Steilacoom Historical School District
Water Quality Lead Monitoring Program

Purpose

To establish a lead water quality monitoring program for the Steilacoom Historical School District for determination of lead contaminant levels.

Background

Federal drinking water regulations set water quality standards for public water systems. State rule establishes:

- Water quality standards known as the maximum contaminant levels (WAC 246-290-310).
- Water quality monitoring requirements (WAC 246-290-300).
- Follow-up monitoring requirements (WAC 246-290-320).

However, there is no current legal requirement for schools to test their drinking water for lead. The State Board of Health adopted a revised "School Rule" in 2009, WAC 246-366A, that requires testing, but the legislature prohibited its implementation. The prohibition has not been lifted.

How Lead Gets into Drinking Water (Department of Health 3Ts www.doh.wa.gov)

Lead can get into drinking water in two ways:

(1) by being present in the source water, such as coming from contaminated runoff or water pollution.

(2) through an interaction between the water and plumbing materials containing lead, such as through corrosion.

(1) At the Source

Most sources of drinking water have no lead or very low levels of lead (i.e., under 5 parts per billion). However, lead is a naturally occurring metal and in some instances can get into well water. Lead can enter surface waters (waters from rivers, lakes, or streams) through direct or indirect discharges from industrial or municipal wastewater treatment plants or when lead in air settles into water or onto city streets and eventually, via rain water, flows into storm sewers, or waterways, which may enter the water supply. Lead from these sources can be easily removed by existing treatment plant technologies.

(2) Through Corrosion

> Most lead gets into drinking water after the water leaves the local well or treatment plant and comes into contact with plumbing materials containing lead. These include lead pipe and lead solder (commonly used until 1986) as well as faucets, valves, and other components made of brass. The physical/chemical interaction that occurs between the water and plumbing is referred to as corrosion. The extent to which corrosion occurs contributes to the amount of lead that can be released into the drinking water.

The critical issue is that even though your public water supplier may deliver water that meets all federal and state public health standards for lead, you may end up with too much lead in your drinking water because of the plumbing in your facility. The potential for lead to leach into water can increase the longer the water remains in contact with lead in plumbing. As a result, facilities with intermittent water use patterns, such as schools, may have elevated lead concentrations. Testing drinking water in schools is important because children spend a significant portion of their day in these facilities and are likely to consume water while they are there. That is why testing water from your drinking water outlets for lead is so important. Drinking water outlets are locations where water may be used for consumption, such as a drinking fountain, water faucet, or tap.

The corrosion of lead tends to occur more frequently in "soft" water (i.e., water that lathers soap easily) and acidic (low pH) water. Other factors, however, also contribute to the corrosion potential of the water and include water velocity and temperature, alkalinity, chlorine levels, the age and condition of plumbing, and the amount of time water is in contact with plumbing. The occurrence and rate of corrosion depend on the complex interaction between a number of these and other chemical, physical, and biological factors.

Sediments containing lead may also collect in the low-lying sections of pipe or behind sediment screens. Lead containing sediments may result from minute particles of pipe, mineral deposits (scales), valves, fixtures, solder, or flux that accumulate in the plumbing. This may happen during the initial construction of the plumbing system, during repairs, when connecting new fixtures, when plumbing is otherwise disturbed, or during normal use (e.g., turning of faucet handles, movement of valves, etc.). Sediment can also originate from the public water system's water mains and service taps.

If the public water supplier finds unacceptable levels of lead at customers' homes, the system may have to provide centralized treatment to minimize the corrosion of lead into the water. However, centralized treatment by a public water system does not guarantee that corrosion of lead from plumbing will not occur within buildings served by the public water system, i.e., your school.

Interior plumbing, soldered joints, leaded brass fittings, and various drinking water outlets that contain lead materials are the primary contributors of lead in drinking water. It is also important to note that brass plumbing components contain lead. Although there is an increased probability that a given plumbing component installed prior to the 1990s could contain more lead than the

newer components, the *occurrence of lead in drinking water cannot be predicted based upon the age of the component or the school facility.*

Identifying Plumbing Profile of District Buildings

The district identified all water distribution locations for each school building which included water main into the building, sinks and drinking fountains. Refer to **Attachment A** for water distribution locations by building.

The district's water sources are public water systems: Town of Steilacoom, City of DuPont and Riviera Community Club Water System. These entities are required to perform monthly water sampling in operating their public water systems. Any results that exceed maximum contaminant levels must be reported to the waters users of the system.

Monitoring

The district will perform two types of monitoring for lead in the drinking water throughout our buildings:

- **Baseline monitoring:** Long-term routine monitoring assigned to specific distribution locations. It is based on the distribution type and susceptibility of the distribution type to contamination.
- **Follow-up monitoring:** Reflects an increase in monitoring frequency from the baseline if a contaminant is detected above a trigger level or Maximum Contaminant Level (MCL).

Water Sampling Procedures

The district will perform sample testing for lead throughout all buildings annually in September of each school year. The samples will be collected by the lead custodian at various locations within each building. Refer to **Attachment B** for building sample locations for the 2016-2017 school year.

The collection procedures:

(1) All water samples collected will be 250 milliliters (ml) in volume. School samples are smaller than the one liter sample collected by public water suppliers. A smaller sample is more effective at identifying the sources of lead at an outlet because a smaller sample represents a smaller section of plumbing. A smaller sample is also more representative of water per serving consumed by a child. A 250 ml sample from a faucet would not include portions of the plumbing behind the wall that the faucet is mounted on, for example, compared to a 1000 ml (1 liter) sample, which would include a longer line of plumbing with its valves and tees and elbows and soldered joints.

(2) All water samples will be collected before the facility opens and before any water is used. Ideally, the water should sit in the pipes unused for at least 8 hours but not more than 18 hours before a sample is taken. However, water may be more than 18 hours old at some outlets that are

infrequently used. If this is typical of normal use patterns, then these outlets should still be sampled.

(3) Make sure that no water is withdrawn from the taps or fountains from which the samples are to be collected prior to their sampling.

(4) Unless specifically directed to do so, samples will not be collected from any location in the morning after vacations, weekends, or holidays because the water will have remained stagnant for too long and would not represent the water used for drinking during most of the days of the week.

(5) A unique sample identification number will be assigned to each sample collected – using a sampling plan schematic or numbering system. The identification number will be recorded on the sample bottle and on the recordkeeping form. The recordkeeping form will include information on: • Type of sample taken, e.g., initial first draw, follow-up flush, etc. • Date and time of collection. • Name of the sample collector. • Location of the sample site.

Laboratory Analysis

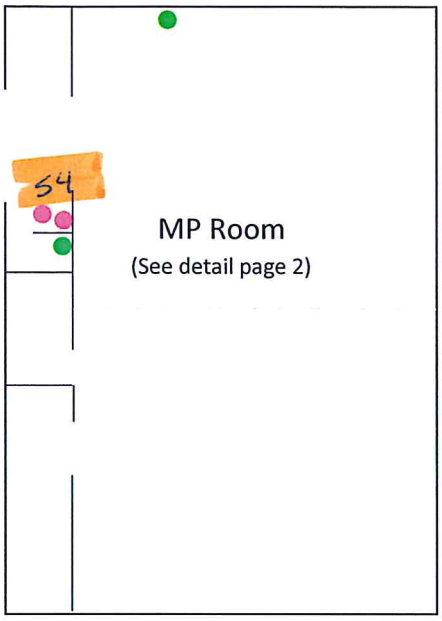
All water samples will be delivered to Water Management Laboratories (1515 80th St. E, Tacoma, WA 98404, (253) 531-3121) for analysis.

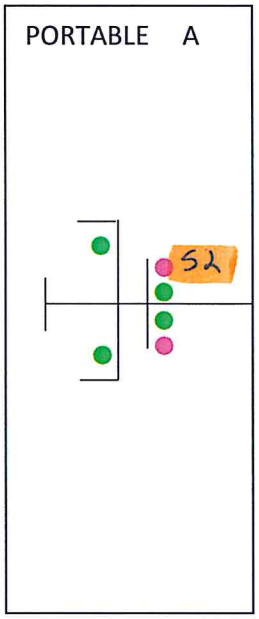
Reporting

The district will publish all results of lead water testing annually on the district website.

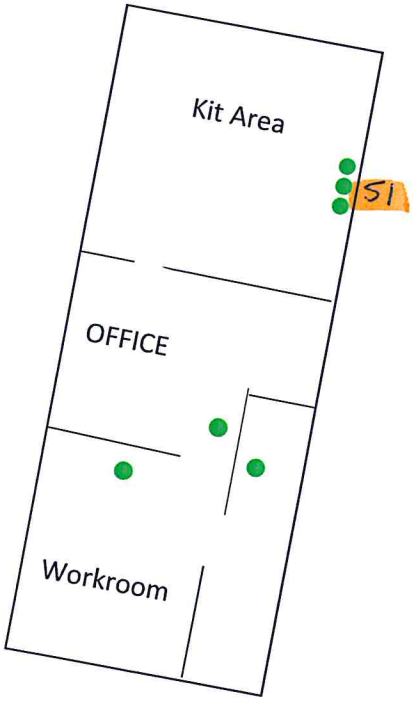
If any test exceeds MCLs, the district will take immediate action to prevent further exposure to our students, staff and community and communicate with staff, families and communities supporting the school district.

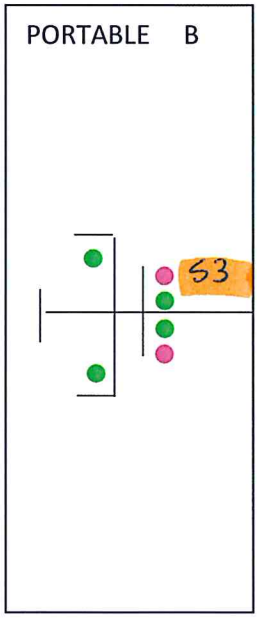
Attachment A
Building Water Distribution Locations





ANDERSON ISLAND ELEMENTARY

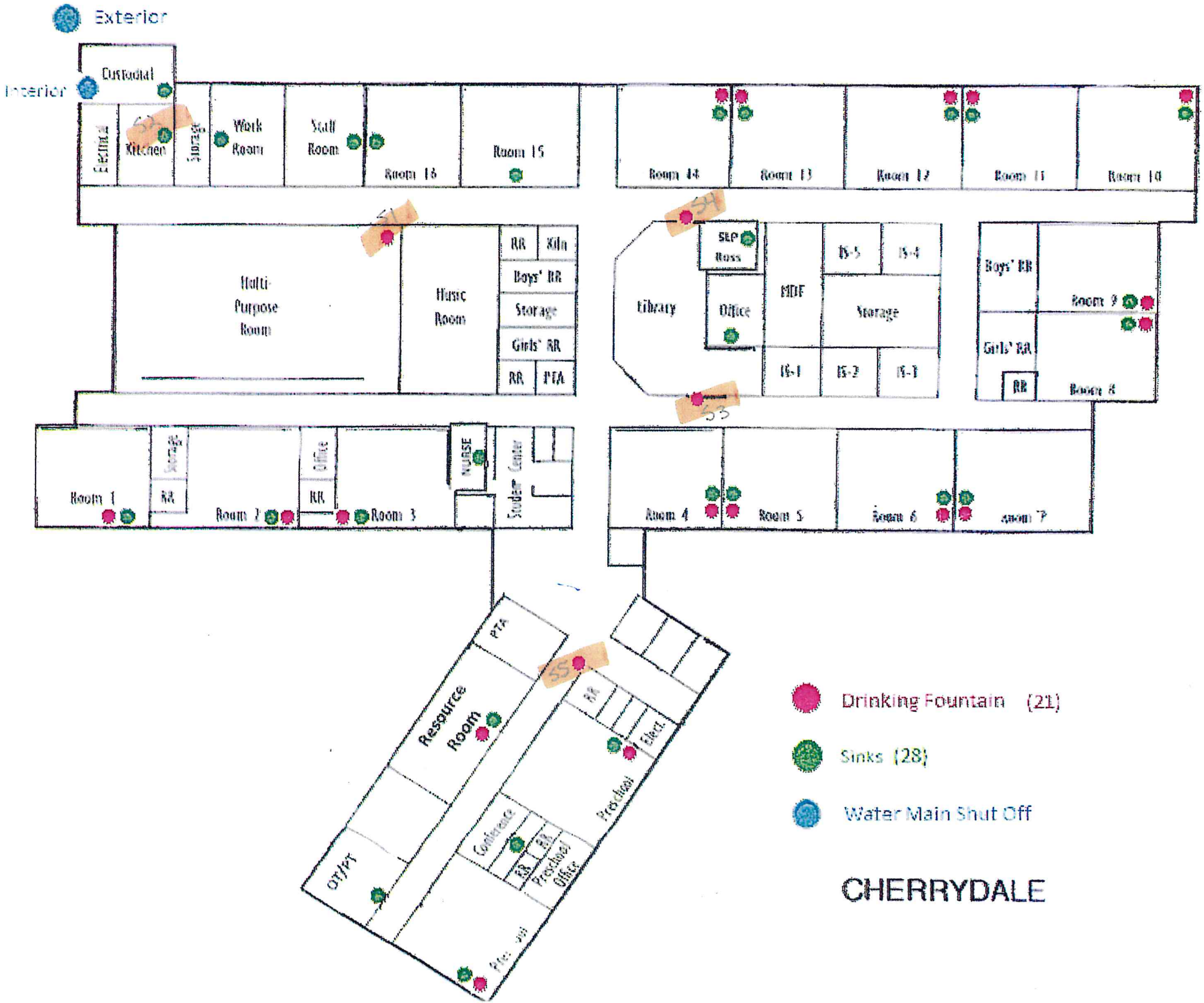




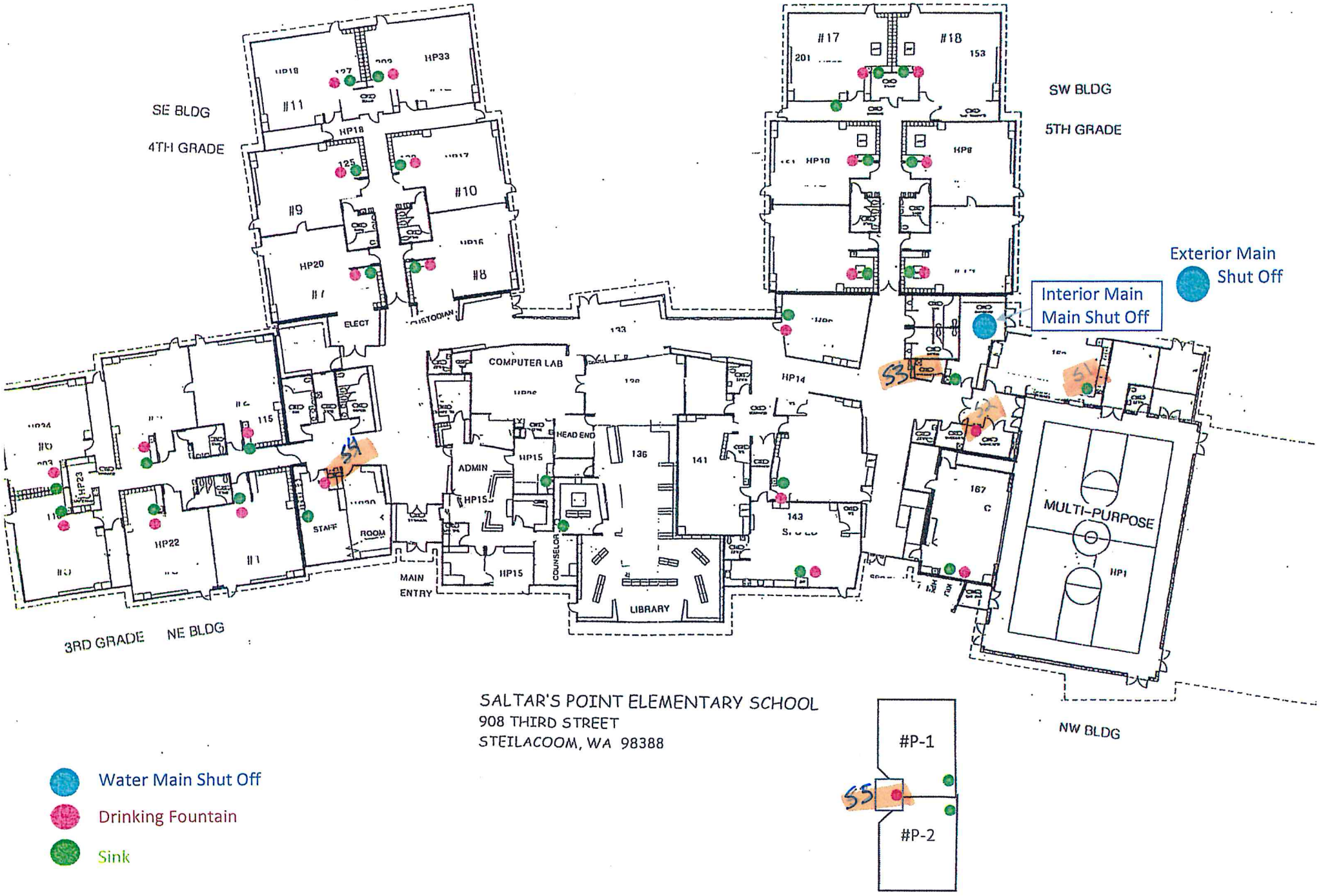
Water Main Shut Off

Drinking Fountain

Sink


Exterior
Interior
Custodial
Electrical
Kitchen
Storage
Work Room
Staff Room
Room 16
Room 15
Room 14
Room 13
Room 12
Room 11
Room 10
Multi-Purpose Room
Music Room
RR
Kiln
Boys' RR
Storage
Girls' RR
RR
PEA
Library
SLP Room
Office
MDF
IS-5
IS-4
Storage
IS-1
IS-2
IS-3
Boys' RR
Room 9
Girls' RR
RR
Room 8
Room 1
Storage
RR
Room 2
Office
RR
Room 3
NURSE
Student Center
Room 4
Room 5
Room 6
Room 7
PTA
Resource Room
OT/PT
Conference
RR
RR
Preschool Office
Preschool
RR
Elect.
Drinking Fountain (21)
Sinks (28)
Water Main Shut Off
CHERRYDALE

CHLOE CLARK ELEMENTARY

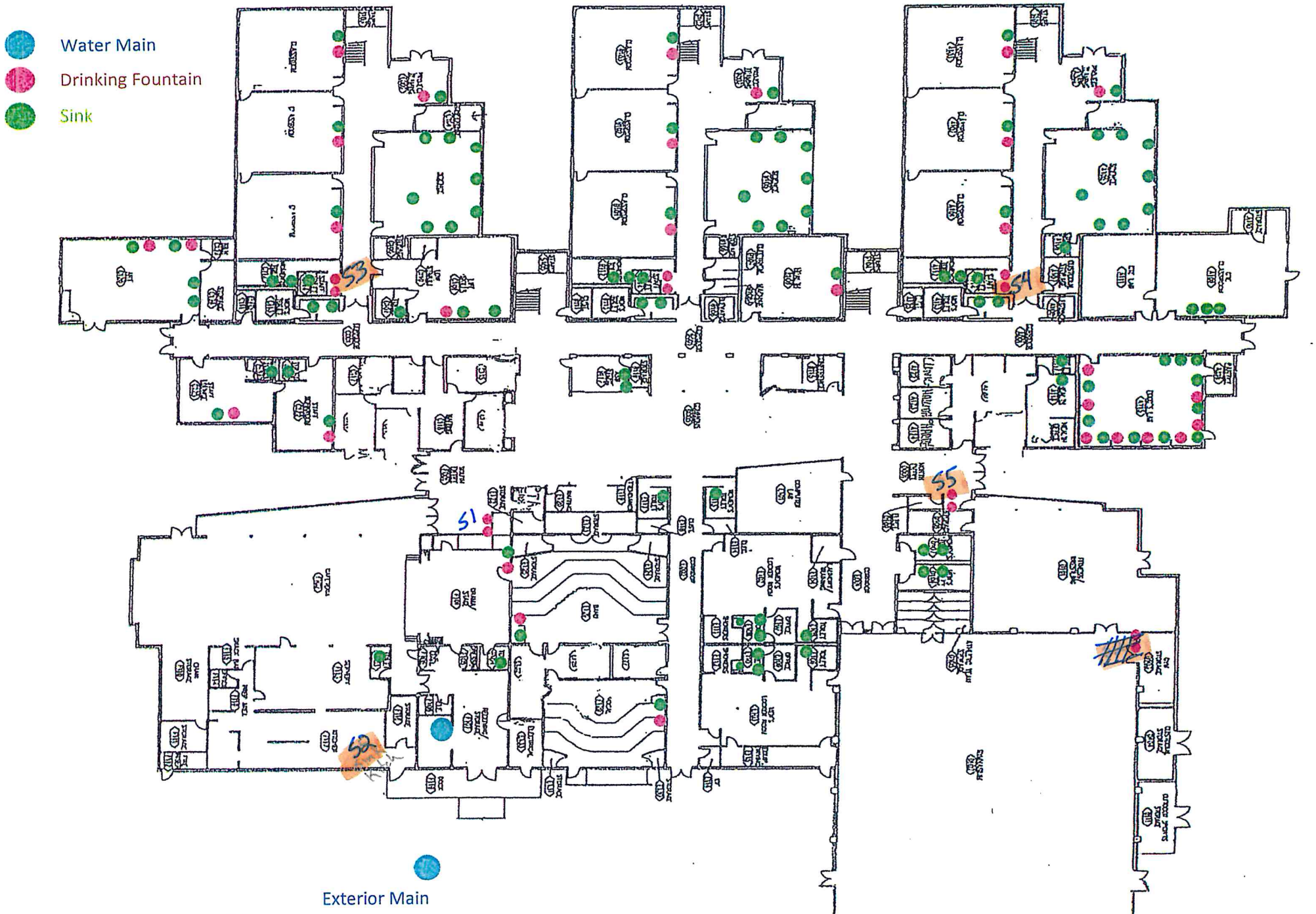


SALTAR'S POINT ELEMENTARY SCHOOL
908 THIRD STREET
STEILACOOM, WA 98388

Water Main Shut Off

Drinking Fountain

Sink

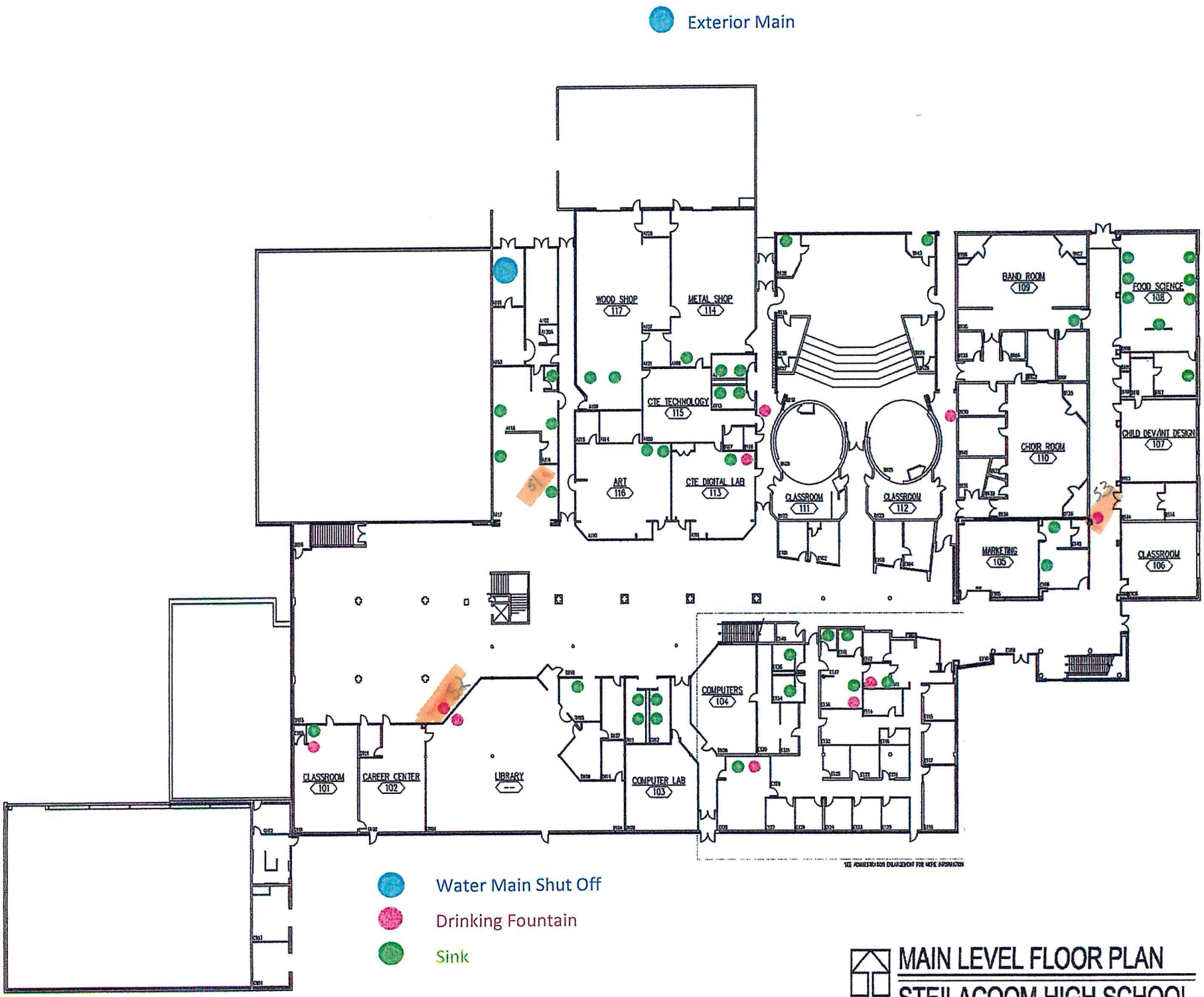


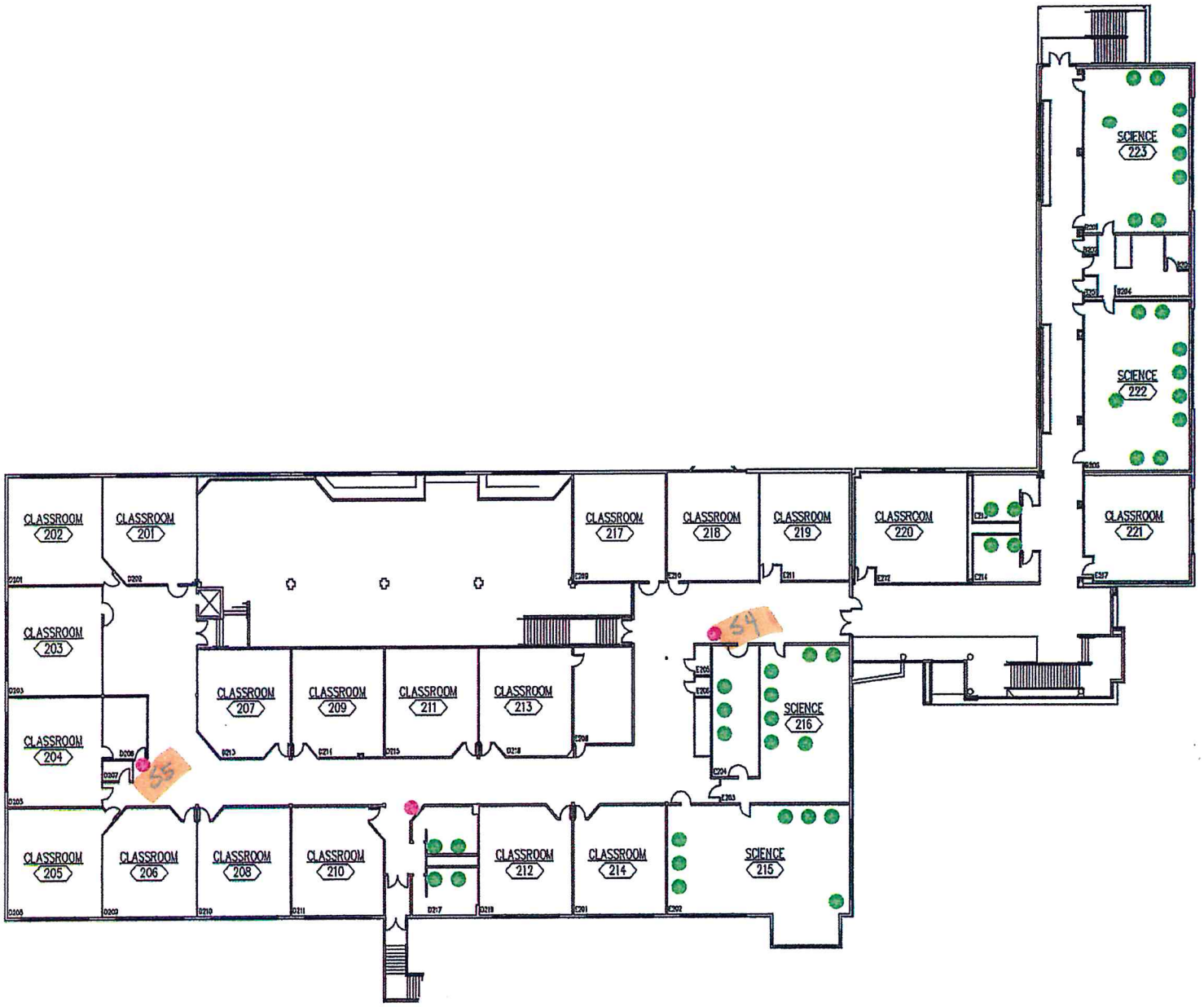
PIONEER MIDDLE SCHOOL
FIRST FLOOR

Drinking Fountain

Sink

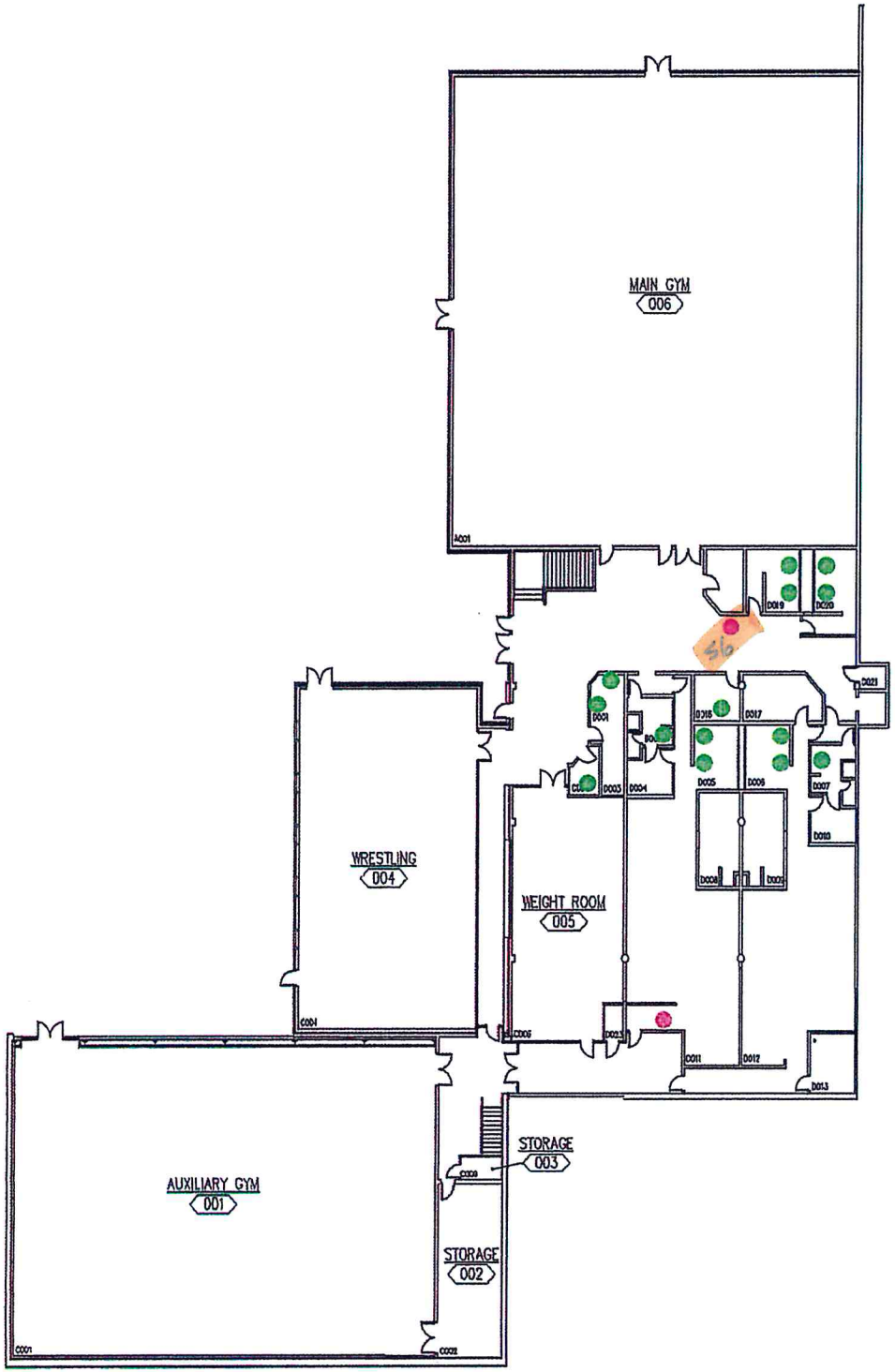
PIONEER MIDDLE SCHOOL
SECOND FLOOR


Exterior Main
WOOD SHOP 117
METAL SHOP 114
CTE TECHNOLOGY 115
ART 116
CTE DIGITAL LAB 113
CLASSROOM 111
CLASSROOM 112
BAND ROOM 109
FOOD SCIENCE 108
CHOIR ROOM 110
CHILD DEV./INT DESIGN 107
MARKETING 105
CLASSROOM 106
COMPUTERS 104
CLASSROOM 101
CAREER CENTER 102
LIBRARY
COMPUTER LAB 103
Water Main Shut Off
Drinking Fountain
Sink
NORTH
MAIN LEVEL FLOOR PLAN
STEILACOOM HIGH SCHOOL



NORTH

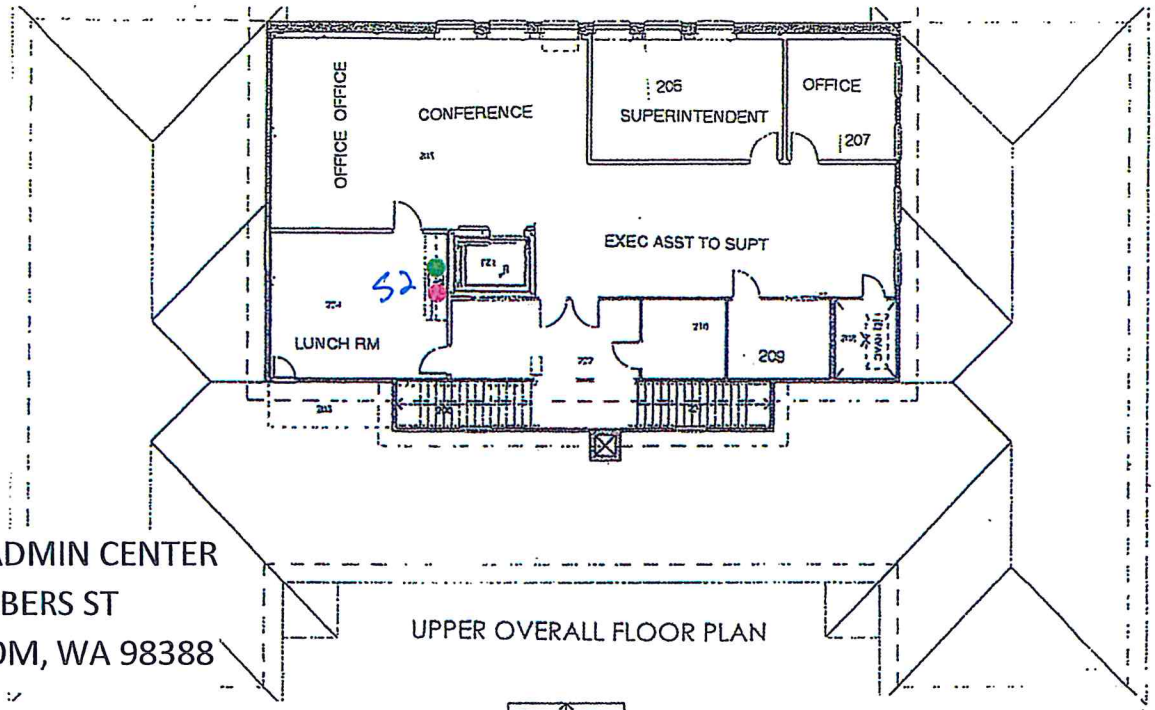
UPPER LEVEL FLOOR PLAN
STEILACOOM HIGH SCHOOL



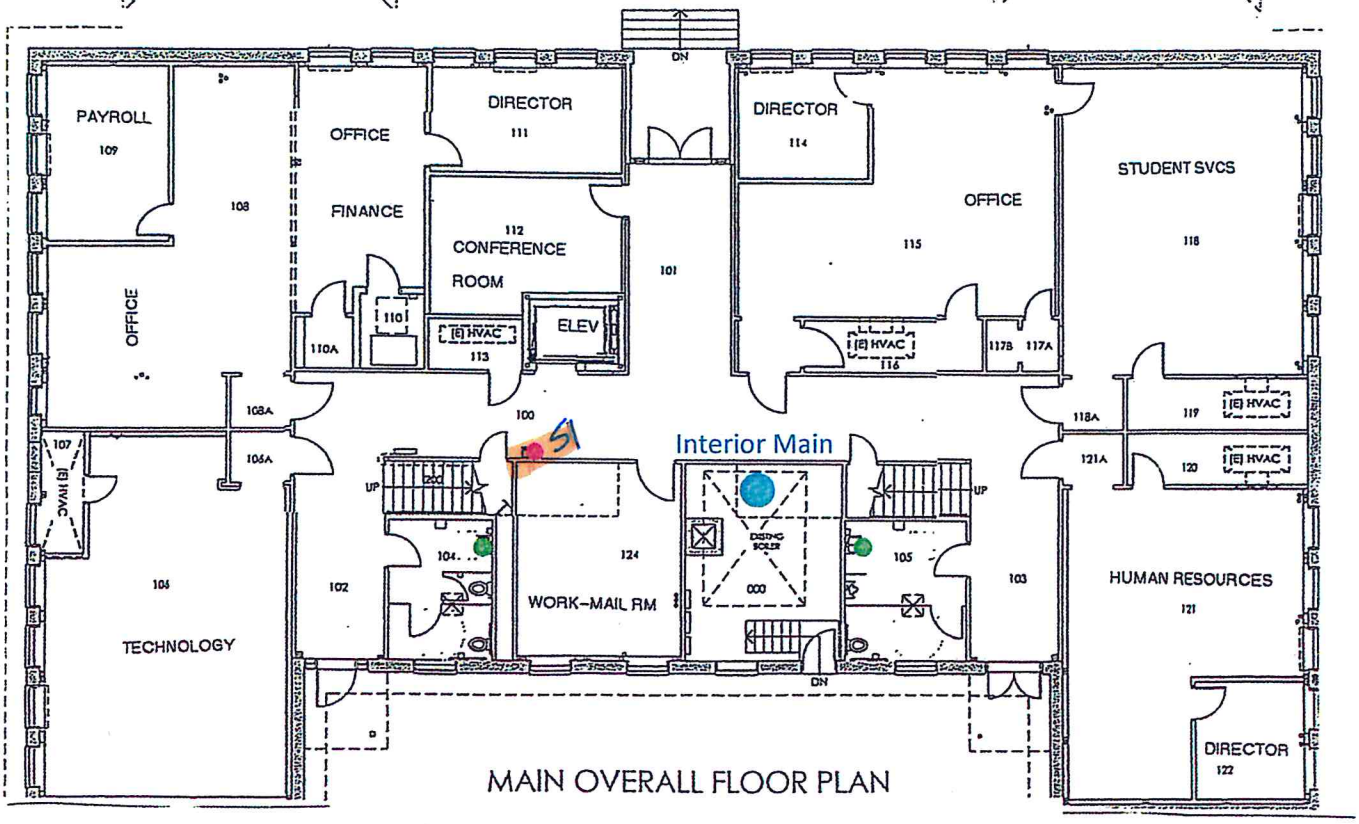
NORTH

LOWER LEVEL FLOOR PLAN
STEILACOOM HIGH SCHOOL

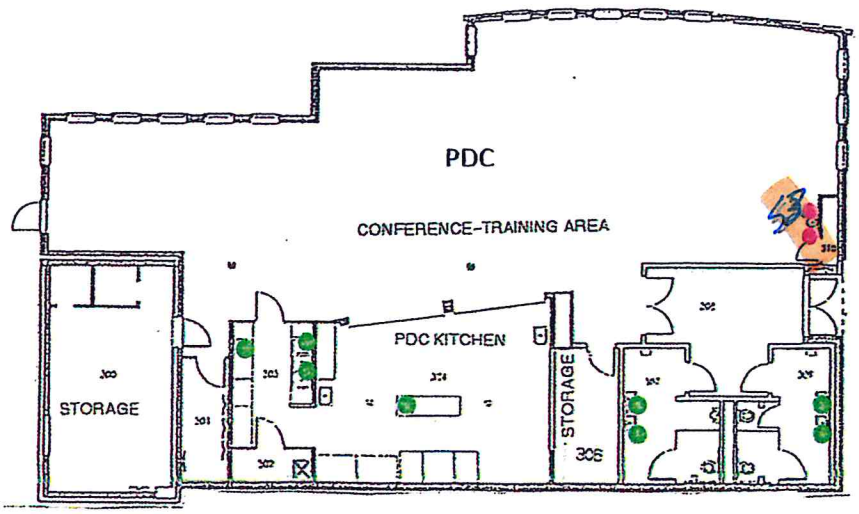
DISTRICT ADMIN CENTER
511 CHAMBERS ST
STEILACOOM, WA 98388



UPPER OVERALL FLOOR PLAN



MAIN OVERALL FLOOR PLAN



Water Main
Sink
Drinking Fountain

Exterior Main
in Lawn Island
toward Sequalish St

Attachment B

Steilacoom Historical School District
Water Quality Lead Monitoring

Anderson Island Elementary

S1 - Main Building - Kitchen Sink
S2 - Portable A - Drinking Fountain
S3 - Portable B - Drinking Fountain
S4 - Multi-Purpose Room - Drinking Fountain

Cherrydale Elementary

S1 - Multi-purpose room - Drinking Fountain
S2 - Kitchen Sink
S3 - Hallway Drinking Fountain
S4 - Hallway Drinking Fountain
S5 - Hallway Drinking Fountain

Chloe Clark Elementary

S1 - Kitchen Sink
S2 - Hallway Drinking Fountain
S3 - Hallway Drinking Fountain
S4 - Hallway Drinking Fountain
S5 - Hallway Drinking Fountain

Saltar's Point Elementary

S1 - Kitchen Sink
S2 - Hallway Drinking Fountain
S3 - Hallway Drinking Fountain
S4 - Hallway Drinking Fountain
S5 - Modular Hallway Drinking Fountain

510 Chambers Street

S2 - Kitchen Sink

Pioneer Middle School

First Floor

S1 - Entry Drinking Fountain
S2 - Kitchen Sink
S3 - South Hallway Drinking Fountain
S4 - North Hallway Drinking Fountain
S5 - West Entrance Drinking Foutain

Second Floor

S6 - South Hallway Drinking Fountain
S7 - Middle Hallway Drinking Fountain
S8 - North Hallway Drinking Fountain

Steilacoom High School

Main Floor

S1 - Kitchen Sink
S2 - Commons Drinking Fountain
S3 - West Hallway Drinking Fountain

Second Floor

S4 - Hallway Drinking Fountain
S5 - Hallway Drinking Fountain

Lower Level

S6 - Gymnasium Entry Drinking Fountain

District Office

S1 - Hallway Drinking Fountain
S2 - Kitchen Sink
S3 - PDC Drinking Fountain

Refer Attachment A - Building maps for water sampling locations. All water sample will be before the school day starts and staff have entered the building.