pressure values and coefficient of base friction.

Table 5: RETAINING WALL RESISTING FORCE DESIGN PARAMETERS

Design Parameter	Allowable Value
Static Passive Pressure	400 pcf
Seismic Passive Pressure	450 pcf
Base Friction Coefficient	0.4

Abbreviations
pcf = pounds per cubic foot
Base coefficient assumes the footing is casted on the crushed rock bearing pad

Base friction can be combined with the respective passive pressure to resist static and seismic loads.

4.5 Drainage systems

In our opinion, the school building should be provided with permanent drainage systems to minimize the risk of future moisture problems. We offer the following recommendations and comments for drainage design and construction purposes.

Perimeter Drains: We recommend the building be encircled with a perimeter drain system to collect possible seepage water. This drain should consist of a 4-inch-diameter perforated rigid pipe within an envelope of pea gravel or washed rock, extending at least 6 inches on all sides of the pipe, and the gravel envelope should be wrapped with filter fabric to reduce the migration of fines from the surrounding soils. Ideally, the drain invert would be installed no more than 4 inches above or below the base of the perimeter footings.

Runoff Water: Roof runoff and surface runoff water should ***not*** be allowed to flow into the foundation drainage systems. Instead, these sources should flow into separate tightline pipes and be routed away from the buildings to an appropriate location. In addition, final site grades should slope downward away from each building so that runoff water will flow by gravity to suitable collection points, rather than ponding near the buildings. Ideally, the area surrounding the buildings would be capped with concrete, asphalt, or low-permeability (silty) soils to minimize surface-water infiltration next to the footings.

4.6 Stormwater infiltration

Permeable soil Layers: Laboratory testing indicates the site soils had a fines content between 28 to 81 percent resulting in relatively low permeability. The silt horizons with the highest percentage fines would have the lowest permeability and would impede infiltration from sandier layers that may be present on site. Relatively permeable soil layers suitable for stormwater infiltration were not encountered within our exploration limits.

While no longer accepted for estimating design infiltration rates, we made a preliminary estimate of infiltration rate based on grain size. We find preliminary design saturated infiltration rate (Ksat) values of 0.1 to 0.5 inches per hour using the 2014 WDOE manual equation 3.3.6 and correction factors. We also did a check using the methodology described in the WSDOT 2019 Hydraulics Manual, Equation 4D-3. That method indicates Ksat values mostly in the range of 0.03 to 0.14 inch/ hour.

Therefore, after reviewing laboratory tests results combined with visual observation of the soil samples collected our preliminary conclusion is the soils within our exploration limits would likely provide relatively slow long-term infiltration rates, and may be considered infeasible for infiltration.

Groundwater: Although groundwater was not encountered in any of our explorations, mottling and oxidation staining (mottling) was present within most of the soil samples collected indicating perched groundwater is present atop of potential silt layers within the soil or atop of the weathered and unweathered sandstone deposit during or after a wet weather period. Throughout the year, groundwater levels would likely fluctuate in response to changing precipitation patterns, construction activities, and site utilization.

City of Seattle Stormwater Manual: According to City of Seattle GIS maps, the majority of the Van Asselt campus is mapped as “Green Stormwater Infiltration Evaluation Not Required”. Based on this mapping, the only portion of the site that may be feasible is a 50- to 100-foot-wide strip parallel with Beacon Avenue. Wood completed a brief review of the City of Seattle 2017 Stormwater Manual (Volume 3). In Section 3.2, the manual states “Green Stormwater Infiltration Evaluation Not required” areas are based on required City of Seattle setbacks and known infiltration restrictions. Wood review of Section 3.2, subsection “Site Constraints” the manual generally states “Steep Slope or Landslide-prone Areas – infiltration is limited within landslide-prone areas or within a setback of 10 times the height of the steep slope to a maximum of 500 feet from the steep slope area. Infiltration within this area may be feasible provided a detailed slope stability analysis is completed by a licensed engineer or engineering geologist. The analysis shall determine the effects infiltration would have on the landslide-prone or steep slope area and adjacent properties”. A Steep Slope Critical Area Study or slope stability analysis was not part of our preliminary geotechnical study scope of work.

Pilot Infiltration Testing (PIT): Prior to this preliminary report, no potential site infiltration facilities have been designed or infiltration locations selected. If requested, Wood could further evaluate potential infiltration rates for stormwater infiltration within the narrow 50- to 100-foot wide strip parallel with Beacon Avenue that would not require a Critical Area Study or steep slope analysis to be completed for site infiltration. Wood recommends additional exploration and completion of pilot infiltration tests in accordance with the guidelines and procedures for determining design infiltration rates presented in the 2017 City of Seattle Stormwater Design Manual. However, depending on the type of infiltration facility design proposed and the City of Seattle Stormwater Manual requirements, additional geotechnical engineering maybe needed for project permitting beyond our initial cost estimate for infiltration testing, such as installation of a groundwater monitoring well or groundwater readings through a wet winter season. Although, our preliminary infiltration assessment indicates the site long term infiltration rates to be relatively slow, the City of Seattle may require infiltration testing to determine if the infiltration rates do or do not meet the City of Seattle Stormwater manual thresholds for site infiltration.

4.7 Structural fill

The term "structural fill" refers to any materials used for building pads, as well as materials placed under foundations, slab-on-grade floors, sidewalks, and pavements; under and behind retaining walls; and permanent fill slopes.

Materials: Typical structural fill materials include sand, gravel, crushed rock, quarry spalls, controlled density fill, lean-mix concrete, well-graded mixtures of sand and gravel (commonly called "gravel borrow" or "pit-run"), and mixtures of silt, sand, and gravel. Soils used for structural fill should not contain any organic matter or debris, or any individual particles larger than approximately 6 inches in diameter.

Fill placement: Structural fill should be placed in horizontal lifts not exceeding 8 inches in loose thickness, and each lift should be thoroughly compacted with a mechanical vibratory compactor. Other procedures may be appropriate for some materials.

Compaction criteria: Using the Modified Proctor test (ASTM D1557) as the standard, we recommend structural fill be used for various on-site applications and compacted to the minimum densities shown in Table 6.

Table 6: RECOMMENDED COMPACTION CRITERIA BASED ON FILL APPLICATION

Fill Application	Minimum Compaction
Footing subgrade	95 percent
Footing and stemwall backfill	90 percent
Slab-on-grade floor subgrade	90 percent
Retaining wall subgrade	95 percent
Retaining wall backfill	90 percent
Concrete slabs	95 percent
Asphalt pavement subgrade	95 percent
Utility trench backfill (0 to -4 feet)	95 percent
Utility trench backfill (-4 feet and deeper)	90 percent

Subgrade verification and compaction testing: Regardless of material or location, all structural fill should be placed over dense, unyielding subgrades. The condition of all subgrades should be verified by a Wood representative before filling or construction begins. In addition, fill soil compaction should be verified by means of in-place density tests performed during fill placement so the adequacy of the soil compaction efforts may be evaluated as earthwork progresses.

Soil moisture considerations: The suitability of soils used for structural fill depends primarily on their grain-size distribution and moisture content when they are placed. As the "fines" content (the soil fraction passing the U.S. No. 200 Sieve) increases, soils become more sensitive to small changes in moisture content. Soils containing more than about 5 percent fines (by weight) cannot be consistently compacted to a firm, unyielding condition when the moisture content is more than 2 percentage points above or below optimum.

Import fill and wet weathered fill considerations: The on-site soils would be difficult to reuse as structural fill during wet weather because of high silt content and moisture sensitivity. Alternatively, we recommend using a well-graded sand and gravel, such as Selected Backfill (Mineral Aggregate Type 17) per City of Seattle 9-03.10 or Shoulder Ballast (Mineral Aggregate Type 13) per City of Seattle 9-03.7(2).

5.0 Limitations

It should be noted that the explorations performed and used for this evaluation reveal subsurface conditions only at discrete locations across the project site, and that actual conditions in other locations could vary. Furthermore, the nature and extent of these variations will not become evident until additional explorations are performed or until construction activities have begun. If significant variations are observed, we may need to modify the conclusions and recommendations contained in this report to reflect the actual site conditions.

The conclusions and recommendations contained in this preliminary geotechnical engineering report are based on our understanding of the preliminary conceptual plans for the Van Asselt Elementary School campus development as derived from verbal information supplied by Shiels Obletz Johnsen. As conceptual plans are generated, building configuration and size are determined, and supporting infrastructures designed, a review of these engineering recommendations and modifications to this report will be needed. Wood is available to provide geotechnical engineering throughout the design process and to perform monitoring services throughout construction.

6.0 References

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Troost, Kathy G. 2005. The Geologic Map of Seattle – A Progress Report. U.S. Geological Survey.

International Code Council, Inc. (ICC). 2014. International Building Code 2015. Country Club Hills, Ill.

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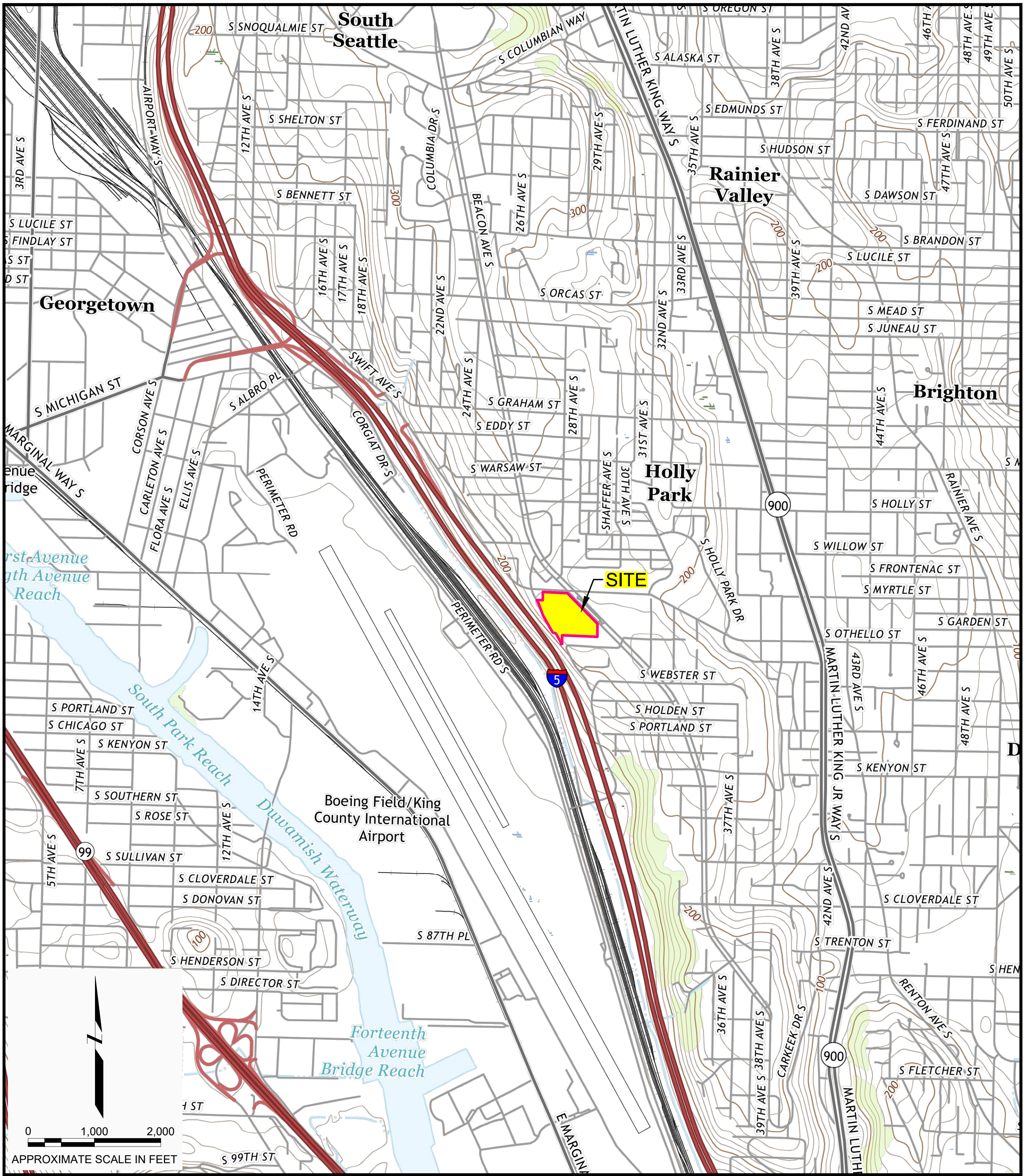
Figures



CLIENT

Shields Obletz Johnson

Wood Environment &
Infrastructure Solutions, Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

wood.

PROJECT

VAN ASSELT
ELEMENTARY SCHOOL

TITLE

SITE VICINITY

DATE
JUNE 2020

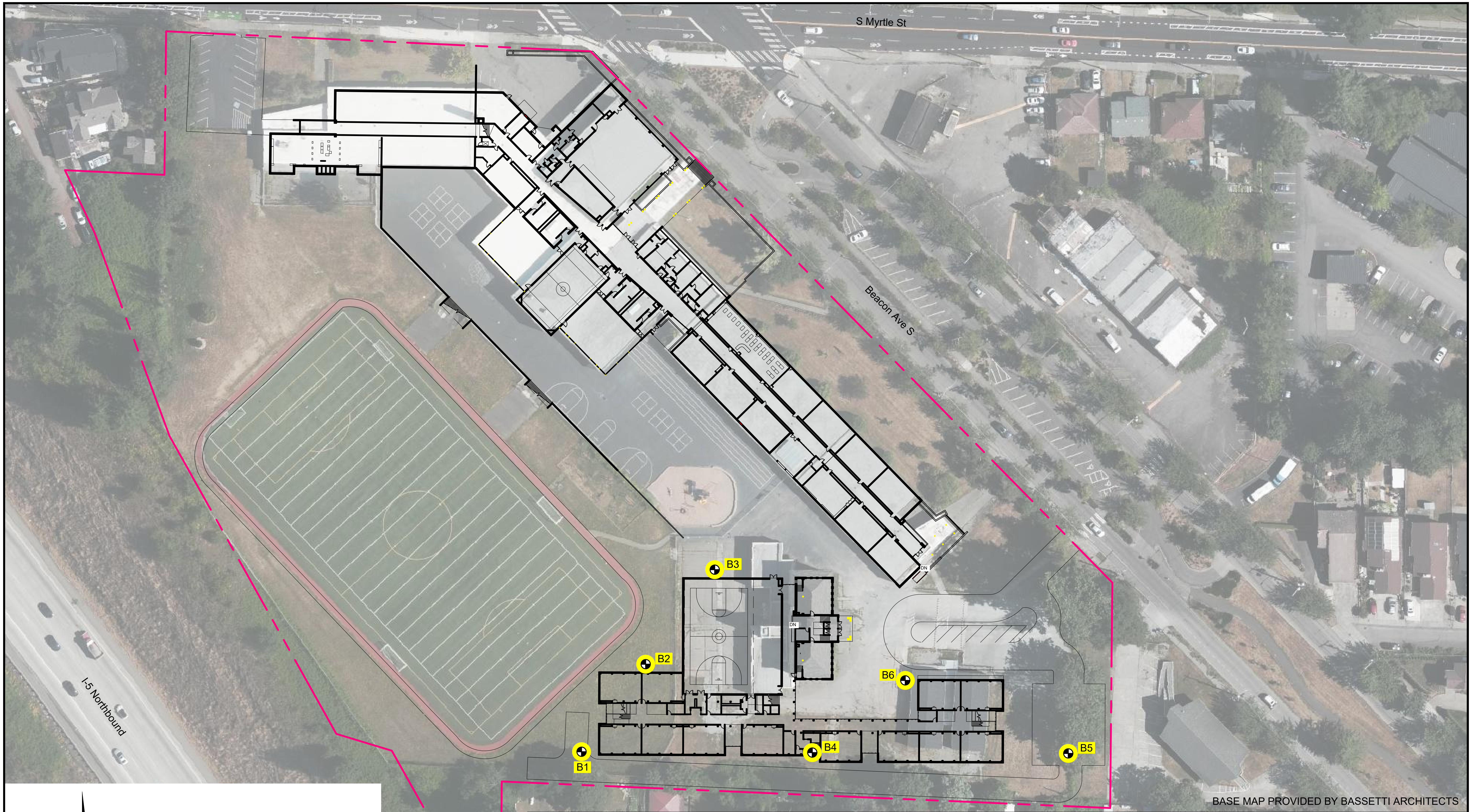
SCALE
AS SHOWN

PROJECT NO.
PS20203710

FIGURE
1

DRAWN BY: APS CHECKED BY: KHM

C:\Users\adam.stenberg\appdata\local\temp\AcPublish_17956\VanAsseltElem_SitePlan_060320.dwg - Vicinity - Jun. 04, 2020 10:21am - adam.stenberg



DRAWN BY: PM CHECKED BY: JKH

CLIENT

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Kirkland, Washington 98033

wood.

PROJECT

VAN ASSELT
ELEMENTARY SCHOOL

TITLE

SITE AND EXPLORATION PLAN

DATE
JUNE 2020

SCALE
AS SHOWN

PROJECT NO.
PS20203710

FIGURE
2

C:\Users\adam.stenberg\appdata\local\temp\AcPublish_12252\VanAsseltElem_SitePlan_060320.dwg - Site - Jun. 04, 2020 11:14am - adam.stenberg

Appendix A

Appendix A –Field exploration procedures and logs

The following paragraphs describe the procedures used for field explorations and field tests that Wood conducted for this project. Descriptive logs of our explorations are enclosed in this appendix.

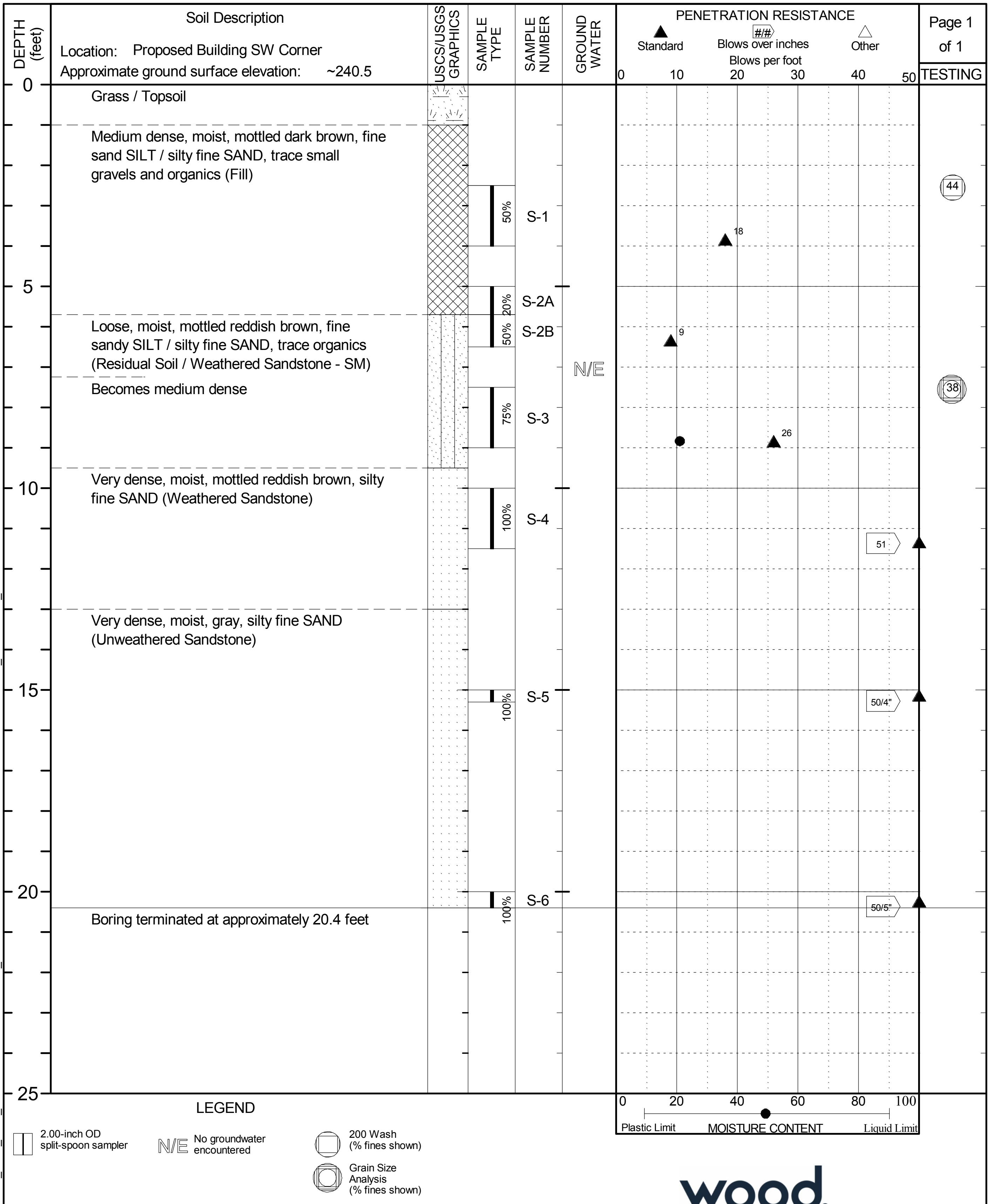
Auger boring procedures

Exploratory borings were advanced with a hollow-stem auger, using a trailer-mounted drill rig operated by an independent drilling firm working under subcontract to Wood. A senior engineering geologist from Wood continuously observed the borings, logged the subsurface conditions, and collected representative soil samples. All samples were stored in watertight containers and later transported to the laboratory for further visual examination and testing. After each boring was completed, the borehole was backfilled with a mixture of bentonite chips and soil cuttings.

Throughout the drilling operation, soil samples were obtained at 2.5- or 5-foot depth intervals by means of the standard penetration test (SPT) per ASTM D-1586. This testing and sampling procedure consist of driving a standard 2-inch-diameter steel split-spoon sampler 18 inches into the soil with a 140-pound hammer free-falling 30 inches. The number of blows required to drive the sampler through each 6-inch interval was counted, and the total number of blows struck during the final 12 inches was recorded as the standard penetration resistance, or "SPT blow count." If a total of 50 blows were struck within any 6-inch interval, the driving was stopped, and the blow count was recorded as 50 blows for the actual penetration distance. The resulting standard penetration resistance values indicate the relative density of granular soils and the relative consistency of cohesive soils.

The enclosed boring logs describe the vertical sequence of soils and materials encountered in each boring, based primarily on field classifications and supported by subsequent laboratory examination and testing. Where a soil contact was observed to be gradational, boring logs indicate the average contact depth. Where a soil type changed between sample intervals, we inferred the contact depth. The boring logs also graphically indicate the blow count, sample type, sample number, and approximate depth of each soil sample obtained from the borings. If groundwater was encountered in a borehole, the approximate groundwater depth is depicted on the boring log. Groundwater depth estimates are typically based on the moisture content of soil samples, the wetted height on the drilling rods, and the water level measured in the borehole after the auger has been extracted.

PROJECT: Van Asselt ES **JOB No. PS20203710** **BORING No. B-1**



Soil Description

Location: Proposed Building SW Corner

Approximate ground surface elevation: ~240.5

Grass / Topsoil

Medium dense, moist, mottled dark brown, fine sand SILT / silty fine SAND, trace small gravels and organics (Fill)

Loose, moist, mottled reddish brown, fine sandy SILT / silty fine SAND, trace organics (Residual Soil / Weathered Sandstone - SM)

Becomes medium dense

Very dense, moist, mottled reddish brown, silty fine SAND (Weathered Sandstone)

Very dense, moist, gray, silty fine SAND (Unweathered Sandstone)

Boring terminated at approximately 20.4 feet

wood.

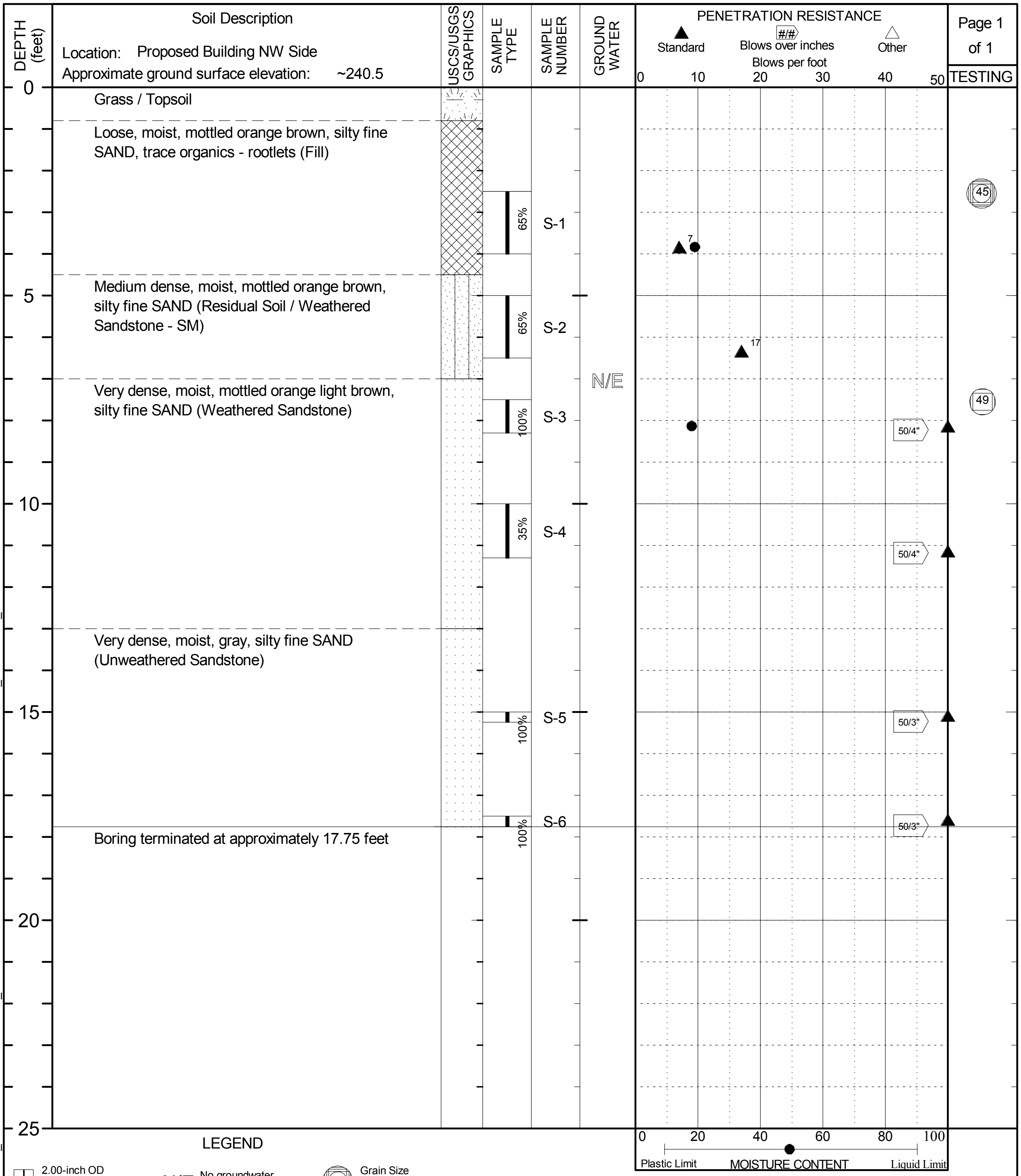
4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

KIRKLAND_GEO_2018_WOOD.GLB 2018 BOING_LOG FORMAT W/O VAN ASSELT ES.GPJ KIRKLAND_TEMPLATE_2017.GDT PRINTDATE 6/16/20

Drilled by: *Boretec* Hammer Type: Automatic Date drilled: *May 26, 2020* Logged By: *CM*

Drilling Method: HSA

PROJECT: Van Asselt ES **JOB No. PS20203710** **BORING No. B-2**



Location: Proposed Building NW Side

Approximate ground surface elevation: ~240.5

Soil Description	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE	TESTING
Grass / Topsoil					
Loose, moist, mottled orange brown, silty fine SAND, trace organics - rootlets (Fill)	65%	S-1		7	45
Medium dense, moist, mottled orange brown, silty fine SAND (Residual Soil / Weathered Sandstone - SM)	65%	S-2		17	
Very dense, moist, mottled orange light brown, silty fine SAND (Weathered Sandstone)	100%	S-3	N/E	50/4"	49
	35%	S-4		50/4"	
Very dense, moist, gray, silty fine SAND (Unweathered Sandstone)	100%	S-5		50/3"	
	100%	S-6		50/3"	
Boring terminated at approximately 17.75 feet					

Page 1 of 1

LEGEND

- ▯ 2.00-inch OD split-spoon sampler
- N/E No groundwater encountered
- ◎ Grain Size Analysis (% fines shown)
- ○ 200 Wash (% fines shown)

wood.

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Boretec* Hammer Type: Automatic Date drilled: *May 26, 2020* Logged By: *CM*

Drilling Method: HSA

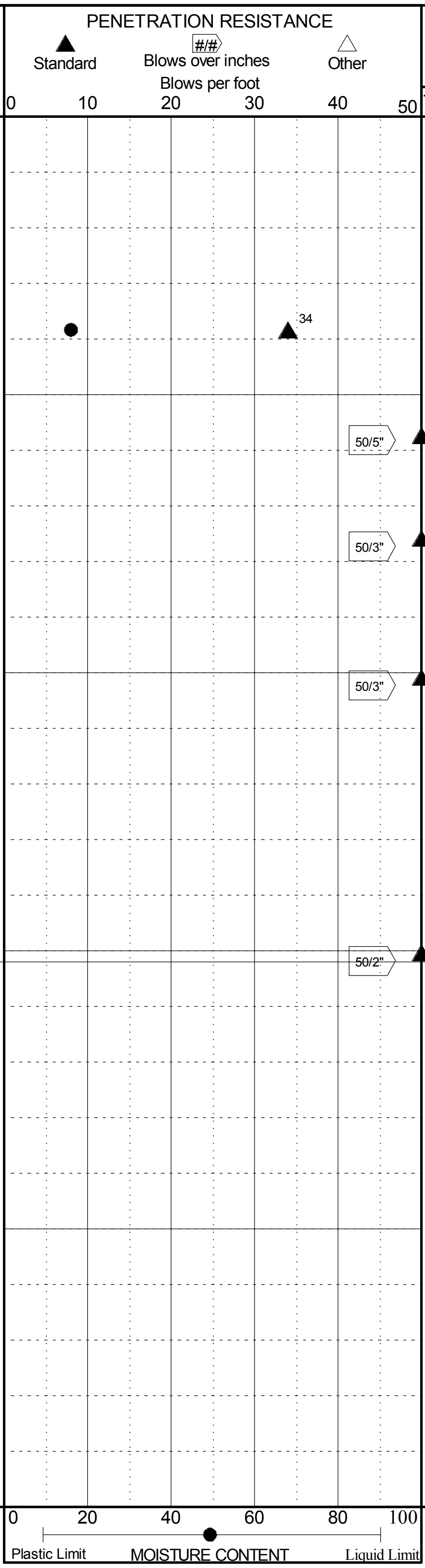
PROJECT: Van Asselt ES **JOB No. PS20203710** **BORING No. B-3**

Page 1 of 1

Location: Proposed N. Side of Gym

Approximate ground surface elevation: ~236

DEPTH (feet)	Soil Description	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE Blows per foot	TESTING
0	Asphalt			N/E		
	Medium dense, moist, gray, fine sandy SILT / silty fine SAND, trace gravel (Residual Soil / Weathered Sandstone - SM)					
	Becomes dense	30%	S-1		34	81
5	Very dense, moist, mottled orange light brown, silty fine SAND (Weathered Sandstone)	70%	S-2		50/5"	
	Very dense, moist, gray, silty fine SAND (Unweathered Sandstone)	100%	S-3		50/3"	
10		100%	S-4		50/3"	
15		100%	S-5		50/2"	
	Boring terminated at approximately 15.2 feet					



LEGEND

▯ 2.00-inch OD split-spoon sampler

N/E No groundwater encountered

▢ 200 Wash (% fines shown)

wood.

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Boretec* Hammer Type: Cathead Date drilled: *May 26, 2020* Logged By: *CM*

Drilling Method: HSA

KIRKLAND_GEO_2018_WOOD.GLB 2018 BOING_LOG FORMAT W/O VAN ASSELT ES.GPJ KIRKLAND_TEMPLATE_2017.GDT PRINTDATE 6/16/20

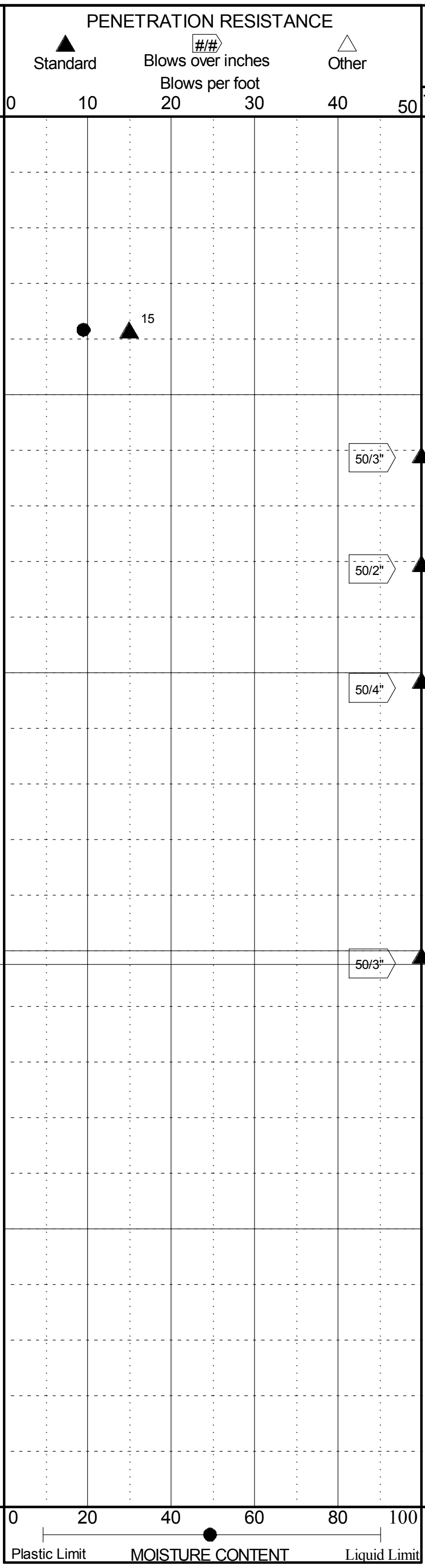
PROJECT: Van Asselt ES **JOB No. PS20203710** **BORING No. B-4**

Page 1 of 1

Location: Proposed Building S. Side

Approximate ground surface elevation: ~234.5

DEPTH (feet)	Soil Description	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	TESTING
0	Grass / Topsoil				
	Medium dense, wet, heavy mottlling, gray, fine sandy SILT / silty Fine SAND (Residual Soil / Weathered Sandstone - SM)	80%	S-1		75
5	Becomes very dense	20%	S-2		
	Very dense, moist, mottled, orange brown, silty fine SAND (Weathered Sandstone)	75%	S-3	N/E	
10	Very dense, moist, gray, silty fine SAND (Unweathered Sandstone)	75%	S-4		
15		100%	S-5		
	Boring terminated at approximately 15.25 feet				
20					
25					



LEGEND

▯ 2.00-inch OD split-spoon sampler

N/E No groundwater encountered

⊚ Grain Size Analysis (% fines shown)

wood.

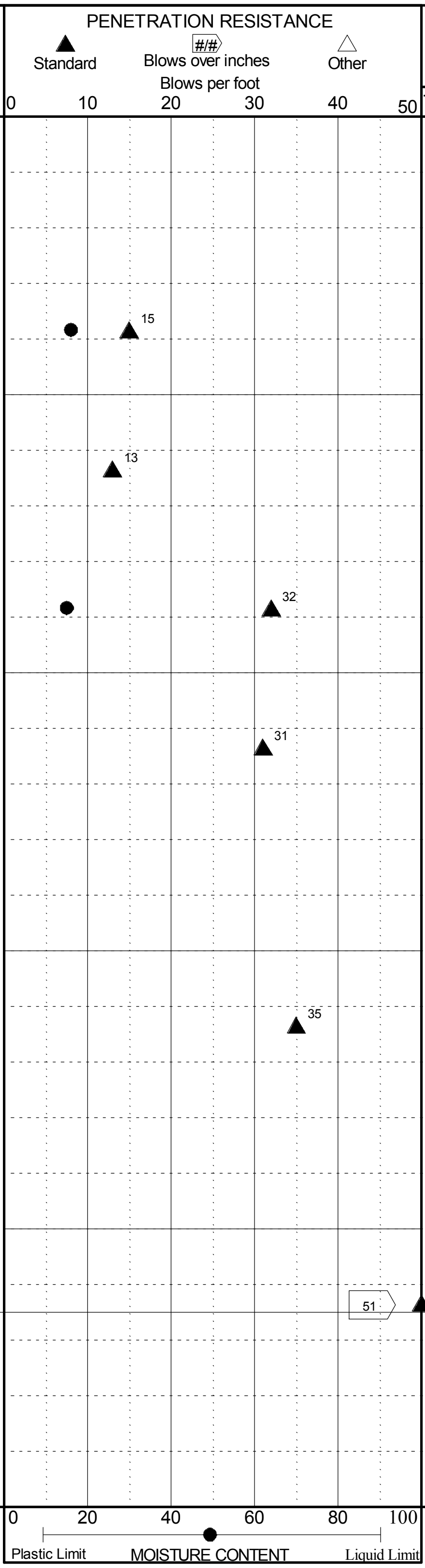
4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Boretec* Hammer Type: Cathead Date drilled: *May 26, 2020* Logged By: *CM*

Drilling Method: HSA

PROJECT: Van Asselt ES **JOB No. PS20203710** **BORING No. B-5**

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	TESTING
0	Location: Near Proposed Building SE Corner Approximate ground surface elevation: ~233					Page 1 of 1
	Grass / Topsoil					
	Medium dense, wet, mottled, orange-brown to gray, silty fine SAND (Pre-Fraser Non-Glacial Deposit - SM)		50%	S-1		37
5	Medium dense, wet, bluish gray, fine sandy SILT / silty fine SAND (Pre-Fraser Non-Glacial Deposit - SM)		65%	S-2	N/E	
	Becomes dense		70%	S-3		65
10	Becomes silty fine SAND		70%	S-4		
15			70%	S-5		
	Very dense, wet, fine sandy SILT / silty fine SAND (Residual Soil / Weathered Sandstone - SM)					
20			85%	S-6		
	Boring terminated at approximately 21.5 feet					
25						



LEGEND

2.00-inch OD split-spoon sampler

N/E No groundwater encountered

200 Wash (% fines shown)

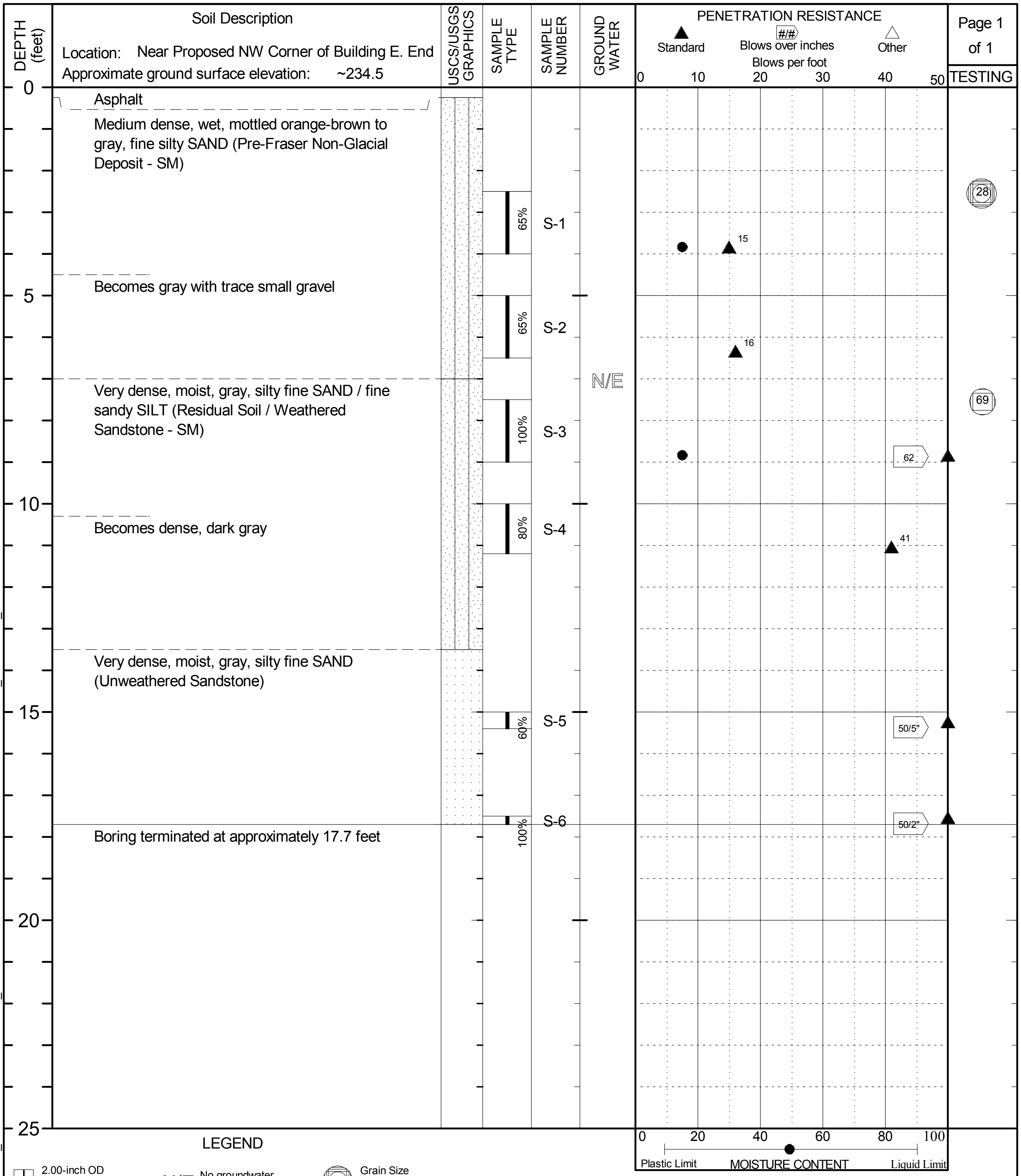
Grain Size Analysis (% fines shown)

wood.
4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Boretec* Hammer Type: Cathead Date drilled: *May 26, 2020* Logged By: *CM*

Drilling Method: HSA

PROJECT: Van Asselt ES **JOB No. PS20203710** **BORING No. B-6**



LEGEND

▯ 2.00-inch OD split-spoon sampler

N/E No groundwater encountered

Grain Size Analysis (% fines shown)

200 Wash (% fines shown)

wood.

4020 Lake Washington Blvd NE, Ste 200
Kirkland, WA 98033

Drilled by: *Boretec* Hammer Type: Cathead Date drilled: *May 26, 2020* Logged By: *CM*

Drilling Method: HSA

Appendix B

Appendix B – Laboratory testing procedures and results

This appendix describes procedures associated with the laboratory tests Wood assigned for this project. Geotechnical laboratory testing was performed by a local, accredited geotechnical testing laboratory, subcontracted to Wood. Results of certain laboratory tests are enclosed in this appendix.

Visual classification procedures

Visual soil classifications were conducted on all samples in the field and on selected samples in the laboratory. All soils were classified in general accordance with the Unified Soil Classification System, which includes color, relative moisture content, primary soil type (based on grain size), and any accessory soil types. The resulting soil classifications are presented on the exploration logs contained in Appendix A.

Moisture content determination procedures

Moisture content determinations were performed on representative samples to aid in identification and correlation of soil types. All determinations were made in general accordance with ASTM International D-2216. The results of these tests are shown on the exploration logs contained in Appendix A.

Grain-size analysis procedures

A grain-size analysis indicates the range of soil particle diameters included in a particular sample. Grain-size analyses were performed on representative samples in general accordance with ASTM International D-422. The results of these tests are presented on the enclosed grain-size distribution graphs and were used in soil classifications shown on the exploration logs contained in Appendix A.

200-wash analysis procedures

A 200-wash is a procedure in which the fine-grained soil fraction is separated from the sand and gravel by washing the soil on a U.S. No. 200 Sieve. A 200-wash was performed on selected soil samples obtained from our borings in general accordance with ASTM D-1140, Test Method for Amount of Material in Soils Finer than the No. 200 (75-µm) Sieve. The results of these analyses were used in soil classifications shown on the exploration logs presented in Appendix A.

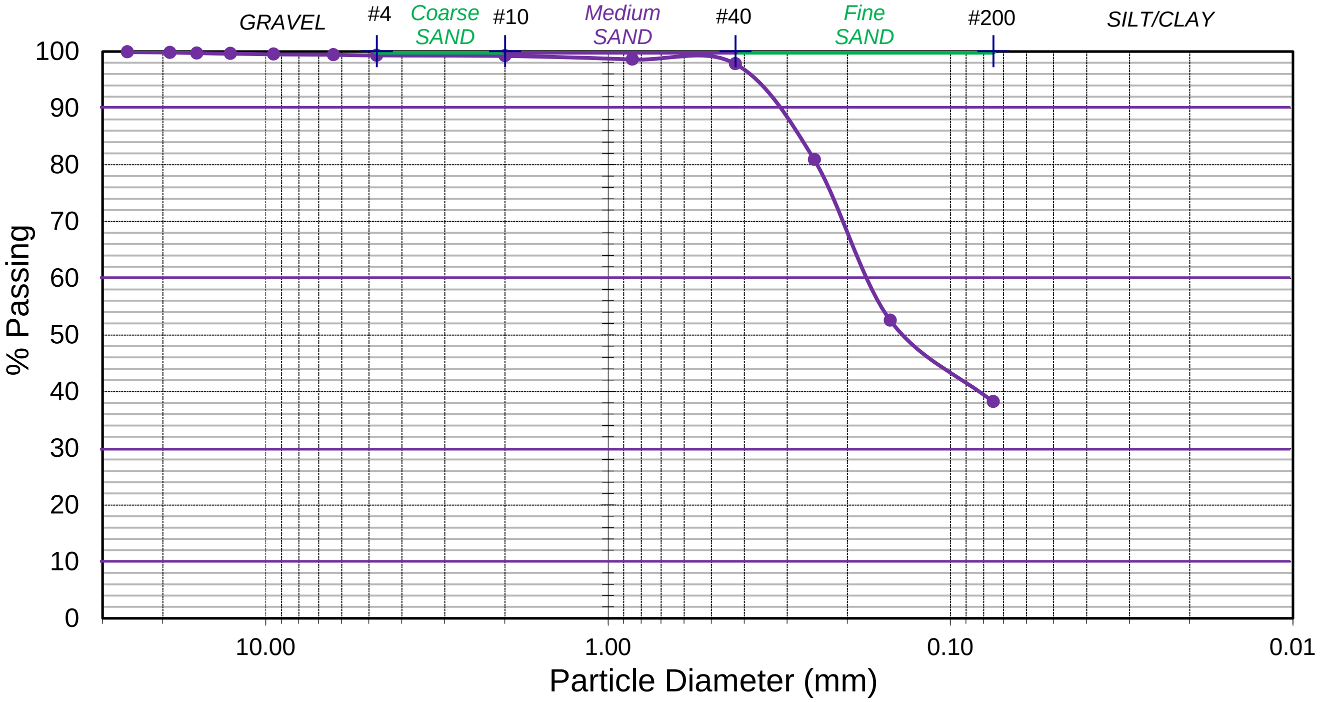
Sieve Analysis Data Sheet

ASTM D422

Project Name:	Van Asselt Elementary	**Tested By:**	AMTest	**Date Collected:**	5/26/2020
Location:	Seattle, WA	**Checked By:**	AWY	**Date Reported:**	6/12/2020
Test Pit No:	B-1, S-3	**Gnd Elev.:**	~240.5 feet	**Sample Depth:**	7.5 to 9.0

USCS Soil Classification: **SM - silty SAND**

Sieve Number	**Diameter (mm)**	**Soil Retained (%)**	**Soil Passing (%)**	**Particles**
1"	25.4	0.1	99.9	**Gravel**
3/4"	19.05	0.1	99.8	
5/8"	15.9	0.1	99.7	
1/2"	12.7	0.1	99.6	
3/8"	9.5	0.1	99.5	
1/4"	6.35	0.1	99.4	
#4	4.75	0.1	99.3	
#10	2.0	0.1	99.2	**Sand**
#20	0.85	0.6	98.6	
#40	0.425	0.8	97.8	
#60	0.25	16.9	80.9	
#100	0.150	28.3	52.6	
#200	0.075	14.4	38.2	
Pan	< 0.075	38.2	38.2	**Fines**
	TOTAL:	100.0	0.0	



Grain Size Distribution Curve Results:

% Gravel:	0.7	**% Solids:**	78.6
% Sand:	61.1	**% Moisture:**	21.4
% Fines:	38.2	**% Organics:**	----

Sieve Analysis Data Sheet

ASTM D422

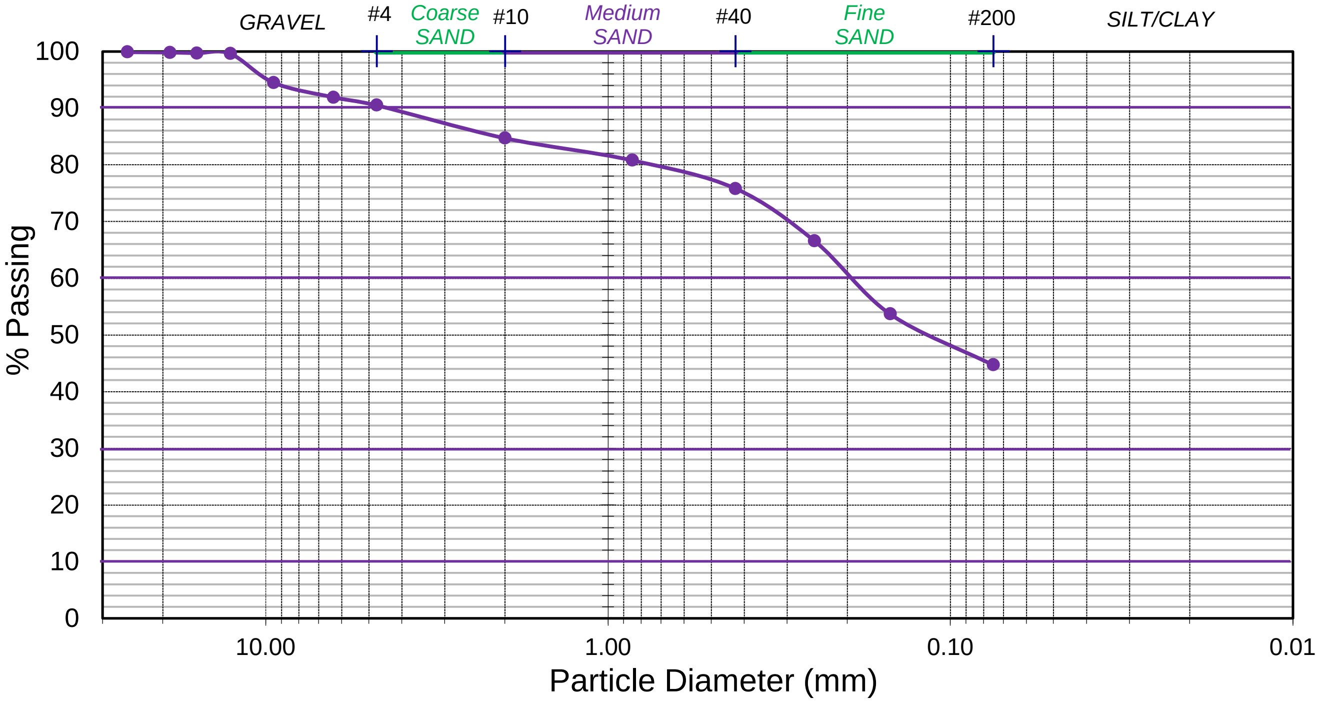
Project Name: Van Asselt Elementary **Tested By:** AMTest **Date Collected:** 5/26/2020

Location: Seattle, WA **Checked By:** AWY **Date Reported:** 6/12/2020

Test Pit No: B-2, S-1 **Gnd Elev.:** ~240.5 feet **Sample Depth:** 2.5 to 4.0

USCS Soil Classification: **SM - silty SAND, some gravel**

Sieve Number	Diameter (mm)	Soil Retained (%)	Soil Passing (%)	Particles
1"	25.4	0.1	99.9	**Gravel**
3/4"	19.05	0.1	99.8	
5/8"	15.9	0.1	99.7	
1/2"	12.7	0.1	99.6	
3/8"	9.5	5.1	94.5	
1/4"	6.35	2.6	91.9	
#4	4.75	1.4	90.5	
#10	2.0	5.8	84.7	**Sand**
#20	0.85	3.9	80.8	
#40	0.425	5	75.8	
#60	0.25	9.2	66.6	
#100	0.150	12.9	53.7	
#200	0.075	9	44.7	
Pan	< 0.075	44.7	44.7	**Fines**
	TOTAL:	100.0	0.0	



Grain Size Distribution Curve Results:

% Gravel: 9.5 **% Solids:** 81.2

% Sand: 45.8 **% Moisture:** 18.8

% Fines: 44.7 **% Organics:** ----

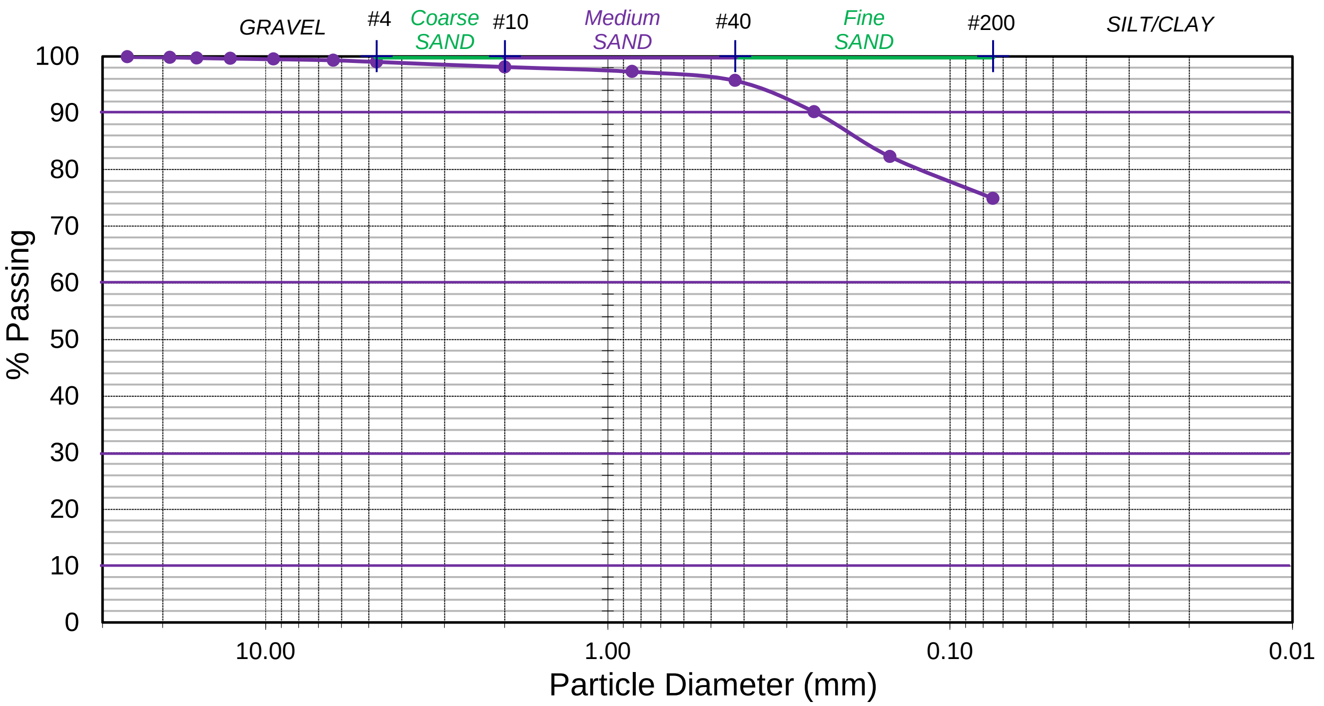
Sieve Analysis Data Sheet

ASTM D422

Project Name:	Van Asselt Elementary	**Tested By:**	AMTest	**Date Collected:**	5/26/2020
Location:	Seattle, WA	**Checked By:**	AWY	**Date Reported:**	6/12/2020
Test Pit No:	B-4, S-1	**Gnd Elev.:**	~234.5 feet	**Sample Depth:**	2.5 to 4.0

USCS Soil Classification: **ML - sandy SILT**

Sieve Number	Diameter (mm)	Soil Retained (%)	Soil Passing (%)	Particles
1"	25.4	0.1	99.9	**Gravel**
3/4"	19.05	0.1	99.8	
5/8"	15.9	0.1	99.7	
1/2"	12.7	0.1	99.6	
3/8"	9.5	0.1	99.5	
1/4"	6.35	0.2	99.3	
#4	4.75	0.3	99	
#10	2.0	0.9	98.1	**Sand**
#20	0.85	0.8	97.3	
#40	0.425	1.6	95.7	
#60	0.25	5.5	90.2	
#100	0.150	7.9	82.3	
#200	0.075	7.4	74.9	
Pan	< 0.075	74.9	74.9	**Fines**
	TOTAL:	100.0	0.0	



Grain Size Distribution Curve Results:

% Gravel:	1	**% Solids:**	81.4
% Sand:	24.1	**% Moisture:**	18.6
% Fines:	74.9	**% Organics:**	----

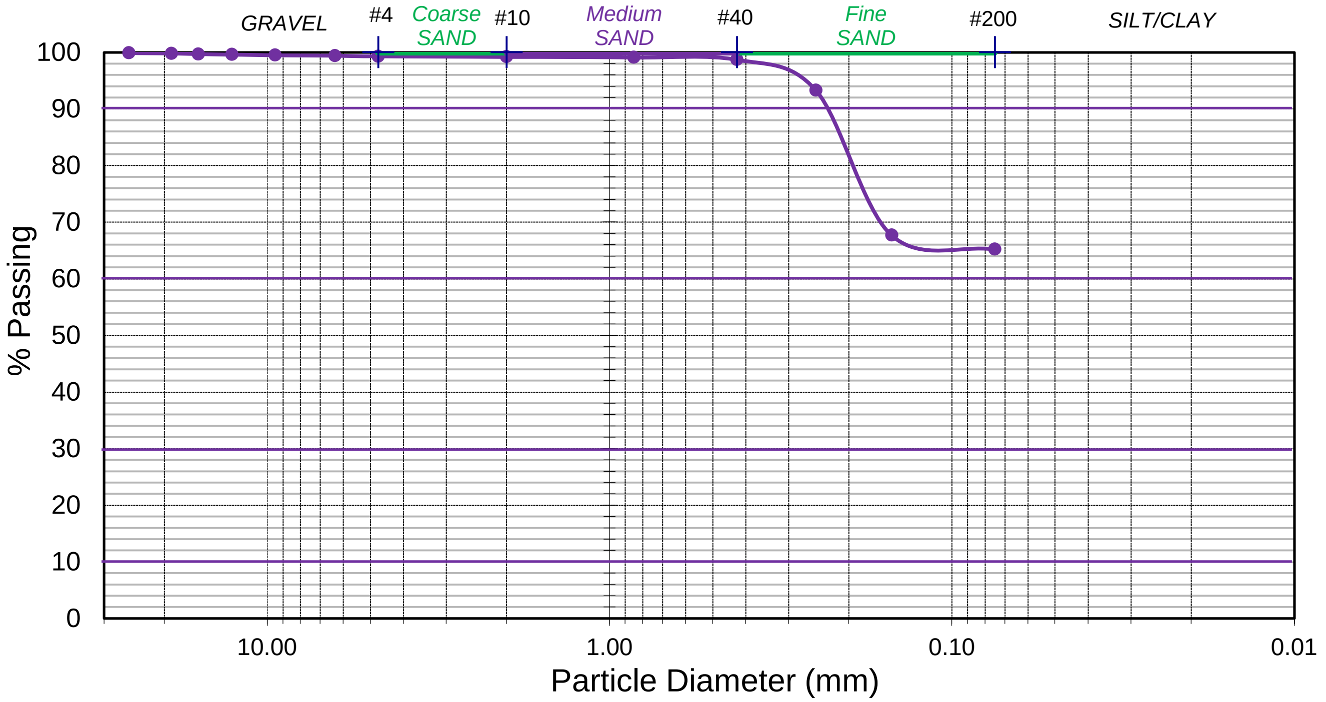
Sieve Analysis Data Sheet

ASTM D422

Project Name:	Van Asselt Elementary	**Tested By:**	AMTest	**Date Collected:**	5/26/2020
Location:	Seattle, WA	**Checked By:**	AWY	**Date Reported:**	6/12/2020
Test Pit No:	B-5, S-3	**Gnd Elev.:**	~233 feet	**Sample Depth:**	7.5 to 9.0

USCS Soil Classification: **ML - sandy SILT**

Sieve Number	Diameter (mm)	Soil Retained (%)	Soil Passing (%)	Particles
1"	25.4	0.1	99.9	**Gravel**
3/4"	19.05	0.1	99.8	
5/8"	15.9	0.1	99.7	
1/2"	12.7	0.1	99.6	
3/8"	9.5	0.1	99.5	
1/4"	6.35	0.1	99.4	
#4	4.75	0.1	99.3	
#10	2.0	0.1	99.2	**Sand**
#20	0.85	0.1	99.1	
#40	0.425	0.4	98.7	
#60	0.25	5.4	93.3	
#100	0.150	25.6	67.7	
#200	0.075	2.5	65.2	
Pan	< 0.075	65.2	65.2	**Fines**
	TOTAL:	100.0	0.0	



Grain Size Distribution Curve Results:

% Gravel:	0.7	**% Solids:**	85.1
% Sand:	34.1	**% Moisture:**	14.9
% Fines:	65.2	**% Organics:**	----

Sieve Analysis Data Sheet

ASTM D422

Project Name: Van Asselt Elementary

Tested By: AMTest

Date Collected: 5/26/2020

Location: Seattle, WA

Checked By: AWY

Date Reported: 6/12/2020

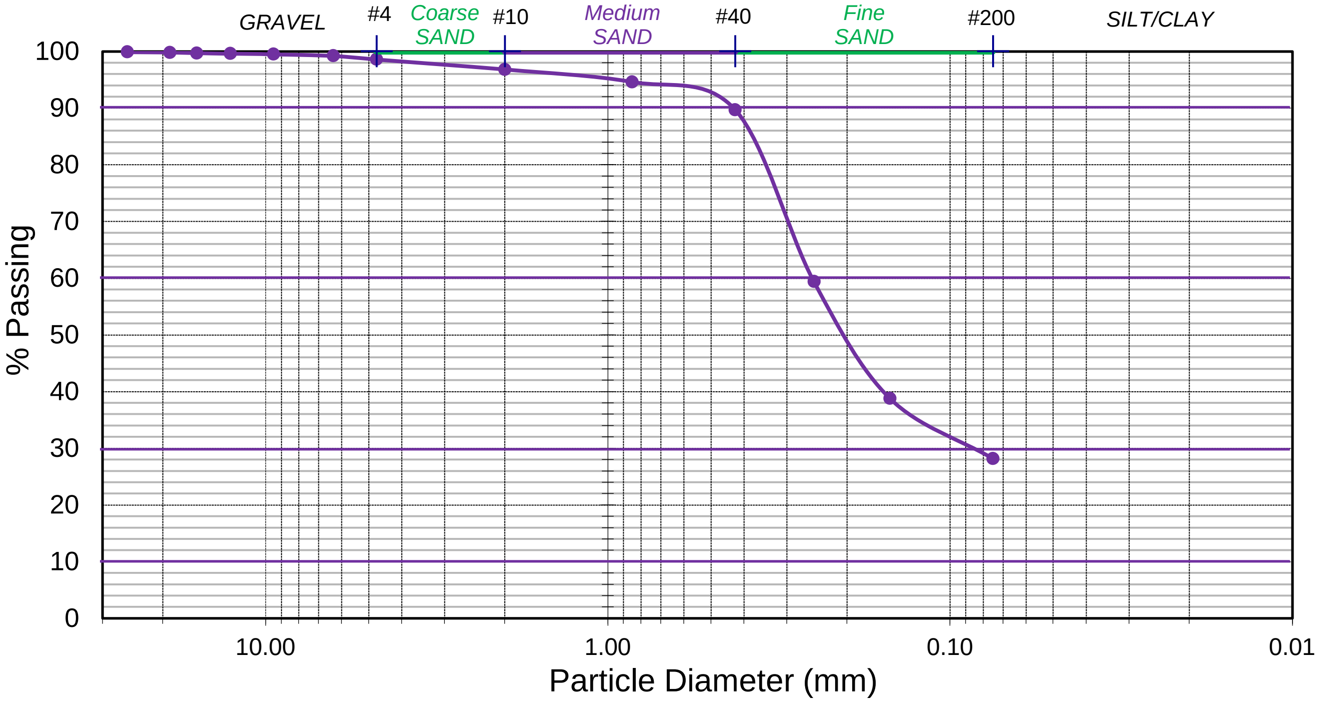
Test Pit No: B-6, S-1

Gnd Elev.: ~234.5 feet

Sample Depth: 2.5 to 4.0

USCS Soil Classification: **SM - silty SAND, trace gravel**

Sieve Number	Diameter (mm)	Soil Retained (%)	Soil Passing (%)	Particles
1"	25.4	0.1	99.9	**Gravel**
3/4"	19.05	0.1	99.8	
5/8"	15.9	0.1	99.7	
1/2"	12.7	0.1	99.6	
3/8"	9.5	0.1	99.5	
1/4"	6.35	0.3	99.2	
#4	4.75	0.6	98.6	
#10	2.0	1.8	96.8	**Sand**
#20	0.85	2.2	94.6	
#40	0.425	4.9	89.7	
#60	0.25	30.3	59.4	
#100	0.150	20.6	38.8	
#200	0.075	10.6	28.2	
Pan	< 0.075	28.2	28.2	**Fines**
	TOTAL:	100.0	0.0	



Grain Size Distribution Curve Results:

% Gravel: 1.4

% Solids: 85

% Sand: 70.4

% Moisture: 15.0

% Fines: 28.2

% Organics: ----

AMTEST
LABORATORIES

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664

Professional Analytical Services

Jun 12 2020
WOOD ENVIRONMENT & INFRASTRUCT
4020 LAKE WASHINGTON BLVD NE
SUITE 200
KIRKLAND, WA 98033
Attention: KONRAD MOELLER

Dear KONRAD MOELLER:

Enclosed please find the analytical data for your VAN ASSELT EMERSON ELEMENTARY project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
B-1, S-1, 2.5-4.0'	Soil	20-A007375	Sieve Analysis, CONV, Sieve Analysis
B-1, S-3, 7.5-9.0'	Soil	20-A007376	Sieve Analysis, CONV, Sieve Analysis
B-2, S-1, 2.5-4.0'	Soil	20-A007377	Sieve Analysis, CONV, Sieve Analysis
B-2, S-3, 7.5-8.5'	Soil	20-A007378	Sieve Analysis, CONV, Sieve Analysis
B-3, S-1, 2.5-4.0'	Soil	20-A007379	Sieve Analysis, CONV, Sieve Analysis
B-4, S-1, 2.5-4.0'	Soil	20-A007380	Sieve Analysis, CONV, Sieve Analysis
B-5, S-1, 2.5-4.0'	Soil	20-A007381	Sieve Analysis, CONV, Sieve Analysis
B-5, S-3, 7.5-9.0'	Soil	20-A007382	Sieve Analysis, CONV, Sieve Analysis
B-6, S-1, 2.5-4.0'	Soil	20-A007383	Sieve Analysis, CONV, Sieve Analysis
B-6, S-3, 7.5-9.0'	Soil	20-A007384	Sieve Analysis, CONV, Sieve Analysis

Your samples were received on Friday, May 29, 2020. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Aaron W Y

Aaron W. Young
Laboratory Manager

cc: JIM DRANSFIELD
Project #: PS20203710

BACT = Bacteriological
CONV = Conventionals
MET = Metals
ORG = Organics
NUT=Nutrients
DEM=Demand
MIN=Minerals

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

WOOD ENVIRONMENT & INFRASTRUCT
4020 LAKE WASHINGTON BLVD NE
KIRKLAND, WA 98033
Attention: KONRAD MOELLER
Project Name: VAN ASSELT EMERSON ELEMENTARY
Project #: PS20203710
All results reported on a dry weight basis.

Date Received: 05/29/20
Date Reported: 6/12/20

AMTEST Identification Number **20-A007375**
Client Identification **B-1, S-1, 2.5-4.0'**
Sampling Date **05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	86.8	%		0.1	SM 2540G	AY	06/11/20
% Moisture	13.2	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
#200	0.075 mm	55.7	% Retained	ASTM D422	AY	06/05/20

AMTEST Identification Number **20-A007376**
Client Identification **B-1, S-3, 7.5-9.0'**
Sampling Date **05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	78.6	%		0.1	SM 2540G	AY	06/11/20
% Moisture	21.4	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
1"	25.4 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
3/4"	19.05 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
5/8"	15.9 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
1/2"	12.7 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
3/8"	9.5 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
1/4"	6.35 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
#4	4.75 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
#10	2.0 mm	0.10	% Retained	ASTM D422	AY	06/05/20
#20	0.85 mm	0.60	% Retained	ASTM D422	AY	06/05/20
#40	0.425 mm	0.80	% Retained	ASTM D422	AY	06/05/20
#60	0.25 mm	16.9	% Retained	ASTM D422	AY	06/05/20
#100	0.15 mm	28.3	% Retained	ASTM D422	AY	06/05/20
#200	0.075 mm	14.4	% Retained	ASTM D422	AY	06/05/20

AMTEST Identification Number	**20-A007377**
Client Identification	**B-2, S-1, 2.5-4.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	81.2	%		0.1	SM 2540G	AY	06/11/20
% Moisture	18.8	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
1"	25.4 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
3/4"	19.05 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
5/8"	15.9 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
1/2"	12.7 mm	< 0.1	% Retained	ASTM D422	AY	06/05/20
3/8"	9.5 mm	5.10	% Retained	ASTM D422	AY	06/05/20
1/4"	6.35 mm	2.60	% Retained	ASTM D422	AY	06/05/20
#4	4.75 mm	1.40	% Retained	ASTM D422	AY	06/05/20
#10	2.0 mm	5.80	% Retained	ASTM D422	AY	06/05/20
#20	0.85 mm	3.90	% Retained	ASTM D422	AY	06/05/20
#40	0.425 mm	5.00	% Retained	ASTM D422	AY	06/05/20
#60	0.25 mm	9.20	% Retained	ASTM D422	AY	06/05/20
#100	0.15 mm	12.9	% Retained	ASTM D422	AY	06/05/20
#200	0.075 mm	9.00	% Retained	ASTM D422	AY	06/05/20

AMTEST Identification Number	**20-A007378**
Client Identification	**B-2, S-3, 7.5-8.5'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	82.4	%		0.1	SM 2540G	AY	06/11/20
% Moisture	17.6	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
#200	0.075 mm	50.8	% Retained	ASTM D422	AY	06/05/20

AMTEST Identification Number	**20-A007379**
Client Identification	**B-3, S-1, 2.5-4.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	84.2	%		0.1	SM 2540G	AY	06/11/20
% Moisture	15.8	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
#200	0.075 mm	19.2	% Retained	ASTM D422	AY	06/08/20

AMTEST Identification Number	**20-A007380**
Client Identification	**B-4, S-1, 2.5-4.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	81.4	%		0.1	SM 2540G	AY	06/11/20
% Moisture	18.6	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
1"	25.4 mm	< 0.1	% Retained	ASTM D422	AY	06/08/20
3/4"	19.05 mm	< 0.1	% Retained	ASTM D422	AY	06/08/20
5/8"	15.9 mm	< 0.1	% Retained	ASTM D422	AY	06/08/20
1/2"	12.7 mm	< 0.1	% Retained	ASTM D422	AY	06/08/20
3/8"	9.5 mm	< 0.1	% Retained	ASTM D422	AY	06/08/20
1/4"	6.35 mm	0.20	% Retained	ASTM D422	AY	06/08/20
#4	4.75 mm	0.30	% Retained	ASTM D422	AY	06/08/20
#10	2.0 mm	0.90	% Retained	ASTM D422	AY	06/08/20
#20	0.85 mm	0.80	% Retained	ASTM D422	AY	06/08/20
#40	0.425 mm	1.60	% Retained	ASTM D422	AY	06/08/20
#60	0.25 mm	5.50	% Retained	ASTM D422	AY	06/08/20
#100	0.15 mm	7.90	% Retained	ASTM D422	AY	06/08/20
#200	0.075 mm	7.40	% Retained	ASTM D422	AY	06/08/20

AMTEST Identification Number	**20-A007381**
Client Identification	**B-5, S-1, 2.5-4.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	83.9	%		0.1	SM 2540G	AY	06/11/20
% Moisture	16.1	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
#200	0.075 mm	63.4	% Retained	ASTM D422	AY	06/11/20

AMTEST Identification Number	**20-A007382**
Client Identification	**B-5, S-3, 7.5-9.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	85.1	%		0.1	SM 2540G	AY	06/11/20
% Moisture	14.9	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
1"	25.4 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
3/4"	19.05 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
5/8"	15.9 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
1/2"	12.7 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
3/8"	9.5 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
1/4"	6.35 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
#4	4.75 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
#10	2.0 mm	0.10	% Retained	ASTM D422	AY	06/11/20
#20	0.85 mm	0.10	% Retained	ASTM D422	AY	06/11/20
#40	0.425 mm	0.40	% Retained	ASTM D422	AY	06/11/20
#60	0.25 mm	5.40	% Retained	ASTM D422	AY	06/11/20
#100	0.15 mm	25.6	% Retained	ASTM D422	AY	06/11/20
#200	0.075 mm	23.5	% Retained	ASTM D422	AY	06/11/20

AMTEST Identification Number	**20-A007383**
Client Identification	**B-6, S-1, 2.5-4.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	85.0	%		0.1	SM 2540G	AY	06/11/20
% Moisture	15.0	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
1"	25.4 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
3/4"	19.05 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
5/8"	15.9 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
1/2"	12.7 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
3/8"	9.5 mm	< 0.1	% Retained	ASTM D422	AY	06/11/20
1/4"	6.35 mm	0.30	% Retained	ASTM D422	AY	06/11/20
#4	4.75 mm	0.60	% Retained	ASTM D422	AY	06/11/20
#10	2.0 mm	1.80	% Retained	ASTM D422	AY	06/11/20
#20	0.85 mm	2.20	% Retained	ASTM D422	AY	06/11/20
#40	0.425 mm	4.90	% Retained	ASTM D422	AY	06/11/20
#60	0.25 mm	30.3	% Retained	ASTM D422	AY	06/11/20
#100	0.15 mm	20.6	% Retained	ASTM D422	AY	06/11/20
#200	0.075 mm	10.6	% Retained	ASTM D422	AY	06/11/20

AMTEST Identification Number	**20-A007384**
Client Identification	**B-6, S-3, 7.5-9.0'**
Sampling Date	**05/29/20**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Total Solids	84.5	%		0.1	SM 2540G	AY	06/11/20
% Moisture	15.5	%		0.1	SM 2540G	AY	06/11/20

Particle Size by Sieve Only

Sieve Number	Sieve Size	RESULT	UNITS	METHOD	ANALYST	DATE
#200	0.075 mm	30.7	% Retained	ASTM D422	AY	06/11/20

Aaron W Young

Aaron W. Young
Laboratory Manager

P.10

LABORATORY TESTING PROGRAM

CLIENT: Wood E & I **PROJ NAME:** Van Asselt Emerson Elementary - Seattle **PROJ #:** PS20203710 **PHASE:** **TASK:**

SAMPLED BY: CMM **DATE:** 5/29/2020 **PROJ MGR:** Konrad Moeller / Jim Dransfield **DATE TASK REQUESTED:** 5/2782020 **DUE DATE:** 6/5/2020

	BORING OR TEST PIT #	SAMPLE #	DEPTH	VISUAL CLASSIFICATION	1 MOISTURE CONTENT	2 SIEVE ANALYSIS	3 PROCTOR - MODIFIED	4 ORGANIC CONTENT	5 IN-SITU DENSITY	6 SPECIFIC GRAVITY	7 LA ABRASION	9 - #200 WASH	EXT/GRAD A/B ATB G HMA	14 RICE	15 GYRATORY	16 SAND EQUIVALENT	17 SOUNDNESS	18 DEGRADATION	19 HYDROMETER ANALYSIS	20 ATTERBERG LIMITS	22 CBR	23 FRACTURED FACES	24 Cation Exchange	ID NUMBER	REMARKS: (e.g., SOURCE, SUPPLIER, INTENDED USE, DESCRIPTION, LOCATION, ETC. Use multiple lines for information if necessary. PLEASE NOTE REMARKS
7375	B-1	S-1	2.5 - 4.0		/							/													
76	B-1	S-3	7.5 - 9.0		/	/																			
77	B-2	S-1	2.5 - 4.0		/	/																			
78	B-2	S-3	7.5 - 8.5		/							/													
79	B-3	S-1	2.5 - 4.0		/							/													
80	B-4	S-1	2.5 - 4.0		/	/																			
81	B-5	S-1	2.5 - 4.0		/							/													
82	B-5	S-3	7.5 - 9.0		/	/																			
83	B-6	S-1	2.5 - 4.0		/	/																			
84	B-6	S-3	7.5 - 9.0		/							/													

Please send results to:
Konrad Moeller - konrad.moeller@woodplc.com
Jim Dransfield - james.dransfield@woodplc.com

◿ TEST TO BE PERFORMED ☒ TEST HAS BEEN SET UP ☒ TEST HAS BEEN COMPLETED

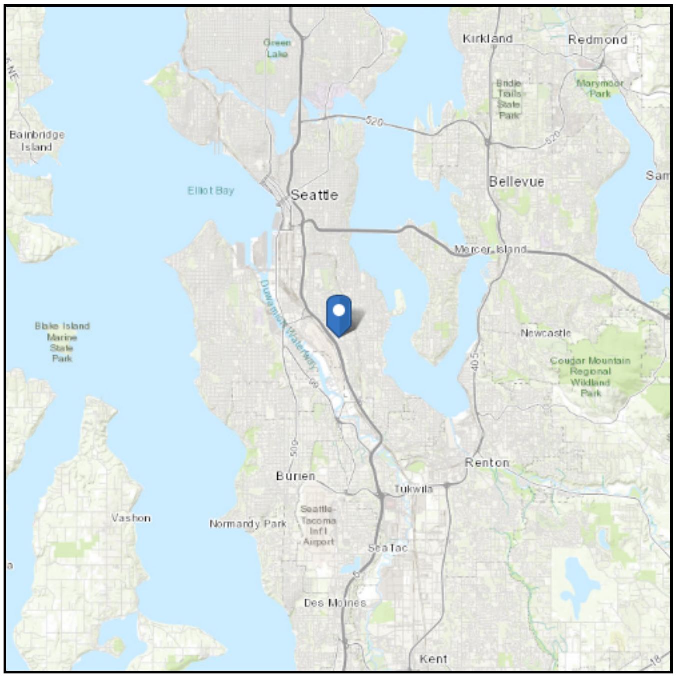
5/29/20
15:50

Client
T=25.6

Appendix C

ASCE 7 Hazards Report

Address:		**Standard:**	ASCE/SEI 7-16	**Elevation:**	229 ft (NAVD 88)
7201 Beacon Ave S Seattle, Washington 98108		**Risk Category:**	II	**Latitude:**	47.538115
		Soil Class:	C - Very Dense Soil and Soft Rock	**Longitude:**	-122.295299



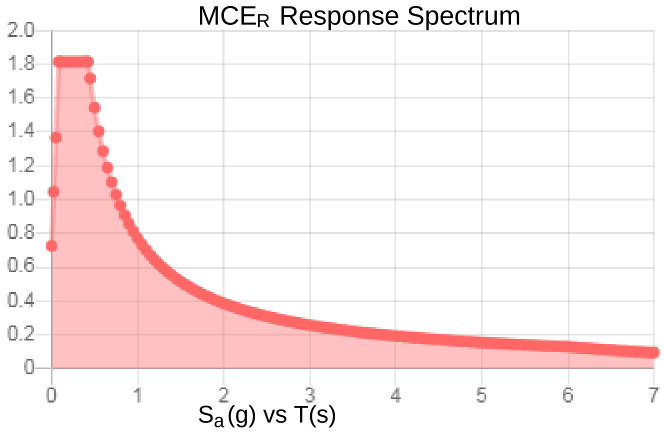
Seismic

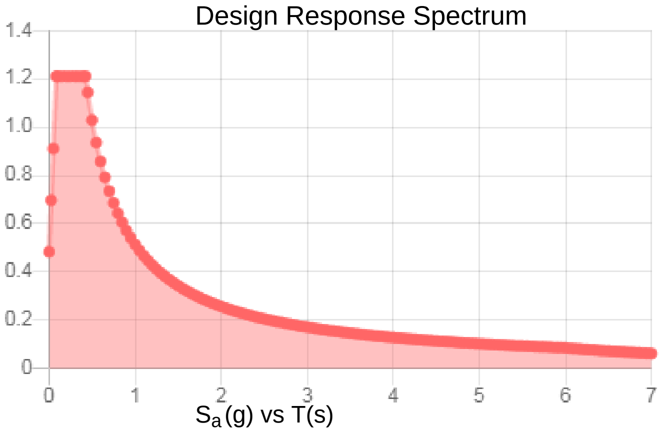
Site Soil Class: C - Very Dense Soil and Soft Rock

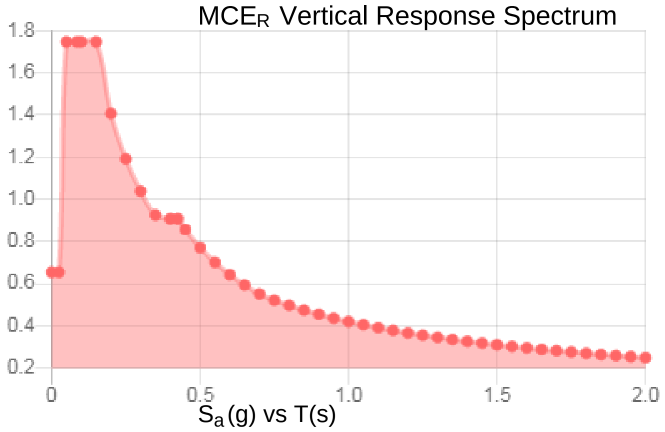
Results:

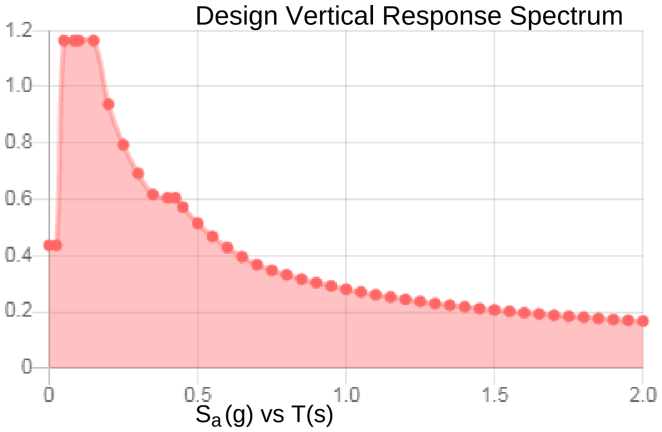
S_S :	1.513	S_{D1} :	0.515
S_1 :	0.523	T_L :	6
F_a :	1.2	PGA :	0.648
F_v :	1.477	PGA_M :	0.778
S_{MS} :	1.815	F_{PGA} :	1.2
S_{M1} :	0.772	I_e :	1
S_{DS} :	1.21	C_v :	1.203

Seismic Design Category D


MCE$_R$ Response Spectrum


Design Response Spectrum


MCE$_R$ Vertical Response Spectrum


Design Vertical Response Spectrum

Data Accessed: Thu Jun 04 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Appendix B

CONSTRUCTION BEST MANAGEMENT PRACTICES

APPENDIX B

CONSTRUCTION BEST MANAGEMENT PRACTICES

The contractor will be required to implement measures to ensure the minimal environmental impacts throughout the construction process, which could include the following:

- The contractor will submit a written earthwork plan to the Project Engineer for approval prior to the commencing with any mass excavation or filling. The earthwork plan will also include:
  - Sequencing of the earthwork and grading activities;
  - Proposed equipment to be utilized;
  - Surface water diversion and control (description of how existing catch basins at the project site would remain intact and measures used to protect them from sediment during construction);
  - Proposed protection methods for excavated stockpiled fill materials and trenches;
  - Soil drying procedures; and,
  - Any other information pertinent to the manner in which the earthwork and grading will be performed.
- The contractor will obtain the City of Seattle's Department of Construction and Inspection approval that erosion control measures are in place and functioning, and will maintain erosion control measures as earthwork and utility construction commences in accordance with City of Seattle Standards.
- Surface water controls (i.e., temporary interceptor swales, check dams, silt fences, etc.) will be constructed simultaneously with clearing and grading for project development.
- Surface water and erosion control measures will be relocated or new measures will be installed so as site conditions change, erosion control measures remain in accordance with City of Seattle Best Management Practice (BMP) requirements during the construction period.
- All construction areas inactive for more than seven days during the dry season (April 1st to October 31st) or two days during the wet season (November 1st to March 31st) will be covered.
- Mitigation measures to reduce and/or control impacts to air will include:
  - Watering surfaces to control dust, the use of temporary ground covers, sprinkling the project site with approved dust palliatives, or use of temporary stabilizations practices upon the completion of grading.
  - Wheel-cleaning stations will be provided to ensure construction vehicle wheels and undercarriages do not carry excess dirt from the site onto adjacent roadways.

  - Streets will be regularly cleaned to ensure excess dust and debris is not transported from the construction site onto adjacent roads.
  - Construction activities will be planned to minimize exposing areas of earth for extended periods.
  - The contractor will be required to comply with the Puget Sound Clean Air Agency's (PSCAA) Regulation I, Section 9.15, requiring reasonable precautions to avoid dust emissions and Regulation I, Section 9.11, requiring the best available measures to control emissions of odor-bearing contaminants. The contractor will be required to comply with recommendations in the Washington Associated General Contractor brochure "Guide to Handling Fugitive Dust from Construction Projects."

- During construction, BMPs would be implemented to ensure that sediment originating from disturbed soils would be retained within the limits of disturbance. BMP measures may include installation of filter fabric between grate and rings of all catch basin inlets, fabric fencing, barriers, check dams, etc.

- Construction activities will be restricted to hours designated by the City of Seattle Noise Control Ordinance (SMC 25.08.425). If construction activities exceed permitted noise levels, the District would instruct the contractor to implement measures to reduce noise impacts to comply with the Noise Ordinance, which may include additional muffling of equipment.

- Construction vehicle traffic to and from the site will be minimized during peak traffic hours.

- Construction vehicles will not be parked in traffic lanes.

- Flaggers will be provided as required.

- Barriers, flashing lights, walkways, guardrails, and night lighting will be provided as required for safety and control.

- Fire lanes and roadways to existing buildings will be retained, as required by the fire department.

- Walkways leading past the site will remain clear of construction vehicles and debris and will remain safe at all times.

Appendix C

GREENHOUSE GAS EMISSIONS WORKSHEET

City of Seattle Department of Planning and Development
SEPA GHG Emissions Worksheet
Version 1.7 12/26/07

Introduction

The Washington State Environmental Policy Act (SEPA) requires environmental review of development proposals that may have a significant adverse impact on the environment. If a proposed development is subject to SEPA, the project proponent is required to complete the SEPA Checklist. The Checklist includes questions relating to the development's air emissions. The emissions that have traditionally been considered cover smoke, dust, and industrial and automobile emissions. With our understanding of the climate change impacts of GHG emissions, the City of Seattle requires the applicant to also estimate these emissions.

Emissions created by Development

GHG emissions associated with development come from multiple sources:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (Embodied Emissions)
- Energy demands created by the development after it is completed (Energy Emissions)
- Transportation demands created by the development after it is completed (Transportation Emissions)

GHG Emissions Worksheet

This GHG Emissions Worksheet has been developed to assist applicants in answering the SEPA Checklist question relating to GHG emissions. The worksheet was originally developed by King County, but the City of Seattle and King County are working together on future updates to maintain consistency of methodologies across jurisdictions.

The SEPA GHG Emissions worksheet estimates all GHG emissions that will be created over the life span of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

Using the Worksheet

1. Descriptions of the different residential and commercial building types can be found on the second tabbed worksheet ("Definition of Building Types"). If a development proposal consists of multiple projects, e.g. both single family and multi-family residential structures or a commercial development that consists of more than on type of commercial activity, the appropriate information should be estimated for each type of building or activity.

2. For paving, estimate the total amount of paving (in thousands of square feet) of the project.

3. The Worksheet will calculate the amount of GHG emissions associated with the project and display the amount in the "Total Emissions" column on the worksheet. The applicant should use this information when completing the SEPA checklist.

4. The last three worksheets in the Excel file provide the background information that is used to calculate the total GHG emissions.

5. The methodology of creating the estimates is transparent; if there is reason to believe that a better estimate can be obtained by changing specific values, this can and should be done. Changes to the values should be documented with an explanation of why and the sources relied upon.

6. Print out the “Total Emissions” worksheet and attach it to the SEPA checklist. If the applicant has made changes to the calculations or the values, the documentation supporting those changes should also be attached to the SEPA checklist.

Van Asselt School Addition Project

(prepared February 2021)

Section I: Buildings

			Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	**Lifespan Emissions (MTCO2e)**
Single-Family Home............................	0		98	672	792	**0**
Multi-Family Unit in Large Building	0		33	357	766	**0**
Multi-Family Unit in Small Building	0		54	681	766	**0**
Mobile Home.......................................	0		41	475	709	**0**
Education		62.0	39	646	361	**64820**
Food Sales		0.0	39	1,541	282	**0**
Food Service		0.0	39	1,994	561	**0**
Health Care Inpatient		0.0	39	1,938	582	**0**
Health Care Outpatient		0.0	39	737	571	**0**
Lodging		0.0	39	777	117	**0**
Retail (Other Than Mall).......................		0.0	39	577	247	**0**
Office		0.0	39	723	588	**0**
Public Assembly		0.0	39	733	150	**0**
Public Order and Safety		0.0	39	899	374	**0**
Religious Worship		0.0	39	339	129	**0**
Service		0.0	39	599	266	**0**
Warehouse and Storage		0.0	39	352	181	**0**
Other		0.0	39	1,278	257	**0**
Vacant		0.0	39	162	47	**0**

Section II: Pavement..........................

Pavement...		0.00				**0**

Total Project Emissions: **64820**

Version 1.7 12/26/07

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	**Description**
Single-Family Home..................................	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home...	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall)............................	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources: ....

Residential	2001 Residential Energy Consumption Survey Square footage measurements and comparisons http://www.eia.doe.gov/emeu/recs/sqft-measure.html
Commercial	Commercial Buildings Energy Consumption Survey (CBECS), Description of CBECS Building Types http://www.eia.doe.gov/emeu/cbecs/pba99/bldgtypes.html

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home................................	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home...	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall)..........................	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement.............................

All Types of Pavement...........................			50

	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0		
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0	88.0	38.7

Sources

All data in black text	King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov
Residential floorspace per unit	2001 Residential Energy Consumption Survey (National Average, 2001) Square footage measurements and comparisons http://www.eia.doe.gov/emeu/recs/sqft-measure.html
Floorspace per building	EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003) Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003 http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	Athena EcoCalculator Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building Assembly Average GWP (kg) per square meter http://www.athenasmi.ca/tools/ecoCalculator/index.html Lbs per kg 2.20 Square feet per square meter 10.76
Average Materials in a 2,272-square foot single family home	Buildings Energy Data Book: 7.3 Typical/Average Household Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000 http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.
Average window size	Energy Information Administration/Housing Characteristics 1993 Appendix B, Quality of the Data. Pg. 5. ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hcf.pdf

Pavement Emissions Factors MTCO2e/thousand square feet of asphalt or concrete pavement	50 (see below)

Embodied GHG Emissions……………………..Worksheet Background Information

Buildings

Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO2e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO2e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO2e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO2e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO2e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTK0WE3/athena%20report%20Feb.%202%202007.pdf

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: http://www.ivl.se/rapporter/pdf/B1210E.pdf

Treloar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home............................	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home...	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall)........................	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text

King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings

2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
http://buildingsdatabook.eren.doe.gov/
Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings
and
Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings

Buildings Energy Data Book (National average, 2005)
Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
http://www.eia.doe.gov/emeu/recs/sqft-measure.html

average lief span of buildings,
estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings
New Housing Construction, 2001	1,273,000	329,000	1,602,000
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000
Replacement time:	57.9	80.5	62.5

(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.
Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.
Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction, 2001 **Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)**
http://www.census.gov/const/quarterly_starts_completions_cust.xls
See also: http://www.census.gov/const/www/newresconstindex.html

Existing Housing Stock, 2001 **Residential Energy Consumption Survey (RECS) 2001**
Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home..................................	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home...	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall).............................	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text	King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov
# people/ unit	Estimating Household Size for Use in Population Estimates (WA state, 2000 average) Washington State Office of Financial Management Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007 http://www.ofm.wa.gov/researchbriefs/brief047.pdf Note: This analysis combines Multi Unit Structures in both large and small units into one category; the average is used in this case although there is likely a difference
Residential floorspace per unit	2001 Residential Energy Consumption Survey (National Average, 2001) Square footage measurements and comparisons http://www.eia.doe.gov/emeu/recs/sqft-measure.html
# employees/thousand square feet	Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003) Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003 http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls
	Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee. In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000 2006 Annual WA State Vehicle Miles Traveled
Data was daily VMT. Annual VMT was 365*daily VMT.
http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm
6,395,798 2006 WA state population
http://quickfacts.census.gov/qfd/states/53000.html
8839 vehicle miles per person per year
0.0506 gallon gasoline/mile
This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term “miles/per gallon” (which is 19.75 for these cars and light trucks).
Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks.
http://cta.ornl.gov/data/tedb26/Edition26_Chapter04.pdf
Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles.
http://cta.ornl.gov/data/tedb26/Spreadsheets/Table3_04.xls
24.3 lbs CO2e/gallon gasoline
The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion.
Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield.
Available: http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf
Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel,
2205 with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.
4.93 lbs/metric tonne
vehicle related GHG emissions (metric tonnes CO2e per person per year)

average lief span of buildings, estimated by replacement time method
See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit
EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Appendix D

TREE INVENTORY AND ARBORIST REPORT

Tree Solutions Inc
Consulting Arborists

Project No. TS - 7191

Arborist Report
DRAFT

To:	Seattle Public Schools, c/o Ethan Bernau
Site:	7201 Beacon Ave S., Seattle WA 98108
Re:	Preliminary Tree Inventory
Date:	June 2, 2020
Project Arborist:	Josh Petter ISA Certified Arborist #PN-8406A ISA Qualified Tree Risk Assessor
Reviewed By:	Katie Hogan ISA Certified Arborist #PN- 8078A ISA Qualified Tree Risk Assessor
Attached:	Table of Trees Tree Site Map

Summary

We inventoried and assessed 77 trees on this lot, of those 60 are greater than 6 inches diameter at standard height (DSH) and are regulated. Based on city of Seattle Municipal Code (SMC), trees measuring 6 inches or greater DSH are required to be assessed for development projects. We tagged each tree with an aluminum tree tag. Tree identifier corresponds to the number on each tag.

Of the trees assessed, four met the exceptional tree criteria outlined in the Seattle Director's Rule 16-2008.

We found no exceptional tree groves on-site. The City defines an exceptional grove as eight (8) or more trees each with a diameter measuring 12 inches or greater with continuously overlapping canopies.

There were 26 adjacent trees that required documentation for this property; of these, 15 are regulated by Seattle Department of Transportation (SDOT).

Trees on neighboring properties were documented if they appeared to be greater than 6-inches diameter and their driplines extended over the property line. All trees on adjacent properties were estimated from the subject site or public property such as the adjacent right-of-way. We used an alphabetical tree identifier for trees off-site. Two off-site trees were estimated to be exceptional.

Assignment and Scope of Work

This report documents the visit by Josh Petter and Tyler Bunton, of Tree Solutions Inc., on May 19, 2020 to the above referenced site. We were asked to complete a tree inventory and assessment by Ethan Bernau, of Shield Obletz Johnsen, in preparation for proposed development.

Observations

Site

This property is comprised of two parcels, the western parcel (2824049028) is 162,478 square feet and fronts South Myrtle street; the eastern parcel (5129000050) is 204,182 square feet and fronts both South Myrtle Street and Beacon Ave South.

There are existing school buildings on-site, as well as play structures and a synthetic turf athletic field.

The site has a mix of turf grass, paved surfaces, and ornamental plantings.

According to Seattle Department of Construction and Inspection (SDCI) GIS there are steep slopes on the northwestern portion of the site, just northwest of the existing turf field.

Trees

We have included an annotated survey of the site to serve as the site map and attached a table of trees that has detailed information about each tree.

We tagged 17 trees under 6 inches DSH that appeared on the survey, these trees are not regulated by the city of Seattle.

Trees 123 (Photo 1), 125 (Photo 2), 126 (Photo 3), 129 (Photo 4), are all exceptional by size and regulated per the Directors Rule 16-2008.

Tree 123 is a flowering cherry (*Prunus serrulata*) in fair health and structural condition. This tree has codominant trunks at the base, with decay visible between the union. There are also a number of large old pruning wounds.

Tree 125 is a Kousa dogwood (*Cornus kousa*) in good health and fair structural condition. This tree has a large amount of invasive blackberry (*Rubus bifrons*) and ivy (*Hedera* sp.) at the base; the invasive plants should be carefully removed by hand.

Tree 126 is a Lawson cypress (*Chamaecyparis lawsonia*) in good health and fair structural condition. It is growing next to an existing staircase and pushing against a chain-link fence.

Tree 129 is a burr oak (*Quercus macrocarpa*) in good health and structural condition. This tree is in close proximity to an existing gravel driveway.

Off-site Trees

Trees A through O (TRE-85329 to TRE-85343) are regulated by SDOT and should be protected throughout construction to the greatest extent feasible.

Tree 147 was tagged on a trunk that extended over the property line; however, this tree originated off-site. This tree, as well as trees S and T, were all estimated to be exceptional by size and should be protected throughout construction.

Discussion—Construction Impacts

This report is preliminary as we have not reviewed construction plans for this area. General tree protection specifications can be found in Appendix F.

Recommendations

- Provide Tree Solutions Inc with demolition, utility, grading, and landscaping plans when available to assess impacts to retained trees.
- Add tree numbers and dripline measurements (per table of trees) to all plans.
- Site planning around exceptional trees must follow the guidelines outlined in SMC 25.11.050. [1]
- Site planning around trees in critical areas must follow the guidelines outlined in SMC 25.09.070.[2]
- All pruning should be conducted by an ISA certified arborist and following ANSI A300 specifications.[3]

Respectfully submitted,
Josh Petter,
Consulting Arborist

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[1] Seattle Municipal Code 25.11.050. General Provisions for Exceptional Trees

[2] Seattle Municipal Code 25.09.070 Standards for Trees and Vegetation in Critical Areas

[3] Accredited Standards Committee A300 (ASC 300). ANSI A300 (Part 1) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Londonderry: Tree Care Industry Association, 2017.

Appendix A **Photographs**

Photo 1. Exceptional tree 123, the yellow circle shows an old branch tear out.

Photo 2. Exceptional tree 125 is in close proximity to an existing staircase and has a large amount on ivy on the trunk

Photo 3. Exceptional tree 126, is in close proximity to an existing staircase and abutting the fence.

Photo 4. Arrow pointing to exceptional tree 129 is in close proximity to an existing gravel driveway.

Appendix B **Glossary**

ANSI A300: American National Standards Institute (ANSI) standards for tree care

DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Council of Tree and Landscape Appraisers 2019)

ISA: International Society of Arboriculture

Regulated Tree: A tree required by municipal code to be identified in an arborist report.

Visual Tree Assessment (VTA): method of evaluating structural defects and stability in trees by noting the pattern of growth. Developed by Claus Mattheck (Harris, *et al* 1999)

Appendix C **References**

Accredited Standards Committee A300 (ASC 300). ANSI A300 (Part 1) Tree, Shrub, and Other Woody Plant Management – Standard Practices (Pruning). Londonderry: Tree Care Industry Association, 2017.

Council of Tree and Landscape Appraisers, Guide for Plant Appraisal, 10th Edition, Second Printing. Atlanta, GA: The International Society of Arboriculture (ISA), 2019.

Mattheck, Claus and Helge Breloer, The Body Language of Trees.: A Handbook for Failure Analysis. London: HMSO, 1994.

Seattle Municipal Code 25.09.070. Standards for Trees and Vegetation in Critical Areas.

Seattle Municipal Code 25.11.050. General Provisions for Exceptional Trees.

Sugimura, D.W. “DPD Director’s Rule 16-2008”. Seattle, WA, 2009

Appendix D **Assumptions & Limiting Conditions**

1 Consultant assumes that the site and its use do not violate, and is in compliance with, all applicable codes, ordinances, statutes or regulations.

2 The consultant may provide a report or recommendation based on published municipal regulations. The consultant assumes that the municipal regulations published on the date of the report are current municipal regulations and assumes no obligation related to unpublished city regulation information.

3 Any report by the consultant and any values expressed therein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event, or upon any finding to be reported.

4 All photographs included in this report were taken by Tree Solutions, Inc. during the documented site visit, unless otherwise noted. Sketches, drawings and photographs (included in, and attached to, this report) are intended as visual aids and are not necessarily to scale. They should not be construed as engineering drawings, architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.

5 Unless otherwise agreed, (1) information contained in any report by consultant covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring.

6 These findings are based on the observations and opinions of the authoring arborist, and do not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described and assessed.

7 Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks and canopies.

8 Tree Solutions did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. Tree Solutions staff are not and do not claim to be soils experts. An independent inventory and evaluation of the site's soil should be obtained by a qualified professional if an additional understanding of the site's characteristics is needed to make an informed decision.

9 Our assessments are made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.

Appendix E **Methods**

Measuring

I measured the diameter of each tree at 54 inches above grade, diameter at standard height (DSH). If a tree had multiple stems, I measured each stem individually at standard height and determined a single-stem equivalent diameter by using the method outlined in the city of Seattle Director's Rule 16-2008 or the Guide for Plant Appraisal, 10th Edition Second Printing published by the Council of Tree and Landscape Appraisers. A tree is regulated based on this single-stem equivalent diameter value. Because this value is calculated in the office following field work, some trees in our data set may have diameters smaller than 6 inches. These trees are included in the tree table for informational purposes only and not factored into tree totals discussed in this report.

Tagging

I tagged each tree with a circular aluminum tag at eye level. I assigned each tree a numerical identifier on our map and in our tree table, corresponding to this tree tag. I used alphabetical identifiers for trees off-site.

Evaluating

I evaluated tree health and structure utilizing visual tree assessment (VTA) methods. The basis behind VTA is the identification of symptoms, which the tree produces in reaction to a weak spot or area of mechanical stress. A tree reacts to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts. An understanding of the uniform stress allows the arborist to make informed judgments about the condition of a tree.

Rating

When rating tree health, I took into consideration crown indicators such as foliar density, size, color, stem and shoot extensions. When rating tree structure, I evaluated the tree for form and structural defects, including past damage and decay. Tree Solutions has adapted our ratings based on the Purdue University Extension formula values for health condition (*Purdue University Extension bulletin FNR-473-W - Tree Appraisal*). These values are a general representation used to assist arborists in assigning ratings.

Excellent - Perfect specimen with excellent form and vigor, well-balanced crown. Normal to exceeding shoot length on new growth. Leaf size and color normal. Trunk is sound and solid. Root zone undisturbed. No apparent pest problems. Long safe useful life expectancy for the species.

Good - Imperfect canopy density in few parts of the tree, up to 10% of the canopy. Normal to less than ¾ typical growth rate of shoots and minor deficiency in typical leaf development. Few pest issues or damage, and if they exist they are controllable or tree is reacting appropriately. Normal branch and stem development with healthy growth. Safe useful life expectancy typical for the species.

Fair - Crown decline and dieback up to 30% of the canopy. Leaf color is somewhat chlorotic/necrotic with smaller leaves and "off" coloration. Shoot extensions indicate some stunting and stressed growing conditions. Stress cone crop clearly visible. Obvious signs of pest problems contributing to lesser condition, control might be possible. Some decay areas found in main stem and branches. Below average safe useful life expectancy

Poor - Lacking full crown, more than 50% decline and dieback, especially affecting larger branches. Stunting of shoots is obvious with little evidence of growth on smaller stems. Leaf size and color reveals overall stress in the plant. Insect or disease infestation may be severe and uncontrollable. Extensive decay or hollows in branches and trunk. Short safe useful life expectancy.

Appendix F **Tree Protection Specifications**

The follow is a list of protection measures that must be employed before, during and after construction to ensure the long-term viability of retained trees.

Tree Protection Fencing
All trees planned for retention or on neighboring properties that overhang the site shall be protected for the entire duration of the construction project. Tree protection fencing shall consist of high visibility mesh or chain link fencing installed at the extent of the tree protection area. Where trees are being retained as a group the fencing should encompass the entire area.

Excavation
Excavation done at or within the tree protection area should be carefully planned to minimize disturbance. Where feasible consider using alternative methods such as pneumatic excavation which uses pressurized air to blow soil away from the root system, directional drilling to bore utility lines, or hand excavation to expose roots. Excavation done with machinery (backhoe) in proximity of trees should be performed slowly with flat front buckets, removing small amounts of soil at a time with one person on the ground spotting for roots. When roots are encountered, excavation should stop and roots should be cleanly pruned as needed so they are not ripped or torn.

Soil Protection
No parking, materials storage, or dumping (including excavated soils) are allowed within the tree protection area. Any heavy machinery should remain outside of the protection area unless soils are protected from the load. Acceptable methods of soil protection include applying 1 inch plywood over 3 to 4 inches of wood chip mulch, or use of AlturnaMats^{TM} (or equivalent product).

Root Pruning
Root pruning should be limited to the extent possible. All roots shall be pruned with a sharp saw making clean cuts. Avoid fracturing and breaking roots with excavation equipment. Root cuts shall be immediately covered with soil or mulch and kept moist.

Duff/Mulch
Retain and protect as much of the existing duff and understory as possible. Retained trees in areas where there are exposed soils shall have 4 to 6 inches of wood chips applied to help prevent water evaporation and compaction. Keep mulch 1 foot away from the base of the tree.

Irrigation
Retained trees will require supplemental water if construction occurs during summer drought periods.

Canopy Pruning
Any pruning required for construction and safety clearance shall be done with a pruning specification provided by the project arborist in accordance with American National Standards Institute ANSI A300 Standard Practices for Pruning. Use of an arborist with an International Society of Arboriculture Certification to perform pruning is strongly advised.

Table of Trees

Van Asselt Elementary School

Seattle, WA

Arborist: JP TB
Date of Inventory: 05.19.2020
Table Prepared: 06.02.2020

DSH (Diameter at Standard Height) is measured 4.5 feet above grade, or as specified in the Guide for Plant Appraisal, 10th Edition , published by the Council of Tree and Landscape Appraisers.
DSH for multi-stem trees are noted as a single stem equivalent, which is calculated using the method defined in the Director's Rule 16-2008.
Letters are used to identify trees on neighboring properties with overhanging canopies.
Dripline is measured from the center of the tree to the outermost extent of the canopy.

							Dripline Radius (feet)						
Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**DSH Multistem**	**Health Condition**	**Structural Condition**	**N**	**E**	**S**	**W**	**Exceptional Threshold**	**Exceptional by Size**	**Notes**
103	*Cornus florida*	Eastern flowering dogwood	7.4		good	fair	10.8	7.3	8.3	11.3	*12.0*	-	1 foot wound on south side; 25 percent circumference of trunk
104	*Cornus florida*	Eastern flowering dogwood	10.3		fair	poor	13.4	9.4	8.9	9.9	*12.0*	-	Measured at narrowest point below union; wound on south side, approximately 1 foot and 10 per circumference of the trunk; large amount of decay between union; large wound and bark sloughing on north side
105	*Cornus florida*	Eastern flowering dogwood	8.9		good	fair	11.4	11.4	9.9	9.9	*12.0*	-	Wound and decay cavity on south side, 3 feet tall, 6 inches wide, few inches deep
108	*rhododendron*	Tree rhododendron	6.0	2.3,2.2,2.8, 4.3	good	good	5.3	5.3	7.8	2.8	*11.3*	-	
110	*Cedrus libani*	Cedar of Lebanon	24.7		good	good	18.0	18.5	18.0	23.0	*30.0*	-	Blue atlas; partially buried root flare; add woodchip mulch and understory plants if retaining
111	*Cornus florida*	Eastern flowering dogwood	9.0	5.6,4.4,5.5	good	good	10.4	11.9	10.9	7.4	*12.0*	-	Old stub cut pruning wounds on northeast side
112	*Cornus florida*	Eastern flowering dogwood	10.0	5.1,5.3,4.9, 4.6	good	good	13.4	11.4	9.4	10.9	*12.0*	-	Minor decay near old pruning wounds
113	*Fagus sylvatica*	European beech	23.5		good	good	19.0	19.0	21.0	22.0	*30.0*	-	Measured at narrowest point below union; crowded scaffolding branches with Included bark, but branches are grafting; unions look ok; minor wounding in some lateral branches, possibly from climbing or maintenance; hypericum at base
117	*Camellia japonica*	Japanese camellia	9.8	4.4,4.9,4.5, 5.7	good	good	11.4	11.4	7.4	7.4	*30.0*	-	Blackberry at base
118	*Camellia japonica*	Japanese camellia	6.8	4.9,4.7	good	good	10.3	9.3	6.3	5.3	*30.0*	-	Bindweed at base

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
120	*Camellia japonica*	Japanese camellia	12.6	3.6,5,4.3,2.9,4.2,2.5,2.5,3,2.9,3.1,3.1,3.6,4	good	good	11.5	11.5	7.5	7.5	*30.0*	-	Bindweed and blackberry at base
121	*Camellia japonica*	Japanese camellia	7.8	2.5,3.5,3.2,2.7,3.2,3.8	good	good	9.8	7.3	4.8	5.8	*30.0*	-	Bindweed at base; minor wounding on two lateral branches, potentially from lawn maintenance
123	*Prunus serrulata*	Flowering cherry	23.3	19,13.5	fair	fair	19.0	17.5	16.0	13.0	*23.0*	Exceptional	Codominant trunks at base; decay between union; 10 inch pruning wound with decay column on east side of trunk; old branch tear out on west side
124	*Betula pendula*	European white birch	21.0		fair	poor	21.9	19.9	19.4	20.4	*24.0*	-	Measured at narrowest point below union; lots of low scaffold branches; unusual form for this tree; pruning wounds and decay present
125	*Cornus kousa*	Kousa dogwood	22.2		good	fair	20.9	18.9	15.9	16.9	*12.0*	Exceptional	Check on species; ivy climbing the trunk; blackberry at base; close to existing trunk; some minor dieback; cherry laurel near base; old dead leader, approximately 3 in diameter should be removed; wound at base
126	*Chamaecyparis lawsoniana*	Lawson cypress	30.3	23,19.8	good	fair	14.3	11.8	14.3	14.3	*30.0*	Exceptional	Some decay between union; wound on inside of north trunk
127	*Chamaecyparis lawsoniana*	Lawson cypress	16.7		good	fair	9.7	8.7	12.7	15.7	*30.0*	-	Ivy on trunk; dead trunk on east at base
128	*Populus trichocarpa*	Black cottonwood	54.0		good	good	33.8	33.8	46.8	33.8	*Not Exceptional except in grove*	-	Populus deltoidies; large amount of ivy in trunk which limited assessment; some deadwood under 2 inches; while it looks good this species is known for dropping branches; i would not build too closely to this tree; we were only able to measure half diameter and double it due to access, fence against the trunk of tree; must remove ivy climbing into canopy
129	*Quercus macrocarpa*	Burr oak	36.8		good	good	20.5	28.5	39.5	21.0	*30.0*	Exceptional	Ivy climbing trunk

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
130	*Acer macrophyllum*	Bigleaf maple	27.0		good	fair	24.6	25.1	12.1	28.6	*30.0*	-	Trunk enveloping the fence; may have to remove trunk for stability; diameter estimated due to the fence; ivy at base; included bark in all unions;
131	*Acer macrophyllum*	Bigleaf maple	27.0	21,17	poor	poor	9.1	20.1	17.6	21.1	*30.0*	-	Two trunks entirely dead; heavy dieback; Ganoderma applanatum fungal fruiting body at base
132	*Acer macrophyllum*	Bigleaf maple	24.7	10,16,15,5.5	good	fair	13.5	29.0	15.0	23.0	*30.0*	-	Ivy climbing into canopy; limited assessment; narrow unions between trunks; growing close to fence
133	*Acer macrophyllum*	Bigleaf maple	21.6	12,18	good	fair	14.9	11.4	11.4	21.9	*30.0*	-	Narrow unions between trunks; ivy growing into canopy; starting to grow over fence
134	*Acer macrophyllum*	Bigleaf maple	25.3	16.8,18.9	fair	fair	17.6	28.1	24.1	20.1	*30.0*	-	One central dead trunk; decay cavity below it; good wildlife habitat if nothing is nearby; blackberry and ivy at base
135	*Acer macrophyllum*	Bigleaf maple	17.3	10.2,14	good	fair	22.7	17.2	15.7	17.2	*30.0*	-	Diameter estimated on 2nd trunk due to access; trunk growing through fence which is impacting the structure; cherry laurel at base
136	*Acer macrophyllum*	Bigleaf maple	16.6	7.5,3,3.4,5.5,3.9,4.5,6.8,4.6,8	good	fair	15.7	14.7	10.7	16.7	*30.0*	-	Many trunks at base; growing through fence; diameter estimated; heavy ivy on trunks
137	*Acer macrophyllum*	Bigleaf maple	8.4	5.8,6.1	poor	poor	17.9	12.9	6.4	10.4	*30.0*	-	Two trunk sprouts growing through fence; base is off property and heavily decayed; not a long term viable tree
138	*Pseudotsuga menziesii*	Douglas-fir	10.0		good	good	12.9	9.4	6.4	9.4	*30.0*	-	Behind fence; unable to access; not tagged
139	*Pyrus* sp.	Pear	6.6	5,3,3	good	fair	10.3	10.8	5.3	6.3	*30.0*	-	Behind fence; growing through fence; tagged on this side of fence
141	*Cuprocyparis leylandii*	Leyland cypress	7.2	5.4,4.8	good	good	9.3	9.3	9.3	9.3	*30.0*	-	Some type of golden cultivar, maybe 'Golconda'
144	*Acer platanoides*	Norway maple	7.7		good	good	15.8	16.8	14.8	9.8	*30.0*	-	White pith in leaf petiole

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
145	*Acer macrophyllum*	Bigleaf maple	18.4	13.2,8,10	good	good	17.3	28.3	23.3	17.8	*30.0*	-	Heavy ivy in trunk that limited assessment; diameter estimated; growing across fence line
146	*Ulmus 'Homestead'*	Homestead elm	7.8		good	good	16.8	14.3	12.8	12.3	*29.5*	-	Elm with small leaf's; insect damage; blackberry at base
148	*Malus domestica*	Apple	7.2	4.4,3.7,4.4	fair	fair	10.3	5.3	9.3	5.3	*20.0*	-	Tip dieback; covered in blackberry and ivy
149	*Betula pendula*	European white birch	10.0		good	good	14.4	16.4	13.4	14.9	*24.0*	-	Limited soil volume; growing against concrete planter
150	*Malus domestica*	Apple	8.3		fair	fair	1.3	1.3	14.3	7.3	*20.0*	-	Old branch tear out approximately 3 in diameter; heavy ivy in canopy
151	*Acer macrophyllum*	Bigleaf maple	10.4		good	good	11.4	17.4	18.4	12.4	*30.0*	-	Phototropic to east; ivy in canopy
152	*Acer macrophyllum*	Bigleaf maple	17.1		good	good	11.7	19.7	13.7	9.7	*30.0*	-	Codominant trunks; measured as one trunk because they are growing together; ivy into canopy
153	*Acer macrophyllum*	Bigleaf maple	12.8		good	good	8.5	7.5	15.5	11.5	*30.0*	-	Ivy in canopy
154	*Crataegus monogyna*	Common hawthorn	7.2	6,3.9	fair	fair	9.3	7.3	8.3	14.3	*16.2*	-	Suppressed; engulfed in ivy; codominant trunks at 3 feet
155	*Acer macrophyllum*	Bigleaf maple	10.3	9,5	good	good	10.4	7.4	9.4	20.4	*30.0*	-	Phototropic west; ivy in canopy
156	*Acer macrophyllum*	Bigleaf maple	16.2	12.5,10.3	good	good	10.7	14.7	12.7	16.7	*30.0*	-	Codominant at base with good union; ivy into canopy
158	*Acer macrophyllum*	Bigleaf maple	17.8	15.9,8.1	good	good	17.7	23.7	18.7	29.7	*30.0*	-	Codominant at base; ivy in canopy
160	*Acer macrophyllum*	Bigleaf maple	9.3		good	good	12.4	16.9	8.4	8.4	*30.0*	-	Ivy on trunk; suppressed
161	*Acer macrophyllum*	Bigleaf maple	12.3	7.4,6.5,7.4	good	good	15.5	20.0	14.5	9.5	*30.0*	-	Scotch broom at base; ivy in canopy; phototropic east; 3 trunks at base with good unions
162	*Acer macrophyllum*	Bigleaf maple	15.7	12.4,9.6	good	good	12.7	21.7	10.7	15.7	*30.0*	-	Larger trunk is two trunks that have grown together; codominant at base; ivy on trunk
163	*Acer macrophyllum*	Bigleaf maple	12.1	9.2,7.8	good	good	12.5	19.5	6.5	13.5	*30.0*	-	Codominant trunks at base; ivy on trunk
164	*Thuja plicata*	Western redcedar	9.5		good	good	12.4	9.4	9.4	9.4	*30.0*	-	Phototropic to north; debris at base; blackberry and ivy at base
165	*Betula populifolia*	Gray birch	9.2	8.3,4	fair	fair	19.9	7.4	7.4	22.4	*15.1*	-	Codominant at base; old trunk removed at base; minor tip dieback; probably has bronze birch borer

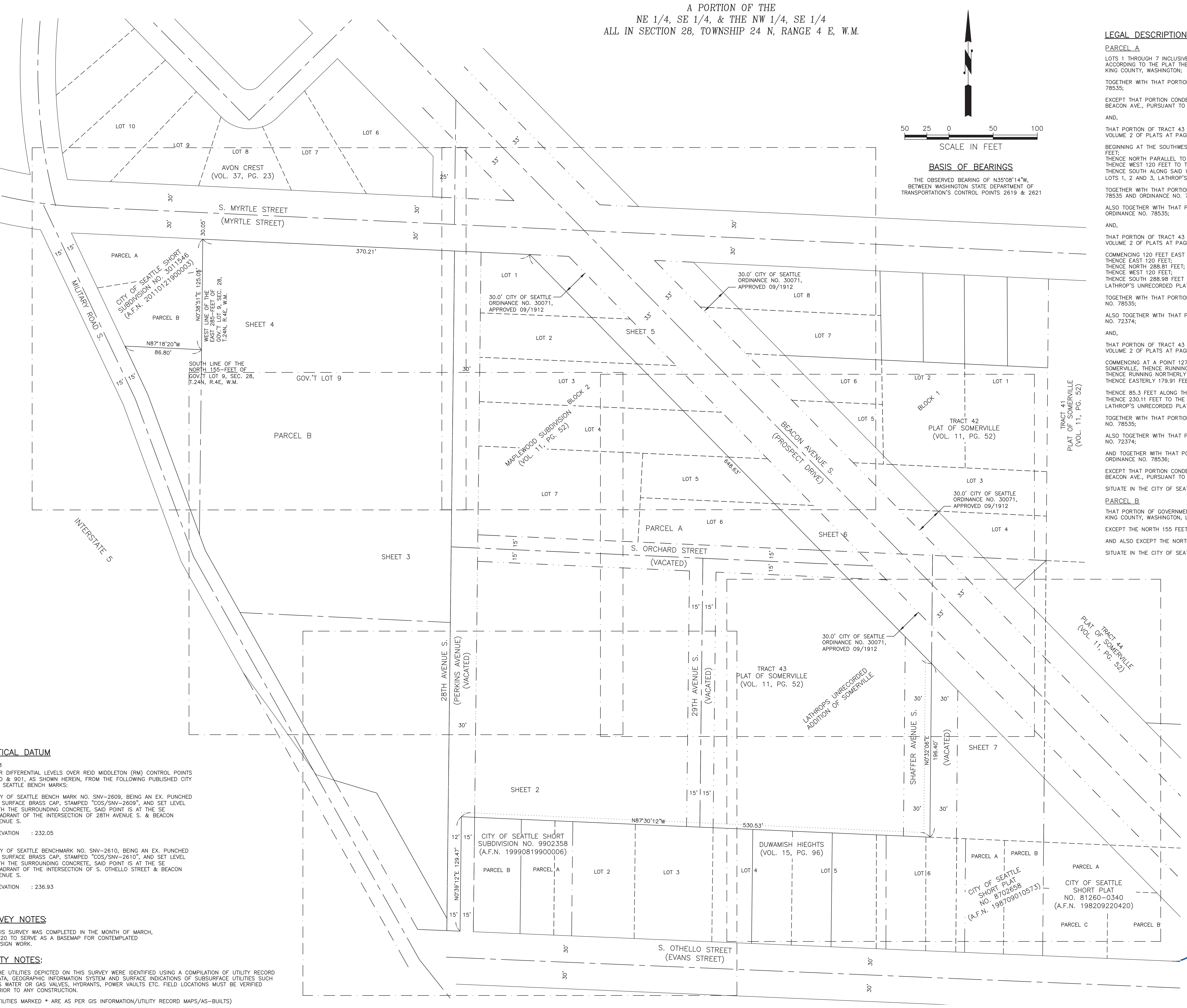
Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
166	*Betula populifolia*	Gray birch	7.4		poor	fair	12.3	17.3	6.3	1.3	*15.1*	-	Found d-shaped holes of bronze birch borer; major dieback; one trunk dead; unlikely to recover
169	*Prunus x subhirtella 'Autumnalis Rosea'*	Autumn flowering cherry	7.5		fair	fair	6.8	8.3	6.3	8.8	*15.8*	-	40 percent dieback
171	*Davidia involucrata*	Dove tree	12.9	7.4,9.2,5.3	good	good	13.0	15.5	15.0	14.5	*14.3*	-	Dove tree; minor lawn mower damage at base; needs mulch
172	*Alnus rubra*	Red alder	30.4		fair	fair	18.3	22.3	21.3	26.3	*Not Exceptional unless in grove*	-	Large dead leader; fence at base; holly; blackberry at base
173	*Populus trichocarpa*	Black cottonwood	37.3		fair	poor	24.6	20.6	17.6	18.6	*Not Exceptional except in grove*	-	Large decay cavity on northeast side; large growth deficit on south side; straddles property line; recommend removal
174	*Acer macrophyllum*	Bigleaf maple	19.5	18.5,5.2,3.5	good	fair	23.8	24.8	18.8	20.8	*30.0*	-	Wound on east side and narrow unions with included bark
175	*Populus trichocarpa*	Black cottonwood	13.9		good	good	14.1	16.6	16.6	14.6	*Not Exceptional except in grove*	-	Growing in cluster of cottonwood; blackberry at base
176	*Populus trichocarpa*	Black cottonwood	11.7		good	good	12.5	32.5	17.5	3.5	*Not Exceptional except in grove*	-	Growing in cluster of cottonwood; blackberry at base; phototropic to the east
177	*Populus trichocarpa*	Black cottonwood	9.3		good	good	4.4	15.4	19.4	12.4	*Not Exceptional except in grove*	-	Growing in cluster of cottonwood; blackberry at base
178	*Populus trichocarpa*	Black cottonwood	13.1		good	good	5.5	16.5	24.5	19.5	*Not Exceptional except in grove*	-	Growing in cluster of cottonwood; blackberry at base
179	*Populus trichocarpa*	Black cottonwood	17.4	14.3,10	good	good	17.7	9.7	16.7	20.7	*Not Exceptional except in grove*	-	Growing in cluster of cottonwood; blackberry at base
Trees tagged under 6 inches DSH													
102	*Cornus florida*	Eastern flowering dogwood	5.8		good	good	10.2	9.2	9.2	7.2	*12.0*	-	Raised planter; surface roots; stump to northwest
106	*rhododendron*	Tree rhododendron	3.7		good	good	6.7	6.7	6.7	4.7	*11.3*	-	

Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**DSH Multistem**	**Health Condition**	**Structural Condition**	**N**	**E**	**S**	**W**	**Exceptional Threshold**	**Exceptional by Size**	**Notes**
107	*rhododendron*	Tree rhododendron	4.6	3.6,2.4,1.7	good	good	2.7	3.2	7.2	5.2	*11.3*	-	
109	*rhododendron*	Tree rhododendron	5.0		good	good	3.7	5.2	4.7	2.7	*11.3*	-	Pruning wounds near base with decay
114	*Malus* 'Prariefire'	Prariefire crabapple	4.0		good	good	7.2	9.2	9.2	8.2	*30.0*	-	Minor lawnmower damage at base; purple leaf crab apple
115	*Camellia japonica*	Japanese camellia	5.0		good	good	6.2	10.2	6.7	2.2	*30.0*	-	Camelia japonica; wound on northwest side at base, looks to be from an old trunk removed
116	*Sorbus aucuparia*	European mountain ash	4.1		good	fair	5.7	6.7	7.2	7.2	*29.0*	-	Lawn mower damage around majority of base; need better mulch circle and understory planting
119	*Malus* 'Prariefire'	Prariefire crabapple	4.6		good	good	11.2	9.7	11.2	8.7	*30.0*	-	
122	*Sorbus aucuparia*	European mountain ash	4.9		good	good	7.7	7.2	7.7	8.2	*29.0*	-	Minor lawn mower damage at base; narrow unions between branches
140	*Calocedrus decurrens*	Incense cedar	4.3		good	good	4.2	4.2	4.2	4.2	*30.0*	-	
142	*Populus nigra 'Italica'*	Lombardy poplar	5.7	4,4	fair	fair	8.2	9.2	4.2	2.2	*30.0*	-	In row of dead poplars; ivy and blackberry at base
143	*Acer rubrum*	Red maple	5.5		fair	fair	8.2	9.2	7.2	8.2	*25.0*	-	Wounding and cracking at base to 3 feet on south side
157	*Thuja plicata*	Western redcedar	5.9		fair	fair	7.7	8.2	7.2	5.7	*30.0*	-	Top dead; likely due to shading; could recover with more sunlight; ivy climbing trunk
159	*Acer macrophyllum*	Bigleaf maple	5.5		good	good	8.2	1.2	7.2	15.2	*30.0*	-	Hawthorn at base; ivy on trunk
167	*Malus* 'Prariefire'	Prairie fire crabapple	5.3		good	good	10.2	12.7	12.2	12.2	*30.0*	-	Crab apple; not 100 percent sure on id
168	*Malus* 'Prariefire'	Prairie fire crabapple	3.4		good	good	9.1	9.1	9.1	9.1	*30.0*	-	Purple leaf crab apple; not 100 percent sure on id
170	*Malus* 'Prariefire'	Prairie fire crabapple	3.2		good	good	7.1	7.1	7.1	7.1	*30.0*	-	Crab apple
Off-site Trees with overhanging canopies													
147	*Acer circinatum*	Vine maple	8.5	5.5,6.5	good	good	12.9	7.4	10.4	7.4	*8.0*	Exceptional	Tagged on trunk on this side of fence, but really originates offsite; ivy and blackberry at base

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
A (TRE-85329)	*Acer rubrum*	Red maple	12.8		good	good	16.5	21.0	13.5	9.5	*25.0*	-	Small planter; under powerlines, pruning done for clearance; limited soil volume; surface roots; new sidewalk to south
B (TRE-85330)	*Acer rubrum*	Red maple	12.4		good	good	21.5	15.5	16.5	12.5	*25.0*	-	Under powerlines; sidewalk raising; codominant trunks at 8 feet; included bark in union
C (TRE-85331)	*Acer rubrum*	Red maple	8.7		fair	fair	17.4	12.4	14.9	14.4	*25.0*	-	Large wound at base to 3.5 feet, 35 percent circumference of trunk; clearance pruning done for wire clearance
D (TRE-85332)	*Acer rubrum*	Red maple	6.7		good	good	11.3	13.3	12.8	11.8	*25.0*	-	Surface roots growing over sidewalk with lawnmower damage on roots
E (TRE-85333)	*Acer rubrum*	Red maple	9.2		good	good	12.4	13.9	14.4	14.4	*25.0*	-	Limited soil volume; pruning for overhead wires previously done
F (TRE-85334)	*Acer rubrum*	Red maple	7.0		good	good	17.3	15.3	9.3	10.3	*25.0*	-	Needs clearance pruning; surface roots; girdling roots; small wound on east side; 5 percent circumference of trunk
G (TRE-85335)	*Acer rubrum*	Red maple	11.6		good	good	19.5	18.5	20.5	14.5	*25.0*	-	Sidewalk raising; surface roots; sprouting at base
H (TRE-85336)	*Acer rubrum*	Red maple	10.1		good	good	15.4	10.4	14.9	14.9	*25.0*	-	Sidewalk raising; girdling roots; surface roots;
I (TRE-85337)	*Acer rubrum*	Red maple	12.2		good	good	14.5	11.5	19.5	19.5	*25.0*	-	Sidewalk raising; girdling roots; surface roots
J (TRE-85338)	*Acer rubrum*	Red maple	12.3		good	good	13.0	15.0	21.0	19.5	*25.0*	-	Sidewalk raising; girdling roots; surface roots
K (TRE-85339)	*Acer rubrum*	Red maple	11.9		good	good	15.0	11.5	19.5	23.0	*25.0*	-	Sidewalk raising; girdling roots; surface roots;

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Exceptional Threshold	Exceptional by Size	Notes
L (TRE-85340)	*Acer rubrum*	Red maple	10.9		good	fair	11.0	15.0	15.5	20.0	*25.0*	-	Sidewalk raising; girdling roots; surface roots; included bark between codominant trunks at 6 feet, extends for 1 to 2 feet
M (TRE-85341)	*Acer rubrum*	Red maple	15.2		good	fair	17.6	15.1	14.1	26.1	*25.0*	-	Sidewalk raising; girdling roots; surface roots; large reduction cuts for clearance on overhead wires
N (TRE 85342)	*Acer x Freemanii*	Freeman maple	11.4		good	good	14.5	14.5	17.0	15.5	*20.8*	-	Sidewalk raising; girdling roots; surface roots; crowded scaffold branches
O (TRE 85343)	*Acer rubrum*	Red maple	11.8		good	good	14.5	16.5	16.5	23.0	*25.0*	-	Sidewalk raising; surface roots; girdling roots
P	*Acer macrophyllum*	Bigleaf maple	25.2	11,17,15	good	fair	26.0	28.5	21.0	25.0	*30.0*	-	Growing into fence; maintained as an offsite tree by pruning
Q	*Populus nigra 'Italica'*	Lombardy poplar	12.0		fair	fair	10.5	3.5	14.5	12.5	*30.0*	-	Large amount of ivy on one trunk which is dead; not on survey
R	*Acer macrophyllum*	Bigleaf maple	14.0		good	fair	10.6	10.6	12.6	13.6	*30.0*	-	Growing through the fence; large amount of ivy and blackberry at base
S	*Acer macrophyllum*	Bigleaf maple	31.0		fair	fair	28.3	21.3	21.3	21.3	*30.0*	Exceptional	Behind shed; overhang just barely; wisteria into canopy; large amount of dieback; not on survey
T	*Acer macrophyllum*	Bigleaf maple	40.0		good	fair	26.7	24.7	29.7	28.7	*30.0*	Exceptional	Some old branch tear outs and minor deadwood in canopy below 3 inch diameter
U	*Pseudotsuga menziesii*	Douglas-fir	9.0		good	good	13.4	6.4	10.4	10.4	*30.0*	-	Behind fence; ivy at base
V	*Pseudotsuga menziesii*	Douglas-fir	8.0		good	good	11.8	10.3	7.3	11.3	*30.0*	-	Ivy at base
W	*Pseudotsuga menziesii*	Douglas-fir	7.0		good	good	9.3	4.3	10.3	11.3	*30.0*	-	Ivy at base
X	*Acer macrophyllum*	Bigleaf maple	22.0	14,17	good	good	18.9	25.9	18.9	18.9	*30.0*	-	Ivy at base
Y	*Acer macrophyllum*	Bigleaf maple	11.6	3,6,5,7,4	good	fair	12.5	12.5	12.5	12.5	*30.0*	-	Ivy on trunk; growing through fence

A PORTION OF THE
NE 1/4, SE 1/4, & THE NW 1/4, SE 1/4
ALL IN SECTION 28, TOWNSHIP 24 N, RANGE 4 E, W.M.



BASIS OF BEARINGS

THE OBSERVED BEARING OF N35°08'14"W, BETWEEN WASHINGTON STATE DEPARTMENT OF TRANSPORTATION'S CONTROL POINTS 2619 & 2621

LEGAL DESCRIPTIONS

PARCEL A

LOTS 1 THROUGH 7 INCLUSIVE, BLOCK 2, MAPLEWOOD SUBDIVISION OF LOT 42, SOMERVILLE, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 11 OF PLATS AT PAGE 52, RECORDS OF KING COUNTY, WASHINGTON;

TOGETHER WITH THAT PORTION OF VACATED 28TH AVE. S. ADJOINING, PURSUANT TO ORDINANCE NO. 78535;

EXCEPT THAT PORTION CONDEMNED UNDER KING COUNTY SUPERIOR COURT CAUSE NO. 93467 FOR BEACON AVE., PURSUANT TO ORDINANCE NO. 30071;

AND,

THAT PORTION OF TRACT 43 OF SOMERVILLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2 OF PLATS AT PAGE 63, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID TRACT, THENCE EAST ALONG SAID SOUTH LINE 120 FEET;
THENCE NORTH PARALLEL TO THE WEST LINE 288.98 FEET;
THENCE WEST 120 FEET TO THE WEST LINE;
THENCE SOUTH ALONG SAID WEST LINE 289.14 FEET TO THE POINT OF BEGINNING. (ALSO KNOWN AS LOTS 1, 2 AND 3, LATHROP'S UNRECORDED PLAT OF SOMERVILLE TRACTS);

TOGETHER WITH THAT PORTION OF VACATED 28TH AVE. S. ADJOINING, PURSUANT TO ORDINANCE NO. 78535 AND ORDINANCE NO. 78862;

ALSO TOGETHER WITH THAT PORTION OF VACATED S. ORCHARD ST. ADJOINING, PURSUANT TO ORDINANCE NO. 78535;

AND,

THAT PORTION OF TRACT 43 OF SOMERVILLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2 OF PLATS AT PAGE 63, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING 120 FEET EAST OF THE SOUTHWEST CORNER OF TRACT 43 OF SOMERVILLE, RUNNING THENCE EAST 120 FEET;
THENCE NORTH 288.81 FEET;
THENCE WEST 120 FEET;
THENCE SOUTH 288.98 FEET TO THE PLACE OF BEGINNING. (ALSO KNOWN AS LOTS 4, 5 AND 6, LATHROP'S UNRECORDED PLAT OF SOMERVILLE TRACTS);

TOGETHER WITH THAT PORTION OF VACATED S. ORCHARD ST. ADJOINING, PURSUANT TO ORDINANCE NO. 78535;

ALSO TOGETHER WITH THAT PORTION OF VACATED 29TH AVE. S. ADJOINING, PURSUANT TO ORDINANCE NO. 72374;

AND,

THAT PORTION OF TRACT 43 OF SOMERVILLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 2 OF PLATS AT PAGE 63, RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT 127.22 FEET WEST OF THE SOUTHEAST CORNER STAKE OF TRACT 43 OF SOMERVILLE, THENCE RUNNING WEST 240 FEET;
THENCE RUNNING NORTHERLY 288.77 FEET;
THENCE EASTERLY 179.91 FEET TO THE LINE OF THE "PIPE LINE ROAD";

THENCE 85.3 FEET ALONG THIS LINE IN A SOUTHEASTERLY DIRECTION;
THENCE 230.11 FEET TO THE PLACE OF BEGINNING. (ALSO KNOWN AS LOTS 7, 8, 9, 10, 11 AND 12, LATHROP'S UNRECORDED PLAT OF SOMERVILLE TRACTS).

TOGETHER WITH THAT PORTION OF VACATED S. ORCHARD ST. ADJOINING, PURSUANT TO ORDINANCE NO. 78535;

ALSO TOGETHER WITH THAT PORTION OF VACATED 29TH AVE. S. ADJOINING, PURSUANT TO ORDINANCE NO. 72374;

AND TOGETHER WITH THAT PORTION DEEDED FOR SHAEFFER AVE. S. ADJOINING, PURSUANT TO ORDINANCE NO. 78536;

EXCEPT THAT PORTION CONDEMNED UNDER KING COUNTY SUPERIOR COURT CAUSE NO. 93467 FOR BEACON AVE., PURSUANT TO ORDINANCE NO. 30071;

SITUATE IN THE CITY OF SEATTLE, COUNTY OF KING, STATE OF WASHINGTON.

PARCEL B

THAT PORTION OF GOVERNMENT LOT 9, SECTION 28, TOWNSHIP 24 NORTH, RANGE 4 EAST, W.M., IN KING COUNTY, WASHINGTON, LYING EAST OF OLD MILITARY ROAD;

EXCEPT THE NORTH 155 FEET, LYING WEST OF THE EAST 285 FEET THEREOF;

AND ALSO EXCEPT THE NORTH 30 FEET FOR STREET.

SITUATE IN THE CITY OF SEATTLE, COUNTY OF KING, STATE OF WASHINGTON

HORIZONTAL DATUM

NAD83/11, WA STATE PLANE, N ZONE

COORDINATES ESTABLISHED THROUGH RTK GPS OBSERVATIONS VIA THE WASHINGTON STATE REFERENCE NETWORK (WSRN), ADDITIONAL CONTROL COORDINATES WERE ESTABLISHED VIA CLOSED TRAVERSE.

OBSERVED CONTROL POINT POSITIONS:

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2619, "GP17005-177" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005-177", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 198375.423
EASTING : 1278956.553
ELELVATION : 85.439

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2621, "GP17005-179" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005-179", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 200751.350
EASTING : 1277284.463
ELEVATION : 86.614

VERTICAL DATUM

NAVD88

PER DIFFERENTIAL LEVELS OVER REID MIDDLETON (RM) CONTROL POINTS 900 & 901, AS SHOWN HEREIN, FROM THE FOLLOWING PUBLISHED CITY OF SEATTLE BENCH MARKS:

CITY OF SEATTLE BENCH MARK NO. SNV-2609, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV-2609", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF 28TH AVENUE S. & BEACON AVENUE S.

ELEVATION : 232.05

CITY OF SEATTLE BENCHMARK NO. SNV-2610, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV-2610", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF S. OTHELLO STREET & BEACON AVENUE S.

ELEVATION : 236.93

SURVEY NOTES:

1. THIS SURVEY WAS COMPLETED IN THE MONTH OF MARCH, 2020 TO SERVE AS A BASEMAP FOR CONTEMPLATED DESIGN WORK.

UTILITY NOTES:

1. THE UTILITIES DEPICTED ON THIS SURVEY WERE IDENTIFIED USING A COMPILATION OF UTILITY RECORD DATA, GEOGRAPHIC INFORMATION SYSTEM AND SURFACE INDICATIONS OF SUBSURFACE UTILITIES SUCH AS WATER OR GAS VALVES, HYDRANTS, POWER VAULTS ETC. FIELD LOCATIONS MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.
2. UTILITIES MARKED * ARE AS PER GIS INFORMATION/UTILITY RECORD MAPS/AS-BUILTS)

PHILLIP T. ABENROTH
42666
05-01-2020

CALL 48 HOURS
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NOTE: L
IF "L" DOES NOT MEASURE 1"
ADJUST SCALES ACCORDINGLY.

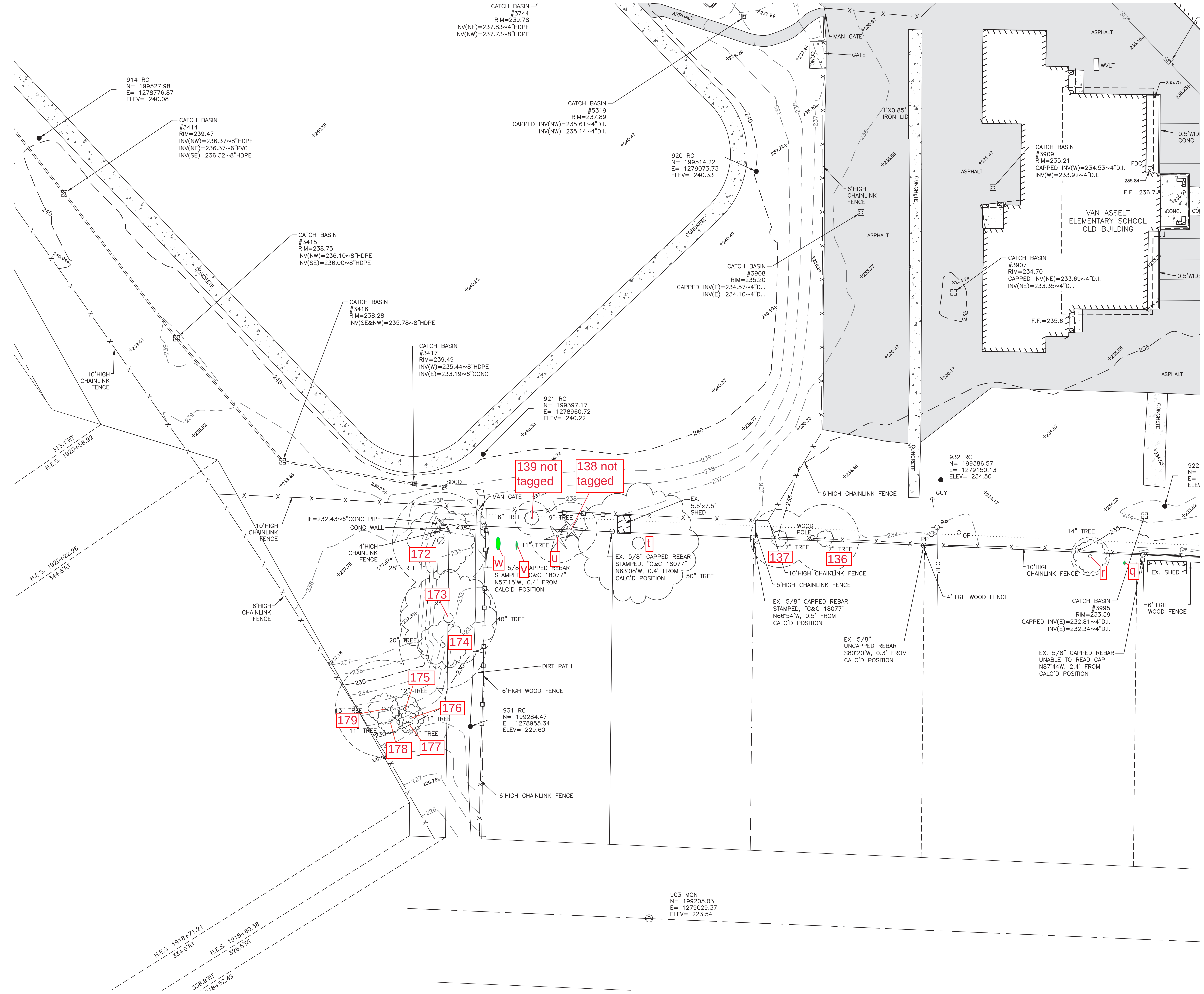
REVISION		
NO.	DATE	BY

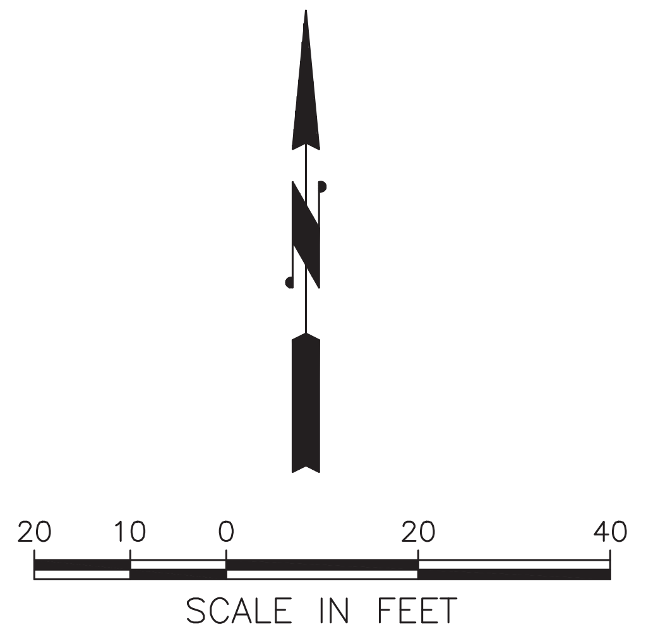
ReidMiddleton
728 134th Street SW · Suite 200
Everett, Washington 98204
Ph: 425 741-3800

TOPOGRAPHIC SURVEY
SEATTLE SCHOOL DISTRICT
OLD VAN ASSELT ELEMENTARY SCHOOL
CITY OF SEATTLE, KING COUNTY, WA

SCALE 1"=50'
DES.
DR. DW, IW
CH. PTA
F.B. 679-B
SHEET NO. 1 OF 7 SHEETS
DATE 05/01/2020
FILE NO. 222020.002

A PORTION OF THE
NE 1/4, SE 1/4, & THE NW 1/4, SE 1/4
ALL IN SECTION 28, TOWNSHIP 24 N, RANGE 4 E, W.M.





BASIS OF BEARINGS

THE OBSERVED BEARING OF N35°08'14"W, BETWEEN WASHINGTON STATE DEPARTMENT OF TRANSPORTATION'S CONTROL POINTS 2619 & 2621

HORIZONTAL DATUM

NAD83/11, WA STATE PLANE, N ZONE

COORDINATES ESTABLISHED THROUGH RTK GPS OBSERVATIONS VIA THE WASHINGTON STATE REFERENCE NETWORK (WSRN), ADDITIONAL CONTROL COORDINATES WERE ESTABLISHED VIA CLOSED TRAVERSE.

OBSERVED CONTROL POINT POSITIONS:

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2619, "GP17005–177" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005–177", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 198375.423
EASTING : 1278956.553
ELELVATION : 85.439

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2621, "GP17005–179" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005–179", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 200751.350
EASTING : 1277284.463
ELEVATION : 86.614

VERTICAL DATUM

NAVD88

PER DIFFERENTIAL LEVELS OVER REID MIDDLETON (RM) CONTROL POINTS 900 & 901, AS SHOWN HEREIN, FROM THE FOLLOWING PUBLISHED CITY OF SEATTLE BENCH MARKS:

CITY OF SEATTLE BENCH MARK NO. SNV–2609, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV–2609", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF 28TH AVENUE S. & BEACON AVENUE S.

ELEVATION : 232.05

CITY OF SEATTLE BENCHMARK NO. SNV–2610, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV–2610", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF S. OTHELLO STREET & BEACON AVENUE S.

ELEVATION : 236.93

LEGEND

	CONIFER TREE
	DECIDUOUS TREE
COMMH	TELEPHONE/COMM. MANHOLE
ELEC HH	ELECTRIC HANDHOLE
PVLT	POWER VAULT
PMH	POWER MANHOLE
PP	POWER POLE
GP	GUIDE POLE
LP	LIGHT POLE
LUM	LUMINAIRE
	GUY
TSVT	TRAFFIC SIGNAL VAULT
TRSP	TRAFFIC SIGNAL POLE]
TS BOX	TRAFFIC SIGNAL CONTROL CABINET
TRHH	TRAFFIC SIGNAL HANDHOLE
PSP	PEDESTRIAN SIGNAL PUSH BUTTON
SP	PEDESTRIAN CROSSING SIGNAL POLE
Ⓓ	STORM DRAIN MANHOLE
	CATCH BASIN
	INLET
WVLT	WATER VAULT
HYD	FIRE HYDRANT
WV	WATER VALVE
WM	WATER METER
FDC	FIRE DEPARTMENT CONNECTION
Ⓢ	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEAN OUT
BLRD	BOLLARD
	SIGN
	FOUND MONUMENT IN CASE
●	REBAR SURVEY CONTROL POINT
×	SCRIBED SURVEY MARK SURVEY

	BUILDING LINE
	EDGE OF GRAVEL
	WOOD FENCE
X	CHAINLINK FENCE
	HANDRAIL
P	POWER LINE
P*	RECORD POWER LINE
OHP	OVERHEAD POWER LINE
G	GAS LINE
G*	RECORD GAS LINE
SD	STORM DRAIN LINE
SD*	RECORD STORM DRAIN LINE
SS	SANITARY SEWER LINE
SS*	RECORD SANITARY SEWER
W	WATER LINE
W*	RECORD WATER LINE
C	COMMUNICATIONS LINE
OHC	OVERHEAD COMMUNICATIONS LINE
	RIGHT–OF–WAY
	RIGHT–OF–WAY CENTERLINE
	PROPERTY LINE
	ROCKERY
	CONCRETE PAVEMENT
▨	ASPHALT PAVEMENT
	GRAVEL

UTILITY NOTES:

1. THE UTILITIES DEPICTED ON THIS SURVEY WERE IDENTIFIED USING A COMPILATION OF UTILITY RECORD DATA, GEOGRAPHIC INFORMATION SYSTEM AND SURFACE INDICATIONS OF SUBSURFACE UTILITIES SUCH AS WATER OR GAS VALVES, HYDRANTS, POWER VAULTS ETC. FIELD LOCATIONS MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.
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NO.	DATE	BY

ReidMiddleton
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Everett, Washington 98204
Ph: 425 741–3800

TOPOGRAPHIC SURVEY
SEATTLE SCHOOL DISTRICT
OLD VAN ASSELT ELEMENTARY SCHOOL
CITY OF SEATTLE, KING COUNTY, WA

SCALE 1"=20'
DES.
DR. DW, IW
CH. PTA
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SHEET NO. 2 OF 7 SHEETS
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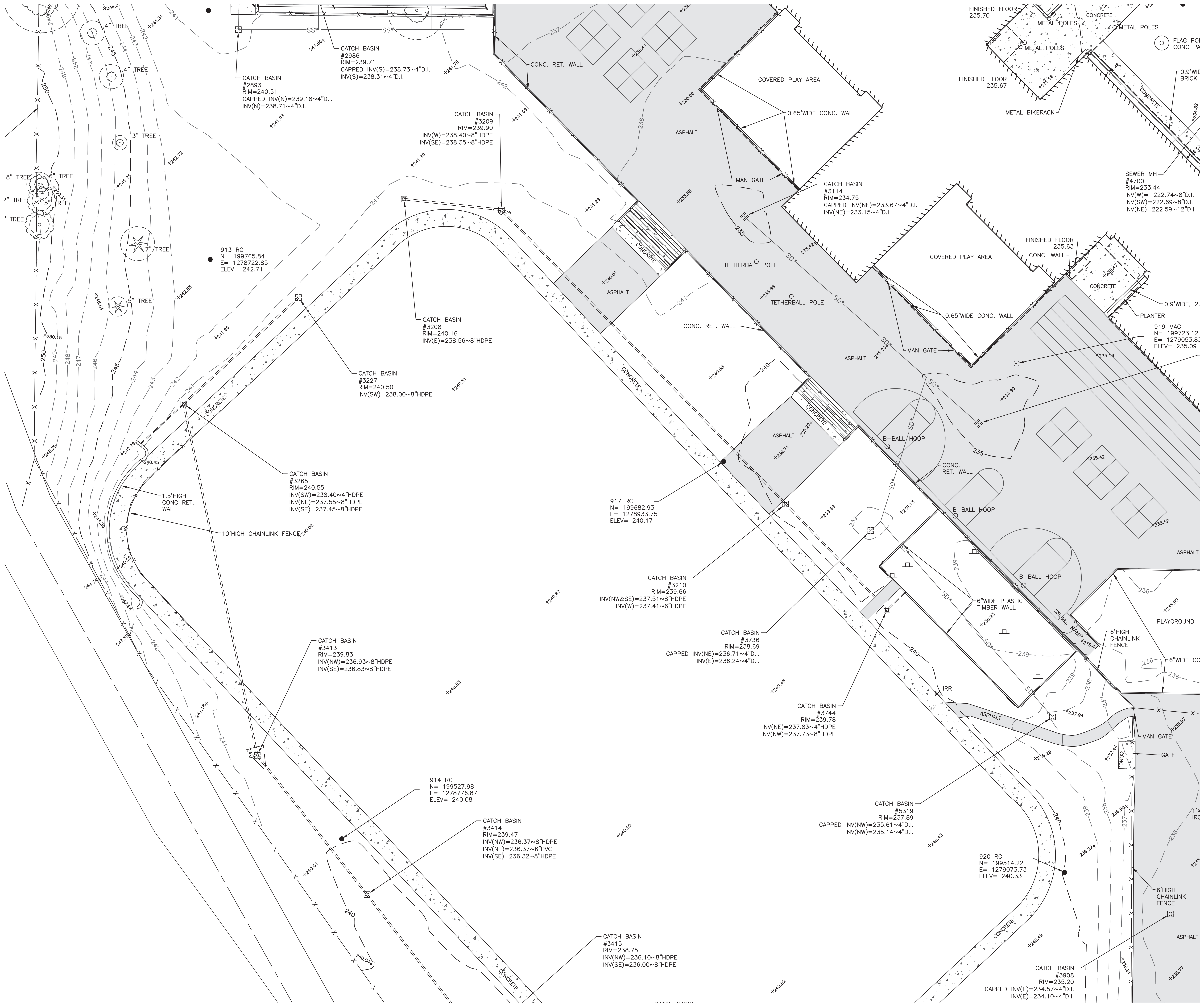
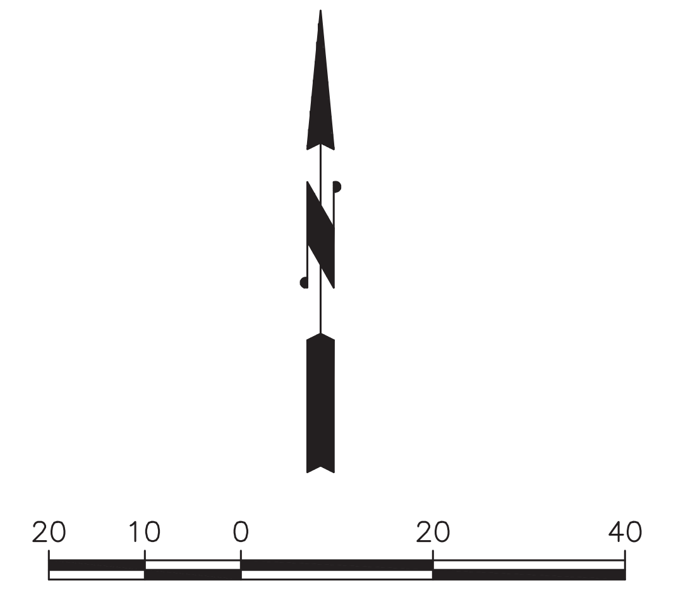
ALL IN SECTION 28, TOWNSHIP 24 N, RANGE 4 E, W.M.





SCALE IN FEET

BASIS OF BEARINGS

THE OBSERVED BEARING OF N35°08'14"W, BETWEEN WASHINGTON STATE DEPARTMENT OF TRANSPORTATION'S CONTROL POINTS 2619 & 2621

HORIZONTAL DATUM

NAD83/11, WA STATE PLANE, N ZONE
COORDINATES ESTABLISHED THROUGH RTK GPS OBSERVATIONS VIA THE WASHINGTON STATE REFERENCE NETWORK (WSRN), ADDITIONAL CONTROL COORDINATES WERE ESTABLISHED VIA CLOSED TRAVERSE.

OBSERVED CONTROL POINT POSITIONS:

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2619, "GP17005–177" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005–177", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 198375.423
EASTING : 1278956.553
ELELVATION : 85.439

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2621, "GP17005–179" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005–179", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 200751.350
EASTING : 1277284.463
ELEVATION : 86.614

VERTICAL DATUM

NAVD88
PER DIFFERENTIAL LEVELS OVER REID MIDDLETON (RM) CONTROL POINTS 900 & 901, AS SHOWN HEREIN, FROM THE FOLLOWING PUBLISHED CITY OF SEATTLE BENCH MARKS:

CITY OF SEATTLE BENCH MARK NO. SNV–2609, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV–2609", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF 28TH AVENUE S. & BEACON AVENUE S.

ELEVATION : 232.05

CITY OF SEATTLE BENCHMARK NO. SNV–2610, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV–2610", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF S. OTHELLO STREET & BEACON AVENUE S.

ELEVATION : 236.93

LEGEND

✳	CONIFER TREE
❀	DECIDUOUS TREE
COMMH ○	TELEPHONE/COMM. MANHOLE
ELEC HH □	ELECTRIC HANDHOLE
PVLT Ⓟ	POWER VAULT
PMH Ⓟ	POWER MANHOLE
PP ○	POWER POLE
GP ○	GUIDE POLE
LP ○—☼	LIGHT POLE
LUM ☼	LUMINAIRE
←	GUY
TSVT Ⓟ	TRAFFIC SIGNAL VAULT
TRSP ○—▷	TRAFFIC SIGNAL POLE]
TS BOX ☒	TRAFFIC SIGNAL CONTROL CABINET
TRHH □	TRAFFIC SIGNAL HANDHOLE
PSP ○	PEDESTRIAN SIGNAL PUSH BUTTON
SP ○	PEDESTRIAN CROSSING SIGNAL POLE
Ⓓ	STORM DRAIN MANHOLE
⊡	CATCH BASIN
⊏⊐	INLET
WVLT Ⓦ	WATER VAULT
HYD	FIRE HYDRANT
WV ⋈	WATER VALVE
WM ⊞	WATER METER
FDC	FIRE DEPARTMENT CONNECTION
Ⓢ	SANITARY SEWER MANHOLE
SSCO ○	SANITARY SEWER CLEAN OUT
BLRD ○	BOLLARD
⊓	SIGN
◒	FOUND MONUMENT IN CASE
●	REBAR SURVEY CONTROL POINT
×	SCRIBED SURVEY MARK SURVEY

\\\\\\\\\\\\	BUILDING LINE
— — — —	EDGE OF GRAVEL
—□—□—□—	WOOD FENCE
—— X ——	CHAINLINK FENCE
—○—○—○—	HANDRAIL
—— P ——	POWER LINE
—— P* ——	RECORD POWER LINE
—— OHP ——	OVERHEAD POWER LINE
—— G ——	GAS LINE
—— G* ——	RECORD GAS LINE
—— SD ——	STORM DRAIN LINE
—— SD* ——	RECORD STORM DRAIN LINE
—— SS ——	SANITARY SEWER LINE
—— SS* ——	RECORD SANITARY SEWER
—— W ——	WATER LINE
—— W* ——	RECORD WATER LINE
—— C ——	COMMUNICATIONS LINE
—— OHC ——	OVERHEAD COMMUNICATIONS LINE
————	RIGHT–OF–WAY
—— — ——	RIGHT–OF–WAY CENTERLINE
————	PROPERTY LINE
▨	ROCKERY
▭	CONCRETE PAVEMENT
▩	ASPHALT PAVEMENT
⛶	GRAVEL

UTILITY NOTES:

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PHILLIP T. ABENROTH
42666
05-01-2020

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BEFORE YOU DIG
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NOTE: |◄— L —►|
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NO.	DATE	BY	REVISION

ReidMiddleton

728 134th Street SW · Suite 200
Everett, Washington 98204
Ph: 425 741–3800

TOPOGRAPHIC SURVEY
SEATTLE SCHOOL DISTRICT
OLD VAN ASSELT ELEMENTARY SCHOOL
CITY OF SEATTLE, KING COUNTY, WA

SCALE	1"=20'
DES.	
DR.	DW,IW
CH.	PTA
F.B.	679–B
SHEET NO.	3 OF 7 SHEETS
DATE	05/01/2020
FILE NO.	222020.002

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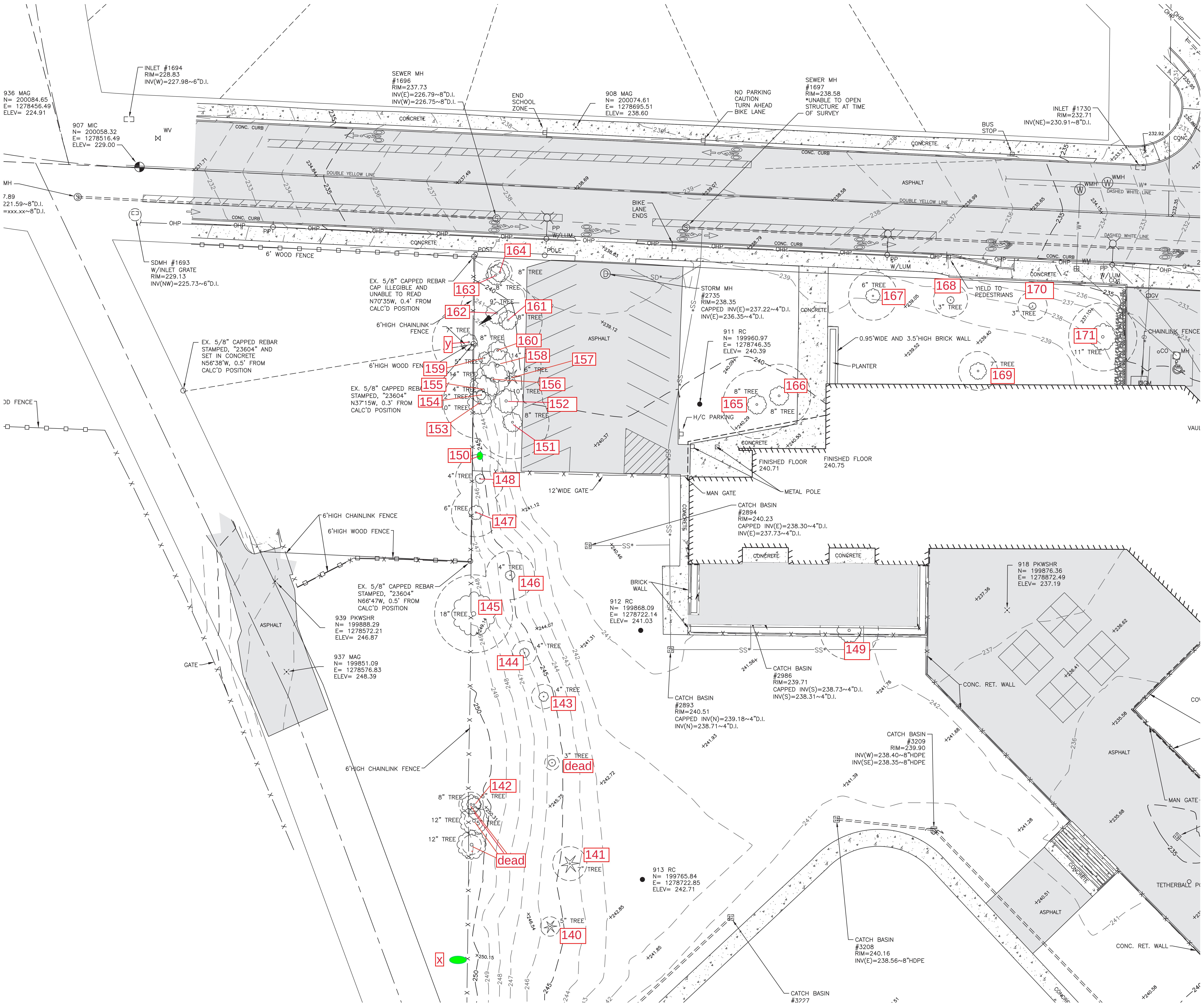

20 10 0 20 40
SCALE IN FEET

BASIS OF BEARINGS

THE OBSERVED BEARING OF N35°08'14"W, BETWEEN WASHINGTON STATE DEPARTMENT OF TRANSPORTATION'S CONTROL POINTS 2619 & 2621

HORIZONTAL DATUM

NAD83/11, WA STATE PLANE, N ZONE

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ELEVATION : 236.93

LEGEND

	CONIFER TREE		BUILDING LINE
	DECIDUOUS TREE		EDGE OF GRAVEL
COMMH	TELEPHONE/COMM. MANHOLE		WOOD FENCE
ELEC HH	ELECTRIC HANDHOLE	X	CHAINLINK FENCE
PVLT	POWER VAULT		HANDRAIL
PMH	POWER MANHOLE	P	POWER LINE
PP	POWER POLE	P*	RECORD POWER LINE
GP	GUIDE POLE	OHP	OVERHEAD POWER LINE
LP	LIGHT POLE	G	GAS LINE
LUM	LUMINAIRE	G*	RECORD GAS LINE
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TSVT	TRAFFIC SIGNAL VAULT	SD*	RECORD STORM DRAIN LINE
TRSP	TRAFFIC SIGNAL POLE]	SS	SANITARY SEWER LINE
TS BOX	TRAFFIC SIGNAL CONTROL CABINET	SS*	RECORD SANITARY SEWER
TRHH	TRAFFIC SIGNAL HANDHOLE	W	WATER LINE
PSP	PEDESTRIAN SIGNAL PUSH BUTTON	W*	RECORD WATER LINE
SP	PEDESTRIAN CROSSING SIGNAL POLE	C	COMMUNICATIONS LINE
	STORM DRAIN MANHOLE	OHC	OVERHEAD COMMUNICATIONS LINE
	CATCH BASIN		RIGHT–OF–WAY
	INLET		RIGHT–OF–WAY CENTERLINE
WVLT	WATER VAULT		PROPERTY LINE
HYD	FIRE HYDRANT		ROCKERY
WV	WATER VALVE		CONCRETE PAVEMENT
WM	WATER METER		ASPHALT PAVEMENT
FDC	FIRE DEPARTMENT CONNECTION		GRAVEL
	SANITARY SEWER MANHOLE		
SSCO	SANITARY SEWER CLEAN OUT		
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	SIGN		
	FOUND MONUMENT IN CASE		
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	SCRIBED SURVEY MARK SURVEY		

PHILLIP T. ABENROTH
42666

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REVISION
NO. DATE BY

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SHEET NO. 4 OF 7 SHEETS
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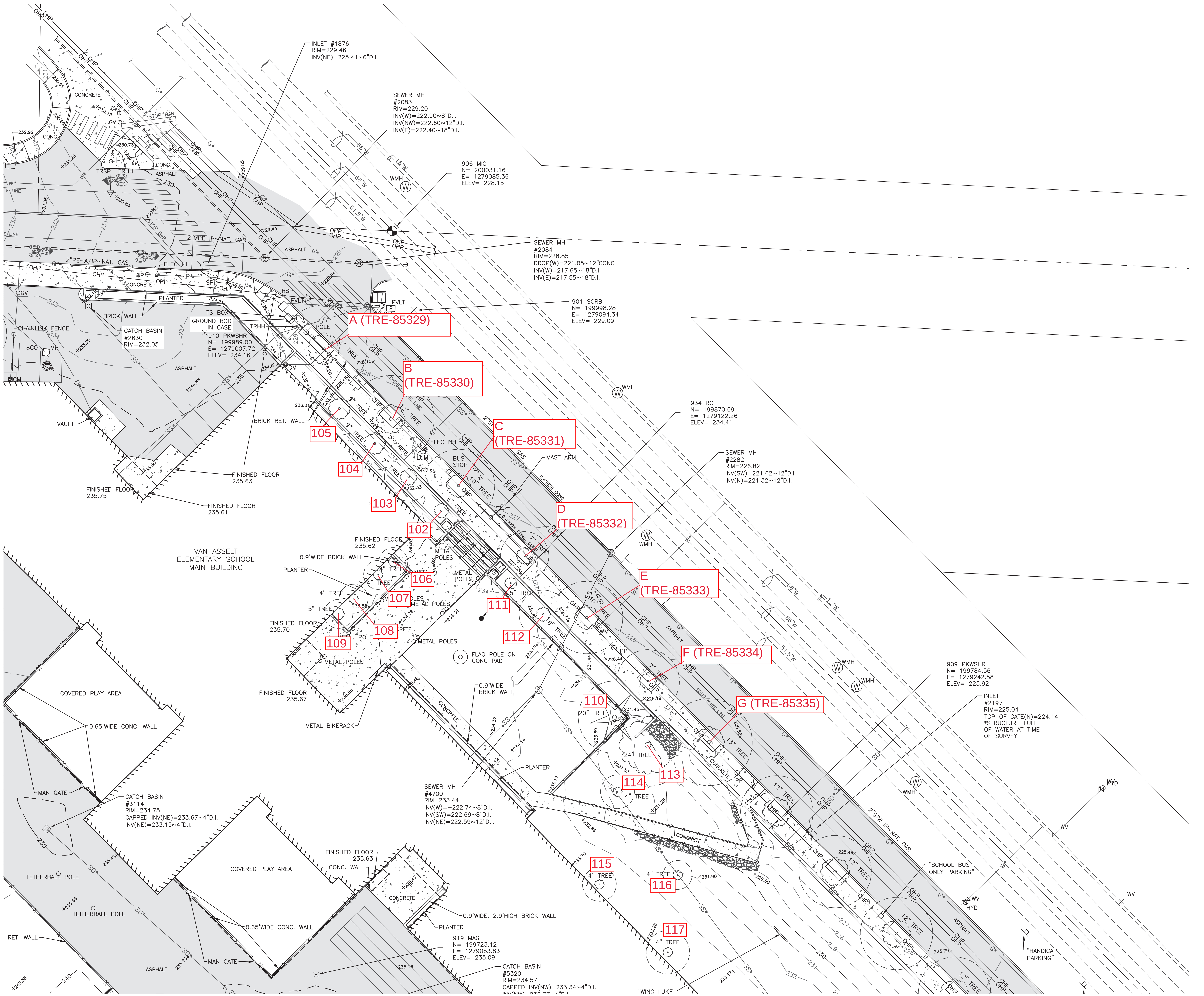

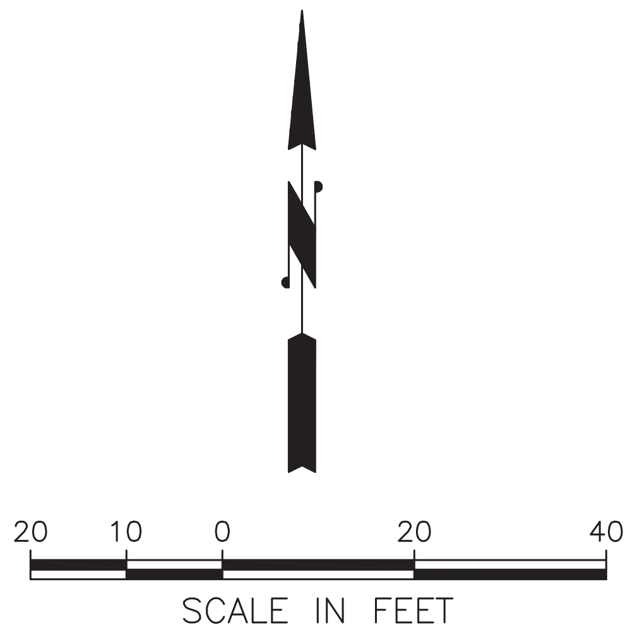

BASIS OF BEARINGS

THE OBSERVED BEARING OF N35°08'14"W,
BETWEEN WASHINGTON STATE DEPARTMENT OF
TRANSPORTATION'S CONTROL POINTS 2619 & 2621

HORIZONTAL DATUM

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ELEVATION : 236.93

LEGEND

	CONIFER TREE
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COMMH ○	TELEPHONE/COMM. MANHOLE
ELEC HH □	ELECTRIC HANDHOLE
PVLT	POWER VAULT
PMH	POWER MANHOLE
PP ○	POWER POLE
GP ○	GUIDE POLE
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	GUY
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	CATCH BASIN
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WV	WATER VALVE
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S	SANITARY SEWER MANHOLE
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BLRD ○	BOLLARD
	SIGN
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×	SCRIBED SURVEY MARK SURVEY

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	EDGE OF GRAVEL
	WOOD FENCE
X	CHAINLINK FENCE
	HANDRAIL
P	POWER LINE
P*	RECORD POWER LINE
OHP	OVERHEAD POWER LINE
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SD	STORM DRAIN LINE
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SS	SANITARY SEWER LINE
SS*	RECORD SANITARY SEWER
W	WATER LINE
W*	RECORD WATER LINE
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NO.	DATE	BY

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TOPOGRAPHIC SURVEY
SEATTLE SCHOOL DISTRICT
OLD VAN ASSELT ELEMENTARY SCHOOL
CITY OF SEATTLE, KING COUNTY, WA

SCALE 1"=20'	
DES.	SHEET NO.
DR. DW,IW	5
CH. PTA	
F.B. 679–B	OF 7 SHEETS
DATE 05/01/2020	
FILE NO. 222020.002	

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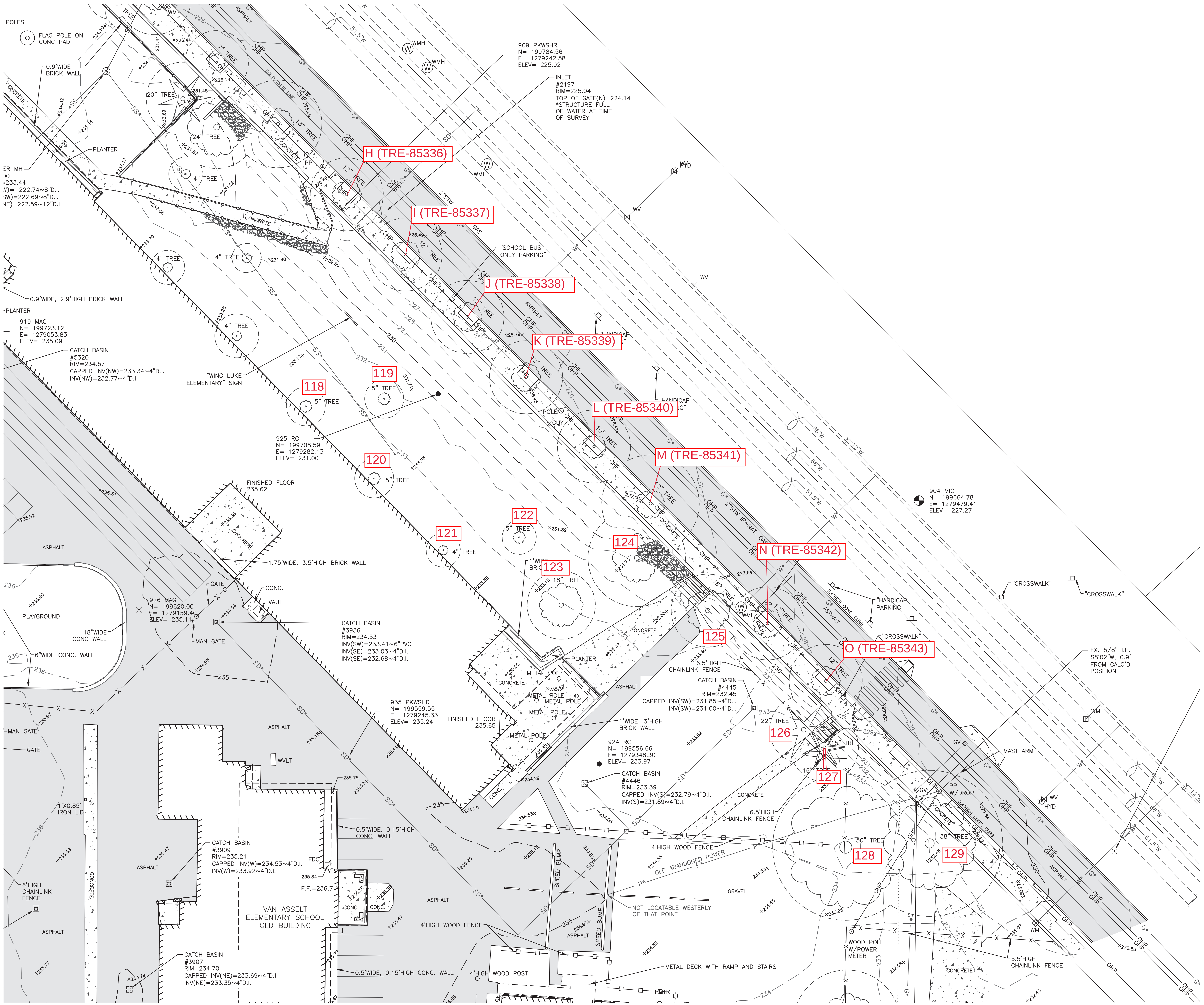

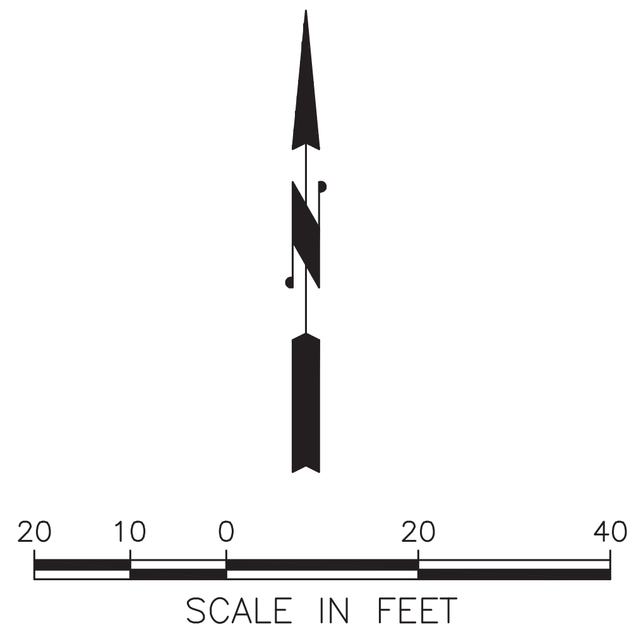

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ELEVATION : 236.93

LEGEND

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✿	DECIDUOUS TREE	— — — —	EDGE OF GRAVEL
COMMH ○	TELEPHONE/COMM. MANHOLE	—□—□—□—	WOOD FENCE
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TOPOGRAPHIC SURVEY
SEATTLE SCHOOL DISTRICT
OLD VAN ASSELT ELEMENTARY SCHOOL
CITY OF SEATTLE, KING COUNTY, WA

SCALE 1"=20'	
DES.	SHEET NO. 6
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CH. PTA	
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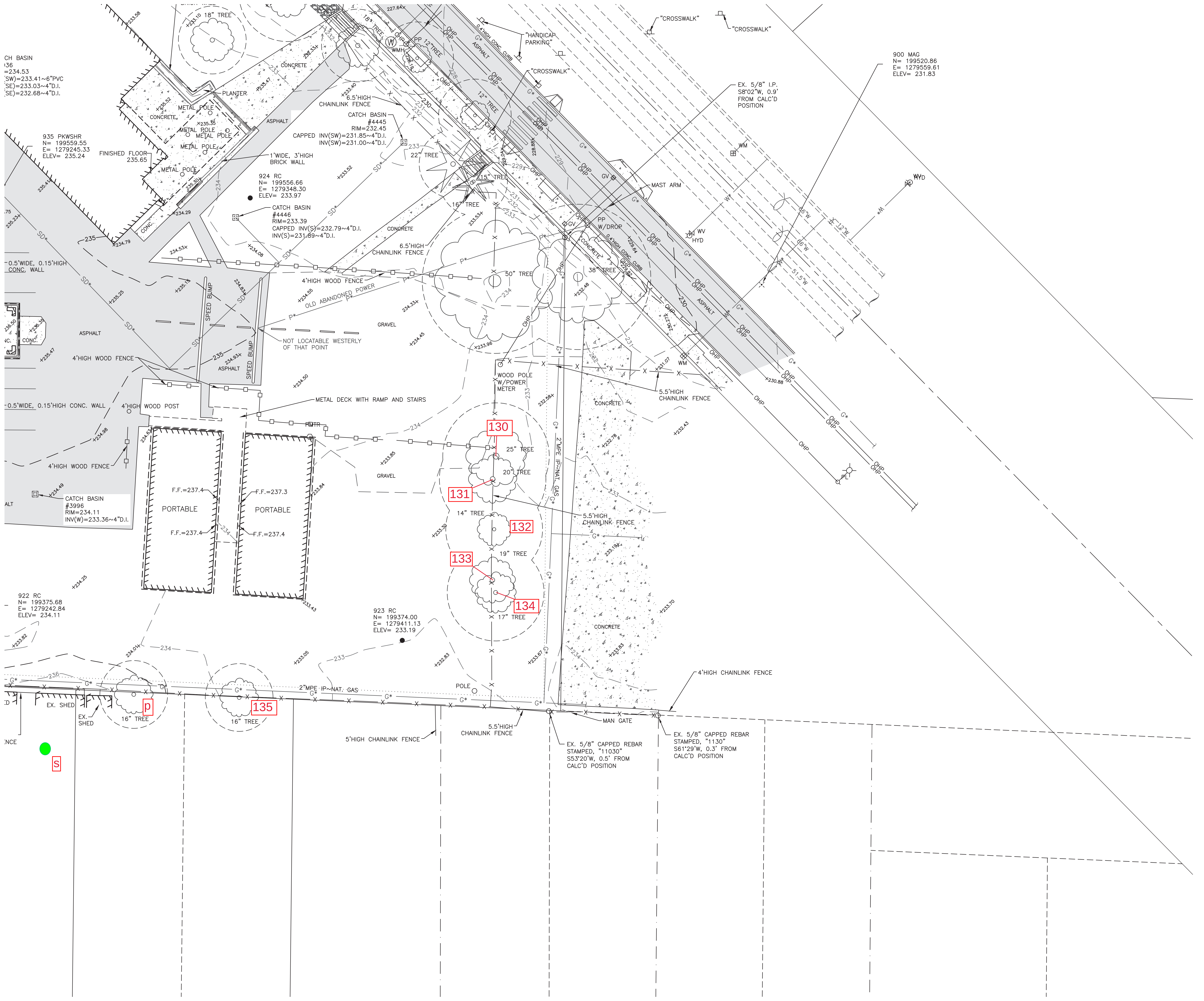

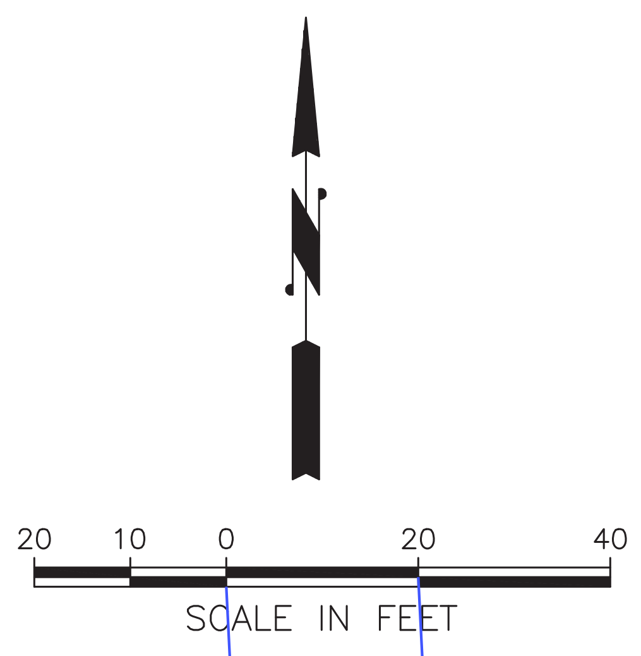

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EASTING : 1278956.553
ELELVATION : 85.439

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION CONTROL POINT NO. 2621, "GP17005–179" BEING AN EX. PUNCHED 3" SURFACE BRASS CAP, STAMPED "WSDOT 1997/GP17005–179", AND SET LEVEL WITH THE SURROUNDING CONCRETE

NORTHING : 200751.350
EASTING : 1277284.463
ELEVATION : 86.614

VERTICAL DATUM

NAVD88

PER DIFFERENTIAL LEVELS OVER REID MIDDLETON (RM) CONTROL POINTS 900 & 901, AS SHOWN HEREIN, FROM THE FOLLOWING PUBLISHED CITY OF SEATTLE BENCH MARKS:

CITY OF SEATTLE BENCH MARK NO. SNV–2609, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV–2609", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF 28TH AVENUE S. & BEACON AVENUE S.

ELEVATION : 232.05

CITY OF SEATTLE BENCHMARK NO. SNV–2610, BEING AN EX. PUNCHED 2" SURFACE BRASS CAP, STAMPED "COS/SNV–2610", AND SET LEVEL WITH THE SURROUNDING CONCRETE, SAID POINT IS AT THE SE QUADRANT OF THE INTERSECTION OF S. OTHELLO STREET & BEACON AVENUE S.

ELEVATION : 236.93

LEGEND

✱	CONIFER TREE	\\\\\\\\\\\\	BUILDING LINE
✿	DECIDUOUS TREE	— — — —	EDGE OF GRAVEL
COMMH ○	TELEPHONE/COMM. MANHOLE	—□—□—□—	WOOD FENCE
ELEC HH □	ELECTRIC HANDHOLE	—— X ——	CHAINLINK FENCE
PVLT P	POWER VAULT	—o—o—o—	HANDRAIL
PMH Ⓟ	POWER MANHOLE	—— P ——	POWER LINE
PP ○	POWER POLE	—— P* ——	RECORD POWER LINE
GP ○	GUIDE POLE	—— OHP ——	OVERHEAD POWER LINE
LP	LIGHT POLE	—— G ——	GAS LINE
LUM	LUMINAIRE	—— G* ——	RECORD GAS LINE
←	GUY	—— SD ——	STORM DRAIN LINE
TSVT P	TRAFFIC SIGNAL VAULT	—— SD* ——	RECORD STORM DRAIN LINE
TRSP	TRAFFIC SIGNAL POLE]	—— SS ——	SANITARY SEWER LINE
TS BOX ☒	TRAFFIC SIGNAL CONTROL CABINET	—— SS* ——	RECORD SANITARY SEWER
TRHH □	TRAFFIC SIGNAL HANDHOLE	—— W ——	WATER LINE
PSP ○	PEDESTRIAN SIGNAL PUSH BUTTON	—— W* ——	RECORD WATER LINE
SP ○	PEDESTRIAN CROSSING SIGNAL POLE	—— C ——	COMMUNICATIONS LINE
Ⓓ	STORM DRAIN MANHOLE	—— OHC ——	OVERHEAD COMMUNICATIONS LINE
⊡	CATCH BASIN	————	RIGHT–OF–WAY
⊏⊐	INLET	—— — ——	RIGHT–OF–WAY CENTERLINE
WVLT W	WATER VAULT	————	PROPERTY LINE
HYD	FIRE HYDRANT	▨	ROCKERY
WV ⋈	WATER VALVE	▨	CONCRETE PAVEMENT
WM ⊞	WATER METER	▨	ASPHALT PAVEMENT
FDC	FIRE DEPARTMENT CONNECTION	▨	GRAVEL
Ⓢ	SANITARY SEWER MANHOLE		
SSCO ○	SANITARY SEWER CLEAN OUT		
BLRD ○	BOLLARD		
⊓	SIGN		
◉	FOUND MONUMENT IN CASE		
●	REBAR SURVEY CONTROL POINT		
×	SCRIBED SURVEY MARK SURVEY		

UTILITY NOTES:

1. THE UTILITIES DEPICTED ON THIS SURVEY WERE IDENTIFIED USING A COMPILATION OF UTILITY RECORD DATA, GEOGRAPHIC INFORMATION SYSTEM AND SURFACE INDICATIONS OF SUBSURFACE UTILITIES SUCH AS WATER OR GAS VALVES, HYDRANTS, POWER VAULTS ETC. FIELD LOCATIONS MUST BE VERIFIED PRIOR TO ANY CONSTRUCTION.
2. UTILITIES MARKED * ARE AS PER GIS INFORMATION/UTILITY RECORD MAPS/AS–BUILTS)

PHILLIP T. ABENROTH
42666

CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555

NOTE: IF "L" DOES NOT MEASURE 1" ADJUST SCALES ACCORDINGLY.

REVISION

NO.	DATE	BY

Reid Middleton
728 134th Street SW · Suite 200
Everett, Washington 98204
Ph: 425 741–3800

TOPOGRAPHIC SURVEY
SEATTLE SCHOOL DISTRICT
OLD VAN ASSELT ELEMENTARY SCHOOL
CITY OF SEATTLE, KING COUNTY, WA

SCALE 1"=20'
DES.
DR. DW,IW
CH. PTA
F.B. 679–B
SHEET NO. 7 OF 7 SHEETS
DATE 05/01/2020
FILE NO. 222020.002

Appendix E

HAZARDOUS MATERIALS SURVEY REPORT

PRELIMINARY Hazardous Materials Summary Report

Van Asselt Elementary School Addition

7201 Beacon Avenue S.
Seattle, WA 98108

Prepared for:

Seattle Public Schools
Mail Stop 22-331
PO Box 34165
Seattle, WA

August 24, 2020
PBS Project No. 40008.265

PBS
214 EAST GALER STREET
SUITE 300
SEATTLE, WA 98102
206.233.9639 MAIN
866.727.0140 FAX
PBSUSA.COM

TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION

1.1 Project Background

PBS Engineering and Environmental, Inc. (PBS) performed a hazardous materials survey of Van Asselt Elementary School located at 7201 Beacon Avenue S., Seattle, Washington, in conjunction with the planned renovation of the school. The intent of this investigation is to ensure that Seattle Public Schools is in compliance with applicable regulatory requirements that a "good faith inspection" for ACMs be performed prior to renovation activities.

At the request of Seattle Public Schools, select portions of the buildings at the site were inspected for the presence of asbestos-containing materials (ACMs), lead-containing paint (LCP), PCB-containing light ballasts, mercury-containing fluorescent lamps. Areas inspected were based on preliminary discussions with Seattle Public Schools and 100% Schematic Design drawings provided by Bassetti Architects dated 6/30/2020. All accessible areas of the 1909/1940s wood building and select portions of the main 1950s building were included in the scope of this investigation. The portions of the main building included in this investigation consist of the two northern kindergarten classrooms and associated exterior play areas, offices/work rooms north/west of the central play courts on the south side of the main hallway, and the central "music" area between the two central play courts.

1.2 Building Descriptions

The Van Asselt Elementary School Campus is comprised of two separate buildings. The original wood building at the south end of the campus and the brick masonry building at the north end of the campus.

1909 Building
The 1909 building is a three-story slab-on-grade wood structure. The building underwent an addition in the 1940's and various renovations over the years. Interior floor finishes throughout consist of wood flooring with the exception of 12" vinyl floor tile in northwest basement rooms and main floor elevator lobby and bare concrete in northeast basement rooms. Interior wall finishes throughout consist of plaster. Ceilings throughout are finished with 12" acoustic ceiling tiles. 12" ceiling tiles are glued to plaster on the upper floor and are nailed onto furring strips on floors below. Northwest and southwest classroom ceilings consist of tectum panels. Heating is supplied to the building via radiators that are supplied by a boiler unit in the basement. Exterior walls are constructed of wood siding. Windows are wood framed. Roofing consists of a pitched roof over the original 1909 portion of the building and a flat asphaltic built-up roofing system over the 1940 addition.

1950's Building
The 1950's building is a single-story wood-framed and masonry structure. The building has undergone various renovations over the years. Interior floor finishes consist of 12" vinyl floor tile and sheet vinyl flooring. Walls throughout consist of plaster. Ceilings throughout include 12" glued-on ceiling tiles of various patterns, concrete, and plaster Exterior finishes consists of brick and concrete. Roofing consists of a flat asphaltic built-up roofing system.

1.3 Asbestos Survey Process

Records of the school's asbestos management plan and records of previous abatement activities were reviewed to inform the inspection process. All accessible areas were inspected by AHERA Certified Building

Inspector Ferman Fletcher (Cert. No. IR-20-8539B Exp. 4/1/2021) in June of 2020. PBS endeavored to inspect all accessible areas of the scope of work. Inaccessible areas consist of those requiring selective demolition, fall protection, or confined space entry protocols in order to gain access.

When observed, suspect materials were sampled. All samples were assigned a unique identification number and transmitted for analysis to Seattle Asbestos Test (NVLAP #201057-0) under chain-of-custody protocols. Samples were analyzed according to EPA Method 600R-93/116 using Polarized Light Microscopy (PLM), which has a reliable limit of quantification of 1% asbestos by volume. Information regarding the type and location of sampled materials can be found on the attached PLM Sample Inventory located in Appendix A.

Suspect ACMs may exist in inaccessible areas. PBS endeavored to determine the presence and estimate the condition of suspect materials in all inaccessible areas included in the scope of work. While PBS has endeavored to identify the ACM that may be found in concealed locations, additional unidentified ACM may exist. All building demolition activities should be performed cautiously to prevent impacts to concealed asbestos-containing materials.

2 FINDINGS

2.1 Asbestos-Containing Materials (ACMs)

The following materials were determined to contain greater than 1% asbestos:

1909 Building

- **Straight run pipe insulation and associated hard mudded fittings** –
  - Exposed in various locations throughout (approx. 930 LF);
  - concealed locations such as wall cavities, under slabs, etc. throughout (approx. 250 LF);
- **Hard mudded fitting insulation on fiberglass insulated piping** – 1940's addition – Basement Classrooms (approx. 10 EA);
- **Vibration joint cloth** – Basement Fan Room (approx. 2 EA);
- **Flange Gaskets** – Basement Fan Room (approx. 10 EA);
- **Glue dots behind chalkboards (presumed to exist)** – Classrooms throughout (approx. 74 Chalkboards 6'x4' Each for a total of 1,780SF);
- **Window putty (between frame and glass) on wood windows –** Various locations throughout (approx. 74 windows for a total of 6,500 LF).

1950's Building

- **Straight run pipe insulation and associated hard mudded fittings** –
  - Utilidor (no anticipated impacts) - throughout;
  - Concealed locations such as wall cavities, etc. – throughout (no anticipated impacts);

The following materials were sampled and found to contain no detectable concentrations of asbestos:

1909 Building

- 12" Beige vinyl floor tile (Type I) and associated yellow mastic – 1940's addition, Northwest classroom;
- 12" Beige vinyl floor tile (Type II) and associated yellow mastic – Main floor elevator lobby;
- 12" Pink vinyl floor tile (Type I) and associated yellow mastic – 1940's addition, Southwest classroom;
- 12" Pink vinyl floor tile (Type II) and associated yellow mastic – Main floor elevator lobby;
- Wall and ceiling plaster – Throughout;
- Gypsum wallboard and associated joint compound - Basement; Northeast "Former Playroom", South Wall;

- Covebase and associated mastic – Throughout;
- Wallpaper and associated glue – Throughout 1909 classrooms;
- 12" even holed glued acoustic ceiling tile and associated glue - Throughout 1909 classrooms;
- Cementitious Board – Classroom entry alcoves throughout;
- Woven wire insulation – Throughout;
- Built-up roofing – 1940's addition flat roofing.

For a complete listing of representative bulk sampling and associated laboratory analysis, refer to the inventory in Appendix A.

2.2 Lead-Containing Paint (LCP)

Seven (7) representative painted coatings were sampled for lead content. The samples were assigned unique identification numbers and transmitted to NVL Laboratories, Inc. (AIHA IH #101861) in Seattle, Washington under chain-of-custody protocols for analysis using Flame Atomic Absorption.

The following painted coatings were sampled and found to contain lead:

- Silver paint on metal radiators was found to contain 0.16% lead;
- Blue paint on exterior concrete walls was found to contain 3.8% lead;
- White paint on metal ductwork was found to contain 0.93% lead;
- Brown paint on interior wood door frames was found to contain 0.089% lead;
- Pink paint on interior plaster walls was found to contain 0.23% lead.

The following painted coatings were previously sampled and found to contain lead:

- Blue paint on exterior wood window frames on 3rd floor windows was found to contain 30% lead;
- Off-white paint on exterior wood window frames on 3rd floor windows was found to contain 10.0% lead;
- Blue paint on exterior wood siding was found to contain 2% lead;
- Composite paint taken from first floor wood window frames was found to contain 6.5% lead;
- Pink paint on interior plaster walls was found to contain 0.23% lead;

See Appendix B for location and laboratory findings of paint samples.

2.3 Mercury-Containing Components

All fluorescent light tubes are presumed to contain mercury. PBS observed approximately 200 compact fluorescent light bulbs in the 1909 building for the purposes of mercury vapor recovery prior to renovation activities. These mercury-containing light bulbs were observed throughout. Caution should be exercised during renovation to not break these bulbs.

2.4 PCB-Containing Components

PBS inspected representative fluorescent light fixture ballasts throughout the school. Light fixture ballasts inspected were observed to be electronic. PBS recommends all light ballasts be inspected prior to disposal. Magnetic ballasts should be presumed to contain PCBs and properly removed, stored, transported and disposed of in accordance with Washington Administrative Code (WAC) 173-303 Dangerous Waste Regulations and 40 CFR Part 761 Subpart D.

3 RECOMMENDATIONS

3.1 ACMs

PBS recommends that all exposed and concealed ACM to be impacted by the remodel be removed prior to construction activities. A qualified Washington State licensed asbestos abatement contractor should be employed to remove all such ACM according to applicable local, state and federal regulations.

The possibility exists that suspect ACM may be present in equipment, wall and ceiling cavities, beneath concrete slabs and buried in site soils included in the scope of the work. These may include, but are not limited to waterproofing membrane, internal gaskets, pipe insulation, piping materials, caulking and sealants of HVAC equipment and construction adhesives and wall mastics. In the event that suspect ACM is uncovered during construction, contractors should stop work immediately and inform the owner promptly for confirmation testing. All untested materials should be presumed asbestos-containing or tested for asbestos content prior to impact.

Additional suspect-ACM may be present in concealed spaces. Caution should always be exercised during selective demolition to prevent impact of suspect-ACMs. All suspect ACMs should be presumed asbestos-containing until properly sampled and analyzed.

3.2 Lead-Containing Components

Representative painted coatings from the project locations were found to contain lead by laboratory analysis. Impact of painted surfaces with detectable concentrations of lead requires construction activities to be performed according to Washington Labor and Industries regulations for Lead in Construction (WAC 296-62-155). Workers impacting LCP should be provided the proper personal protective equipment and use proper work methods to limit occupational and environmental exposure to lead until an initial exposure assessment has been conducted. Additionally, all impacts to lead-based paint shall be in accordance with 40 CFR Part 745.

Painted coatings may exist in inaccessible areas of the work area or in secondary coatings. Any previously unidentified painted coatings should be considered lead containing until sampled and proven otherwise.

All waste shall be handled in accordance with WAC 173-303.

3.3 Mercury-Containing Components

Fluorescent lamps are known to contain mercury and mercury vapors. All fluorescent lamps at this site are presumed to be mercury-containing. PBS recommends that all fluorescent lamps be carefully handled and recycled/disposed of in accordance with the contract documents and applicable regulations during demolition activities. Breakage of lamps should be avoided to prevent potential exposures to mercury. Washington Department of Safety and Health requires specific training, handling, engineering controls and disposal practices when performing this work. All waste shall be handled in accordance with WAC 173-303.

3.4 PCB-Containing Components

PBS recommends all light ballasts be inspected prior to disposal. Magnetic ballasts should be presumed to contain PCBs and properly removed, stored, transported and disposed of in accordance with Washington Administrative Code (WAC) 173-303 Dangerous Waste Regulations and 40 CFR Part 761 Subpart D. Electronic ballasts do not contain PCB's and can be disposed of as general debris in compliance with applicable codes and endpoint facility requirements.

Report prepared by:	Report reviewed by:
Ferman Fletcher AHERA Building Inspector Cert. No. IR-20-8539B Exp. 04/01/2021	Tim Ogden Principal/Sr. Project Manager AHERA Building Inspector Cert. # IR-20-2008A, Exp. 04/01/2021

APPENDIX A

PLM Bulk Sampling Information

PLM Bulk Sample Inventory
PLM Bulk Sample Laboratory Data Sheets
PLM Bulk Sample Chain of Custody Documentation
Historical PLM Asbestos Sample Data

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
40008.265 -01	12" Beige Vinyl Floor Tile (Type I) Mastic	1909 Buillding; Basement; 1940s Addition; Northwest Classroom	Layer 1: Beige tile Layer 2: Trace yellow mastic	NAD NAD	SAT
40008.265 -02	12" Pink Vinyl Floor Tile (Type I) Mastic	1909 Buillding; Basement; 1940s Addition; Southwest Classroom	Layer 1: Pink tile Layer 2: Brown mastic	NAD NAD	SAT
40008.265 -03	12" Beige Vinyl Floor Tile (Type II) Mastic	1909 Buillding; Main Floor Elevator Lobby	Layer 1: Beige tile Layer 2: Trace yellow mastic	NAD NAD	SAT
40008.265 -04	12" Pink Vinyl Floor Tile (Type II) Mastic	1909 Buillding; Main Floor Elevator Lobby	Layer 1: Pink tile Layer 2: Trace yellow mastic	NAD NAD	SAT
40008.265 -05	Ceiling Plaster	1909 Buillding; Main Floor; North classroom closet, North end	Layer 1: Off-white brittle material with paint Layer 2: Gray sandy/brittle material	NAD NAD	SAT
40008.265 -06	Joint Compound Gypsum Wallboard	1909 Buillding; Basement; Northeast "Former Playroom", South Wall	Layer 1: White powdery material with paint and paper Layer 2: White chalky material with paper	NAD NAD	SAT
40008.265 -07	Gray Covebase Covebase Mastic	1909 Buillding; Basement; 1940s Addition; Northwest Classroom	Layer 1: Gray rubbery material Layer 2: Trace yellow mastic	NAD NAD	SAT
40008.265 -08	Black Covebase Covebase Mastic	1909 Buillding; Basement; 1940s Addition; Southwest Classroom	Layer 1: Black rubbery material Layer 2: Cream/brown mastic	NAD NAD	SAT
40008.265 -09	Wallpaper Glue	1909 Buillding; Upper Floor; South Classroom, East Wall	Layer 1: Trace white powdery material with paint Layer 2: Tan woven fibrous material Layer 3: Off-white mastic Layer 4: Trace white sandy/brittle material	NAD NAD NAD NAD	SAT
40008.265 -10	Wallpaper Glue	1909 Buillding; Upper Floor; South Classroom, North Wall	Layer 1: Trace white powdery material with paint Layer 2: Tan woven fibrous material Layer 3: Off-white mastic	NAD NAD NAD	SAT
40008.265 -11	Corkboard Brown Mastic	1909 Buillding; Main Floor; South Classroom	Layer 1: Brown fibrous material Layer 2: Brown mastic	NAD NAD	SAT

NAD - No Asbestos Detected

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
40008.265 -12	12" Even-Holed Glued Acoustic Ceiling Tile	1909 Buillding; Upper Floor; South Classroom	Layer 1: Brown fibrous material with paint	NAD	SAT
40008.265 -13	Hard Mudded Fitting	1909 Buillding; Basement; 1940s Addition; Northwest Classroom	Layer 1: White powdery material with woven fibrous material and paint	7% Chrysotile	SAT
40008.265 -14	Woven Wire Insulation	1909 Buillding; Upper Floor; North Classroom	Layer 1: Tan woven fibrous material	NAD	SAT
40008.265 -15	Window Putty	1909 Buillding; Upper Floor Nurse's Office	Layer 1: White brittle material with paint	2% Chrysotile	SAT
40008.265 -16	Window Putty	1909 Building; Main Floor; Room North of elevator lobby	Layer 1: Off-white brittle material with paint	2% Chrysotile	SAT
40008.265 -17	Window Putty	1909 Building; Upper Floor; South Classroom Closet	Layer 1: Gray soft/elastic material Layer 2: Trace brown wood block	NAD NAD	SAT
40008.265 -18	Window Putty	1909 Building; Upper Floor; South Classroom	Layer 1: White brittle material with paint	2% Chrysotile	SAT
40008.265 -19	Window Putty	1909 Building; Main Floor; North Classroom	Layer 1: White brittle material with paint	2% Chrysotile	SAT
40008.265 -20	Window Putty	1909 Building; Basement; Southwest Classroom	Layer 1: White brittle material with paint	NAD	SAT
40008.265 -21	Window Putty	1909 Building; 2nd/3rd Floor Landing	Layer 1: White brittle material with paint	NAD	SAT
40008.265 -22	Window Putty	1909 Building; Basement; Southeast "Former Playroom"	Layer 1: Black brittle material with paint	NAD	SAT

NAD - No Asbestos Detected

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
40008.265 -23	Built-up Roofing on Wood Deck	1909 Building; North Wing, Roof	Layer 1: Black asphaltic fibrous material with sand	NAD	SAT
			Layer 2: Black asphaltic material	NAD	
			Layer 3: Black asphaltic material	NAD	
			Layer 4: Black asphaltic fibrous material	NAD	
			Layer 5: Black asphaltic material	NAD	
			Layer 6: Black asphaltic material	NAD	
			Layer 7: Black asphaltic fibrous material	NAD	
			Layer 8: Black asphaltic material	NAD	
			Layer 9: Black asphaltic material	NAD	
			Layer 10: Black asphaltic material with sand	NAD	
40008.265 -24	Built-up Roofing on Wood Deck	1909 Building; Boiler/Stairwell, Roof	Layer 1: Black asphaltic fibrous material with sand	NAD	SAT
			Layer 2: Black asphaltic material	NAD	
			Layer 3: Black asphaltic material	NAD	
			Layer 4: Black asphaltic fibrous material	NAD	
			Layer 5: Black asphaltic material	NAD	
			Layer 6: Black asphaltic material	NAD	
			Layer 7: Black asphaltic fibrous material	NAD	
			Layer 8: Black asphaltic material	NAD	
40008.265 -25	Built-up Roofing on Wood Deck	1909 Building; South Wing, Roof	Layer 1: Black asphaltic fibrous material with sand	NAD	SAT
			Layer 2: Black asphaltic material	NAD	
			Layer 3: Black asphaltic material	NAD	
			Layer 4: Black asphaltic material	NAD	
			Layer 5: Black asphaltic fibrous material	NAD	
			Layer 6: Black asphaltic material	NAD	
			Layer 7: Black asphaltic material	NAD	
			Layer 8: Black asphaltic fibrous material	NAD	
			Layer 9: Black asphaltic material	NAD	
			Layer 10: Black asphaltic fibrous material	NAD	

SEATTLE ASBESTOS TEST, LLC

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

www.seattleasbestostest.com, admin@seattleasbestostest.com

Project Manager: Michelle Dodson,Ferman Fletcher
Client: PBS Engineering and Environmental, Seattle
Address: 214 E Galer Street, Suite 300, Seattle, WA 98102
Tel: 206.766.7601

Date Analyzed: 7/1/2020
Client Job#: 40008.265
Project Location: Old Van Asselt
Laboratory batch#: 202020614
Samples Received: 22

Enclosed please find the test results for the bulk samples submitted to our laboratory for asbestos analysis. Analysis was performed using polarized light microscopy (PLM) in accordance with Test Method US EPA - 40 CFR Appendix E of Part 763, Interim Method of Determination of Asbestos in Bulk Insulation Samples and Test Method US EPA/600/R-93/116.

Percentages for this report are done by visual estimate and relate to the suggested acceptable error ranges by the method. Since variation in data increases as the quantity of asbestos decreases toward the limit of detection, the EPA recommends point counting for samples containing between <1% and 10% asbestos (NESHAP, 40 CFR Part 61). Statistically, point counting is a more accurate method. If you feel a point count might be beneficial, please feel free to call and request one.

The test results refer only to the samples or items submitted and tested. The accuracy with which these samples represent the actual materials is totally dependent on the acuity of the person who took the samples. This report must not be used by the client to claim product certification, approval, or endorsement by Seattle Asbestos Test, LLC, NVLAP, NIST, or any agency of the Federal government. The test report or calibration certificate shall not be reproduced except in full, without written approval of the laboratory.

This report is highly confidential and will not be released without your consent. Samples are archived for 30 days after the analysis, and disposed of as hazardous waste thereafter.

Thank you for using our service and let us know if we can further assist you.

Sincerely

SZhang

Steve (Fanyao) Zhang
President

PBS

202020614

Project: Old Van Asselt

Analysis requested: PLM

Relinq'd by/Signature:

Received by/Signature: DingPing Liu

Project #: 40008.265

Date: 7/1/20

Date/Time: 7/1/20

Date/Time: 7/1/20 11:15

E-mail results to:

☐ Brian Stanford
☐ Willem Mager
☐ Gregg Middaugh
☐ Mark Hiley
☐ Tim Ogden
☐ Prudy Stoudt-McRae
☐ Cel Alvarez
☐ Janet Murphy
☐ Kaitlin Soukup
☐ Martin Estira
☐ Justin Day
☒ Michelle Dodson
☐ Mike Smith
☒ Ferman Fletcher
☐ Holly Tuttle
☐ Ryan Hunter
☐ Eman Jabali

E-mail all invoices to: seattleap@pbsusa.com

TURN AROUND TIME:

☐ 1 Hour
☐ 2 Hours
☐ 4 Hours
☒ 24 Hours
☐ 48 Hours
☐ 3-5 Days
☐ Other______________

SAMPLE DATA FORM

Sample #	Material	Location	Lab
40008.265-01	12" Beige VFT/Mastic	Basement; 1940's Addition; NW Classroom	SAT
-02	12" Pink VFT/Mastic	Basement; 1940's Addition; SW Classroom	
-03	12" Beige VFT/Mastic	Main Floor elevator Lobby	
04	12" Pink VFT/Mastic	Main Floor elevator Lobby	
-05	Ceiling Plaster	Main Floor; N. classroom closet, N. end	
-06	JC/GWB (Composite analysis requested if applicable)	Basement; NE "Former Playroom", S. Wall	
-07	Gray CB/CBM	Basement; 1940's Addition; NW Classroom	
-08	Black CB/CBM	Basement; 1940's Addition; SW Classroom	
-09	Wallpaper/Glue	Upper Floor; S. Classroom, E. Wall	
-10	"	Upper Floor; S. Classroom, N. Wall	
-11	Corkboard/Brown Mastic	Main Floor; S. classroom	
-12	12" even holed GACT/Glue	Upper Floor; S. Classroom	
-13	HMF	Basement; 1940's Addition; NW Classroom	
-14	Woven Wire Insulation	Upper Floor; N. Classroom	
-15	Window Putty	Upper Floor Nurses Office	
-16	"	Main Floor; Room N. of elevator lobby	
-17	"	Upper Floor; S. Classroom Closet	
-18	"	Upper Floor; S. Classroom	

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Michelle Dodson, Ferman Fletcher
Client: PBS Engineering and Environmental, Seattle
Address: 214 E Galer Street, Suite 300, Seattle, WA 98102
Job#: 40008.265
Batch#: 202020614
Date Received: 7/1/2020
Samples Rec'd: 22
Date Analyzed: 7/1/2020
Samples Analyzed: 22
Project Loc.: Old Van Asselt

Analyzed by: Xingping Lin

SZhang
Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
1	40008.265-01	1	Beige tile		**None detected**	Vinyl/binder, Mineral grains	2	Cellulose
		2	Trace yellow mastic		**None detected**	Mastic/binder	3	Cellulose
2	40008.265-02	1	Pink tile		**None detected**	Vinyl/binder, Mineral grains	2	Cellulose
		2	Brown mastic		**None detected**	Mastic/binder	4	Cellulose
3	40008.265-03	1	Beige tile		**None detected**	Vinyl/binder, Mineral grains	3	Cellulose
		2	Trace yellow mastic		**None detected**	Mastic/binder	2	Cellulose
4	40008.265-04	1	Pink tile		**None detected**	Vinyl/binder, Mineral grains	2	Cellulose
		2	Trace yellow mastic		**None detected**	Mastic/binder	3	Cellulose
5	40008.265-05	1	Off-white brittle material with paint		**None detected**	Filler, Binder, Paint	2	Cellulose
		2	Gray sandy/brittle material		**None detected**	Sand, Filler, Binder	3	Cellulose
6	40008.265-06	1	White powdery material with paint and paper		**None detected**	Binder/filler, Paint	35	Cellulose
		2	White chalky material with paper		**None detected**	Binder/filler, Gypsum/binder	25	Cellulose
7	40008.265-07	1	Gray rubbery material		**None detected**	Rubber/binder	2	Cellulose
		2	Trace yellow mastic		**None detected**	Mastic/binder	2	Cellulose
8	40008.265-08	1	Black rubbery material		**None detected**	Rubber/binder	2	Cellulose
		2	Cream/brown mastic		**None detected**	Mastic/binder	3	Cellulose
9	40008.265-09	1	Trace white powdery material with paint		**None detected**	Binder/filler, Paint	5	Cellulose
		2	Tan woven fibrous material		**None detected**	Filler, Binder	81	Cellulose
		3	Off-white mastic		**None detected**	Mastic/binder	3	Cellulose
		4	Trace white sandy/brittle material		**None detected**	Sand, Filler, Binder	2	Cellulose
10	40008.265-10	1	Trace white powdery material with paint		**None detected**	Binder/filler, Paint	4	Cellulose
		2	Tan woven fibrous material		**None detected**	Filler, Binder	83	Cellulose

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Michelle Dodson, Ferman Fletcher
Client: PBS Engineering and Environmental, Seattle
Address: 214 E Galer Street, Suite 300, Seattle, WA 98102
Job#: 40008.265
Batch#: 202020614
Date Received: 7/1/2020
Samples Rec'd: 22
Date Analyzed: 7/1/2020
Samples Analyzed: 22
Project Loc.: Old Van Asselt

Analyzed by: **Xingping Lin**

SZhang
Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
10	40008.265-10	3	Off-white mastic		**None detected**	Mastic/binder	2	Cellulose
11	40008.265-11	1	Brown fibrous material		**None detected**	Filler	90	Cellulose
		2	Brown mastic		**None detected**	Mastic/binder	4	Cellulose
12	40008.265-12	1	Brown fibrous material with paint		**None detected**	Filler, Paint	91	Cellulose
13	40008.265-13	1	White powdery material with woven fibrous material and paint	**7**	**Chrysotile**	Binder/filler,Paint	36	Cellulose
14	40008.265-14	1	Tan woven fibrous material		**None detected**	Filler, Binder	85	Cellulose
15	40008.265-15	1	White brittle material with paint	**2**	**Chrysotile**	Filler, Binder, Paint	3	Cellulose
16	40008.265-16	1	Off-white brittle material with paint	**2**	**Chrysotile**	Filler, Binder, Paint	2	Cellulose
17	40008.265-17	1	Gray soft/elastic material		**None detected**	Binder, Filler	4	Cellulose
		2	Trace brown wood block		**None detected**	Wood aggregates	3	Cellulose
18	40008.265-18	1	White brittle material with paint	**2**	**Chrysotile**	Filler, Binder, Paint	3	Cellulose
19	40008.265-19	1	White brittle material with paint	**2**	**Chrysotile**	Filler, Binder, Paint	2	Cellulose
20	40008.265-20	1	White brittle material with paint		**None detected**	Filler, Binder, Paint	3	Cellulose
21	40008.265-21	1	White brittle material with paint		**None detected**	Filler, Binder, Paint	2	Cellulose
22	40008.265-22	1	Black brittle material with paint		**None detected**	Filler, Binder, Paint	3	Cellulose

SEATTLE ASBESTOS TEST, LLC

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

www.seattleasbestostest.com, admin@seattleasbestostest.com

Project Manager: Ferman Fletcher,Michelle Dodson
Client: PBS Engineering and Environmental, Seattle
Address: 214 E Galer Street, Suite 300, Seattle, WA 98102
Tel: 206.233.9639

Date Analyzed: 7/15/2020
Client Job#: 40008.265
Project Location: Old Van Asselt
Laboratory batch#: 202020714
Samples Received: 3

Enclosed please find the test results for the bulk samples submitted to our laboratory for asbestos analysis. Analysis was performed using polarized light microscopy (PLM) in accordance with Test Method US EPA - 40 CFR Appendix E of Part 763, Interim Method of Determination of Asbestos in Bulk Insulation Samples and Test Method US EPA/600/R-93/116.

Percentages for this report are done by visual estimate and relate to the suggested acceptable error ranges by the method. Since variation in data increases as the quantity of asbestos decreases toward the limit of detection, the EPA recommends point counting for samples containing between <1% and 10% asbestos (NESHAP, 40 CFR Part 61). Statistically, point counting is a more accurate method. If you feel a point count might be beneficial, please feel free to call and request one.

The test results refer only to the samples or items submitted and tested. The accuracy with which these samples represent the actual materials is totally dependent on the acuity of the person who took the samples. This report must not be used by the client to claim product certification, approval, or endorsement by Seattle Asbestos Test, LLC, NVLAP, NIST, or any agency of the Federal government. The test report or calibration certificate shall not be reproduced except in full, without written approval of the laboratory.

This report is highly confidential and will not be released without your consent. Samples are archived for 30 days after the analysis, and disposed of as hazardous waste thereafter.

Thank you for using our service and let us know if we can further assist you.

Sincerely

SZhang

Steve (Fanyao) Zhang
President

PBS

202020714

Project: Old Van Asselt

Project #: 40008.265

Analysis requested: PLM

Date: 7/14/20

Relinq'd by/Signature:

Date/Time: 7/14/20 3:00pm

Received by/Signature: Xing Ping

Date/Time: 7/14/2020 16:40

E-mail results to:

☐ Brian Stanford
☐ Willem Mager
☐ Gregg Middaugh
☐ Mark Hiley
☐ Tim Ogden
☐ Prudy Stoudt-McRae
☐ Cel Alvarez
☐ Janet Murphy
☐ Kaitlin Soukup
☐ Martin Estira
☐ Justin Day
☒ Michelle Dodson
☐ Mike Smith
☒ Ferman Fletcher
☐ Holly Tuttle
☐ Ryan Hunter
☐ Eman Jabali

E-mail all invoices to: seattleap@pbsusa.com

TURN AROUND TIME:

☐ 1 Hour
☐ 2 Hours
☐ 4 Hours
☒ 24 Hours
☐ 48 Hours
☐ 3-5 Days
☐ Other______________

SAMPLE DATA FORM

Sample #	Material	Location	Lab
40008.265-23	BUR on wood deck	North Wing, Roof	SAT
↓ -24	↓ ↓	Boiler/stairwell, Roof	↓
↓ -25	↓ ↓	South Wing, Roof	↓

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Ferman Fletcher, Michelle Dodson
Client: PBS Engineering and Environmental, Seattle
Address: 214 E Galer Street, Suite 300, Seattle, WA 98102
Job#: 40008.265
Batch#: 202020714
Date Received: 7/14/2020
Samples Rec'd: 3
Date Analyzed: 7/15/2020
Samples Analyzed: 3
Project Loc.: Old Van Asselt

Analyzed by: Xingping Lin / Carolyn Yeo

SZhang
Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
1	40008.265-23	1	Black asphaltic fibrous material with sand		**None detected**	Asphalt/binder, Filler, Sand	43	Cellulose, Synthetic fibers
		2	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		3	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		4	Black asphaltic fibrous material		**None detected**	Filler, Asphalt, Binder	67	Cellulose, Glass fibers
		5	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		6	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose
		7	Black asphaltic fibrous material		**None detected**	Asphalt/binder, Filler	60	Cellulose, Glass fibers
		8	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		9	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose
		10	Black asphaltic material with sand		**None detected**	Asphalt/binder, Sand	22	Glass fibers
2	40008.265-24	1	Black asphaltic fibrous material with sand		**None detected**	Asphalt/binder, Filler, Sand	37	Cellulose, Synthetic fibers
		2	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		3	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose
		4	Black asphaltic fibrous material		**None detected**	Filler, Asphalt, Binder	67	Cellulose, Synthetic fibers
		5	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		6	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose
		7	Black asphaltic fibrous material		**None detected**	Asphalt/binder, Filler	61	Cellulose, Glass fibers
		8	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
3	40008.265-25	1	Black asphaltic fibrous material with sand		**None detected**	Asphalt/binder, Filler, Sand	34	Cellulose, Synthetic fibers
		2	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose
		3	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		4	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose

SEATTLE ASBESTOS TEST

Seattle Laboratory: 4500 9th Ave. NE, Suite 300, Seattle, WA 98105, Tel: 206.633.1111, Fax: 206.633.4747, NVLAP Lab Code: 201057-0

ANALYTICAL LABORATORY REPORT

PLM by Method EPA/600/R-93/116

Attn.: Ferman Fletcher, Michelle Dodson
Client: PBS Engineering and Environmental, Seattle
Address: 214 E Galer Street, Suite 300, Seattle, WA 98102
Job#: 40008.265
Batch#: 202020714
Date Received: 7/14/2020
Samples Rec'd: 3
Date Analyzed: 7/15/2020
Samples Analyzed: 3
Project Loc.: Old Van Asselt

Analyzed by: Xingping Lin / Carolyn Yeo

SZhang
Reviewed by: Steve (Fanyao) Zhang, President

Lab ID	Client Sample ID	Layer	Description	%	Asbestos Fibers	Non-fibrous Components	%	Non-asbestos Fibers
3	40008.265-25	5	Black asphaltic fibrous material		**None detected**	Filler, Asphalt, Binder	65	Cellulose, Glass fibers
		6	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		7	Black asphaltic material		**None detected**	Asphalt/binder	2	Cellulose
		8	Black asphaltic fibrous material		**None detected**	Filler, Asphalt, Binder	58	Cellulose, Glass fibers
		9	Black asphaltic material		**None detected**	Asphalt/binder	3	Cellulose
		10	Black asphaltic fibrous material		**None detected**	Filler, Asphalt, Binder	61	Cellulose, Glass fibers

APPENDIX B

AA Lead Paint Chip Sampling Information

AA Lead Paint Chip Sample Inventory
AA Lead Paint Chip Laboratory Data Sheets
AA Lead Paint Chip Chain of Custody Documentation
Historical AA Lead Paint Chip Data

AA LEAD PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color / Component or Substrate	Sample Location	Results (mg/kg)	Results (%)	Lab
40008.265 -Pb01	Varnish / Wood / Floor	1909 Buillding; Main Floor; Room South of restroom	<110	<0.011	NVL
40008.265 -Pb02	Silver / Metal / Radiator	1909 Buillding; Basement; Stairwell	1600	0.16	NVL
40008.265 -Pb03	Blue / Concrete / Wall	1909 Buillding; West elevation	38000	3.8	NVL
40008.265 -Pb04	White / Metal / Ductwork	1909 Buillding; Basement; Room East of Boiler Room	9300	0.93	NVL
40008.265 -Pb05	Brown / Wood / Door Frame	1909 Buillding; Basement; 1940s addition, Northwest classroom	890	0.089	NVL
40008.265 -Pb06	Pink / Plaster / Wall	1909 Buillding; Basement; 1940s addition, Northwest classroom	2300	0.23	NVL

mg/kg = Milligrams per kilogram
< = Less than the Limit of Detection

NVL
INDUSTRIAL HYGIENE SERVICES
LABORATORY + MANAGEMENT + TRAINING

July 8, 2020

Ferman Fletcher
PBS Environmental - Seattle
214 E Galer St. Suite. 300
Seattle, WA 98102

NVL Batch # 2011404.00

RE: Total Metal Analysis
Method: EPA 7000B Lead by FAA <paint>
Item Code: FAA-02

Client Project: 40008.265
Location: Old Van Asselt

Dear Mr. Fletcher,

NVL Labs received 6 sample(s) for the said project on 7/7/2020. Preparation of these samples was conducted following protocol outlined in EPA 3051/7000B , unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with EPA 7000B Lead by FAA <paint>. The results are usually expressed in mg/Kg and percentage (%). Test results are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more detail.

At NVL Labs all analyses are performed under strict guidelines of the Quality Assurance Program. This report is considered highly confidential and will not be released without your approval. Samples are archived after two weeks from the analysis date. Please feel free to contact us at 206-547-0100, in case you have any questions or concerns.

Sincerely,

Shalini Patel, Lab Supervisor

Enc.: Sample results

AIHA LAP, LLC
ACCREDITED LABORATORY
INDUSTRIAL HYGIENE & ENVIRONMENTAL LEAD
ISO/IEC 17025:2005
WWW.AIHAACCREDITEDLABS.ORG
LAB # 101861

Analysis Report

Total Lead (Pb)

Batch #: 2011404.00

Client: PBS Environmental - Seattle
Address: 214 E Galer St. Suite. 300
Seattle, WA 98102

Attention: **Mr. Ferman Fletcher**
Project Location: Old Van Asselt

Matrix: Paint
Method: EPA 3051/7000B
Client Project #: 40008.265
Date Received: 7/7/2020
Samples Received: 6
Samples Analyzed: 6

Lab ID	Client Sample #	Sample Weight (g)	RL in mg/Kg	Results in mg/Kg	Results in percent
20079882	40008-265-Pb01	0.0884	110	< 110	<0.011
20079883	40008-265-Pb02	0.1826	55	1600	0.16
20079884	40008-265-Pb03	0.1873	53	38000	3.8
20079885	40008-265-Pb04	0.1751	57	9300	0.93
20079886	40008-265-Pb05	0.1942	51	890	0.089
20079887	40008-265-Pb06	0.1877	53	2300	0.23

Sampled by: Client
Analyzed by: Yasuyuki Hida
Reviewed by: Shalini Patel

Date Analyzed: 07/07/2020
Date Issued: 07/08/2020

Shalini Patel, Lab Supervisor

mg/ Kg =Milligrams per kilogram
Percent = Milligrams per kilogram / 10000

RL = Reporting Limit
'<' = Below the reporting Limit

Note : Method QC results are acceptable unless stated otherwise.
Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

Bench Run No: 2020-0707-6

LEAD LABORATORY SERVICES

Company	PBS Environmental - Seattle	**NVL Batch Number**	**2011404.00**
Address	214 E Galer St. Suite. 300 Seattle, WA 98102	**TAT**	1 Day **AH** No
		Rush TAT	
Project Manager	Mr. Ferman Fletcher	**Due Date**	7/8/2020 **Time** 11:15 AM
Phone	(206) 233-9639	**Email**	ferman.fletcher@pbsusa.com
Cell	(206) 491-1389	**Fax**	(866) 727-0140

Project Name/Number: 40008.265 **Project Location:** Old Van Asselt

Subcategory Flame AA (FAA)

Item Code FAA-02 EPA 7000B Lead by FAA <paint>

Total Number of Samples 6

Rush Samples

	Lab ID	Sample ID	Description	A/R
1	20079882	40008-265-Pb01		A
2	20079883	40008-265-Pb02		A
3	20079884	40008-265-Pb03		A
4	20079885	40008-265-Pb04		A
5	20079886	40008-265-Pb05		A
6	20079887	40008-265-Pb06		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Drop Box				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Kelly AuVu		NVL	7/7/20	1115
Analyzed by	Yasuyuki Hida		NVL	7/7/20	
Results Called by					
☐ **Faxed** ☐ **Emailed**					

Special Instructions:

Date: 7/7/2020
Time: 11:53 AM
Entered By: Kelly AuVu

2011404

Project: Old Van Asselt

Project #: 40008.265

Analysis requested: AAS for Pb

Date: 7/7/20

Relinq'd by/Signature:

Date/Time: 7/7/20

Received by/Signature: Kellyfuller @ NVL

Date/Time: 7/7/2020 115DB

E-mail results to:

☐ Brian Stanford
☐ Willem Mager
☐ Gregg Middaugh
☐ Mark Hiley
☐ Tim Ogden
☐ Prudy Stoudt-McRae
☐ Cel Alvarez
☐ Janet Murphy
☐ Kaitlin Soukup
☐ Martin Estira
☐ Justin Day
☒ Michelle Dodson
☐ Mike Smith
☒ Ferman Fletcher
☐ Holly Tuttle
☐ Ryan Hunter
☐ Eman Jabali

E-mail all invoices to: seattleap@pbsusa.com

TURN AROUND TIME:

☐ 1 Hour
☐ 2 Hours
☐ 4 Hours
☒ 24 Hours
☐ 48 Hours
☐ 3-5 Days
☐ Other____________

SAMPLE DATA FORM

Sample #	Material	Location	Lab
40008.265-Pb01	Varnish/Wood/Floor	Main Floor; Room S, of restroom	NVL
-Pb02	Silver/Metal/Radiator	Basement; Stairwell	
-Pb03	Blue/Concrete/Wall	West elevation	
-Pb04	White/Metal/Ductwork	Basement; Room E. of Boiler Room	
-Pb05	Brown/Wood/Door Frame	Basement; 1940's addition, NW classroom	
-Pb06	Pink/Plaster/Wall	Basement; 1940's addition, NW classroom	

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result	Lab
40008.224 -001	Plaster	Child Care	Layer 1: White sandy/brittle material	NAD	SAT
40008.224 -002	Plaster	Hallway	Layer 1: White sandy/brittle material with paint	NAD	SAT
40008.224 -003	Plaster	Hallway	Layer 1: White sandy/brittle material	NAD	SAT
40008.224 -004	Plaster	Hallway	Layer 1: White sandy/brittle material	NAD	SAT
40008.224 -005	Plaster	Library	Layer 1: White sandy/brittle material	NAD	SAT
40008.224 -006	Plaster	Kitchen	Layer 1: White sandy/brittle material	NAD	SAT
40008.224 -007	Plaster	Kitchen	Layer 1: Trace white sandy/brittle material	NAD	SAT
40008.224 -008	12" Green vinyl floor tile Mastic	Commons	Layer 1: Green tile Layer 2: Black mastic	NAD NAD	SAT
40008.224 -009	12" Green vinyl floor tile Mastic	Kitchen at metal cabinet	Layer 1: Green tile Layer 2: Trace black mastic	NAD NAD	SAT
40008.224 -010	12" Green vinyl floor tile Mastic	Library	Layer 1: Green tile Layer 2: Trace black mastic	NAD NAD	SAT
40008.224 -011	Red ceramic floor tile Grout	Kitchen	Layer 1: Red ceramic Layer 2: Gray brittle/sandy material	NAD NAD	SAT
40008.224 -012	Kickplate grout	Kitchen	Layer 1: Off-white brittle material with sand	NAD	SAT
40008.224 -013	Light brown sheet flooring with white streaks Mastic	CR 14	Layer 1: Brown tile Layer 2: Brown mastic	NAD NAD	SAT
40008.224 -014	Light brown sheet flooring with white streaks Mastic	CR 15	Layer 1: Brown tile Layer 2: Brown mastic	NAD NAD	SAT
40008.224 -015	12" Even-holed GACT Glue	Kitchen	Layer 1: Tan fibrous material with paint Layer 2: Brown mastic	NAD NAD	SAT
40008.224 -016	Perimeter caulking	Entry canopy	Layer 1: Gray brittle material with paint	4% Chrysotile	SAT

NAD - No Asbestos Detected

Van Asselt Elementary School
Seattle Public Schools

PBS Engineering+Environmental
Project #40008.188

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40008.188 -001	Built-up Roofing	Roof D	Layer 1: Multi-layered black asphaltic material with fibrous material	NAD	SAT
40008.188 -002	Built-up Roofing	Roof E	Layer 1: Black asphaltic material with fibrous material	35% Chrysotile	SAT
			Layer 2: Black asphaltic material with fibrous material	30% Chrysotile	
			Layer 3: Black asphaltic material with fibrous material	32% Chrysotile	
			Layer 4: Black asphaltic material with fibrous material	36% Chrysotile	
			Layer 5: Tan paper with black mastic	NAD	
			Layer 6: Black asphaltic material with fibrous material	NAD	
			Layer 7: Black asphaltic material with fibrous material	NAD	
40008.188 -003	Built-up Roofing	Roof F	Layer 1: Black asphaltic material with fibrous material	NAD	SAT
			Layer 2: Black asphaltic fibrous material	NAD	
40008.188 -004	Built-up Roofing	Roof D	Layer 1: Muti-layered black asphaltic material with fibrous material	NAD	SAT
40008.188 -005	Built-up Roofing	Canopy Roof	Layer 1: Black asphaltic material	NAD	SAT
	Insulation		Layer 2: Black asphaltic material	NAD	
			Layer 3: Black asphaltic material with fibrous material	22% Chrysotile	
			Layer 4: Brown fibrous material	NAD	
40008.188 -006	Built-up Roofing	Roof F	Layer 1: Multi-layered black asphaltic material with fibrous material	NAD	SAT
	Cementitious Material		Layer 2: Tan paper with black mastic	NAD	
			Layer 3: Gray cementitious material with paint	17% Chrysotile	
40008.188 -007	Built-up Roofing	Roof F	Layer 1: Black asphaltic material with fibrous material	NAD	SAT
	Cementitious Material		Layer 2: Black asphaltic material with fibrous material	NAD	
			Layer 3: Black asphaltic material with fibrous material	NAD	
			Layer 4: Tan paper with black mastic	NAD	
			Layer 5: Gray cementitious material with paint	17% Chrysotile	
40008.188 -008	Roof Flashing	Roof E	Layer 1: Black asphaltic material	NAD	SAT
			Layer 2: Black asphaltic material with fibrous material	NAD	

PLM ASBESTOS SAMPLE INVENTORY

PBS Sample #		Material Type	Sample Location	Laboratory Description	Lab Result	Lab
40008.188	-009	Expansion Joint	Roof D	Layer 1: Black asphaltic material	NAD	SAT
				Layer 2: Black asphaltic material with fibrous material	12% Chrysotile	
				Layer 3: Black asphaltic material with woven fibrous material	NAD	
				Layer 4: Black asphaltic material with woven fibrous material	NAD	
40008.188	-010	Caulking on Corners of Skylight	Roof D	Layer 1: Black asphaltic material	5% Chrysotile	SAT

PBS
ENVIRONMENTAL

July 25, 2000

Mr. Mike Skutack
Seattle Public Schools
Mail Stop AF-332
4141 Fourth Ave. S.
Seattle, WA 98134

RE: SEATTLE PUBLIC SCHOOLS - VAN ASSELT ELEMENTARY SCHOOL (WAN) - LETTER OF LIMITED "GOOD FAITH" INSPECTION FOR ASBESTOS - PBS PROJECT #40008.053

Dear Mr. Skutack:

PBS Environmental performed a limited hazardous materials investigation of the Wide Area Network (WAN) routing areas at Van Asselt Elementary School to determine the presence of asbestos-containing materials (ACMs) and Lead-Containing Paint (LCP). The areas inspected were based on 100% Construction Document review drawings provided by Hargis Engineers, Inc. titled Van Asselt Elementary School and dated July 18, 2000. The intent of this letter is to ensure that the Seattle Public Schools is in compliance with the Washington Department of Labor and Industries' requirement that a "good faith" inspection for ACMs be performed prior to construction activities.

ACMs

Suspect materials were surveyed by AHERA accredited inspector Tod Pettingill (cert. # 519784676) in June 2000 and Fatima Oswald (cert. # 994935) in July 2000. Samples were assigned a unique identification number and delivered to NVL Laboratories, Inc. (NVLAP #102063) for analysis. All samples were analyzed by polarized light microscopy (PLM), which has a reliable limit of quantification of one percent asbestos by volume. A total of six (6) samples were collected and analyzed for asbestos. The attached Bulk Summary Report, provided by the district, and the attached Asbestos Bulk sample Inventory supplied by PBS lists suspect materials that were previously sampled and analyzed for asbestos.

The following materials were found to contain asbestos:

Pipe insulation and Associated Hard Fitting Insulation (in exposed and presumed to exist in concealed locations);
Boiler materials;
Vinyl floor tile (identified in the portables);
Sheet vinyl and;
Roofing.

Asbestos-containing materials are present which may be impacted by the Wide Area Network (WAN) installation. Asbestos-containing Pipe Insulation and hard fittings insulation in the tunnels. Asbestos-containing floor tile was previously identified in the portable. These materials should be impacted only by properly asbestos certified personnel using proper work practices and personal protective equipment.

LCP

Suspect painted coatings were sampled and analyzed to determine lead content. The attached Lead Sample Inventory lists suspect coatings that were sampled and analyzed for lead. Lead was found in all of the six (6) samples. Analysis of interior paint ranged from 0.09% to 26.00% lead.

PBS had performed lead paint chip sampling in 1999. Attached is a PBS Lead Sample Inventory for Van Asselt Elementary School dated March 24, 1999. Analysis of the previous sample results revealed lead in levels between 0.022% to 7.0%.

The presence of lead in painted coatings requires that renovation work comply with WAC 296-155, Lead in Construction. Initial monitoring and worker protection will be required for workers impacting LCP until a negative exposure assessment is completed.

The presence of lead in painted coatings requires that waste disposal comply with WAC 173-303, Dangerous Waste Regulations. Characterization, or sampling, of representative waste is required to determine disposal requirements.

Please contact me if you have any questions or require additional information.

Sincerely,

Timothy J. Ogden
Project Manager

Attachments (5):
- Asbestos Sample Inventory
- Lead Sample Inventory
- Previous PBS Asbestos Sample Data
- Previous PBS Lead Sample Data
- Previous Seattle Schools Sample Information

Seattle School District
Van Asselt Elementary School

PBS Environmental
PBS Project No. 40008.053

PLM SAMPLE INVENTORY

PBS Sample #	Material Type	Sample Location	Lab Description	Lab Result
40008.53- -001	Silver paint	Above room 111	Layer 1: Silver paint	2% Chrysotile
	Flashing		Layer 2: Black asphalticmaterial	5% Chrysotile
40008.53- -002	Silver paint	Above room 111	Layer 1: Silver paint	2% Chrysotile
	Flashing		Layer 2: Black asphalticmaterial	6% Chrysotile
40008.53- -003	Built-up roofing	Above room 111	Layer 1: Black asphaltic material	No Asbestos Detected
			Layer 2: Brown fibrous felt	No Asbestos Detected
40008.53- -004	Built-up roofing	Above room 111	Layer 1: Black asphaltic material	No Asbestos Detected
			Layer 2: Brown fibrous felt	No Asbestos Detected
40008.53- -005	Built-up roofing	Above MDF room	Layer 1: Black asphaltic material	No Asbestos Detected
			Layer 2: Brown fibrous felt	No Asbestos Detected
40008.53- -006	Built-up roofing	Above MDF room	Layer 1: Black asphaltic material	No Asbestos Detected
			Layer 2: Brown fibrous felt	No Asbestos Detected

AA PAINT CHIP SAMPLE INVENTORY

PBS Sample #	Paint Color/Component/Substrate	Sample Location	Lab Result (mg/kg)	Lab Result (%)
40008.042- 001LCP	Tan/Plaster/Wall	Exterior North Corridor-Walkway	3,400	0.3400
40008.042- 002LCP	Tan-green-blue/Plaster/Wall	Covered Walkway North	1,600	0.1600
40008.042- 003LCP	White-yellow-purple/concrete/wall	South Corridor	260,000	26.0000
40008.042- 004LCP	White-brown-brown/Concrete/Wall	Faculty Lounge	6,300	0.6300
40008.042- 001LCP	Pink/Concrete/Wall	Room 103A	1,300	0.1300
40008.042- 005LCP	Green-tan-white/Plaster/Wall	Room 103A	900	0.0900

* Below the Analytical Limit of Detection

mg/kg = Milligrams per kilogram
"<" = Below the Limit of Detection

VAN ASSELT ELEMENTARY SCHOOLSCOREBOARDS March 26. 1999

PBS Project No. 40008.13

Sample Number	Material Description	Sample Location	Lab Results
40008.13- 001	Plaster	Annex, 2nd Floor Hall	No Asbestos Detected
40008.13- 002	Plaster	Annex, 2nd Floor West Stairs	No Asbestos Detected
40008.13- 003	Plaster	Annex, Basement, Southwest Room	No Asbestos Detected
40008.13- 004	Tan Vinyl Flooring	Main Bldg., Custodial South Crawl Access	No Asbestos Detected
40008.13- 005	Plaster	Main Bldg., Office Area Hall	No Asbestos Detected
40008.13- 006	Plaster	Main Bldg., Boiler Room Hall	No Asbestos Detected
40008.13- 007	Duct Wrap Cloth	Main Bldg., Crawlspace	No Asbestos Detected

SEATTLE PUBLIC SCHOOLS

LEAD SAMPLE INVENTORY

VAN ASSELT ELEMENTARY SCHOOL

March 24, 1999

PBS Project No. 40008.13

Sample Number	Location	Component	Substrate	Paint Color	Result (% Lead)
40008.13- 001 PB	Annex, 2nd Floor Hall	Wall	Plaster	White	0.1900
40008.13- 002 PB	Annex, 2nd Floor Hall	Wall	Plaster	Purple	0.0220
40008.13- 003 PB	Annex, West Stairwell	Wall	Plaster	Purple	0.2400
40008.13- 004 PB	Annex, Basement Southwest Room	Wall	Plaster	Green	0.3900
40008.13- 005 PB	Annex, Fan Room	Wall	Brick	Olive	0.8700
40008.13- 006 PB	Annex, Basement, Custodial	Wall	Concrete	Tan	1.0000
40008.13- 007 PB	Annex, Basement Northeast Room	Wall	Wood	White	7.0000
40008.13- 008 PB	Main Bldg., South Crawl Access	Wall	Concrete	Light Green	0.1400
40008.13- 009 PB	Main Bldg., Hallway	Wall	Plaster	White/Green	0.0640
40008.13- 010 PB	Main Bldg., Boiler Room	Wall	Concrete	White	0.0710
40008.13- 011 PB	Main Bldg., Boiler Room	Wall	Concrete	Tan	0.4800
40008.13- 012 PB	Main Bldg., Office Area	Wall	Plaster	Light Blue	0.0640

Bulk Sample Summary Report

VANASSELT

Space	Sample	Description	Result
103	Z012191136	H1, Ceiling plaster like material, bldg B, hallway	No asbestos detected.
103	Z012191136	H1, Ceiling plaster, homogeneous throughout room	No asbestos detected.
205	071492B165	H1, Plaster from stairwell leading to attic	No asbestos detected.
205	071492B166	H1, plaster from stairwell leading to attic	No asbestos detected.
205	071492B167	H1, plaster from stairwell leading to attic	No asbestos detected.
019	013095B118	H1, Wall plaster, boys bathrm. Painted pea green surface over thin layer of white chalky material over grey sandy material. S wall.	No asbestos detected.
019	013095B119	H1, Wall plaster, boys bathrm. Painted surface over thin layer of white chalky material over grey sandy mat. N wall.	No asbestos detected.
019	013095B120	H1, Wall plaster, boys bathrm. Painted surface over thin layer white chalky mat over grey sandy material. W wall.	No asbestos detected.
020	112994B595	H1, Wall plaster, classrm22. 2 layers; painted pink surface with thin white chalky mat then grey sandy mat. E wall N end homogenous in rm.	No asbestos detected.
020	112994B596	H1, Wall plaster, classrm22. 2 layers; painted pink surface with thin white chalky mat then grey sandy mat. Middle N wall. Homogenous in rm.	No asbestos detected.
020	112994B594	H1, Wall plaster, classrm22. 2 layers; painted pink surface with thin white chalky material then grey sandy mat. W wall N E. Homogenous in rm.	No asbestos detected.
020	013095B121	H1, Wall plaster, classrm22. Painted surface over thin white chalky mat over grey sandy mat. S wall by cloakrm entry.	No asbestos detected.
021	013095B116	H1, Wall plaster, cloakrm in rm 22. Painted surface over thin white chalky material over grey sandy material. N wall.	No asbestos detected.
021	013095B115	H1, Wall plaster, cloakrm in Rm 22. Painted surface over thin white chalky material over grey sandy material. S wall.	No asbestos detected.
021	013095B117	H1, Wall plaster, cloakrm, in Rm 22. Painted surface over thin white chalky material over grey sandy material. W wall.	No asbestos detected.
119	070894B097	H1Z debris from BoilerRm, debris on floor behind boiler. Gold soft loose pieces.	No asbestos detected.
181	990222B001	H2 - TSI; crawl space/tunnels	No asbestos detected
181	819881654	H2 TSI Fittings-Tunnel	35% AMOSITE
181	819881655	H2 TSI Fittings-Tunnel	30% CHRYSOTILE 45% AMOSITE

H1=Surfacing
H2=TSI
H3=Miscellaneous

Bulk Sample Summary Report

VANASSELT

Space	Sample	Description	Result
119	816881649	H2 TSI-Boiler Room piping	20% CHRYSOTILE 15% AMOSITE
119	Z021191138	H2, ACM debris on tank body-Gray paper	60% CHRYSOTILE
119	Z012991137	H2, ACM sheet material left front by the cone, inside the boiler inself, beige fibrous matrix	30% AMOSITE, 25% CHRYSOTILE
119	Z012991137	H2, ACM sheet material stuck to fire brick inside boiler fireBox. Beige fibrous matrix	25% CHRYSOTILE, 30% AMOSITE
119	Z012991137	H2, ACM sheet materila left behind the fire brick inside the boiler, baige fibrous matrix	35% AMOSITE, 20% CHRYSOTILE
103	Z012191136	H2, Brown blown in insulation on top of lath above ceiling, Bldg B	No asbestos detected.
103	Z012191136	H2, brown insulation on top of lath above ceiling, bundle of fibers w blk matri	No asbestos detected.
119	Z011791135	H2, Lumps w white fiber bundles, front wall,inside, behind fire brick	3% AMOSITE, 3% CHRYSOTILE
119	Z011791134	H2, SW wall inside behind the fire brick, boiler #2, eige fibrous mitrix	20% AMOSITE, 35% CHRYSOTILE
135B	817881650	H2-North Fan Room above stage	30% CHRYSOTILE 25% AMOSITE
203	980611BC01	H3 - 12x12 ceiling tile, random pattern large punched holes; Classrm 25, in the corner of the ceiling.	No asbestos detected
145	980611BC09	H3 - 12x12 ceiling tile, uniform grid pattern medium sized holes; Gym Office, in the corner of the ceiling.	No asbestos detected.
020	980611BC08	H3 - 2x4 tecelling tileum ceiling panel; Room 22, ceiling corner.	No asbestos detected.
ext	980316B001	H3 - roofing; roof of old bldg	No asbestos detected
101	980323B001	H3 - vinyl floor tiles and mastic; rm. 1, under carpet	No asbestos detected
191	816881652	H3 ceiling tile 2X4 Panels-Portable	No asbestos detected.
101	817881651	H3 ceiling tile in Classroom 1	No asbestos detected.
101	816881646	H3 Counter top sheet linoleum-Classrm 1	No asbestos detected.
190	818881653	H3 vinyl floor tile 12X12-Portable	1-5% CHRYSOTILE

H1=Surfacing
H2=TSI
H3=Miscellaneous

VANASSELT

Bulk Sample Summary Report

Space	Sample	Description	Result
114	816881648	H3 vinyl floor tile Hall floor sheet linoleum-Classrm 5	1-5% CHRYSOTILE
101	816881647	H3 vinyl floor tile Off walls sheet linoleum-Classrm 1	No asbestos detected.
020	9603248002	H3, carpet mastic from classroom 22.	No asbestos detected.
110	9603248001	H3, vinyl floor sheeting and mastic from classroom 4.	No asbestos detected.
105	0714928163	H3, Window putty from Classrm23	No asbestos detected.
119	1020948375	H3A, ceiling tile, N hall E/W. 12x12 uniform small holes painted white with tan fibrous mat with brown plyable/hard mastic. Hall by girl/boy lav. ceiling tile#16.	No asbestos detected.

H1=Surfacing
H2=TSI
H3=Miscellaneous

AHERA Asbestos Management Plan

Van Asselt Elementary

SEATTLE
PUBLIC
SCHOOLS

Address:	7201 Beacon S. Seattle 98108
Year Built:	1907
Renovations/Additions:	1950
Square Feet:	69,226

Friable Asbestos-Conaining Building Material(s) Present:	Yes
Non-Friable Asbestos-Containing Building Material(s) Present:	Yes

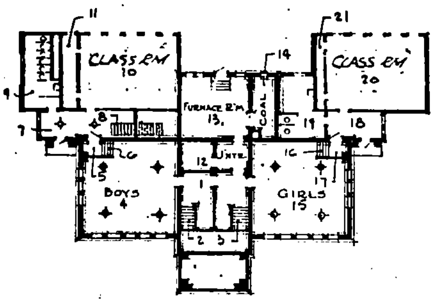
Designated Person:	Fred Stephens Director of Facilities P.O. Box 34165 Seattle, WA 98124-1165 (206) 252-0636	Management Planner:	Troy White Asbestos Program Manager P.O. Box 34165 Seattle, WA 98124-1165 (206) 252-0528

This Asbestos Managment Plan was developed to comply with 40 CFR 763 Subpart E (Asbestos Containing Materials in Schools) and contains the following sections:

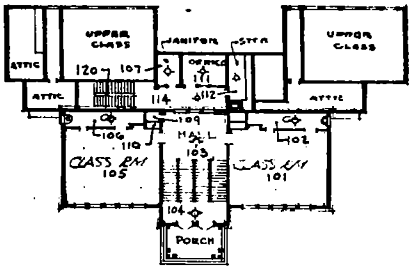
1 - Statement of Assurances from Designated Person
2 - Site Map
3 - List of Homogeneous Materials
4 - Locations of Asbestos Containing Building Materials (ACBM)
5 - Reinspection Report
6 - Assessment of Friable ACBM and Management Planner Recommendations
7 - Bulk Sample Summary Report
8 - Response Actions and Preventative Measures
9 - Periodic Surveillance
10 - Notifications
11 - Plan for Operations and Maintenance Activities
12 - Evaluation of Resources
13 - Training Records
14 - Short-Term Worker Sign In

A complete, up to date copy of this Asbesos Management Plan must be maintained in both the District's administrative office and the school's administrative office. For more information, please contact the Management Planner.

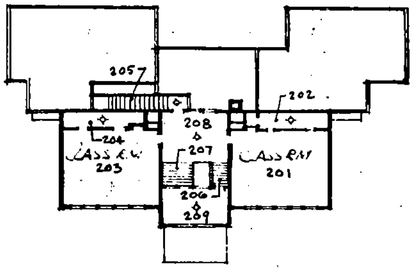
VAN ASSELT SCHOOL



BASEMENT

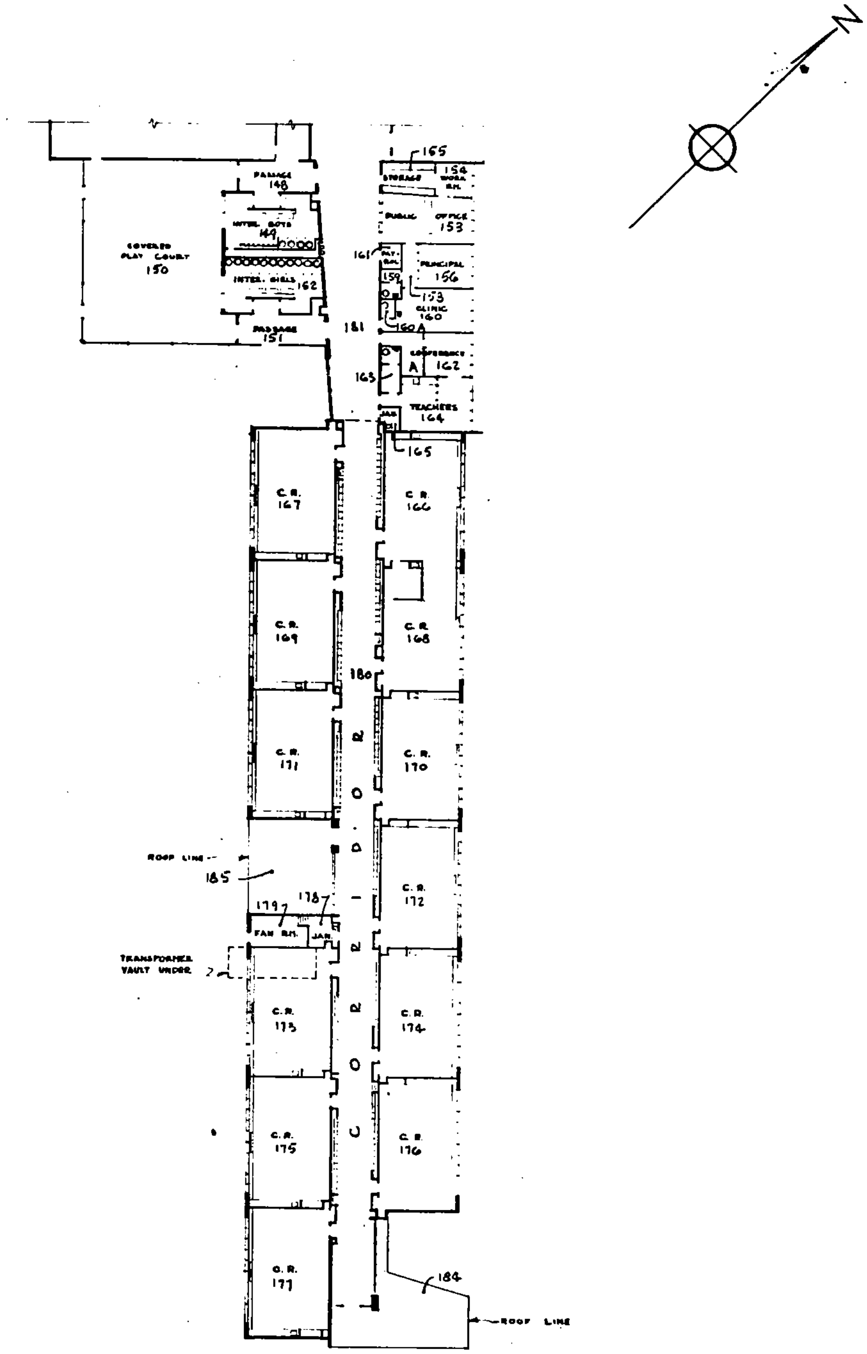


FIRST FLOOR



SECOND FLOOR
SCALE 1" = 32'-0"

VAN ASSELT SCHOOL

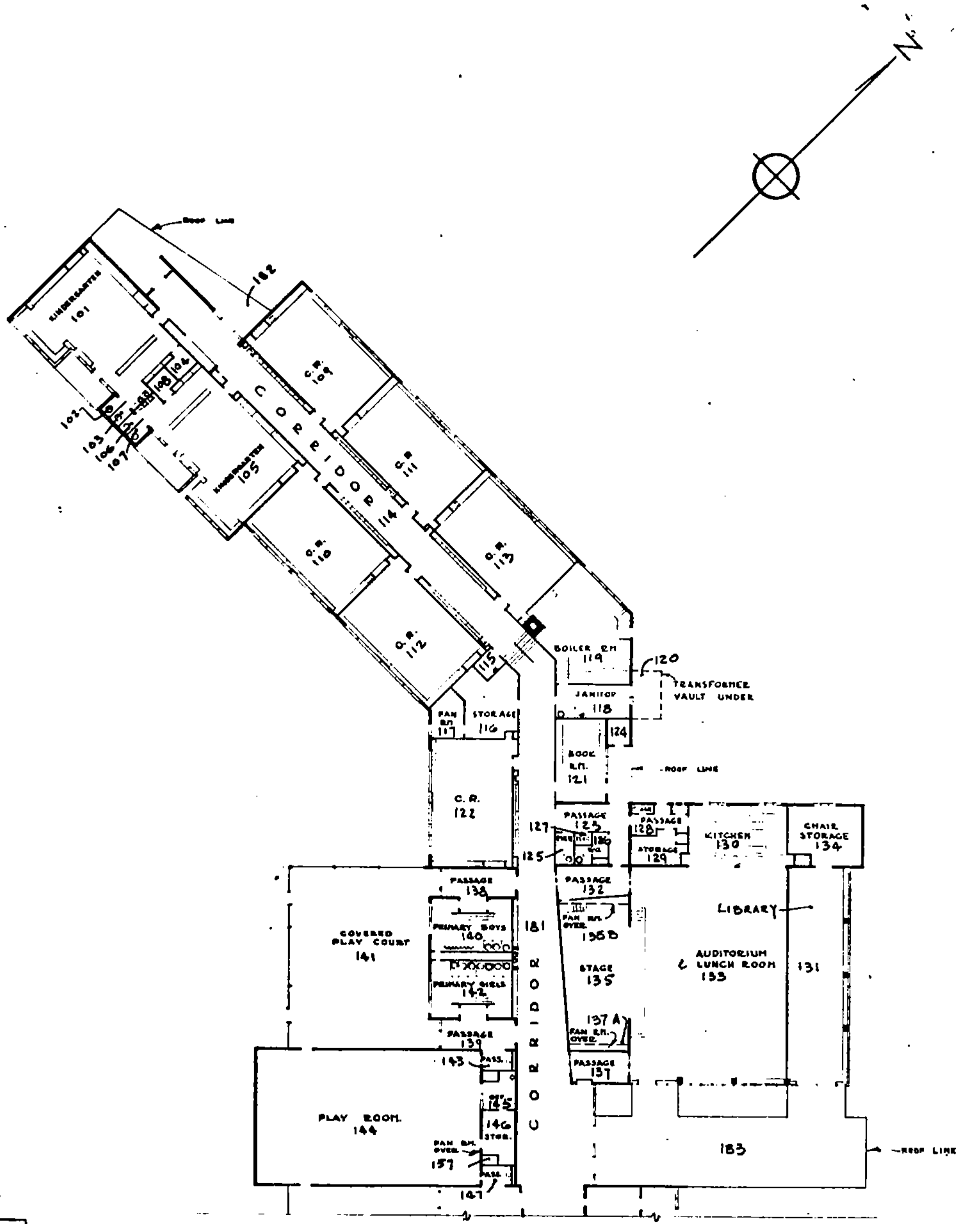


FLOOR PLAN SOUTH WING

SCALE 1" = 30'

JULY 1952

VAN ASSELT SCHOOL



FLOOR PLAN WEST WING

SCALE 1" = 30'

SEATTLE SCHOOL DISTRICT No. 1 Facilities Department		
REVISIONS	BY	DATE
. .		6-22-79

5-16-75

Homogeneous Materials

Van Asselt

Mat. #	Description of Homogeneous Material	Material Type	Asbestos Containing Material
1	12x12 ceiling tile, uniform grid pattern medium sized holes.	Miscellaneous	No*
2	Sheet linoleum flooring, green with white streaks.	Miscellaneous	No*
3	Sheetrock	Miscellaneous	No*
4	Plaster – Bldg. B	Surfacing	No*
5	Sheet linoleum flooring, taupe with brown and white streaks.	Miscellaneous	No*
6	12x12 vinyl floor tile and mastic, beige with white and brown streaks.	Miscellaneous	No*
7	12x12 vinyl floor tile and mastic, tan with dark brown streaks.	Miscellaneous	No*
8	HVAC flex connector	TSI	Assumed
9	12x12 vinyl floor tile and mastic, beige with tan and dark brown streaks	Miscellaneous	No*
10	9x9 vinyl floor tile and mastic, dark brown with light brown streaks	Miscellaneous	Assumed
11	9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks	Miscellaneous	Assumed
12	Sheet linoleum flooring, dark brown	Miscellaneous	No*
13	12x12 vinyl floor tile and mastic, pink with gray and white streaks	Miscellaneous	No*
14	9x9 vinyl floor tile and mastic, tan with dark brown and white streaks	Miscellaneous	Assumed
15	9x9 vinyl floor tile and mastic, taupe with dark brown and beige streaks	Miscellaneous	Assumed
16	9x9 vinyl floor tile and mastic, cream with brown streaks	Miscellaneous	Assumed
17	12x12 vinyl floor tile and mastic, beige with brown and white streaks	Miscellaneous	No*
18	12x12 vinyl floor tile, green/gray with red and white streaks	Miscellaneous	No*
19	9x9 vinyl floor tile and mastic, pink with brown and white streaks	Miscellaneous	Assumed
20	Sheet linoleum flooring and mastic, flesh with brown and cream streaks	Miscellaneous	Yes
21	2x4 tectum ceiling panel	Miscellaneous	No*
22	12x12 ceiling tile, random pattern large punched holes	Miscellaneous	No*
23	2x4 CT, seagull pattern	Miscellaneous	No*
24	Cove base mastic	Miscellaneous	No*
25	Pipe insulation and fittings	TSI	Yes
26	Boiler and tank insulation	TSI	Assumed

*Confirm with asbestos program manager that material does not contain asbestos.

Location of Asbestos Containing Building Materials (ACBM)

VAN ASSELT

This report is intended to help maintenance workers, custodial staff, contractors, and other users of the Asbestos Management Plan more easily determine where asbestos containing materials are located at this site. Each functional space has a description, e.g. OFFICE, and a space number. Because space descriptions are subject to change and can be somewhat generic it is recommended that users of this report cross reference space numbers with the site map included in Section 2 of this Asbestos Management Plan.

Any building material(s) not identified in this Asbestos Managment Plan (See Section 3) must be assumed to contain asbestos until sampled by an accredited AHERA building inspector. Contact the Asbestos Program Manager at 206-252-0528 to coordinate the assessment and sampling of suspect building materials.

*Before entering areas identified as "Restricted Access", notify the Asbestos Program Manager of the specific location and activity to occur. You will be advised of cautionary measures required, which may include air monitoring, preparation of the area, protective clothing, and special precautions during work.

Bldg	Space Number	Space Description	Asbestos Containing Building Material(s)	Restricted Access
A	101	CLASSRM1	No ACBM identified in this space.	No
A	101	CLASSRM1	No ACBM identified in this space.	No
A	102	BOYS LAVATORY	No ACBM identified in this space.	No
A	103	GIRLS LAVATORY	No ACBM identified in this space.	No
A	104	STORAGE	No ACBM identified in this space.	No
A	105	CLASSRM2	No ACBM identified in this space.	No
A	106	GIRLS LAVATORY	No ACBM identified in this space.	No
A	107	BOYS LAVATORY	No ACBM identified in this space.	No
A	108	STOREROOM	No ACBM identified in this space.	No
A	109	CLASSRM3	No ACBM identified in this space.	No
A	110	CLASSRM4	No ACBM identified in this space.	No
A	111	CLASSRM5	No ACBM identified in this space.	No
A	112	CLASSRM6	No ACBM identified in this space.	No
A	113	CLASSRM7	No ACBM identified in this space.	No
A	114	WEST HALL	No ACBM identified in this space.	No
A	114A	MAIN HALL STAIRS	No ACBM identified in this space.	No
A	115	ELEVATOR	No ACBM identified in this space.	No
A	116	FAN ROOM NEAR CE OFC	(8) HVAC flex connector.	No
A	117	CUSTODIAN STORAGE	No ACBM identified in this space.	No
A	118	CUSTODIAN OFFICE	No ACBM identified in this space.	No
A	119	BOILER ROOM	(25) Insulation on pipe and fittings.	No
A	121	SUPPLY ROOM/BOOKROOM	No ACBM identified in this space.	No
A	122	CLASSRM8	No ACBM identified in this space.	No

Bldg	Space Number	Space Description	Asbestos Containing Building Material(s)	Restricted Access
A	123	ENTRY KITCHEN	No ACBM identified in this space.	No
A	124	CUSTODIAN STORAGE	No ACBM identified in this space.	No
A	125	MENS LAVATORY	No ACBM identified in this space.	No
A	126	COOKS LAVATORY	No ACBM identified in this space.	No
A	127	ELECTRICAL ROOM	No ACBM identified in this space.	No
A	128	KITCHEN HALL	No ACBM identified in this space.	No
A	129	KITCHEN STORAGE	No ACBM identified in this space.	No
A	129A	CLOSET KITCHEN	(25) Insulation on pipe and fittings.	No
A	129B	JANITORIAL CLOSET	No ACBM identified in this space.	No
A	130	KITCHEN	No ACBM identified in this space.	No
A	131	LRC	(10) 9x9 vinyl floor tile and mastic, dark brown with light brown streaks; (11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;	No
A	132	LUNCHROOM ENTRY	No ACBM identified in this space.	No
A	133	LUNCHROOM	(11) 9x9 vinyl floor tile and mastic, dark brown with light streaks.	No
A	134	KICHEN STORAGE	No ACBM identified in this space.	No
A	135	STAGE	No ACBM identified in this space.	No
A	135A	FAN RM ABOVE STAGE S	(25) Insulation on pipe and fittings.	No
A	135A	FAN ROOM ABOVE STAGE	(8) HVAC flex connector.	No
A	135B	FAN RM ABOVE STAGE N	(25) Insulation on pipe and fittings.	No
A	135B	FAN ROOM ABOVE STAGE	(8) HVAC flex connector.	No
A	135C	NORTH STAGE ENTRY	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;	No
A	137	ENTRY LUNCHROOM	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;	No
A	138	ENTRY N PLAYCOURT	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;	No
A	139	ENTRY S PLAYCOURT	(10) 9x9 vinyl floor tile and mastic, dark brown with light brown streaks; (11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (14) 9x9 vinyl floor tile and mastic, tan with dark brown and white streaks.	No
A	140	BOYS LAVATORY	No ACBM identified in this space.	No
A	140A	PIPECHASE LAVS	No ACBM identified in this space.	No
A	141	NORTH PLAYCOURT	No ACBM identified in this space.	No
A	142	GIRLS LAVATORY	No ACBM identified in this space.	No
A	143	ENTRY GYM	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;	No
A	144	GYM	No ACBM identified in this space.	No

Bldg	Space Number	Space Description	Asbestos Containing Building Material(s)	Restricted Access
A	145	GYM OFFICE	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;	No
A	146	GYM STORAGE	No ACBM identified in this space.	No
A	147	ENTRY GYM	No ACBM identified in this space.	No
A	148	N ENTRY S PLAYCOURT	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (16) 9x9 vinyl floor tile and mastic, cream with brown streaks; (19) 9x9 vinyl floor tile and mastic, pink with brown and white streaks.	No
A	149	BOYS LAVATORY	No ACBM identified in this space.	No
A	149A	PIPECHASE LAVS	No ACBM identified in this space.	No
A	150	SOUTH PLAYCOURT	No ACBM identified in this space.	No
A	151	S ENTRY S PLAYCOURT	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (19) 9x9 vinyl floor tile and mastic, pink with brown and white streaks.	No
A	152	GIRLS LAVATORY	No ACBM identified in this space.	No
A	153	MAIN OFFICE	(20) Sheet linoleum flooring, flesh with brown and cream streaks.	No
A	154	VICE PRINCIPAL OFFIC	No ACBM identified in this space.	No
A	155	WORK RM STORAGE	No ACBM identified in this space.	No
A	156	PRINCIPALS OFFICE	No ACBM identified in this space.	No
A	157	FAN ROOM OVER GYM	(25) Insulation on pipe and fittings.	No
A	158	OFFICE HALL	No ACBM identified in this space.	No
A	159	OFFICE LAVATORY	No ACBM identified in this space.	No
A	159A	ENTRY AREA TO OFF LA	No ACBM identified in this space.	No
A	160	NURSES OFFICE	No ACBM identified in this space.	No
A	160A	NURSES LAVATORY	No ACBM identified in this space.	No
A	161	PATROL STORAGE	No ACBM identified in this space.	No
A	162	CONFERENCE ROOM	No ACBM identified in this space.	No
A	162A	COUNSELOR OFFICE	No ACBM identified in this space.	No
A	163	TEACHERS LAVATORY	No ACBM identified in this space.	No
A	164	TEACHERS LUNCHROOM	No ACBM identified in this space.	No
A	165	STORAGE ROOM	No ACBM identified in this space.	No
A	166	LRC RM9	No ACBM identified in this space.	No
A	167	CLASSRM10	No ACBM identified in this space.	No
A	168	LRC RM11	No ACBM identified in this space.	No
A	169	CLASSRM12	No ACBM identified in this space.	No
A	170	CLASSRM13	No ACBM identified in this space.	No

Bldg	Space Number	Space Description	Asbestos Containing Building Material(s)	Restricted Access
A	171	CLASSRM14	No ACBM identified in this space.	No
A	172	CLASSRM15	No ACBM identified in this space.	No
A	173	CLASSRM16	No ACBM identified in this space.	No
A	174	CLASSRM17	No ACBM identified in this space.	No
A	175	CLASSRM18	No ACBM identified in this space.	No
A	176	CLASSRM19	No ACBM identified in this space.	No
A	177	CLASSRM20	No ACBM identified in this space.	No
A	178	CUSTODIAN CLOSET	No ACBM identified in this space.	No
A	179	FAN ROOM BY RM16	(8) HVAC flex connector.	No
A	179A	STAIRS	No ACBM identified in this space.	No
A	180	MAIN HALL	(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (20) Sheet linoleum flooring, flesh with brown and cream streaks.	No
A	181	TUNNELS	(25) Insulation on pipe and fittings.	No
B	001	HALL	(25) Insulation on pipe and fittings.	No
B	002	MAIN ENTRY	No ACBM identified in this space.	No
B	003	MAIN ENTRY	No ACBM identified in this space.	No
B	004	SPC CLASSRM	(25) Insulation on pipe and fittings.	No
B	005	ENTRY PLAYCOURT	No ACBM identified in this space.	No
B	006	STAIRS	(25) Insulation on pipe and fittings.	No
B	007	HALLWAY	No ACBM identified in this space.	No
B	008	STAIRS	No ACBM identified in this space.	No
B	009	GIRLS LAVATORY	(25) Insulation on pipe and fittings.	No
B	009A	PIPECHASE	(25) Insulation on pipe and fittings.	No
B	010	CLASSRM21	(25) Insulation on pipe and fittings.	No
B	011	CLOAK RM CLASSRM21	(25) Insulation on pipe and fittings.	No
B	011A	ATTIC SPACE	No ACBM identified in this space.	No
B	012	STORAGE	(25) Insulation on pipe and fittings.	No
B	013	OLD BOILER RM	(25) Insulation on pipe and fittings.	No
B	013A	FAN ROOM BOILER RM	(25) Insulation on pipe and fittings.	No
B	013A	FANRM OLD BOILERRM	(8) HVAC flex connector.	No
B	014	COAL STORAGE	(25) Insulation on pipe and fittings.	No
B	015	SCI/COMP LAB	(25) Insulation on pipe and fittings.	No
B	017	LANDING	(25) Insulation on pipe and fittings.	No
B	018	ENTRY	No ACBM identified in this space.	No
B	019	BOYS LAVATORY	(25) Insulation on pipe and fittings.	No

Bldg	Space Number	Space Description	Asbestos Containing Building Material(s)	Restricted Access
B	019A	PIPECHASE BOYS LAV	(25) Insulation on pipe and fittings.	No
B	020	CLASSRM22	(25) Insulation on pipe and fittings.	No
B	020A	ATTIC ABV CLASSRM22	No ACBM identified in this space.	No
B	021	CLOAK RM CLASSRM22	(25) Insulation on pipe and fittings.	No
B	101	CLASSRM24	(25) Insulation on pipe and fittings.	No
B	102	CLOAK RM CLASSRM24	(25) Insulation on pipe and fittings.	No
B	103	HALLWAY	(25) Insulation on pipe and fittings.	No
B	105	CLASSRM23	(25) Insulation on pipe and fittings.	No
B	106	CLOAK RM CLASSRM23	(25) Insulation on pipe and fittings.	No
B	107	CUSTODIAN STORAGE	(25) Insulation on pipe and fittings.	No
B	108	STAIRS	No ACBM identified in this space.	No
B	109	STORAGE	No ACBM identified in this space.	No
B	110	LAVATORY	No ACBM identified in this space.	No
B	111	TEACHERS LOUNGE	(25) Insulation on pipe and fittings.	No
B	112	STORAGE	(25) Insulation on pipe and fittings.	No
B	114	HALLWAY	No ACBM identified in this space.	No
B	201	CLASSRM26	(25) Insulation on pipe and fittings.	No
B	202	CLOAK RM CLASSRM26	(25) Insulation on pipe and fittings.	No
B	203	CLASSRM25	No ACBM identified in this space.	No
B	204	CLASSRM25 CLOAKRM	(25) Insulation on pipe and fittings.	No
B	205	STAIRS	No ACBM identified in this space.	No
B	206	STAIRS	No ACBM identified in this space.	No
B	207	STAIRS	No ACBM identified in this space.	No
B	208	HALLWAY	No ACBM identified in this space.	No
B	209	CONFERENCE ROOM	No ACBM identified in this space.	No
B	210	ATTIC	(25) Insulation on pipe and fittings.	No
C	191	PORTABLE 748 RM27	No ACBM identified in this space.	No
D	190	PORTABLE 749 RM 27A	No ACBM identified in this space.	No

AHERA Reinspection Report - 2007

VAN ASSELT

Every three years since the initial inspection and management plan was put in place the District has conducted a reinspection of all known or assumed asbestos containing building materials (ACBM) in each school building. Reinspections are completed by accredited inspectors* and for each functional space in a school building the person peforming the inspection shall:

> Visually reinspect and reassess the condition of all friable known or assumed ACBM.

> Visually inspect material that was previously considered non-friable ACBM and touch the material to determine whether the material has become friable since the last reinspection. Assess the condtion of newly friable ACBM**

> Reassess the condition of previously identified friable ACBM**.

*Inspector's signature and certification are included at the end of this report.

**Detailed condition assessments for friable ACBM and recommended response actions for friable ACBM are included in Section 6 of this Asbestos Managment Plan.

Functional Space: **CLASSRM1** **Building:** A **Space No:** 101

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **BOYS LAVATORY** **Building:** A **Space No:** 102

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GIRLS LAVATORY** **Building:** A **Space No:** 103

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STORAGE** **Building:** A **Space No:** 104

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM2** **Building:** A **Space No:** 105

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GIRLS LAVATORY** **Building:** A **Space No:** 106

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **BOYS LAVATORY** **Building:** A **Space No:** 107

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STOREROOM** **Building:** A **Space No:** 108

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM3** **Building:** A **Space No:** 109

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM4** **Building:** A **Space No:** 110

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM5** **Building:** A **Space No:** 111

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM6** **Building:** A **Space No:** 112

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM7** **Building:** A **Space No:** 113

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **WEST HALL** **Building:** A **Space No:** 114

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **MAIN HALL STAIRS** **Building:** A **Space No:** 114A

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ELEVATOR** **Building:** A **Space No:** 115

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN ROOM NEAR CE OFC** **Building:** A **Space No:** 116

Asbestos Containing Building Material(s) Identified in Space:
(8) HVAC flex connector.
Friable: No **ACBM Assessed:** Duct Flex Connector **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CUSTODIAN STORAGE** **Building:** A **Space No:** 117

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CUSTODIAN OFFICE** **Building:** A **Space No:** 118

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **SUPPLY ROOM/BOOKROOM** **Building:** A **Space No:** 121

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM8** **Building:** A **Space No:** 122

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY KITCHEN** **Building:** A **Space No:** 123

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CUSTODIAN STORAGE** **Building:** A **Space No:** 124

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **MENS LAVATORY** **Building:** A **Space No:** 125

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **COOKS LAVATORY** **Building:** A **Space No:** 126

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ELECTRICAL ROOM** **Building:** A **Space No:** 127

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **KITCHEN HALL** **Building:** A **Space No:** 128

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **KITCHEN STORAGE** **Building:** A **Space No:** 129

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLOSET KITCHEN** **Building:** A **Space No:** 129A

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **JANITORIAL CLOSET** **Building:** A **Space No:** 129B

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **KITCHEN** **Building:** A **Space No:** 130

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LRC** **Building:** A **Space No:** 131

Asbestos Containing Building Material(s) Identified in Space:

(10) 9x9 vinyl floor tile and mastic, dark brown with light brown streaks; (11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LUNCHROOM ENTRY** **Building:** A **Space No:** 132

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LUNCHROOM** **Building:** A **Space No:** 133

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, dark brown with light streaks.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **KICHEN STORAGE** **Building:** A **Space No:** 134

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAGE** **Building:** A **Space No:** 135

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN ROOM ABOVE STAGE** **Building:** A **Space No:** 135A

Asbestos Containing Building Material(s) Identified in Space:

(8) HVAC flex connector.

Friable: No **ACBM Assessed:** Duct Flex Connector **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN RM ABOVE STAGE S** **Building:** A **Space No:** 135A

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN ROOM ABOVE STAGE** **Building:** A **Space No:** 135B

Asbestos Containing Building Material(s) Identified in Space:

(8) HVAC flex connector.

Friable: No **ACBM Assessed:** Duct Flex Connector **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN RM ABOVE STAGE N** **Building:** A **Space No:** 135B

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **NORTH STAGE ENTRY** **Building:** A **Space No:** 135C

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY LUNCHROOM** **Building:** A **Space No:** 137

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY N PLAYCOURT** **Building:** A **Space No:** 138

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY S PLAYCOURT** **Building:** A **Space No:** 139

Asbestos Containing Building Material(s) Identified in Space:

(10) 9x9 vinyl floor tile and mastic, dark brown with light brown streaks; (11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (14) 9x9 vinyl floor tile and mastic, tan with dark brown and white streaks.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **BOYS LAVATORY** **Building:** A **Space No:** 140

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **PIPECHASE LAVS** **Building:** A **Space No:** 140A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **NORTH PLAYCOURT** **Building:** A **Space No:** 141

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GIRLS LAVATORY** **Building:** A **Space No:** 142

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY GYM** **Building:** A **Space No:** 143

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GYM** **Building:** A **Space No:** 144

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GYM OFFICE** **Building:** A **Space No:** 145

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks;

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GYM STORAGE** **Building:** A **Space No:** 146

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY GYM** **Building:** A **Space No:** 147

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **N ENTRY S PLAYCOURT** **Building:** A **Space No:** 148

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (16) 9x9 vinyl floor tile and mastic, cream with brown streaks; (19) 9x9 vinyl floor tile and mastic, pink with brown and white streaks.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **BOYS LAVATORY** **Building:** A **Space No:** 149

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **PIPECHASE LAVS** **Building:** A **Space No:** 149A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **SOUTH PLAYCOURT** **Building:** A **Space No:** 150

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **S ENTRY S PLAYCOURT** **Building:** A **Space No:** 151

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (19) 9x9 vinyl floor tile and mastic, pink with brown and white streaks.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GIRLS LAVATORY** **Building:** A **Space No:** 152

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **MAIN OFFICE** **Building:** A **Space No:** 153

Asbestos Containing Building Material(s) Identified in Space:

(20) Sheet linoleum flooring, flesh with brown and cream streaks.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **VICE PRINCIPAL OFFIC** **Building:** A **Space No:** 154

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **WORK RM STORAGE** **Building:** A **Space No:** 155

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **PRINCIPALS OFFICE** **Building:** A **Space No:** 156

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN ROOM OVER GYM** **Building:** A **Space No:** 157

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **OFFICE HALL** **Building:** A **Space No:** 158

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **OFFICE LAVATORY** **Building:** A **Space No:** 159

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY AREA TO OFF LA** **Building:** A **Space No:** 159A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **NURSES OFFICE** **Building:** A **Space No:** 160

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **NURSES LAVATORY** **Building:** A **Space No:** 160A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **PATROL STORAGE** **Building:** A **Space No:** 161

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CONFERENCE ROOM** **Building:** A **Space No:** 162

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **COUNSELOR OFFICE** **Building:** A **Space No:** 162A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **TEACHERS LAVATORY** **Building:** A **Space No:** 163

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **TEACHERS LUNCHROOM** **Building:** A **Space No:** 164

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STORAGE ROOM** **Building:** A **Space No:** 165

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LRC RM9** **Building:** A **Space No:** 166

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM10** **Building:** A **Space No:** 167

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LRC RM11** **Building:** A **Space No:** 168

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM12** **Building:** A **Space No:** 169

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM13** **Building:** A **Space No:** 170

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM14** **Building:** A **Space No:** 171

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM15** **Building:** A **Space No:** 172

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM16** **Building:** A **Space No:** 173

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM17** **Building:** A **Space No:** 174

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM18** **Building:** A **Space No:** 175

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM19** **Building:** A **Space No:** 176

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: CLASSRM20 **Building:** A **Space No:** 177

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: CUSTODIAN CLOSET **Building:** A **Space No:** 178

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: FAN ROOM BY RM16 **Building:** A **Space No:** 179

Asbestos Containing Building Material(s) Identified in Space:

(8) HVAC flex connector.

Friable: No **ACBM Assessed:** Duct Flex Connector **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: STAIRS **Building:** A **Space No:** 179A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: MAIN HALL **Building:** A **Space No:** 180

Asbestos Containing Building Material(s) Identified in Space:

(11) 9x9 vinyl floor tile and mastic, light brown with dark brown and tan streaks; (20) Sheet linoleum flooring, flesh with brown and cream streaks.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: TUNNELS **Building:** A **Space No:** 181

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: HALL **Building:** B **Space No:** 001

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: MAIN ENTRY **Building:** B **Space No:** 002

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: MAIN ENTRY **Building:** B **Space No:** 003

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: SPC CLASSRM **Building:** B **Space No:** 004

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY PLAYCOURT** **Building:** B **Space No:** 005
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAIRS** **Building:** B **Space No:** 006
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **HALLWAY** **Building:** B **Space No:** 007
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAIRS** **Building:** B **Space No:** 008
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **GIRLS LAVATORY** **Building:** B **Space No:** 009
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **PIPECHASE** **Building:** B **Space No:** 009A
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM21** **Building:** B **Space No:** 010
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLOAK RM CLASSRM21** **Building:** B **Space No:** 011
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ATTIC SPACE** **Building:** B **Space No:** 011A
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STORAGE** **Building:** B **Space No:** 012
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **OLD BOILER RM** **Building:** B **Space No:** 013

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FANRM OLD BOILERRM** **Building:** B **Space No:** 013A

Asbestos Containing Building Material(s) Identified in Space:
(8) HVAC flex connector.

Friable: No **ACBM Assessed:** Duct Flex Connector **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **FAN ROOM BOILER RM** **Building:** B **Space No:** 013A

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **COAL STORAGE** **Building:** B **Space No:** 014

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **SCI/COMP LAB** **Building:** B **Space No:** 015

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LANDING** **Building:** B **Space No:** 017

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ENTRY** **Building:** B **Space No:** 018

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **BOYS LAVATORY** **Building:** B **Space No:** 019

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **PIPECHASE BOYS LAV** **Building:** B **Space No:** 019A

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM22** **Building:** B **Space No:** 020

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ATTIC ABV CLASSRM22** **Building:** B **Space No:** 020A

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLOAK RM CLASSRM22** **Building:** B **Space No:** 021

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM24** **Building:** B **Space No:** 101

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLOAK RM CLASSRM24** **Building:** B **Space No:** 102

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **HALLWAY** **Building:** B **Space No:** 103

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM23** **Building:** B **Space No:** 105

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLOAK RM CLASSRM23** **Building:** B **Space No:** 106

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CUSTODIAN STORAGE** **Building:** B **Space No:** 107

Asbestos Containing Building Material(s) Identified in Space:

(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAIRS** **Building:** B **Space No:** 108

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STORAGE** **Building:** B **Space No:** 109

Asbestos Containing Building Material(s) Identified in Space:

No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a

Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **LAVATORY** **Building:** B **Space No:** 110
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **TEACHERS LOUNGE** **Building:** B **Space No:** 111
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STORAGE** **Building:** B **Space No:** 112
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **HALLWAY** **Building:** B **Space No:** 114
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM26** **Building:** B **Space No:** 201
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLOAK RM CLASSRM26** **Building:** B **Space No:** 202
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM25** **Building:** B **Space No:** 203
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CLASSRM25 CLOAKRM** **Building:** B **Space No:** 204
Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.
Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAIRS** **Building:** B **Space No:** 205
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAIRS** **Building:** B **Space No:** 206
Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.
Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **STAIRS** **Building:** B **Space No:** 207

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **HALLWAY** **Building:** B **Space No:** 208

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **CONFERENCE ROOM** **Building:** B **Space No:** 209

Asbestos Containing Building Material(s) Identified in Space:
No ACBM identified in this space.

Friable: No **ACBM Assessed:** Nothing to Assess **Condition Assessment:** n/a
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Functional Space: **ATTIC** **Building:** B **Space No:** 210

Asbestos Containing Building Material(s) Identified in Space:
(25) Insulation on pipe and fittings.

Friable: No **ACBM Assessed:** Pipe/Fitting Insulation **Condition Assessment:** Potential for Damage
Certified Building Inspector: Acena **Date of Reinspection:** 7/16/2007

Bulk Sample Summary Report

VAN ASSELT

Samples of suspect buidling materials that are summarized in this report were collected by accredited building inspectors in accordance with 40 CFR 763.86. Exact sample locations can be found in the sample description and/or the listed Space number by cross referencing the site map included in Section 2 of this Asbestos Management Plan. Laboratory reports are on file at the District's administrative office and available for review by request through the Management Planner.

Bldg.	Space	Sample No.	Description	Result	Date
B	103	Z0121911365	H1 - Ceiling plaster, bldg B, hallway	No asbestos detected.	1/21/1991
B	103	Z0121911365	H1 - Ceiling plaster, homogeneous throughout room	No asbestos detected.	1/21/1991
B	205	071492B165	H1 - Plaster from stairwell leading to attic	No asbestos detected.	7/14/1992
B	205	071492B166	H1 - plaster from stairwell leading to attic	No asbestos detected.	7/14/1992
B	205	071492B167	H1 - plaster from stairwell leading to attic	No asbestos detected.	7/14/1992
A	112	100505B1	H1 - Rm. 6,white powder from plaster walls.	No asbestos detected.	10/5/2005
B	019	013095B118	H1 - Wall plaster, boys bathrm. Painted pea green surface over thin layer of white chalky material over grey sandy material. S wall.	No asbestos detected.	1/30/1995
B	019	013095B119	H1 - Wall plaster, boys bathrm. Painted surface over thin layer of white chalky material over grey sandy mat. N wall.	No asbestos detected.	1/30/1995
B	019	013095B120	H1 - Wall plaster, boys bathrm. Painted surface over thin layer white chalky mat over grey sandy material. W wall.	No asbestos detected.	1/30/1995
B	020	112994B595	H1 - Wall plaster, classrm22. 2 layers; painted pink surface with thin white chalky mat then grey sandy mat. E wall N end homogenous in rm.	No asbestos detected.	11/29/1994
B	020	112994B596	H1 - Wall plaster, classrm22. 2 layers; painted pink surface with thin white chalky mat then grey sandy mat. Middle N wall. Homogenous in rm.	No asbestos detected.	11/29/1994
B	020	112994B594	H1 - Wall plaster, classrm22. 2 layers; painted pink surface with thin white chalky material then grey sandy mat. W wall N E. Homogenous in rm.	No asbestos detected.	11/29/1994
B	020	013095B121	H1 - Wall plaster, classrm22. Painted surface over thin white chalky mat over grey sandy mat. S wall by cloakrm entry.	No asbestos detected.	1/30/1995
B	021	013095B116	H1 - Wall plaster, cloakrm in rm 22. Painted surface over thin white chalky material over grey sandy material. N wall.	No asbestos detected.	1/30/1995
B	021	013095B115	H1 - Wall plaster, cloakrm in Rm 22. Painted surface over thin white chalky material over grey sandy material. S wall.	No asbestos detected.	1/30/1995
B	021	013095B117	H1 - Wall plaster, cloakrm, in Rm 22. Painted surface over thin white chalky material over grey sandy material. W wall.	No asbestos detected.	1/30/1995
A	119	Z0129911373	H2 - sheet material left behind the fire brick inside the boiler, beige fibrous matrix	35% AMOSITE, 20% CHRYSOTILE	1/29/1991
A	119	Z0129911374	H2 - sheet material left front by the cone, inside the boiler inself, beige fibrous matrix	30% AMOSITE, 25% CHRYSOTILE	1/29/1991
A	119	Z0129911375	H2 - sheet material stuck to fire brick inside boiler fireBox. Beige fibrous matrix	25% CHRYSOTILE, 30% AMOSITE	1/29/1991

H1=Surfacing H2=TSI H3=Miscellaneous

Bldg.	Space	Sample No.	Description	Result	Date
B	103	Z0121911366	H2 - Brown blown in insulation on top of lath above ceiling, Bldg B	No asbestos detected.	1/21/1991
B	103	Z0121911366	H2 - brown insulation on top of lath above ceiling, bundle of fibers w blk matri	No asbestos detected.	1/21/1991
A	119	102202B02	H2 - Cast from cone; boiler interior..	No asbestos detected.	10/22/2002
A	119	102202B03	H2 - Cast from left wall of boiler interior.	No asbestos detected.	10/22/2002
A	119	032703B11	H2 - debris from boiler.	5% Chrysotile asbestos and 25% Amosite asbestos	3/27/2003
A	119	032703B12	H2 - debris from boiler.	Sample not analyzed.	3/27/2003
A	119	032703B13	H2 - debris from boiler.	Sample not analyzed.	3/27/2003
A	181	819881654	H2 - Fittings-Tunnel	35% AMOSITE	8/19/1988
A	181	819881655	H2 - Fittings-Tunnel	30% CHRYSOTILE 45% AMOSITE	8/19/1988
A	119	032703B11	H2 - Insulation board from east interior of east boiler.	5% Chrysotile asbestos and 25% Amosite asbestos	3/27/2003
A	119	040103B04	H2 - Insulation board from east interior of east boiler.	2% Chrysotile asbestos and 12% Amosite asbestos	4/1/2003
A	119	Z0117911355	H2 - Lumps w white fiber bundles, front wall,inside, behind fire brick in boiler.	3% AMOSITE, 3% CHRYSOTILE	1/17/1991
A	135B	817881650	H2 - pipe insulation, North Fan Room above stage	30% CHRYSOTILE 25% AMOSITE	8/17/1988
A	119	Z0117911345	H2 - SW wall inside behind the fire brick, boiler #2, beige fibrous mitrix	20% AMOSITE, 35% CHRYSOTILE	1/17/1991
A	119	Z0211911388	H2 - TSI on tank body-Gray paper	60% CHRYSOTILE	2/11/1991
A	181	990222B001	H2 - TSI; crawl space/tunnels	No asbestos detected	2/22/1999
A	119	040103B01	H2 - Vermiculite like material from interior of east boiler.	<1% Actinolite asbestos	4/1/2003
A	119	816881649	H2 -Boiler Room piping	20% CHRYSOTILE 15% AMOSITE	8/16/1988
B	203	980611BC01	H3 - 12x12 ceiling tile, random pattern large punched holes; Classrm 25, in the corner of the ceiling.	No asbestos detected.	6/11/1998
A	145	980611BC09	H3 - 12x12 ceiling tile, uniform grid pattern medium sized holes; Gym Office, in the corner of the ceiling.	No asbestos detected.	6/11/1998
A	115	980611BC04	H3 - 12x12 vinyl floor tile and mastic sampled in elevator, tan with dark brown streaks (mat. 7).	No asbestos detected.	6/11/1998
A	123	980611BC05	H3 - 12x12 vinyl floor tile and mastic sampled in kitchen entry, beige with tan and dark brown streaks (mat. 9).	No asbestos detected.	6/11/1998
A	138	980611BC07	H3 - 12x12 vinyl floor tile and mastic sampled in north entry to playcourt, pink with gray and white streaks (mat. 13).	No asbestos detected.	6/11/1998
A	148	980611BC1	H3 - 12x12 vinyl floor tile and mastic sampled in north entry to south playcourt, beige with brown and white streaks (mat. 17).	No asbestos detected.	6/11/1998
A	105	980611BC02	H3 - 12x12 vinyl floor tile and mastic sampled in Room 2, biege with white and brown streaks (mat. 6).	No asbestos detected.	6/11/1998

H1=Surfacing H2=TSI H3=Miscellaneous

Bldg.	Space	Sample No.	Description	Result	Date
A	148	980611BC11	H3 - 12x12 vinyl floor tile sampled in north entry to south playcourt, geen/gray with red and white streaks (mat. 18).	No asbestos detected.	6/11/1998
C	191	980611BC03	H3 - 2x4 ceiling tile sample in Portable, white with seagull pattern (mat. 23).	No asbestos detected.	6/11/1998
B	020	980611BC08	H3 - 2x4 tectum ceiling panel; Room 22, ceiling corner.	No asbestos detected.	6/11/1998
A	180	030200B001	H3 - Brown vinyl floor sheeting (mat. 5) in the main hallway.	No asbestos detected.	3/2/2000
B	020	980324B002	H3 - carpet mastic from classroom 22.	No asbestos detected.	3/24/1998
A	119	102094B375	H3 - ceiling tile, N hall E/W. 12x12 uniform small holes painted white with tan fibrous mat with brown plyable/hard mastic. Hall by girl/boy lav. ceiling tile#16.	No asbestos detected.	10/20/1994
A	180	001201B001	H3 - Leveling compound underneath vinly floor sheeting in main hallway.	No asbestos detected.	12/1/2000
A	153	980611BC12	H3 - Linoleum floor sheeting and mastic sampled in Main Office, flesh with brown and cream streaks (mat. 20).	7% Chrysotile asbestos in flooring only.	6/11/1998
A	119	040103B05	H3 - Mortar from red brick on interior of east boiler	No asbestos detected.	4/1/2003
A	119	040103B09	H3 - Mortar from white brick on interior of east boiler	No asbestos detected.	4/1/2003
B	010	090407L01	H3 - peeling paint on steam pipe in NE corner of Room 21.	No asbestos detected.	9/4/2007
A	119	040103B07	H3 - Red refractory brick from interior of east boiler	No asbestos detected.	4/1/2003
A	119	102202B01	H3 - Refractory brick from boiler interiorr.	No asbestos detected.	10/22/2002
B	ext	990316B001	H3 - roofing; roof of old bldg	No asbestos detected	3/16/1999
A	180	001201B002	H3 - Tan vinyl floor sheeting (mat. 5) and brown mastic in main hallway.	No asbestos detected.	12/1/2000
A	110	980324B001	H3 - vinyl floor sheeting and mastic from classroom 4.	No asbestos detected.	3/24/1998
D	190	818881653	H3 - vinyl floor tile 12X12, portable classroom	1-5% CHRYSOTILE	8/18/1988
B	114	816881648	H3 - vinyl floor tile Classrm 5	1-5% CHRYSOTILE	8/16/1988
A	101	990323B001	H3 - vinyl floor tiles and mastic; rm. 1, under carpet	No asbestos detected	3/23/1999
A	131	VA00626-1	H3 - wallboard in the LRC.	No asbestos detected.	6/26/2000
A	131	VA00626-2	H3 - wallboard in the LRC.	No asbestos detected.	6/26/2000
A	119	040103B06	H3 - White refractory brick from interior of east boiler.	No asbestos detected	4/1/2003
A	105	071492B168	H3 - Window putty from Classrm23	No asbestos detected.	7/14/1992
C	191	818881652	H3 ceiling tile 2X4 Panels-Portable	No asbestos detected.	8/18/1988
A	101	817881651	H3 ceiling tile in Classroom 1	No asbestos detected.	8/17/1988
A	101	816881646	H3 Counter top sheet linoleum-Classrm 1	No asbestos detected.	8/16/1988
A	101	816881647	H3 vinyl floor tile Off walls sheet linoleum-Classrm 1	No asbestos detected.	8/16/1988

APPENDIX E

Certifications

THIS IS TO CERTIFY THAT

FERMAN L FLETCHER

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

Course Date: 04/01/2020

Course Location: Portland, OR

Certificate: IR-20-8539B

CCB #SRA0615 4-Hr Training

CCB #SRA0615 4-Hr Training

Expiration Date: 04/01/2021

For verification of the authenticity of this
certificate contact:
PBS Environmental
4412 SW Corbett Avenue
Portland, OR 97239
(503) 248-1939

Andrew Fridley

Andy Fridley, Instructor

THIS IS TO CERTIFY THAT

TIM OGDEN

HAS SUCCESSFULLY COMPLETED THE TRAINING COURSE

for

ASBESTOS INSPECTOR REFRESHER

In accordance with TSCA Title II, Part 763, Subpart E, Appendix C of 40 CFR

CCB #SRA0615 4-Hr Training

CCB #SRA0615 4-Hr Training

Course Date: 04/01/2020

Course Location: Portland, OR

Certificate: IR-20-2008A

Expiration Date: 04/01/2021

For verification of the authenticity of this
certificate contact:
PBS Environmental
4412 SW Corbett Avenue
Portland, OR 97239
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Andrew Fridley

Andy Fridley, Instructor

Appendix F

CULTURAL RESOURCES ASSESSMENT
(On-File with SPS)

Appendix G

TRANSPORTATION TECHNICAL REPORT

DRAFT

TRANSPORTATION TECHNICAL REPORT

for the

Van Asselt School Addition Project

PREPARED FOR:

Seattle Public Schools

PREPARED BY:

heffron transportation inc

6544 NE 61st Street, Seattle, WA 98115
ph: (206) 523-3939 ◆ fx: (206) 523-4949

March 8, 2021

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1. INTRODUCTION

This report presents the transportation impact analyses for the Seattle Public Schools' (SPS) proposed addition to the Van Asselt School. The scope of analysis and approach were based on extensive past experience performing transportation impact analyses for projects throughout the City of Seattle, including numerous analyses prepared for Seattle Public Schools projects. This report documents the existing conditions in the site vicinity, presents estimates of project-related traffic, and evaluates the anticipated impacts to the surrounding transportation system including transit, parking, safety, and non-motorized facilities. These analyses were prepared to support the SEPA Checklist for this project.

At the time of this analysis, all Seattle Schools' buildings were closed due to the COVID-19 pandemic crisis, which affected traffic volumes and travel patterns throughout Seattle and near the site. Therefore, the analyses were prepared using baseline traffic data collected in the vicinity by the Seattle Department of Transportation (SDOT) in 2018, and adjusted according to standards and practices recommended by the Institute of Transportation Engineers (ITE)[1] and other industry professionals.[2]

1.1. Project Description

SPS is proposing to modernize and expand Van Asselt School, which is located at 7201 Beacon Avenue S in the Beacon Hill neighborhood of Seattle. The following sections describe the site and proposal.

1.1.1. Existing Site

The Van Asselt School site is bounded on the east by Beacon Avenue S, on the north by S Myrtle Street, on the west by Interstate-5 (I-5), and on the south by residential properties.

The existing main school building was constructed in 1950 and contains about 48,125 square feet (sf)[3] of floor area and is located on the northeastern portion of the site. The original historic wood building constructed in 1909 (with an associated 1940 addition and 2002 addition) is located to the south of the main building. That building is closed and not currently utilized. There is a hard-surface play area and an athletic field located west of the main school building. Three areas of the site are regularly used for parking—two accessed from separate driveways on S Myrtle Street and one on the south accessed from Beacon Avenue S. The access driveway on Beacon Avenue S serves the Beacon Avenue Church of God and is currently informally shared by the school to access a paved and gravel area used for parking and vehicle load/unload. The eastern site frontage on Beacon Avenue S is signed for school bus load from 7:00 A.M. to 4:00 P.M.

According to information published in *Building for Learning, Seattle Public Schools Histories, 1862-2000*,[4] the Van Asselt School opened in 1907 in a portable building at the site. It was named for Henry Van Asselt, who had donated land in the 1860s upon which the first structure to be used as a school in King County was built. It served as a replacement for the Maple School, which was demolished to make way for railroads. More portables were added in each of the subsequent years, until a permanent building with capacity for 192 elementary school students was constructed and opened during the 1909-1910 school year. The school was expanded again with additions that were built in 1942 and 1944, to help support the Holly Park Housing Project. By October 1944, when all units at Holly Park were filled, the school had 675 students crowded into the main building, a three-room annex, and six portables. A new concrete and brick school building was constructed in 1950; the original wood building remains on

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[1] ITE, *What a Transportation Professional Needs to Know About Counts and Studies during a Pandemic*, July 2020.
[2] Kittelson & Associates, *Estimating Traffic Volumes Under COVID-19 Pandemic Conditions*, April 2, 2020.
[3] Existing total building area from SPS, 2020.
[4] Nile Thompson and Carolyn J. Marr; *Building for Learning, Seattle Public Schools Histories, 1862-2000;* 2002.

the site. Attendance peaked in 1957 with 1,271 students; during this period Van Asselt was the largest elementary school in Western Washington.

Beginning in 2018, the building has served as an interim site housing Wing Luke Elementary School (with enrollment of 311 students[5]) during construction of its replacement school building. The Van Asselt School will serve as an interim site for Kimball Elementary School during construction of that school replacement from fall 2021 to Spring 2023.

1.1.2. Proposed Site Changes

The proposed project would modify buildings on the site to accommodate a middle school. The project would provide capacity to accommodate up to 1,000 middle school students, with up to 108 faculty and staff members.[6] In the near term, Van Asselt is planned as an interim site to temporarily house other SPS middle schools (Mercer, Aki Kurose, and Washington) while their respective buildings are renovated. In the future, it may also serve as an interim site during elementary school renovations. Up to two elementary schools could potentially be housed at the site at the same time.

The project would add approximately 62,000 sf of new permanent building space and renovate portions of the existing 1909 building (approximately 8,400 sf of renovated building space). The proposed building addition would be located to the west and south of the existing 1909 building and would include 26 classrooms, a new gymnasium, learning commons areas, administrative space, and support space (shower and laundry room, restrooms, custodial spaces, etc.). The proposed renovation to the 1909 building would include four new classrooms, storage space, and student locker areas.

The proposed project would also make minor modifications to the existing one-story main building. This work would include replacing some plumbing fixtures, adding toilet rooms, subdividing spaces, adding special education classrooms, converting the existing gym into a music room, creating an art room and kiln room, adding bike racks, and ADA upgrades to the existing entry ramp. In addition, the project would make interior modifications to the existing elementary school portables to accommodate a middle school program (such as school-based health center, fitness room, offices for counselors and community partners) and relocation of one or more portables within the site.

The site's Beacon Avenue S frontage would remain signed for school bus loading. The parking lot at the northwest corner of the site would be expanded to 59 spaces, and the northeast recycling/trash/loading area would be slightly reconfigured and striped with 3 parking spaces. A small new parking lot with 6 spaces and circulation loop would be constructed at the southeast corner of the site. This area would be accessed from the existing Beacon Avenue Church of God access driveway which SPS has agreed to improve and establish a formal shared-access agreement with the church. The access would remain restricted to right-in / right-out movements on Beacon Avenue S. Figure 1 shows the site plan with the location of the proposed addition, parking areas, and access locations.

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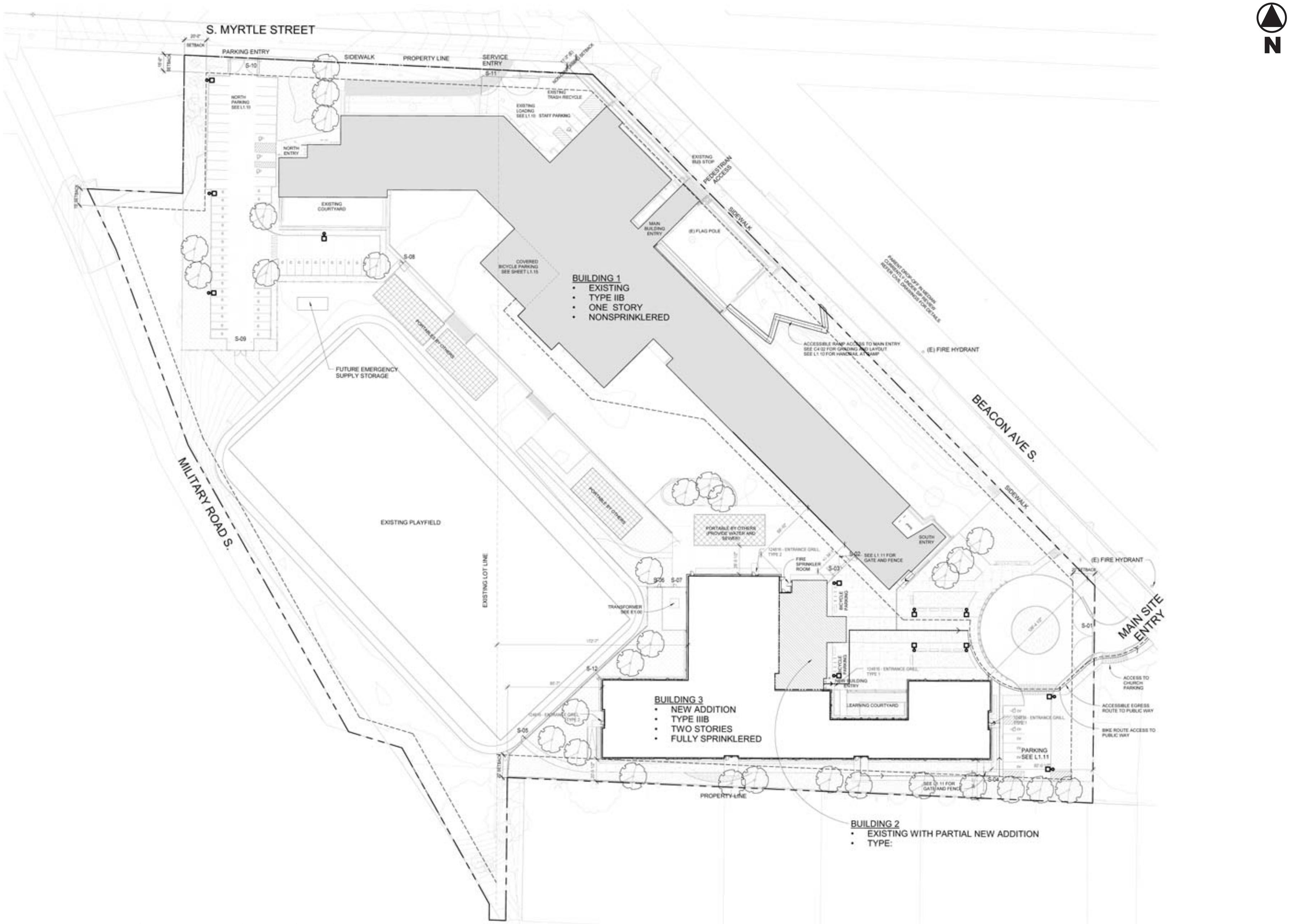
[5] Seattle Public Schools, P223 Enrollment Data for Basic Enrollment report, October 2019.

[6] Ibid.



Source: Bassetti Architects, Permit Set - Architectural Site Plan Sheet G1.00, January 15, 2021.

Van Asselt School
Addition Project

Figure 1

Site Plan

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The site access configuration was developed through extensive coordination with SDOT, Seattle Department of Construction and Inspections (SDCI), the Seattle Schools Traffic Safety Committee (SSTSC), and SPS Transportation. Based on this coordination, the project would reconfigure the existing Beacon Avenue S median strip adjacent to the school site to create a school load/unload zone for automobiles. This median reconfiguration would consist of the elements listed below.

- The existing angle parking spaces would be converted to about 10 parallel load/unload/parking spaces, to accommodate passenger vehicle load/unload for students. During the morning arrival and afternoon departure periods, these spaces would be signed for School Load Only, but could be available for parking at other times of day.
- An additional mid-block crosswalk would be added extending across both directional segments of Beacon Avenue S and aligned with the school's existing main entrance (about 275 feet southeast of S Myrtle Street).
- Both the existing and new crosswalk would be raised to curb height within the median.
- ADA-compliant ramps would be added for the new and existing mid-block crosswalks across both segments of Beacon Avenue S.
- Speed cushions would be added approaching both crosswalks in both directions.

SPS would continue to work with SDOT to install signage in this median segment area for student load/unload during the morning arrival and afternoon dismissal periods, with the space available for general parking during the other times of day.

Construction is planned to begin in summer 2022, while Kimball Elementary school would occupy the site on an interim basis. The first and largest planned interim middle school occupancy (Mercer Middle School) of the expanded buildings are expected in fall 2023. Future analyses (without and with the project) presented in this report reflect year 2023 conditions.

2. BACKGROUND CONDITIONS

This section presents the existing and future conditions without the proposed project. The impacts of the proposed project were evaluated against these base conditions. Because the school most recently housed an elementary school, which has different start and dismissal times than middle schools, year 2023 without-project conditions assume no additional trips generated by the school during the analysis hours, which results in a conservative worst-case analysis of potential project impacts. The following sections describe the existing roadway network, traffic volumes, traffic operations (in terms of levels of service), traffic safety, transit facilities, non-motorized facilities, and parking.

Figure 2 shows the project site location and vicinity. The following four off-site intersections plus site access driveways were selected for study based on the size of the proposed project, local traffic counts, and expected travel routes used by family drivers, buses, and staff to access and egress the site area.

- S Myrtle St / Beacon Ave S Northbound
- S Myrtle St / Beacon Ave S Southbound
- S Othello St / Beacon Ave S Northbound
- S Othello St / Beacon Ave S Southbound

Beacon Avenue S is a boulevard with a median separating northbound and southbound directions, and its intersections with S Myrtle Street were evaluated as separate, but coordinated, intersections. The intersections at S Othello Street are stop-sign controlled and also evaluated separately.

2.1. Transportation Network

2.1.1. Existing Network

The surrounding area predominantly consists of single-family residences, with some institutional (church and community center) uses. Key roadways that serve the site are described below. Roadway classifications are based on the City's Street Classification Map.[7] Speed limits are 25 miles per hour (mph) on arterials (unless otherwise marked) and 20 mph on local access streets.

Beacon Avenue S is a north-south boulevard-style arterial that connects between the Beacon Hill neighborhood and neighborhoods to the north and south. North of S Myrtle Street, it is designated as a Minor Arterial; south of S Myrtle Street, it is a Collector Arterial. Near the school, there is a 20-mph school zone enforced when beacons flash. The roadway has one travel lane in each direction with curb lanes added at major intersections. Northbound and southbound segments are separated by a 50-foot-wide median. Near the site the median has angled public parking accessed from driveways (connected to each direction of Beacon Avenue S) at the north and south ends of the parking area with southbound flow through the parking area. There is a multi-use path within the median and sidewalks on the outsides of travel ways in both directions. Parallel parking occurs on the outside curb (right side) of both street segments.

S Myrtle Street is an east-west Principal Arterial that connects between Swift Avenue west of the site, and turns into S Othello Street about a half-mile to the east. Near the site, there is a 20-mph school zone with flashing beacons. Near the school, it has one travel lane in each direction and widens to two lanes in each direction at Beacon Avenue S. It has curbs, gutters and sidewalks on both sides with a protected bike lane on each side that transition into sharrows[8] at Beacon Avenue S. Its intersections with both directions of Beacon Avenue S are signalized. Parking is prohibited on both sides near the site.

S Othello Street is a local access street in the vicinity of the site, primarily providing access for residential development. It has no curbs, gutters, or sidewalks and parking occurs intermittently within gravel and grass shoulders of varying widths.

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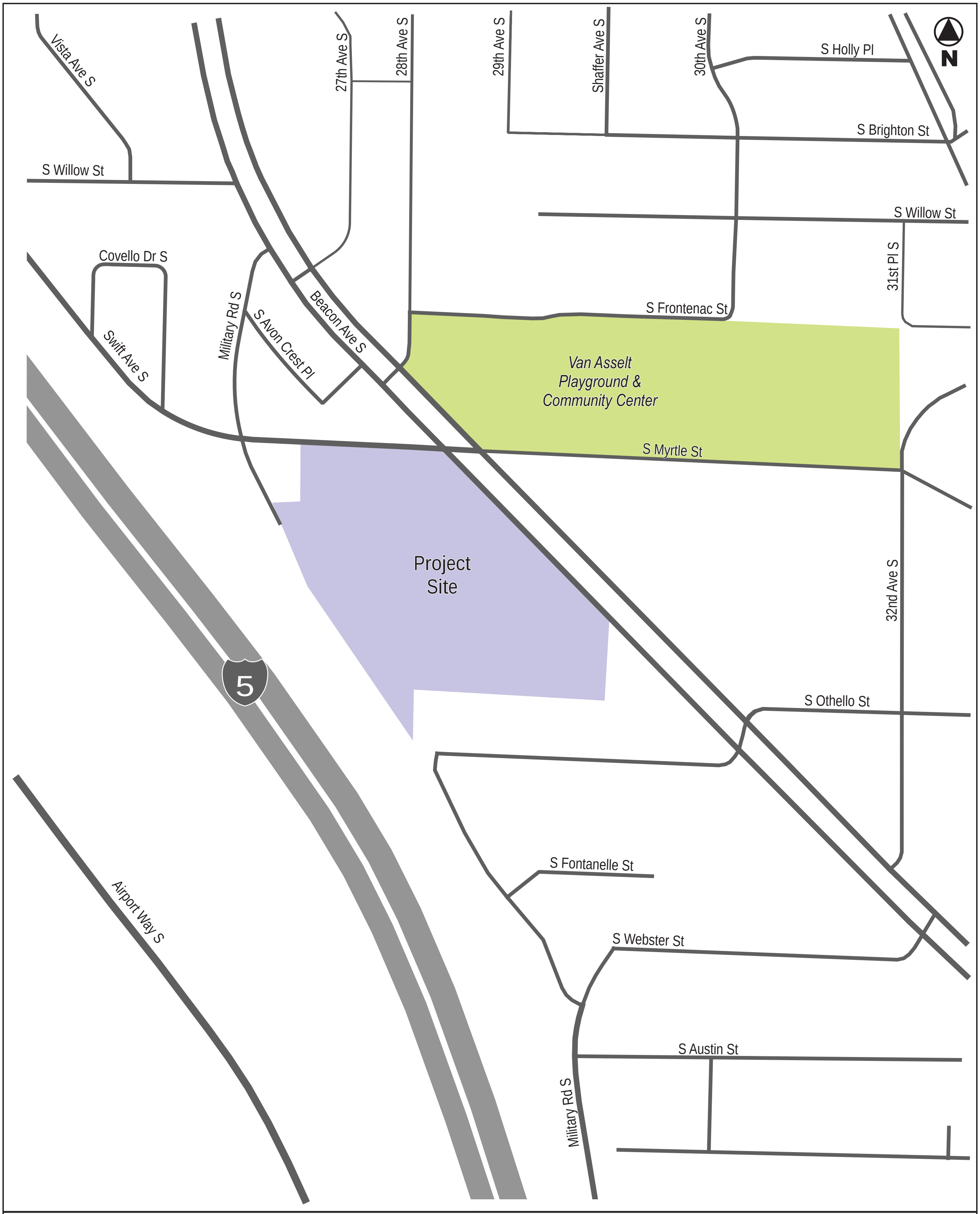
[7] Seattle Department of Transportation (SDOT), Interactive Street Classification Maps, accessed March 2020.

[8] A "sharrow" is a shared-lane pavement marking that is placed in the roadway lane to highlight the shared space; however, unlike a bicycle lane it does not delineate a particular part of the roadway that a bicyclist should use.



Van Asselt School Addition Project

Figure 2

Site Location and Vicinity

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2.1.2. Planned Improvements

The following plans and programs were reviewed to determine if any planned transportation improvements could affect the roadways and intersections near Van Asselt School by 2023 when the addition project is planned to be complete and occupied.

> ***City of Seattle's 2021-2025 Capital Improvement Program (CIP)***[9] – No improvements to the transportation network were identified in the site vicinity.
>
> ***Adopted Seattle Bicycle Master Plan (BMP)***[10] – The plan proposes future off-street facility along the Beacon Avenue corridor, in addition to the protected bike lanes along S Myrtle Street / S Othello Street that were completed in 2019. The *Seattle Bicycle Master Plan – 2019-2024 Implementation Plan*[11], which defines the priorities of the projects, does not identify any additional projects for implementation in the site vicinity. SDOT staff indicated that, although the Beacon Avenue Protected Bike Lane (PBL) project does not currently have full funding or an implementation schedule, it should be included as part of the 2023-without- and with-project analyses.[12]
>
> ***Seattle's Neighborhood Greenway Network***[13] – Neighborhood greenway information provided by SDOT indicates no additional greenways currently in design or planning stages in the site vicinity.
>
> ***Levy to Move Seattle – Workplan Report***[14] – This document outlines SDOT's workplan to deliver citywide transportation projects and services funded in part or in full by the *Levy to Move Seattle* (approved by voters in 2015). The nine-year workplan (2016-2024) documents achievements and challenges and sets the agency's plan for future years. There are no projects defined in the site vicinity.
>
> ***Your Voice, Your Choice***[15] – SDOT's participatory budgeting initiative, in which Seattle residents decide how to spend a portion of the City's budget on small-scale park and street improvements, lists one project about a half-mile east of the school site. The project would install speed humps on Holly Park Drive, between S Myrtle Way and 32nd Avenue.

The Beacon Avenue PBL project would result in signal operational changes and possibly channelization changes at the S Myrtle Street / Beacon Avenue S intersection. Therefore, preliminary operational design alternatives provided by SDOT were incorporated into the intersection modeling of future conditions with and without the Van Asselt School addition project. None of the other planning documents above included any transportation improvements that would affect the roadway network operations or intersection capacity within the study area by 2023.

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[9] City of Seattle, 2020.

[10]. City of Seattle, March 2015.

[11] SDOT, June 13, 2019.

[12] Email communication, J. Marek, SDOT, January 21, 2021.

[13] https://www.seattle.gov/transportation/projects-and-programs/programs/greenways-program, Map updated January 24, 2020, Accessed October 2020.

[14] SDOT, November 2018.

[15] City of Seattle, Your Voice, Your Choice, https://www.seattle.gov/transportation/projects-and-programs/programs/pedestrian-program/yvyc-program, accessed October 2020.

2.2. Traffic Volumes

2.2.1. Existing Traffic Volumes

All Seattle Schools were closed with remote learning in effect at the time of the analysis, and it was not possible to collect new representative traffic data specifically for the Van Asselt School Addition project. However, SDOT conducted turning movement counts at the S Myrtle Street / Beacon Avenue S intersection in June 2018. Therefore, consistent with industry guidance and practice, these volumes were used and adjusted to reflect normalized existing (2020) peak hour traffic volumes.

Historical traffic counts conducted by SDOT between 2010 and 2017 on S Myrtle Street, west of Beacon Avenue S show that traffic has decreased over that period. However, to account for recent and ongoing development throughout Seattle and within the site vicinity, a 1% annual growth rate was applied to the 2018 counts to estimate 2020 volumes at the S Myrtle Street / Beacon Avenue S intersection. This is consistent with rates used for traffic analyses of other developments in Seattle and results in a conservatively high estimate of background traffic conditions. The side-street volumes on S Othello Street at Beacon Avenue S were estimated based turning movement counts performed in March 2017 at the Beacon Avenue S intersections with S Kenyon Street and S Rose Street (less than one mile south of the site). Then, the volumes were balanced with the S Myrtle Street / Beacon Avenue S volumes to estimate 2020 existing volumes on at the S Othello Street intersections. Figure 3 shows the estimated existing morning and afternoon peak hour traffic volumes at the study area intersections.

2.2.2. Forecast Without-Project Traffic Volumes

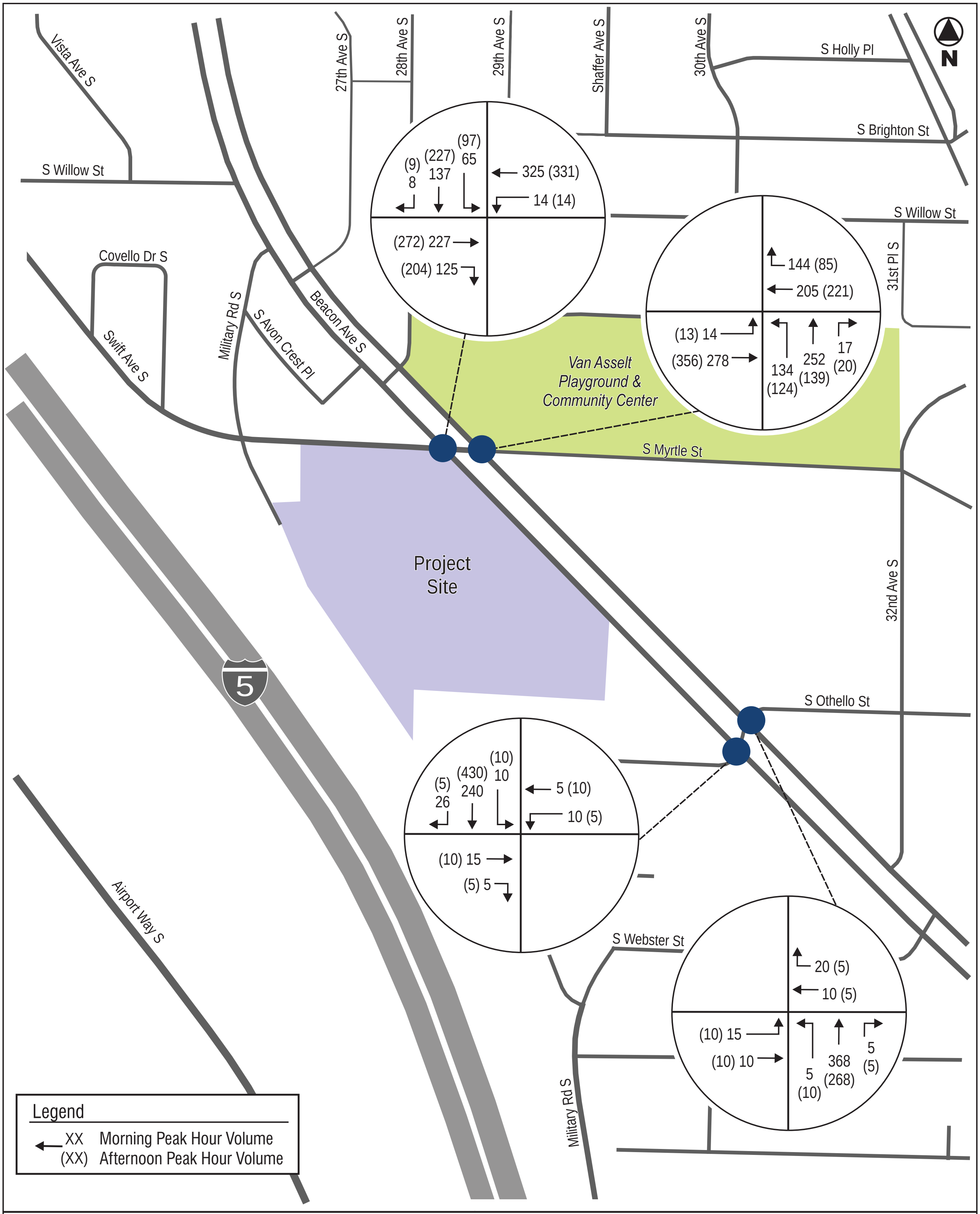
The modernized and expanded school is planned to be occupied by fall 2023. Without-project traffic forecasts for 2023 conditions were developed using the same 1% annual growth rate described in the previous section applied to the 2020 traffic volumes to estimate the 2023 volumes.

Additionally, the SDCI’s Property and Building Activity permit map was reviewed to determine if any large future development projects are planned that could potentially generate additional traffic in the project study area. Based on that review, two pipeline-development projects were identified. Both were under construction at the time of this analysis and located at 7100 and 7118 Beacon Avenue S, across Beacon Avenue S from the school site. According to permitting documents available from SDCI, the two new residential developments will consist of a total of 57 townhomes and live/work residential units. Potential new traffic generated by the 7118 Beacon Avenue S project was derived from information in that project’s Traffic Impact Analysis.[16] Potential new traffic generated by the 7100 Beacon Avenue S project was estimated from available project information[17]; no traffic impact analysis was required by the City for this development due to its relatively small size. Figure 4 shows the forecast 2023-without-project morning and afternoon hour traffic volumes.

---

[16] Gibson Traffic Consultants, 7118 Beacon Avenue S Traffic Impact Analysis, SDCI Project #3025891, March 2019.

[17] MAS Architecture, SEPA Checklist for 7100 Beacon Avenue S, SDCI Project #3025996, June 2017.



Van Asselt School Addition Project

Figure 3
Existing (2020 Normalized) Traffic Volumes
Morning and Afternoon Peak Hours

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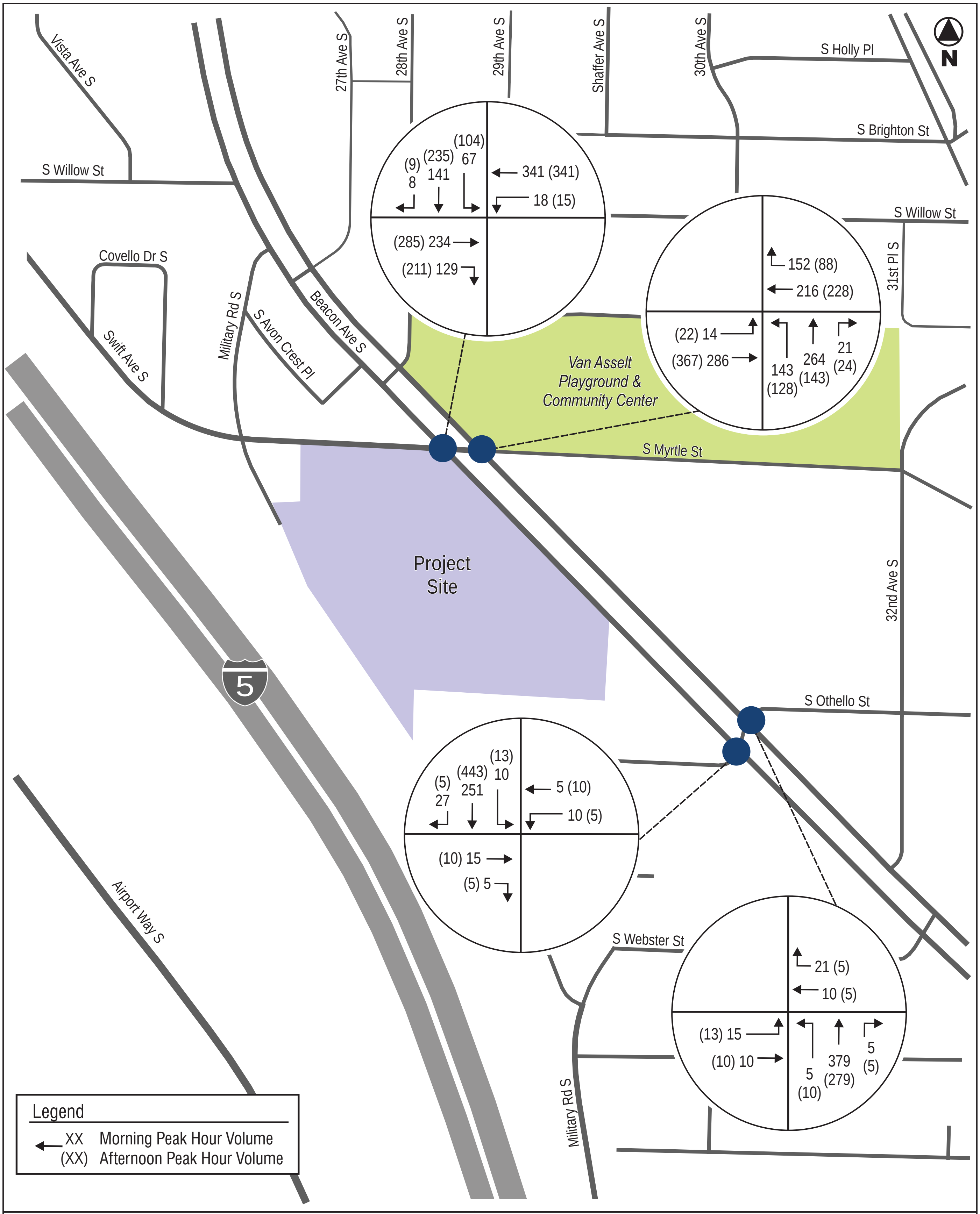

Van Asselt School Addition Project

Figure 4
Forecast 2023-Without-Project Traffic Volumes
Morning and Afternoon Peak Hours

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2.3. Traffic Operations

Level of service (LOS) is a qualitative measure used to characterize traffic operating conditions. Six letter designations, "A" through "F," are used to define level of service. LOS A is the best and represents good traffic operations with little or no delay to motorists. LOS F is the worst and indicates poor traffic operations with long delays. The City of Seattle does not have adopted intersection level of service standards; however, project-related intersection delay that causes a signalized intersection to operate at LOS E or F, or increases delay at a signalized intersection that is projected to operate at LOS E or F without the project, may be considered a significant adverse impact, if increases are greater than 5 seconds. The City may tolerate LOS E or F conditions for automobiles at signalized intersections where physical constraints limit opportunities for widening or where it has established priority for other modes such as transit, pedestrian, or bicycle movements. The City may also tolerate delays in the LOS E or F range at unsignalized intersections where changes such as conversion to all-way-stop-control or signalization are not applicable or desirable.

Levels of service for the study area intersections were determined based on methodologies established in the *Highway Capacity Manual (HCM), 6th Edition*[18] using the *Synchro 10.3* analysis software. Appendix A summarizes level of service thresholds and definitions for signalized and unsignalized intersections. The modeling assumptions for existing conditions, including signal timing, phase splits, and channelization for the S Myrtle Street / Beacon Avenue S intersections were provided by SDOT.[19] The modeling assumptions for 2023-without-project conditions were modified to reflect implementation of the Beacon Avenue PBL project[20] and to reflect SDOT's new policy for signal timing, which codifies support for mobility while minimizing delay to pedestrians.[21] The models also include Leading Pedestrian Intervals (LPIs) as directed by SDOT staff. Table 1 summarizes existing and forecast 2023-without-project levels of service at the study-area intersections for morning and afternoon peak hours.

Table 1. Level of Service Summary – Existing and 2023-Without-Project Conditions

	Morning Peak Hour (8:00–9:00 A.M.)				Afternoon Peak Hour (3:15–4:15 P.M.)			
Intersections	Existing		2023 w/o Project		Existing		2023 w/o Project	
Signalized	LOS[1]	Delay[2]	LOS	Delay	LOS	Delay	LOS	Delay
S Myrtle St / Beacon Ave S – NB	C	30.4	D	35.7	C	25.1	C	31.2
S Myrtle St / Beacon Ave S – SB	C	20.8	C	24.6	C	30.6	D	41.0
Two-Way-Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Othello St / Beacon Ave S – NB	A	1.6	A	1.6	A	1.3	A	1.4
Eastbound / All Movements	B	13.1	B	13.3	B	11.2	B	11.4
Westbound / All Movements	B	11.9	B	12.0	B	10.5	B	10.6
S Othello St / Beacon Ave S – SB	A	1.5	A	1.5	A	1.0	A	1.0
Eastbound / All Movements	B	10.9	B	11.0	B	12.3	B	12.5
Westbound / All Movements	B	11.1	B	11.3	B	12.9	B	13.2

Source: Heffron Transportation, Inc., February 2021.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*

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[18] Transportation Research Board 2016.

[19] M. Dunlap, SDOT, August 27, 2020.

[20] SDOT, *Beacon Hill Protected Bike Lane Traffic Analysis Check-In*, Channelization / Phasing Alternative 2, Sept. 24, 2020.

[21] SDOT, *Policy for Traffic Signal Cycle Time, and Pedestrian Signal Timing and Actuation*, January 27, 2021. The new policy sets maximum signal cycle lengths by corridor type and Comprehensive Plan designation, reduces walk speed calculations, and establishes criteria for pedestrian recall phases. The modeling was also adjusted to add Leading Pedestrian Intervals (LPIs) as directed by SDOT staff.

As shown, the S Myrtle Street / Beacon Avenue S intersections currently operate at LOS C during both peak hours. The S Othello Street / Beacon Avenue S intersections operate at LOS A overall (with all movements at LOS B or better). Changes assumed at the S Myrtle Street / Beacon Avenue S intersection as part of the Beacon Avenue PBL project, combined with assumed traffic increases, are projected to increase average delays by between 4 and 11 seconds and degrade operations to LOS D at the northbound intersection in the morning and at the southbound intersection in the afternoon.

2.4. Parking Supply and Occupancy

On-street parking at and around the Van Asselt School site was surveyed in June and July 2020 to determine the existing parking supply and occupancy. The results of those surveys were used to estimate how parking occupancy could be affected by new parking demand generated by the modernized and expanded school (which is presented later in Section 3.5). The following sections describe the on-street parking supply as well as the observed parking occupancy and utilization rates.

2.4.1. Methodology and Study Area

Detailed on-street parking studies were performed and supply was documented according to the methodology outlined in the City's Tip #117. Although Tip #117 was created for another purpose, it outlines the City's preferred methodology to determine the number and type of on-street parking spaces that may exist within a defined study area, and how much of that supply is currently utilized at different times of the day. This analysis was completed to document the existing supply and how it is utilized.

The study area for the on-street parking analysis included all roadways within an 800-foot *walking* distance from the school site, as is typically required by the City of Seattle. The 800-foot walking distance results in a study area that extends to just west of Swift Avenue S, S Willow Street to the north, just north of S Webster Street, and just east of 32nd Avenue S. Details about parking supply and occupancy are provided in the following sections. The study area consists primarily of single-family residential land uses, with some institutional uses, such as churches and a community center. Many of the residential properties have garages and driveways; some area residents also use on-street parking.

The study area was separated into individual block faces. A block face consists of one side of a street between two cross-streets. For example, the north side of S Myrtle Street, between Military Road S and Beacon Avenue S is one block face (identified as block face 'AY' for this study). Figure 5 shows the study area and block face designations.

2.4.2. Existing On-Street Parking Supply

Each block face was measured and analyzed to determine the number of available on-street parking spaces. First, common street features—such as driveways, fire hydrants, and special parking zones—were noted and certain distances adjacent to the street features were noted. No on-street parking capacity was assumed within 30 feet of a signalized or marked intersection, within 20 feet of an uncontrolled intersection, within 15 feet on either side of a fire hydrant, or within 5 feet on either side of a driveway or alley. The remaining unobstructed lengths between street features were converted to legal on-street parking spaces using values in the City's Tip #117. Based on extensive past experience of Heffron Transportation preparing on-street parking utilization studies, a trend has been observed that the increased popularity of smaller cars and the tendency for drivers to park closer together in areas with higher utilization can result in more available supply than would be suggested by the Tip #117 guidance. Detailed parking supply by block face is provided in Appendix B.

The parking supply survey determined that there are 256 on-street parking spaces within the study area (including the public parking within the Beacon Avenue S median), the majority of which have no signed restrictions. After accounting for restrictions such as school-bus load zones along the school frontage (totaling 17 spaces), the total supply is 239 parking spaces for all analysis time periods.

Van Asselt School
Addition Project

Figure 5
Study Area for On-Street Parking
Utilization Survey

heffron
transportation inc

2.4.3. On-Street Parking Occupancy

At the time of this analysis, schools were out for summer and expected to remain closed with remote learning in fall 2020 due to the COVID-19 pandemic crisis. Many residents shifted to home-based work during the pandemic. As a result, midday on-street parking demand within Seattle's residential neighborhoods, such as the streets within the project study area, is likely higher than normal even though there was no school-related parking demand.

Parking occupancy counts were performed in early July 2020. Weekday occupancy counts were performed during early morning (between 7:00 and 7:45 A.M.), the time when staff typically begin to arrive at the school, and mid-morning (between 10:30 and 11:15 A.M.), the time when school-day parking is typically highest. Evening counts were performed (between 7:30 and 8:15 P.M.) when occasional school events could occur. The counts were performed on Wednesday, July 1 and Thursday, July 2, 2020. The counts for each day were compiled and averaged and results are summarized in Table 2. On-street parking utilization was calculated using the methodology described in Tip #117 and is the number of vehicles parked on-street divided by the number of legal on-street parking spaces within the study area or on a specific block face. The study area utilization totals are also shown. Detailed summaries of the on-street parking occupancy by block face for all counts are provided in Appendix B.

Table 2. On-Street Parking Demand Survey Results

Time Period Surveyed	Parking Supply	Total Vehicles Parked	% Utilization
Weekday Early Morning (7:00 to 7:45 A.M.)			
Wednesday, June 24, 2020	239	75	31%
Thursday, June 25, 2020	239	72	30%
Average	239	74	31%
Weekdays Mid-Morning (10:30 to 11:15 A.M.)			
Wednesday, June 24, 2020	239	61	26%
Thursday, June 25, 2020	239	56	23%
Average	*239*	*59*	*24%*
Weekday Evenings (7:30 to 8:15 P.M.) [b]			
Wednesday, June 24, 2020	239	69	29%
Thursday, June 25, 2020	239	66	28%
Average	*239*	*68*	*28%*

Source: Heffron Transportation, Inc., July 2020

As shown, the surveys determined that on-street parking within the study area ranged from 23% to 31% occupied; the number of unused parking spaces ranged from 164 to 183 spaces over six separate observations. For the purpose of evaluating the potential on-street parking impacts associated with new development, the City considers utilization rates of 85% or higher to be effectively full. The survey determined that parking utilization was well below this threshold during all time periods.

It is noted that the parking occupancy surveys do not reflect school-related demand that would typically occurs on-street when school is in session and operating normally. In addition, published residential parking accumulation rates for suburban areas[22] suggest weekday demand typically begins to decline after 6:00 A.M. when residents leave their homes for work and school. By mid-morning demand may be

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[22] ITE, *Parking Generation*, 5th Edition, January 2019, Time of Day Distribution for Parking Demand, Multifamily Housing.

36% to 50% of the overnight peak demand. Past observations and parking demand surveys performed around numerous other Seattle school sites have shown that during normal (non-pandemic) conditions, on-street demand typically declines 15% to 25% between 7:00 and 10:00 A.M. even with the on-street demand generated by a nearby elementary school. Therefore, the total study-area parking demand observed during the early- and mid-morning periods are likely higher than would be expected during normal (non-pandemic) conditions.

As noted previously in Section 2.2.2, new residential development projects were under construction at the time of this analysis at 7100 and 7118 Beacon Avenue S, across Beacon Avenue S to the east of the school site. The development at 7100 Beacon Avenue S will have 10 residential units and 5 live/work units with parking for 12 vehicles. The analysis prepared for the project indicates it could have parking overspill or 2 or 3 vehicles during the overnight hours. The development at 7118 Beacon Avenue S will have 34 townhomes and 8 live work units with parking for 32 vehicles. Based on parking analysis prepared for the project, the code requirement for parking was 17 spaces and peak demand was estimated at 24 spaces and the planned supply of 32 spaces would be enough to accommodate its demand on site. These projects are not expected to affect study-area on-street parking conditions during the school day or early evening hours.

2.4.4. Off-Street Parking

Three areas on the site are used for parking. The northwest lot has 16 striped spaces accessed from the west driveway on S Myrtle Street. The recycling/trash/loading area located in the northeastern corner of the site was previously striped with 7 spaces (striping has faded) and is accessed from the eastern driveway on S Myrtle Street. An unmarked gravel and paved area accessed from the church driveway on Beacon Avenue S surrounds the historic original school building on the south end of the site. Aerial imagery from 2015 indicates 5 spaces were striped adjacent to the building, while the remainder of the area has been used for parking. *Google Earth's* historical imagery suggests that parking has occurred on the hard surface play area between the main school building and playfield (such as for special events). The hard-surface play area and the gravel/paved area to the south were used for parking by 70 or more vehicles.

School-day parking demand at middle and elementary schools is primarily influenced by staffing levels and family-volunteer activity. Because schools were closed at the time of the analysis and remained closed through early 2021, representative field counts of on-site parking demand were not possible. Parking observations in July 2020 on the same days and time periods as the on-street parking occupancy counts found negligible demand (average of one vehicle in the early and mid-morning, and five in the evening). This demand may have been generated by building maintenance or other employees in the morning and attributed to use of the athletic fields for recreation in afternoon.

Historical *Google Earth* images were reviewed for weekday parking demand conditions. Two images—one from May 2017 and one from May 2018—appear to reflect midday conditions on weekdays. These images showed 39 and 40 vehicles parked on the site, respectively.

2.5. Traffic Safety

Collision data for the study area intersections and roadway segments were obtained from SDOT's Open Data Portal for the period between January 1, 2017 and the most recent records available as of July 2, 2020 (3.5 years). The data were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project. Table 3 summarizes the collision data.

Unsignalized intersections with five or more collisions per year and signalized intersections with 10 or more collisions per year are considered high collision locations by the City. As shown, all of the study area intersections averaged fewer than two collision per year, and none meet the criteria for a high collision location for the period of time evaluated. None of the reported collisions resulted in fatalities. Overall, these data do not indicate any unusual traffic safety conditions.

Table 3. Collision Summary

Intersection	Rear-End	Side-Swipe	Left Turn	Right Angle	Ped / Cycle	Other	Total for 3.5 Years	Average/ Year
S Myrtle Street / Beacon Avenue SB	0	0	1	1	0	0	2	0.6
S Myrtle Street / Beacon Avenue NB	2	1	0	0	0	0	3	0.9
S Othello Street / Beacon Avenue SB	0	0	0	0	1	0	1	0.3
S Othello Street / Beacon Avenue NB	1	0	0	0	0	0	1	0.3
Roadway Segment	**Rear-End**	**Side-Swipe**	**Left Turn**	**Right Angle**	**Ped / Cycle**	**Other [a]**	**Total for 4 Years**	**Average/ Year**
S Beacon Avenue SB (between S Myrtle Street and S Othello Street) [b]	0	0	0	1	0	4	5	1.4
S Beacon Avenue NB (between S Myrtle Street and S Othello Street)	3	0	0	1	0	0	4	1.1
S Myrtle Street (between Swift Avenue and S Beacon Avenue SB) [c]	3	1	0	0	0	1	5	1.4
S Myrtle Street (between S Beacon Ave SB and S Beacon Ave NB)	1	0	0	0	1	0	2	0.6

Source: City of Seattle Department of Transportation, January 1, 2017 through June 30, 2020, https://data-seattlecitygis.opendata.arcgis.com/datasets/collisions, Accessed July 2, 2020.

a. *'Other' collisions included three vehicles striking an object of the roadway and two with insufficient information to determine type.*

b. *The shared driveway with Beacon Ave Church of God is within this segment. No collisions were specifically attributed to the driveway.*

c. *The School's parking lot driveway is within this segment. No collisions were specifically attributed to the driveway.*

2.6. Transit Facilities and Service

King County Metro Transit (Metro) provides bus service along Beacon Avenue S and S Myrtle Street. On Beacon Avenue S, the southbound Metro bus stop is located at the north end of the curb adjacent to the school separate from the school bus loading areas; the northbound stop is located north of S Myrtle Street. On S Myrtle Street, the eastbound stop is located east of Beacon Avenue S, and the westbound stop is located east of Beacon Avenue S opposite the school site. These stops are served by Metro Routes 36 and 107. Route 36 provides all-day service seven days per week between Downtown Seattle, Beacon Hill and Rainier Beach, with weekday headways (time between consecutive buses) of 8 to 10 minutes. Route 107 provides all-day service seven days per week between Beacon Hill, Georgetown, Rainier Beach, and Renton, with weekday headways of 15 to 30 minutes.

Most of the west curb of Beacon Avenue S adjacent to the school is reserved for "School Bus Only, 7 AM to 4 PM." School bus transportation would continue to be available to Kimball Elementary School students who qualify while it occupies the Van Asselt site on an interim basis. As outlined in the current *Transportation Service Standards:*[23]

> *Elementary and K-8 students who live within the attendance area or linked attendance area boundaries and outside the designated walk boundaries are eligible for district arranged transportation. Specialized transportation is provided in the following circumstances:*
>
> *a. Students who require specialized transportation services as determined by their Individualized Education Program (IEP); and/or*
> *b. Students requiring medical transportation as approved by District Health Services.*

2.7. Non-Motorized Facilities

Sidewalks exist on both sides of the arterial streets in the vicinity of the project site; they are intermittent on local access streets. There is also a shared-use pathway within the landscaped median of Beacon Avenue S. The signalized S Myrtle Street / Beacon Avenue S intersections have crosswalks and pedestrian signals across all legs. There are also crosswalks with signage across Beacon Avenue S near the south end of the school site. There is a protected bike lane in each direction along S Myrtle Street, which transition as sharrows in the outside lanes approaching Beacon Avenue S.

As described previously, the City's *Adopted Seattle Bicycle Master Plan (BMP)* includes the Beacon Avenue Protected Bike Lane (PBL) project that will enhance the existing shared-use trail within the Beacon Avenue S median. Although not currently fully funded and the timing of implementation is uncertain, it was assumed to be in place as part of the forecast 2023 conditions. Changes to the signal operations at the S Myrtle Street / Beacon Avenue S intersection were assumed in the future to accommodate the planned Beacon Avenue PBL crossing. In addition, the future-conditions analysis includes LPIs, which provide an advance signal for the crosswalks.

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[23] SPS, *Revised Transportation Service Standards 2020-21: Ridership Eligibility*, Effective Sept. 1, 2020.

3. PROJECT IMPACTS

This section describes the conditions that would exist with the Van Asselt Middle School Addition project and the school operating at its highest planned interim enrollment capacity of up to 1,000 middle school students. Vehicle trip estimates associated with the school addition were added to the 2023-without-project traffic volume forecasts. Level of service analyses were performed to determine the proposed project's impact on traffic operations in the study area. Parking demand and the potential change to on-street parking utilization was also estimated.

3.1. Transportation Network

In coordination with SDOT, the project would reconfigure the existing parking area within the Beacon Avenue S median strip adjacent to the school site to create a school load/unload zone for automobiles. This median reconfiguration would consist of the elements listed below.

- The existing angle parking spaces would be converted to about 10 parallel load/unload/parking spaces, to accommodate passenger vehicle load/unload for students. During the morning arrival and afternoon departure periods, these spaces would be signed for School Load Only, but could be available for parking at other times of day.

- An additional mid-block crosswalk would be added extending across both directional segments of Beacon Avenue S and aligned with the school's existing main entrance (about 275 feet southeast of S Myrtle Street).

- Both the existing and new crosswalk would be raised to curb height within the median.

- ADA-compliant ramps would be added for the new and existing mid-block crosswalks across both segments of Beacon Avenue S.

- Speed cushions would be added approaching both crosswalks in both directions.

No other physical changes to the surrounding transportation network are proposed as part of the project. School buses would continue to use the load zone on the west (southbound) side of Beacon Avenue S.

3.2. Traffic Volumes

The proposed project would result in new vehicular, pedestrian, and bicycle activity on the surrounding transportation network. With the addition, the school is expected to have a peak enrollment capacity of up to 1,000 students. The school project is expected to generate an increase in daily and peak hour traffic compared to without-project conditions. The following describes the method used to estimate project-generated traffic.

3.2.1. School Trip Generation

Trip generation estimates for school projects are generally developed using one of two methods. For new schools, rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*[24] can be applied. ITE has compiled surveys of vehicle trip generation for existing sites throughout the United States, and has developed rates based on numbers of students and school-building sizes.

As discussed previously, the Van Asselt site is planned to temporarily house other SPS middle schools (Mercer, Aki Kurose, and Washington) as their respective buildings are renovated. After the middle school occupancies, the site may also be used as an interim location for elementary schools undergoing renovations or replacements. It is possible that two elementary schools could be housed at the site at the same time, but in this case their schedules would be staggered so their respective arrival and departure periods would occur at separate times. Based on review of the range of potential interim use scenarios, it was determined that a middle school operating at the planned enrollment capacity of up to 1,000 students would result in the highest estimated peak hour trip generation. It is the worst-case scenario analyzed in this report. That worst-case scenario is anticipated for one of the interim middle school occupancies—Mercer Middle School—for two years. The other two middle schools—Aki Kurose and Washington—currently have enrollments that are lower than 1,000 students (727 and 603, respectively).[25] As a result, traffic impacts during those interim occupancies are expected to be less than evaluated for the worst-case condition.

For expansions of existing schools, actual counts of the existing school are preferred. This method works best for schools located in areas where school-related traffic can easily be isolated and identified, and traffic counts can be used to develop rates specifically for that school. However, since the site's most recent use was as an elementary school, there are no counts available at the site that reflect the planned middle school use. Additionally, due to the COVID-19 pandemic crisis and remote learning since March 2020, counts at this site or at Mercer Middle School would not be representative. Therefore, the average rates published for Middle/Junior High Schools (Land Use 522) published by ITE (0.70 trips per student in the morning peak hour and 0.35 trips per student in the afternoon peak hour) were applied. These rates may be conservatively high based on counts conducted in April 2016 at Washington Middle School, which indicated rates that were between 65% and 75% of the published ITE rates.

The ITE rates were applied to the proposed enrollment capacity for the interim middle schools at Van Asselt School (1,000 students). Table 4 presents the resulting trip estimates for the expanded Van Asselt School. These estimates include school bus trips, employee trips, and family-vehicle trips. As shown, at full enrollment capacity, the school is estimated to generate 700 trips (385 in, 315 out) in the morning peak hour and 350 trips (161 in, 189 out) in the afternoon peak hour.

Table 4. Van Asselt School Addition – Trip Generation Estimates

		Morning Peak Hour (8:00–9:00 A.M.)			Afternoon Peak Hour (3:15–4:15 P.M.)		
Site Condition	Enrollment	In	Out	Total	In	Out	Total
Van Asselt School with Addition	1,000 students [a]	385	315	700	161	189	350

Source: Heffron Transportation, Inc., October 2020.

a. Reflects planned capacity of school to house on interim basis three middle schools.

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[24] ITE, 10th Edition, September 2017.

[25] Seattle Public Schools, P223 Enrollment Report, October 1, 2020.

For comparison, trip generation estimates for a 500-student elementary school were also developed as this is the largest likely size for one of the two that could be located at the Van Asselt site on an interim basis. Note that there are currently six Seattle elementary schools with enrollment over 500 students; five of which are already located within new buildings. The one not in a new building—Bryant—is not expected to use the Van Asselt site. For this analysis, average morning arrival and afternoon dismissal peak hour trip generation rates were derived from video trip generation counts at five existing Seattle Schools: Schmitz Park (before it was closed), Arbor Heights, Loyal Heights, Olympic Hills, and Thornton Creek. The average morning peak hour trip generation rate was found to be 0.65 trips per student; the afternoon peak hour rate was found to be 0.47 trips per student. These rates are comparable to or higher than to the average rates published for Elementary Schools (Land Use 520) in the *Trip Generation Manual* (0.67 trips per student in the morning peak hour and 0.34 trips per student in the afternoon peak hour). Since these rates were derived from counts at other Seattle elementary schools and reflect current trends related to family-vehicle drop-off and pick-up activities, they are most appropriate for use in evaluating trip generation for an elementary temporarily located at the Van Asselt site.

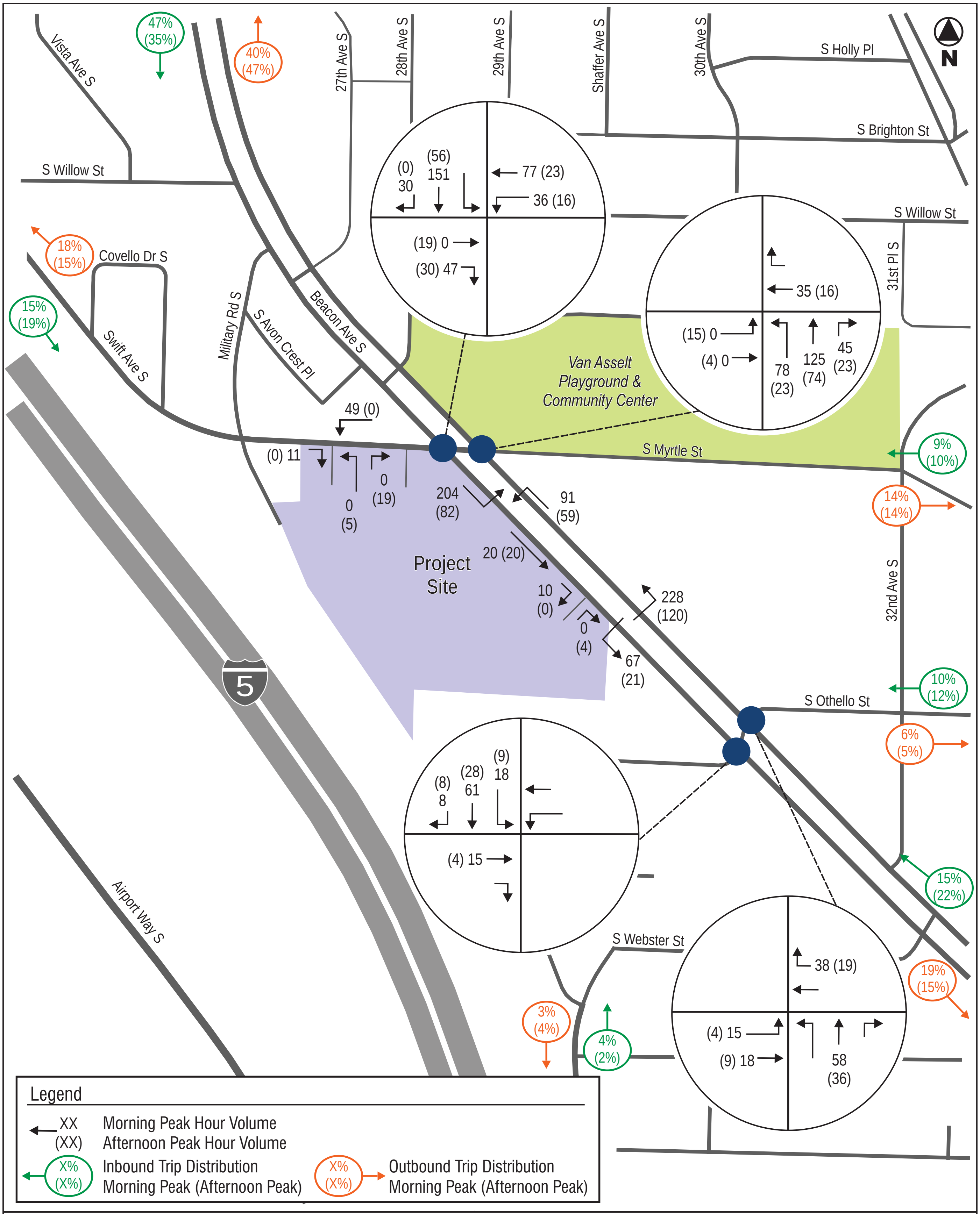
Based on the derived rates described, a 500-student elementary is estimated to generate 325 morning peak hour trips and 235 afternoon peak hour trips—substantially lower than the worst-case condition described for the interim 1,000-student middle school at the site.

3.2.2. Trip Distribution and Assignment

The three middle schools (Mercer, Aki Kurose, and Washington) planned to be housed on an interim basis at the Van Asselt site while their respective buildings are renovated are located in southeast Seattle. The site is located within the Mercer enrollment area; the Washington enrollment area is located to the north and Aki Kurose enrollment area is located to the south. As noted, both Washington and Aki Kurose currently have smaller enrollments than Mercer.

Trip distribution patterns for the new school trips were developed to reflect the highest potential traffic impact in the study area. This is expected to occur when the occupying school's enrollment area is located primarily to the north of the school site, resulting a higher volume of school-generated traffic through the S Myrtle Street / Beacon Avenue S intersections. The distribution patterns also reflect the existing and expected future travel characteristics of the local roadway network including the location of parking supply, student drop-off/pick-up area, bus loading area, and the access driveways. Most of the morning and afternoon peak hour trips typically consist of passenger vehicles (for student drop off and pick up) and school buses. Some trips are also generated by teachers or staff.

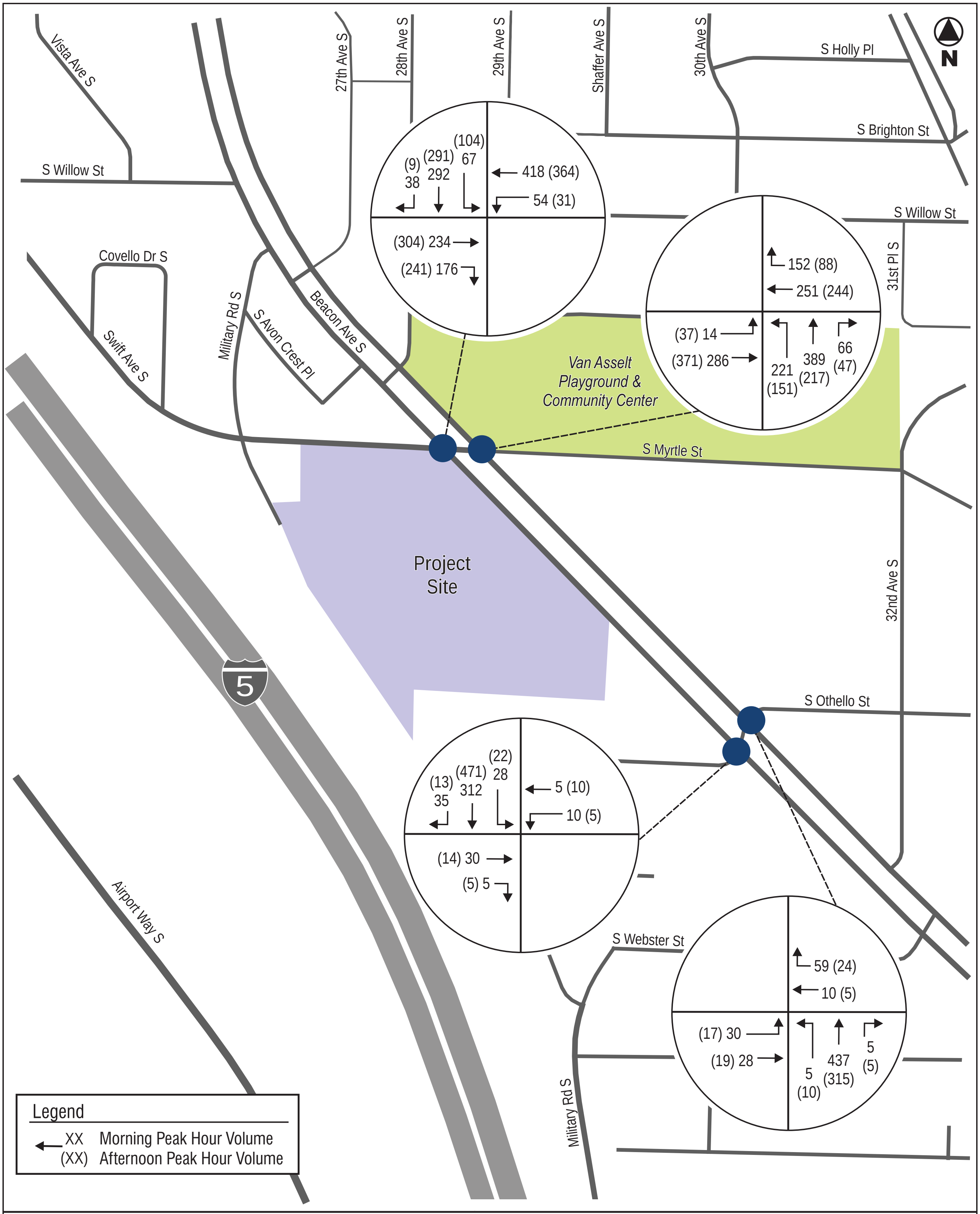
School buses would continue to use the load/unload zone on the west (southbound) side of Beacon Avenue S. Passenger-vehicle load/unload for students is expected to occur in the southbound direction, in a designated area in the center of the Beacon Avenue S median adjacent to the school. Figure 6 shows the traffic distribution patterns and assignments of net new morning and afternoon peak hour trips. The net new peak hour school trips were added to the forecast 2023 without-project traffic volumes to reflect future conditions with the renovated school. Figure 7 shows the forecast 2023 with-project morning and afternoon peak hour traffic volumes.



Van Asselt School Addition Project

Figure 6
Project Trip Distribution and Assignment
Morning and Afternoon Peak Hours

heffron transportation inc



Van Asselt School Addition Project

Figure 7
Forecast 2023-With-Project Traffic Volumes
Morning and Afternoon Peak Hours

heffron transportation inc

3.3. Traffic Operations

Intersection levels of service for future with-project conditions were evaluated using the same methodology described previously. The additional enrollment capacity is expected to increase pedestrian trips and the number of pedestrian crossings at the nearby study intersections. The operational analyses accounted for potential increases in pedestrian crossing activity, the peaking characteristics of school traffic (school drop-off and pick-up primarily occurs during about 20 minutes in the peak hours), and the potential increases in school bus trips to and from the site.

Table 5 shows the results of the analysis; levels of service for the without-project conditions are shown for comparison. The table shows that traffic generated by the proposed project is expected to add delay at the study area intersections. With no changes to the signal timing, cycle length, or turn restriction, operations at the S Myrtle Street / Beacon Avenue S intersection are projected to degrade to LOS F/E (northbound/southbound) during the morning peak hour and to LOS E/E (northbound/southbound) during the afternoon peak hour. The S Othello Street / Beacon Avenue S intersection is forecast to remain operating at LOS A overall with all movements at LOS C or better during both peak hours.

Table 5. Level of Service Summary – Forecast 2023 Conditions Without- and With-Project

	Morning Peak Hour (8:00–9:00 A.M.)				Afternoon Peak Hour (3:15–4:15 P.M.)			
Intersections	2023 w/o Project		2023 w/ Project		2023 w/o Project		2023 w/ Project	
Signalized	LOS [1]	Delay [2]	LOS	Delay	LOS	Delay	LOS	Delay
S Myrtle St / Beacon Ave S – NB	D	35.7	F	88.9	C	31.2	E	56.0
S Myrtle St / Beacon Ave S – SB	C	24.6	E	65.5	D	41.0	E	75.3
Two-Way-Stop Controlled	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
S Othello St / Beacon Ave S – NB	A	1.6	A	4.6	A	1.4	A	2.3
Eastbound / All Movements	B	13.3	C	20.3	B	11.4	B	13.1
Westbound / All Movements	B	12.0	C	15.3	B	10.6	B	11.5
S Othello St / Beacon Ave S – SB	A	1.5	A	2.1	A	1.0	A	1.1
Eastbound / All Movements	B	11.0	B	13.7	B	12.5	B	14.8
Westbound / All Movements	B	11.3	B	13.8	B	13.2	C	15.6

Source: Heffron Transportation, Inc., February 2021.

1. *Level of service.*
2. *Average seconds of delay per vehicle.*

To mitigate the potential impacts of the worst-case interim school use (1,000 students by Mercer Middle School for two years), prior to occupancy in 2023, SPS has coordinated with SDOT a range of measures to modify and optimize the signal operations. The exact changes would be dependent on the status of the Beacon Avenue PBL, but modifications examined include changes to the cycle length (increasing from 100 seconds to 110 or 120 seconds) and optimization of phase splits. With these modifications, intersection operations with the Van Asselt project could be improved to LOS D with less than 55 seconds of delay at both northbound and southbound intersections in the morning and afternoon peak hours. It is noted that, although the increase in cycle length to 120 seconds would result in the best operations and the lowest vehicle delays, the City of Seattle prefers to keep cycle lengths shorter to benefit pedestrian movements. SDOT may select shorter cycle lengths (e.g., 110 seconds or maintaining the existing 100 second cycle) and tolerate vehicular delays in the LOS E range in order to maintain better operations for pedestrian and bicycle movements through the intersections.

In addition to the cycle and phase split optimization, SDOT may explore options to restrict left-turns from S Myrtle Street to Beacon Avenue S (both directions) as it has at the S Columbian Way / Beacon Avenue S intersection. For drivers desiring to turn left on Beacon Avenue S, this change would require them to turn right at Beacon Avenue S and then complete a U-turn through existing median connections north or south of the S Myrtle Street intersection (a movement known as a Michigan left-turn). If implemented, this modification could further improve operations and reduce delays; however, it is acknowledged that community support for these types of turn restrictions may be limited.

In addition to working with SDOT to implement signal optimization measures, SPS would develop a robust Transportation Management Plan (TMP) with the goal of reducing automobile trips to and from the site. The anticipated TMP elements are described in the *Recommendations* section of this report. With the signal timing and TMP measures SDOT would not consider the added school-related delay as a significant impact.

3.4. Site Access and Circulation

School bus load/unload would occur along the S Beacon Avenue frontage where it is currently located; a departure from City code is not anticipated for on-street bus loading. The number of school buses would vary depending on the school occupying the building; it is expected range from 4 to 12 full size buses and 3 to 8 shorter SPED buses. The designated bus load/unload zone has capacity to accommodate about 9 full size buses at a time. During years in which the occupying school operates more buses than can be accommodated in the bus zone, SPS would need to stage the school bus arrivals to ensure that they do not exceed the available space. During morning student delivery, buses arrive at different times, unload, and then leave the site after students are discharged. Therefore, staged bus arrivals may not be needed for mornings. However, in the afternoon, buses typically arrive and wait for dismissal. If the school has more buses than load space, afternoon arrivals will need to be staged. This practice already occurs for some Seattle schools and bus drivers typically find an on-street parking space to wait for the load/unload. Some bus drivers may choose to park in legal on-street parking areas along the southbound lane of Beacon Avenue S north of S Myrtle Street while awaiting the second phase of student loading.

Passenger vehicle load/unload would occur in a designated area in the median strip, which would be reconfigured with the project. It is estimated that about 10 queued vehicles could be accommodated in this area. The morning arrival queue can be modeled directly using Poisson arrival methodologies for a multi-channel service system (i.e., the number of drop-off spaces that can be used simultaneously). Observations conducted by Heffron staff at other Seattle middle schools have found that it takes an average of about 15 to 20 seconds for students to exit a vehicle while at the drop-off space. The higher end of this range equates to a service rate for each drop-off space of 3 vehicles per minute (or a rate of 180 vehicles per hour). With the proposed project at full capacity, the estimated morning arrival volume is 315 family drop-off vehicles (vehicles that both enter and exit the site during the morning peak hour, as shown in Table 4). Field observation at existing schools indicates that most student drop-offs occur over about a 30-minute timespan, which equates to an estimated arrival rate of 388 vehicles per hour. The proposed student loading area would have sufficient length for four vehicles to unload at a time. This information was entered into a queueing model (results provided in Appendix C), which predicted an estimated 95th-percentile queue of 7 vehicles. Therefore, the estimated 10-vehicle queuing capacity is expected to accommodate morning drop-off activities. Some family drivers may choose to use on-street parking in the vicinity to drop off students a block or more from the school in order to limit time in the median load/unload zone.

Although the queue analysis and estimation model are reasonable for application to morning arrival queues, the afternoon queueing conditions are different. Parents often arrive prior to school dismissal during a time when no vehicles are being loaded (or serviced). This causes vehicle queues to develop prior to the student dismissal. Field observation conducted by Heffron Transportation staff at other schools has found that the maximum afternoon queues occur just prior to dismissal, and typically dissipate in within 10 to 15 minutes after dismissal as students load into their vehicles.

Heffron Transportation staff observed the afternoon vehicle queue just prior to dismissal at Aki Kurose Middle School in October 2016. Aki Kurose had a student enrollment of 741 students,[26] and 32 queued vehicles were counted along the school frontages just prior to dismissal. Factoring up to reflect an enrollment of 1,000 students results in an estimated afternoon queue of 44 vehicles. Based upon these observations, it is expected that without management measures, maximum afternoon vehicle queues generated by the proposed school would likely exceed 10 vehicles and with potential to spill out on to Beacon Avenue S. Therefore, the TMP (mentioned in the previous section) would also include measures to address and minimize possible queuing impacts within the median and in the surrounding vicinity.

The analysis indicates that the school driveway intersections and access points to the median load/unload area would operate at LOS A overall with all movements at LOS C or better.

3.5. Parking Supply and Demand

3.5.1. Changes to Parking Supply

The project would expand the parking lot at the northwest corner of the site from 16 to 59 spaces, and the northeast recycling/trash/loading area would be slightly reconfigured and striped with 3 parking spaces (reduced from the prior 7 where striping has faded). A small new parking lot with 6 spaces and circulation loop would be constructed at the southeast corner of the site with access from the existing church driveway on Beacon Avenue S. This would increase the total on-site parking supply from 23 (including 7 where striping has faded) to 68 spaces. This parking supply is expected to meet the City's code requirement and no departure for reduced parking is anticipated.

As required by SDOT as part of the Beacon Avenue S median reconfiguration, the project would convert existing 25 angle parking spaces to about 10 parallel spaces for passenger vehicle load/unload for students. During the morning arrival and afternoon departure periods, these spaces would be signed for School Load Only, but could be available for parking at other times of day. This would reduce the total study area on-street parking supply from 239 to 214 spaces during morning arrival and afternoon dismissal periods and to 224 spaces midday and on nights and weekends. No other changes have been identified in the study area that would affect the on-street parking supply.

3.5.2. Parking Demand

School Day Parking

School-day parking at middle schools is primarily influenced by staffing levels and family-volunteer activity. With the proposed addition and the school operating at its planned capacity of 1,000 students, the school could have up to 108 employees. Future parking demand estimates were developed based on studies by Heffron Transportation at Seattle schools, which indicate school-day peak parking demand rates ranging from 1.06 to 1.23 vehicles parked per employee. These rates account for parking demand generated by all users, including employees and visitors. It is acknowledged that rates at the Van Asselt site could be lower than observed at other Seattle schools due to the high-frequency bus service adjacent to the site. Mode-of-travel data for the site were derived from 'Journey-to-Work' survey results from the year 2010 Census compiled by the PSRC. From these surveys, results for employees working in Transportation Analysis Zones (TAZs) 198 and 199 (the zones that include and surround the project

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[26] Seattle Public Schools, Enrollment Reporting (P223), https://www.seattleschools.org/departments/dots/data_reporting___reporting_and_data_analysis_/enrollment_reporting___p223, Accessed October 2020.

site) indicate that 20% of employees working in these zones take transit (19%) or bike to work (1%). The low end of the parking demand rates presented above assume a 20% reduction to reflect the likelihood of transit and bike use by employees; the high-end demand rate assumes no adjustment to reflect a worst-case condition.

Based on the expected number of employees at the enrollment capacity and the mode-of-travel adjustment described, the school could generate peak demand of 91 to 133 parked vehicles with variations likely depending on the number of part-time staff and visitors/volunteers on site at any given time. Of these, 68 vehicles could be accommodated on site. After accounting for demand expected to occur on-site, the school is estimated to generate demand of 23 to 65 vehicles in on-street spaces surrounding the site midday on school days.

As presented previously, there are 239 on-street parking spaces within the site vicinity, and 59 vehicles were parked in them during the midday hours, leaving 180 unused spaces. This occupancy level reflected conditions with schools closed and many local residents likely remaining home due to the COVID-19 pandemic. Assuming morning residential demand in the vicinity under normalized conditions would be reduced to about 80% of the level observed in July 2020, which would leave an estimated 192 unused parking spaces in the neighborhood without the school. The Beacon Avenue S median reconfiguration would eliminate 25 angle parking spaces and replace those with 10 parallel spaces. During the morning arrival and afternoon departure periods, these spaces would be signed for School Load Only, but could be available for parking at other times of day. Combined with the overspill demand, the number of unused parking spaces with the proposed school would range from 112 to 154 spaces. Overall school-day utilization is expected to remain between 31% and 50%, which is acceptable parking utilization by the City and school impacts would not be considered significant.

Event Parking

Van Asselt School may host events periodically throughout the school year. Many of the events would have relatively modest attendance including PTSA monthly board meetings and monthly general membership meetings, parent meetings for clubs, and film screening nights. Larger events could include the Winter Concert, Math Night, Science Night, Multicultural Night, Jazz, Band, and Orchestra Concerts, Talent Shows, and/or fundraising events. The largest evening events held for middle schools are typically the annual Open House (Curriculum Night) in late September.

The on-street parking survey results indicated an average of 171 unused on-street parking spaces (out of 239 total) in the school vicinity on evenings without events at the school. With the reduction resulting from the Beacon Avenue S median reconfiguration, this number would be reduced to 156 spaces. This assumes that the 10 loading spaces in the median could be used for evening parking. Up to 122 additional spaces could be utilized before reaching 85% occupancy, which is the level at which the City considers parking to be effectively full and may examine additional parking management measures.

SPS will establish a shared-use agreement with the Beacon Avenue Church of God that will allow school use of the church’s parking lot (about 14 spaces) for school/community events, as scheduled with the church (school will avoid conflicts with church services). The hard-surface play area west of the main school building may also be used for occasional evening or weekend event parking. Historical aerial imagery and plans for fire access indicate that 35 to 40 vehicles could park in that area for events depending on the placement of portables and their access ramps.

Observations conducted by Heffron Transportation staff at other schools have found typical larger evening events have between 3 and 3.5 attendees per parked vehicle, factoring in multiple attendees that arrive in one vehicle (e.g., students with families) and attendees that may be dropped off at an event without generating parking demand. Based on these rates, the available parking supply (68 on-site spaces, 35 to 40 temporary spaces on hard-surface play area, 14 at the church, and 122 on-street spaces) would be sufficient to accommodate occasional events with between 700 and 850 people before on-street parking utilization reaches 85% occupied.

It is recommended that the District development an Event Management Plan to reduce parking impacts during events that have potential attendance of 700 or more. Measures could include: 1) separating large events by grade to reduce overall attendance on any given evening; 2) holding large events at an off-site location; and/or 3) securing additional off-site parking.

3.6. Traffic Safety

The collision data provided for the study area did not indicate any unusual collision patterns that would impact or be impacted by the proposed project. The project could increase traffic at the study-area intersections and statistically, the number of collisions could increase as traffic increases.

SDOT would require the project to install an additional mid-block crosswalk extending across both directional segments of Beacon Avenue S and aligned with the school's existing main entrance. The existing and new crosswalk would be raised to curb height within the median and speed cushions would be added approaching both crosswalks in both directions. Crossing guards would be stationed at the marked mid-block crosswalks on Beacon Avenue S and other locations as determined by the Seattle Schools Traffic Safety Committee (SSTSC). These modifications would enhance safety conditions adjacent to the school. The project does not include any other changes to the roadway network that are expected to result in new adverse safety concerns.

3.7. Transit

Some transit trips are expected to be generated by teachers or staff at the site; however, the traffic and parking demand estimates do not rely on reductions in auto trips to account for any staff transit usage. Some student trips may also occur on Metro Transit as ORCA cards may be provided for eligible students. SPS coordinates with Metro to address expected student demand on certain routes. Since the nearest stops are adjacent to the school on S Myrtle Street and Beacon Avenue S, coordination with Metro is recommended to confirm service availability and capacity.

School buses would continue to serve the site. As outlined in the current *Transportation Service Standards:*[27]

> *Middle school students who live within the boundaries of the Seattle School District and who live more than 2 miles from their assigned school are eligible for transportation. District arranged transportation is provided for those students attending a middle school in their attendance area or linked service area. ORCA cards may be provided for students attending a school outside of their service area or linked service area if they live farther than 2 miles from the school.*
>
> *Specialized transportation is provided in the following circumstances:*
>
> c. *Students who require specialized transportation services as determined by their Individualized Education Program (IEP); and/or*
> d. *Students requiring medical transportation as approved by District Health Services.*

Increased transit and school-bus use by students will be a key focus of the recommended TMP in order to reduce the number of automobile trips made to and from the school site and to minimize traffic delays at the S Myrtle Street / Beacon Avenue S intersection. With the signal operational improvements described previously and with reduced traffic demand from the TMP, the project is not expected to result in adverse impacts to transit facilities or service.

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[27] SPS, *Revised Transportation Service Standards 2020-21: Ridership Eligibility*, Effective Sept. 1, 2020.

3.8. Non-Motorized Facilities

Van Asselt Middle School, with increased enrollment capacity, is expected to generate pedestrian trips within the site vicinity. It is anticipated that some increase in pedestrian activity would occur along Beacon Avenue S adjacent to the school, and S Myrtle Street to the east. There would also likely be increases in bicycle trips within the site vicinity.

The site frontages already have sidewalks and marked crosswalks along primary school walking routes. The shared-use trail and planned Beacon Avenue PBL would enhance bicycle access to and from the school. The additional mid-block crosswalks required as part of the median reconfiguration (described previously) would improve the non-motorized facilities near the site.

On site, the project would provide the code-required 192 bicycle parking spaces (144 long-term covered and secured spaces and 48 short-term spaces). Increased pedestrian and bicycle transport by students will be a key focus of the recommended TMP in order to reduce the number of automobile trips made to and from the school site and to minimize traffic delays at the S Myrtle Street / Beacon Avenue S intersection. The project is not expected to result in adverse impacts to non-motorized facilities.

3.9. Short-Term Construction Impacts

Construction is planned to start in summer 2022 and end prior to fall 2023 when the updated school is planned to be ready for occupancy as a middle school. The school would remain open and operating as an interim elementary school site (Kimball Elementary) during construction.

3.9.1. Construction-Period Access Operations

The proposed new building construction is planned at the southern portion of the site and would affect the existing access, informal parking, and vehicle load/unload areas. However, SPS plans to implement the Beacon Avenue S median reconfiguration to create the school load/unload zone prior to construction. The existing school-bus load/unload zone on Beacon Avenue S would remain and is expected to adequately accommodate the number of buses that will serve the interim school during construction.

During construction, pedestrians (including students) will be routed around construction activities using temporary walkways, fencing, and signage and movements around the south portion of the site would be partially restricted. SPS would work with the Kimball Elementary School principal to develop an TMP for the interim use of Van Asselt site. The anticipated interim TMP elements are described in the *Recommendations* section of this report.

3.9.2. Construction-Period Parking Conditions

The shared-use agreement with the Beacon Avenue Church of God will allow parking by construction workers during construction. Construction personnel are also expected to park on-street in the site vicinity. Although parking demand generated by construction workers may be noticeable to some local residents, the parking occupancy on the surrounding roadways was found to be about 24% to 31% utilized during weekdays with more than 160 unused spaces. The unused spaces would accommodate the temporary added demand during construction and is not expected to result in significant adverse impacts to study-area parking conditions.

3.9.3. Construction-Period Earthwork and Employee Activity

The construction effort would include some demolition and earthwork (excavation and fill for foundations, grading, and stripping) estimated to require removal of about 8,700 cubic yards (cy) of material. Assuming an average of 20-cubic yards per truck (truck/trailer combination), the excavation and fill effort would generate about 435 truckloads (435 trucks in, 435 trucks out). The earthwork cut, fill, grading, and stripping activities are tentatively scheduled to occur over two weeks in late June and early July 2022. This would result in an average of about 88 truck trips per day (44 in, 44 out) and 11 truck trips per hour over ten weekdays. This volume of truck traffic may be noticeable to residents living in the immediate vicinity, but access would occur directly to one of two adjacent arterials—Beacon Avenue S or S Myrtle Street. The effort would be short in duration at a time (summer) when students are not in school and would therefore not result in significant adverse traffic impacts.

The construction effort would also involve employee and equipment trips to and from the site. Construction workers usually arrive before the morning peak traffic period and depart prior to the commuter PM peak period; school construction work shifts are usually from 7:00 A.M. to 3:30 P.M., with workers arriving between 6:30 and 6:45 A.M., but work not starting until 7:00 A.M. Generally, it is preferred that construction employee arrival and departures as well as transport and delivery of materials for construction not occur during student arrival or dismissal times to avoid conflicts. The number of workers at the project site at any one time would vary depending upon the construction element being implemented.

4. SUMMARY AND RECOMMENDATIONS

The following sections summarize the findings and recommendations of the analysis.

4.1. Short-Term Conditions – Construction

- Construction is planned to begin in summer 2022 with occupancy of the new classrooms by fall 2023. During construction, the school would be occupied as an interim elementary school.
- SPS plans to implement the Beacon Avenue S median reconfiguration to create the school load/unload zone for the interim elementary school use prior to construction.
- During construction, pedestrians would be routed around or directed to avoid construction area using temporary walkways, fencing, and signage.
- Construction personnel are expected to park at the adjacent Beacon Avenue Church of God (through a shared-use agreement with SPS) and on-street in the site vicinity. Unused on-street supply is expected to accommodate the temporary added demand during the construction period.
- Earthwork transport during construction is estimated to require an average of 88 truck trips per day (44 in, 44 out) and 11 truck trips per hour over ten days. This volume of truck traffic may be noticeable to residents living in the immediate vicinity, but access would occur directly to one of two adjacent arterials, the effort would be short in duration at a time (summer) when students are not in school and would therefore not result in significant adverse traffic impacts.

It is recommended that the contractor and SPS develop a Construction Transportation Management Plan. Details to be included in this plan are described in Section 4.3.

4.2. Long-Term Conditions – Operations

- With the proposed addition, Van Asselt School would have an enrollment capacity of up to 1,000 students and is expected to have up to 108 faculty and staff members.
- Beginning in 2023, Van Asselt School is planned to temporarily house other SPS middle schools (Mercer, Aki Kurose, and Washington) as their respective buildings are renovated. In the future, it may also serve as an interim site for elementary schools during construction.
- During the worst-case middle-school occupancy, the school is estimated to generate 700 trips (385 in, 315 out) in the morning peak hour (8:00 to 9:00 A.M.) and 350 trips (161 in, 189 out) in the afternoon peak hour (3:15 to 4:15 P.M.).
- The additional traffic and pedestrian activity generated by the proposed project is expected to add delay to the study area intersections and turning movements during morning and afternoon peak hours. Without mitigation, the S Myrtle Street is projected to operate at LOS F in the northbound direction during the morning peak hour, and LOS E in the southbound direction during the afternoon peak hour. The intersection is expected to operate at LOS D or better in both directions during the other times of day. All movements at the S Othello Street / Beacon Avenue S intersection are projected to operate at LOS C or better during both peak hours.
- With changes to mitigate the potential worst-case interim school impacts, SPS would coordinate with SDOT to modify and optimize the signal operations at the S Myrtle Street / Beacon Avenue S intersections. Preliminary coordination with SDOT indicates intersection operations could be improved to LOS D during both peak hours.
- School bus load/unload would occur along the S Beacon Avenue frontage where it is currently located. During years in which the occupying school operates more buses than can be

accommodated in the bus zone, SPS would platoon school bus arrivals to ensure that they do not exceed the available space.

- Passenger-vehicle load/unload would occur in a designated area in the median strip, which would be reconfigured with the project. The estimated 10-vehicle queuing capacity is expected to accommodate morning drop-off activities. Management measures would be implemented to minimize afternoon vehicle queues.
- At the proposed enrollment capacity of 1,000 students, the school may generate peak demand of 91 to 133 parked vehicles. Of these, 68 vehicles could be accommodated on site. Unused on-street parking within the site vicinity could accommodate the typical added school-day demand with occupancy expected to remain between 31% and 50%, which is acceptable to the City.
- Occasional large evening events could draw large attendances. The combined parking supply (68 on-site, 35 to 40 temporary, 14 shared, and 122 on-street spaces) would be sufficient to accommodate occasional events with attendance between 700 and 850 people. It is recommended that the District development an Event Management Plan to reduce parking impacts during events that have potential attendance higher than 700 people.

4.3. Recommendations

The following sections identify measures to reduce adverse impacts during short-term construction and long-term operations of Van Asselt School with the proposed addition and planned interim school use. With these measures the project would not result in significant adverse transportation impacts.

4.3.1. Short-Term Conditions – Construction

A. **Construction Transportation Management Plan (CTMP):** The District should require the selected contractor to develop a Construction Transportation Management Plan (CTMP) that addresses traffic and pedestrian control during construction of the new facility. It would define truck routes, lane closures, walkway closures, and parking or load/unload area disruptions, as necessary. To the extent possible, the CTMP would direct trucks along the shortest route to arterials and away from residential streets to avoid unnecessary conflicts with resident and pedestrian activity. The CTMP may also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite.

B. **Interim Transportation Management Plan (TMP):** Prior to construction, the District and Kimball Elementary School (next interim occupant of the Van Asselt School site) should establish or modify an existing Transportation Management Plan (TMP) to educate parents and students about the preferred access and circulation during site construction. It should encourage carpooling and school bus ridership for those eligible. For students living within the walk-zone for the interim site, the TMP should encourage supervised walking (such as walking school buses). The plan should define clear procedures and travel routes and preferred load/unload locations, and identify staffing requirements to manage load/unload activities.

C. **Engage Seattle School Traffic Safety Committee (SSTSC):** The District should continue its ongoing engagement with the SSTSC (led by SDOT) to review walk routes and to confirm crossing guard locations for crosswalks on Beacon Avenue S and at the S Myrtle Street / Beacon Avenue S intersections, as needed.

D. **Update right-of-way and curb-side signage:** The District should work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school-bus load zone on Beacon Avenue S and the passenger-vehicle load/unload zone in the reconfigured Beacon Avenue S median.

E. **Interim Neighborhood Communication Plan for School Event:** Prior to construction, the District and Kimball Elementary School administration should develop a neighborhood communication plan to inform nearby neighbors of large events each year the school is located at the Van Asselt site. The plan should be updated annually (or as events are scheduled) and should provide information about the dates, times, and rough magnitude of large-attendance events. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events.

4.3.2. Long-Term Conditions – Operations

F. **Signal optimization at S Myrtle Street / Beacon Avenue S:** To mitigate the potential impacts of the worst-case interim school use (1,000 students by Mercer Middle School for two years), SPS has coordinated with SDOT a range of measures to modify and optimize the signal operations. Changes would be dependent on the status of the Beacon Avenue PBL, but modifications examined include changes to the cycle length (increasing from 100 seconds to 110 or 120 seconds) and optimization of phase splits. SDOT may select shorter cycle lengths (e.g., 110 seconds or maintaining the existing 100 second cycle) and tolerate vehicular delays in the LOS E range in order to maintain better operations for pedestrian and bicycle movements through the intersections. Signal timing could be re-evaluated when lower-enrollment schools occupy the site.

G. **Initial Middle School Transportation Management Plan (TMP):** Prior to opening the expanded school for interim use by Mercer Middle School, the District should establish a robust Transportation Management Plan (TMP) designed to minimize automobile trips to and from the site and to educate parents and students about the preferred access and circulation patterns for the interim school. The TMP should include the following key components:

1. *Enhanced bus transportation options for students* – SPS should explore options to increase transportation eligibility for students during the interim occupancy period(s). This could occur by temporarily reducing eligibility distance from 2 miles and/or making more students eligible for ORCA cards during the interim occupancy period to take advantage of the adjacent Metro stop. It is noted that this component would require review and approval based on transportation standards in effect at the time (updated annually) and ensuring equity issues are addressed.

2. *Communication of transportation options to families* – The TMP should provide information about transportation options, including walking and biking to and from the site. As noted, the site is located adjacent to an existing shared-use trail along Beacon Avenue S, which is planned to be upgraded by SDOT. The Van Asselt project would add new secure and covered bicycle parking (192 spaces) that could be used by students and staff. Families and students should be encouraged to walk or bike to and from school as frequently as possible or to drop-off and pick-up students one or more blocks from the school to avoid typical peak period congestion near the school site.

3. *Communication of ride-sharing opportunities* – The TMP should include information about ride sharing and carpooling options for families such as King County Metro Transit's School-Based Trip Management program—*SchoolPool*. *SchoolPool* is designed to reduce vehicle trips linked to commuting to school by introducing ridesharing modes like carpooling, walking, biking, busing, and rolling combined with its Safe-Routes-To-School Toolkit to reduce car trips to and from schools and decrease greenhouse gas emissions.

4. *Directions for load/unload and parking procedures* – The TMP should provide written transportation guidelines to families that explain the load/unload procedures and queuing limitations. Parking guidelines would be provided, as well as reminders about observing speed limits and City parking rules on public streets. The TMP should include directions to

family drivers prohibiting vehicle queuing in the travel lanes on Beacon Avenue S and S Myrtle Street. Families should be instructed that as they approach the school by vehicle that, if they see that the loading area queue is full, they should proceed around the block (and/or wait at a safe location off site) and re-enter the load zone a few minutes later. Family drivers may also park and wait in available legal on-street parking spaces in the school vicinity.

5. *Crossing guard stations and load/unload assistance* – The TMP should identify crossing guard locations and locations where staff would be stationed at the loading areas to assist student load/unload to reduce the likelihood that queues spill over into Beacon Avenue S.

6. *School bus staging and load/unload procedures* – If the number of school buses is greater than can be simultaneously accommodated in the bus load zone on Beacon Avenue S, SPS would stage school bus arrivals to ensure that they do not exceed the available space. The District should develop a school-bus staging plan and include information in the TMP about the staging plan with instructions to students and staff on locations and times for school bus boarding and alighting.

H. **Subsequent Middle School TMPs:** Prior to occupancy for interim use by Aki Kurose or Washington Middle Schools, the District should update the Middle School Transportation Management Plan (TMP) to reflect reduced enrollment and more distant enrollment area. School bus staging may be needed if most students qualify based on distance from the site.

I. **Event Management Plan:** Prior to each school year, the District should work with each school principal to develop an Event Management Plan to reduce parking impacts during large evening events (those expected to have 700 or more attendees/participants). Measures could include: 1) separating large events by grade to reduce overall attendance on any given evening; 2) holding large events at an off-site location; and/or 3) securing additional off-site parking.

J. **Engage Seattle School Traffic Safety Committee:** The District should continue its ongoing engagement with the SSTSC (led by SDOT) to review walk routes and to confirm crossing guard locations for crosswalks on Beacon Avenue S and at the S Myrtle Street / Beacon Avenue S intersections, as needed.

K. **Develop Neighborhood Communication Plan for School Events:** The District and school administration should develop a neighborhood communication plan to inform nearby neighbors of events each year. The plan should be updated annually (or as events are scheduled) and should provide information about the dates, times, and rough magnitude of attendance. The communication would be intended to allow neighbors to plan for the occasional increase in on-street parking demand that would occur with large events. SPS should coordinate the Neighborhood Communication Plan with each principal prior to occupation by their school.

L. **Update right-of-way and curb-side signage:** The District should work with SDOT to confirm the locations, extent, and signage (such as times of restrictions) of the school-bus load zone on Beacon Avenue S and the passenger-vehicle load/unload zone in the reconfigured Beacon Avenue S median.

M. **Coordinate with Metro Transit:** The District should coordinate with Metro Transit to confirm the ORCA eligibility for middle school students during the interim occupancy periods and confirm transit service availability and capacity.

APPENDIX A

LEVEL OF SERVICE DEFINITIONS

Levels of service (LOS) are qualitative descriptions of traffic operating conditions. These levels of service are designated with letters ranging from LOS A, which is indicative of good operating conditions with little or no delay, to LOS F, which is indicative of stop-and-go conditions with frequent and lengthy delays. Levels of service for this analysis were developed using procedures presented in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016).

Signalized Intersections

Level of service for signalized intersections is defined in terms of average delay for all vehicles that travel through the intersection. Delay can be a cause of driver discomfort, frustration, inefficient fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average delay per vehicle in seconds. Delay is a complex measure and is dependent on a number of variables including: number and type of vehicles by movement, intersection lane geometry, signal phasing, the amount of green time allocated to each phase, transit stops and parking maneuvers. Table A-1 shows the level of service criteria for signalized intersections from the *Highway Capacity Manual, Sixth Edition.*

Table A-1. Level of Service for Signalized Intersections

Level of Service	Average Control Delay Per Vehicle
A	≤ 10 seconds
B	> 10 – 20 seconds
C	> 20 – 35 seconds
D	> 35 – 55 seconds
E	> 55 – 80 seconds
F	> 80 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 19.8, 2016.

Unsignalized Intersections

For unsignalized intersections, level of service is based on the average delay per vehicle for each turning movement. The level of service for all-way stop or roundabout-controlled intersections is based upon the average delay for all vehicles that travel through the intersection. The level of service for a one- or two-way, stop-controlled intersection, delay is related to the availability of gaps in the main street's traffic flow, and the ability of a driver to enter or pass through those gaps. Table A-2 shows the level of service criteria for unsignalized intersections from the *Highway Capacity Manual, Sixth Edition*.

Table A-2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle
A	0 – 10 seconds
B	> 10 – 15 seconds
C	> 15 – 25 seconds
D	> 25 – 35 seconds
E	> 35 – 50 seconds
F	> 50 seconds

Source: Transportation Research Board, Highway Capacity Manual, Exhibit 20.2, 2016.

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APPENDIX B

PARKING UTILIZATION STUDY DATA

Project **Van Asselt School - Interim School**

Block Face ID	Street Name	Street Segment	Side of Street	Parking Supply				
				Unrestricted Parallel Parking	Disabled	School Bus Only 7a-4p, No Parking At Other Times	**Total Parking Spaces**	**Total Available Parking Spaces**
AA	Military Rd S	Beacon Wr Ave S and S Avon Crest Pl	W	5	0	0	**5**	**5**
AB	Military Rd S	Beacon Wr Ave S and S Avon Crest Pl	E	0	0	0	**0**	**0**
AC	Beacon Wr Ave S	Military Rd S and 27th Ave S	SW	0	0	0	**0**	**0**
AD	Beacon Er Ave S	27th Ave S and 28th Ave S	NE	12	0	0	**12**	**12**
AE	Beacon Wr Ave S	27th Ave S and S Avon Crest Pl	SW	11	0	0	**11**	**11**
AF	28th Ave S	S Brighton E St and S Frontenac St	W	4	0	0	**4**	**4**
AG	28th Ave S	S Brighton E St and S Frontenac St	E	5	0	0	**5**	**5**
AH	28th Ave S	S Frontenac St and Beacon Er Ave S	W	3	0	0	**3**	**3**
AI	28th Ave S	S Frontenac St and Beacon Er Ave S	E	4	0	0	**4**	**4**
AJ	S Frontenac St	28th Ave S and 30th Ave S	N	4	0	0	**4**	**4**
AK	S Frontenac St	28th Ave S and 30th Ave S	S	0	0	0	**0**	**0**
AL	Swift Ave S	Covello W Dr S and Covello E Dr S	SW	0	0	0	**0**	**0**
AM	Swift Ave S	Covello W Dr S and Covello E Dr S	NE	0	0	0	**0**	**0**
AN	Covello Dr S	Swift W Ave S and Swift E Ave S	W	6	0	0	**6**	**6**
AO	Covello Dr S	Swift W Ave S and Swift E Ave S	E	8	0	0	**8**	**8**
AP	Military Rd S	S Avon Crest Pl and Swift Ave S	W	8	0	0	**8**	**8**
AQ	Military Rd S	S Avon Crest Pl and Swift Ave S	E	12	0	0	**12**	**12**
AR	S Avon Crest Pl	Military Rd S and Beacon Wr Ave S	SW	10	0	0	**10**	**10**
AS	S Avon Crest Pl	Military Rd S and Beacon Wr Ave S	NE	10	0	0	**10**	**10**
AT	Beacon Wr Ave S	S Avon Crest Pl and 28th Ave S	SW	0	0	0	**0**	**0**
AU	Beacon Er Ave S	28th Ave S and S Myrtle St	NE	8	0	0	**8**	**8**
AV	Beacon Wr Ave S	28th Ave S and S Myrtle St	SW	5	0	0	**5**	**5**
AW	Swift Ave S	Covello E Dr S and S Myrtle St	N	0	0	0	**0**	**0**
AX	Swift Ave S	Covello E Dr S and S Myrtle St	S	0	0	0	**0**	**0**
AY	S Myrtle St	Swift Ave S and Beacon Wr Ave S	N	0	0	0	**0**	**0**
AZ	S Myrtle St	Swift Ave S and Beacon Wr Ave S	S	0	0	0	**0**	**0**
BA	S Myrtle St	Beacon Er Ave S and S Myrtle Pl	N	0	0	0	**0**	**0**
BB	S Myrtle St	Beacon Er Ave S and S Myrtle Pl	S	0	0	0	**0**	**0**
BC	Military Rd S	S Myrtle St and Dead End 1	SW	9	0	0	**9**	**9**
BD	Military Rd S	S Myrtle St and Dead End 1	NE	4	0	0	**4**	**4**
BE	Beacon Ave S Median Strip	S Myrtle St and S Othello St	SW	23	2	0	**25**	**25**
BF	Beacon Er Ave S	S Myrtle St and S Othello St	NE	18	0	0	**18**	**18**
BG	Beacon Wr Ave S	S Myrtle St and S Othello St	SW	13	1	17	**31**	**14**
BH	S Othello St	Military Rd S and Beacon Wr Ave S	N	9	0	0	**9**	**9**

Project **Van Asselt School - Interim School**

				Parking Supply				
Block Face ID	Street Name	Street Segment	Side of Street	Unrestricted Parallel Parking	Disabled	School Bus Only 7a-4p, No Parking At Other Times	**Total Parking Spaces**	**Total Available Parking Spaces**
BI	S Othello St	Military Rd S and Beacon Wr Ave S	S	12	0	0	**12**	**12**
BJ	S Othello St	Beacon Er Ave S and 32nd Ave S	N	6	0	0	**6**	**6**
BK	S Othello St	Beacon Er Ave S and 32nd Ave S	S	8	0	0	**8**	**8**
BL	Beacon Er Ave S	S Othello St and 32nd Ave S	NE	6	0	0	**6**	**6**
BM	Beacon Wr Ave S	S Othello St and S Webster N St	SW	13	0	0	**13**	**13**
			TOTAL	**236**	**3**	**17**	**256**	**239**

Project **Van Asselt School - Interim School**

				Parking Supply	Parking Occupancy								
					Morning			Midday			Evening		
					7:00 A.M. to 7:45 A.M			10:30 A.M. to 11:15 A.M.			7:30 P.M to 8:15 P.M.		
Block Face ID	Street Name	Street Segment	Side of Street	**Total Available Parking Spaces**	Weds 7/1/2020	Thurs 7/2/2020	Average	Weds 7/1/2020	Thurs 7/2/2020	Average	Weds 7/1/2020	Thurs 7/2/2020	Average
AA	Military Rd S	Beacon Wr Ave S and S Avon Crest Pl	W	**5**	2	4	3	3	3	3	3	5	4
AB	Military Rd S	Beacon Wr Ave S and S Avon Crest Pl	E	**0**	3	3	3	3	3	3	3	3	3
AC	Beacon Wr Ave S	Military Rd S and 27th Ave S	SW	**0**	0	0	0	0	0	0	0	0	0
AD	Beacon Er Ave S	27th Ave S and 28th Ave S	NE	**12**	1	1	1	1	0	1	1	0	1
AE	Beacon Wr Ave S	27th Ave S and S Avon Crest Pl	SW	**11**	0	0	0	0	0	0	0	0	0
AF	28th Ave S	S Brighton E St and S Frontenac St	W	**4**	1	1	1	1	1	1	1	1	1
AG	28th Ave S	S Brighton E St and S Frontenac St	E	**5**	1	1	1	3	1	2	1	1	1
AH	28th Ave S	S Frontenac St and Beacon Er Ave S	W	**3**	1	1	1	1	1	1	1	1	1
AI	28th Ave S	S Frontenac St and Beacon Er Ave S	E	**4**	0	0	0	0	0	0	0	0	0
AJ	S Frontenac St	28th Ave S and 30th Ave S	N	**4**	2	1	2	0	0	0	0	1	1
AK	S Frontenac St	28th Ave S and 30th Ave S	S	**0**	0	0	0	0	0	0	0	0	0
AL	Swift Ave S	Covello W Dr S and Covello E Dr S	SW	**0**	0	0	0	0	0	0	0	0	0
AM	Swift Ave S	Covello W Dr S and Covello E Dr S	NE	**0**	0	0	0	0	0	0	0	0	0
AN	Covello Dr S	Swift W Ave S and Swift E Ave S	W	**6**	6	6	6	6	6	6	7	5	6
AO	Covello Dr S	Swift W Ave S and Swift E Ave S	E	**8**	8	7	8	6	7	7	8	6	7
AP	Military Rd S	S Avon Crest Pl and Swift Ave S	W	**8**	2	2	2	1	1	1	3	1	2
AQ	Military Rd S	S Avon Crest Pl and Swift Ave S	E	**12**	4	4	4	2	3	3	2	5	4
AR	S Avon Crest Pl	Military Rd S and Beacon Wr Ave S	SW	**10**	6	6	6	1	3	2	9	10	10
AS	S Avon Crest Pl	Military Rd S and Beacon Wr Ave S	NE	**10**	9	9	9	6	8	7	6	8	7
AT	Beacon Wr Ave S	S Avon Crest Pl and 28th Ave S	SW	**0**	0	0	0	0	0	0	0	0	0
AU	Beacon Er Ave S	28th Ave S and S Myrtle St	NE	**8**	1	1	1	1	1	1	3	0	2
AV	Beacon Wr Ave S	28th Ave S and S Myrtle St	SW	**5**	0	0	0	0	0	0	0	0	0
AW	Swift Ave S	Covello E Dr S and S Myrtle St	N	**0**	0	0	0	0	0	0	0	0	0
AX	Swift Ave S	Covello E Dr S and S Myrtle St	S	**0**	0	0	0	0	0	0	0	0	0
AY	S Myrtle St	Swift Ave S and Beacon Wr Ave S	N	**0**	0	0	0	0	0	0	0	0	0
AZ	S Myrtle St	Swift Ave S and Beacon Wr Ave S	S	**0**	0	0	0	0	0	0	0	0	0
BA	S Myrtle St	Beacon Er Ave S and S Myrtle Pl	N	**0**	0	0	0	0	0	0	0	0	0
BB	S Myrtle St	Beacon Er Ave S and S Myrtle Pl	S	**0**	0	0	0	0	0	0	0	0	0
BC	Military Rd S	S Myrtle St and Dead End 1	SW	**9**	6	6	6	4	5	5	6	5	6
BD	Military Rd S	S Myrtle St and Dead End 1	NE	**4**	5	4	5	3	3	3	2	3	3
BE	Beacon Ave S Median Strip	S Myrtle St and S Othello St	SW	**25**	7	4	6	9	4	7	4	2	3
BF	Beacon Er Ave S	S Myrtle St and S Othello St	NE	**18**	0	1	1	0	0	0	0	0	0
BG	Beacon Wr Ave S	S Myrtle St and S Othello St	SW	**14**	0	0	0	0	0	0	0	0	0
BH	S Othello St	Military Rd S and Beacon Wr Ave S	N	**9**	4	4	4	3	2	3	4	3	4
BI	S Othello St	Military Rd S and Beacon Wr Ave S	S	**12**	1	1	1	1	1	1	1	1	1
BJ	S Othello St	Beacon Er Ave S and 32nd Ave S	N	**6**	1	1	1	1	1	1	1	1	1
BK	S Othello St	Beacon Er Ave S and 32nd Ave S	S	**8**	2	2	2	2	1	2	1	1	1
BL	Beacon Er Ave S	S Othello St and 32nd Ave S	NE	**6**	1	1	1	0	0	0	1	1	1
BM	Beacon Wr Ave S	S Othello St and S Webster N St	SW	**13**	1	1	1	3	1	2	1	2	2
			TOTAL	**239**	**75**	**72**	**74**	**61**	**56**	**59**	**69**	**66**	**68**

Project **Van Asselt School - Interim School**

				Parking Supply	Parking Utilization								
					Morning			Midday			Evening		
					7:00 A.M. to 7:45 A.M			10:30 A.M. to 11:15 A.M.			7:30 P.M to 8:15 P.M.		
Block Face ID	Street Name	Street Segment	Side of Street	Total Available Parking Spaces	Weds 7/1/2020	Thurs 7/2/2020	Average	Weds 7/1/2020	Thurs 7/2/2020	Average	Weds 7/1/2020	Thurs 7/2/2020	Average
AA	Military Rd S	Beacon Wr Ave S and S Avon Crest Pl	W	**5**	40%	80%	60%	60%	60%	60%	60%	100%	80%
AB	Military Rd S	Beacon Wr Ave S and S Avon Crest Pl	E	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AC	Beacon Wr Ave S	Military Rd S and 27th Ave S	SW	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AD	Beacon Er Ave S	27th Ave S and 28th Ave S	NE	**12**	8%	8%	8%	8%	0%	4%	8%	0%	4%
AE	Beacon Wr Ave S	27th Ave S and S Avon Crest Pl	SW	**11**	0%	0%	0%	0%	0%	0%	0%	0%	0%
AF	28th Ave S	S Brighton E St and S Frontenac St	W	**4**	25%	25%	25%	25%	25%	25%	25%	25%	25%
AG	28th Ave S	S Brighton E St and S Frontenac St	E	**5**	20%	20%	20%	60%	20%	40%	20%	20%	20%
AH	28th Ave S	S Frontenac St and Beacon Er Ave S	W	**3**	33%	33%	33%	33%	33%	33%	33%	33%	33%
AI	28th Ave S	S Frontenac St and Beacon Er Ave S	E	**4**	0%	0%	0%	0%	0%	0%	0%	0%	0%
AJ	S Frontenac St	28th Ave S and 30th Ave S	N	**4**	50%	25%	38%	0%	0%	0%	0%	25%	13%
AK	S Frontenac St	28th Ave S and 30th Ave S	S	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AL	Swift Ave S	Covello W Dr S and Covello E Dr S	SW	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AM	Swift Ave S	Covello W Dr S and Covello E Dr S	NE	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AN	Covello Dr S	Swift W Ave S and Swift E Ave S	W	**6**	100%	100%	100%	100%	100%	100%	117%	83%	100%
AO	Covello Dr S	Swift W Ave S and Swift E Ave S	E	**8**	100%	88%	94%	75%	88%	81%	100%	75%	88%
AP	Military Rd S	S Avon Crest Pl and Swift Ave S	W	**8**	25%	25%	25%	13%	13%	13%	38%	13%	25%
AQ	Military Rd S	S Avon Crest Pl and Swift Ave S	E	**12**	33%	33%	33%	17%	25%	21%	17%	42%	29%
AR	S Avon Crest Pl	Military Rd S and Beacon Wr Ave S	SW	**10**	60%	60%	60%	10%	30%	20%	90%	100%	95%
AS	S Avon Crest Pl	Military Rd S and Beacon Wr Ave S	NE	**10**	90%	90%	90%	60%	80%	70%	60%	80%	70%
AT	Beacon Wr Ave S	S Avon Crest Pl and 28th Ave S	SW	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AU	Beacon Er Ave S	28th Ave S and S Myrtle St	NE	**8**	13%	13%	13%	13%	13%	13%	38%	0%	19%
AV	Beacon Wr Ave S	28th Ave S and S Myrtle St	SW	**5**	0%	0%	0%	0%	0%	0%	0%	0%	0%
AW	Swift Ave S	Covello E Dr S and S Myrtle St	N	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AX	Swift Ave S	Covello E Dr S and S Myrtle St	S	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AY	S Myrtle St	Swift Ave S and Beacon Wr Ave S	N	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
AZ	S Myrtle St	Swift Ave S and Beacon Wr Ave S	S	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
BA	S Myrtle St	Beacon Er Ave S and S Myrtle Pl	N	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
BB	S Myrtle St	Beacon Er Ave S and S Myrtle Pl	S	**0**	NS	NS	NS	NS	NS	NS	NS	NS	NS
BC	Military Rd S	S Myrtle St and Dead End 1	SW	**9**	67%	67%	67%	44%	56%	50%	67%	56%	61%
BD	Military Rd S	S Myrtle St and Dead End 1	NE	**4**	125%	100%	113%	75%	75%	75%	50%	75%	63%
BE	Beacon Ave S Median Strip	S Myrtle St and S Othello St	SW	**25**	28%	16%	22%	36%	16%	26%	16%	8%	12%
BF	Beacon Er Ave S	S Myrtle St and S Othello St	NE	**18**	0%	6%	3%	0%	0%	0%	0%	0%	0%
BG	Beacon Wr Ave S	S Myrtle St and S Othello St	SW	**14**	0%	0%	0%	0%	0%	0%	0%	0%	0%
BH	S Othello St	Military Rd S and Beacon Wr Ave S	N	**9**	44%	44%	44%	33%	22%	28%	44%	33%	39%
BI	S Othello St	Military Rd S and Beacon Wr Ave S	S	**12**	8%	8%	8%	8%	8%	8%	8%	8%	8%
BJ	S Othello St	Beacon Er Ave S and 32nd Ave S	N	**6**	17%	17%	17%	17%	17%	17%	17%	17%	17%
BK	S Othello St	Beacon Er Ave S and 32nd Ave S	S	**8**	25%	25%	25%	25%	13%	19%	13%	13%	13%
BL	Beacon Er Ave S	S Othello St and 32nd Ave S	NE	**6**	17%	17%	17%	0%	0%	0%	17%	17%	17%
BM	Beacon Wr Ave S	S Othello St and S Webster N St	SW	**13**	8%	8%	8%	23%	8%	15%	8%	15%	12%
			TOTAL	**239**	**31%**	**30%**	**31%**	**26%**	**23%**	**24%**	**29%**	**28%**	**28%**