

# BORA

LINCOLN HIGH SCHOOL MODERNIZATION  
DESIGN ADVISE REQUEST  
JULY 26, 2018



PROJECT OVERVIEW  
PUBLIC ENGAGEMENT PROCESS  
PROGRAM  
SITE  
EVALUATION CRITERIA  
OPTIONS CONSIDERED  
PROPOSED DIRECTION

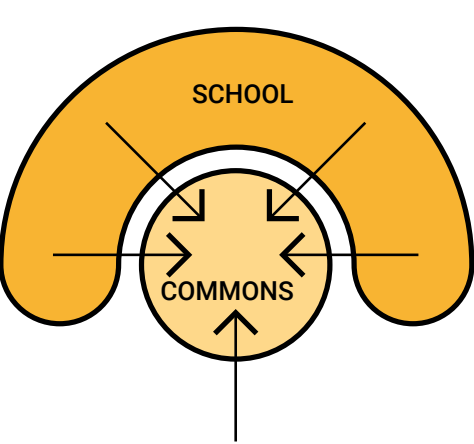
We ask for the Design Commission's advice on the following topics:

- Overall Massing & Orientation
- Location of Main Entry
- Strategy for Active Ground Floor Uses
- Site Security & Site Access
- Other

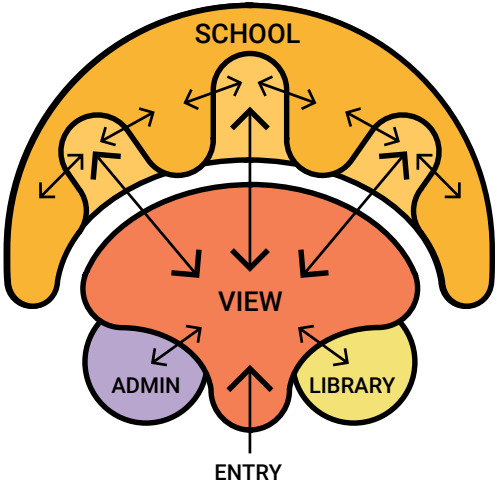


VISION STATEMENT

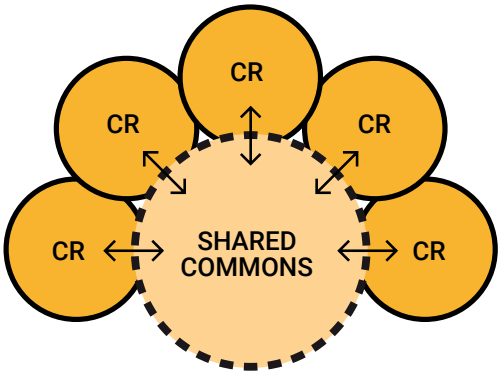
*“The redeveloped Lincoln campus will be an innovative hub of life-long learning; it will help students reach their goals in a safe, inclusive, and inspiring environment. The campus will be the center of an active, healthy, urban community and will support educationally related public and private partnerships. The project will be an example of schools promoting positive change in our neighborhood, city, state and region”*



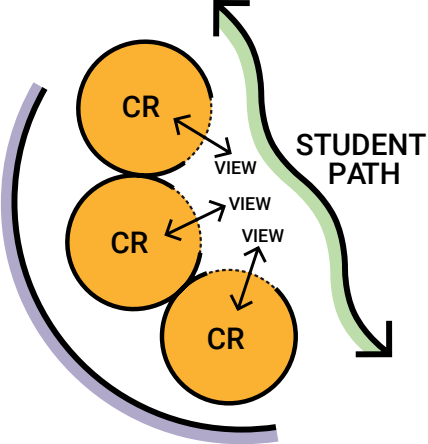
School Heart



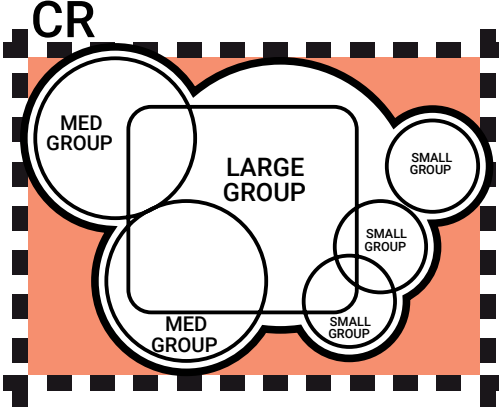
Viewable



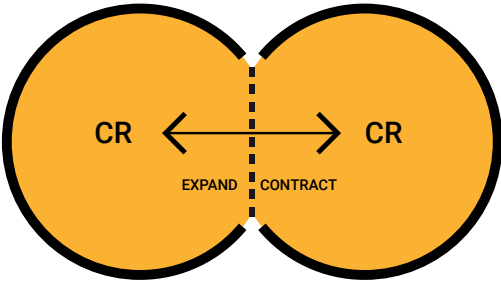
Learning Suite



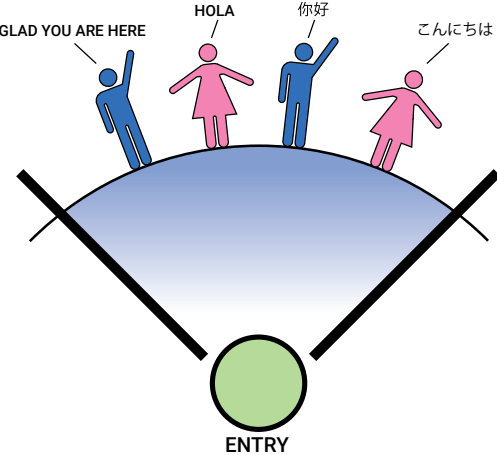
Transparent



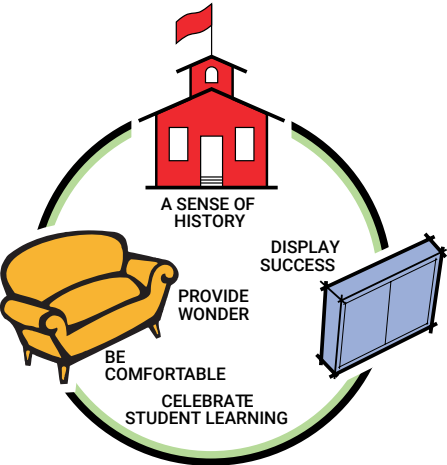
Variety



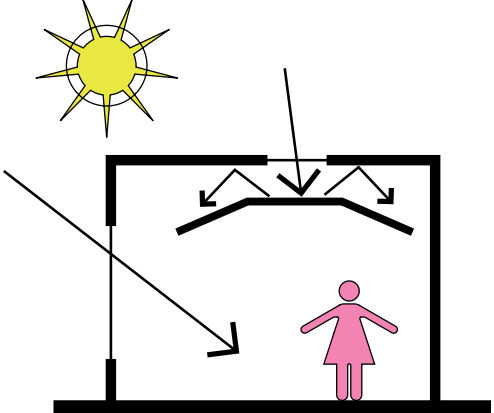
Flexible/Agile



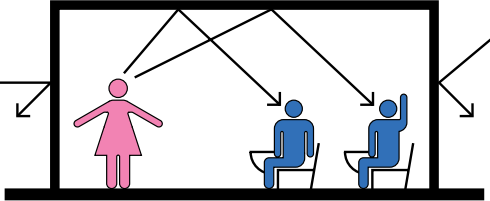
Entry



A School Should



Natural Light



Acoustics

Lincoln High School (LHS) serves approximately 1,700 students in the Central City and Northwest portions of the PPS District. The LHS site faces distinct challenges, among them:

- Location within the Central City 2035 plan requires compliance with numerous design criteria enforced by the Design Commission, including pedestrian access through the site, no surface parking, and placing new construction along the property line to define an active street edge.
- LHS is situated in a constrained site in a dense urban setting.
- Two major utility easements run through the site creating “no build zones” in the old SW 16th and SW 17th Avenue right-of-ways. These easements contain major storm water infrastructure that cannot be built upon or relocated.
- Sloped site topography requires extensive grading for accessibility and potential retaining walls.
- Poor soil conditions require deep foundations regardless of location on the site.
- Very few of the spaces in the existing school are in compliance with Portland Public School's Educational Specifications for Comprehensive High Schools (Ed Specs).
- The school is 100,000 SF below required area for a comprehensive PPS high school:

Existing Lincoln High School: 180,912 SF

2017 Required Ed Spec: 281,370 SF
- The replacement strategy is more cost effective than upgrading and expanding the existing building. Existing mechanical, electrical, plumbing, data and fire protection systems are outdated and require full replacement, and while portions of the existing structural system can be retained, the entire building would require a full seismic upgrade. The challenge on occupied renovation is also a consideration.

PLANNING, DESIGN AND CONSTRUCTION SCHEDULE

Master Plan	January - July 2016
Pre-Design / Due Diligence Study	October 2016 - March 2017
Programming / Concepts	November 2017 - March 2018
Schematic Design	June - October 2018
Design Development	October 2018- April 2019
Construction Documents	April 2019 - November 2019
Construction Phase 1 (building)	Spring 2020 - Spring 2022
Move-in	Summer 2022
Construction Phase 2 (fields)	Summer 2022 - Spring 2023
Project Completion	Summer 2023



MASTER PLANNING PROCESS

In 2016, PPS engaged in an extensive public engagement and outreach process through a Master Planning effort. A 29-person Master Planning Committee (MPC) was established, made up of teachers, students, current and future parents, and members of the surrounding community, including PSU, Goose Hollow Neighborhood Association and the City, all of whom applied and were selected to participate in this advisory role because of the collective diversity of their voices.

Over a 6 month period, the MPC worked to develop a Preferred Plan for the School. The proposed design shown in this DAR application reflects this work. The committee met for six public meetings and hosted three Public Workshops with the broader community. Also, the Design Team hosted two workshops with the entire faculty and staff of Lincoln, engaged in smaller meetings with people from all the school departments, and met with neighborhood groups and a series of potential community partners, in order to ensure that the recommendations from the MPC reflected a broadly considered cross section of priorities, concerns and aspirations for Lincoln High School.



PRE-DESIGN / DUE DILIGENCE STUDY

During this effort, the team studied and analyzed two Full Replacement options in addition to a Renovation + Addition option under this effort. Building a new school on the west side of the site would allow students to stay in the existing school during construction and eliminate the need and cost for a temporary swing school.

The objective of the Pre-Design / Diligence Study was to reach beyond the previously completed master planning study and into early design due diligence with more detailed investigations of the three conceptual options: Renovation + Additions: Wrapper, Full Replacement: Horizontal, and Full Replacement: Vertical. The design team received input on the development options from the Steering and Master Planning Committees at regular meetings throughout the three month study.

The design team’s scope also included the following due diligence analysis under this effort:

- Health and safety analysis of existing facilities
- Existing space and site analysis
- Program verification per Educational Specifications for comprehensive high school for 1,700 students
- Land use planning and code compliance
- Site survey and geotechnical analysis
- Assessment of existing building systems (mechanical, electrical, data, plumbing fire protection)
- Develop building concepts and site design options
- Provide civil, landscape structural, mechanical, and electrical systems narratives for each design concept
- Develop construction logistics and phasing scenarios
- Develop cost estimates for each option.

MASTER PLANNING COMMITTEE RECOMMENDATION

At the conclusion of the Due Diligence effort, the Master Planning Committee recommended the Full Replacement option based on the lower overall project cost, a qualitative assessment of the design, and the feasibility of implementation. Among the Full Replacement options, the MPC stated a preference for the Vertical scheme because it provides a clear south-facing orientation with simple massing and compact form, provides more efficiency in organizing the athletic facilities without stacking the gymnasiums, and promotes long-term flexibility.







**Master Plan Phase**

- 7 Master Plan Committee / Public Meetings
- 1 Open House
- 1 Public Design Workshop
- Multiple Meetings with Neighbors and Other Stakeholders

**Due Diligence Phase**

- 7 Design Advisory Group / Public Meetings
- 1 Open House
- 1 Public Design Workshop
- Multiple Meetings with Neighbors and Other Stakeholders

**Current Phase**

- 7 Design Advisory Group / Public Meetings
- 1 Open House (Planned October, 2018)
- 1 Public Design Workshop (Scheduled August 1, 2018)
- Multiple Meetings with Neighbors and Other Stakeholders





**Lincoln High School Proposed Program**

- 280,000-290,000 SF
- Instructional Spaces
- Fine & Performing Arts
- 500 Seat Theater
- Athletics (2 gyms, weights, movement, wrestling, lockers)
- Teen Parent Center
- Health Center
- Admin & Counseling
- Special Education
- Media Center
- Commons & Food Service
- Track & Field With Grandstands
- Small Practice Field
- Plazas & Landscape & 100 Parking Spaces
- Site Security TBD
- No Retail Uses - Bond can fund educational uses only





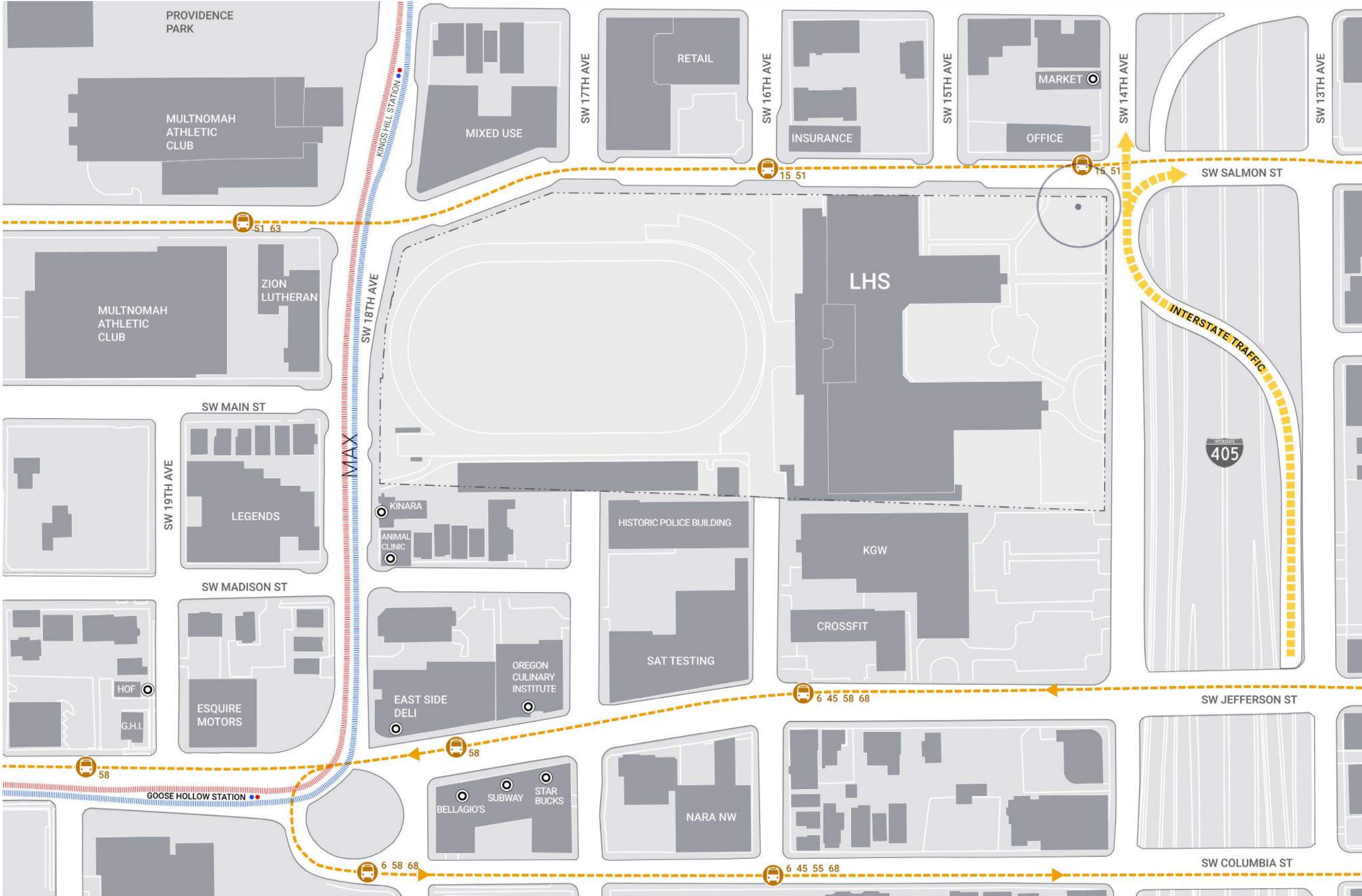


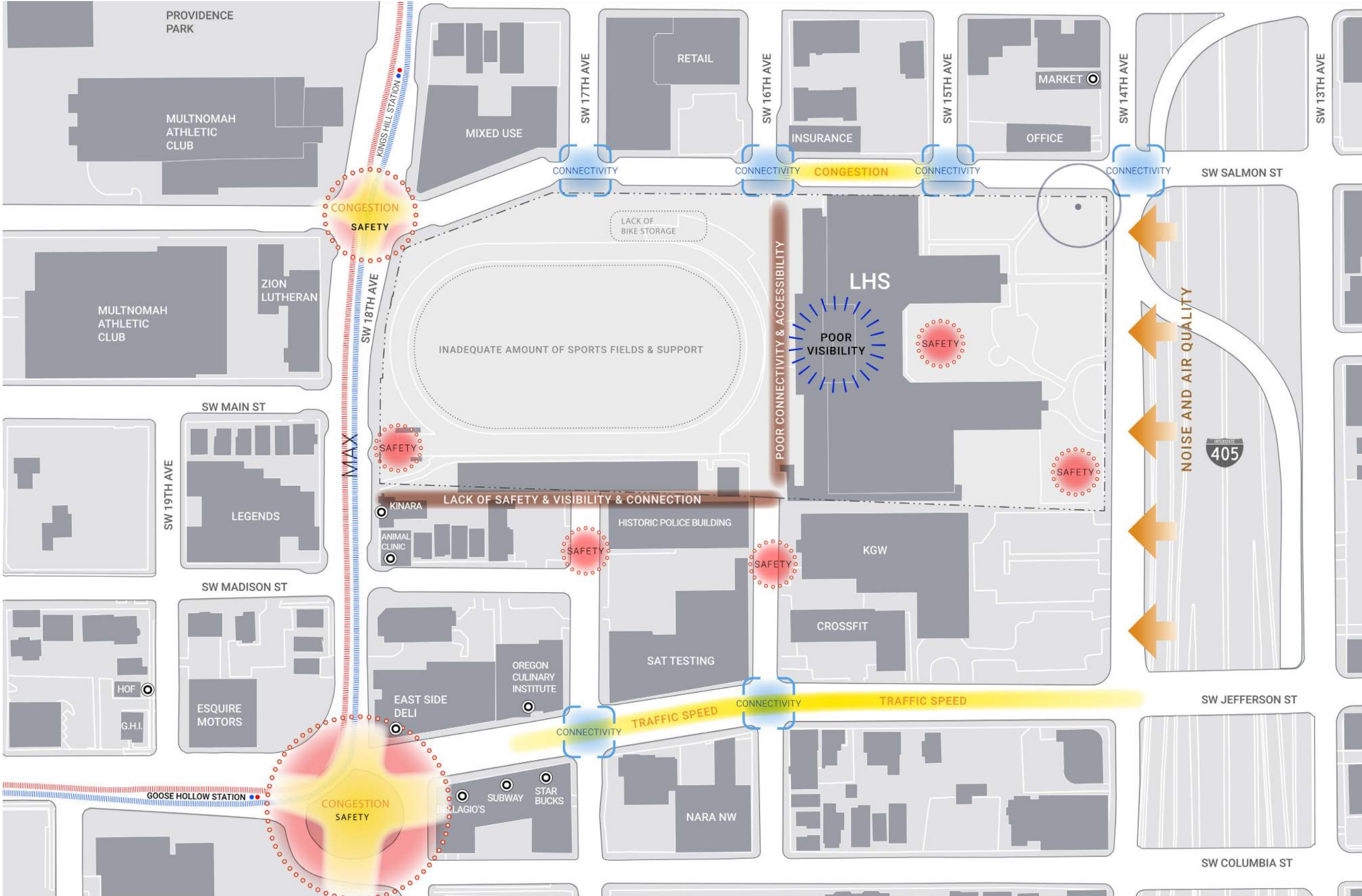
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SITE ANALYSIS

LINCOLN HIGH SCHOOL MODERNIZATION







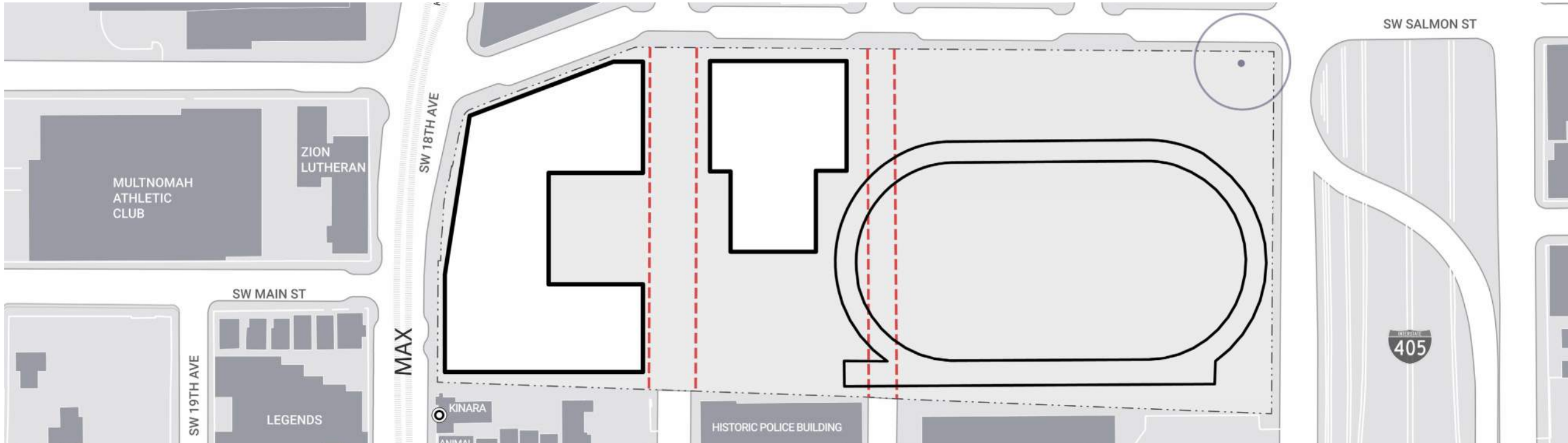
BUILDING LOCATION OPTIONS  
LINCOLN HIGH SCHOOL MODERNIZATION



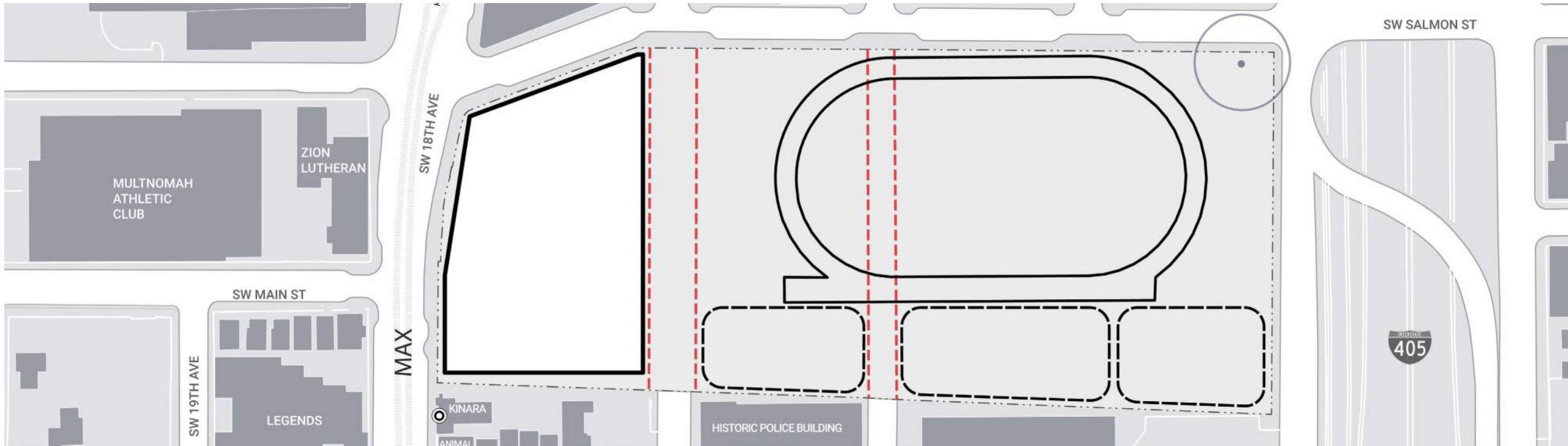


BUILDING LOCATION CRITERIA	1	2	3
Allows Continuous Operation of Lincoln High School	✓	✓	X
Allows Space for Track & Field	✓	X	✓
Accommodates Building Program	✓	✓	✓
Accommodates Pedestrian Connectivity Through Site	✓	✓	✓

Option 1 is the only option that allows for continuous Lincoln High School operations during construction and accommodates the required Track & Field.



MULTIPLE BUILDINGS

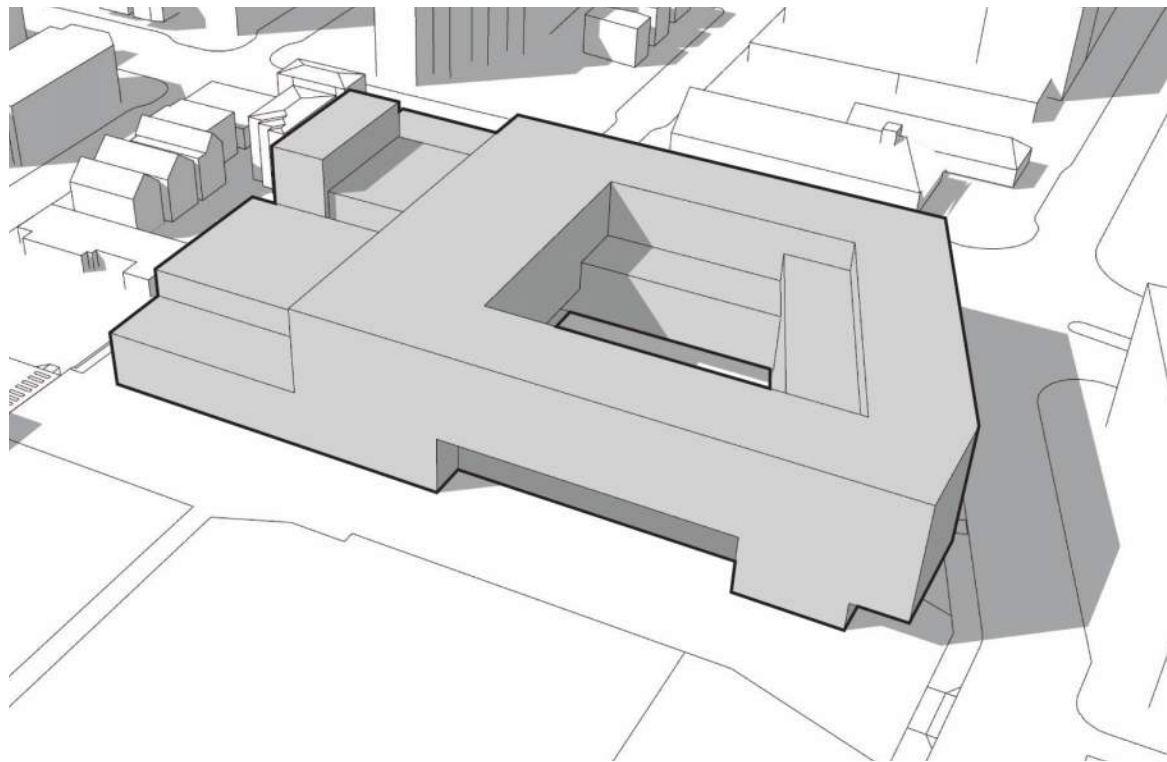


SINGLE BUILDING

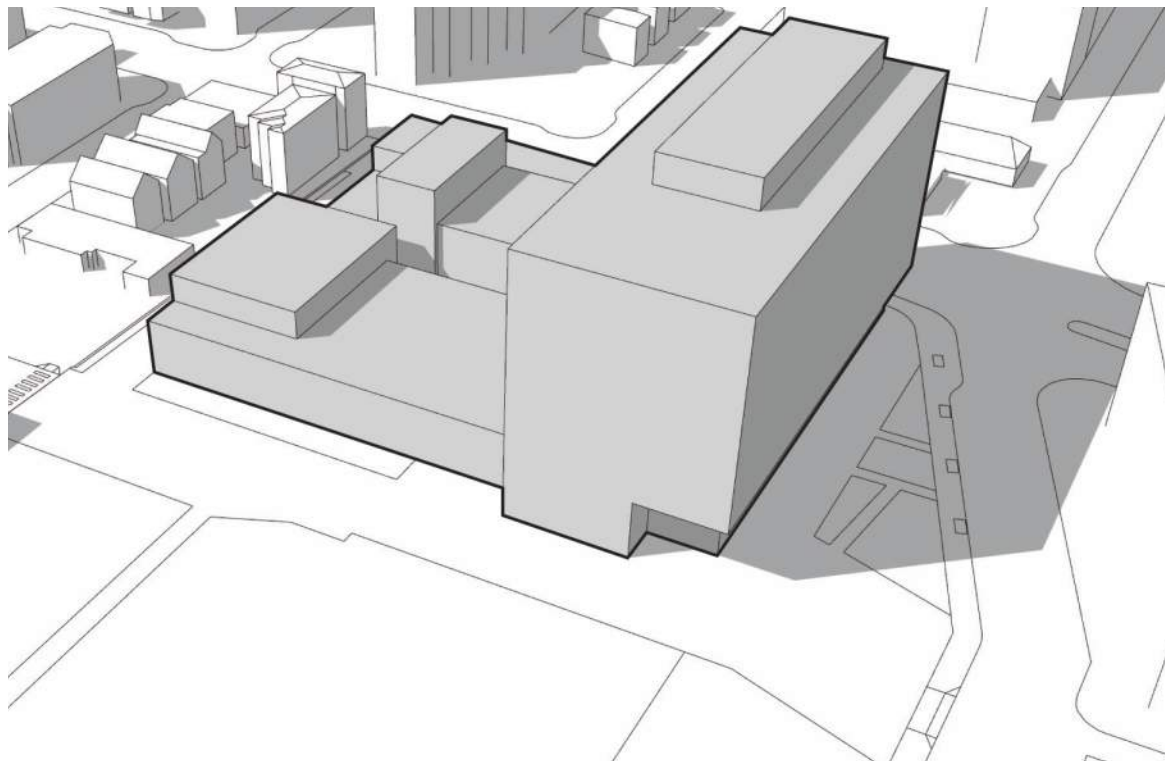
SINGLE BUILDING VS MULTIPLE BUILDING OPTIONS	SINGLE	MULTIPLE
Accommodates Building Program	✓	✓
Accommodates Site Program	✓	✓-
Enhances Security & Visibility	✓	X
Appropriate Urban Scale	✓	✓
Cost Effective	✓	X

- Single Building Option Preferred
- Multiple buildings present significant security issues and is a more costly option
- The site is large enough and prominent enough to support the larger scale of a single building.





HORIZONTAL ORGANIZATION

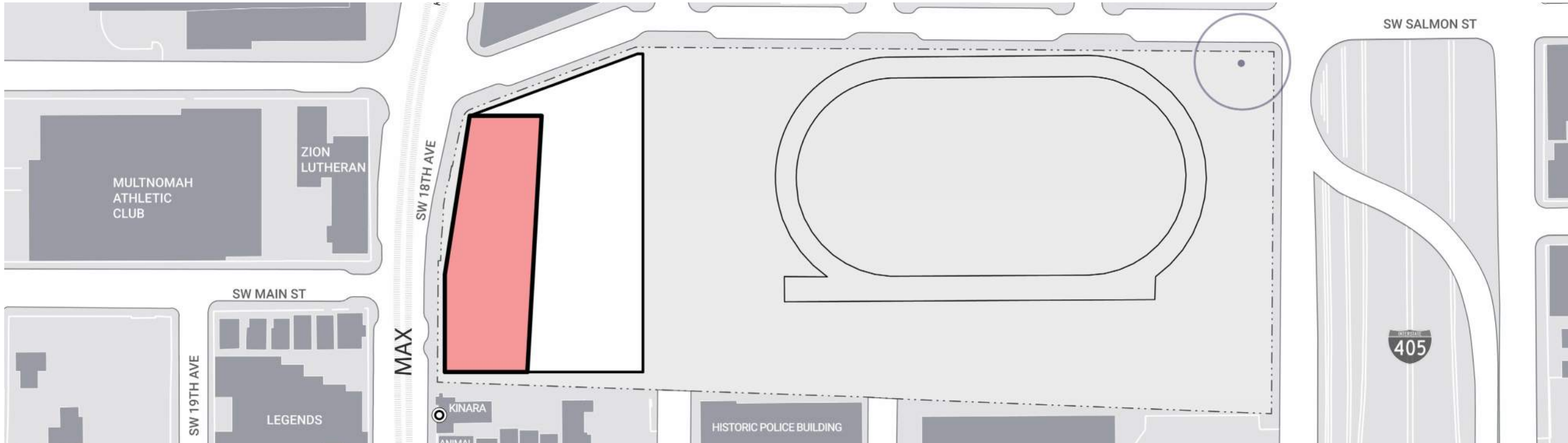


VERTICAL ORGANIZATION

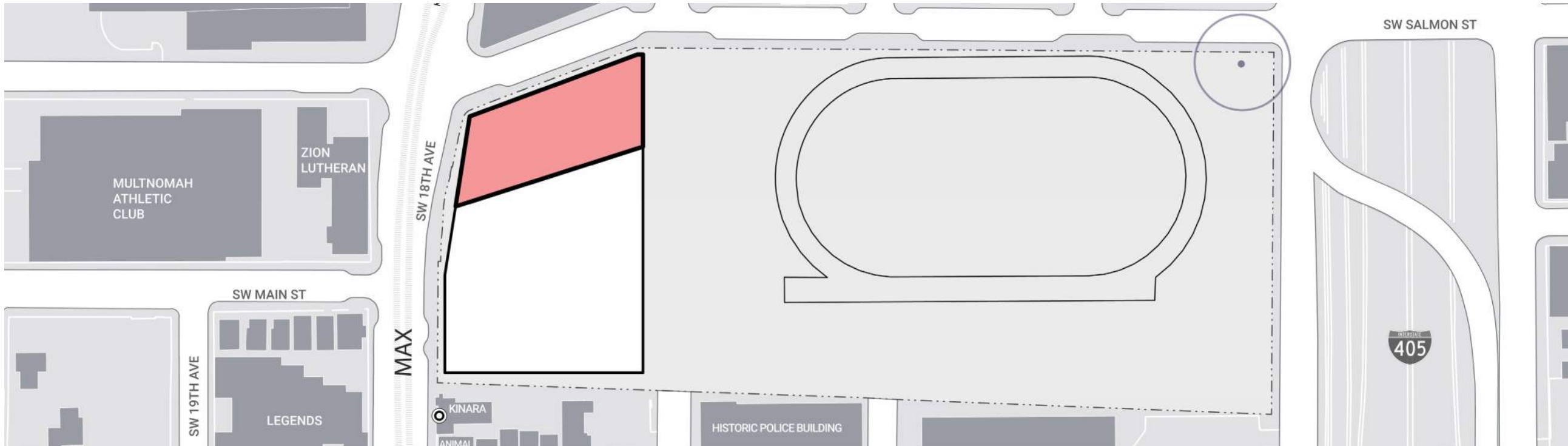
ORGANIZATION CRITERIA	HORIZONTAL	VERTICAL
Accommodates Building Program	✓	✓
Minimizes Structural Transfers	X	✓
Minimizes Acoustical Transfers	X	✓
Provides Varied Massing and Profile	X	✓
Provides Daylight and Views to all Program Spaces	✓-	✓

Vertical Option Preferred

- Horizontal Option requires placement of short span structure over long span assembly spaces = \$\$\$
- Horizontal Option requires costly acoustical isolation of assembly spaces
- Vertical option provides more varied building profile, Horizontal Option is more monolithic
- Horizontal Option will limit daylight and views to some program



EAST/WEST FACING



NORTH/SOUTH FACING



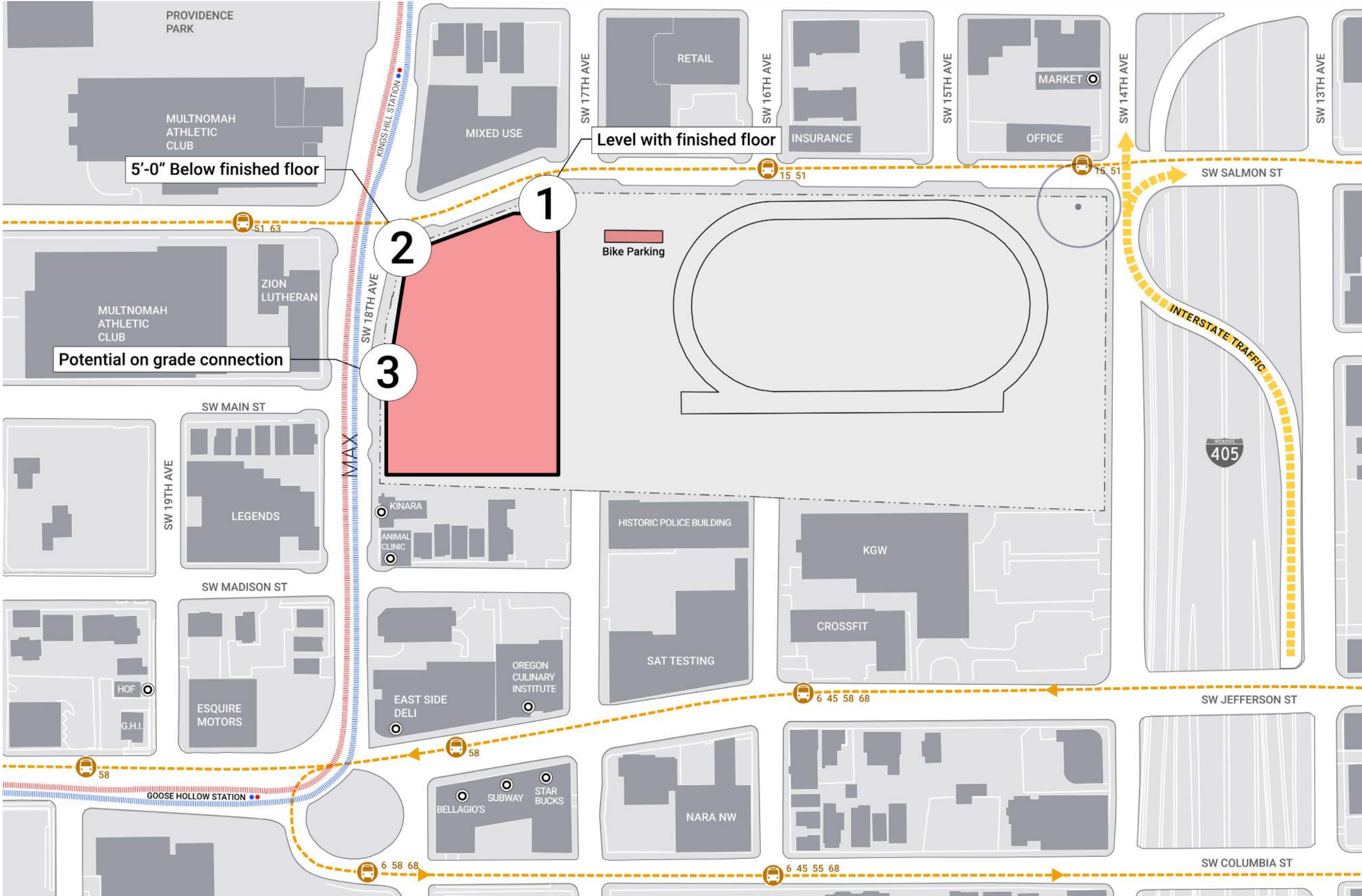


VERTICAL BAR ORIENTATION CRITERIA	EAST/WEST	NORTH/SOUTH
Minimizes Glare in Instructional Spaces	X	✓
Minimum Heat Gain in Instructional Spaces	X	✓
Minimum Energy Use	X	✓
Minimum View Impact	X	✓

North/South Facing Orientation Preferred

\* NOTE: Views are not protected

POTENTIAL MAIN ENTRY LOCATIONS  
LINCOLN HIGH SCHOOL MODERNIZATION



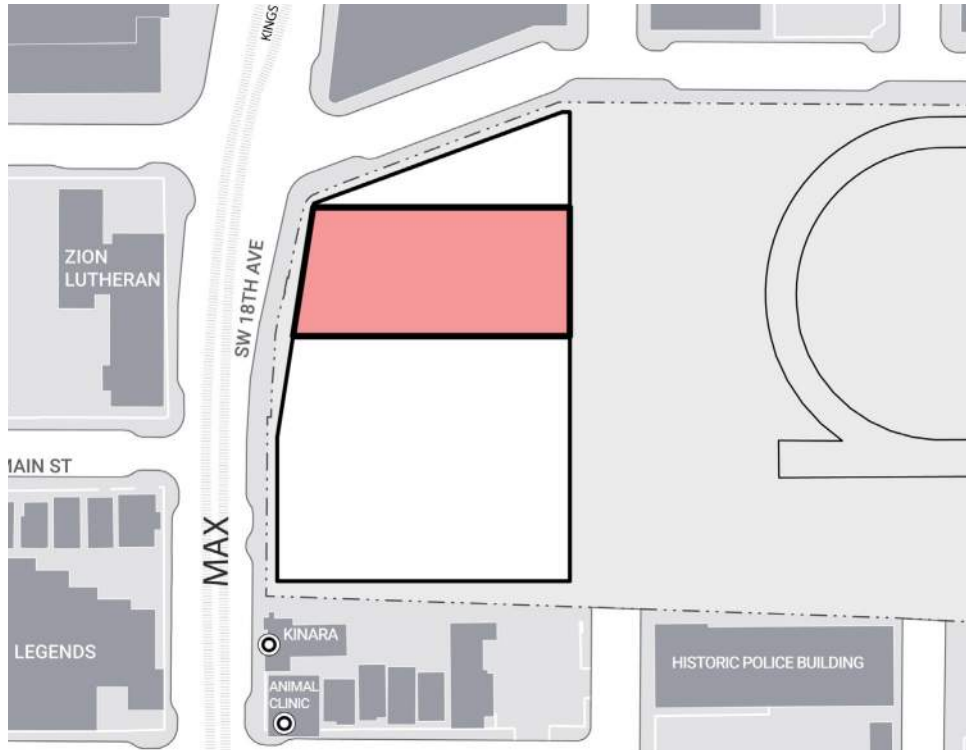
POTENTIAL MAIN ENTRY LOCATIONS

LINCOLN HIGH SCHOOL MODERNIZATION

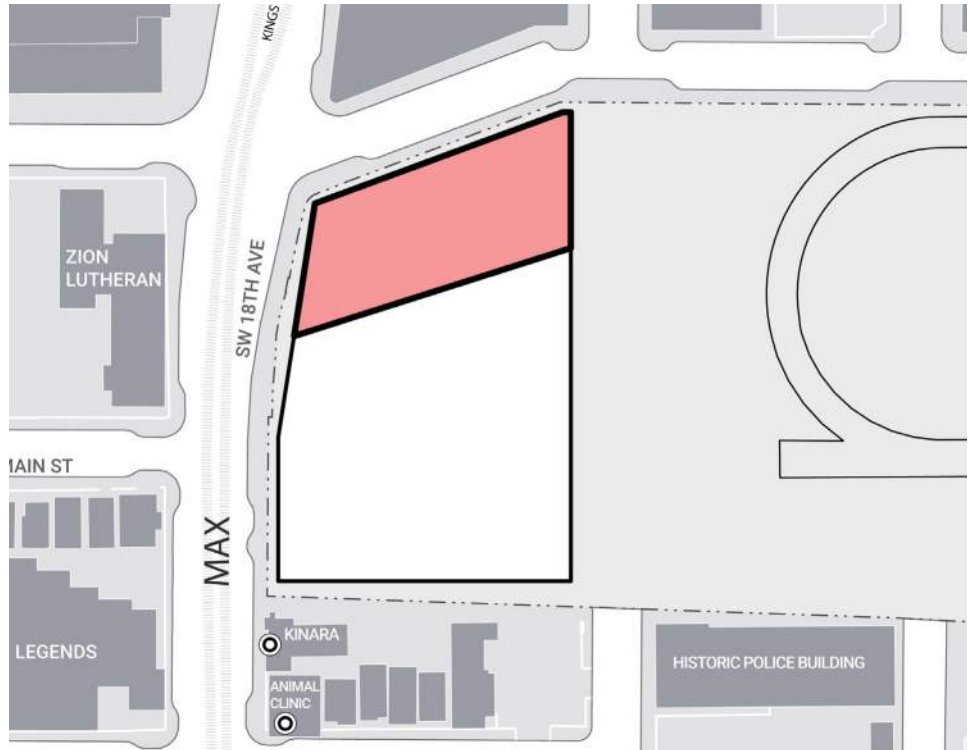
MAIN ENTRY LOCATION CRITERIA	1	2	3
Visible from Salmon	✓	✓	X
Universal Access	✓	X	✓-
Minimize Congestion at Major Intersection	✓	X	X
Supports Site Security	✓	X	X
Supports Transit Use	✓	✓	✓
Supports Bicycle Use	✓	✓-	✓-
Supports Pedestrians	✓	✓	✓

Option 1 Preferred

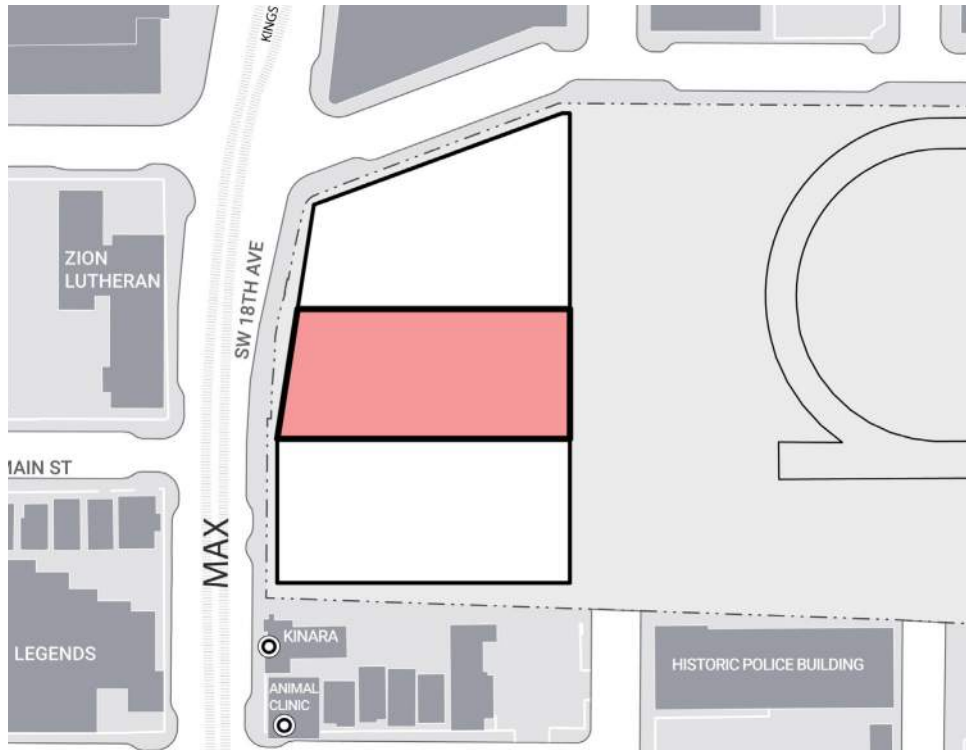
LOCATION OF VERTICAL BAR  
LINCOLN HIGH SCHOOL MODERNIZATION



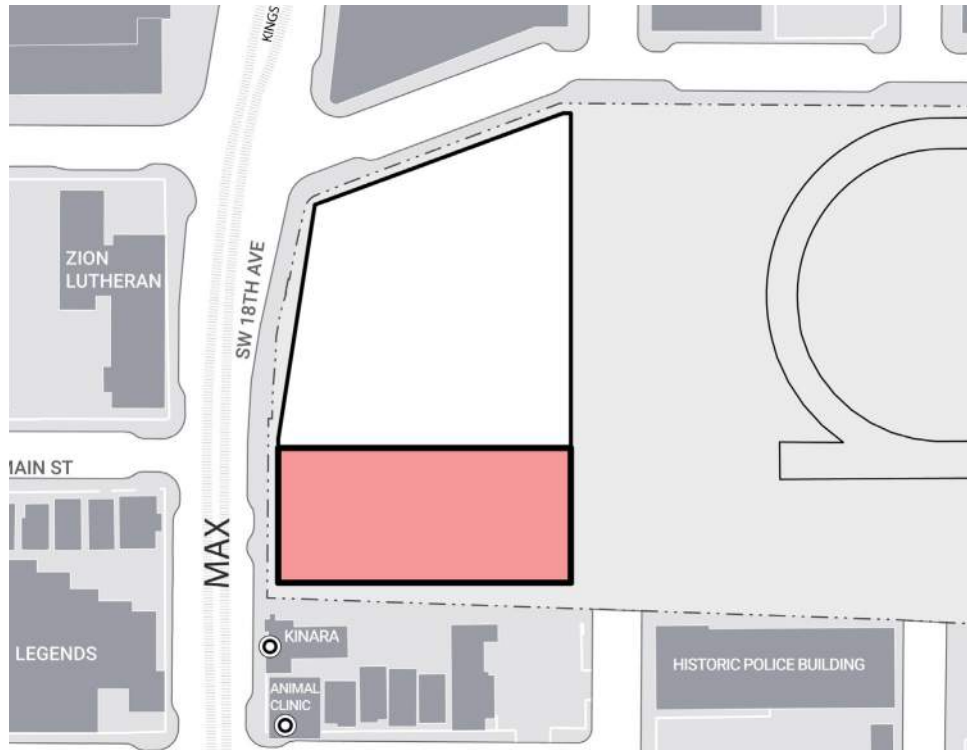
1. PERPENDICULAR TO 17th



2. PARALLEL TO SALMON



3. MID BLOCK



4. SOUTHERN EDGE



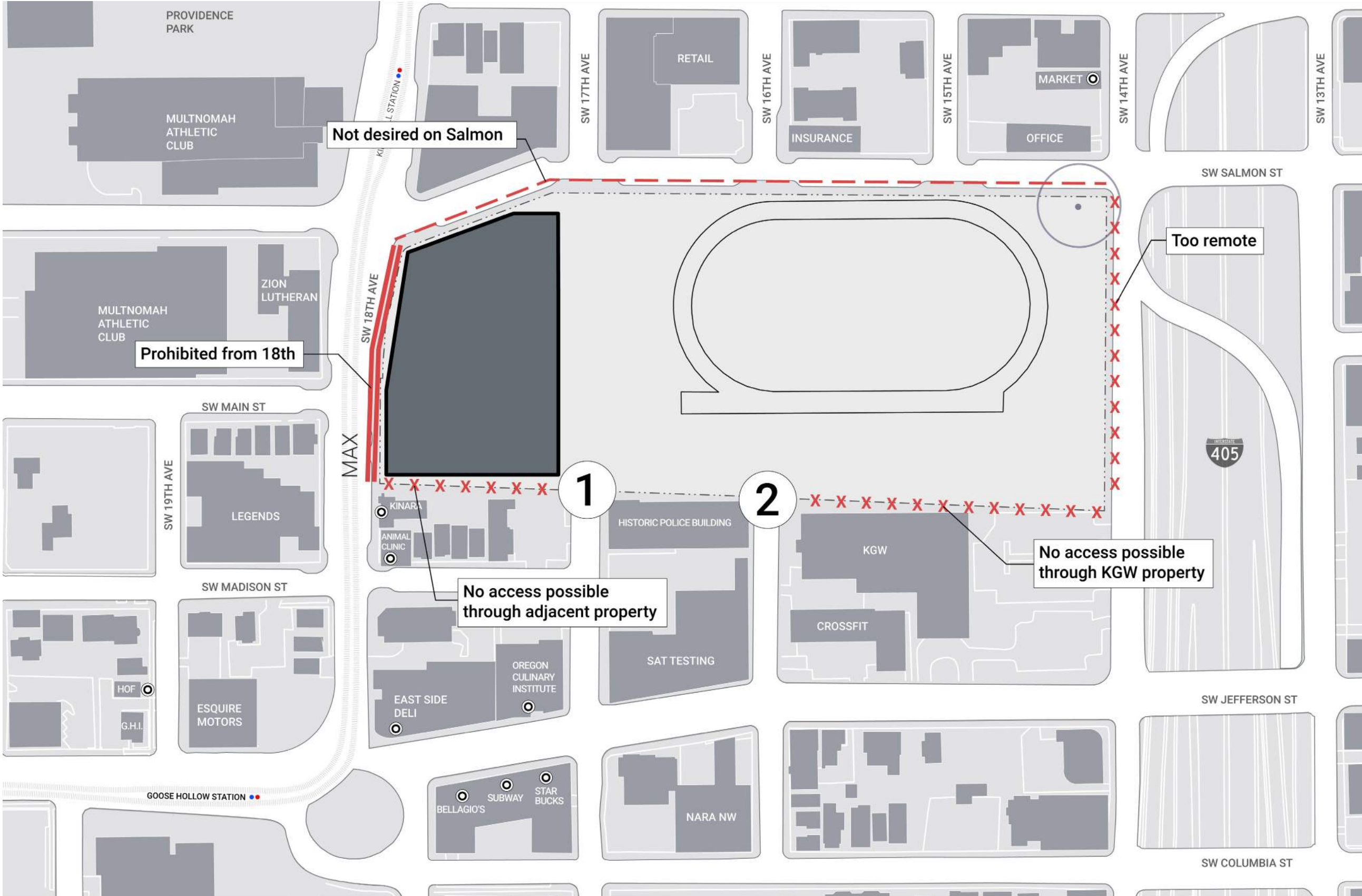


VERTICAL BAR LOCATION CRITERIA	1	2	3	4
Accommodates Building Program	✓	✓	✓	✓
Minimizes Structural Transfers over Assembly Spaces	✓	✓	X	✓
Maximizes Adjacency of Program to Main Entry	✓	✓	X	X
Defines Street Edge/Public Realm	✓-	✓	✓	✓
Maximizes Public Uses on Ground Floor / Active Uses	X <sup>A</sup>	✓	✓-	✓-
Maximizes PPS Operational Efficiencies	X <sup>B</sup>	✓	✓-	✓-

Option 2 Preferred

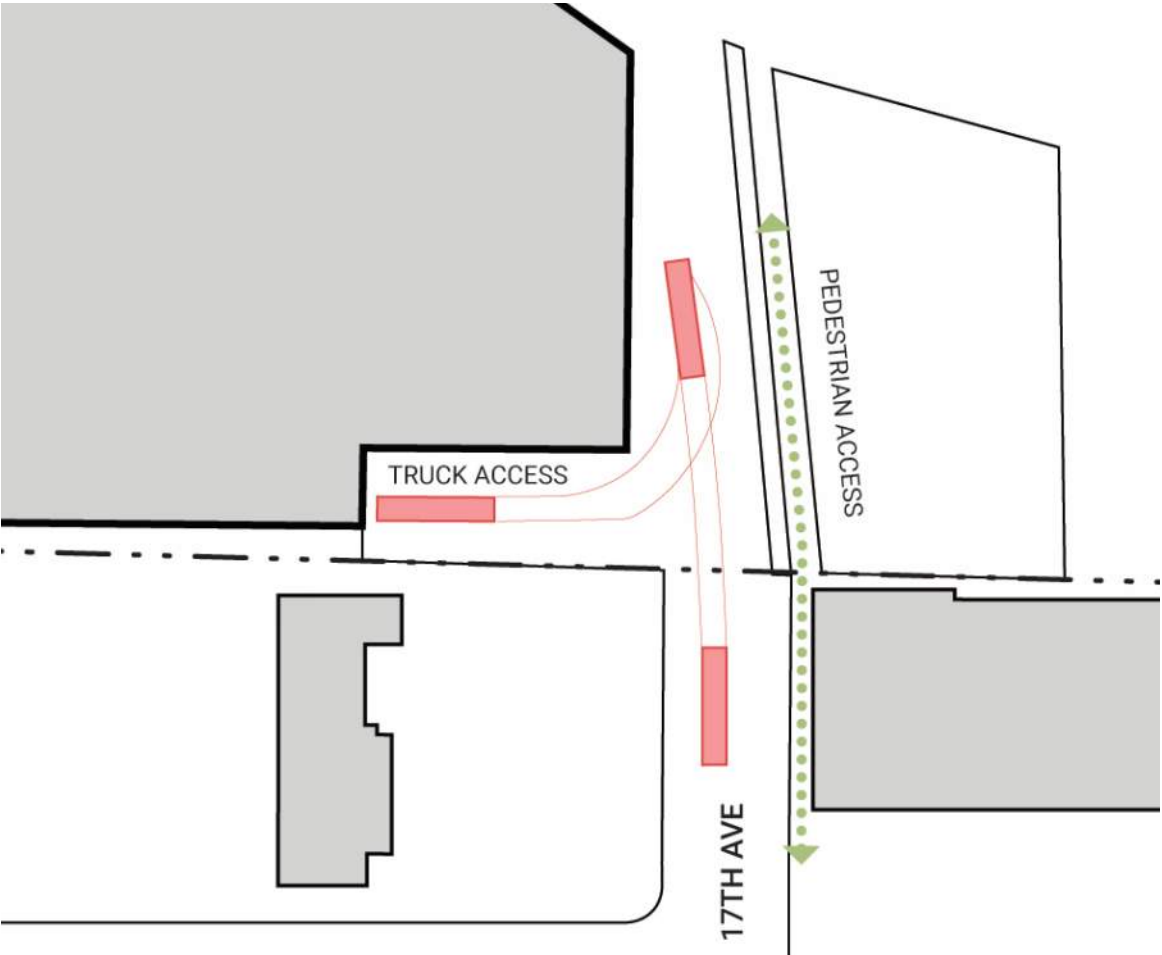
- A: Requires relocation of commons to upper levels
- B: Separates loading, commons & kitchen - requires extra staff

POTENTIAL SERVICE ACCESS LOCATIONS  
LINCOLN HIGH SCHOOL MODERNIZATION



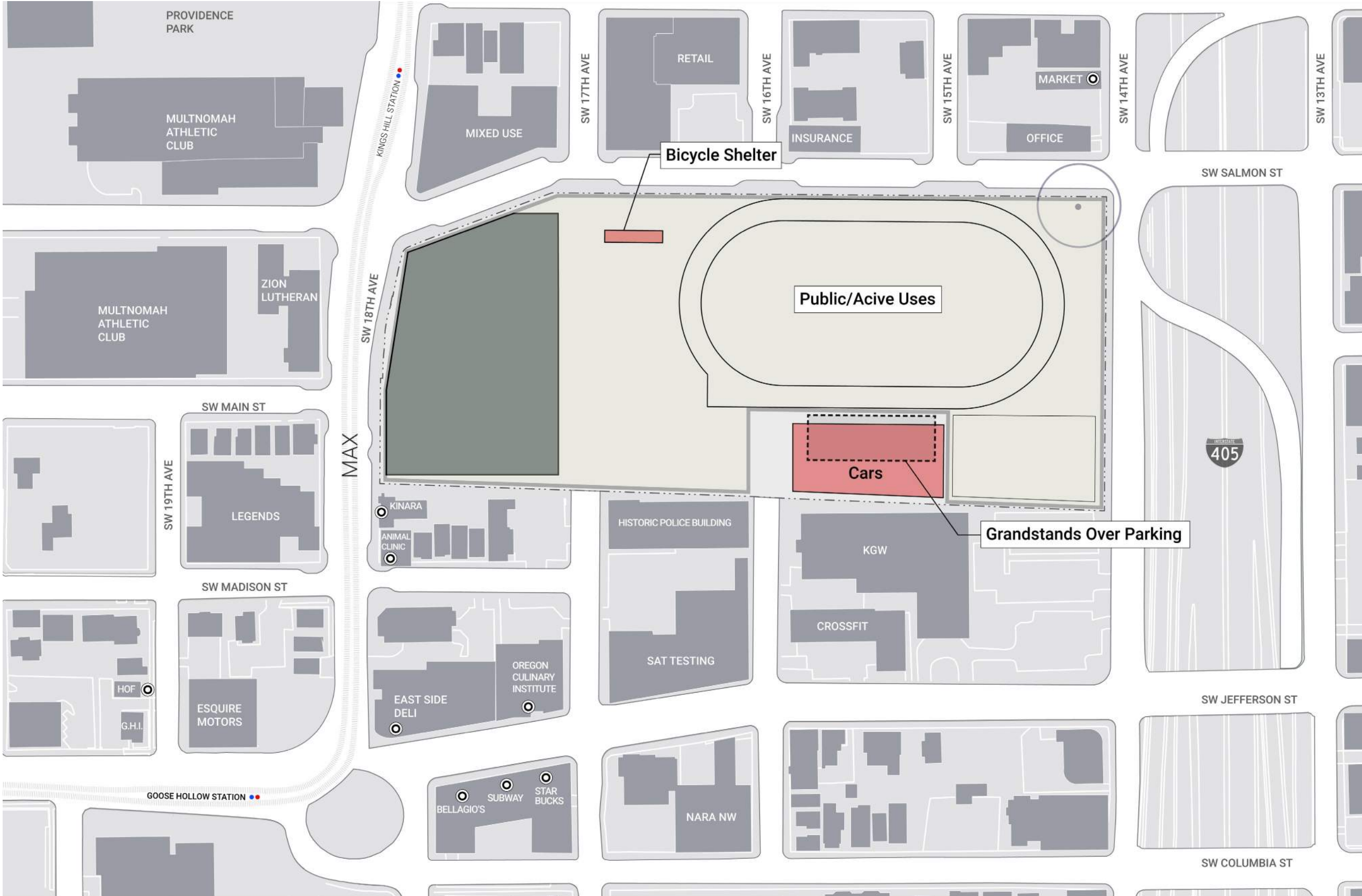
SERVICE ACCESS DESIGN CRITERIA	1	2
Adjacency to Building	✓	✗
Minimizes Pedestrian Conflicts	✓	✓-
Screened from Public View	✓	✓
Permitted by Jurisdictions	✓	✓
Minimizes Grading	✓	✗

Option 1 Preferred





PARKING STRATEGY (CARS & BICYCLES)  
LINCOLN HIGH SCHOOL MODERNIZATION



## PARKING STRATEGY OBJECTIVES:

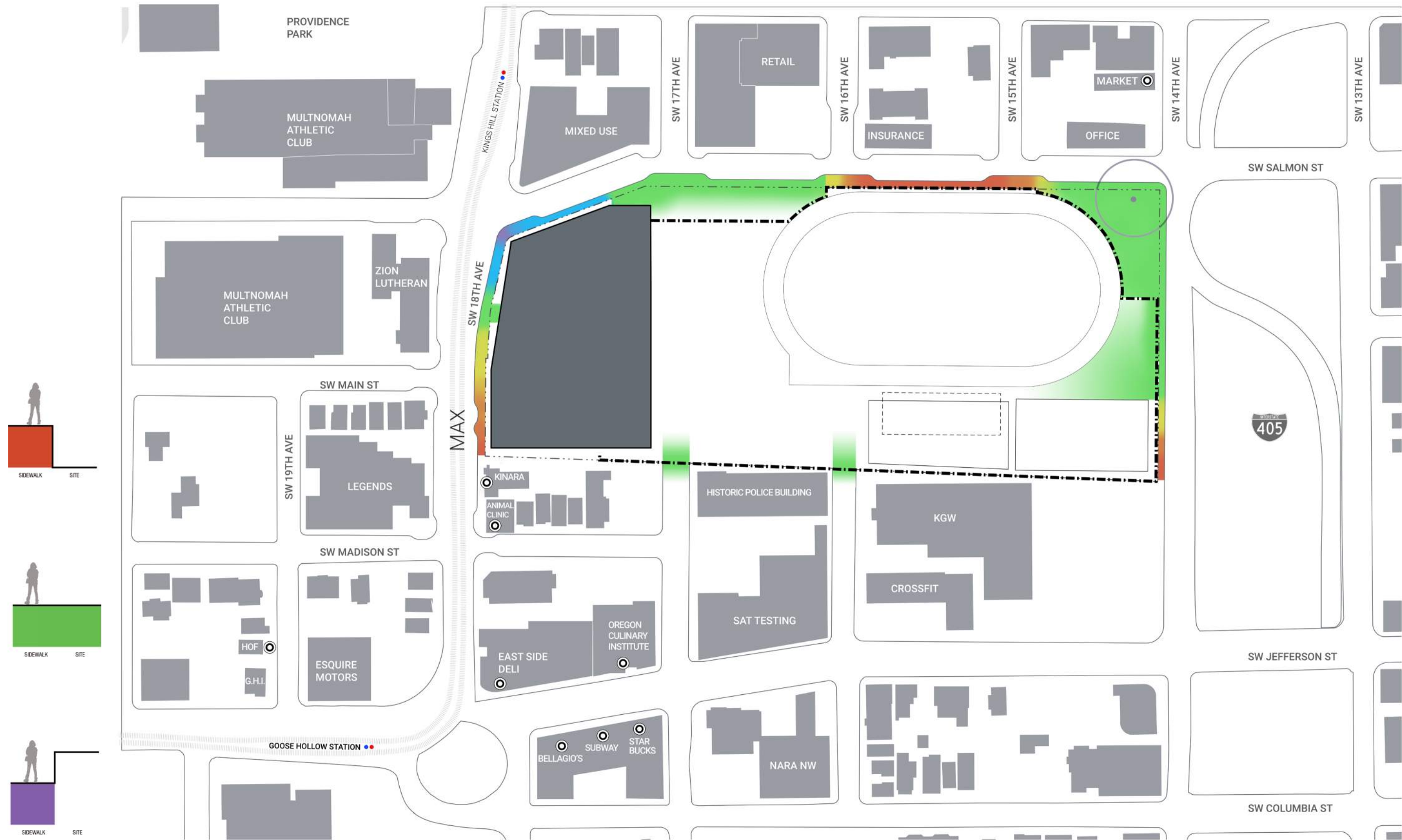
### CARS

- 100 surface spaces permitted by City of Portland
- Dedicated to Lincoln High School Staff, not for general public use except events
- Secured (fenced, card key access)
- Screened from public view by active uses

### BICYCLES

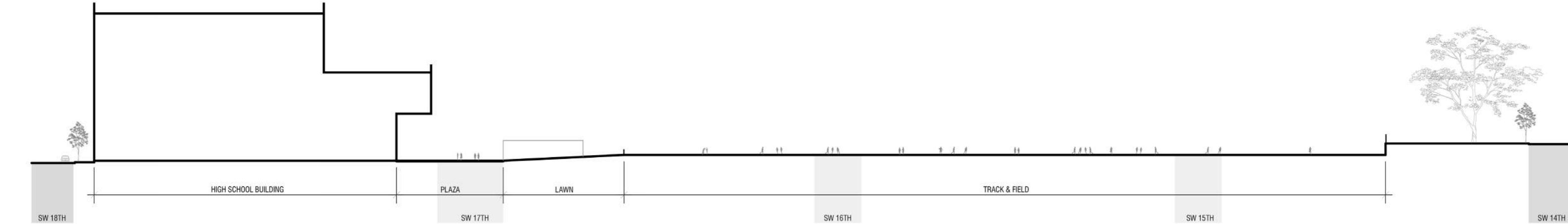
- Visible location
- Close to main entry
- Secured/protected from weather

NEIGHBORHOOD CONNECTIVITY - SIDEWALK TO SITE RELATIONSHIP  
LINCOLN HIGH SCHOOL MODERNIZATION

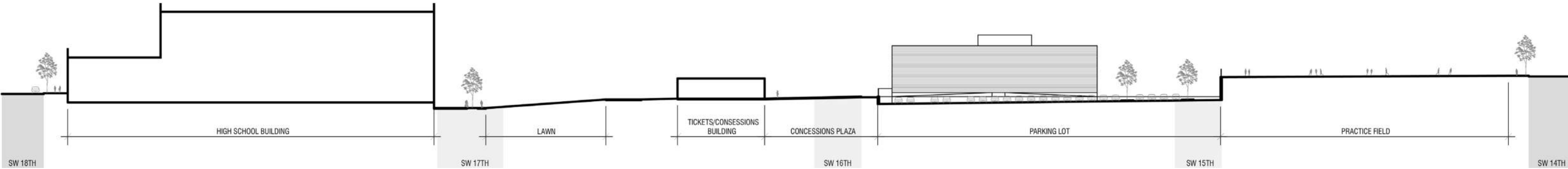




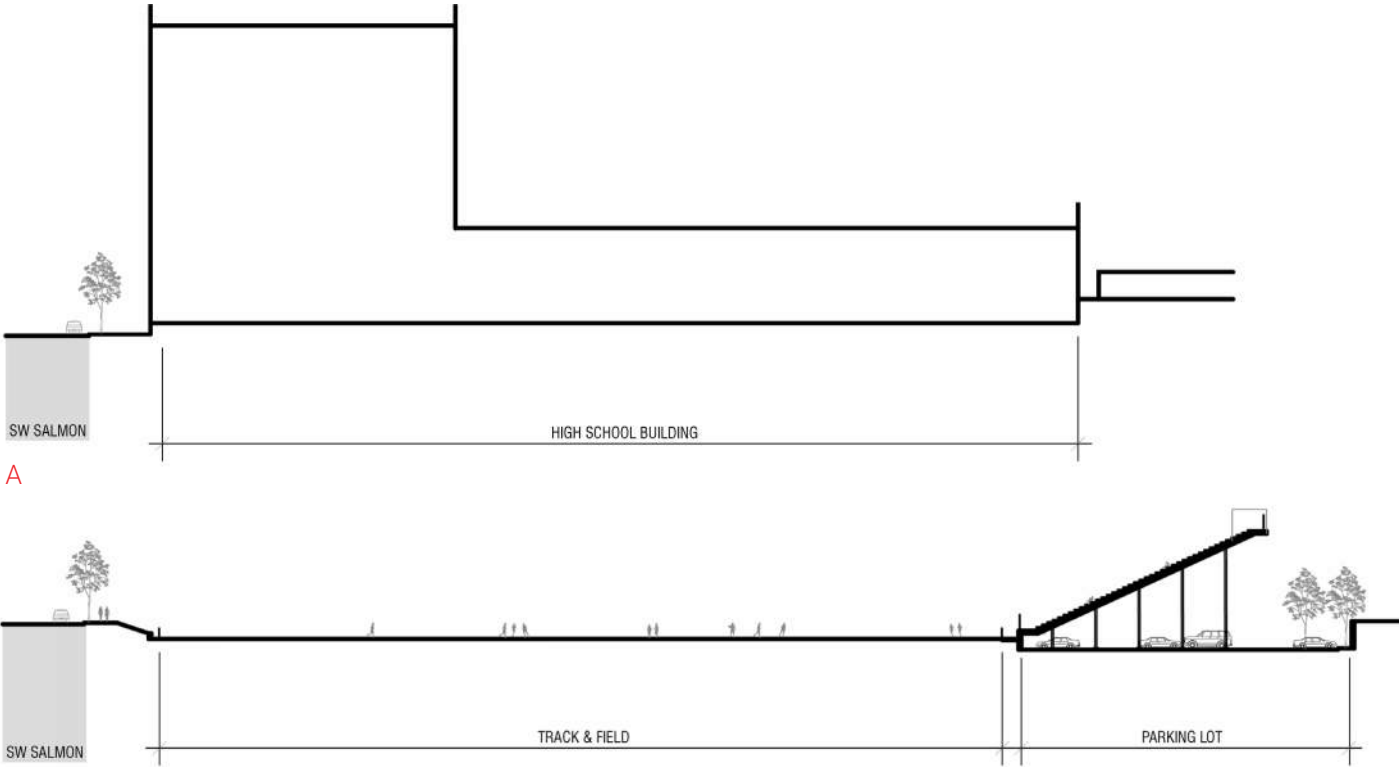
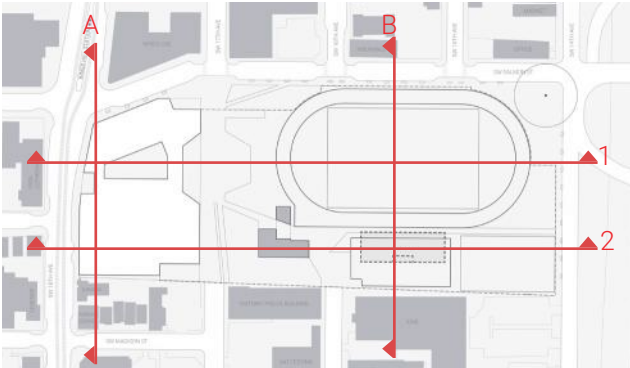
NEIGHBORHOOD CONNECTIVITY - SITE SECTIONS  
LINCOLN HIGH SCHOOL MODERNIZATION



1

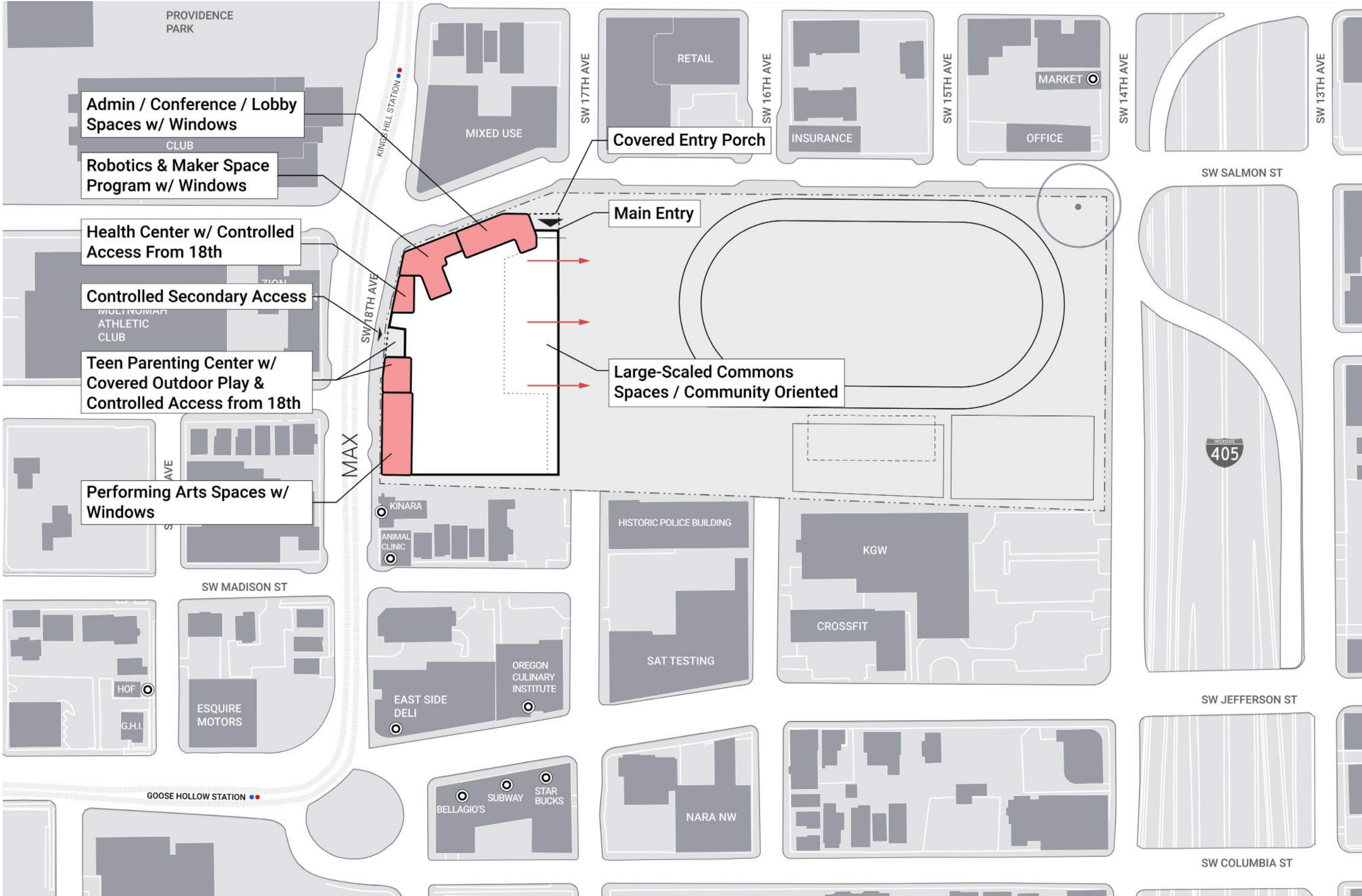


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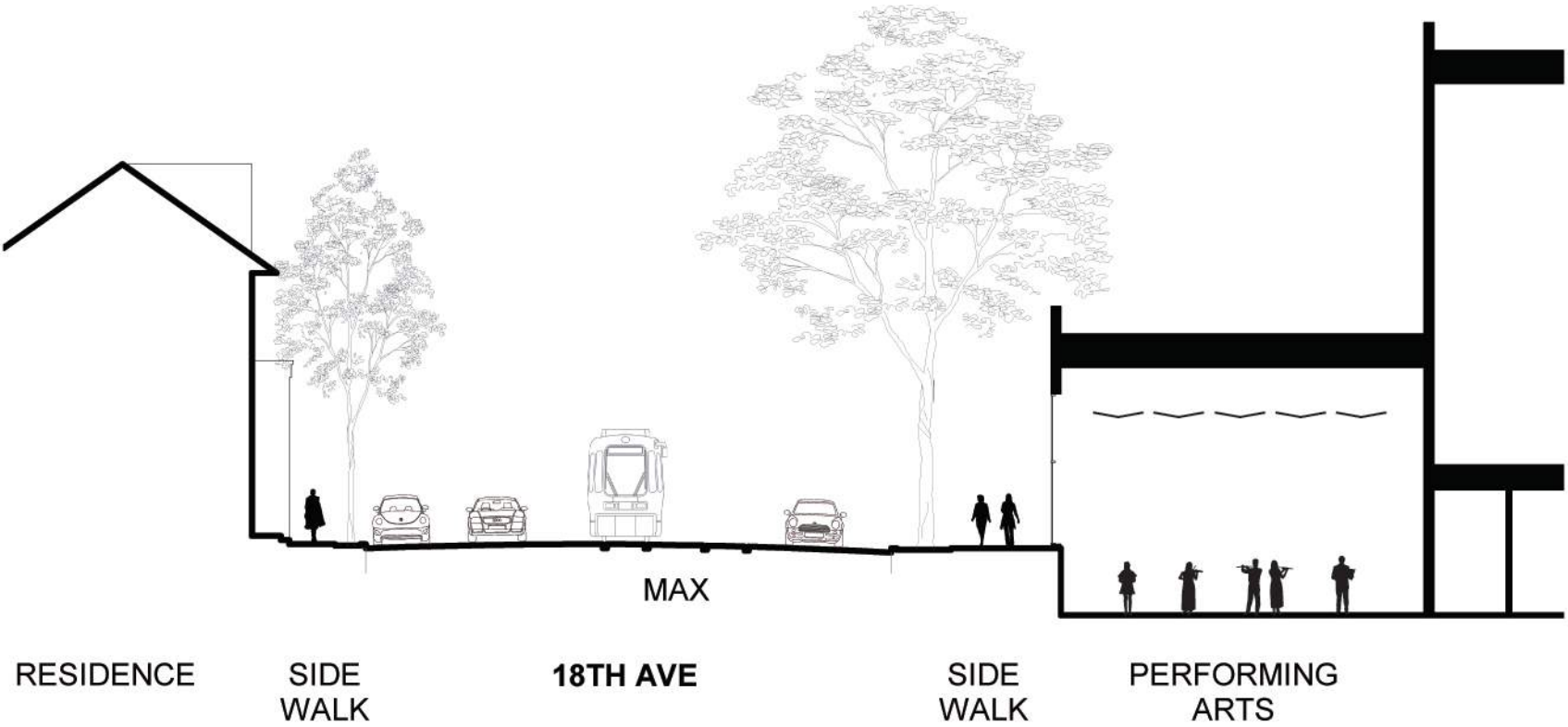
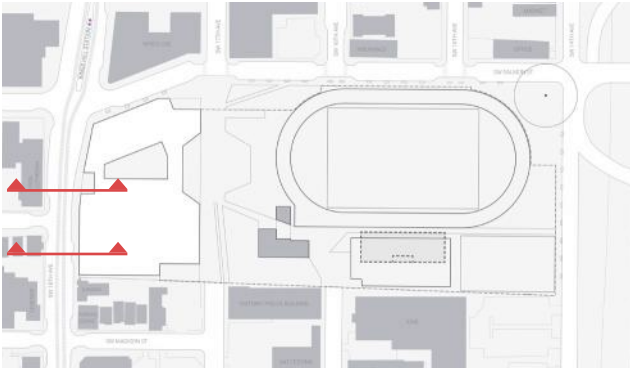
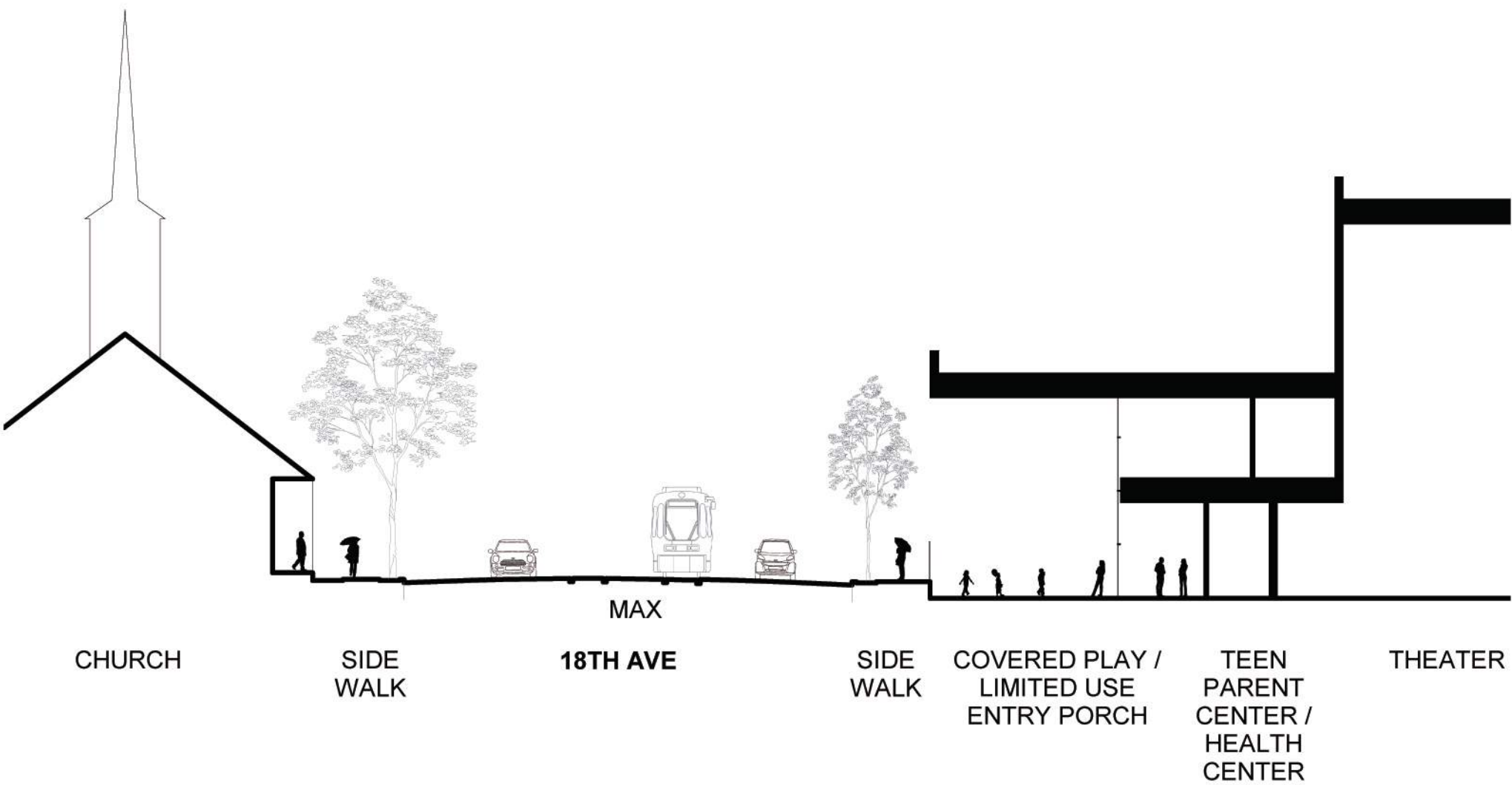


A

B

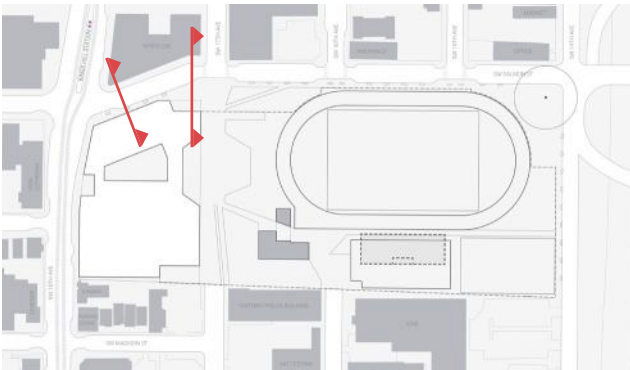
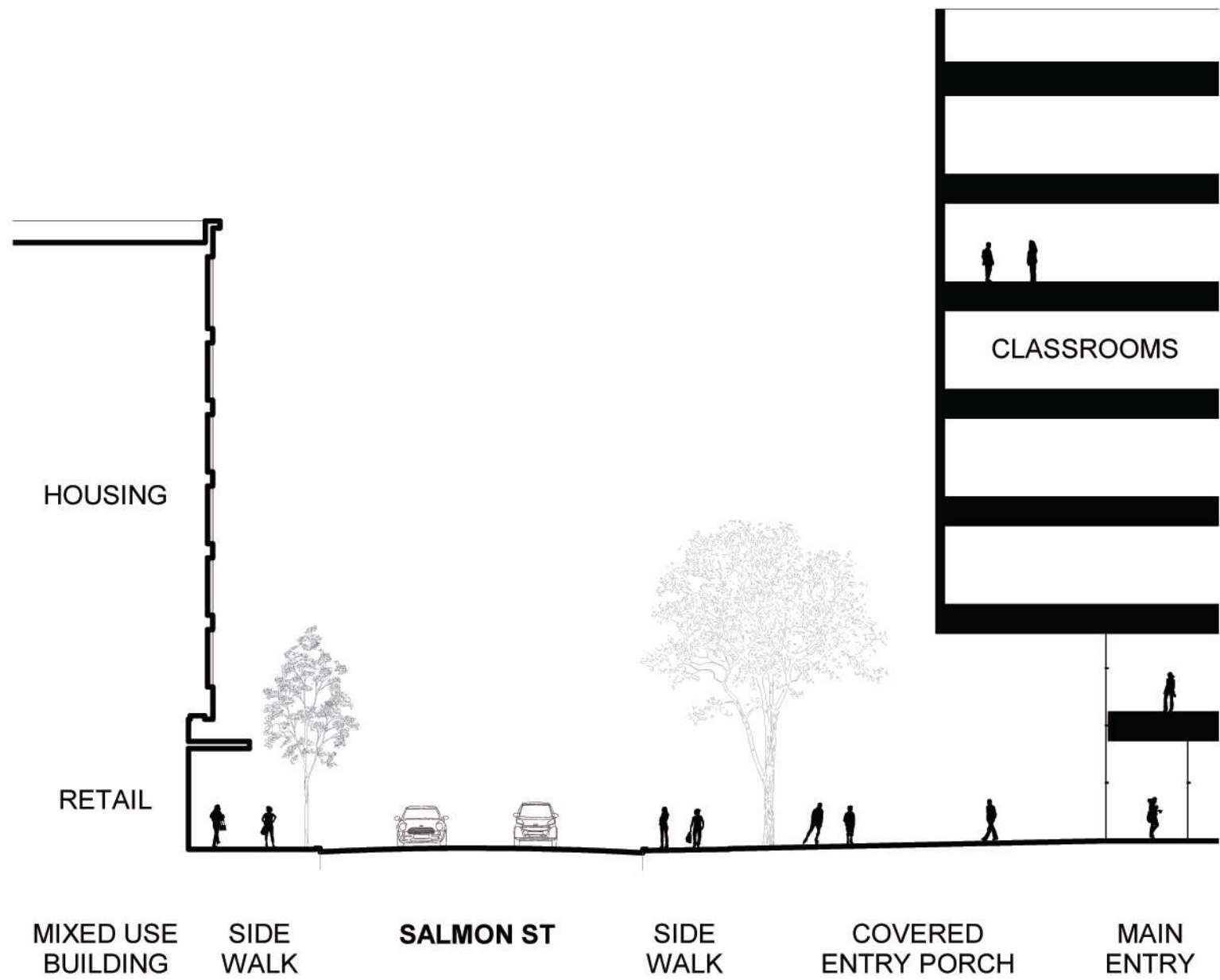
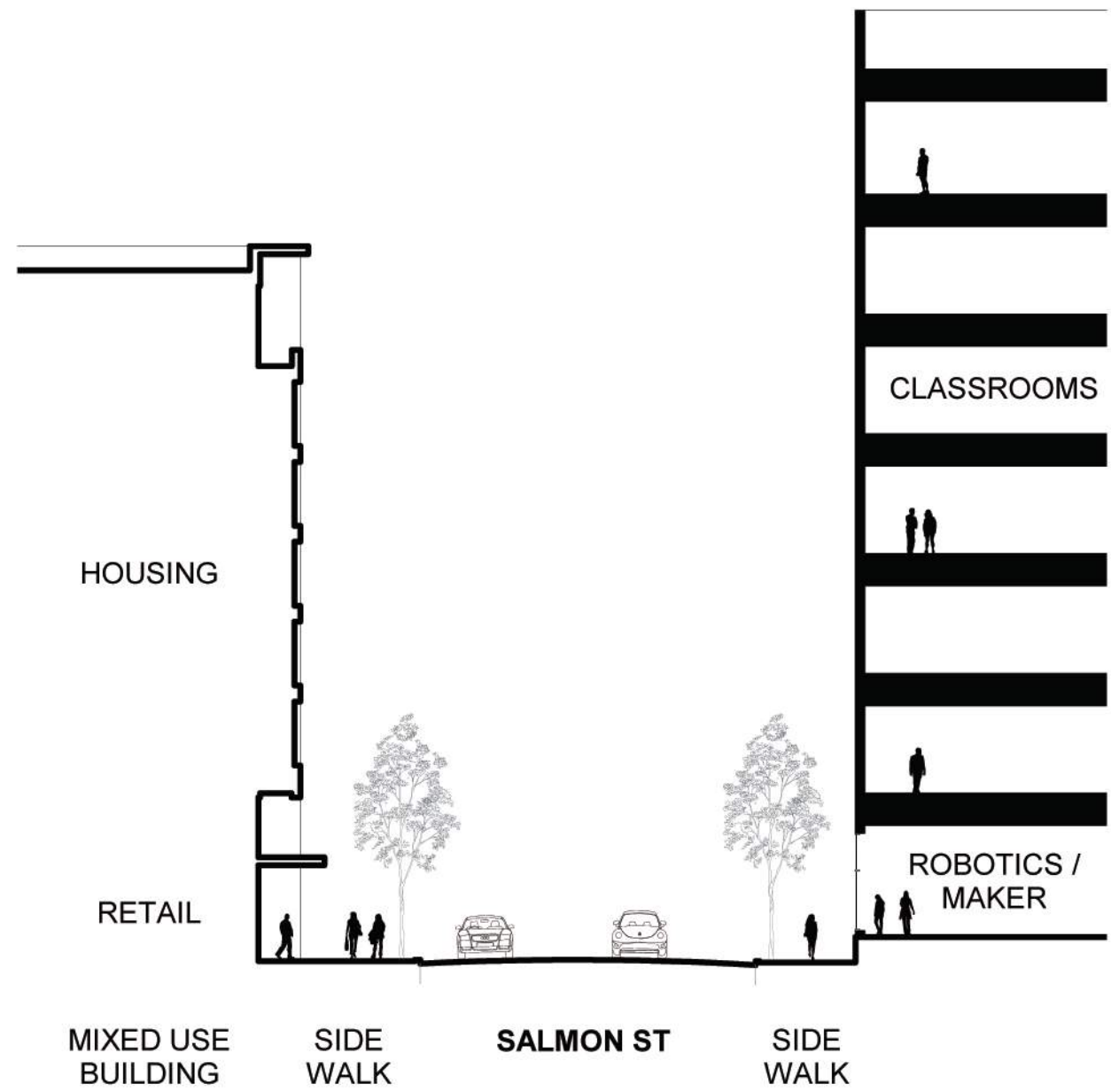


ACTIVE GROUND FLOOR - GRADE RELATIONSHIPS  
LINCOLN HIGH SCHOOL MODERNIZATION

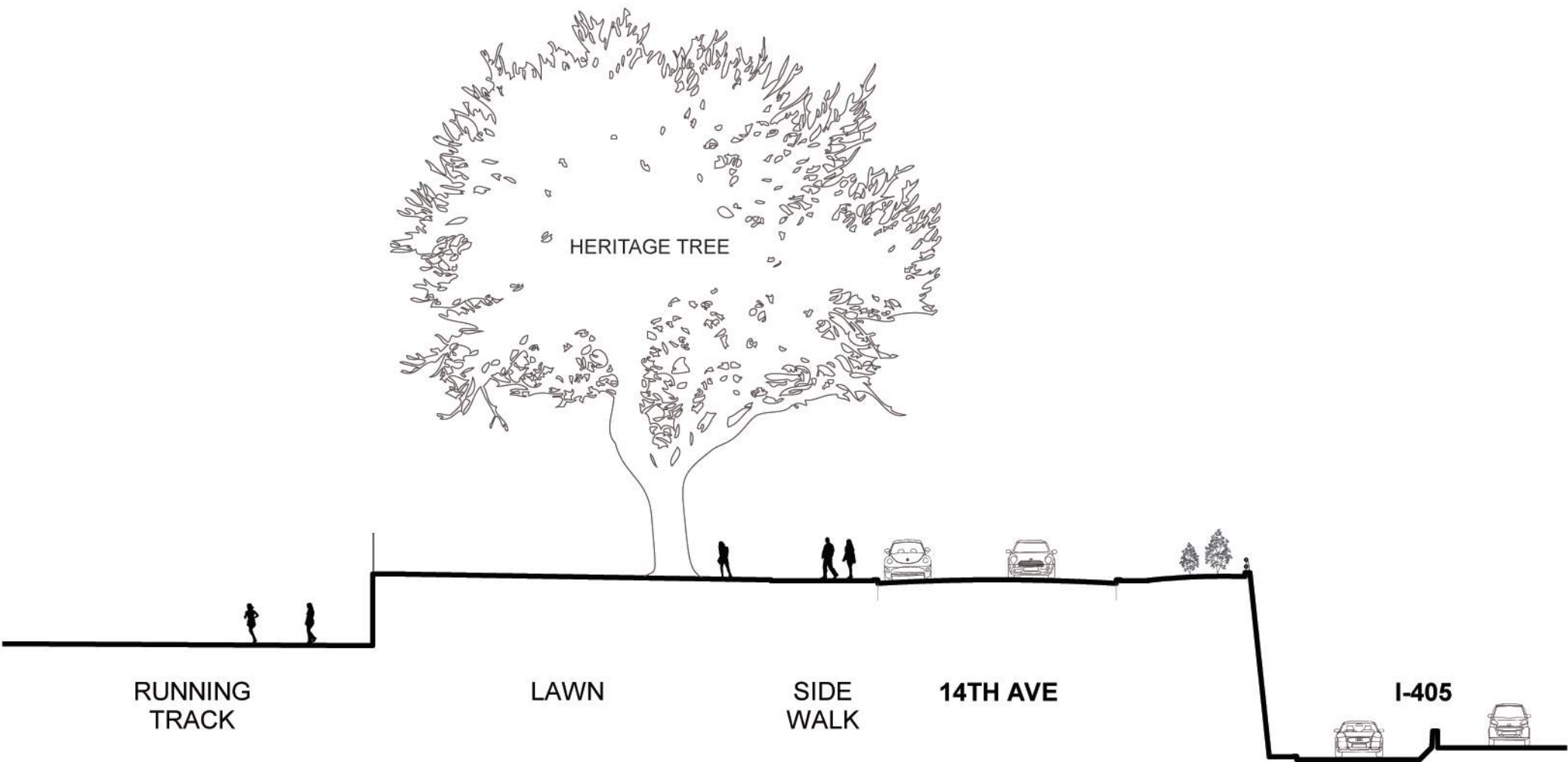
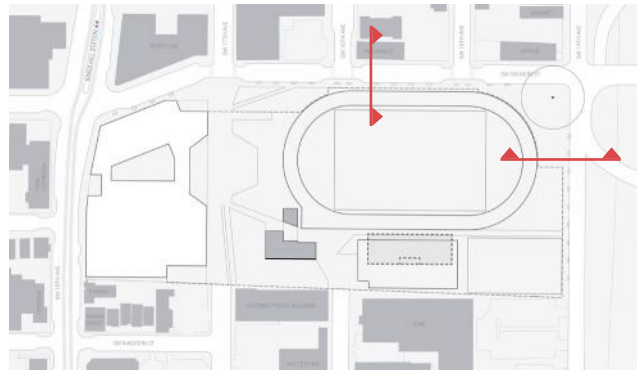
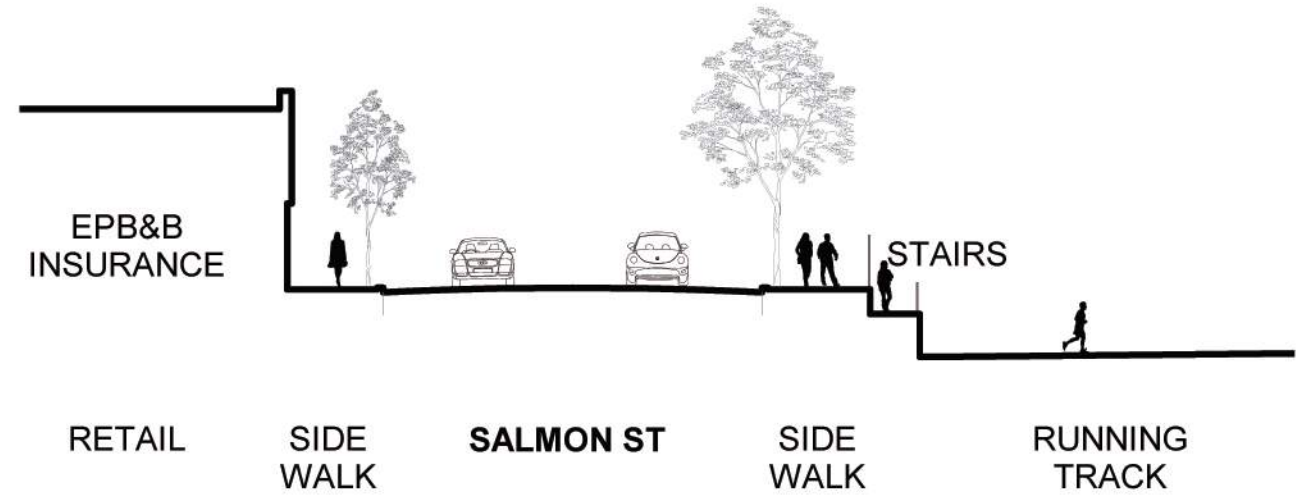


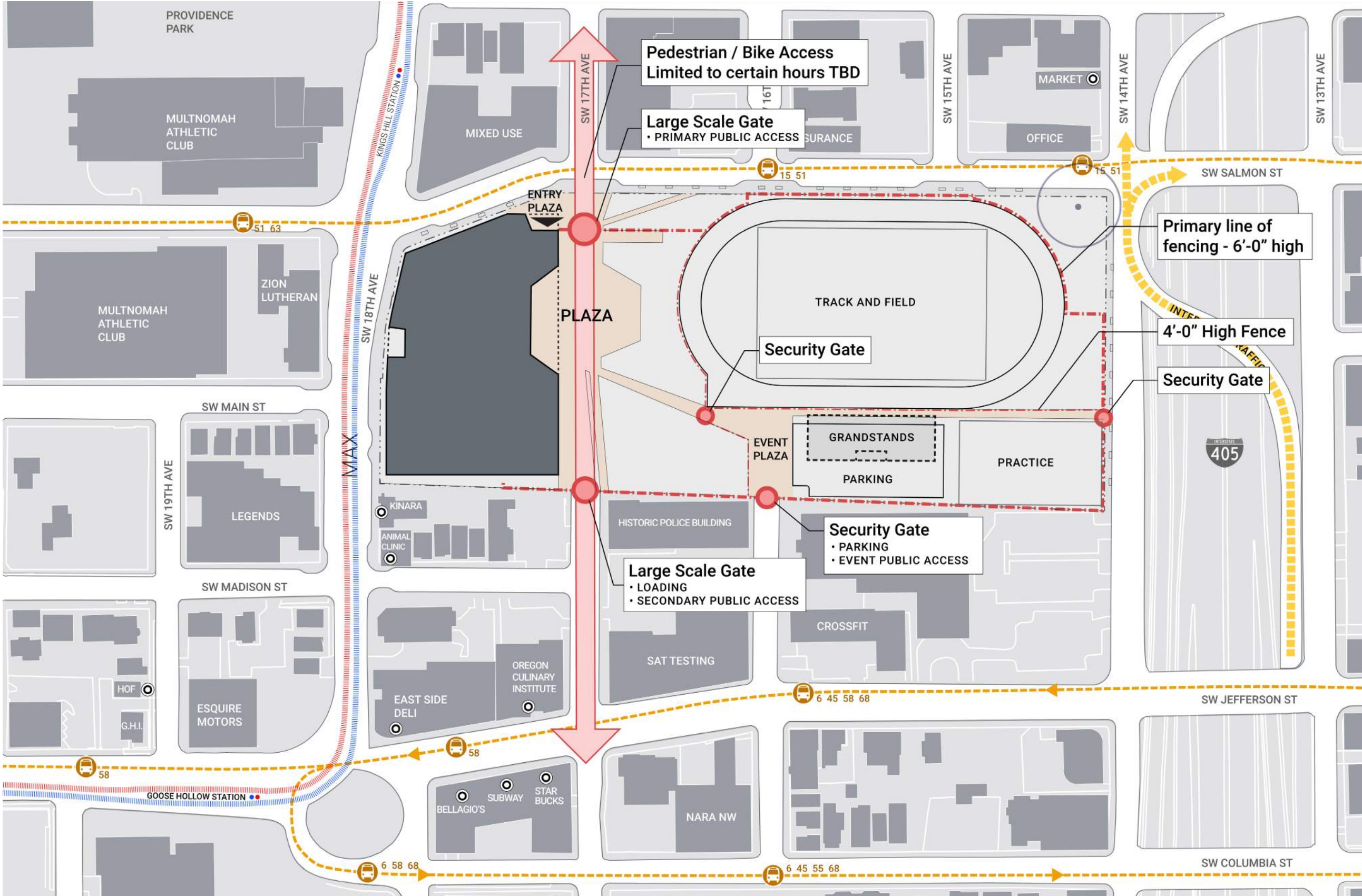


ACTIVE GROUND FLOOR - GRADE RELATIONSHIPS  
LINCOLN HIGH SCHOOL MODERNIZATION

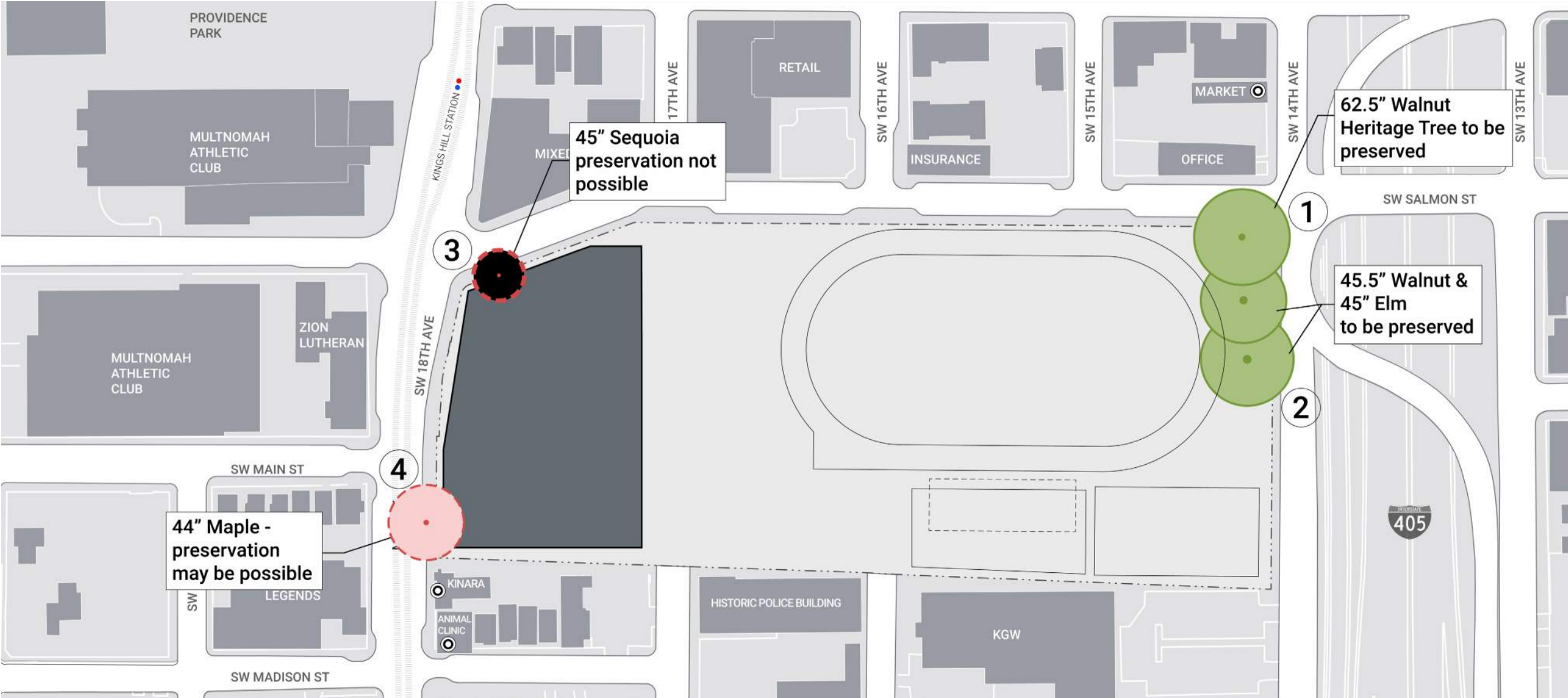


ACTIVE GROUND FLOOR - GRADE RELATIONSHIPS  
LINCOLN HIGH SCHOOL MODERNIZATION



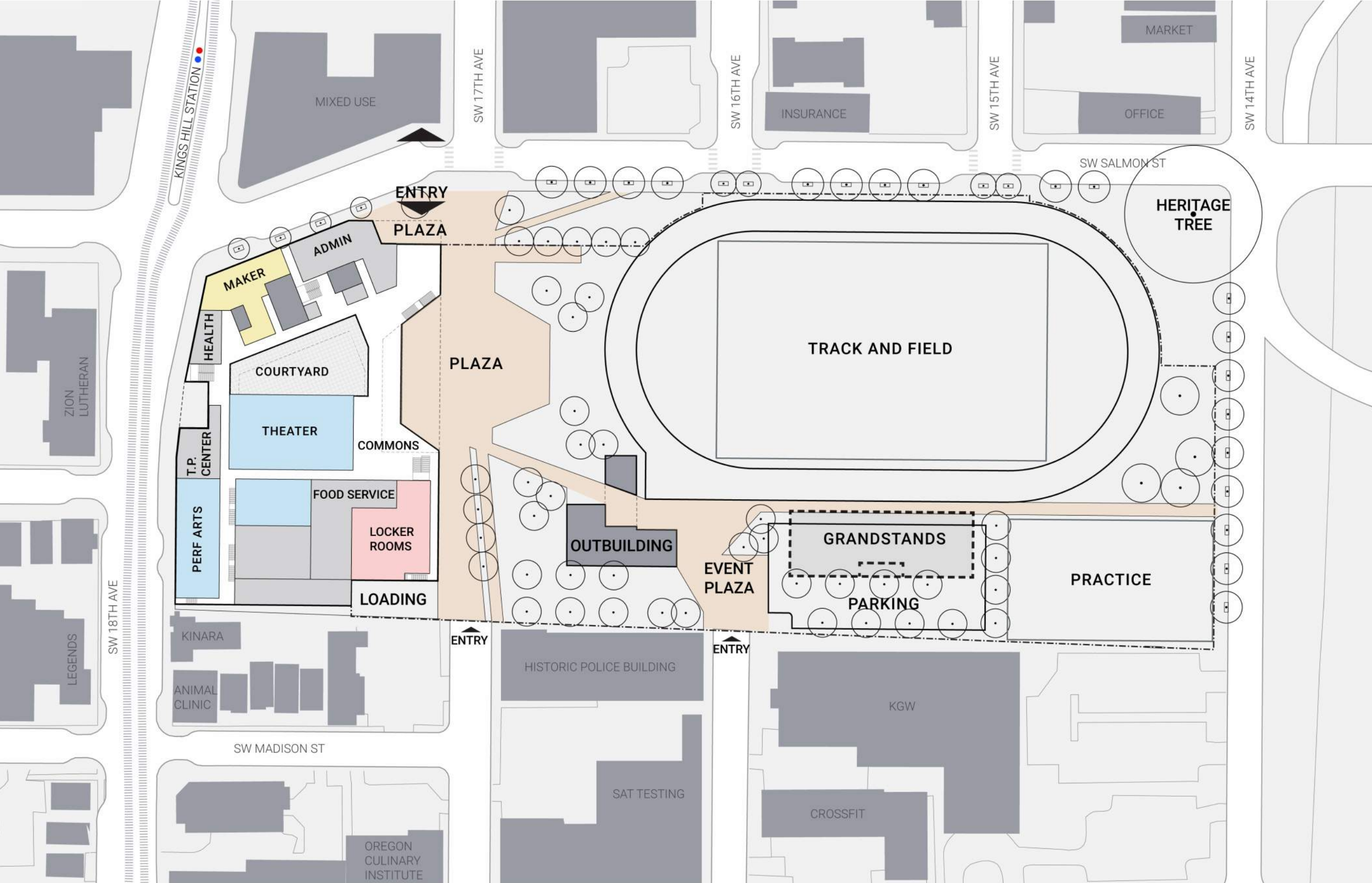






Notes:

- 1. Heritage Tree (62.5" Walnut) to be preserved
- 2. 2 large trees (45.5" Walnut & 45" Elm) may be possible to preserve
- 3. 45" Sequoia - Root structure lies within PBOT required sidewalk widening - see letter from Arborist - preservation not possible
- 4. 44" Maple - In public ROW, preservation may be possible









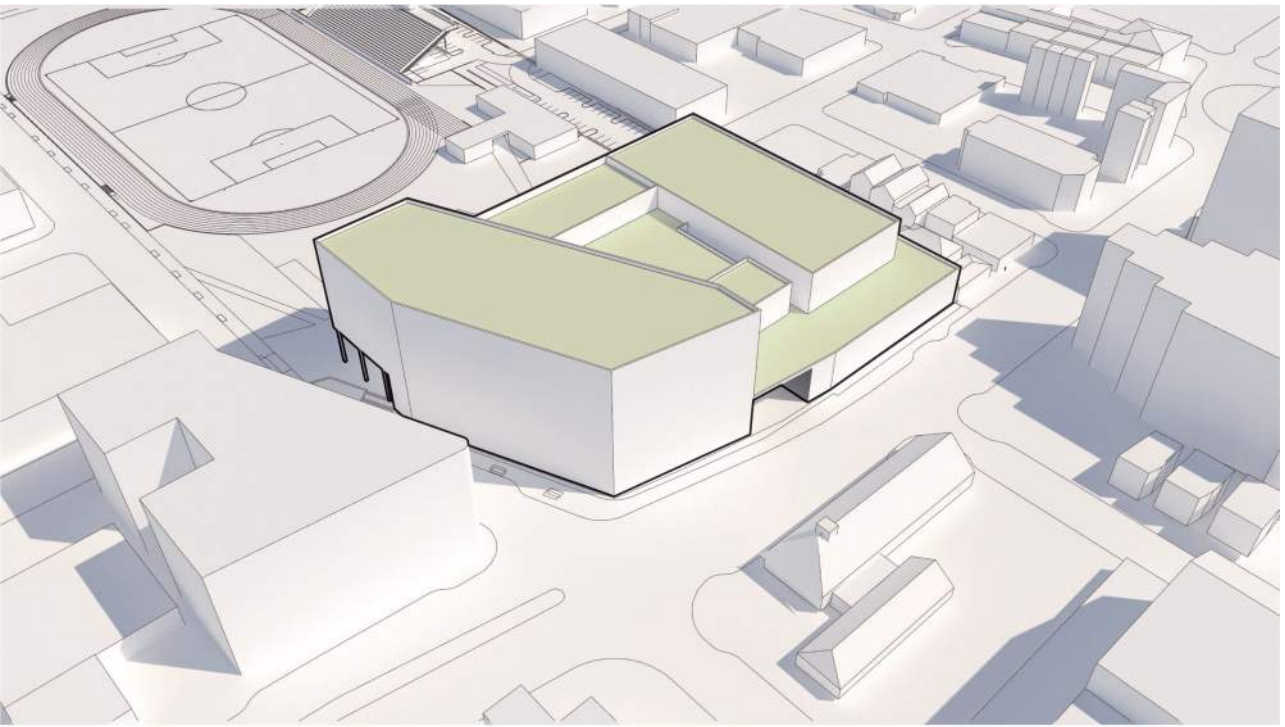
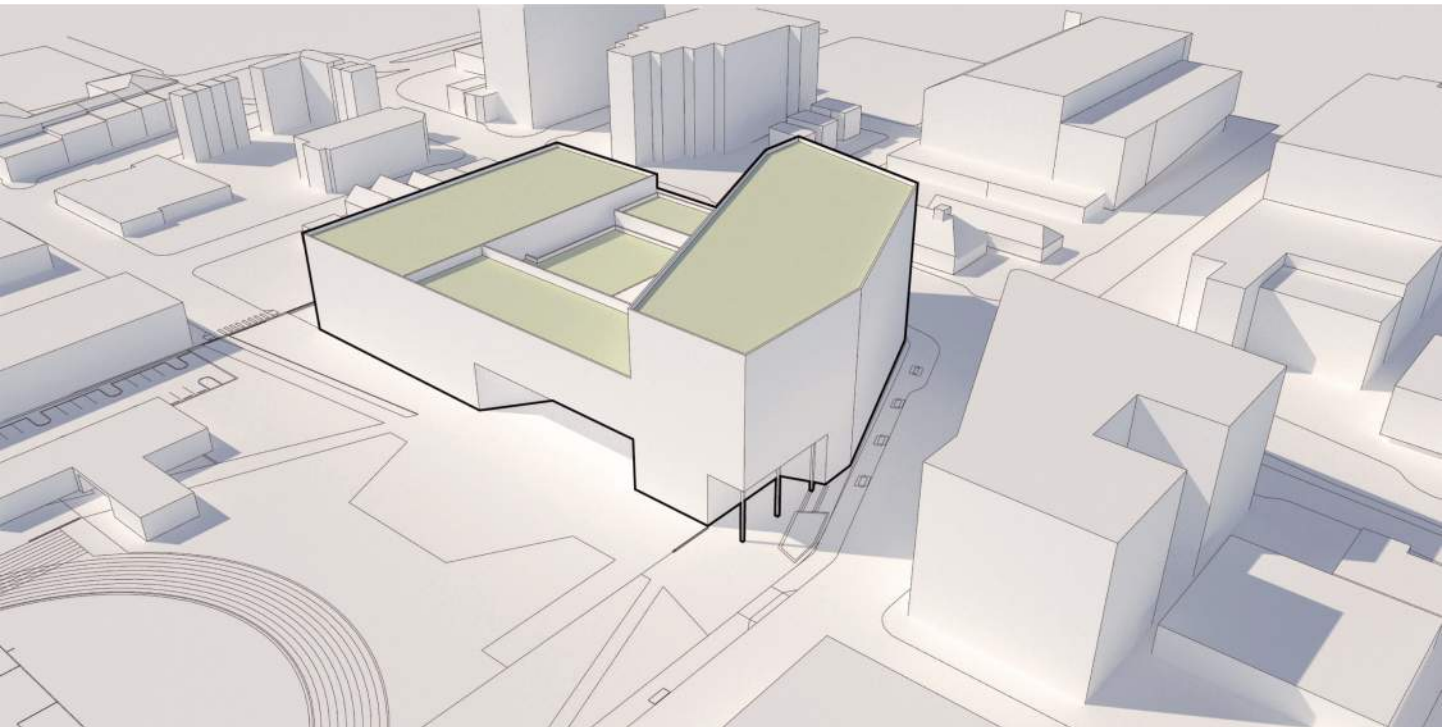
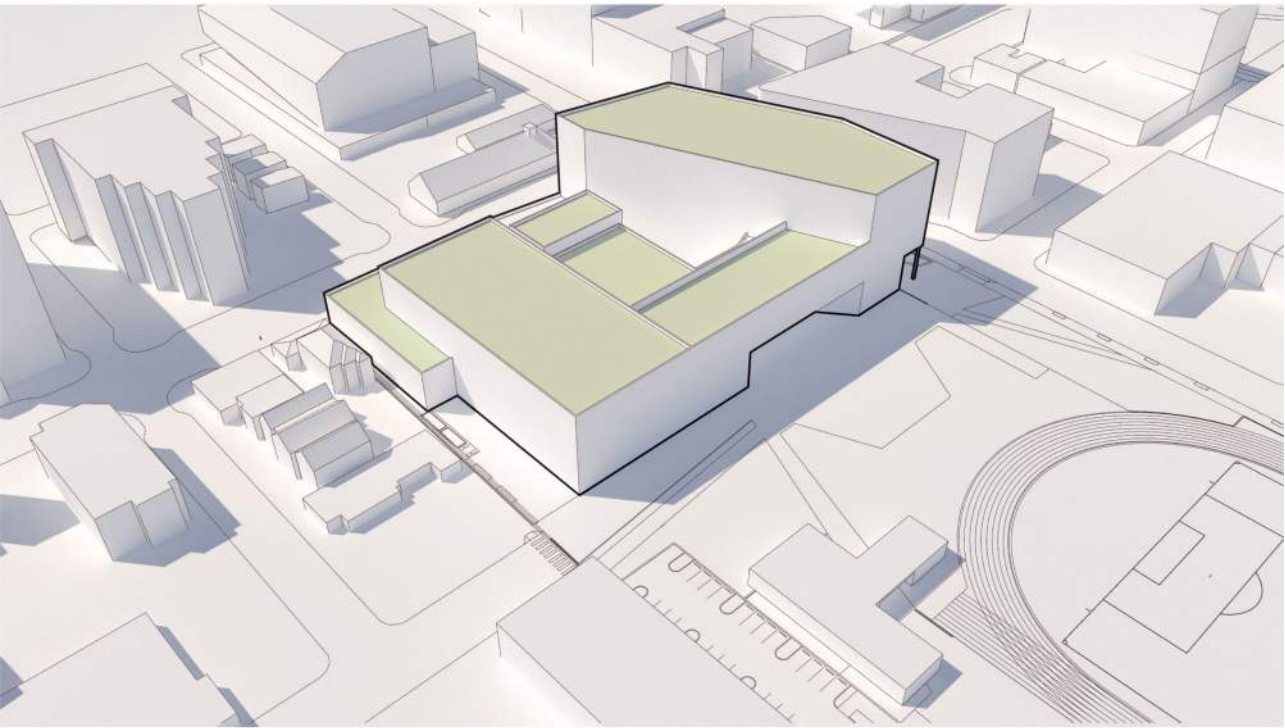
CURRENT PROPOSAL

LINCOLN HIGH SCHOOL MODERNIZATION

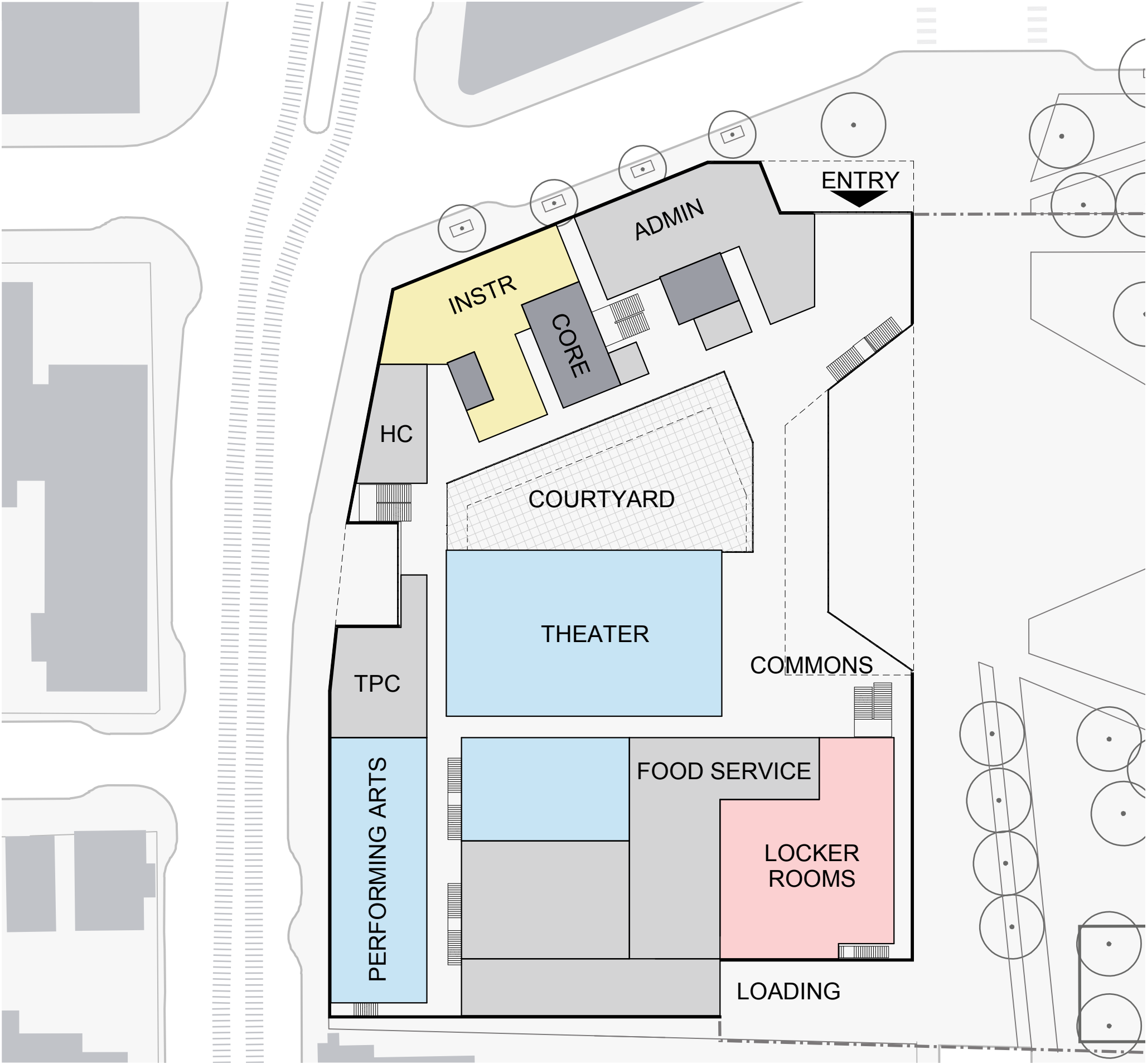
Initial design studies completed since the approval of the Pre-Design / Due Diligence have focused on program fit and refinement, and consideration of site development constraints. The building height has been reduced, as a more realistic analysis of space needs and adjacencies have demonstrated the need for more program space to occupy the first floor the building.

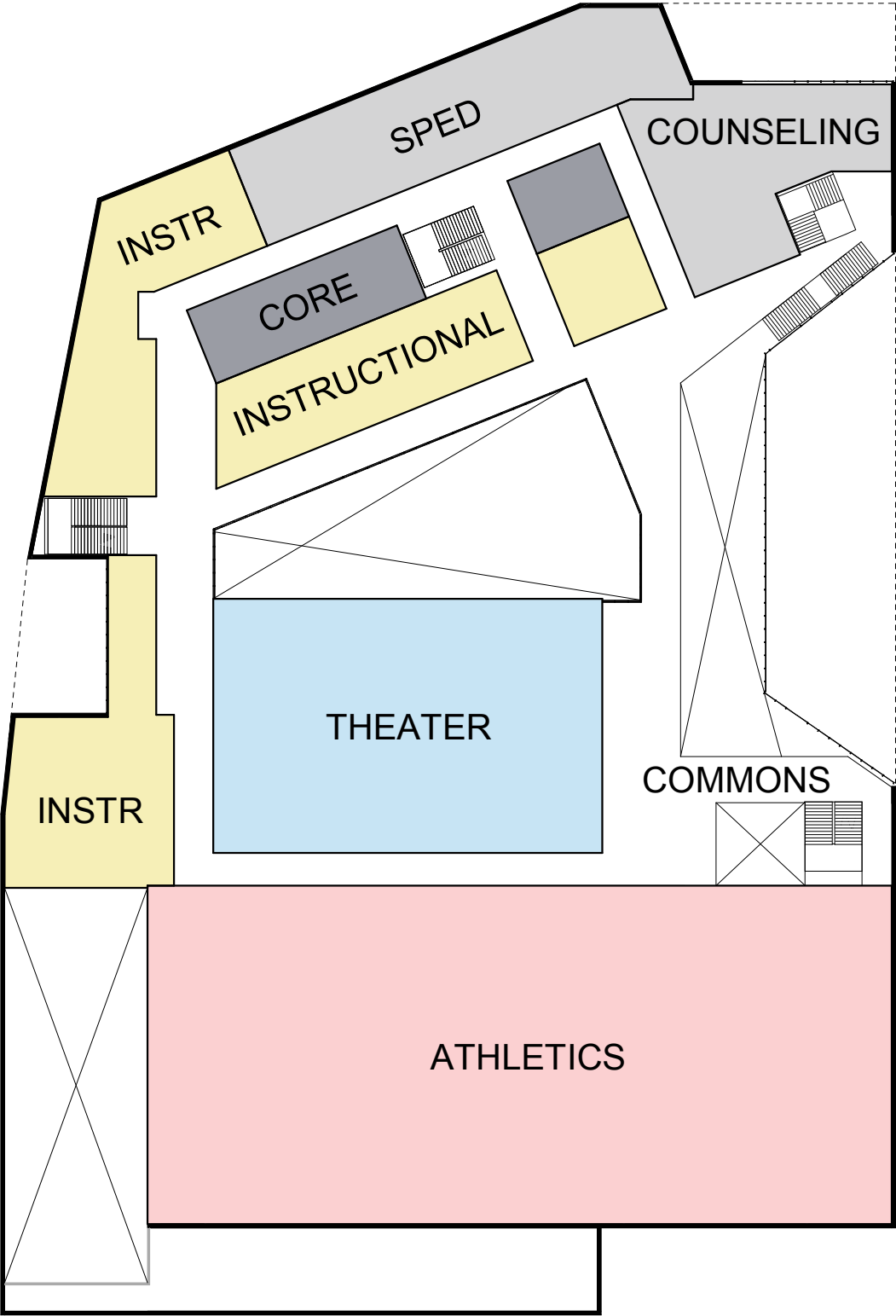
This 7-story, scheme provides 281,000 GSF of educational and support space. Instructional spaces are oriented vertically on the north side of the site.

The education support functions are consolidated on the lower levels of the building. The performing arts program spaces are oriented along SW 18th Avenue to activate the street edge by allowing views to the student activities within. The auditorium is at the center of the low portion of the building keeping opaque program elements away from the street. The athletics program is located towards the southeast corner of the facility to allow connectivity with the track and fields to the east.

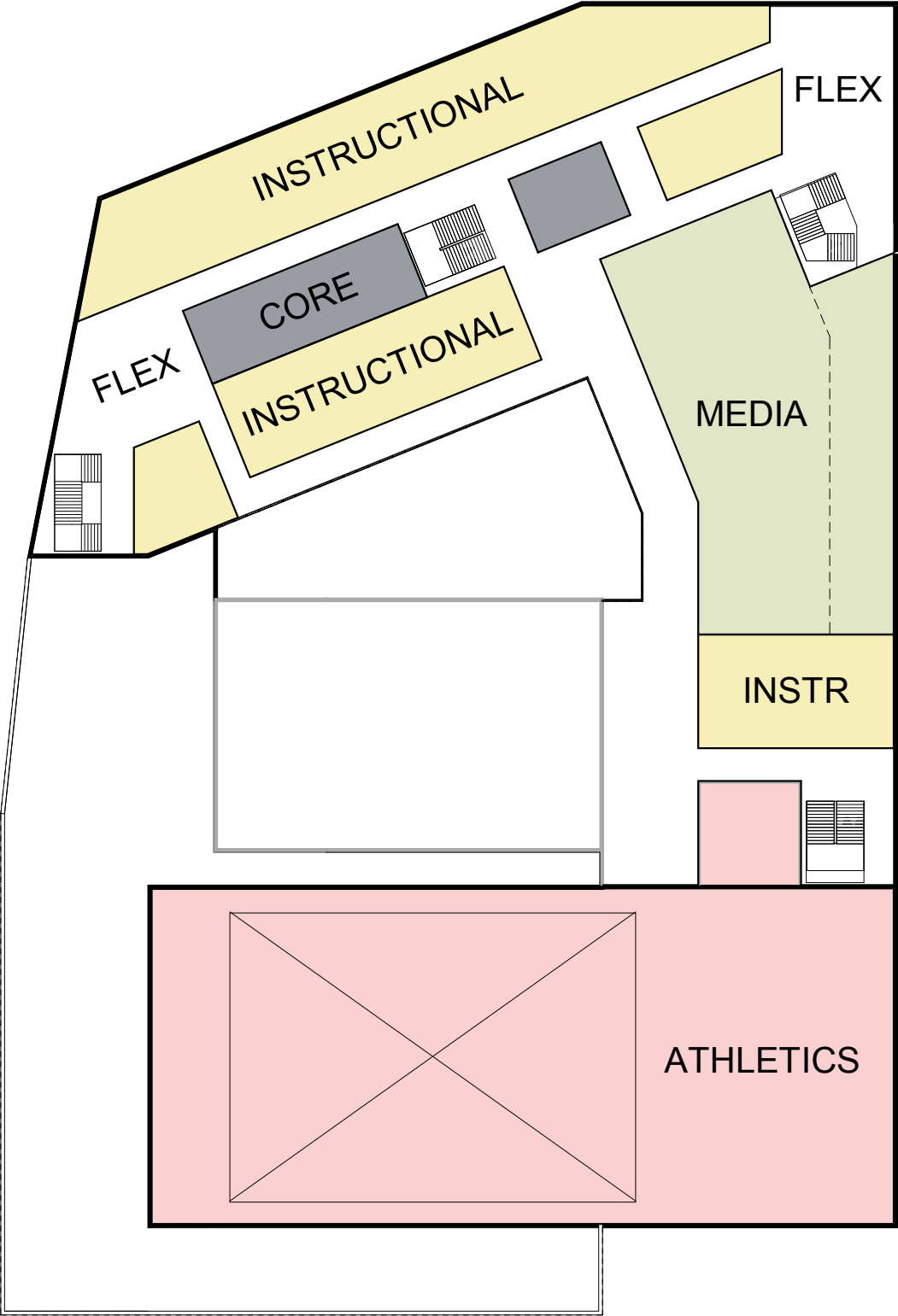


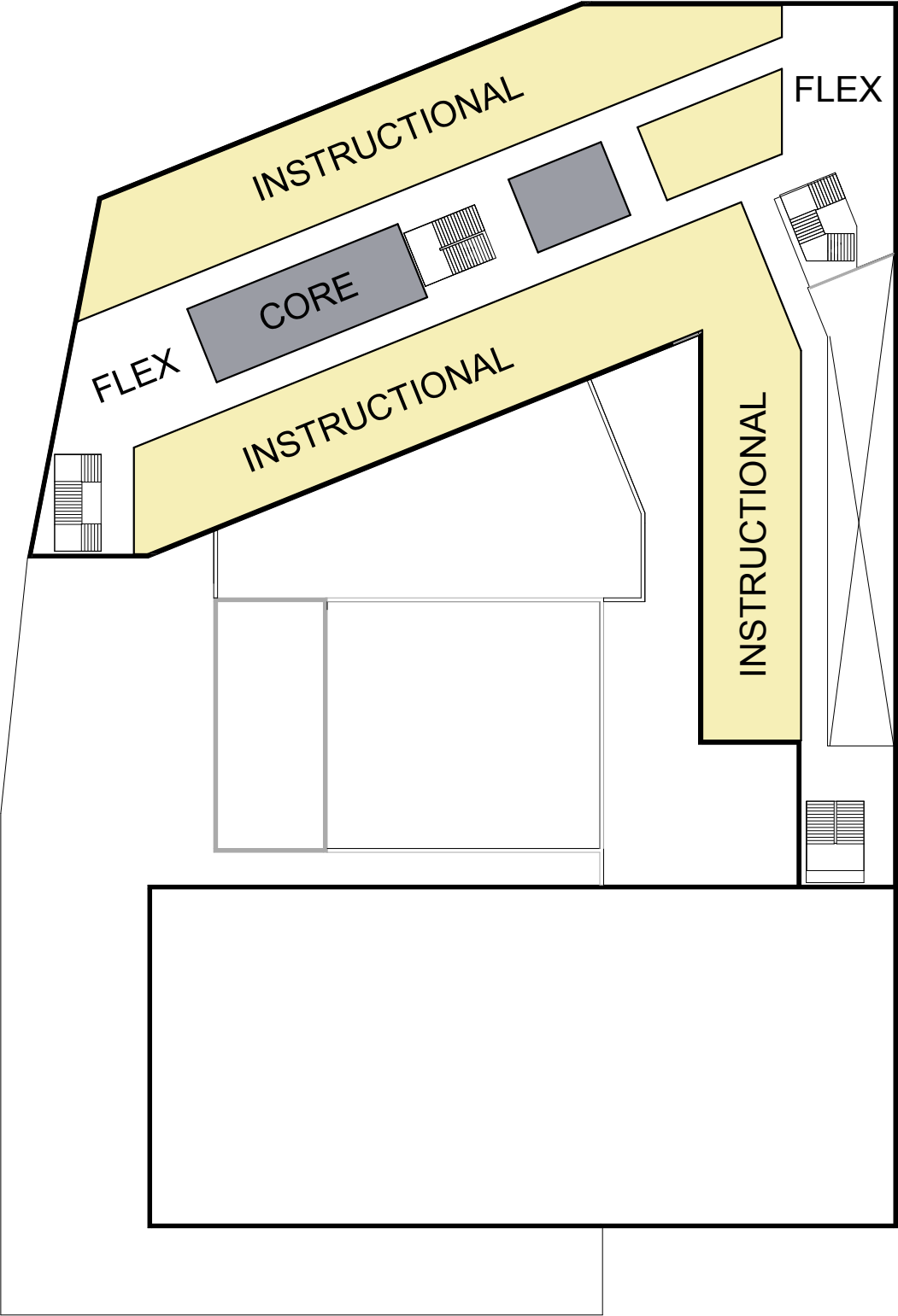
CURRENT PROPOSAL  
GROUND FLOOR PLAN

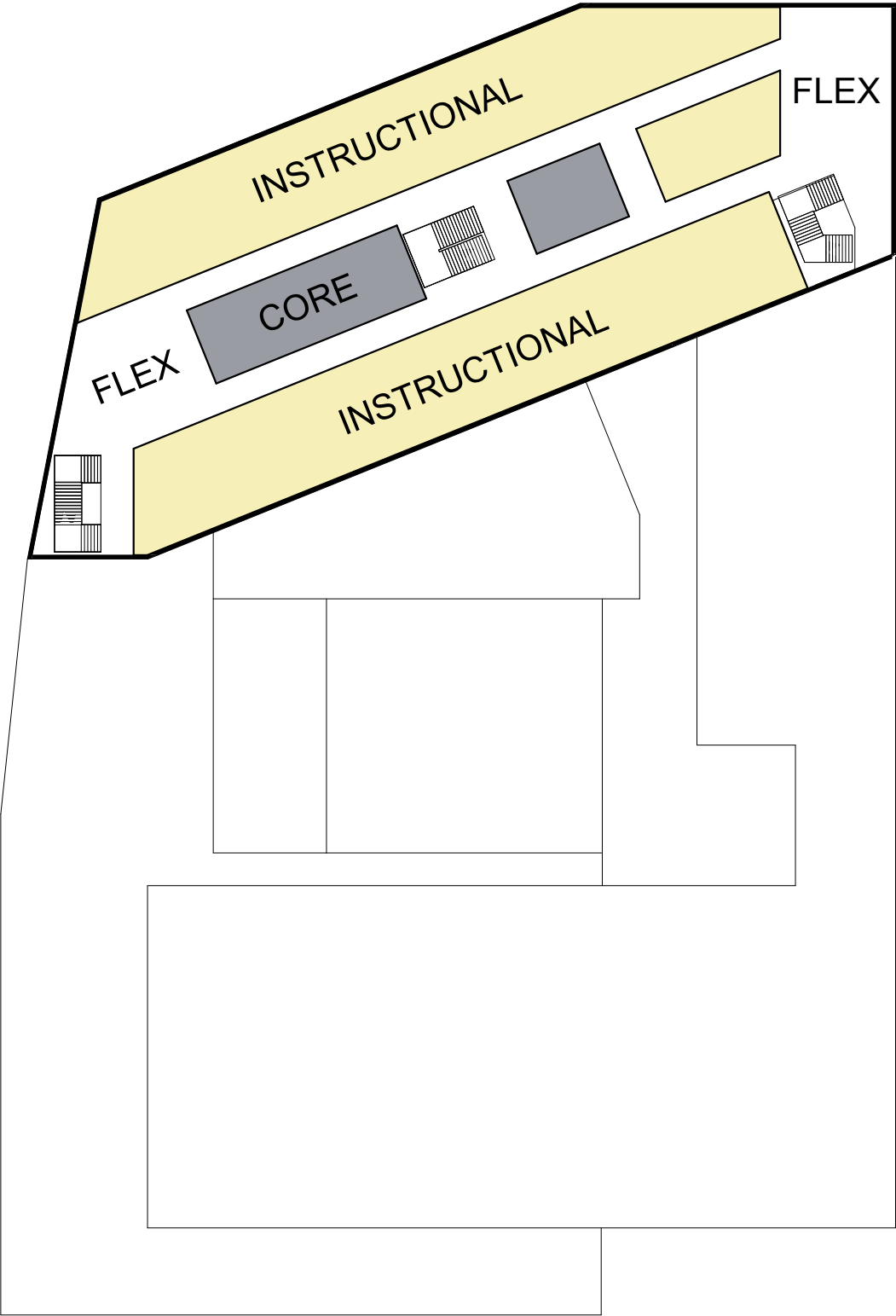
















THE PACIFIC RESOURCES GROUP

June 26, 2018

Mr. Ryan Carlson  
Mayer|Reed  
319 SW Washington, Suite 820  
Portland, OR 97204

Subject: Revised Tree Assessment for Lincoln High School

Dear Mr. Carlson,

I revisited the site to assess the chances for preserving the 5 trees of listed on the attached chart. These trees, numbered from 1 to 5, and the corresponding design scheme are shown on the attached diagram. The attached chart summarizes the data I collected for each tree.

My assumptions and recommendations are based on the site plan that shows the retaining wall on the north and east sides of the track and athletic field. Since this is a schematic design alternative, I can provide more precise recommendations once more detailed plans are available.

The most recent site plan is substantially changed from my initial review. The site plan provided shows that the major impact on the trees will be from excavation for the building foundation, walls and the retaining wall on the east end of the athletic field. I have reviewed the data collected and as a result of our discussion related to the proximity of excavation necessary to construct the proposed improvements near the trees, I can make the following observations and recommendations.

Tree 1, 62.5" Black Walnut - Appears to have a good chance of being preserved. The excavation for the retaining wall is far enough away that little root loss will occur. As mentioned previously, I did notice that there were several large exposed roots at the surface within 20' to 30' of this tree. Avoiding disturbances within the drip line of this tree to the extent possible is necessary if it is to be retained. I recommend using shoring to construct the retaining wall which will minimize the excavation and minimize any disturbance of existing grade within the drip line and the root zone of this tree.

Tree 2, 45.5" Black Walnut - Closer to the proposed retaining wall which is just at the edge of the drip line. It is difficult to be certain from the schematic design, but given the distance of the tree to the retaining wall, this tree is unlikely to suffer significant root loss.

It is in good condition and should remain so even if shoring is used to construct the wall. I can make a more precise recommendation once excavation is underway and root loss can be observed. As a precaution, I recommend using shoring to construct the retaining wall which will minimize the excavation and minimize any disturbance of existing grade within the drip line and the root zone of this tree. Depending on the method used, it may be necessary to prune the west side of the tree for clearance for the equipment needed to construct the retaining wall.

Tree 3, 45" American Elm - Located outside the running track retaining wall. The retaining wall does intrude into the drip line on the tree's west side, which will result in limited loss. Significantly more root loss will occur on the south side of the tree where the retaining wall comes within 20'. If possible it would be desirable to pull the wall back just inside the drip line south of the tree. Another issue that may present a challenge is the need to remove a major portion of the crown of the tree if the retaining wall uses driven elements since clearance would have to be provided for the pile driver. If this is a like construction technique, you should explore this possibility as it would dramatically affect the appearance of the tree.

Tree 4, 45" Giant Sequoia, - Located far too close to the building foundation wall. Excavation for building foundation and construction of the building will cause the removal of a major portion of the root system making the tree unstable. Scaffolding needed to construct and install wall materials will conflict with the tree and require the removal of most of the crown. This will destroy the appearance of the tree in addition to leaving the tree unsafe to leave standing. Given the information I have at present, this tree will need to be removed.

Tree 5, 44" Bigleaf Maple - Located on SW 18th on the west side of the site. This is a large tree in a very small bump out extending into the street. The new school building will be less than 10' from the trunk. Excavation for footings and construction of the building wall will remove more than half of the root system. This will destroy the appearance of the tree leaving it unsafe to remain standing. Given the information I have at present, this tree will need to be removed.

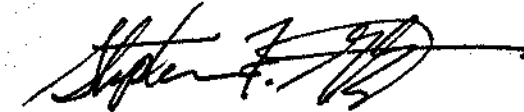
Any of the trees that are retained should have tree protection fencing erected at the drip line. The fencing should keep vehicle and pedestrian traffic, material or equipment storage and other activities that will compact the soil outside of the tree protection area. When work within the tree protection area is required, the fencing should be moved back to accommodate the work and that work should be observed by the Project Arborist. Once work is complete the fencing should be replaced. I mentioned earlier that the trees being retained will require some pruning to provide clearance for construction activities. This work should be done by a qualified tree care firm and supervised by the Project Arborist.

Once construction is complete, those trees that are retained should receive therapeutic treatments to help replace roots that are lost due to excavation, and to mitigate the other effects of construction. They will also need pruning to thin the crown, remove deadwood, correct obvious structural problems and to balance weight distribution in the crown of

tree. Specific recommendations should be based on the degree of construction disturbance observed by the Project Arborist.

This completes my report. If any additional information, which would effect these recommendations, becomes available I would welcome the opportunity to consider it and revise this report accordingly. If I omitted any information or if you have any questions please do not hesitate to contact me.

Sincerely yours,



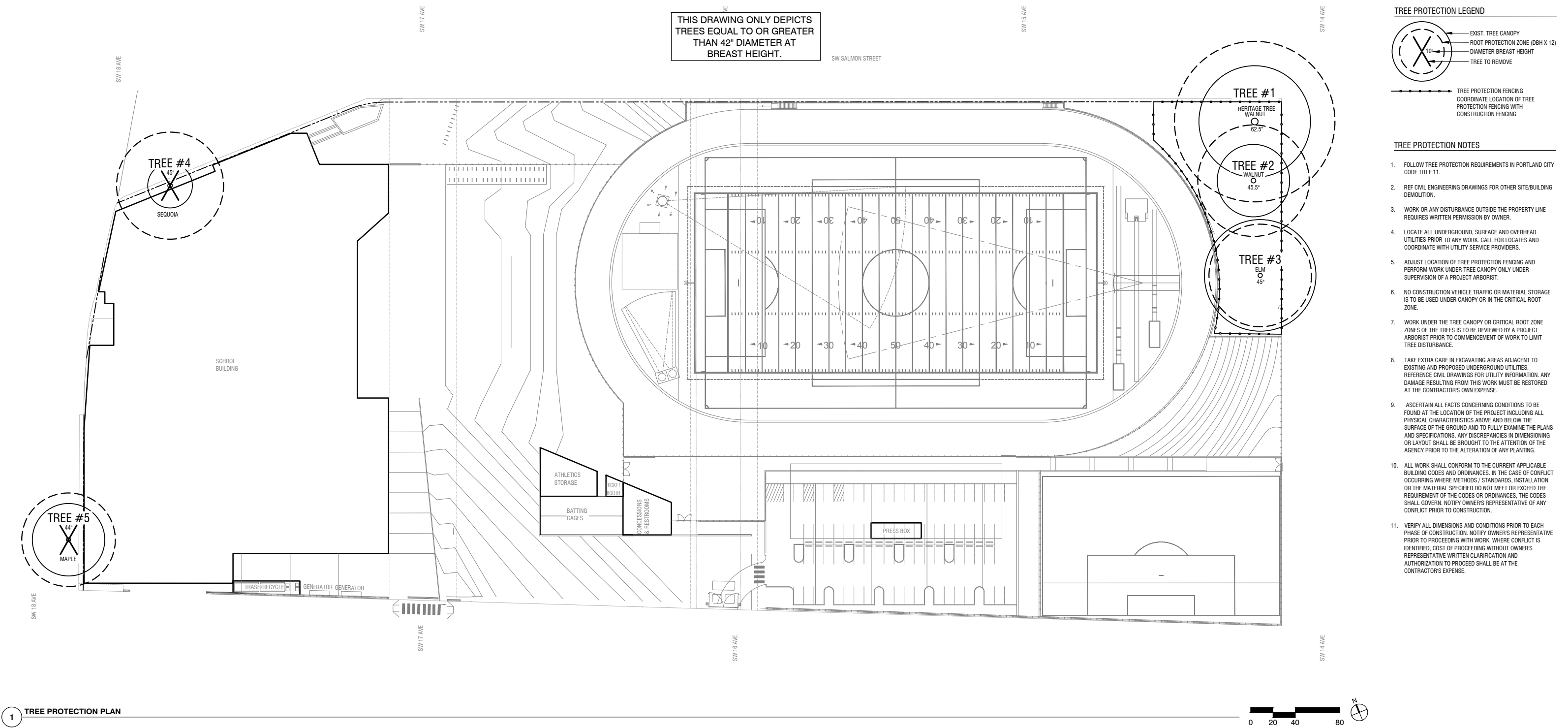
Stephen F. Goetz, Principal  
American Society of Consulting Arborists Reg #260  
American Society of Landscape Architects, OR Lic. #80  
Society of American Foresters

SG:mac  
Attachments

**ARBORIST DISCLOSURE STATEMENT:** Arborists are tree specialists who use their education, knowledge training and experience to examine trees, recommend measures to enhance their health and beauty and to attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist or to seek additional advice. Trees and other plant life are living, changing organisms affected by innumerable factors beyond our control. Trees fail in ways and because of conditions we do not fully understand. Arborists cannot detect or anticipate every condition or event that could possibly lead to the structural failure of a tree. Conditions are often hidden within the trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, for any specific period or when a tree or its parts may fail. Further, remedial treatments, as with any treatment or therapy, cannot be guaranteed. Treatment, pruning, bracing and removal of trees may involve considerations beyond the scope of the arborist's skills and usual services such as the boundaries of properties, property ownership, site lines, neighbor disputes and agreements and other issues. Therefore, arborists cannot consider such issues unless complete and accurate information is disclosed in a timely fashion. Then, the arborist can be expected, reasonably, to rely upon the completeness and accuracy of the information provided. Trees can be managed but not controlled. To live near trees, regardless of their condition, is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.

**HAZARD/HAZARD POTENTIAL:** For the purposes of this evaluation and report, a tree or tree part that presents a threat to humans, livestock, vehicles, structures, landscape features or other entity of civilization from uprooting, falling, breaking or growth development (e.g., roots). While all large landscape trees in proximity to such targets present some degree of hazard regardless of their condition, such inherent hazard is not intended as within this definition and its usage in this evaluation and report.

**INSPECTION LIMITATIONS:** The inspection of these trees consisted solely of a visual inspection from the ground. While more thorough techniques are available for inspection and evaluation, they were neither requested nor considered necessary or appropriate at this time. Because trees and other plant life are living, changing organisms affected by innumerable factors beyond our control, The Pacific Resources Group and its personnel offer no guarantees, stated or implied, as to tree, plant or general landscape safety, health, condition or improvement, beyond that specifically stated in writing in accepted contracts.





LINCOLN HS TREE ASSESSMENT

Tree No.	Dia. Inches	Species	Crown Ht/Width	Health	Condition	Comments
1	62.5	Black Walnut	75 x 90	Good	Few & minor or correctable defects	Full crown with small amount of medium to fine deadwood. Some structural issues to repair with proper pruning. Good leaf size and annual twig growth in the past. Very large root crown is 15' north to south and 12' east to west
2	45.5	Black Walnut	75 x 75	Fair	Moderate & non-correctable defects	Tree appears to have a hollow or undermined base (home to a squirrel).and a natural lean of 10° to south. Somewhat thin or sparse upper most canopy with a nearly full but asymmetric crown due to crowding by tree 1. Large root crown is 12.5' east to west and 12' north to south.
3	45	American Elm	80 x 120	Excellent	Few & minor or correctable defects	Full crown with good leaf size and annual twig growth in the past. Large root crown is 13' east to west and 12' north to south
4	45	Giant Sequoia	70 x 32	Good	Sound - no obvious defects	Full crown with moderate amount of fine to medium deadwood on interior of crown. Crown extends just over edge of track and over sidewalk. Average annual twig growth. Few & minor or correctable defects.
5	44	Bigleaf Maple	50 x(75x62)	Good	Few & minor or correctable defects	Full crown with good leaf size and average annual twig growth. Light amount of medium to fine deadwood in crown. Located in very narrow bump out between walk and curb. Walk was raised and repaved and raised12" to 18" to accommodate root flair and surface roots.

BORA

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