SEATTLE ARENA

NOVEMBER 07, 2013

SEATTLE DESIGN COMMISSION

PROJECT NUMBER: 301 4195 | 1700 FIRST AVENUE SOUTH

AGENDA

1.0 PROJECT UPDATE | 03

KEY DESIGN ELEMENT UPDATES
RENDERING COMPARISONS
GEO TECHNICAL UPDATE
BUILDING SECTION COMPARISON
EVENT LEVEL +0' (CURRENT)
RENDERINGS

2.0 URBAN MERIT | 24

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USES
RAIL
TRUCK FREIGHT
VEHICLE
PARKING
PEDESTRIAN
BIKE

2.2 EXISTING | 53

STREET IMPROVEMENTS
URBAN FOREST CANOPY
UTILITIES
DISTRICT OPEN SPACE [QUANTITY]
DISTRICT OPEN SPACE [QUALITY]
CITY LANDMARK + CONTEXT
SUSTAINABILITY FEATURES

2.3 NO VACATION | 65

STREET IMPROVEMENTS
URBAN FOREST CANOPY
UTILITIES
DISTRICT OPEN SPACE [QUANTITY]
DISTRICT OPEN SPACE [QUALITY]
CITY LANDMARK + CONTEXT
SUSTAINABILITY FEATURES

2.4 ARENA | 75

STREET IMPROVEMENTS
URBAN FOREST CANOPY
UTILITIES
DISTRICT OPEN SPACE [QUANTITY]
DISTRICT OPEN SPACE [QUALITY]
CITY LANDMARK + CONTEXT
SUSTAINABILITY FEATURES

3.0 PUBLIC BENEFIT | 115

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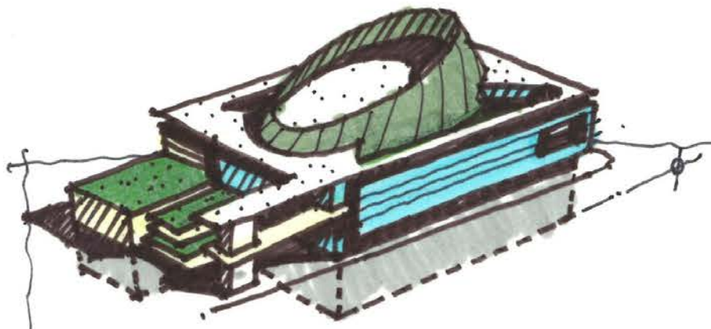
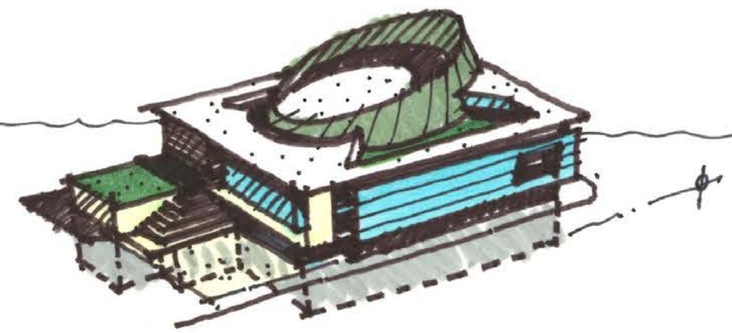
1.0 PROJECT UPDATE



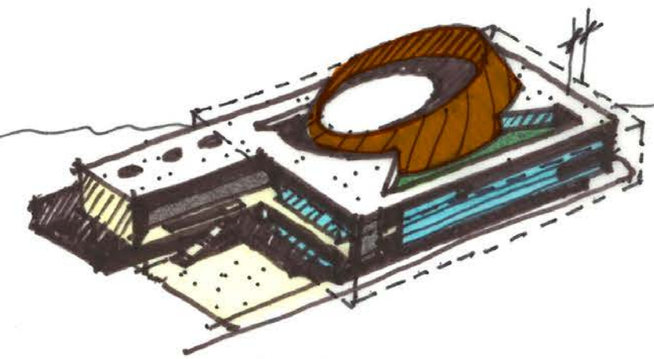
APRIL 5, 2013 100% SD

- ELEVATED PLAZA
- AT GRADE PLAZA
- PIER WALL
- STAIR TOWER
- DECKS
- MEDIA MESH
- BELOW GRADE EVENT LEVEL/PRACTICE FACILITY
- BELOW GRADE SERVICE AND LOADING



MAY 2, 2013

- GREEN ROOF @ PRACTICE FACILITY
- REDUCED ELEVATED PLAZA SF.
- AT GRADE PLAZA
- BELOW GRADE EVENT LEVEL/PRACTICE FACILITY
- BELOW GRADE SERVICE AND LOADING



TODAY

- ABOVE GRADE PRACTICE FACILITY
- AT GRADE SERVICE AND LOADING
- AT GRADE EVENT LEVEL
- AT GRADE PLAZA
- ON SITE PARKING

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SEATTLE ARENA

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3D RENDERING: 1ST & MASS LOOKING SOUTHEAST (MAY 2013)

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3D RENDERING: 1ST & MASS LOOKING SOUTHEAST (CURRENT)

TURBINE

EXTERIOR LOUVERS

ACTIVATED STREET LEVEL

TRAINING FACILITY

PUBLIC PLAZA

MAY 2013

CURRENT

3D RENDERING COMPARISON: 1ST & MASS LOOKING SOUTHEAST

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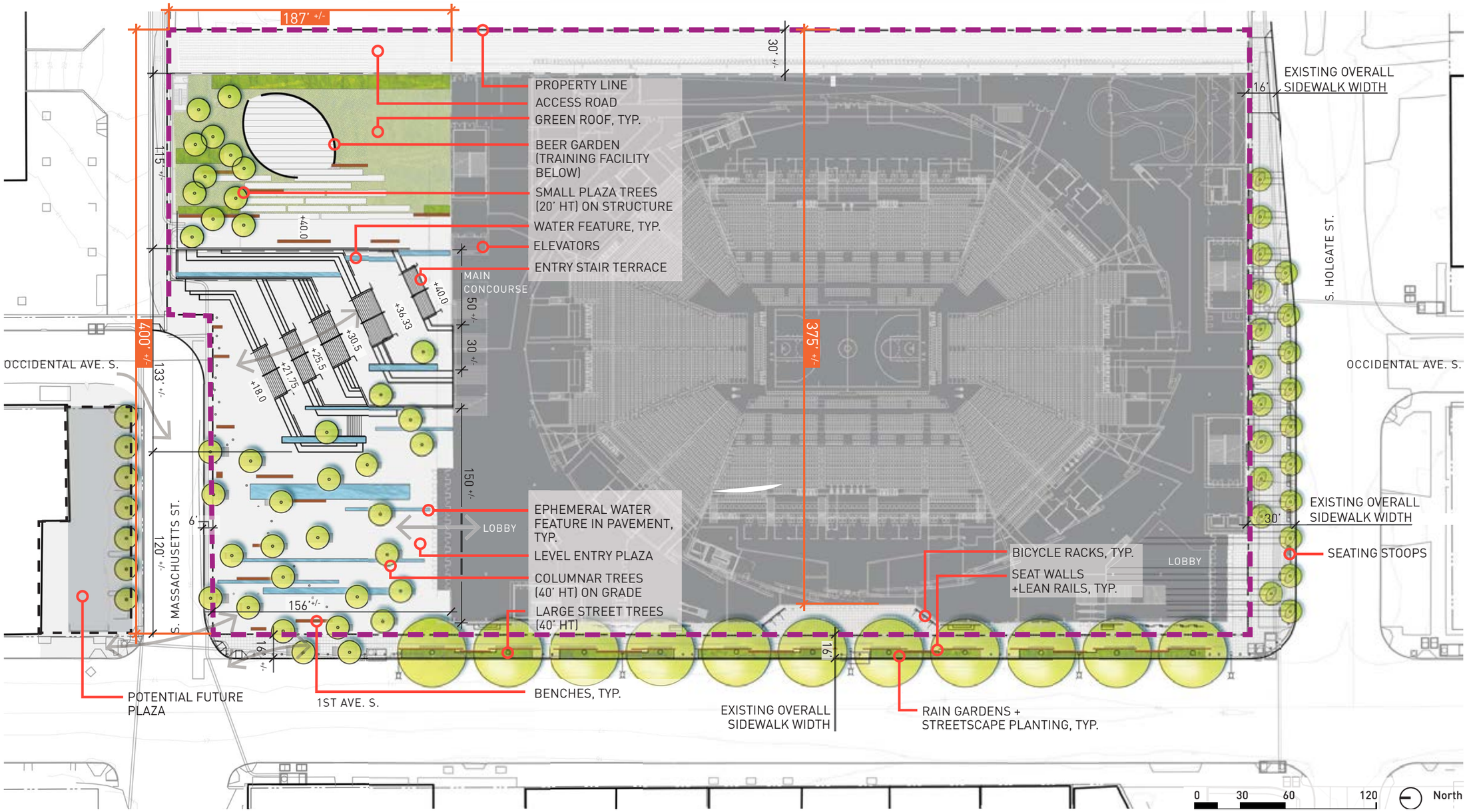

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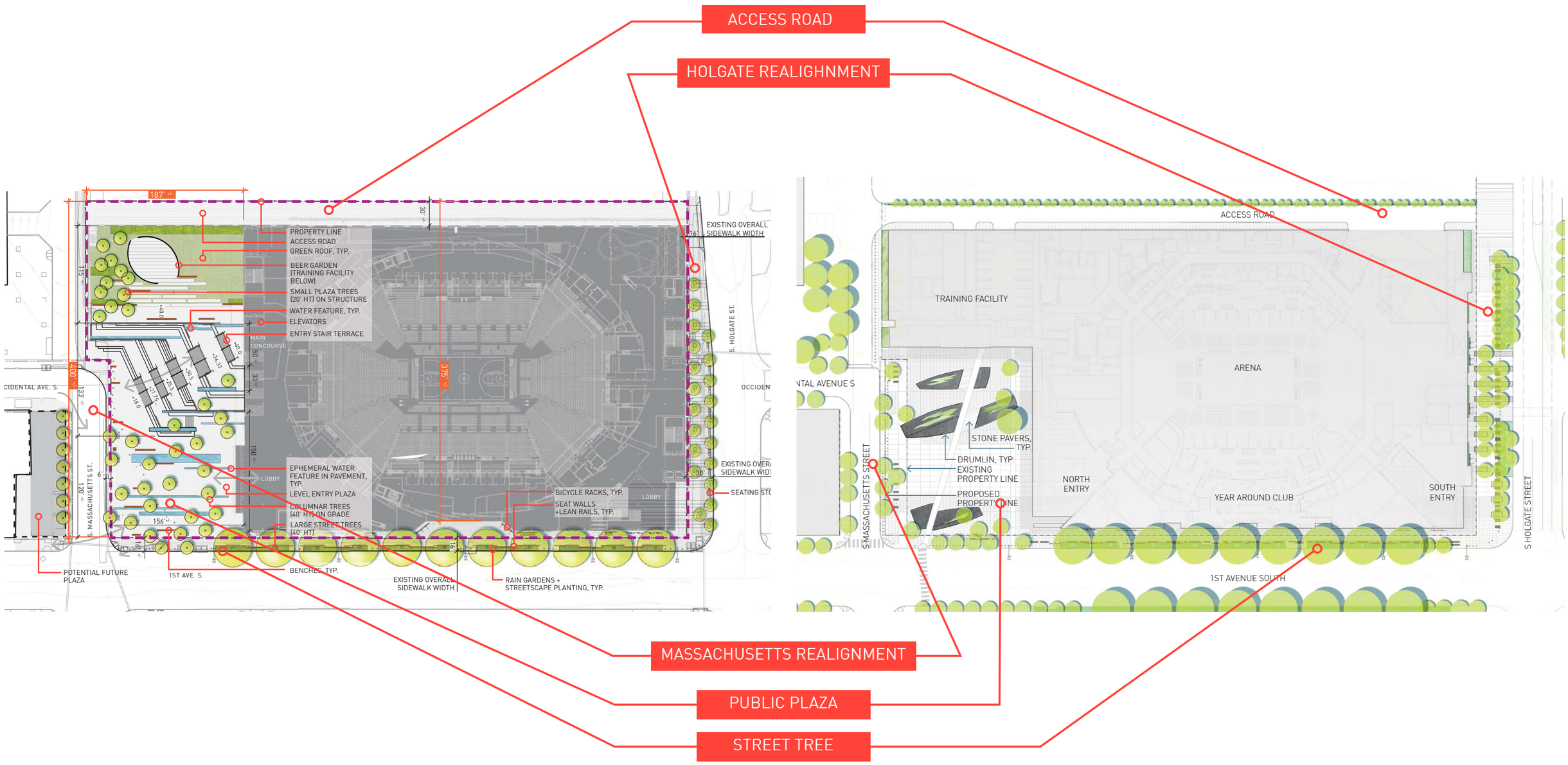

MAY 2013

CURRENT

North

SITE PLAN COMPARISON

SEATTLE ARENA

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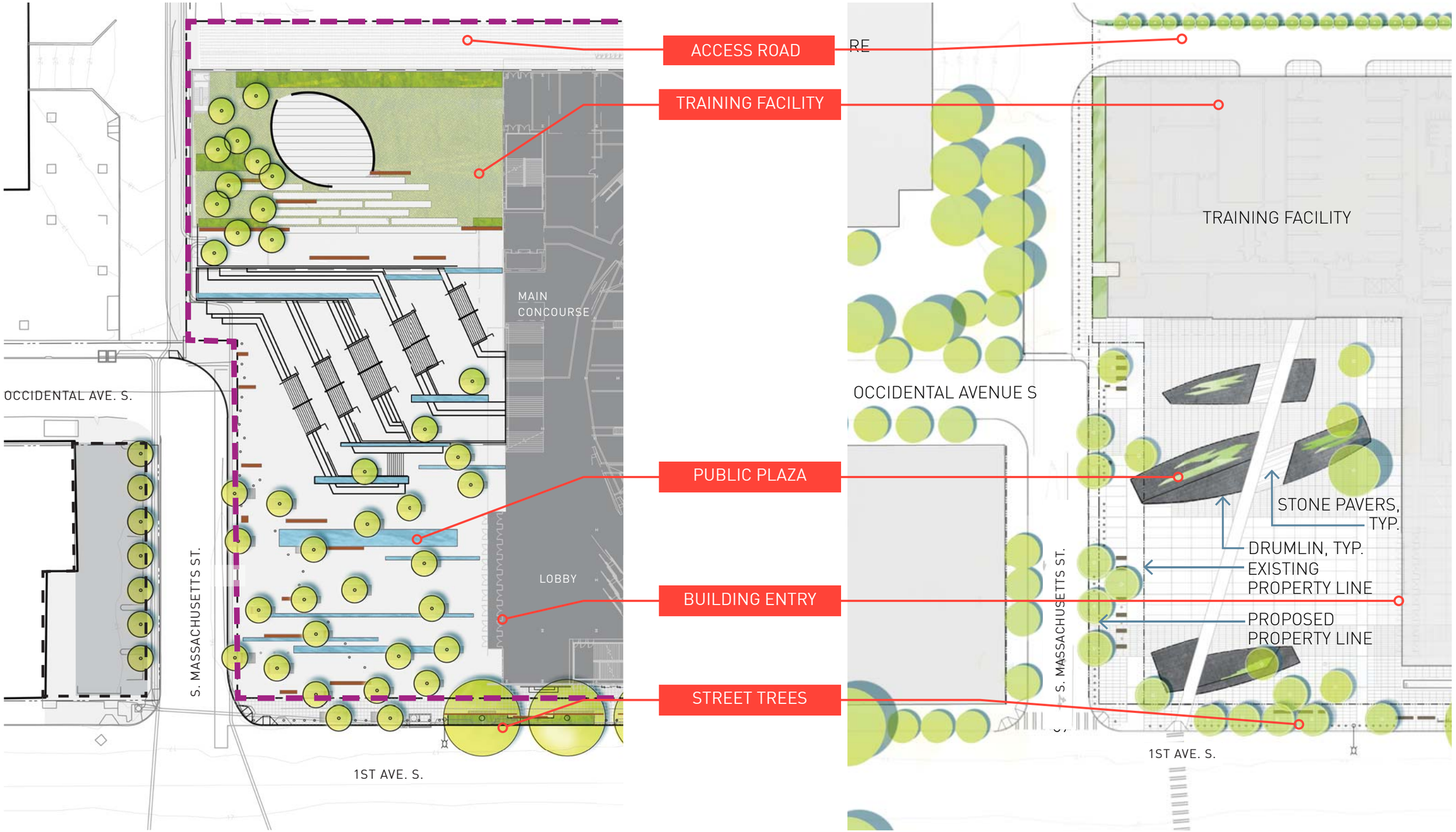

MAY 2013

CURRENT

North

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3D RENDERING: 1ST AVE LOOKING SOUTH (MAY 2013)

SEATTLE ARENA

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3D RENDERING: 1ST AVE LOOKING SOUTH (CURRENT)

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EXTERIOR LOUVERS

BUILDING OVERHANG

STREET TREES

SEATING

MAY 2013

CURRENT

3D RENDERING COMPARISON: 1ST AVE LOOKING SOUTH

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3D RENDERING: HOLGATE LOOKING WEST (MAY 2013)

SEATTLE ARENA

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3D RENDERING: HOLGATE LOOKING EAST (CURRENT)

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STREET TREES

HOLGATE REALIGNMENT

SEATING

GREEN WALL

MAY 2013

CURRENT

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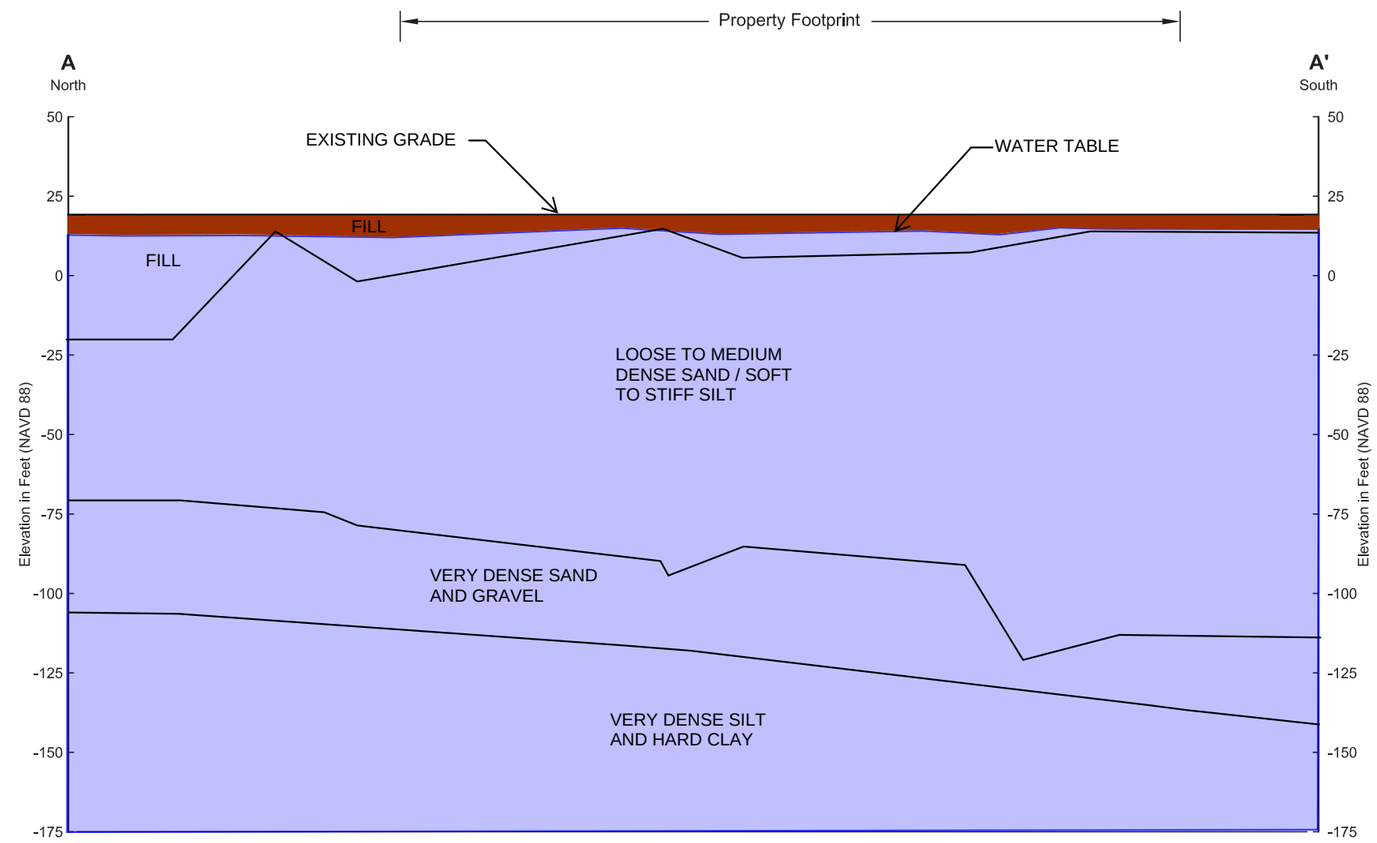
WATER TABLE CONSTRAINTS:

- Aging utilities are sensitive to settlement caused by water table draw-down
- Strict settlement tolerances on adjacent railroad rails
- Challenges associated with shoring below the water table
- Challenges associated with waterproofing the new building and designing for hydrostatic uplift pressures
- Impacts on local vegetation and levels of nearby surface water bodies and their ecosystems
- Turbidity and sedimentation in surface water bodies
- Draw salt water into a less saline aquifer



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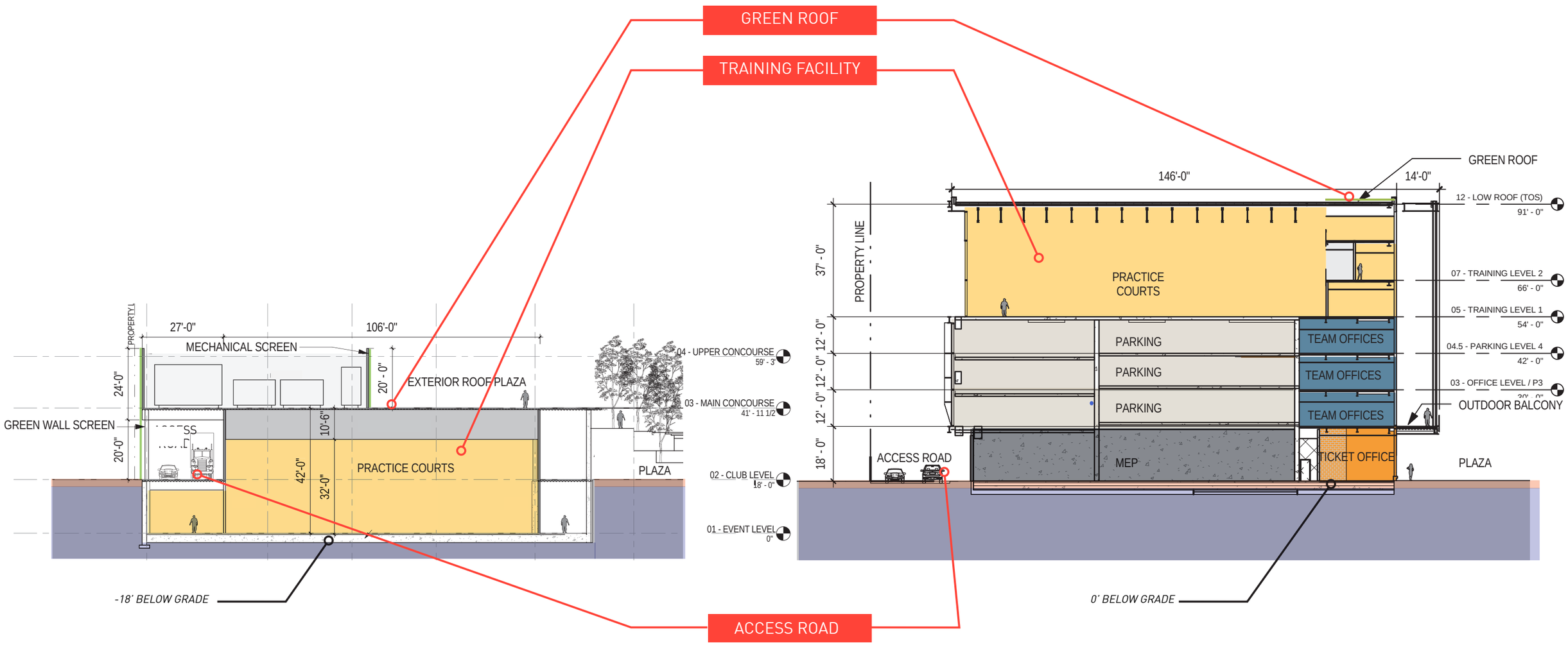

MAY 2013

CURRENT

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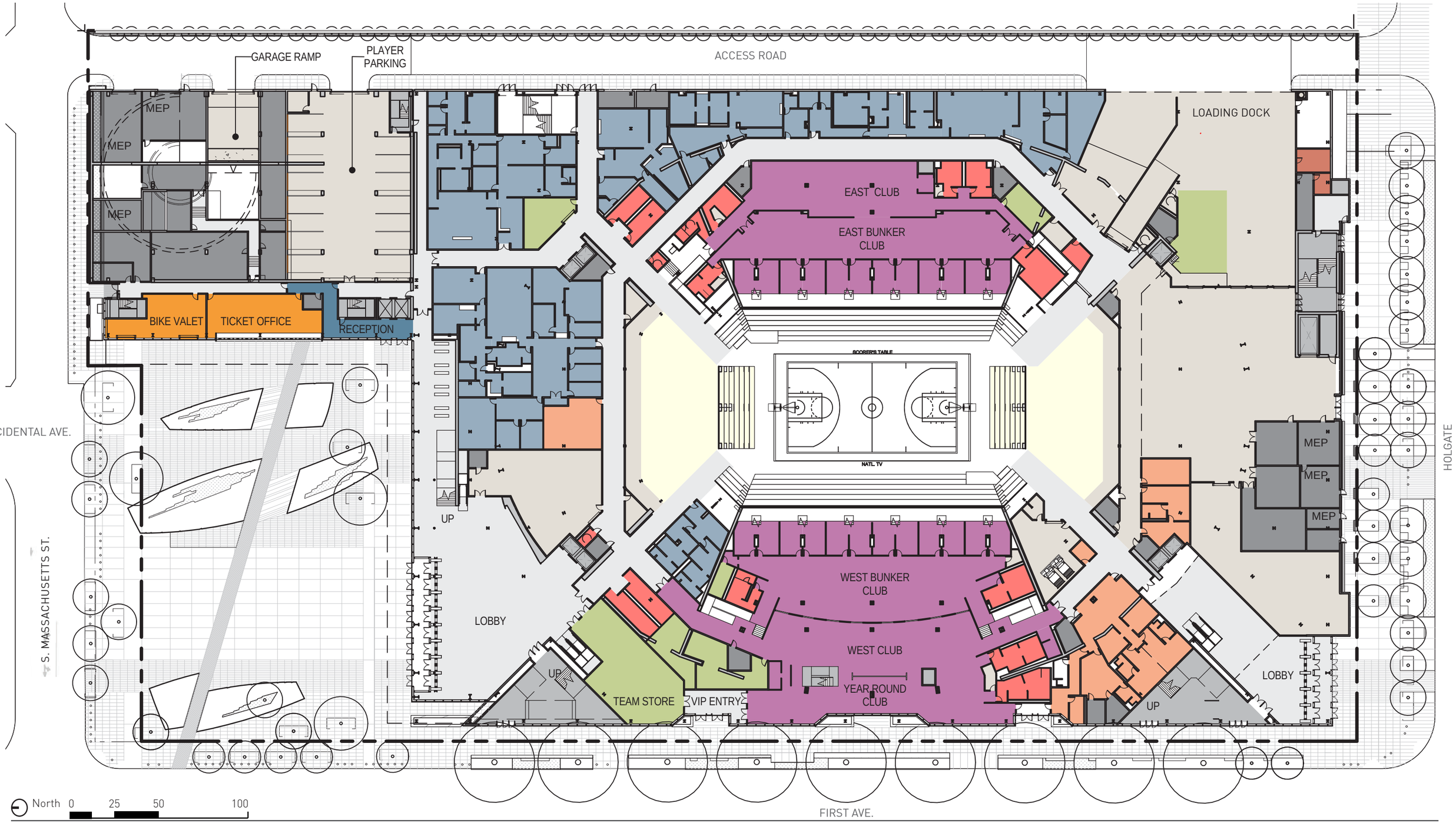

SEATTLE ARENA

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EVENT LEVEL +0'

SEATTLE ARENA

3D RENDERING | NORTHWEST AERIAL

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3D RENDERING | VIEW FROM BEACON HILL

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3D RENDERING | SOUTHWEST VIEW

2.0 URBAN MERIT

URBAN MERIT

2.1 TRANSPORTATION

A. USES

B. RAIL

C. TRUCK FREIGHT

D. VEHICLE TRAFFIC

E. PARKING

F. PEDESTRIAN

G. BIKE

2.2 EXISTING

2.3 NO VACATION

2.4 ARENA

A. URBAN FOREST CANOPY:
Augment City's Urban Forest Canopy

B. UTILITIES:
Under-grounding cluttered overhead utilities and ensuring that all utility systems maintain redundancy.

C. STREET IMPROVEMENTS:
Green street level improvements.

D. DISTRICT OPEN SPACE (QUANTITY):
Arena plaza provides needed open spaces in District.

E. DISTRICT OPEN SPACE (QUALITY):
The proposed arena plaza scale and quality is in line with current trends in adjacent development in the stadium overlay district and responds to city policy.

F. SUSTAINABILITY:
The arena will be designed to a high level of sustainability through water savings, energy savings, educational programs and consideration of regional and district wide strategies.

G. CITY LANDMARK:
The value of creating a new city landmark.

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2.1 TRANSPORTATION

DEIS Transportation

- Broad examination of transportation impacts.
- DEIS published August 2013.
- In process of reviewing comments
- Working with city staff to evaluate benefits of additional data or analysis.

2.1 TRANSPORTATION

Street Vacation Considerations:

A. USES

B. RAIL

C. TRUCK FREIGHT

D. VEHICLE TRAFFIC

E. PARKING

F. PEDESTRIAN

G. BIKE

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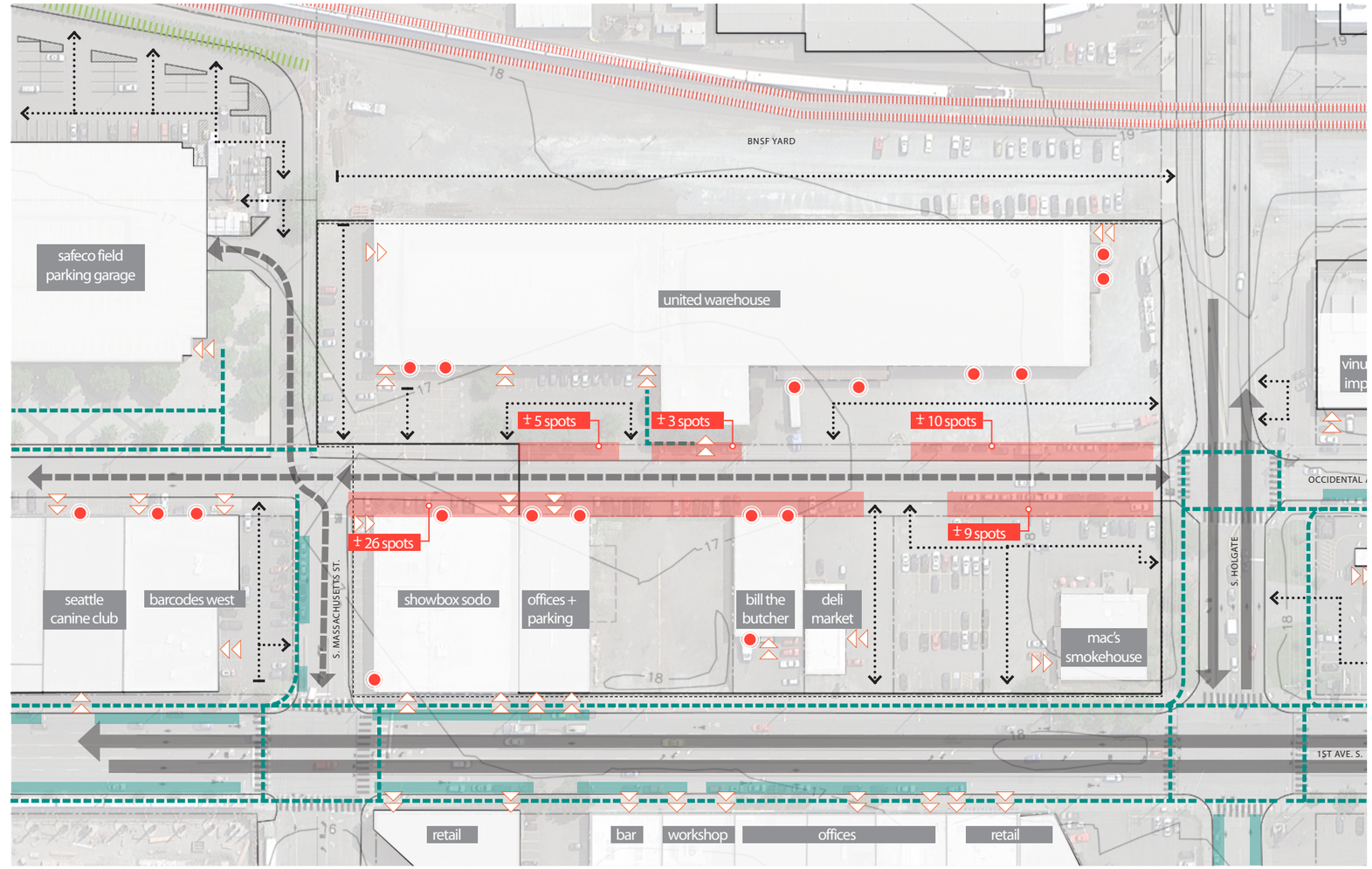
2.1.A EXISTING TRANSPORTATION
USE ANALYSIS

ANALYSIS:

- Occidental through site- S. Horton to Edgar Martinez Drive.
- Approximately 50 on-street parking spaces.
- Massachusetts Street offset from Safeco Garage access.



LEGEND:

- Loading Docks
- Building Entrance
- Building Exit
- Service Entry / Exit
- Improved Pedestrian Routes
- ROW On- Street Parking within proposed Street Vacation
- ROW On-Street Parking outside proposed Street Vacation
- ROW Vehicle Circulation - Major
- ROW Vehicle Circulation - Minor
- Lotline Vehicle Circulation
- Rail Circulation
- Defined Edges
- Property Line

North 40 80 160

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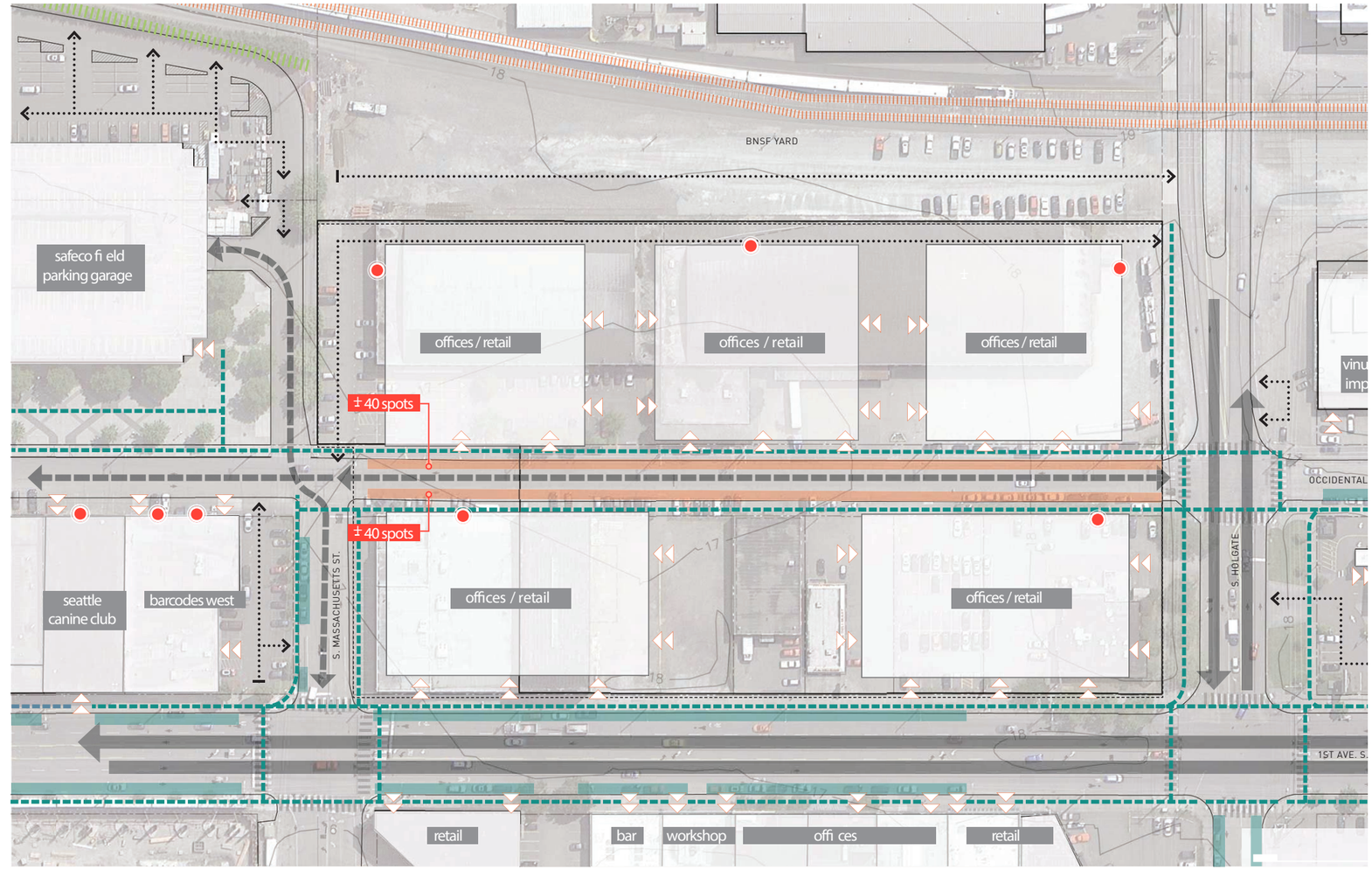
2.1.A NO VACATION TRANSPORTATION
USE ANALYSIS

ANALYSIS:

- Occidental maintained.
- Approximately 50-60 on-street spaces.
- Massachusetts Street non change.



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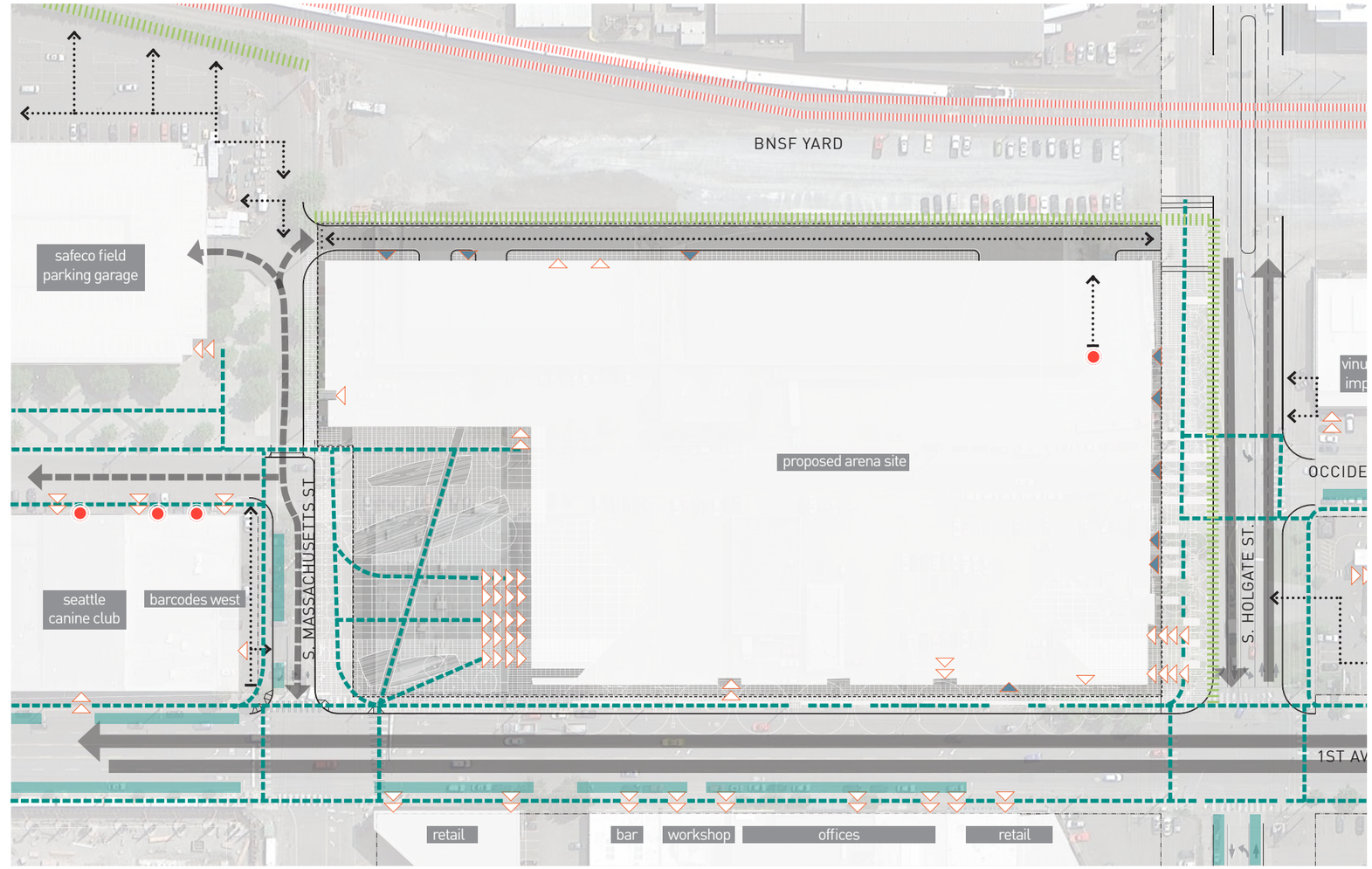
2.1.A ARENA TRANSPORTATION
USE ANALYSIS

ANALYSIS:

- Occidental Vacated.
- Pedestrian connections north and south.
- Improved Holgate Street frontage.
- Realigned Massachusetts to First Ave.



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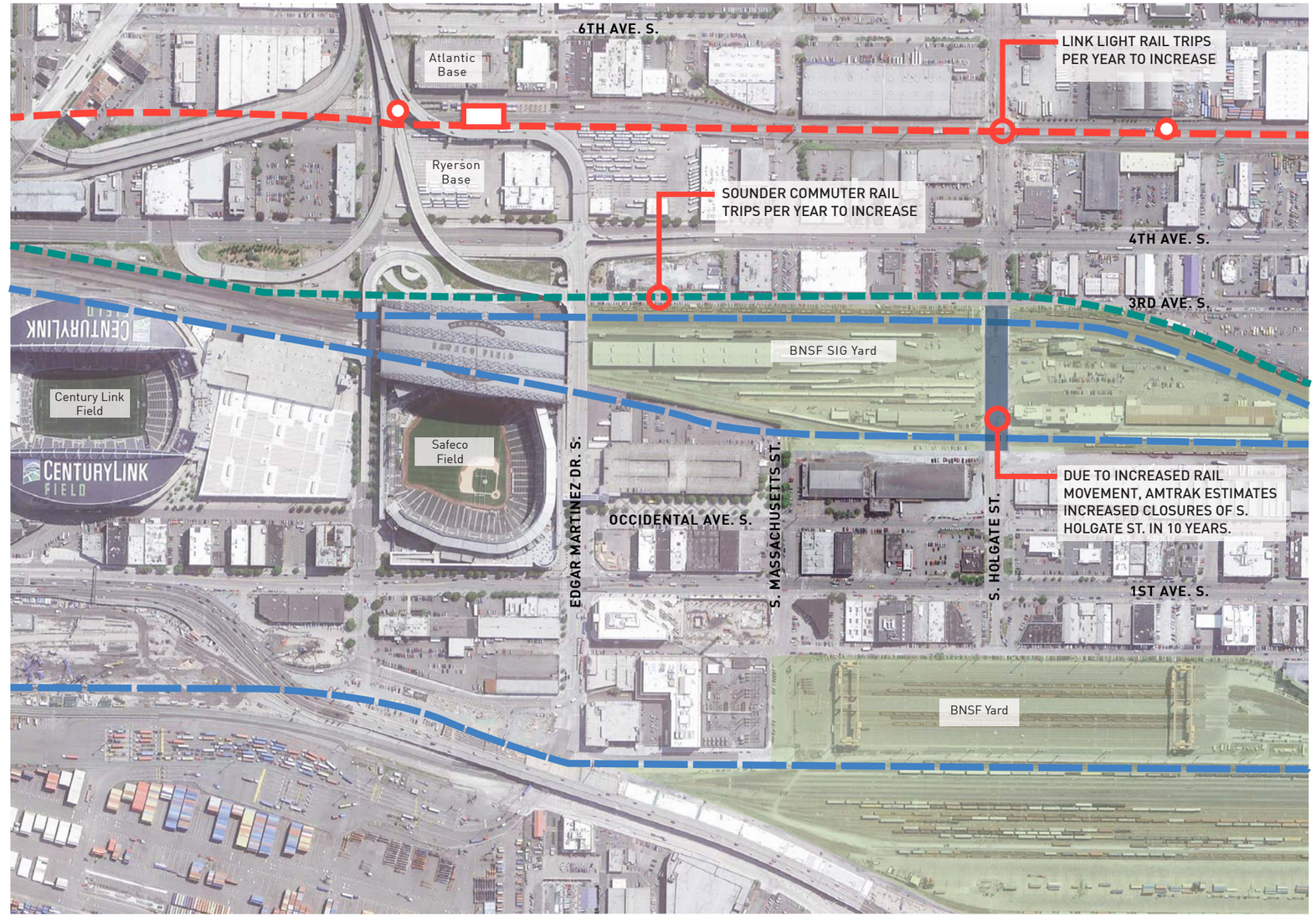
2.1.B EXISTING TRANSPORTATION
RAIL

ANALYSIS:

- ›65 trains/day + switching.
- 13 active tracks
- ›500 ft. to cross
- Poor pedestrian facilities.
- No pedestrian gate protection.



LEGEND:

- Link Light Rail
- Sound Transit Station
- Bus Stop
- Freight Rail Lines
- Sounder Commuter Rail
- Freight & Rail Yards

North NTS

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2.1.B NO VACATION TRANSPORTATION

RAIL

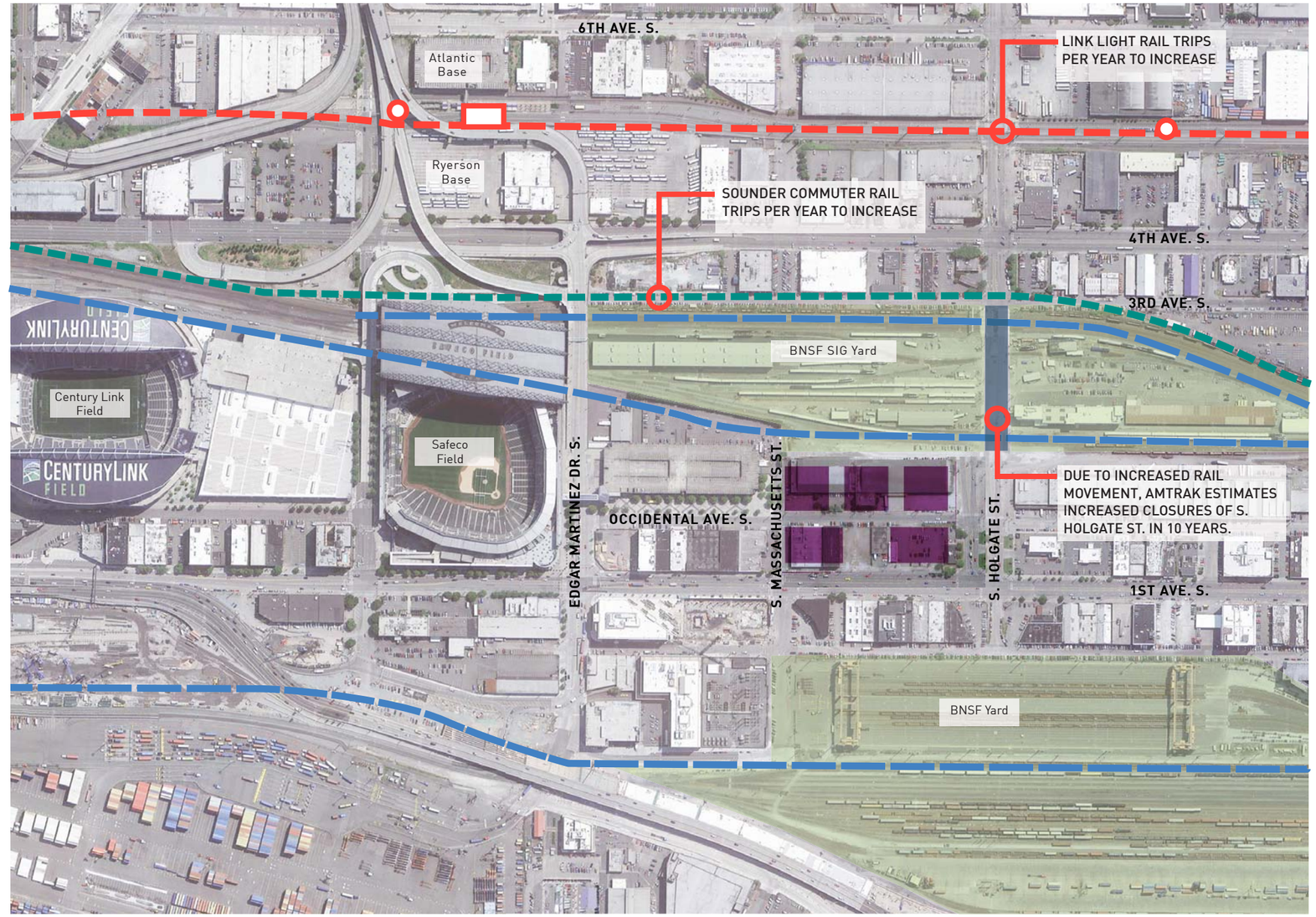
ANALYSIS:

Increased train activity :

- 2018 – 134/day - Double
- 2030 – 174/day - Nearly Triple

- With Amtrak Rail Yard Expansion – 4 additional rail crossings.

- Increased Pedestrian/Vehicular/Train conflicts.



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- Freight & Rail Yards

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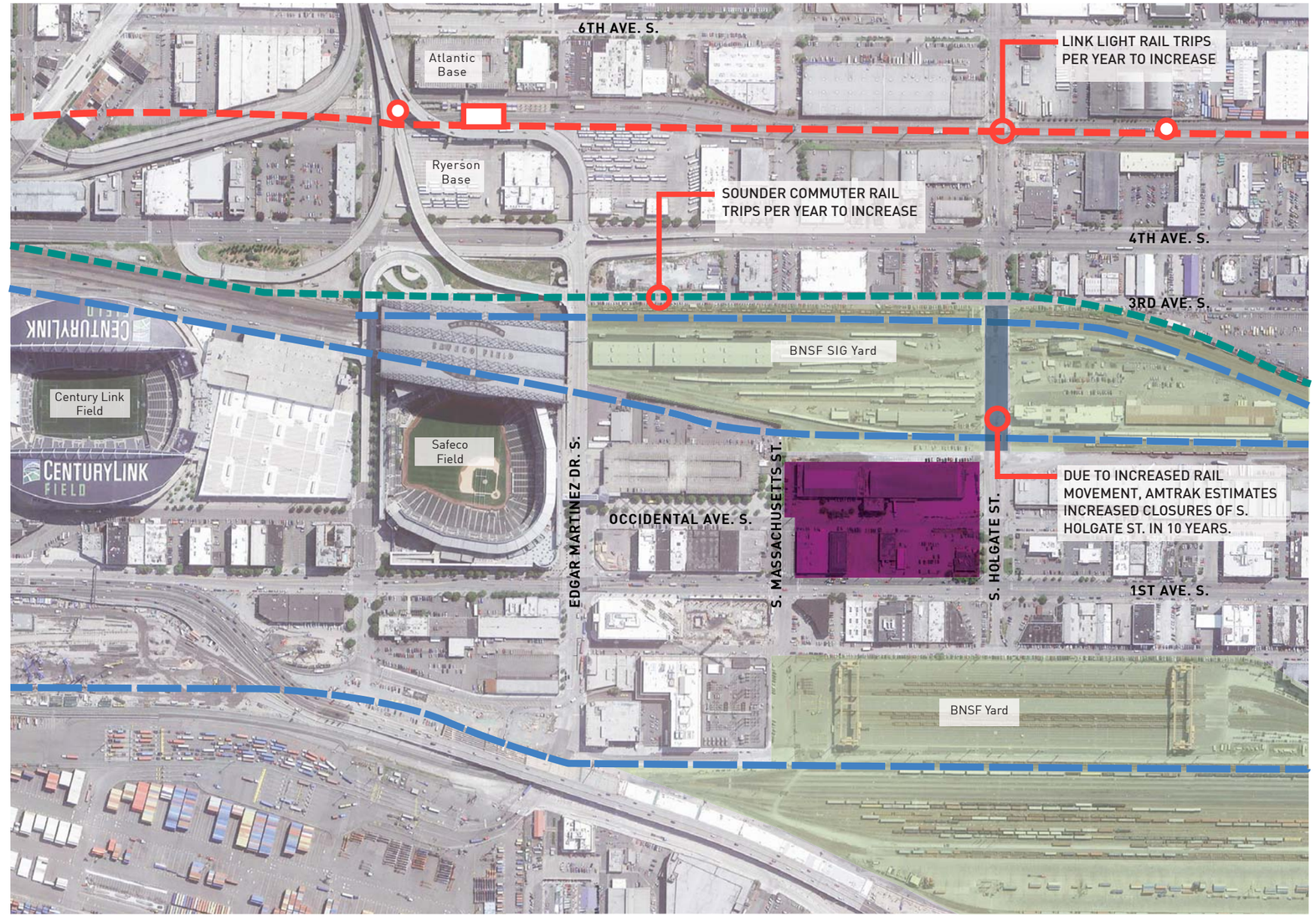
2.1.B ARENA TRANSPORTATION

RAIL

ANALYSIS:

- Access/service drive closer to rail activity
- Rail conflicts with pedestrians worse.
- Mitigation-
  - Improved sidewalks.
  - Pedestrian gate crossings.
  - Grade separate.



LEGEND:

- Link Light Rail
- Sound Transit Station
- Bus Stop
- Freight Rail Lines
- Sounder Commuter Rail
- Freight & Rail Yards

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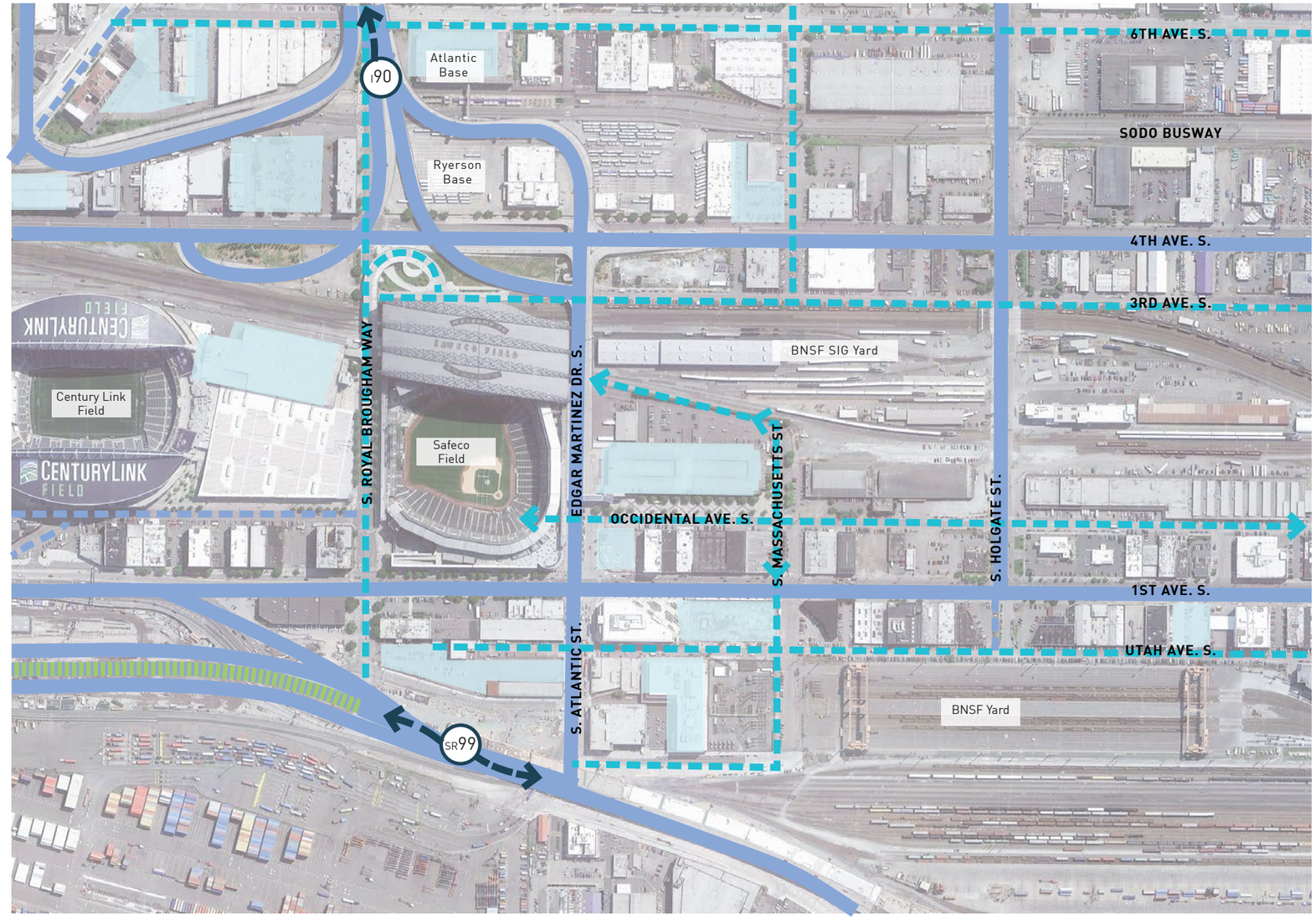
2.1.C EXISTING TRANSPORTATION

TRUCK FREIGHT

ANALYSIS:

- Direct access to loading docks.
- Low volumes on Occidental (<100vph PM peak)
- Very low truck volumes (PM peak, events)
- Continuity from S. Horton St to Edgar Martinez Drive.



LEGEND:

- Interstate/State Route Access
- Major Vehicular Connections
- Minor Vehicular Connections
- Parking Lots + Garages
- Future SR 99 Tunnel

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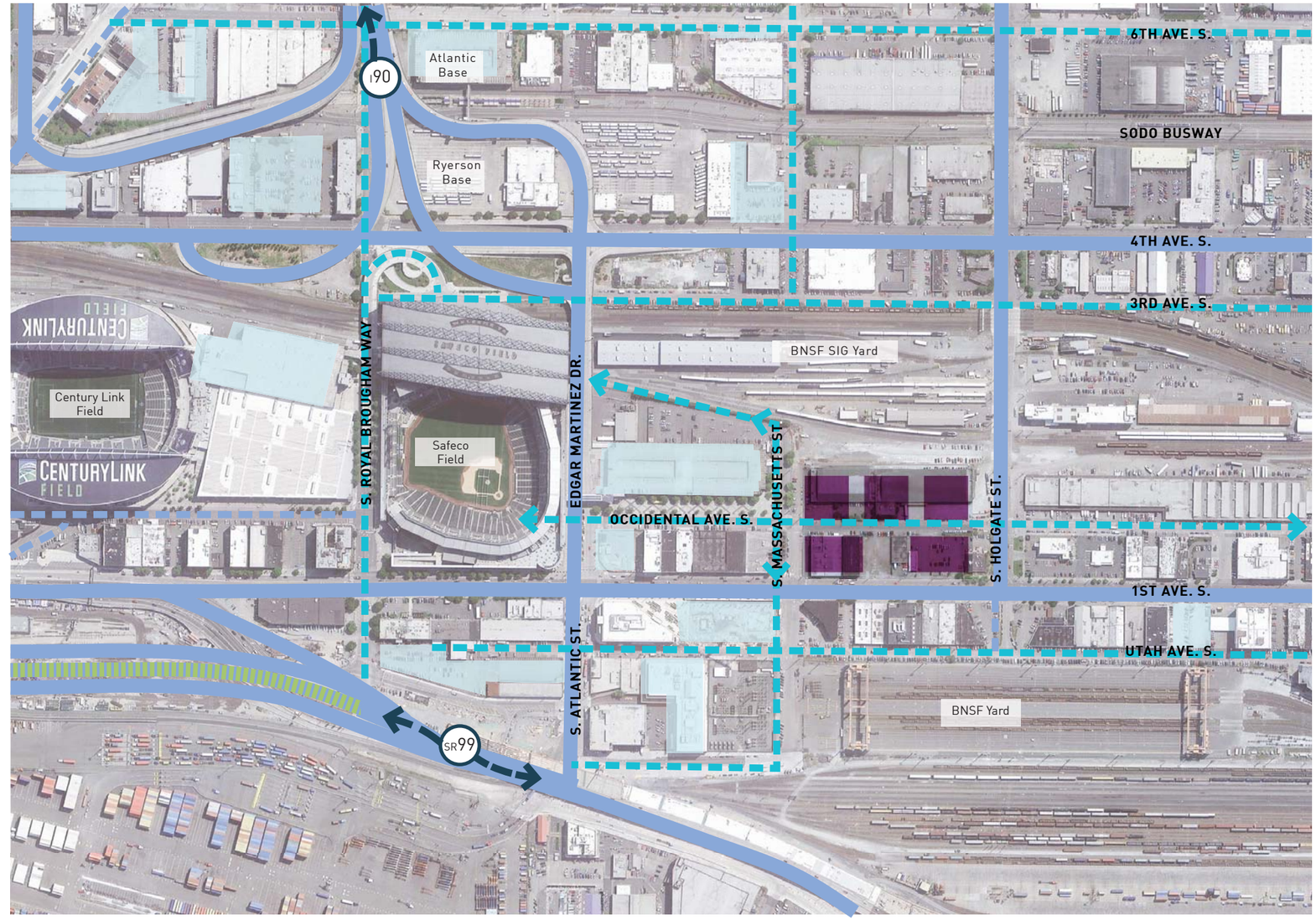
2.1.C NO VACATION TRANSPORTATION

TRUCK FREIGHT

ANALYSIS:

- Access to loading docks maintained without interruption.
- Increased truck traffic due to site development; overall Occidental truck traffic low.
- Increased daily vehicle congestion contributes to increased travel times in the immediate vicinity of the site.
- Continuity maintained- S. Horton to Edgar Martinez Dr.



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- Parking Lots + Garages
- Future SR 99 Tunnel

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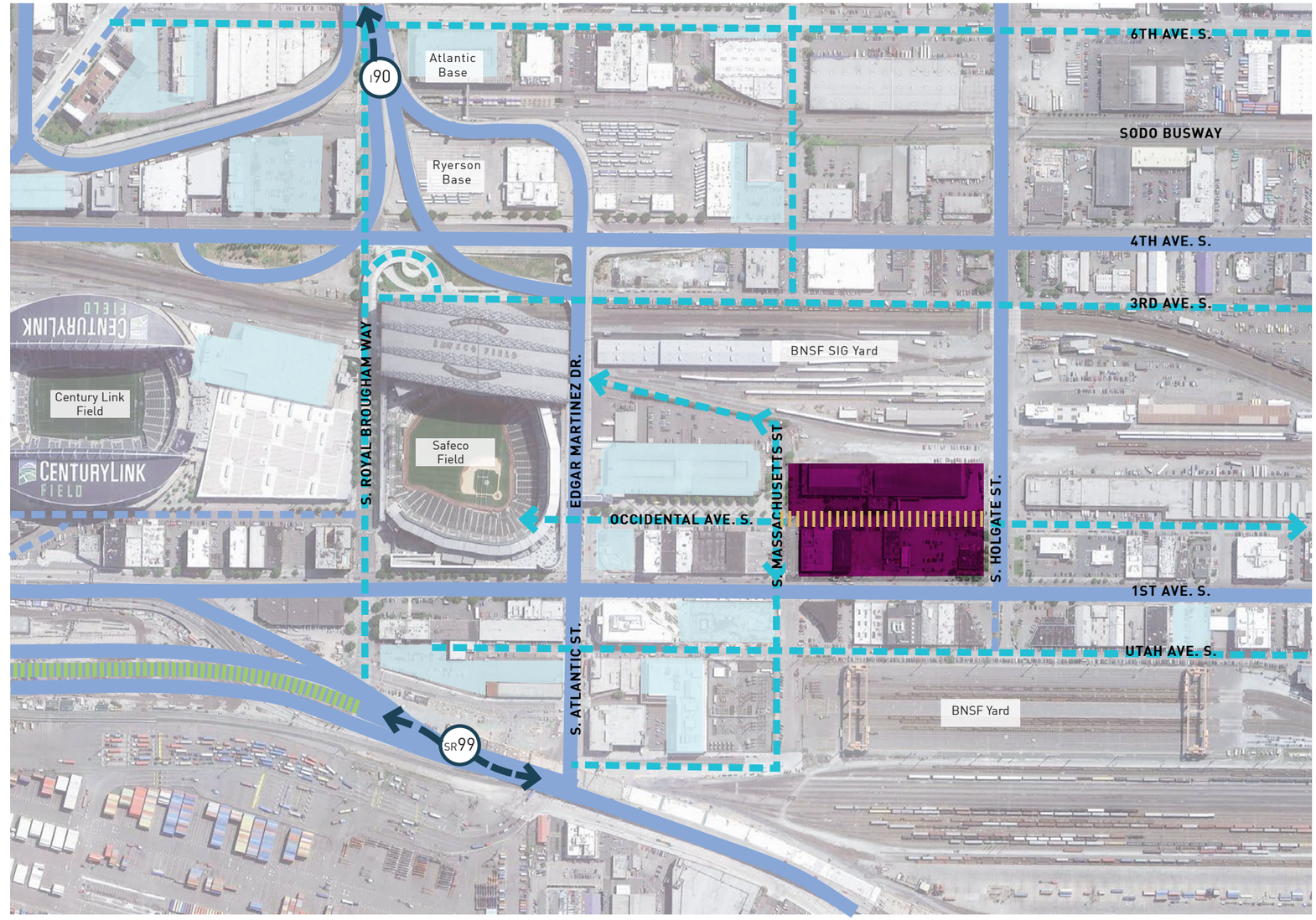
2.1.C ARENA TRANSPORTATION

TRUCK FREIGHT

ANALYSIS:

- Interrupted continuity of connection.
- Reroute of traffic impacts 1st Avenue –increase of approximately 200 vehicles (PM peak hour). - Add to First Ave. Delays.
- Arena would contribute to added congestion as described for event days only, at various event levels.
- Continuity of connection through would be lost; however truck volumes affected were observed to be minimal.



LEGEND:

- Interstate/State Route Access
- Major Vehicular Connections
- Minor Vehicular Connections
- Parking Lots + Garages
- Future SR 99 Tunnel

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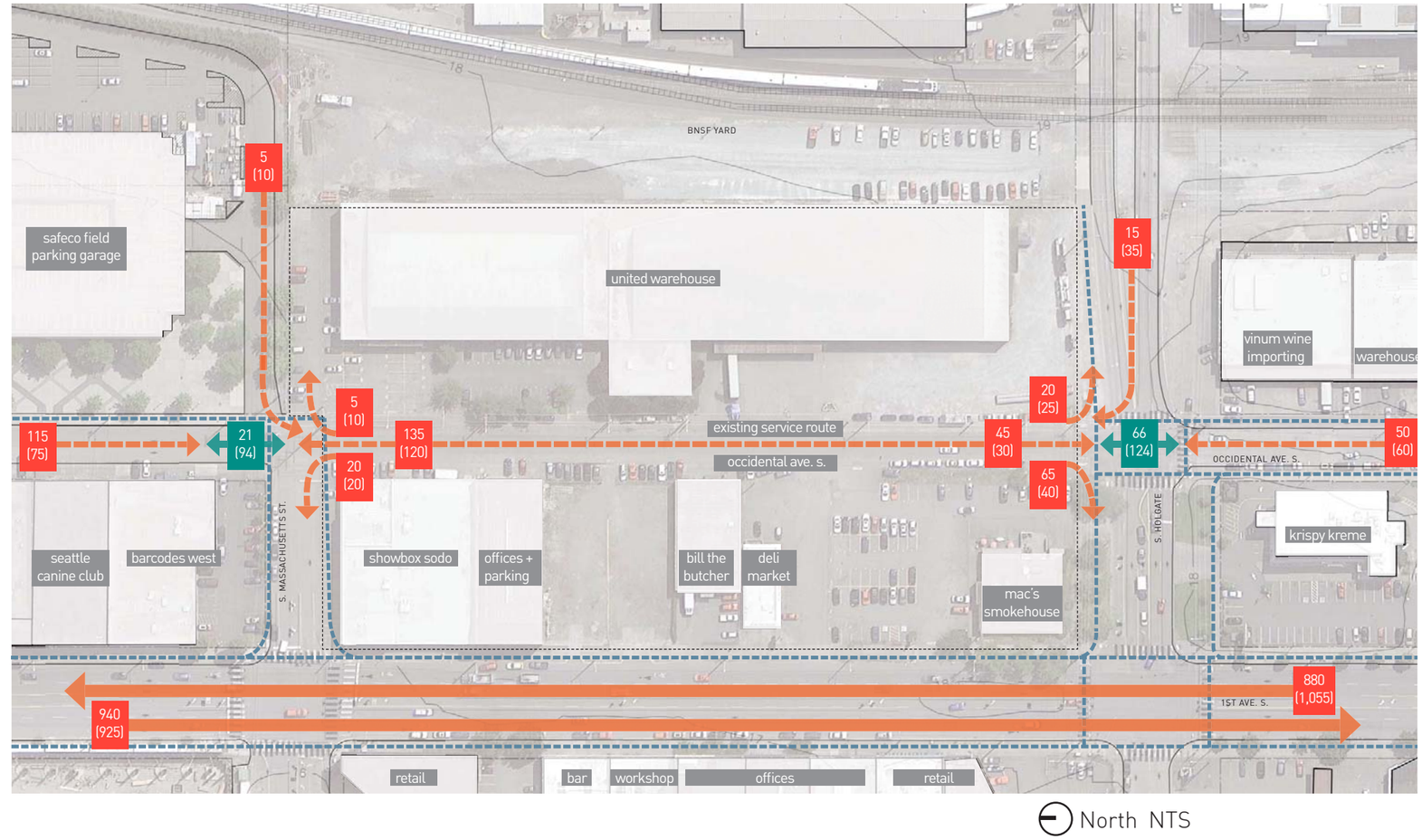
2.1.D EXISTING TRANSPORTATION
VEHICLE

ANALYSIS:

- Occidental Avenue extends from S. Horton to Edgar Martinez Way.
- Existing site development low intensity/industrial.
- Occidental Ave volumes <100 vph during PM peak hour.



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LEGEND:

- Vehicular Circulation
- xx Peak PM Period Vehicular Count without Event (2030)
- (xx) Vehicular Count with Event (2030)
- xx Peak PM Period Pedestrian Count without Event (2030)
- (xx) Pedestrian Count without Event (2030)
- Sidewalk + Cross Circulation
- Property Line

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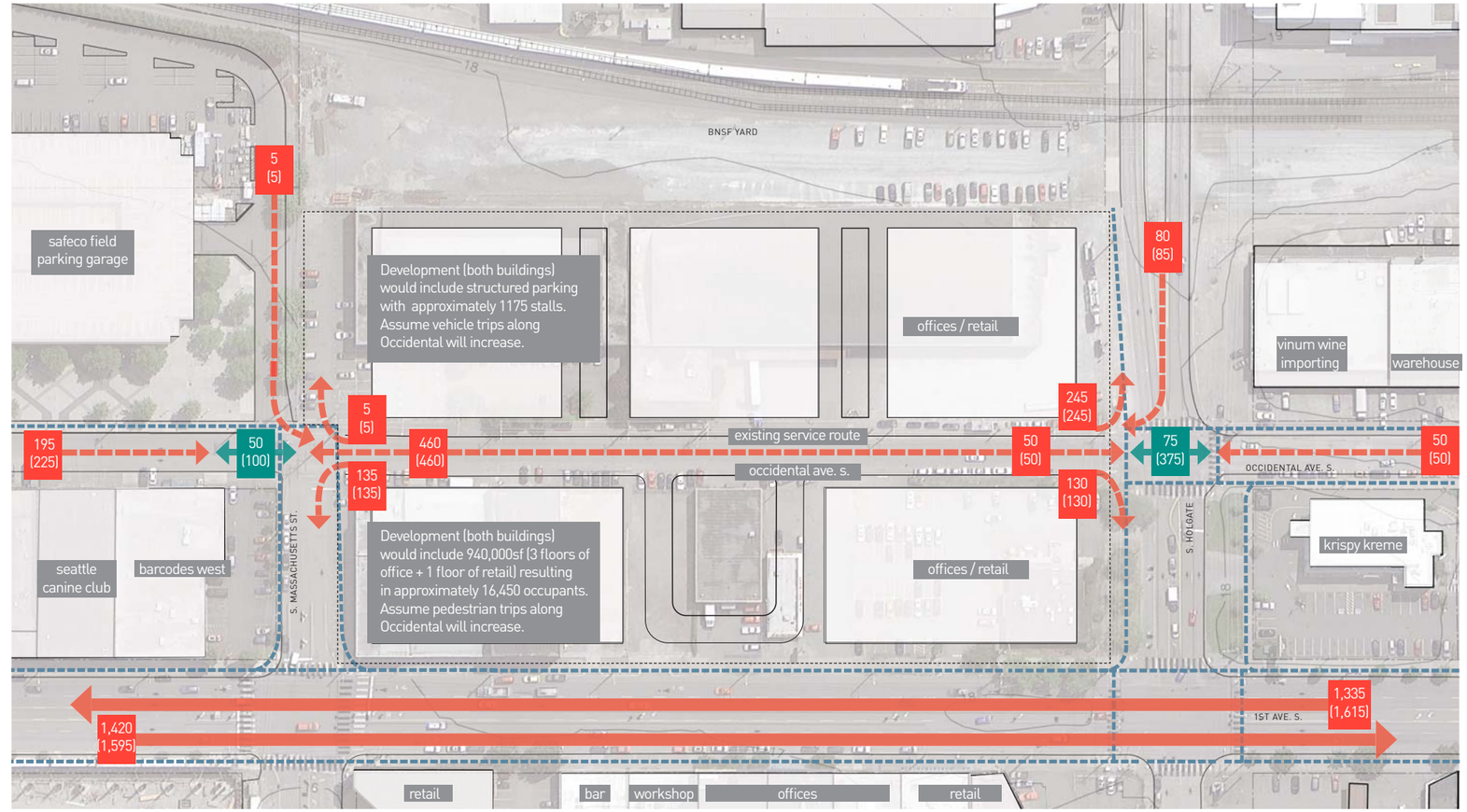
2.1.D NO VACATION TRANSPORTATION
VEHICLE

ANALYSIS:

- No change in Occidental Avenue or Massachusetts Avenue configurations.
- Assumed site development would result in approximately 1,000 new trips during PM peak hour.
- Increased impacts to 1st Avenue, Holgate and Edgar Martinez Way on a daily basis.
- First Ave./Holgate L.O.S. D



North NTS

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- Sidewalk + Cross Circulation
- Property Line

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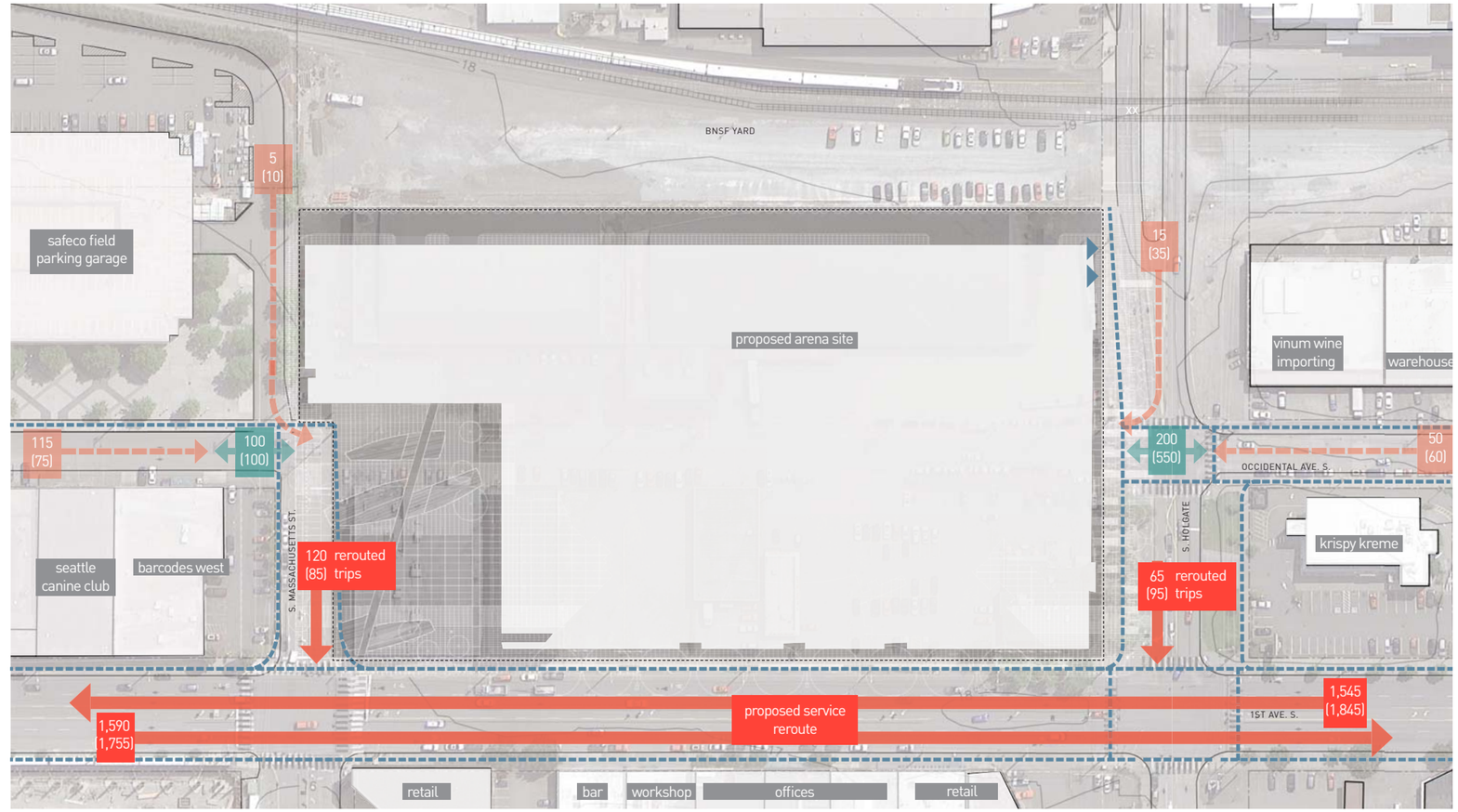
2.1.D ARENA TRANSPORTATION
VEHICLE

ANALYSIS:

- 1,970 vph event traffic generated with 20,000 attendance.
- Spread through system to parking.
- Local impacts on First Ave. and Holgate.
- Lower frequency of impacts with Arena than commercial development – tied to event schedules.
- First Ave./Holgate L.O.S. D to L.O.S. E



North NTS

LEGEND:

- Vehicular Circulation
- xx Peak PM Period Vehicular Count without Event (2030)
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- (xx) Pedestrian Count without Event (2030)
- Sidewalk + Cross Circulation
- Property Line

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2.1.E EXISTING TRANSPORTATION
PARKING

ANALYSIS:

- On street parking along Occidental – 50 spaces.
- Existing events at Safeco & Century Link use available parking.
- Bus staging on Occidental north of Massachusetts St.

LEGEND

- *PARKING FACILITIES*
- *SITE ON STREET PARKING*
- *SOUND TRANSIT STATION*
- *TRAIN STATION*
- *BUS/STREETCAR STOP*
- *INTERSTATE/ STATE ROUTE ACCESS*
- *WALKING DISTANCE*
- *ARENA SITE*

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2.1.E NO VACATION TRANSPORTATION
PARKING

ANALYSIS:

- 50-60 on-street spaces.
- No significant change vs. existing condition.

LEGEND

- *PARKING FACILITIES*
- *SITE ON STREET PARKING*
- *SOUND TRANSIT STATION*
- *TRAIN STATION*
- *BUS/STREETCAR STOP*
- *INTERSTATE/ STATE ROUTE ACCESS*
- *WALKING DISTANCE*
- *ARENA SITE*

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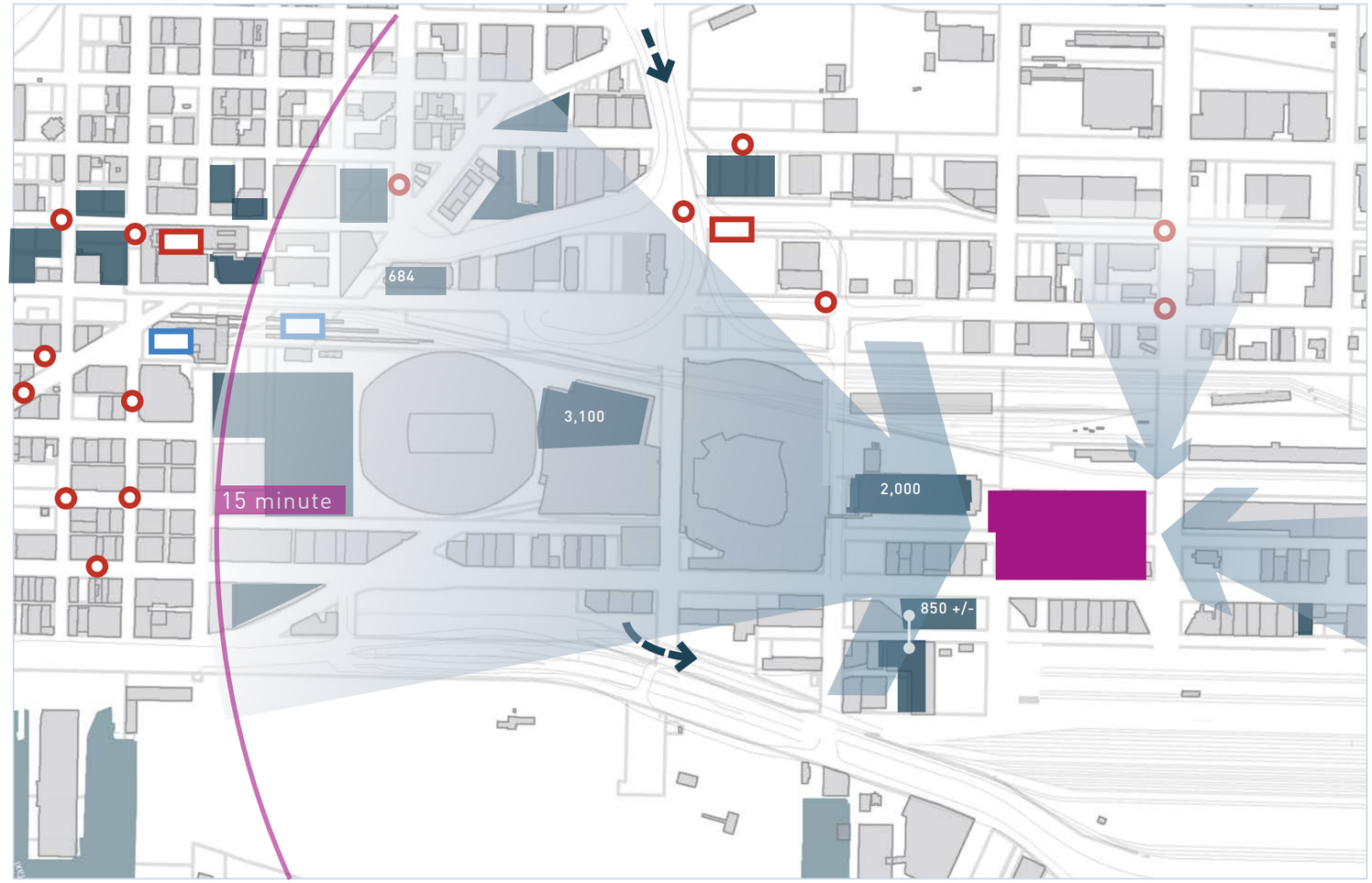
2.1.E ARENA TRANSPORTATION
PARKING

ANALYSIS:

- 50 on-street spaces lost due to Arena.
- 102 off street parking spaces added.
- Additional events at an Arena would result in increased frequency of event days of all sizes, and would raise potential for triple event scenario.
- Arena would add to event related parking impacts frequency and intensity.



LEGEND

- *PARKING FACILITIES*
- *SITE ON STREET PARKING*
- *SOUND TRANSIT STATION*
- *TRAIN STATION*
- *BUS/STREETCAR STOP*
- *INTERSTATE/ STATE ROUTE ACCESS*
- *WALKING DISTANCE*
- *ARENA SITE*

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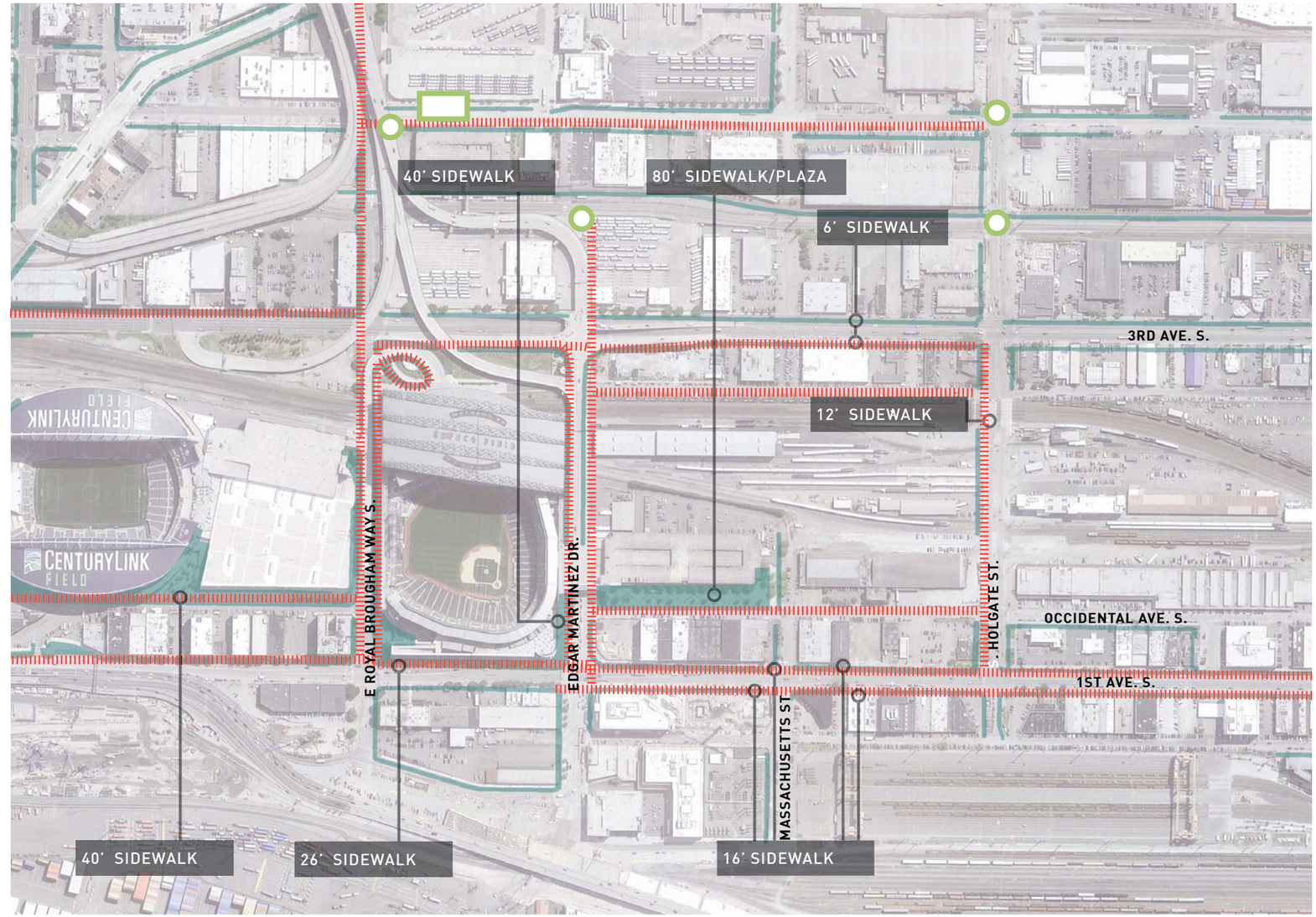
2.1.F EXISTING TRANSPORTATION
PEDESTRIAN

ANALYSIS:

- Occidental Ave. used to connect pedestrians to parking on Occidental - north and south of Holgate St during significant events.
- Non-event pedestrian volumes low.
- Constrained First Ave sidewalk south of Edgar Martinez Drive
- Unsafe Holgate Street railroad crossings during event and non-event conditions.



North NTS

LEGEND:

- Major Pedestrian Route
- Sound Transit Station
- Bus Stop

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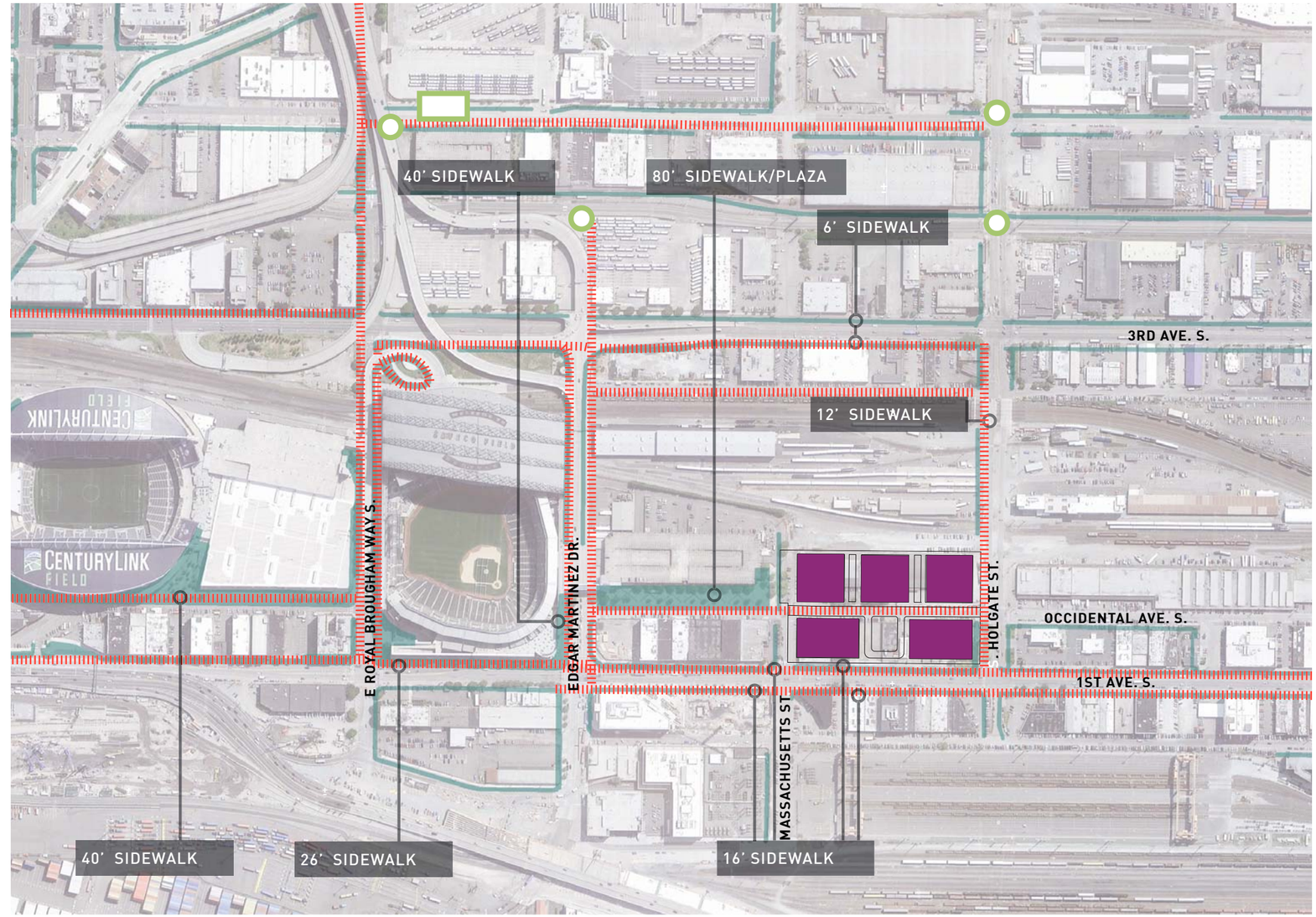
2.1.F NO VACATION TRANSPORTATION
PEDESTRIAN

ANALYSIS:

- Redevelopment would result in sidewalks on Occidental Ave.
- Additional non-event pedestrians.
- Doubling/Tripling of Rail activity would continue to result in hazardous crossings/connection to transit corridor on Fourth Ave.



North NTS

LEGEND:

- Major Pedestrian Route
- Sound Transit Station
- Bus Stop

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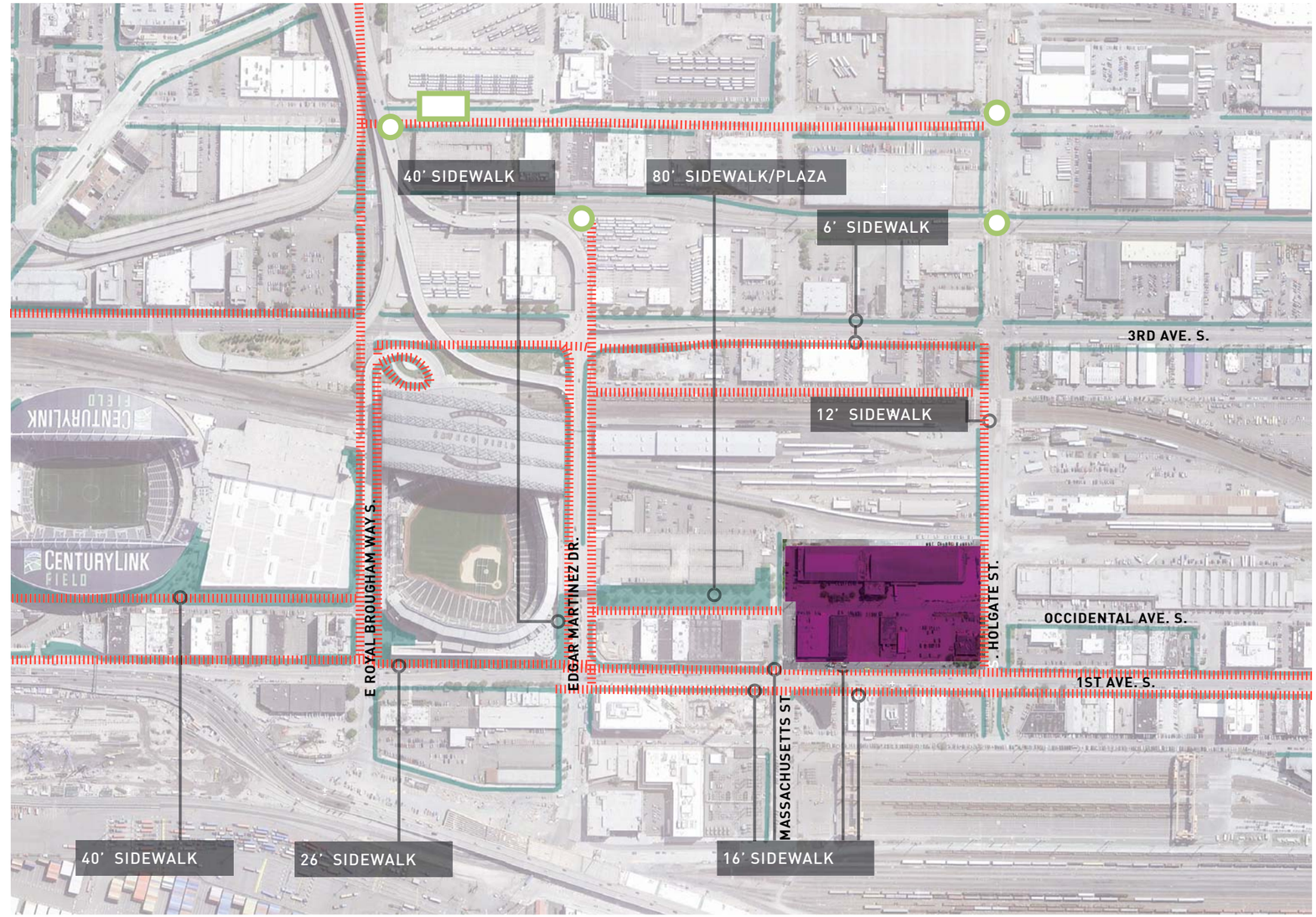
2.1.F ARENA TRANSPORTATION
PEDESTRIAN

ANALYSIS:

- Connection continuity interrupted.
- Significant event pedestrian demands pre/post event.
- Key connections:
  North on First Ave.
  Northeast to transit/rail
  East to Fourth Ave.
- Constrained capacity on Frist Ave.
- Holgate Street rail crossings
  Mitigation options.



North NTS

LEGEND:

Major Pedestrian Route

Sound Transit Station

Bus Stop

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2.1.G EXISTING TRANSPORTATION
BIKE

ANALYSIS:

- Bike volumes on Occidental Low.
- Occidental not designated as a bicycle facility.
- Some use by bicyclists as an alternative to 1st Avenue S.

North NTS

LEGEND:

Major Bike Route (per SDOT Bicycle Master Plan)

ROW Bike Racks in Stadium Overlay District

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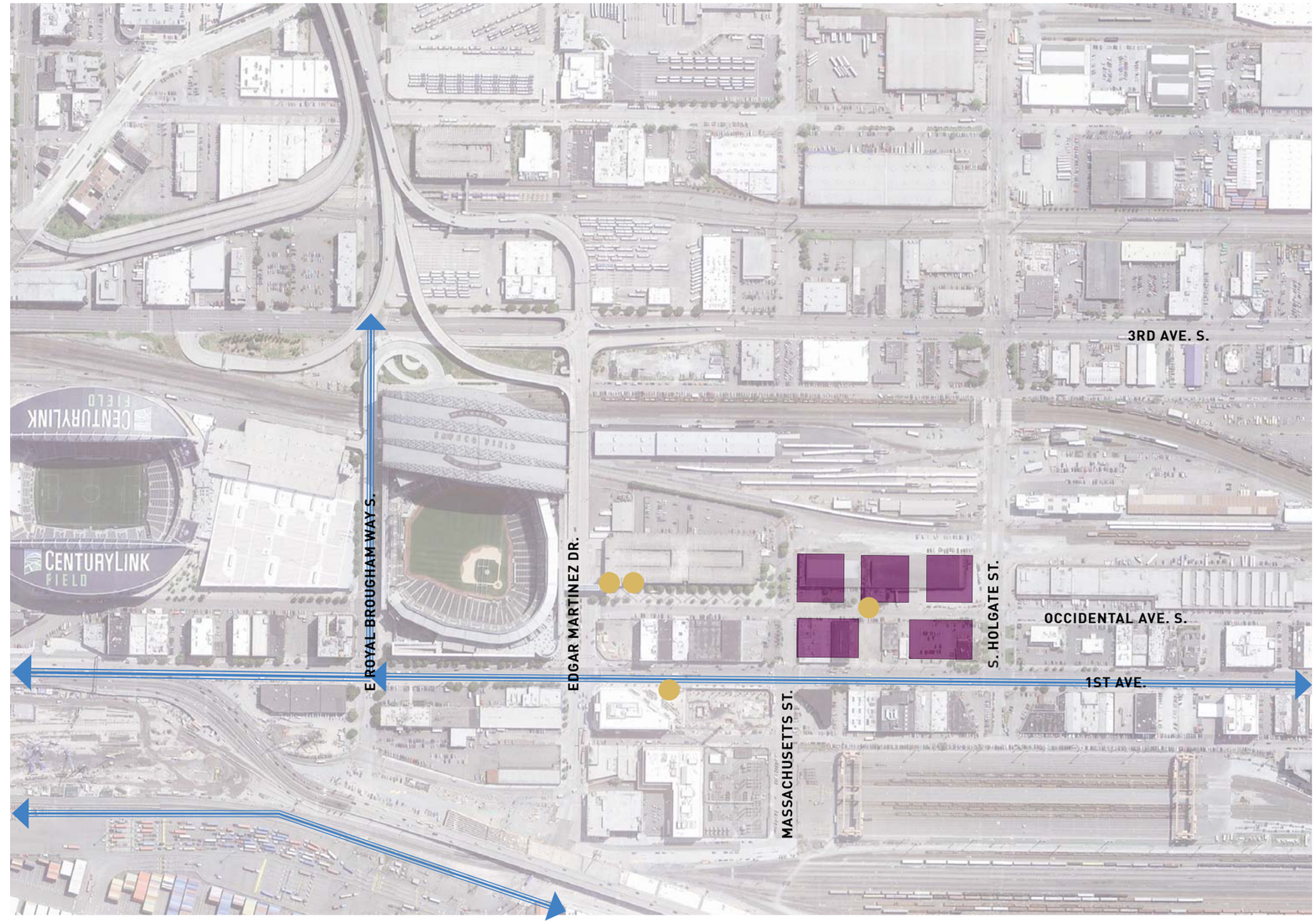
2.1.G NO VACATION TRANSPORTATION
BIKE

ANALYSIS:

- Some increase in bike traffic due to commercial/office development.
- Overall bicycle volumes would remain low.



North NTS

LEGEND:

Major Bike Route (per SDOT Bicycle Master Plan)

ROW Bike Racks in Stadium Overlay District

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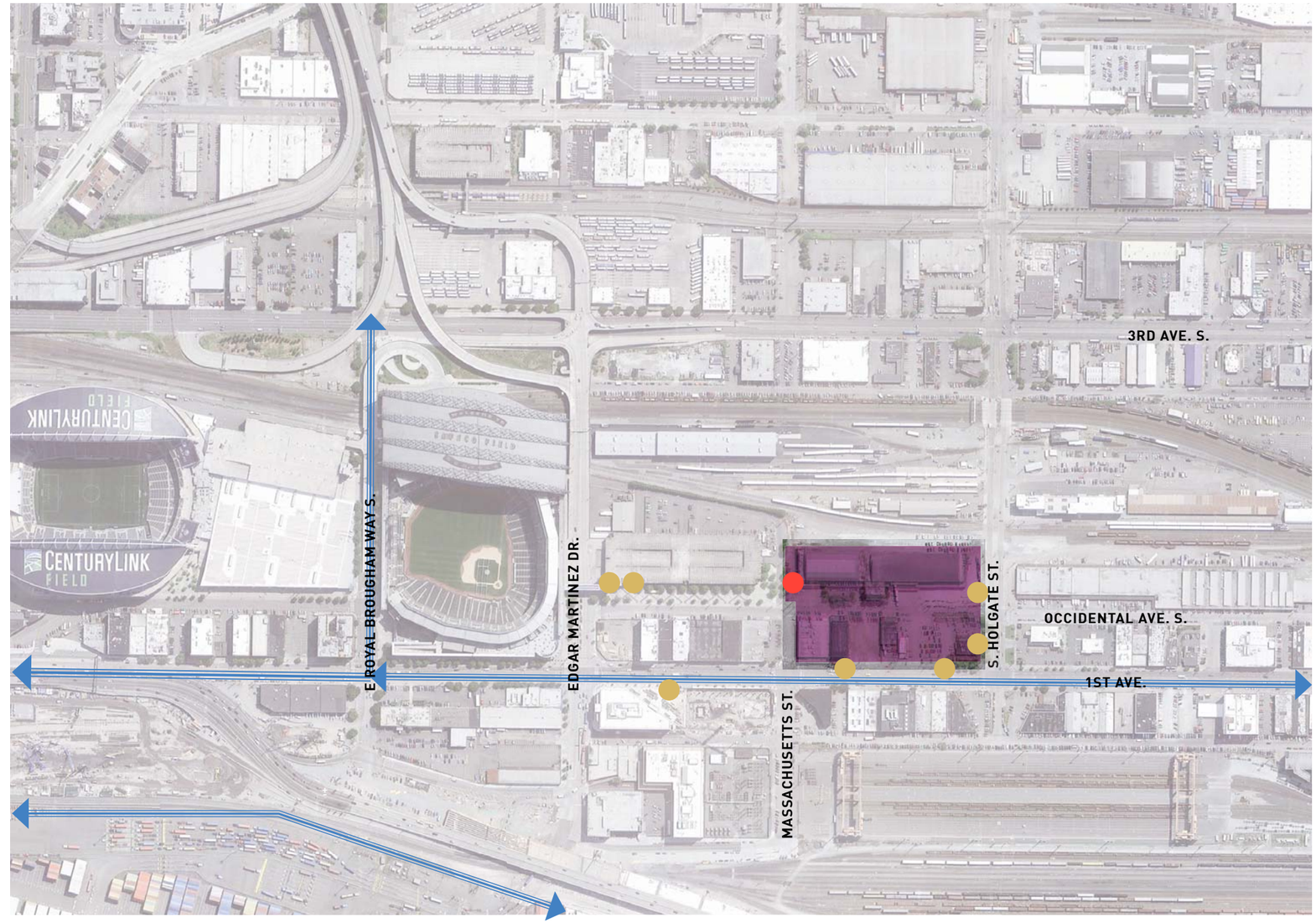
2.1.G ARENA TRANSPORTATION

BIKE

ANALYSIS:

- Closure of Occidental would divert any bicycle traffic using Occidental to 1st, increasing the potential for conflict with 1st Avenue traffic.
- Bike Valet and bike racks added for public use.
- Given low bicycle volumes. Bicycle impacts minor.



North NTS

LEGEND:

- Major Bike Route (per SDOT Bicycle Master Plan)
- ROW Bike Racks in Stadium Overlay District
- Bike Valet/Storage

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2.2 EXISTING

2.2.A EXISTING
URBAN FOREST CANOPY

Macro-Level: City of Seattle Urban Forest Canopy

130,000 EXISTING STREET TREES*

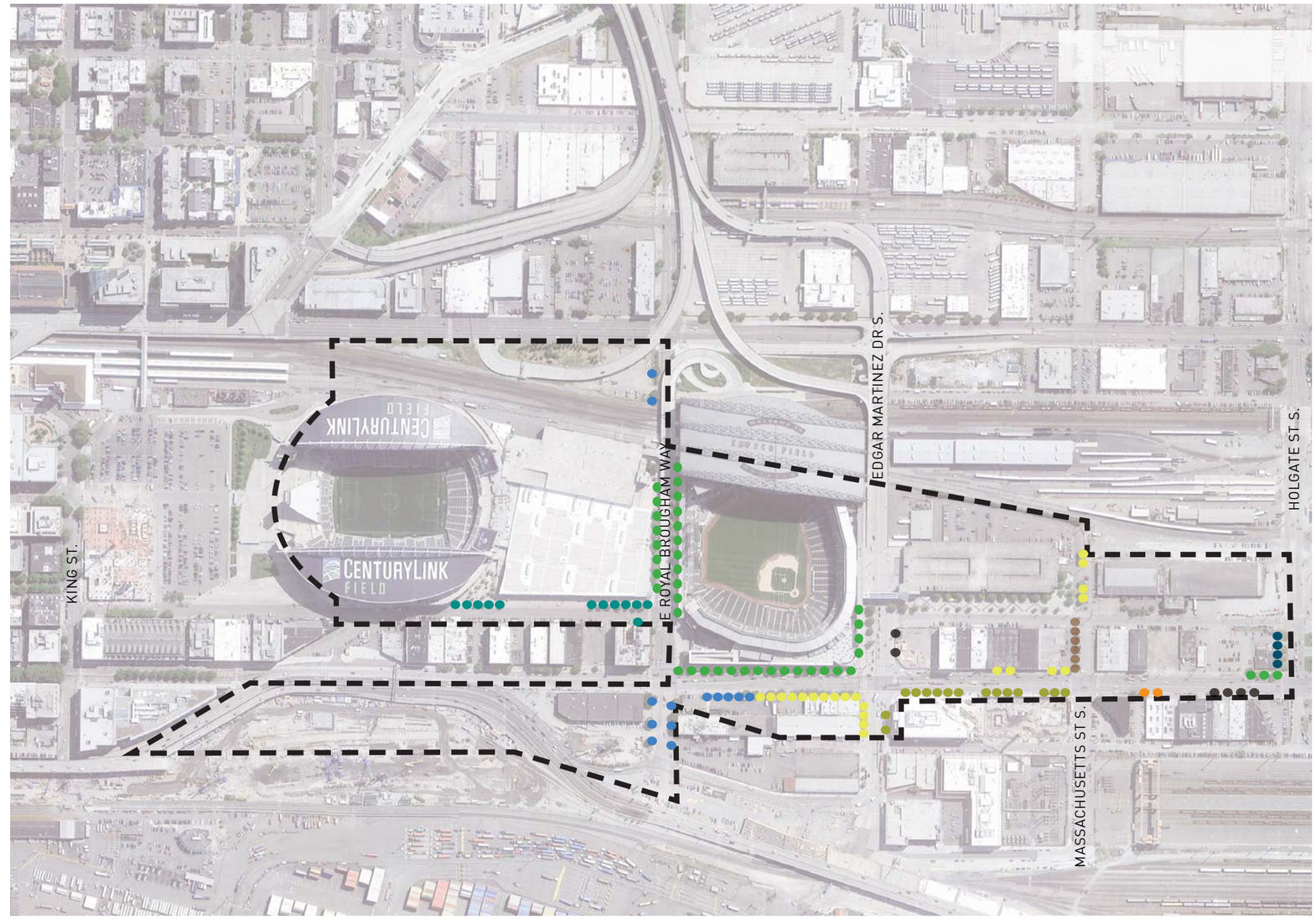
TOP STREET TREE GENERA TRENDS:

TREE TYPE	1994	2011
Prunus SP. (cherry)	26%	21%
Acer SP. (maple)	17%	20%
Crataegus SP. (crabapple)	8%	6%
Malus SP. (apple)	5%	5%
Tilia SP. (linden)	4%	3%
Quercus SP. (oak)	4%	4%
Liquidambar SP. (sweetgum)	4%	3%

TOP SPECIES OF STREET TREES 2011:

TREE TYPE	PERCENT OF TOTAL
Prunus Serrulata (CHERRY)	9.1%
Prunus Cerasifera (CHERRY)	9.0%
Acer Rubrum (RED MAPLE)	5.3%
Malus SP. (CRABAPPLE)	5.2%
Acer Platanoides (NORWAY MAPLE)	5.0%
Cratagus Laevigata (ENGLISH HAWTHORNE)	4.0%
Liquidambar styraciflua (SWEETGUM)	3.3%

**city of seattle, dept. of transportation, seattle tree inventory*



LEGEND:

- Stadium Overlay District
- Platanus x Acerifolia (London Plane) 40
- Acer sp. (Maple) 22
- Pyrus sp. (Flowering Pear) 15
- Zelkova Serrata (Zelkova) 13
- Liriodendron Tulipifera (Tulip Tree) 12
- Carpinus (Hornbeam) (6)
- Gleditsia Tricanthos (Honeylocust) (4)
- Quercus sp. (Oak) (2)

North 200 400 800

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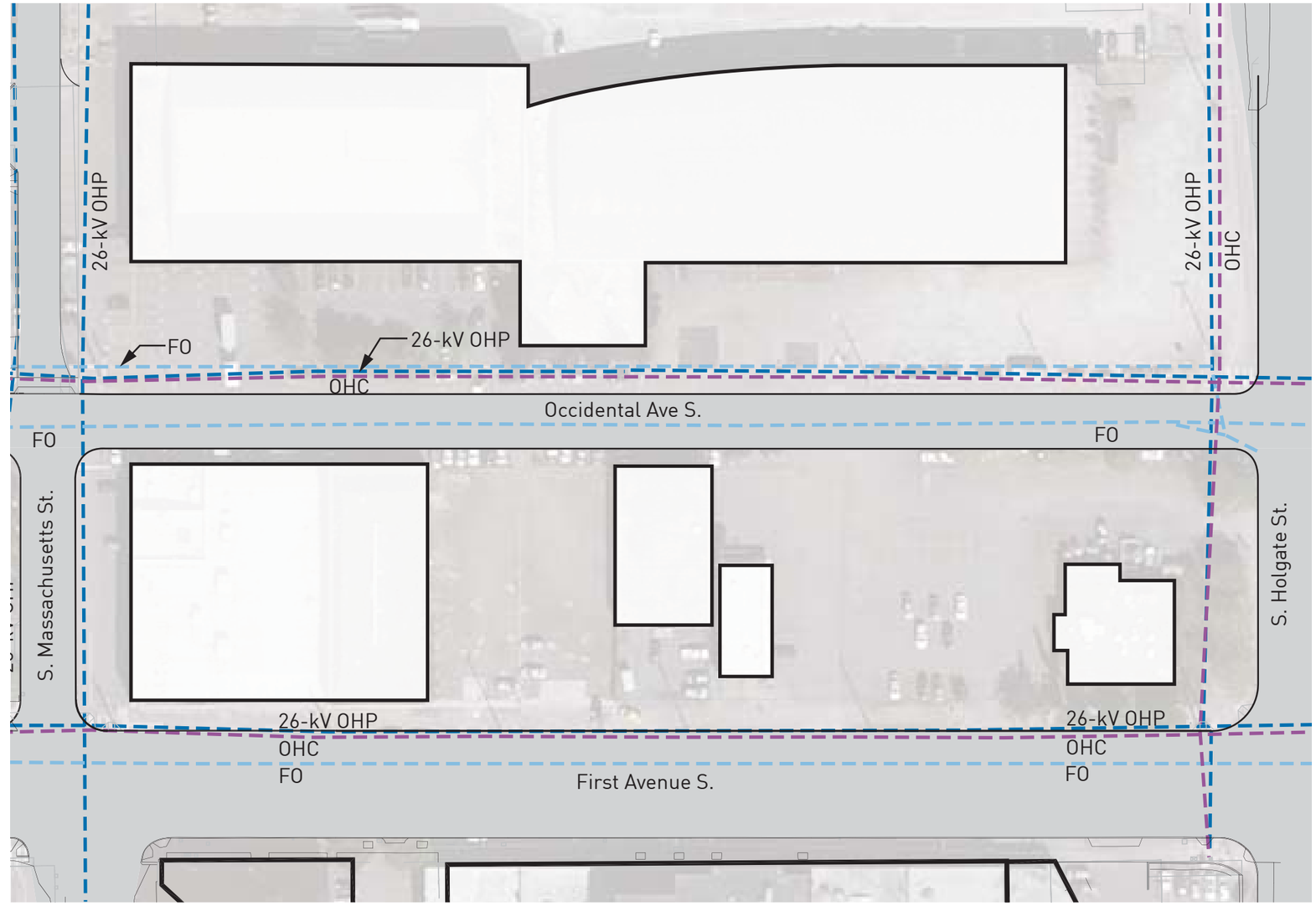
2.2.B EXISTING UTILITIES:
DRY UTILITIES

ANALYSIS:

- Overhead electrical and communications utilities create cluttered views.
- There is a risk of outages caused by weather or vehicles.
- There is a safety concern with electrical clearances for construction as well as permanent building conditions.



LEGEND:

- Fiber Optic
- Overhead Power
- Overhead Communications

North 40 80 160

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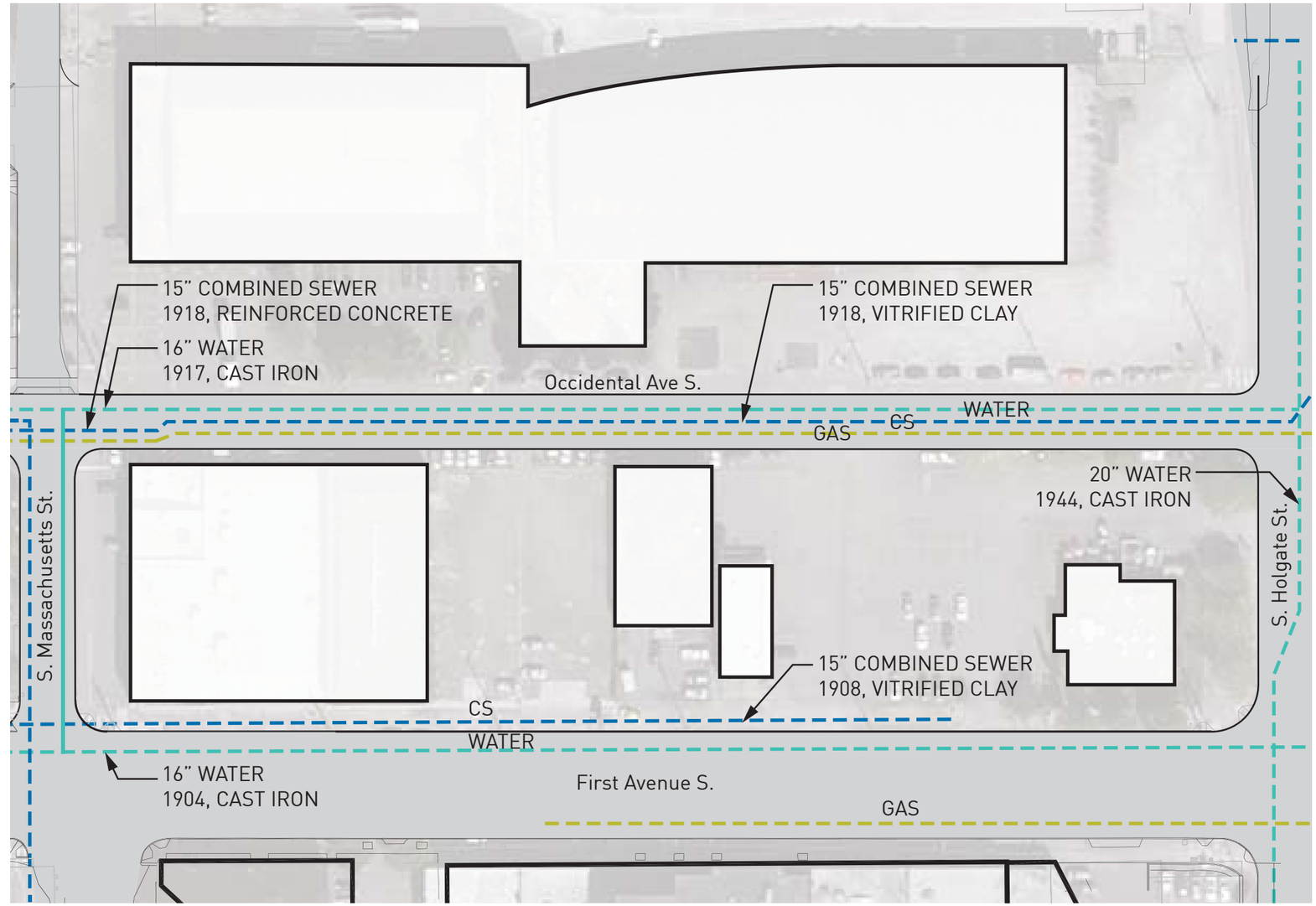
2.2.B EXISTING UTILITIES

WET UTILITIES

ANALYSIS:

- Existing water, sewer, and gas are located in Occidental to serve adjacent properties.
- 96" Elliot Bay Intercept is north of project site.
- Aging infrastructure for water and sewer.



LEGEND:

- Water
- Combined Sewer
- Gas

North 40 80 160

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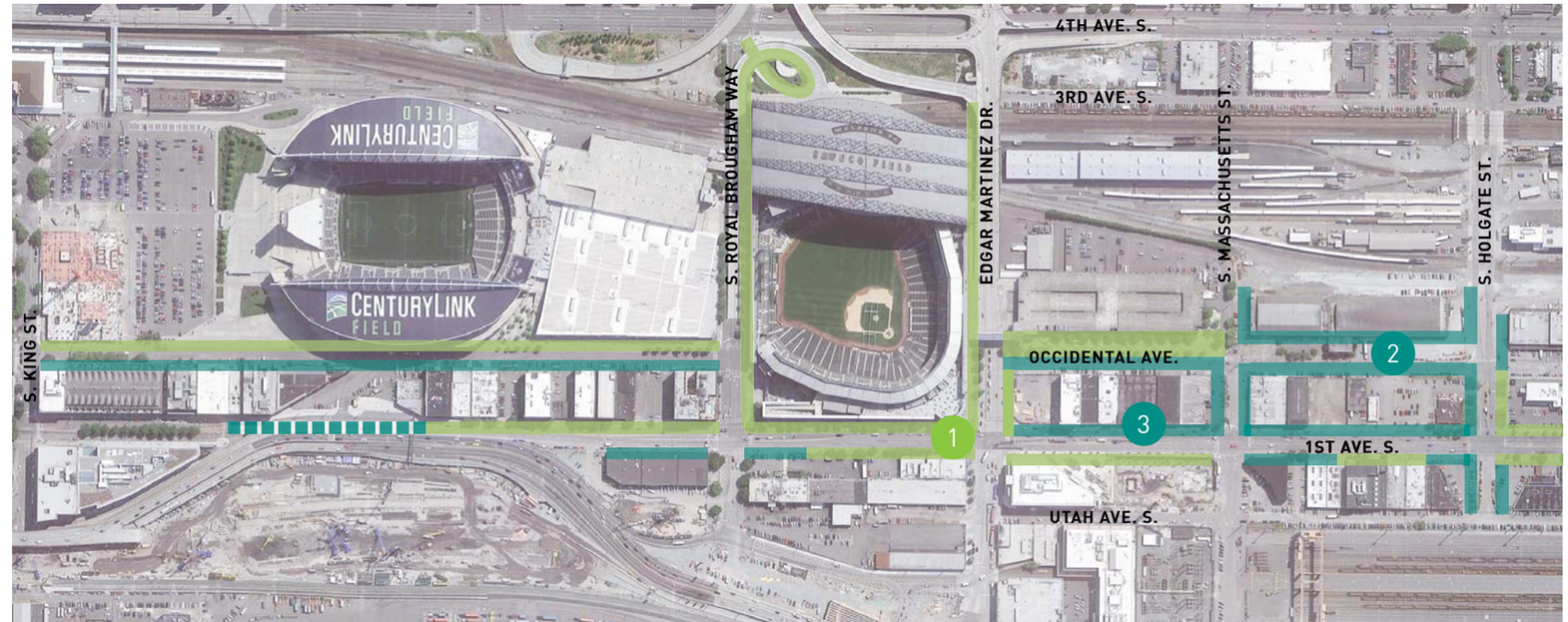
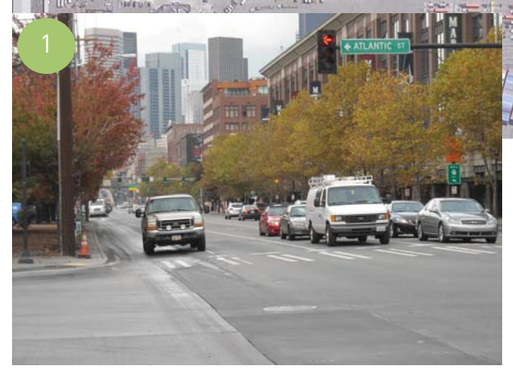
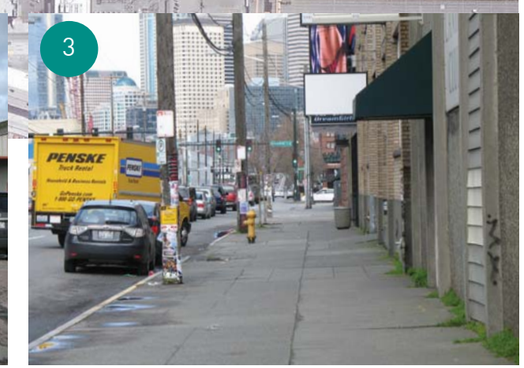
2.2.C EXISTING STREET IMPROVEMENTS
STREETSCAPE

ANALYSIS:

The design team's analysis of existing streetscape conditions uses the SDOT minimum standard of a 6' sidewalk in addition to street tree planting to differentiate between improved versus unimproved streetscape conditions. This applied criteria has identified where holes are in the pedestrian linkages to downtown and where street conditions do not meet this minimum standard.







LEGEND:

- Improved Streetscape
- UnImproved Streetscape
- Streetscape to be improved (by others)

North NTS

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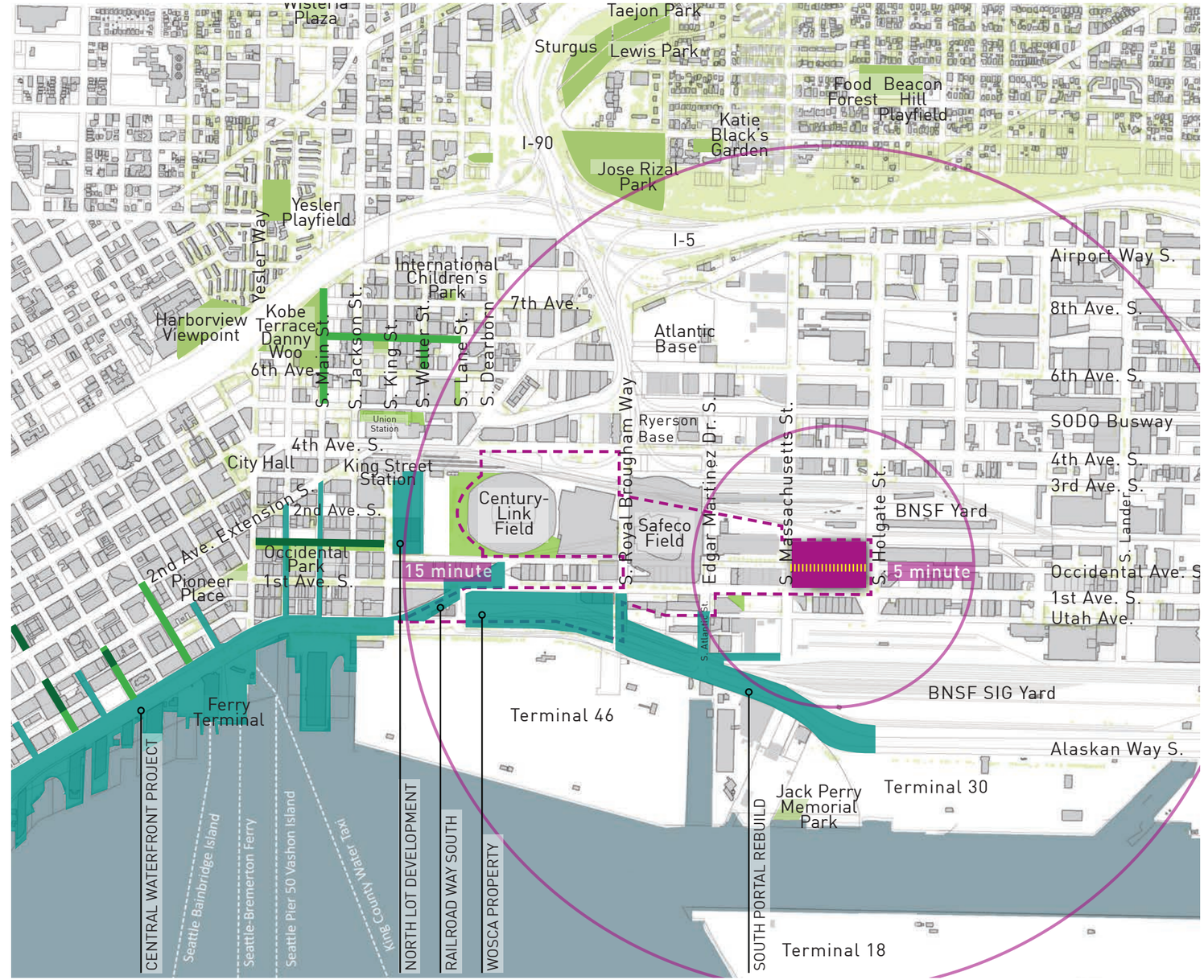
2.2.D EXISTING OPEN SPACE [QUANTITY]

DISTRICT OPEN SPACE

ANALYSIS:

Existing open space is limited in quality and quantity. The southern edge gateway to the stadium overlay district can be further defined with the development of open space.



LEGEND

- Transformational Projects
- Implemented Green Street
- Designated Green Street
- Existing Public Open Space
- Tree canopy
- Proposed Street Vacation
- Walking Distance
- Stadium Transition Zone
- Arena Site

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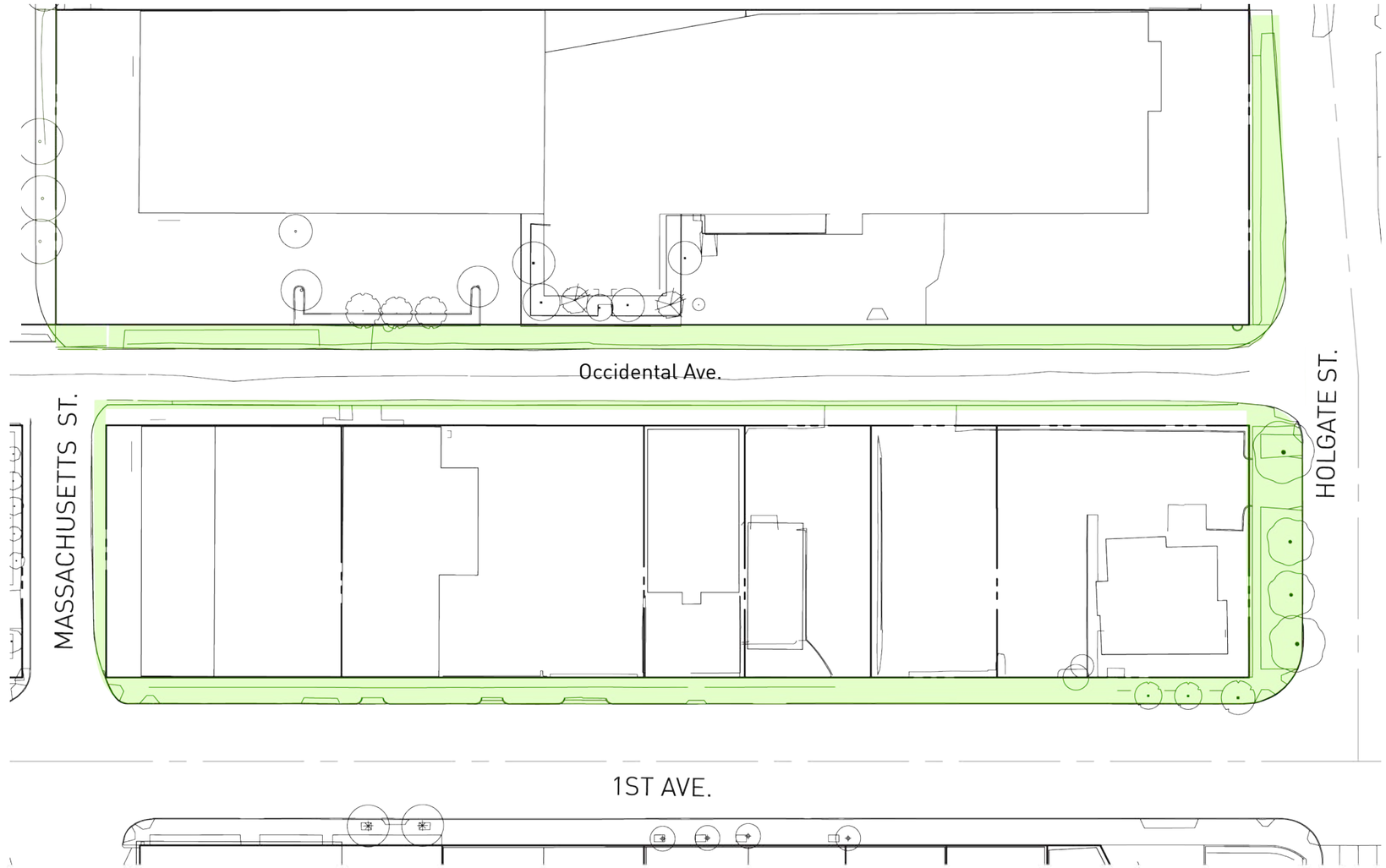
2.2.D EXISTING OPEN SPACE [QUANTITY]

DISTRICT OPEN SPACE

ANALYSIS:

Existing open space is limited to streetscape in the right of way. An existing publicly accessible plaza on private land is located north of the site adjacent to Safeco Field Garage.



LEGEND

Publicly Accessible Streetscape : Public Land 37, 413 Square Feet

North 40 80 160

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2.2.E EXISTING OPEN SPACE [QUALITY]

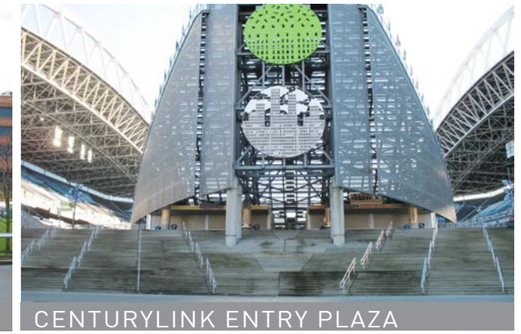
DISTRICT OPEN SPACE

ANALYSIS:

- Existing open space limited to new developments and right of way.
- Recent development (including stadiums) offer generous plaza areas and improved streetscape conditions.
- Majority of district's streetscapes lack recent improvements and defined pedestrian zones.
- Built elements are large grained; pedestrian scaled elements are minimal.

CENTURYLINK PLAZA

- plaza commons
- quality street furnishings
- minimal planting & trees
- limited human scale
- few small gathering spaces



CENTURYLINK ENTRY PLAZA

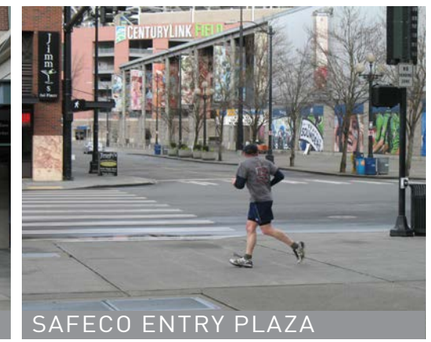
- private elevated building entry
- sense of place at entry

CENTURYLINK STREETSCAPE

- wide sidewalks
- recent street tree, pedestrian lighting and site furnishing streetscape additions

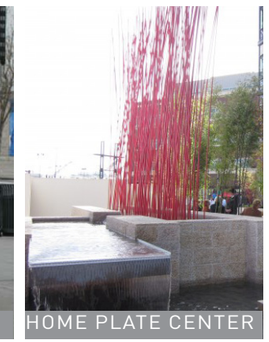
SAFECO STREETSCAPE

- street front retail
- human scale architectural elements



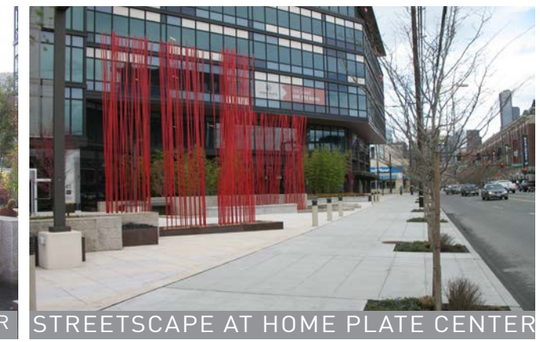
SAFECO ENTRY PLAZA

- wide sidewalks
- safe pedestrian crossing



HOME PLATE CENTER

- public art integration
- water activated space



STREETSCAPE AT HOME PLATE CENTER

- quality materials
- human scale planting
- investment in public space

OCCIDENTAL STREETSCAPE

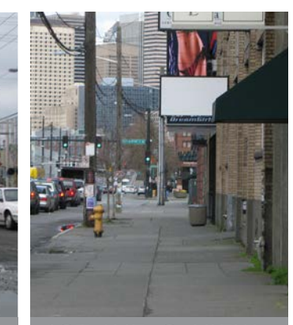
- flexible use
- activated open space

OCCIDENTAL AVE. S. VIEW

- no sidewalks
- uneven pavement
- no street trees
- overhead utilities

S. HOLGATE ST. VIEW WEST

- intermittent sidewalks
- undefined pedestrian/vehicular zones
- multiple nodes crossing rail at grade



1ST AVE. S. VIEW

- no street trees
- pedestrian-scale storefronts

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2.2.E EXISTING OPEN SPACE [QUALITY]

DISTRICT OPEN SPACE

ANALYSIS:

No public open space currently exists outside of the right of way.

North 30 60 120

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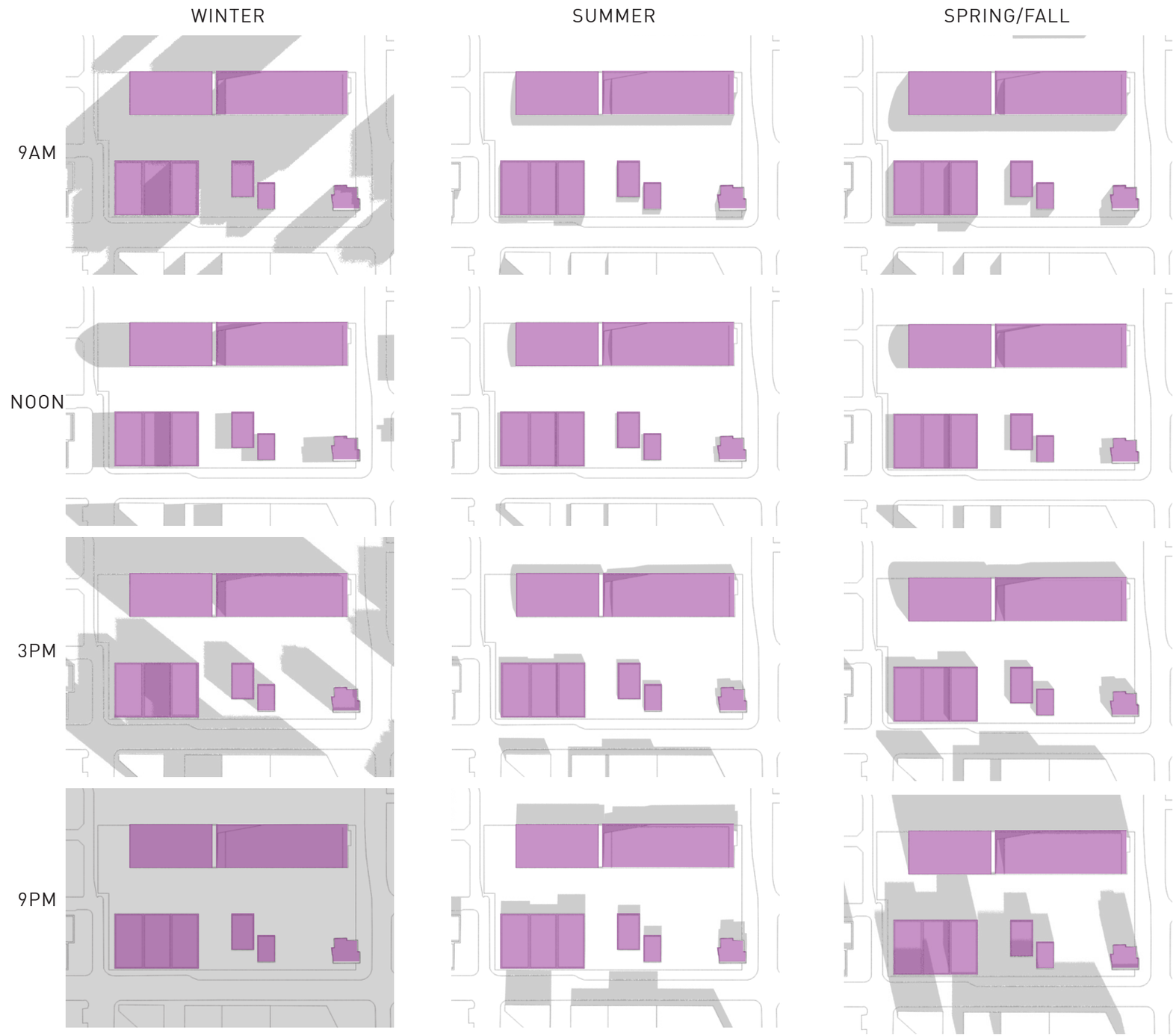
2.2.E EXISTING OPEN SPACE [QUALITY]

SUN SHADOW STUDY

ANALYSIS:

The underdeveloped site creates few significant shadows, and in general does not effect the surrounding buildings.



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2.2.F EXISTING
SUSTAINABILITY

- Large square footages of older roofing materials in the neighborhood contribute to the City's overall heat island effect.
- Limited tree canopy and landscape coverage in neighborhood and limited stormwater and sanitary sewer system capacity cannot not adequately mitigate combined sewer overflows in Elliott Bay resulting from stormwater runoff.
- Current development patterns do not contribute significantly to urban density.
- Current development patterns do not contribute to available open space or habitat biodiversity.
- Majority of current building stock relies on older energy systems and building envelop systems that are not as energy efficient as current technologies.

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2.2.G EXISTING
CITY LANDMARK

The existing site does not have a civic landmark on site.

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2.3 NO VACATION

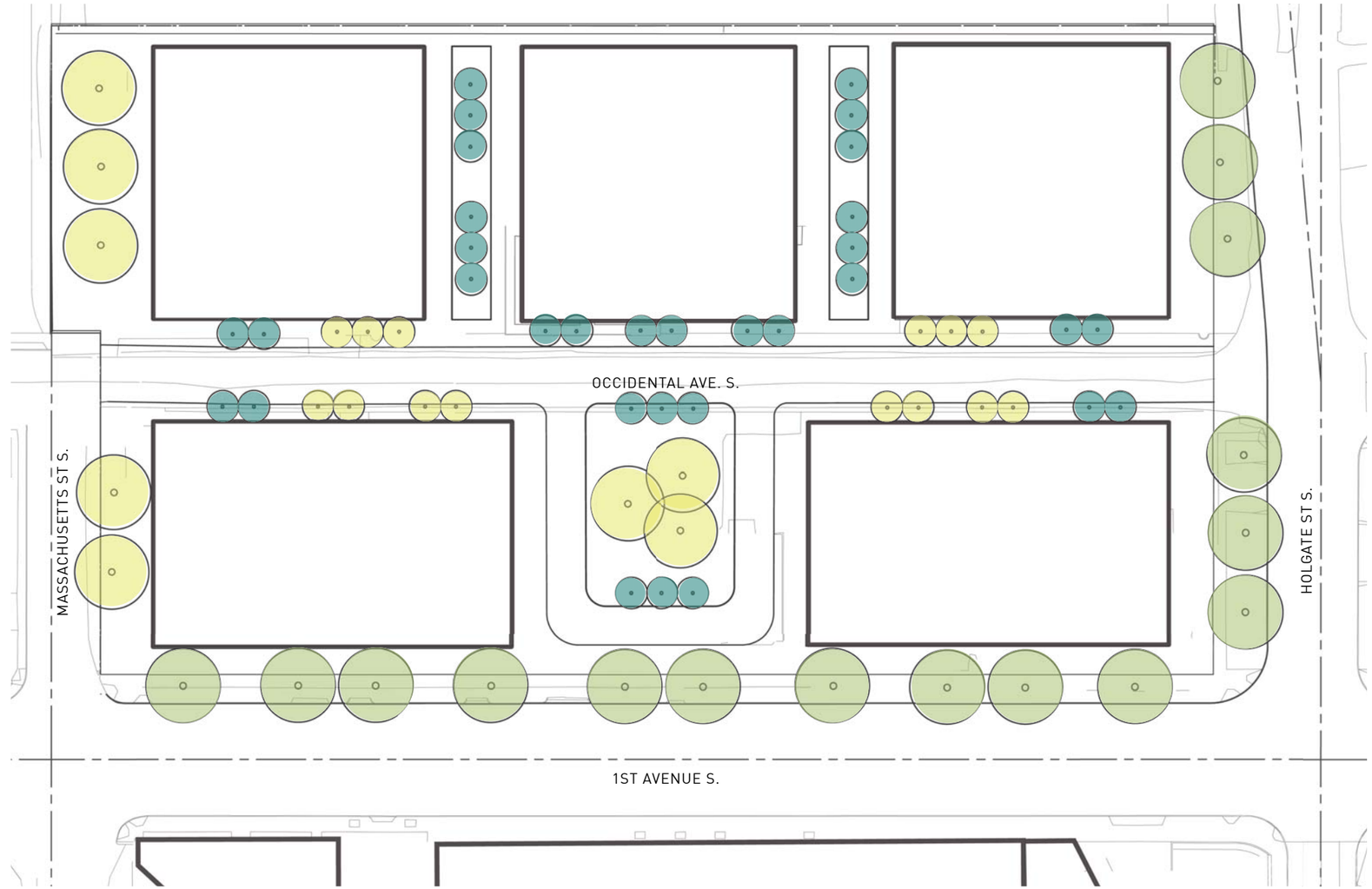
2.3.A NO VACATION
URBAN FOREST CANOPY

SDOT Streetscape Development Minimum Standards:

5-1/2' Landscape/Furniture zone minimum
6' pedestrian zone minimum
2-1/2" Caliper street tree minimum
Medium street trees space 30'-35' OC.

No Vacation estimated tree count: 64

Small to medium street trees, assuming three species selected. Standard setbacks for intersections, driveways and side sewers were used to estimate tree spacing.



North 40 80 160

LEGEND:

- Species 1
- Species 2
- Species 3

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2.3.B NO VACATION UTILITIES

DRY UTILITIES

ANALYSIS:

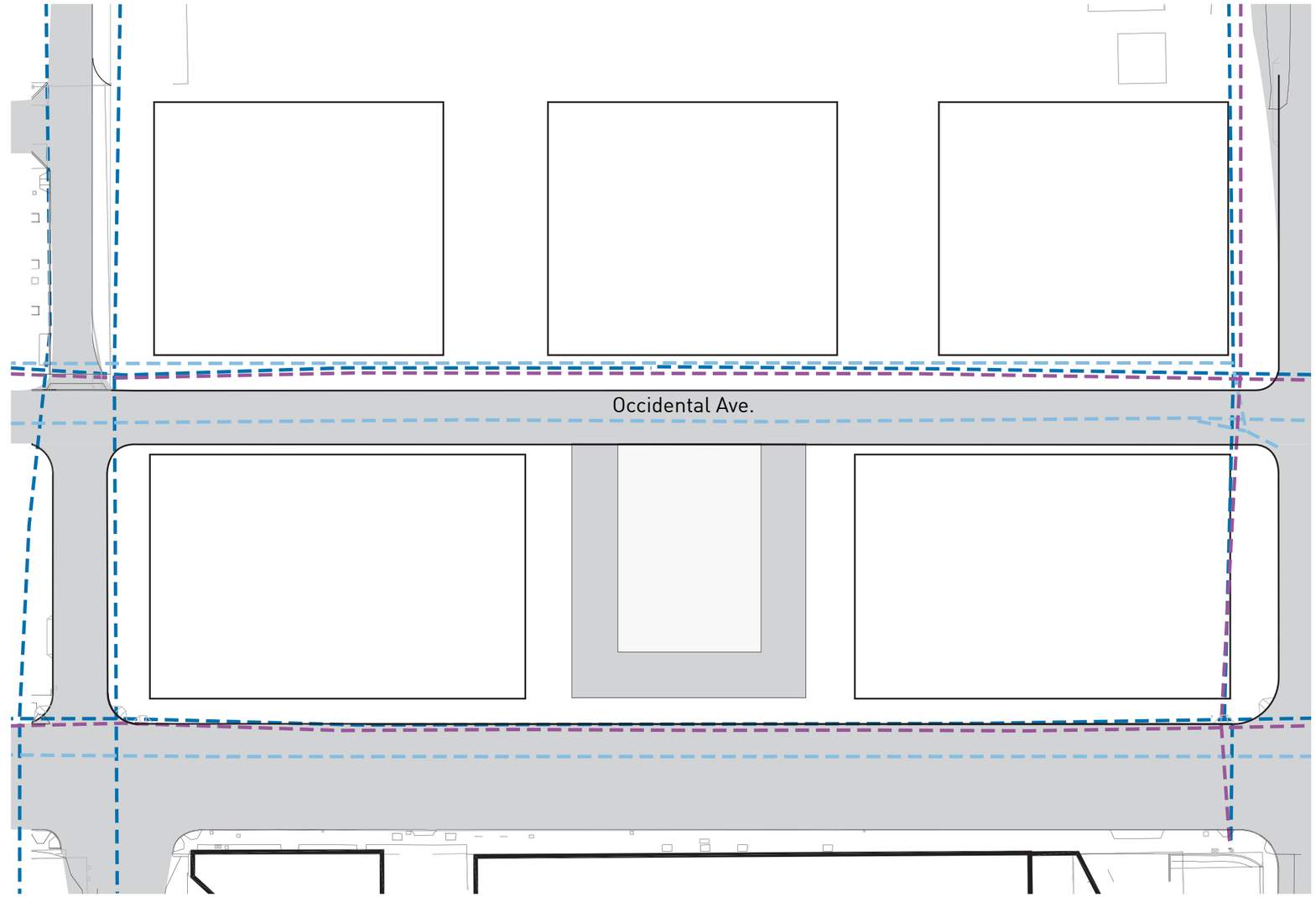
Same as existing condition.

DESIGN IMPLICATIONS:

Undergrounding is not expected to be cost feasible with a typical office development.

Buildings must be set back to maintain clearances.

The overhead lines in Occidental can remain if the street is not vacated.



LEGEND:

- Fiber Optic
- Overhead Power
- Overhead Communications

North 40 80 160

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2.3.B NO VACATION UTILITIES

WET UTILITIES

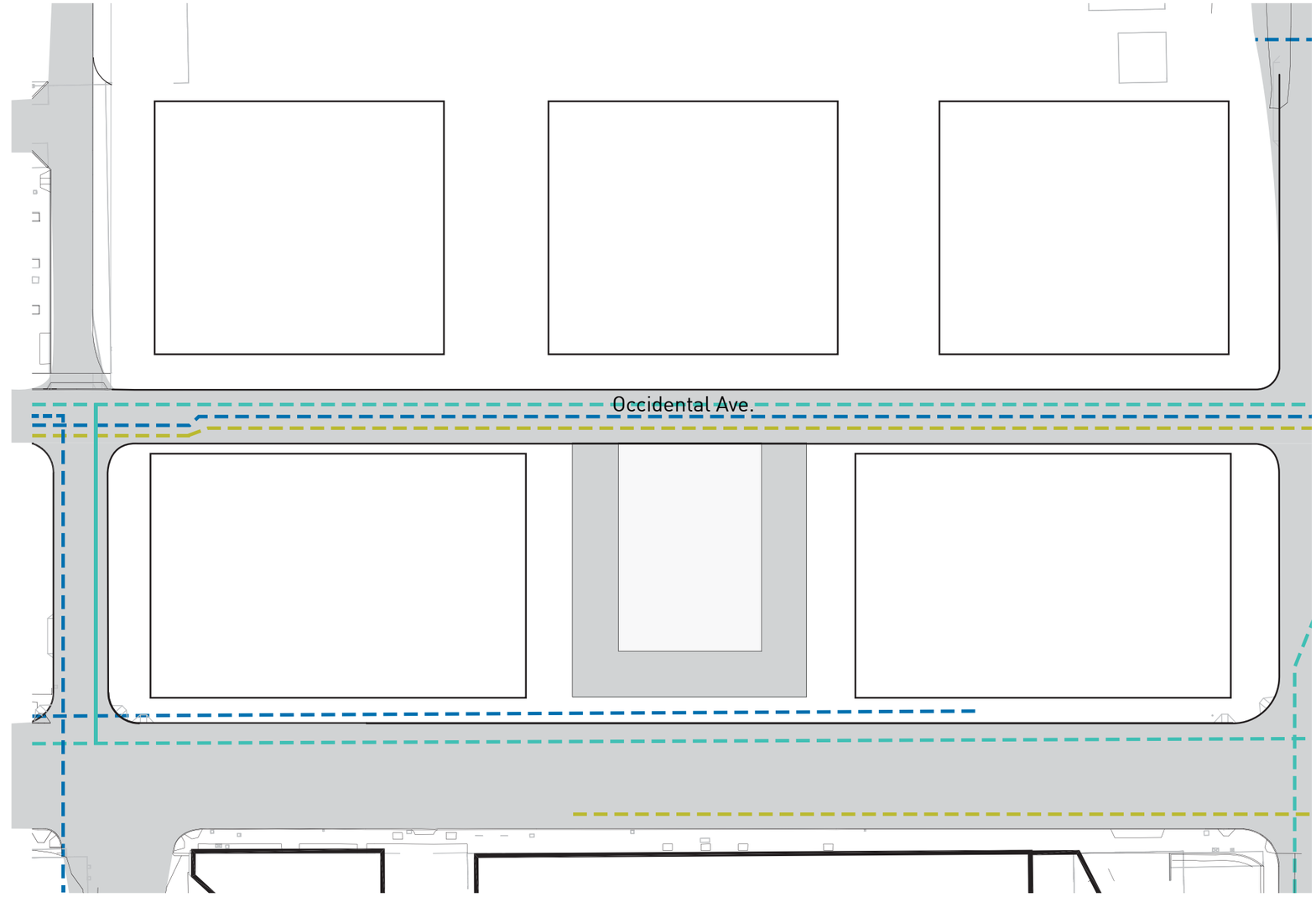
ANALYSIS:

Same as existing conditions.

DESIGN IMPLICATIONS;

Typical office development would require new utility connections.

All utilities will remain unchanged in Occidental so upgrades would not be likely.



LEGEND:

- Water
- Combined Sewer
- Gas

North 40 80 160

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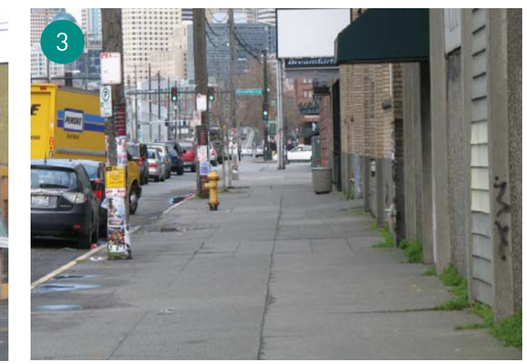
2.3.C NO VACATION
STREETSCAPE IMPROVEMENTS

DESIGN APPLICATION:

A no vacation development alternative would be required to use the SDOT minimum standard streetscape improvements for the segments of Occidental Ave. S, S. Massachusetts St., Holgate St., and 1st Ave. S. adjacent to the development site. The minimum standard would include:

- 6'-0" wide sidewalk
- 5'-6" landscape/furnishing zone
- 2" caliper street tree planting



LEGEND:

- Improved Streetscape
- Streetscape to be improved through project
- UnImproved Streetscape
- Streetscape to be improved (by others)

North NTS

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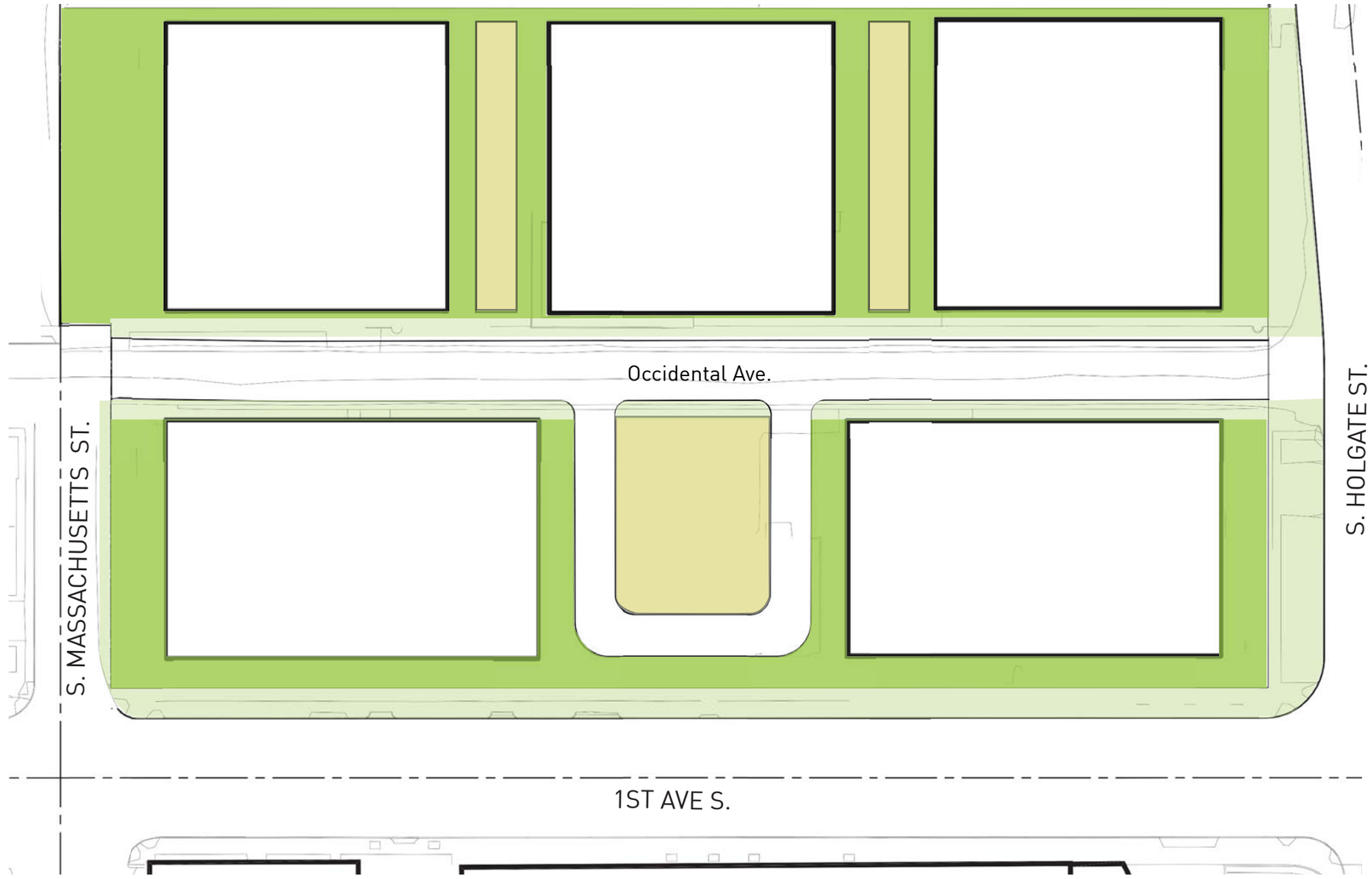
2.3.D NO VACATION [QUANTITY]

DISTRICT OPEN SPACE

ANALYSIS:

In a No Vacation alternative, public open space would not be required unless increases to FAR resulted in public open space as part of the development. Publicly accessible streetscape/building frontage areas and open space would be provided on private land to meet requirements resulting from qualifying increases to FAR.



LEGEND:

North 40 80 160

- Potential accessible open space: private land 19,154 Square Feet
- Potential accessible streetscape: private land 54,849 Square Feet
- Potential accessible open space: public land 47,142 Square Feet

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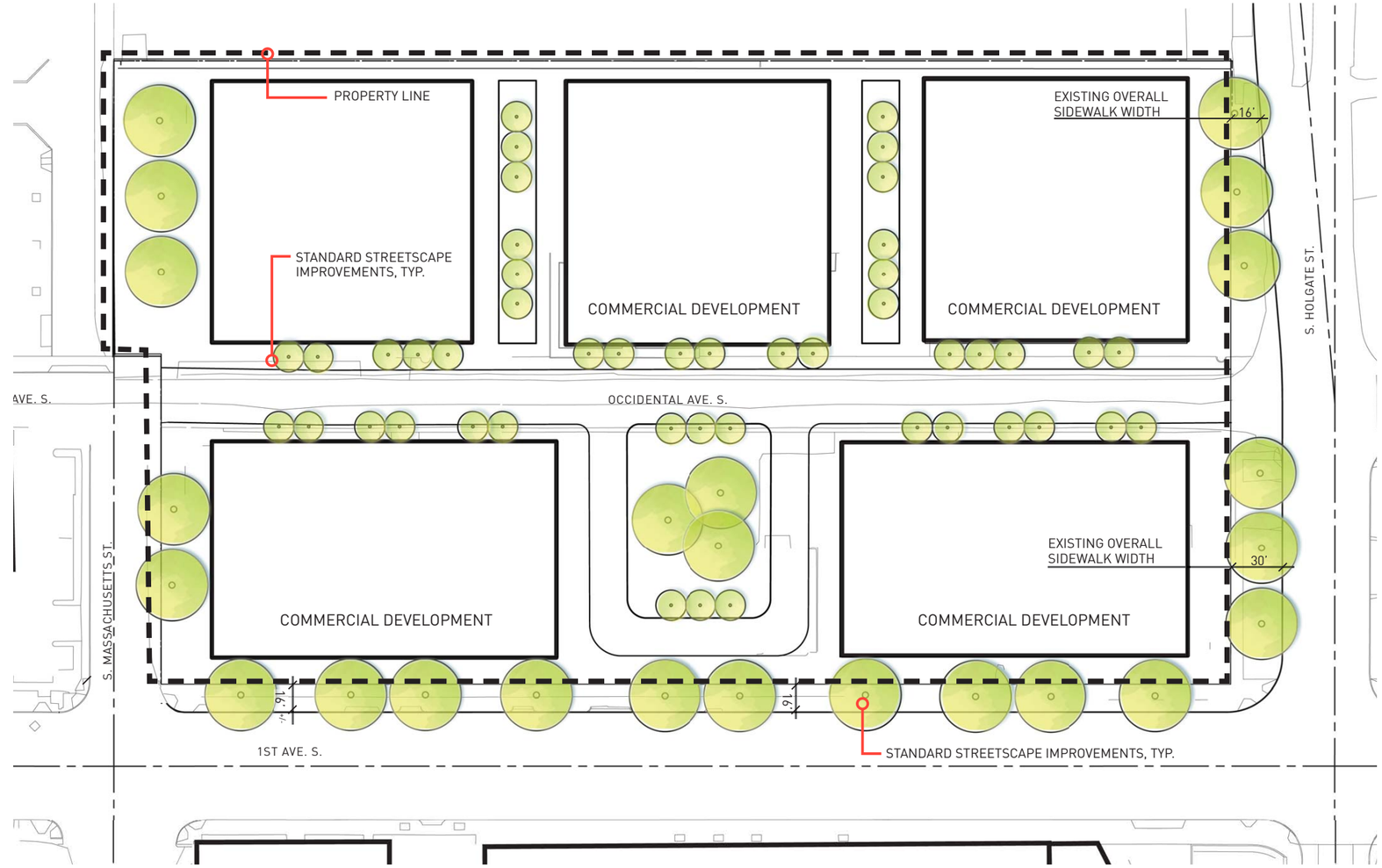
2.3.E NO VACATION [QUALITY]

DISTRICT OPEN SPACE

ANALYSIS:

The existing open space in the area occurs to the north in the Safeco Garage Plaza and to the west at the Home Plate Center.

Open space in the No Vacation option will include SDOT standard right-of-way improvements and would likely include publically accessible open space on private land for qualifying increases to FAR.



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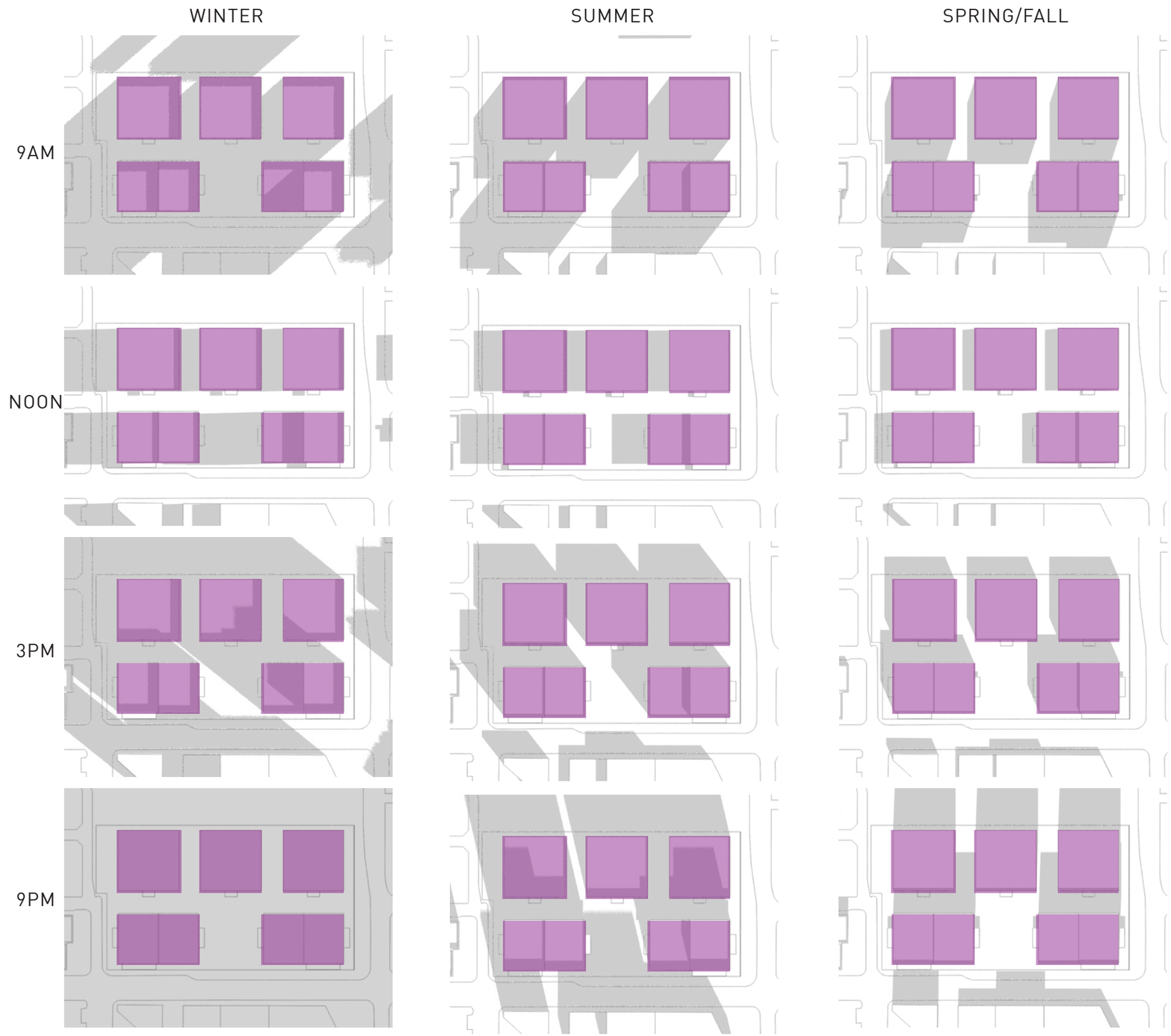
2.3.E NO VACATION [QUALITY]

SUN SHADOW STUDY

ANALYSIS:

- Casts a shadow over Occidental Ave. during various times of the year.
- Shades primarily the railroad property and parking garage to the east.



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2.3.F NO VACATION
SUSTAINABILITY

- **Minimum SDOT streetscape standards** contribute tree and landscape biodiversity to the urban forest canopy and the overall City
- Adding trees, landscape, and updated utilities would contribute to reducing combined sewer overflows and net energy consumption.
- **Project would be required to meet Green Factor.** Required green features, depending on their amount and type, would help improve air quality, reduce stormwater runoff, improve ecosystem and habitat function, reduce heat island effect, and increase overall available open space in the neighborhood.
- **Development would meet Seattle building code requirements relating to sustainability.**
- Development would increase urban density in the neighborhood.

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2.3.G NO VACATION

CITY LANDMARK

No city landmark elements are required for the no vacation alternative beyond those required by the city of Seattle codes.

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2.4 ARENA

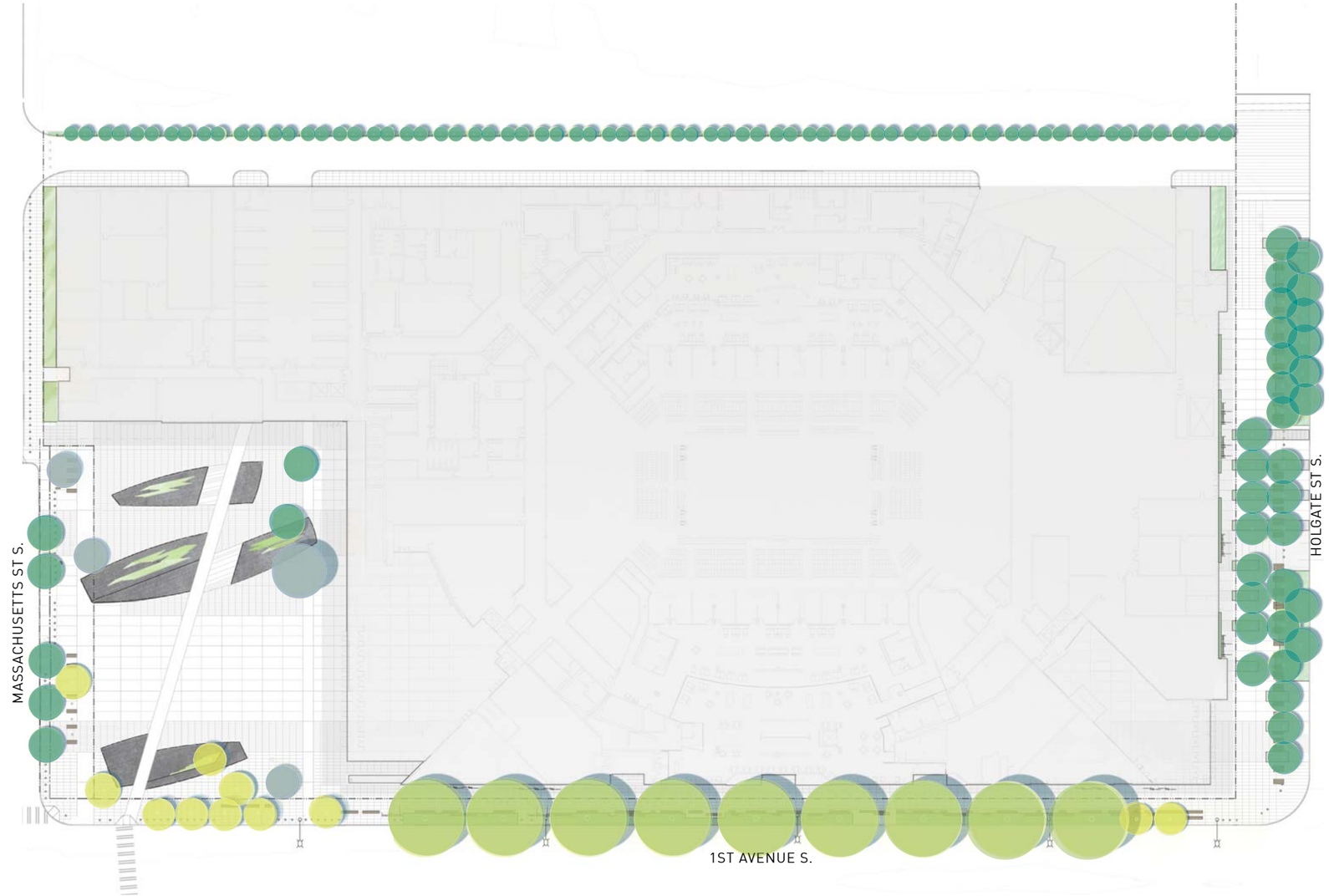
2.4.A ARENA
URBAN FOREST CANOPY

Greenstreet Level Streetscape Improvement Standards:

6' Landscape/Furniture zone minimum
18'-29.5' pedestrian zone minimum
3'-6" Caliper street tree minimum
Large street trees spaced 40'-50' O.C.
Small/Medium plaza trees generously spaced

Arena estimated tree count: 133

Medium to Large street and plaza trees species with a minimum of four species in an integrated site-wide tree strategy.



LEGEND:

- Columnar Tree (109)
- Large Canopy Tree (9)
- Small/Medium Tree (11)
- Large Evergreen Tree (4)

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2.4.A ARENA
URBAN FOREST SYSTEM

To preserve the urban forest diversity goals of the city as well as the design intent of each tree species selection the design team has identified the following trees as complementary and interchangeable in form and function. These trees can be used in combination or as substitutes for each other in the plaza or the streetscape to diversify the canopy while still preserving design integrity.

Seattle Arena Trees:

- Acer griseum
- Acer rubrum 'Karpick'
- Lirodendron tulipifera 'Fastigiatum'
- Metasequoia glyptostroboides
- Platanus x acerifolia 'Bloodgood' or 'Yarwood'
- Populus tremula 'Erecta'
- Sequoia sempervirens

COLUMNAR QUAKING ASPEN

PAPERBARK MAPLE

LONDON PLANE TREE

COAST REDWOOD

DAWN REDWOOD

KARPICK MAPLE

COLUMNAR TULIP TREE

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2.4.B ARENA UTILITIES

RELIABLE UTILITIES

DESIGN COMMISSION ACTION [MAY 2, 2013]

2. Assure reliability and redundancies with all transportation modes and utilities, especially along Holgate. Explain the pedestrian, bicycle, vehicular, and transit movements, nodes, and connections as they are now and once the new stadium is operational.

GAS:

Puget Sound Energy has capacity to meet the arena projects gas demands. Redundant services can be provided

STORM/SEWER:

Seattle Public Utilities has capacity to meet the arena project's sewer and storm demands. Multiple discharge points can be provided.

WATER:

Seattle Public Utilities has capacity to meet the arena project's water demands. Redundant services can be provided.

ELECTRICITY:

Seattle City Light has capacity to meet the arena project's electrical demands. Redundant services can be provided.

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2.4.B ARENA UTILITIES

DRY UTILITIES

ANALYSIS:

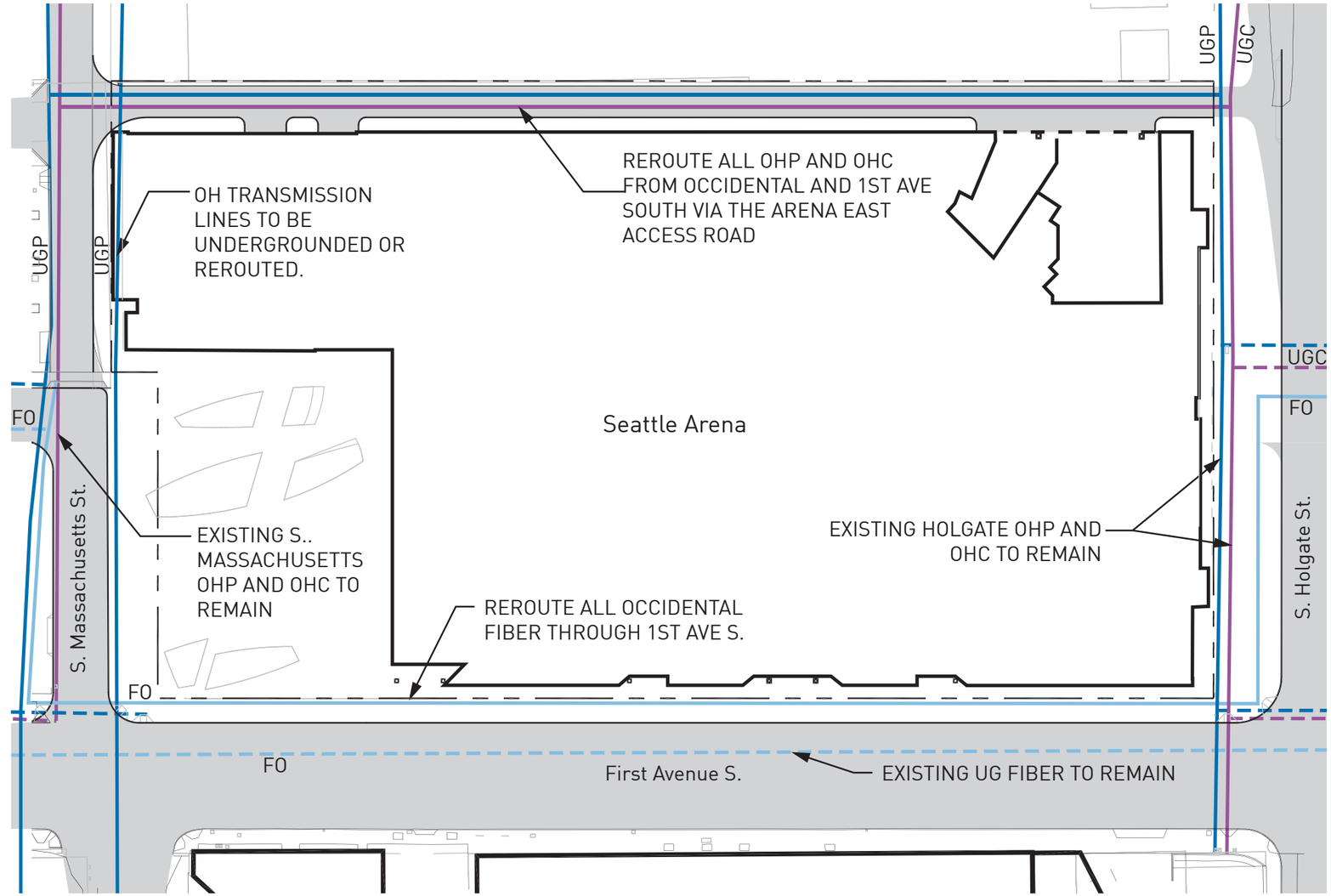
Reroute 1st Avenue electrical and communications lines along the arena's east access road for aesthetic, safety, and redundancy benefits.

Reroute all existing dry utilities in Occidental Ave S via the arena's east access road as part of the Occidental street vacation"

DESIGN IMPLICATIONS:

Removal of overhead poles and wires along first avenue to meet urban design goals.

Transmission lines will be rerouted to provide safe clearances to the building.



LEGEND:

- Fiber Optic
- Overhead Power
- Overhead Communications

North 40 80 160

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2.4.B ARENA UTILITIES

WET UTILITIES

ANALYSIS:

Reconnect Storm laterals south of S. Holgate Street.

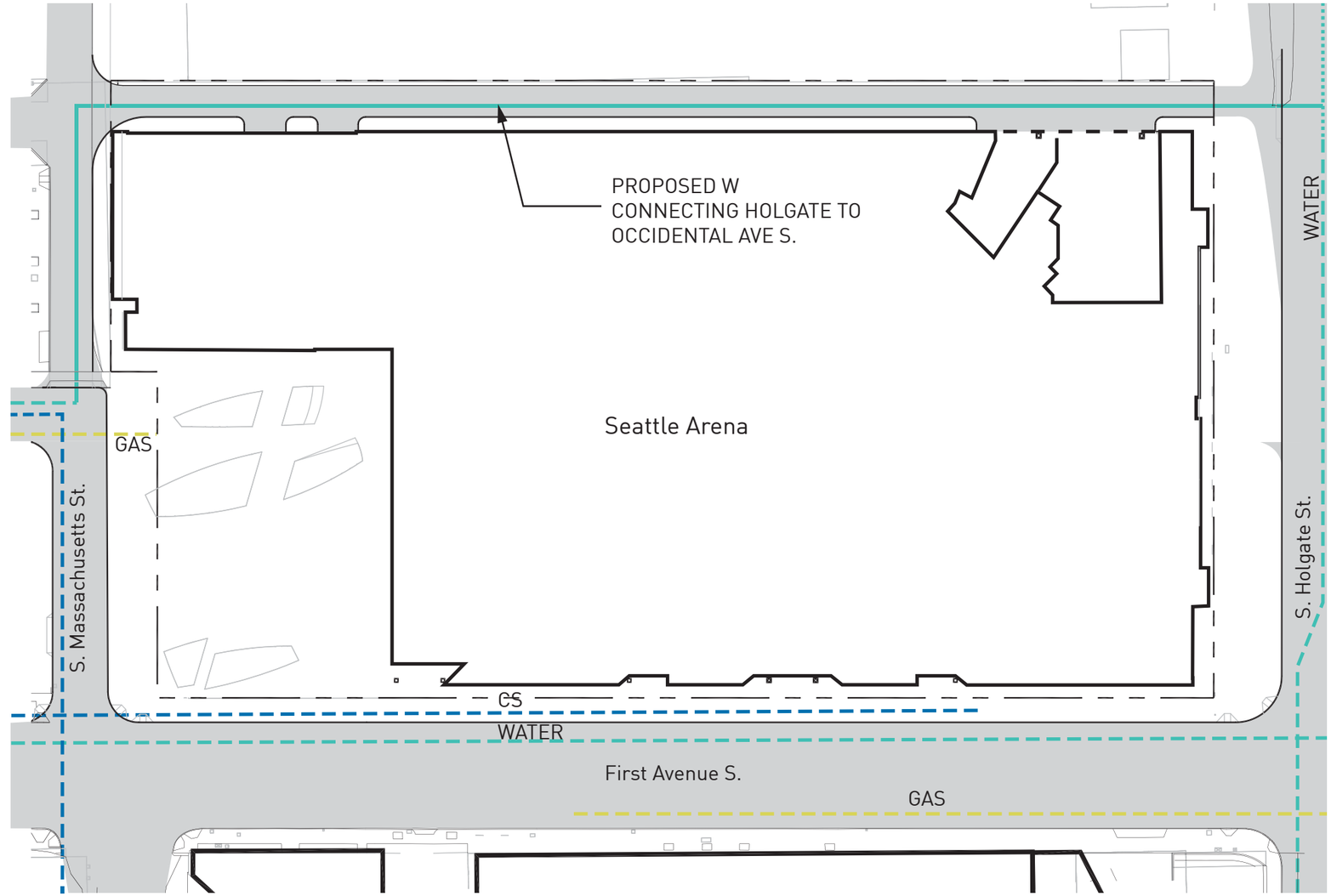
Link Water mains in Occidental and S. Holgate St. via new water main along east access road.

Arena team modeling the water system with SPU to determine if additional water improvements are needed.

DESIGN IMPLICATIONS;

Maintain Utility connectivity

Maintain Redundancy



LEGEND:

- Water
- Combined Sewer
- Gas

North 40 80 160

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2.4.C ARENA STREET IMPROVEMENTS

STREETSCAPE

DESIGN RESPONSE:

The proposed arena would provide for green street level improvements to S. Holgate St., and 1st Avenue S. to enhance the pedestrian experience and increase open space associated with the public ROW. This high standard of streetscape design would include:

- Curb Bulbouts
- On-Street Parking
- Bicycle Parking
- Wide Sidewalks between 29'-6" max and 10' min
- 6'-0" minimum Planting Zone
- Raingardens
- Pedestrian Scaled Lighting
- Street Furniture
- Weather protection via building overhang on 1st Ave S.

The design team has incorporated frequent modulation of the building facade at streetscape level to increase open space adjacent to the ROW as well as create variety in sizes of open space for active streetscape uses.

LEGEND:

- Improved Streetscape
- Streetscape to be improved through project
- Unimproved Streetscape
- Streetscape to be improved (by others)

North NTS

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2.4.C ARENA STREET IMPROVEMENTS

GREEN STREET IMPROVEMENTS

DESIGN COMMISSION ACTION [MAY 2, 2013]

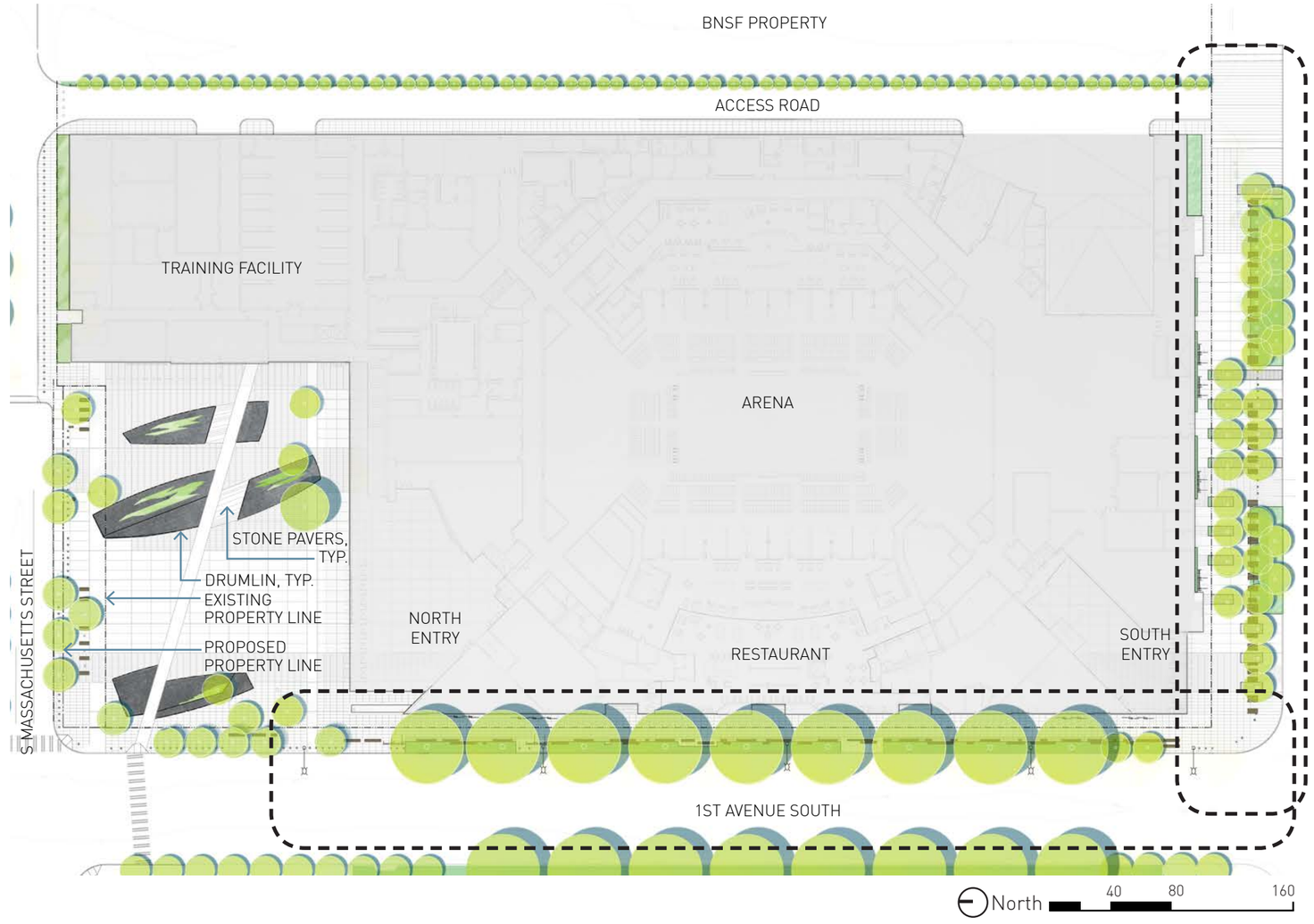
3. The amount of open space appears balanced, but focus on creating a more dynamic urban canopy at the north plaza. Be deliberate with the choice of what areas to cover with the aim of making the space inviting to the general public.

ANALYSIS:

Arena plaza provides needed publicly accessible open space in the district. Vacating Occidental Ave. With the proposed development contributes significantly larger area of public open space than potential development with this vacation.

DESIGN APPLICATION:

Use design and the design elements to signal a generous environment for public use. Develop generous sidewalk zones with associated green street level improvements. Open space to serve event and non event use. Locate entries to open space to foster activity and integrate accepted strategies to support safe use.



ARENA DISTRICT OPEN SPACE_QUALITY

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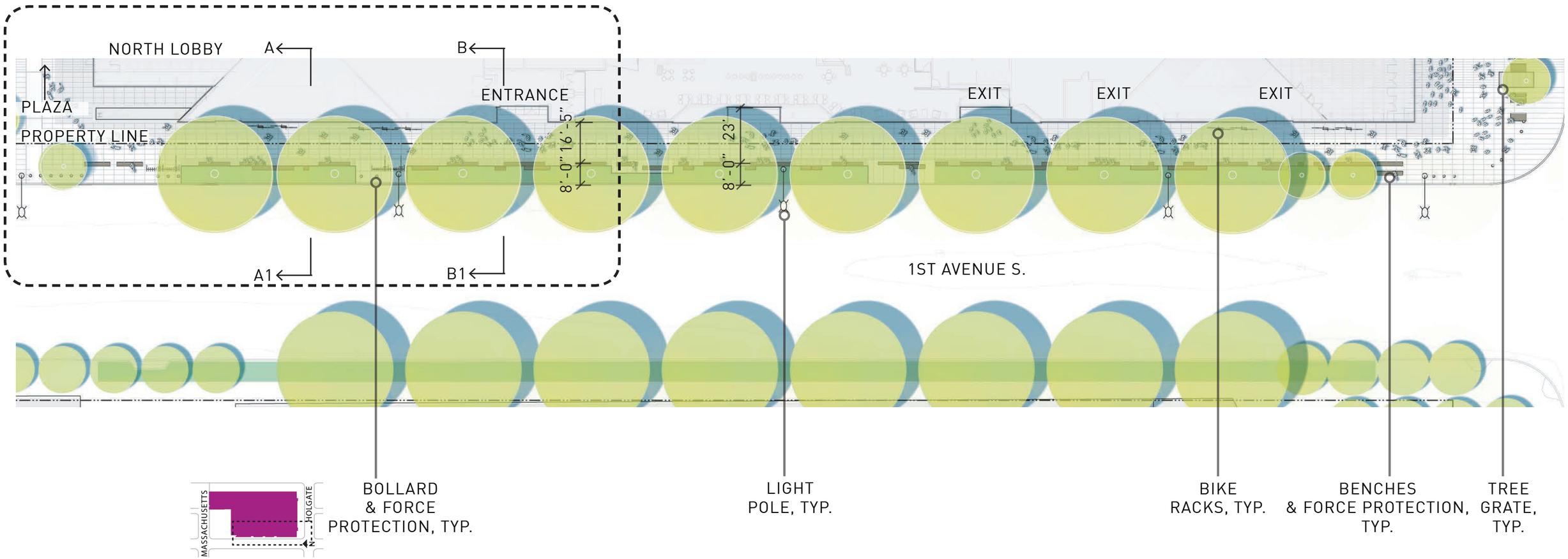
2.4.C ARENA STREET IMPROVEMENTS

FIRST AVE. DETAIL PLAN



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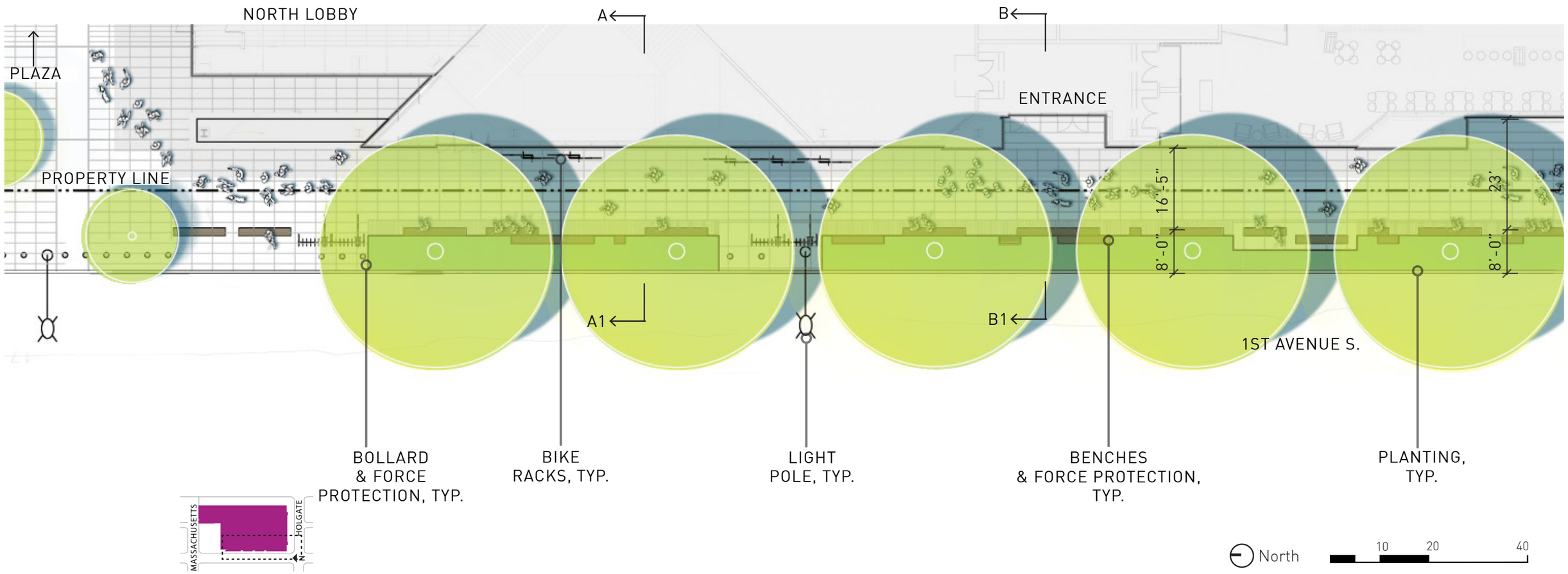
2.4.C ARENA STREET IMPROVEMENTS

FIRST AVE. DETAIL PLAN



LANDSCAPE PLAN

SEATTLE ARENA

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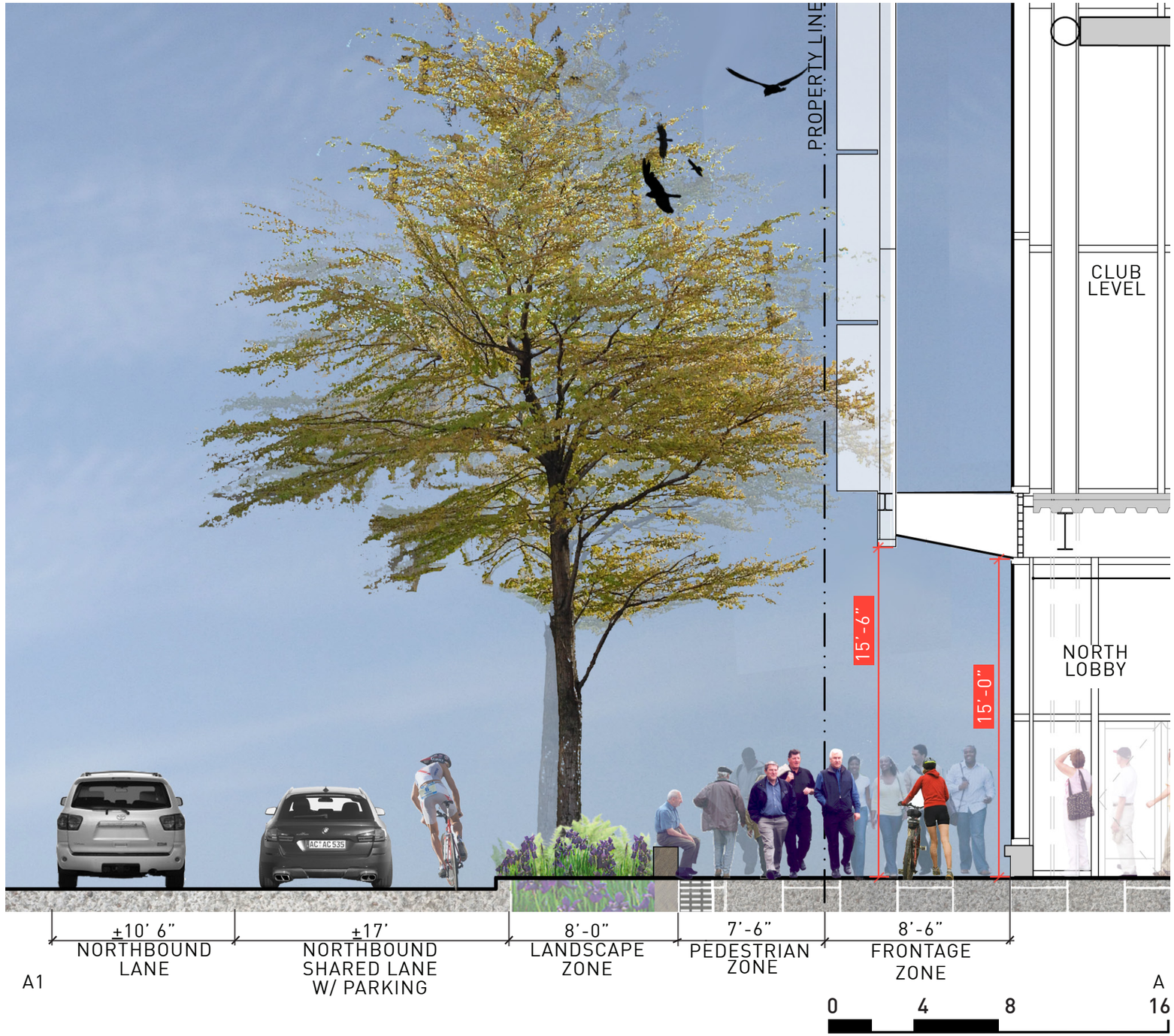
2.4.C ARENA STREET IMPROVEMENTS

STREET SECTION



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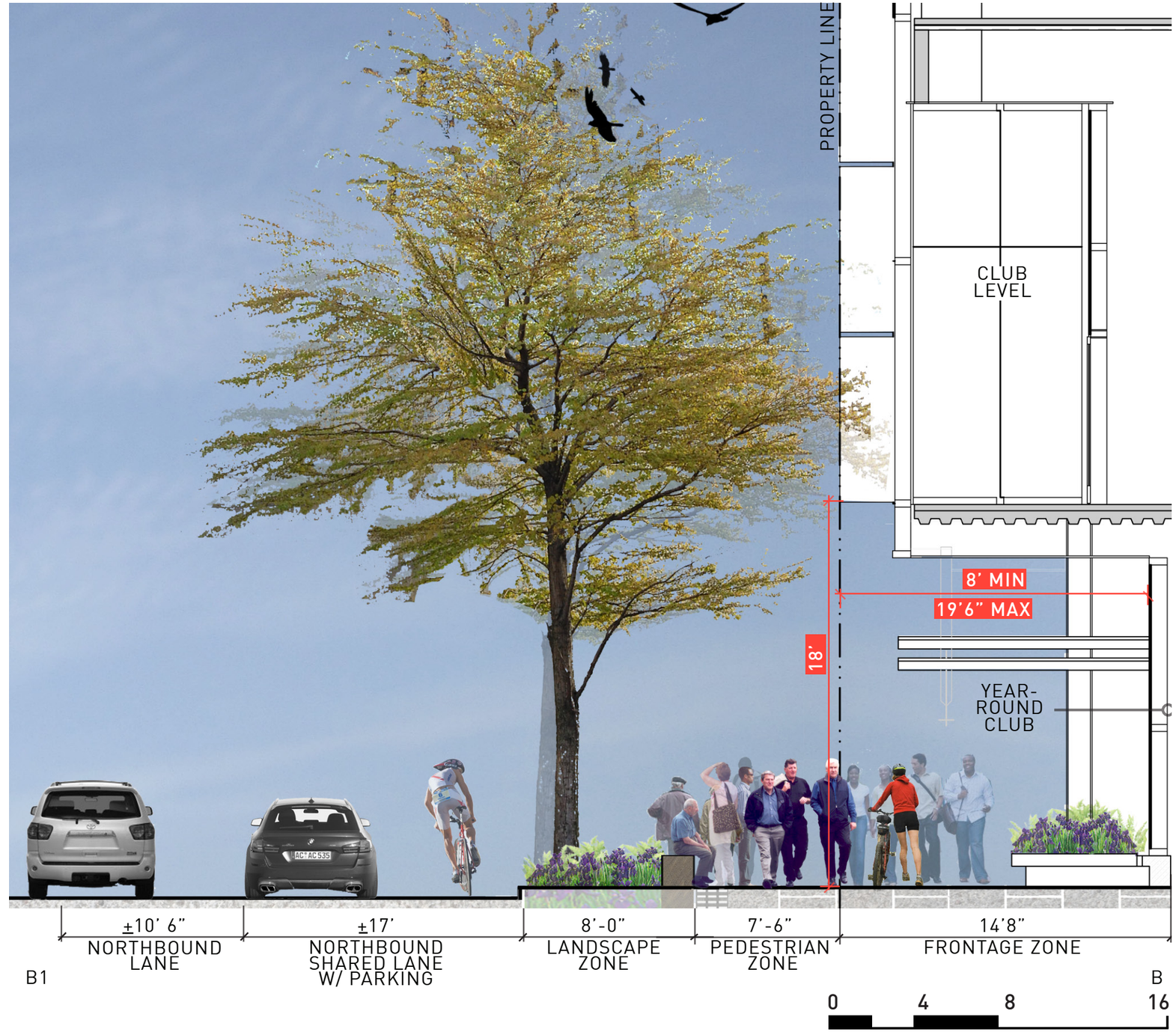

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3D RENDERING | FIRST AVE LOOKING SOUTH

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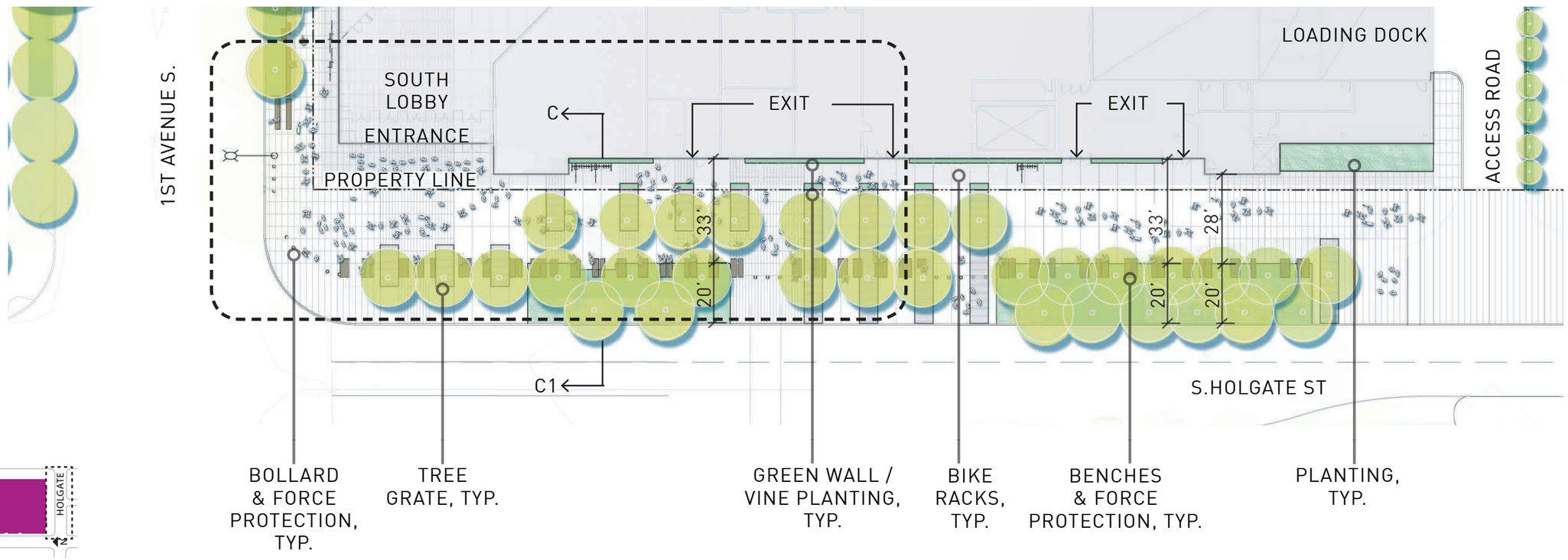
2.4.C ARENA STREET IMPROVEMENTS

HOLGATE DETAIL PLAN

DESIGN COMMISSION ACTION [MAY 2, 2013]

4. Celebrate the character of the south west corner. Do not relegate Holgate to looking like the back-of-house. Align design with Stadium District planning efforts. Investigate future retail viability on non game days.



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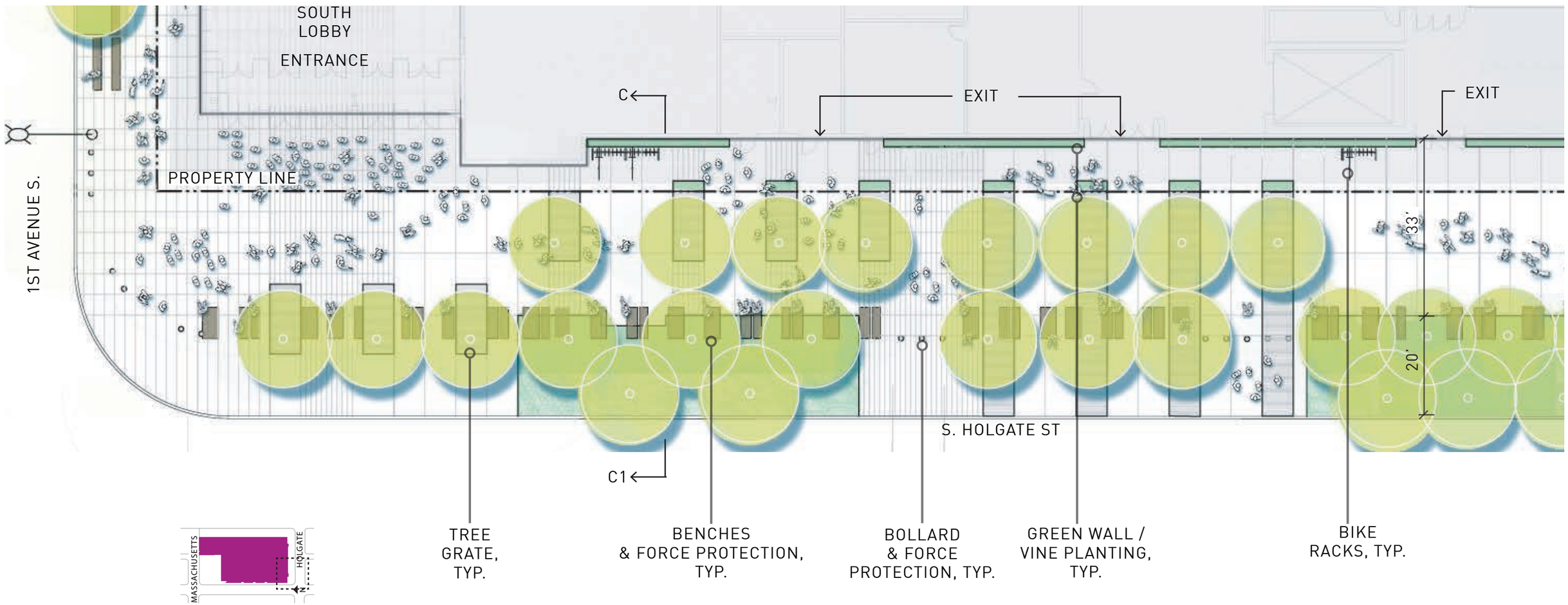
2.4.C ARENA STREET IMPROVEMENTS

HOLGATE DETAIL PLAN



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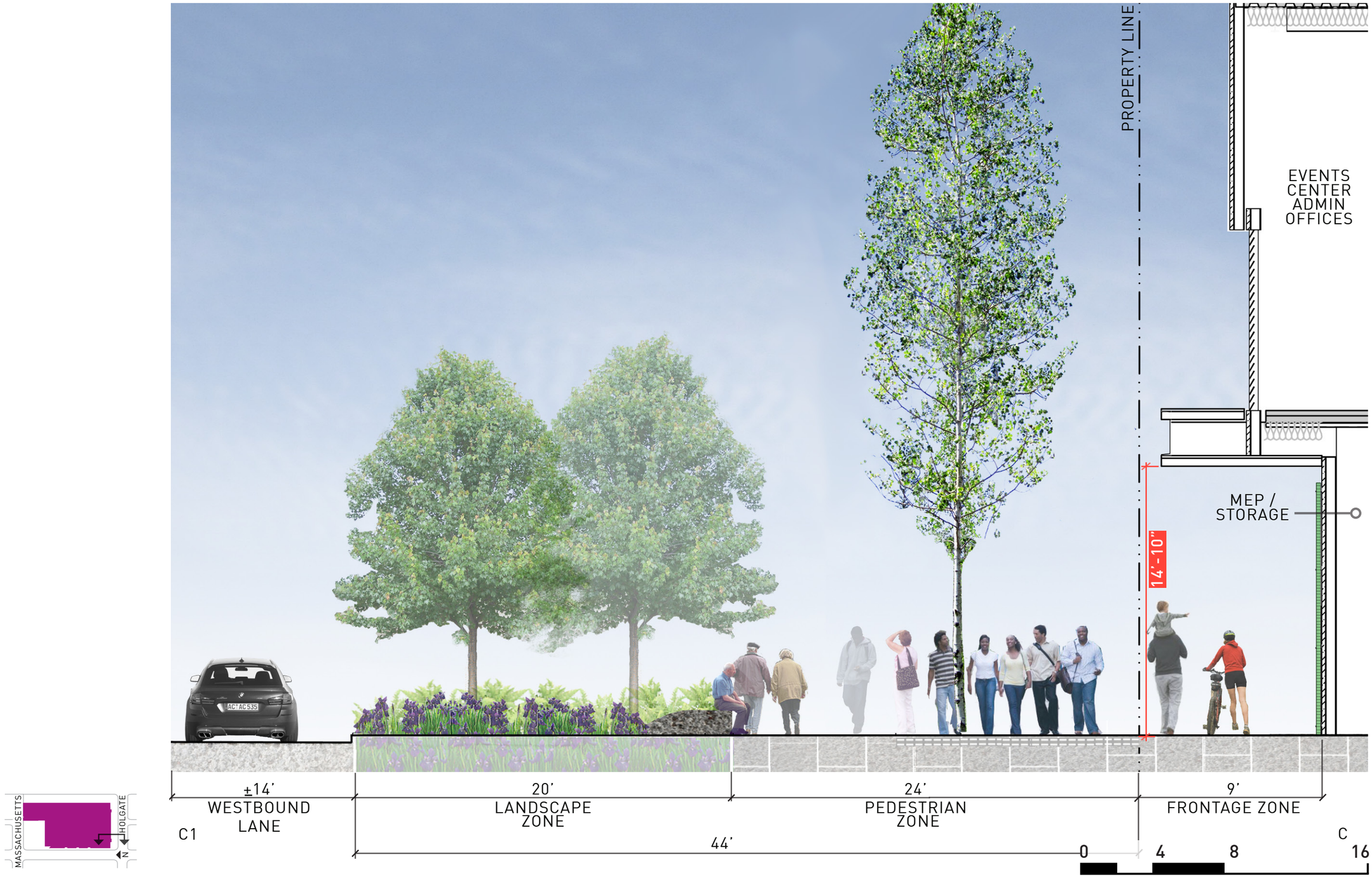

ARENA HOLGATE SECTION

SEATTLE ARENA

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3D RENDERING | FIRST AVE LOOKING SOUTH

SEATTLE ARENA

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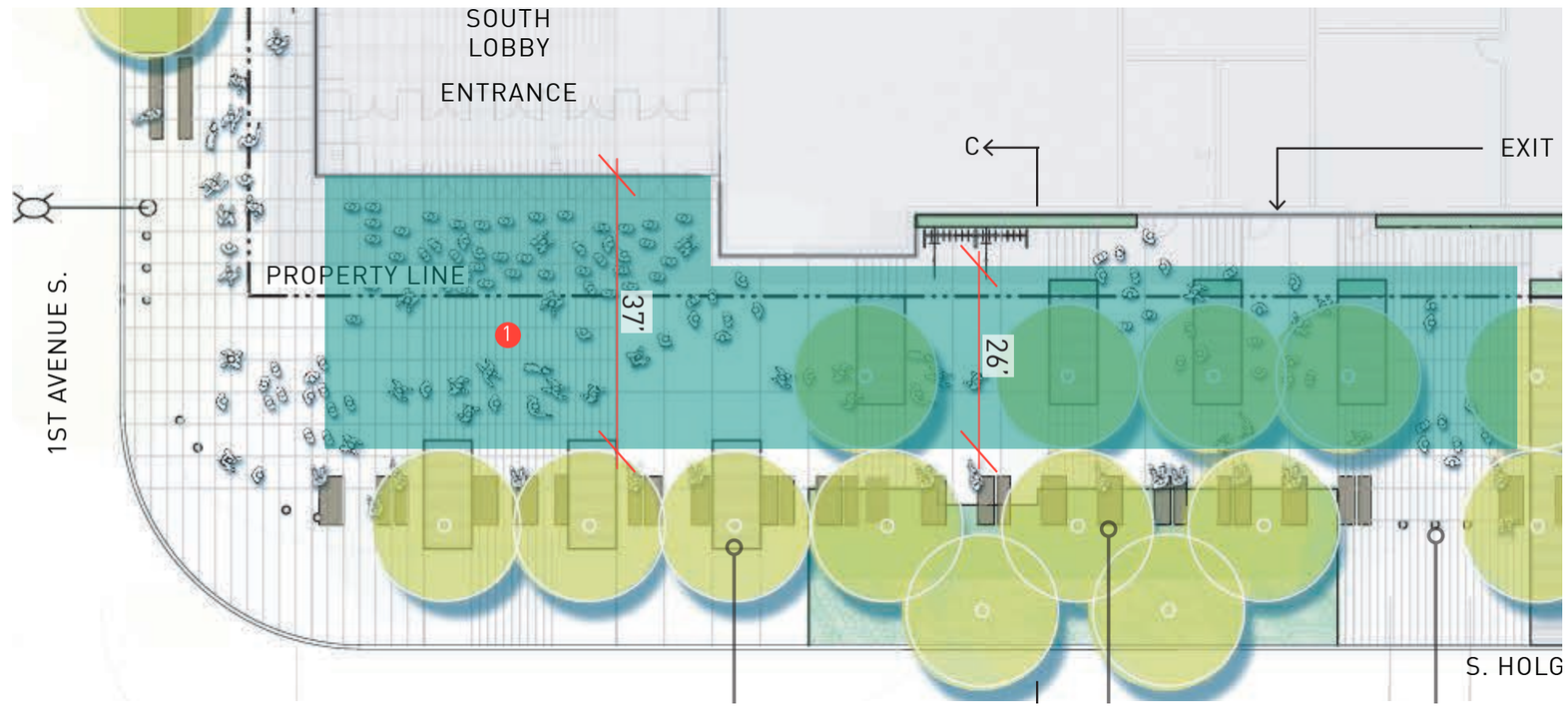
2.4.C ARENA STREET IMPROVEMENTS

HOLGATE PROGRAM

Queuing Level of Service Capacities:

	% Use of Entrance	Level of Service	Area Needed
1	30%	**E**	**4,700sf**



LEGEND:

Queuing Zones

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2.4.D ARENA [QUANTITY]

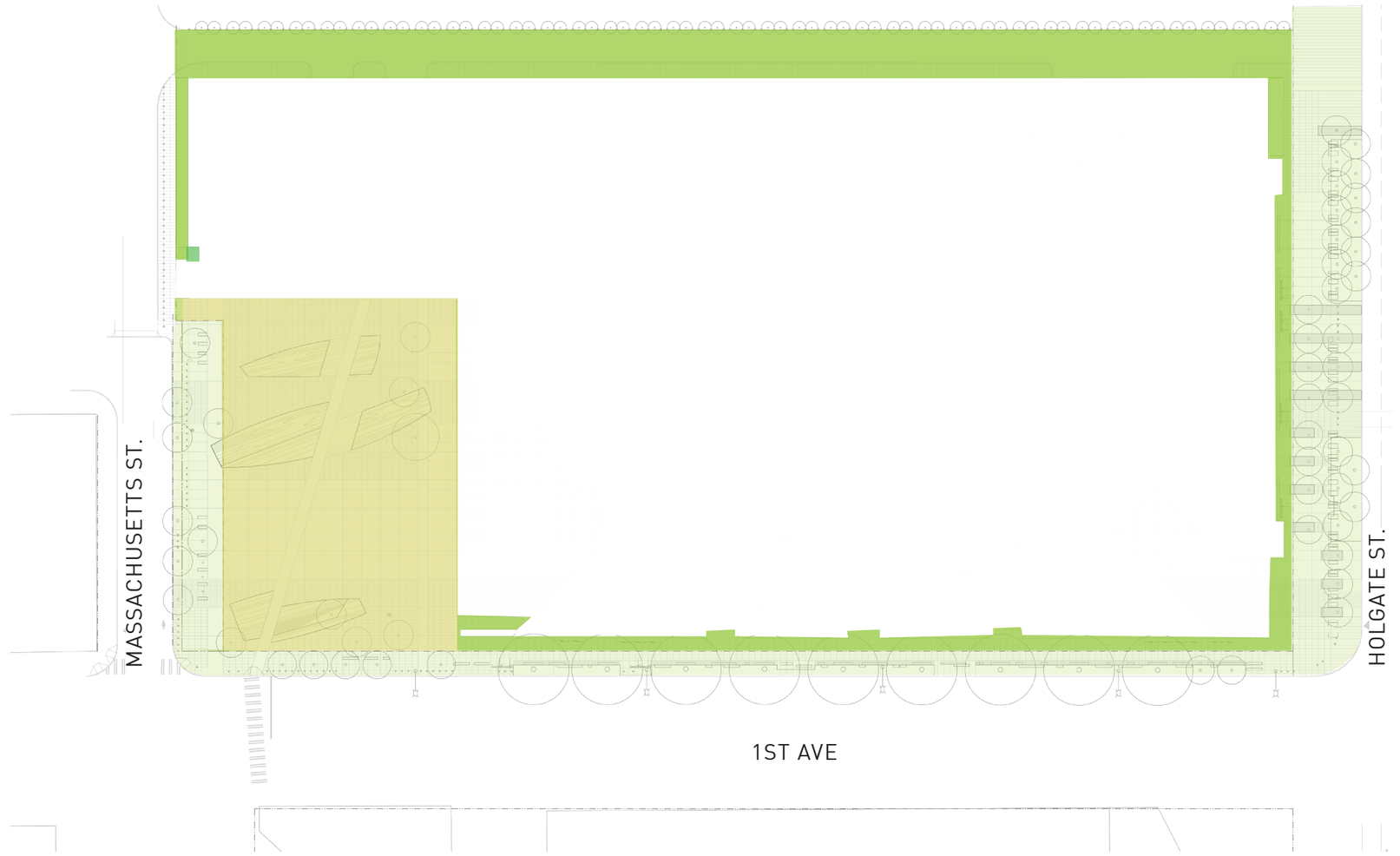
DISTRICT OPEN SPACE

ANALYSIS:

Arena plaza provides needed publicly accessible open space in the district. Vacating Occidental Ave. with the proposed development contributes significantly larger area of public open space than potential development with this vacation.

DESIGN APPLICATION:

Use design and the design elements to signal a generous environment for public use. Develop generous sidewalk zones with associated green street level improvements. Open space to serve event and non event use. Locate entries to open space to foster activity and integrate accepted strategies to support safe use.



LEGEND:

	Publicly accessible open space: private land	34,130 Square Feet
	Publicly accessible streetscape: private land	33,264 Square Feet
	Publicly accessible streetscape: public land	39,126 Square Feet

North 40 80 160

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2.4.E ARENA [QUALITY]

DISTRICT OPEN SPACE

ANALYSIS:

The Arena option includes significant open space including a plaza and widened sidewalks supporting the objectives of district planning, creating an event and non-event gathering area and contributing to the increasing number of district open spaces.

DESIGN APPLICATION:

The plaza is designed to orient to predominant views from the north to the west and take advantage of the grade change to develop gathering areas for viewing, performances, overlooks, congregation, and Arena access. The large staircase is easily accessible with direct access to the concourse level entrance. A significant portion of the plaza is at street level and provides areas for event queuing and daily use. Furnishings for seating, integrated water features, lighting, utility connections and vegetation in the form of vine covered walls and trees support and invite use. The plaza is designed for public use and exceeds the size required to meet the needs of events. A transparent overhead canopy provides weather protection. The proposed arena plaza scale and quality is in line with current trends in adjacent development in stadium overlay district and response to city policy.

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2.4.E ARENA [QUALITY]

SITE MATERIALS

The Seattle Arena is located on Seattle's historic tide flats between the glacial drumlins of West Seattle and Beacon Hill.

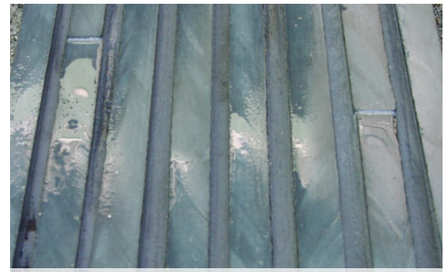
These forms, coupled with Puget Sound lowland forest, water in the form of a tidal influenced water table, fault line uplift and depressions, and silver colored Elliott Bay are critical to regional identity.

The site strategy uses these features as points of departure to create place and form.

Stone drumlins lift out of the plane of paving, providing areas for gathering, a stage, and various scaled public space. Groves of trees provide scale, grandeur and a connection to the seasons.

Thin scrims of water create sheen and reflect light off dark stone and sawcut concrete.

During times of lower use, fog emerges from the drumlins to play with light and silhouettes, in homage to early mornings in the Puget Sound basin.

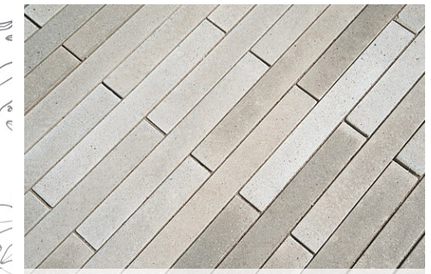

WATER SCRIM ON PAVING

REFLECTION ON WATER

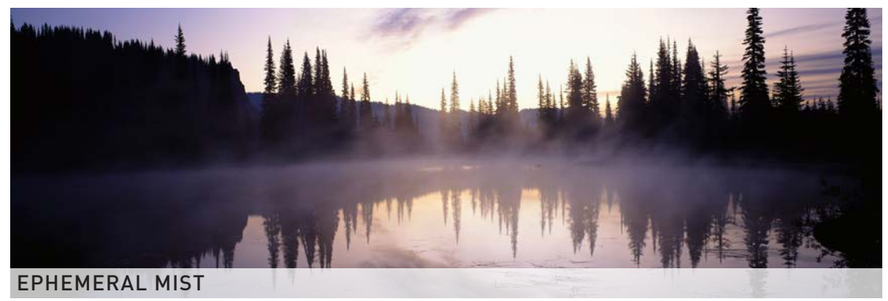
PUGET SOUND DRUMLINS

STONE DRUMLIN

DRUMLIN FORMS


LINEAR PAVING

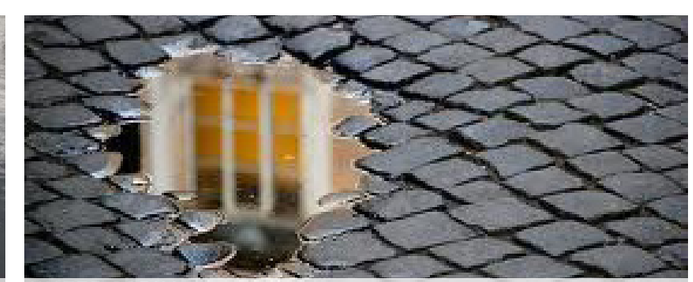
SEASONAL COLOR


EPHEMERAL MIST

SEASONAL PATTERNS

ARCHITECTURAL FORM

RAIN


WATER SCRIM

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2.4.E ARENA [QUALITY]

ENLARGED PLAZA PLAN

The north plaza is the Arena's civic front door and the center of outdoor events.

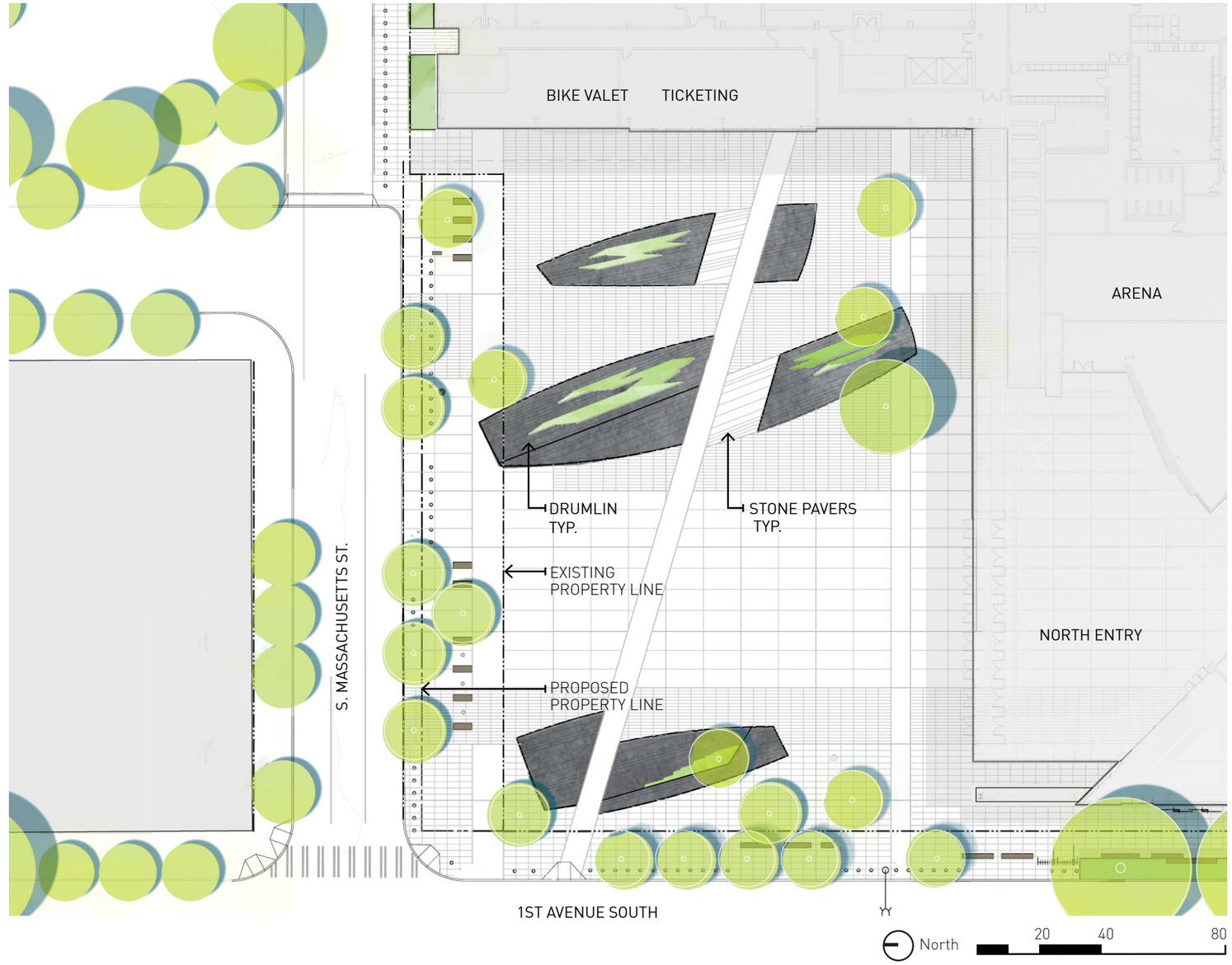
It establishes the formal entry and gestures north making Occidental an integral part of the arrival experience.

The simple plane of paving, marked to delineate tidal influences, extends into the Arena in the Northwest tradition of blurring the edge between inside and out.

Simple patterns mark pedestrian zones, entries and thresholds.

Tall deciduous trees with exceptional seasonal color create constantly changing patterns on the Arena façade with the seasonal weather systems.

Trees and low stone drumlins define the sequence of gathering areas from large to intimate.



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2.4.E ARENA [QUALITY]

PLAZA WATER CONCEPT

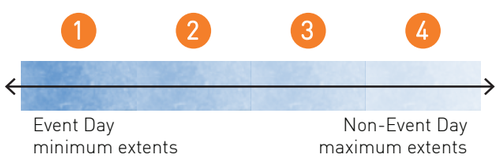
Water is added to the simple plane of paving, drumlins, and trees to amplify the powerful character of the Northwest.

Shallow sheets of water, some ephemeral and some permanent, create a changing experience.

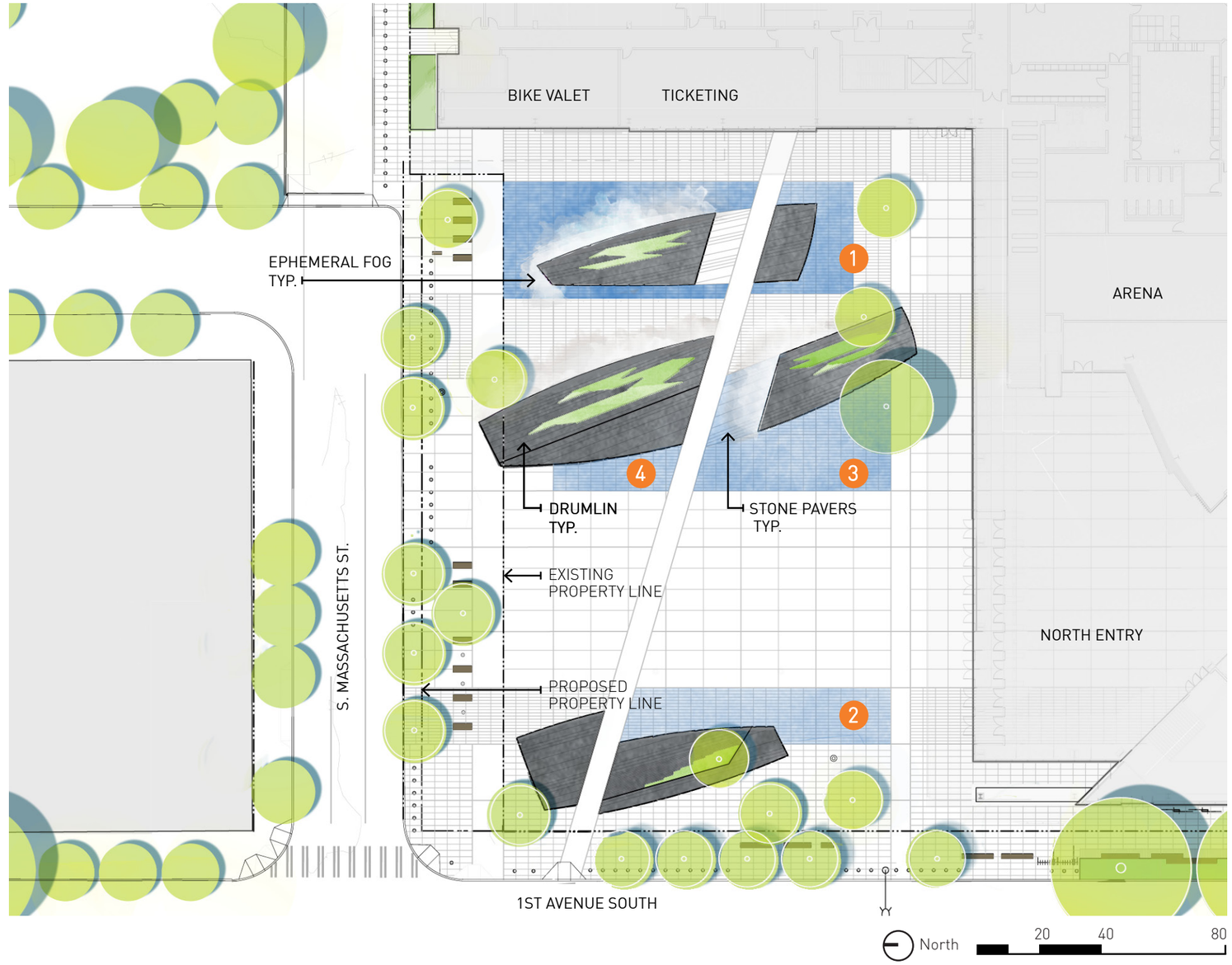
Some days the plaza is dry and open and some days a drumlin becomes an island to climb on.

The simple use of water brings a rich complexity to the public plaza, reflecting the constantly changing Northwest sky, people, and the Arena.

This simple gesture makes a vibrant place when empty and a subtle back drop for the throngs during event days.



EPHEMERAL WATER STRATEGY



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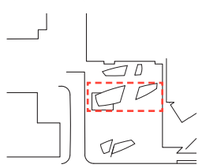
2.4.E ARENA [QUALITY]

DRUMLIN SECTION

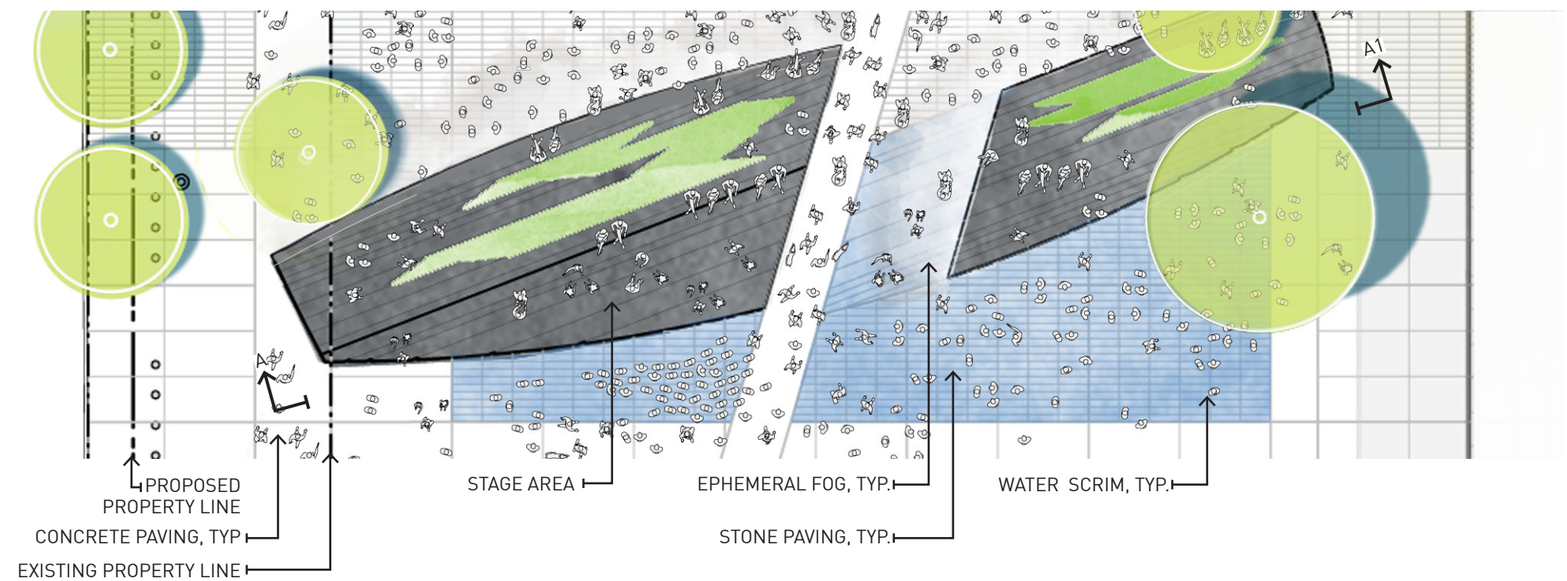
The glaciation of the Puget Sound Trough created north-south drumlins, leaving some protruding out of the tide flats and river deltas. The abstracted drumlins continue this pattern, lifting out of the paving and ephemeral water planes to create low stone platforms for human occupation, people watching and performance. On low use days, the combination of reflective water, low drumlins, trees and buildings create pedestrian scale and identity.

SECTION A-A1

KEY PLAN



10 20 40



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2.4.E ARENA [QUALITY]

HIGH USE DIAGRAM

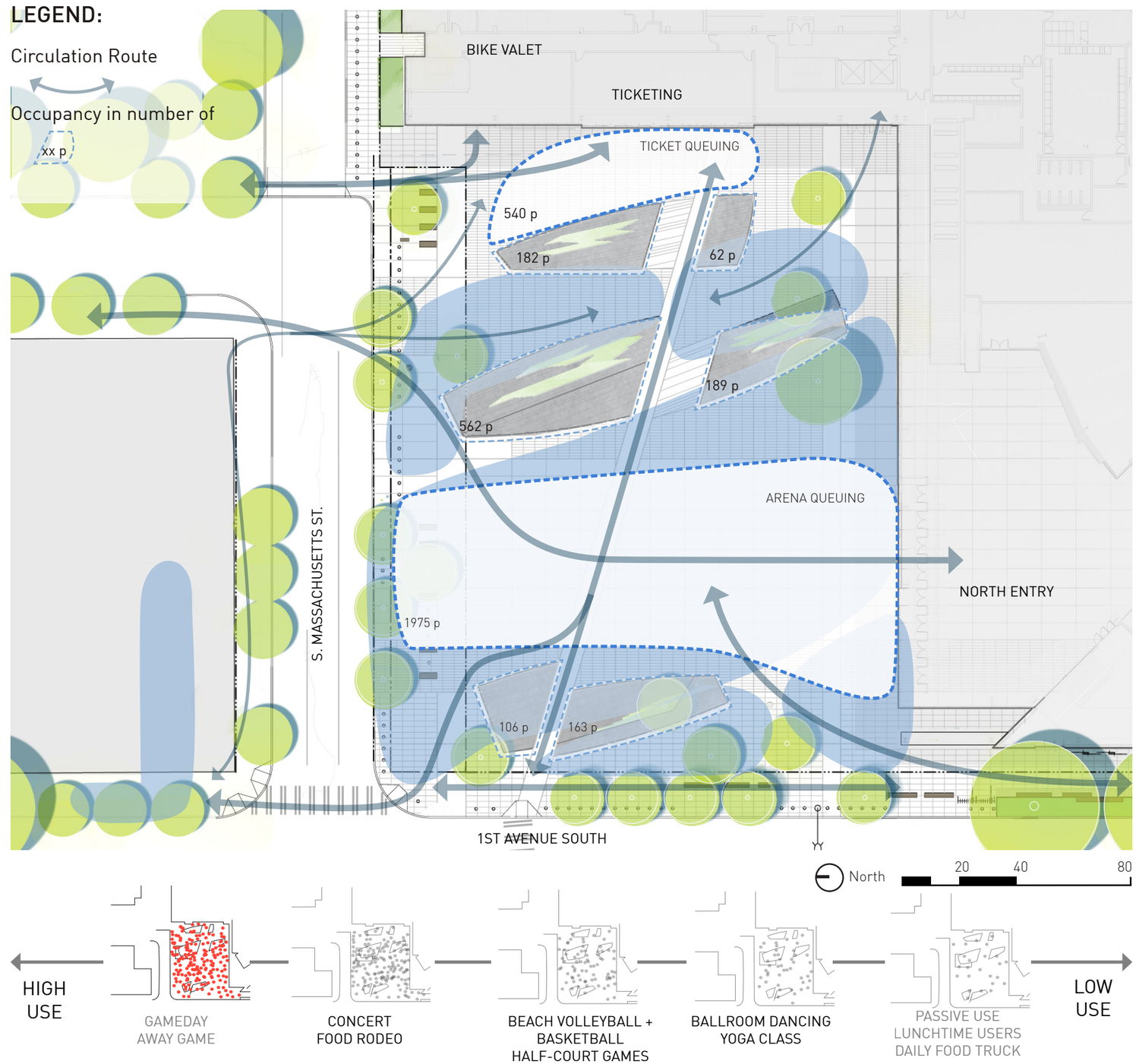
The following three use diagrams highlight the circulation routes and gathering areas associated with the Arena's plaza space.

A hierarchy of space within the plaza has been reconfigured to more generously accommodate user walk and desire lines. Each diagram identifies a variety of activated gathering nodes at three levels of use highlighted on the bottom of each page.

Occupancy was studied for at-grade gathering spaces as well as drumlins, as the design team envisions these as heavily used elements within the plaza that clarify spatial organization and provide standing, sitting, performance and viewing options.

The following criteria were used:

- maintain clear sight lines at plaza grade to potential away-game screen and for safety
- use low drumlin forms to define flexible gathering spaces for a variety of uses and events as well as a spectrum of spaces from large to more intimate.
- edges of drumlins are active edge for users to gather and gain prospect throughout the plaza.
- drumlin forms shall be maximum 30" off the ground at all edges and will not require guardrails.
- level of service calculations consider user comfort and experience as the plaza changes from event high energy to intimate with non-event day passive uses.



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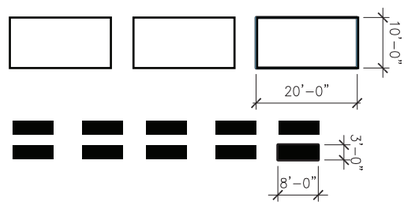
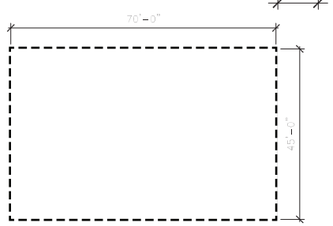
2.4.E ARENA [QUALITY]

MEDIUM USE DIAGRAM

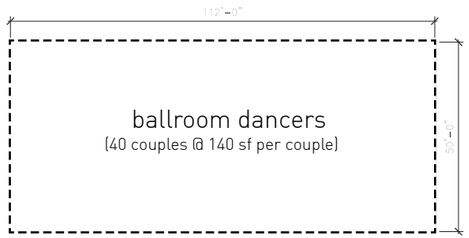
food rodeo
carts and tables

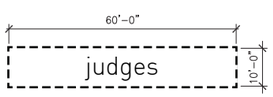


sand volley court

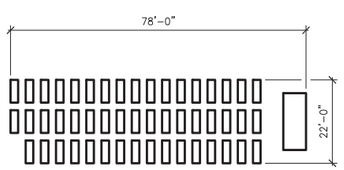


ballroom dancing



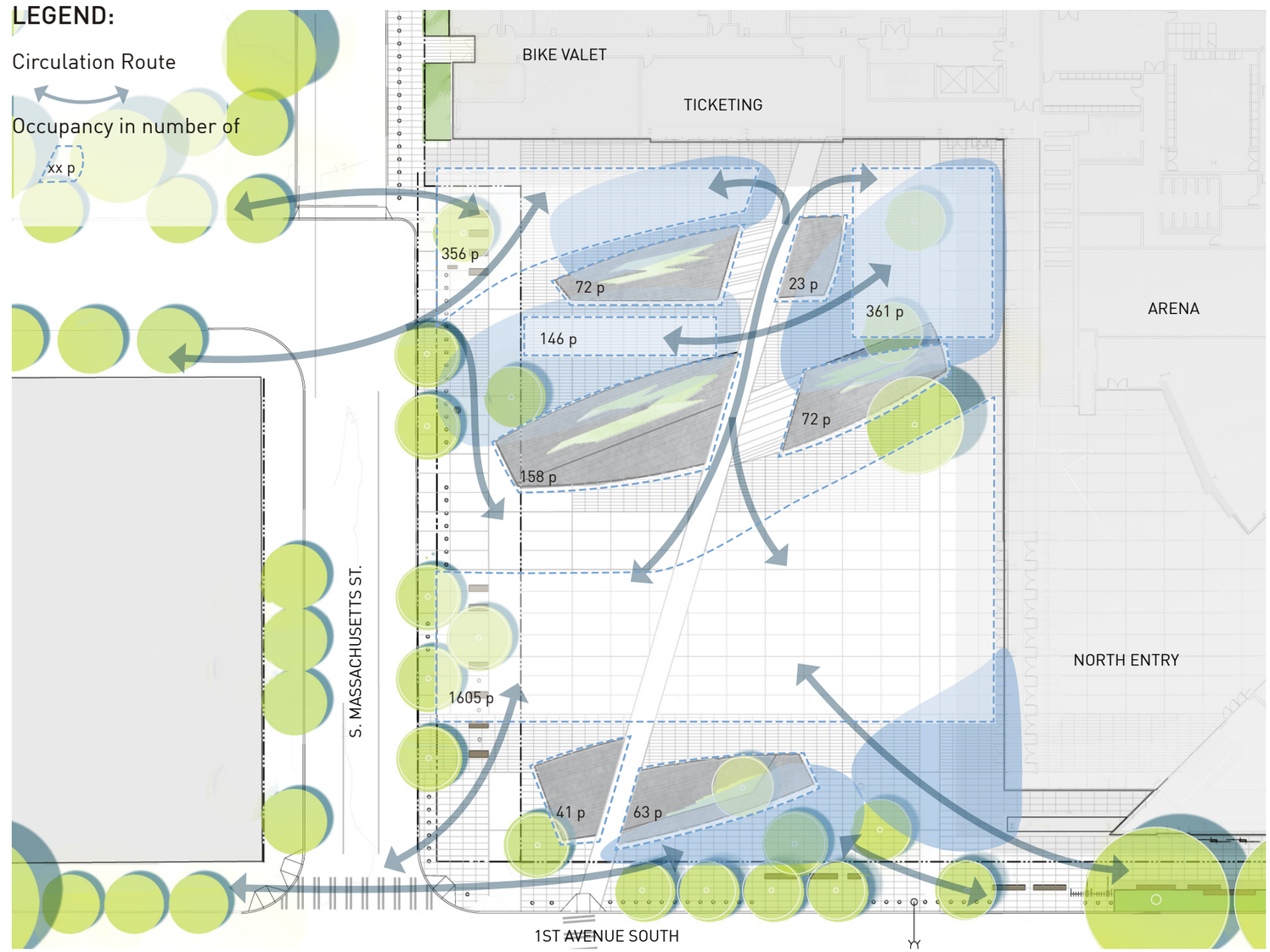


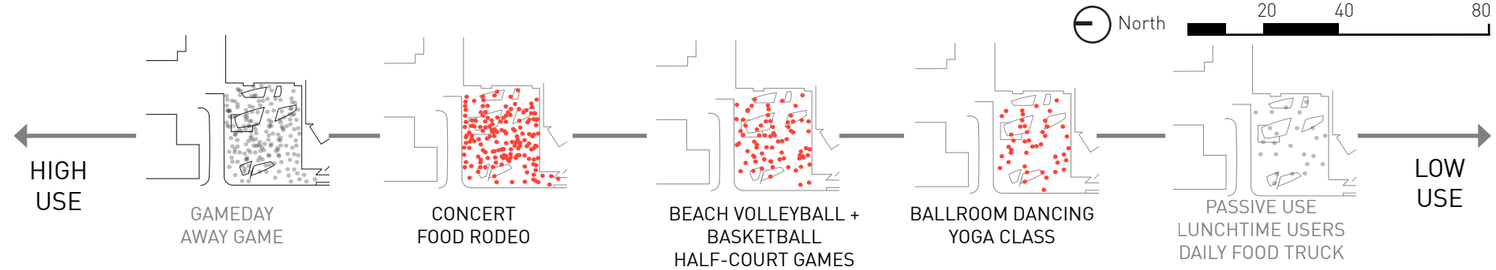
50 person yoga



Note: Activity diagrams above are at same scale as plan diagram for ease of use in review.
This diagram illustrates:

- more than one activity can occur at once.
- activities can select intimate or more public spaces for use.
- drumlins provide space definition and edges for activation.





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2.4.E ARENA [QUALITY]

LOW USE DIAGRAM

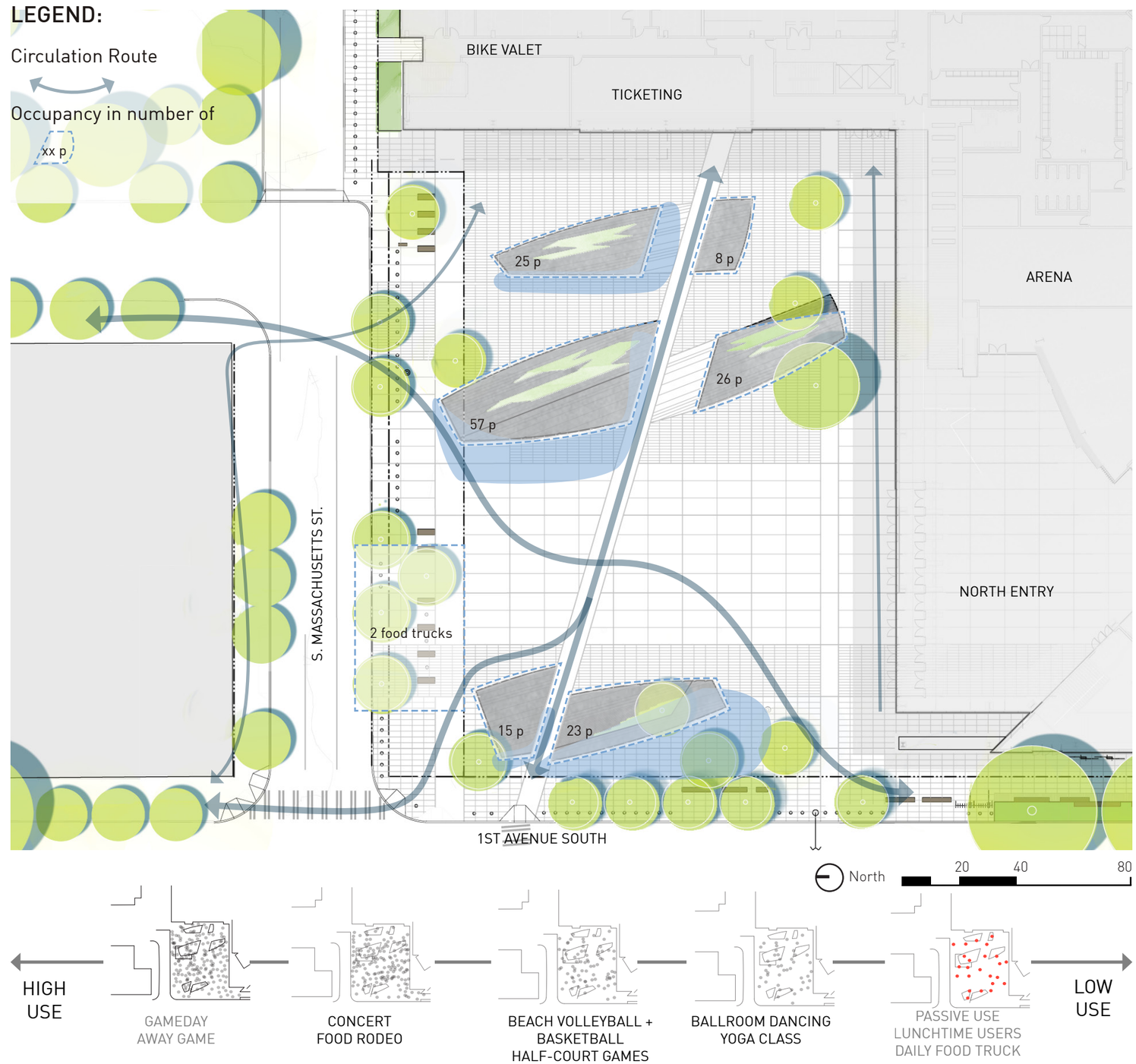
As level of use transitions from medium to low, the drumlins become destinations within the expansive plaza. People are drawn to and activate space by occupying drumlin edges. The edges provide backed seating opportunities that feel sheltered and safe for observing and enjoying the plaza.

The simple forms establish visual clarity and organization. Functionally, this allows for clear site lines and a space that feels welcoming and defensible regardless of the activity level.

Circulation routes have become simple desire lines for those cutting through the site and entering the training facility offices.

Gathering spaces are anticipated at the south and west edges of drumlins to take advantage of sunlight.

Areas with minimal gathering and circulation begin to define opportunities where water scrims and fog features could be used to activate the plaza.



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SEATTLE ARENA

3D RENDERING | NORTH EXTERIOR BALCONY

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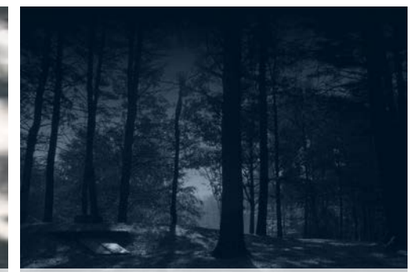
2.4.E ARENA [QUALITY]

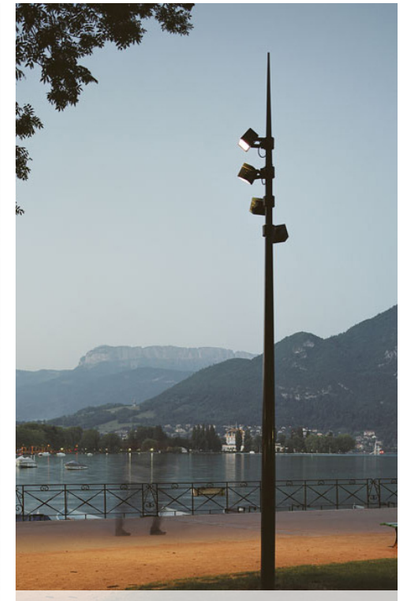
EXTERIOR LIGHTING

Exterior lighting provides for safe use, experiential character, and identity of place. Soffit lights wrap the open space on the east and south edges to frame the plaza, provide pavement light wash, and pedestrian scale. The North Entry is marked by a wide lit paving plane extending north to S. Massachusetts Street, provided by large scale pole lights. The scrims of water reflect the color of the light and of the city, and arena. Small, discreet fixtures illuminate the "fissures" in the stone features.

DAPPLED LIGHT EFFECT



GOBO PROJECTOR FIXTURE



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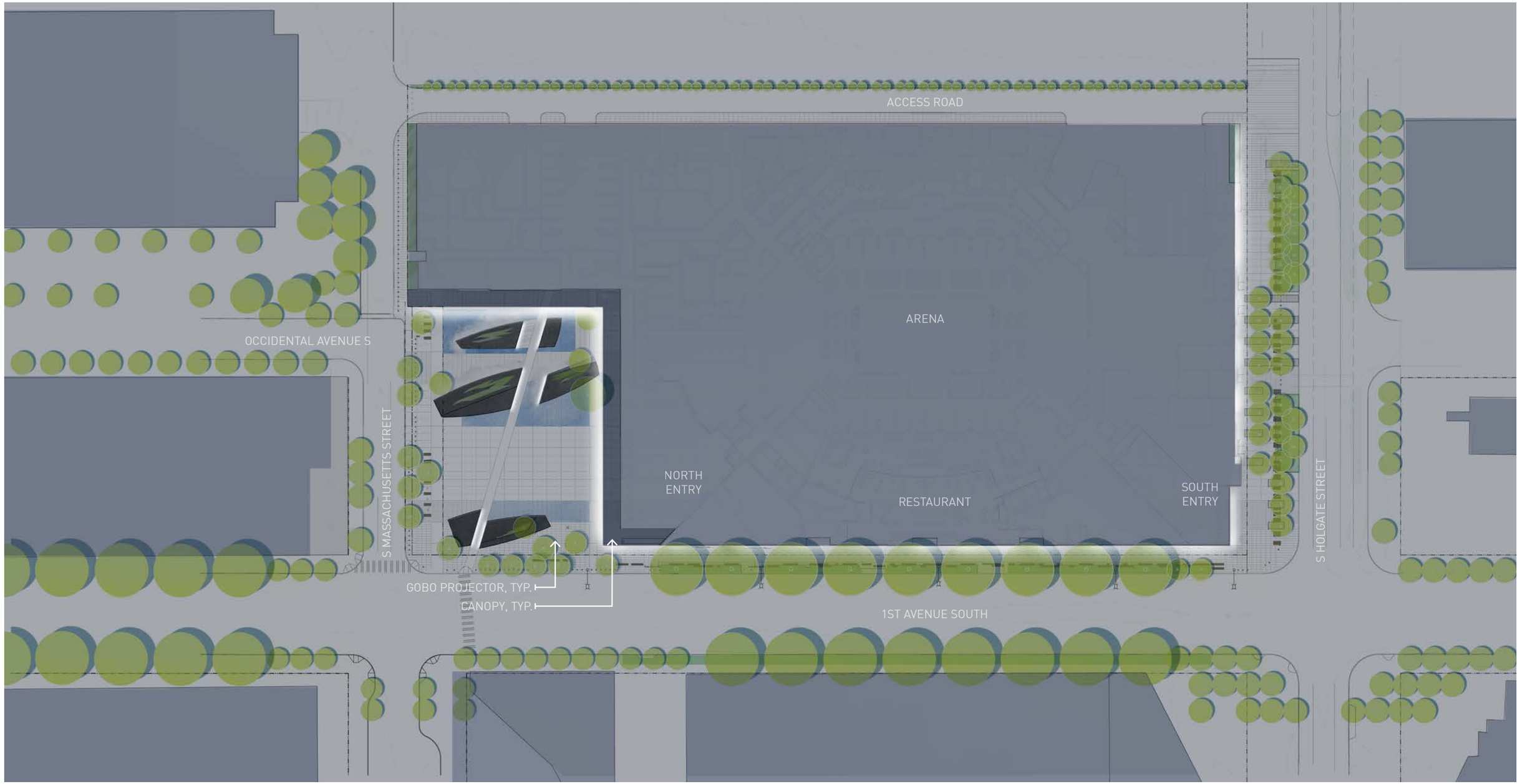

40 80 160

North

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2.4.E ARENA [QUALITY]

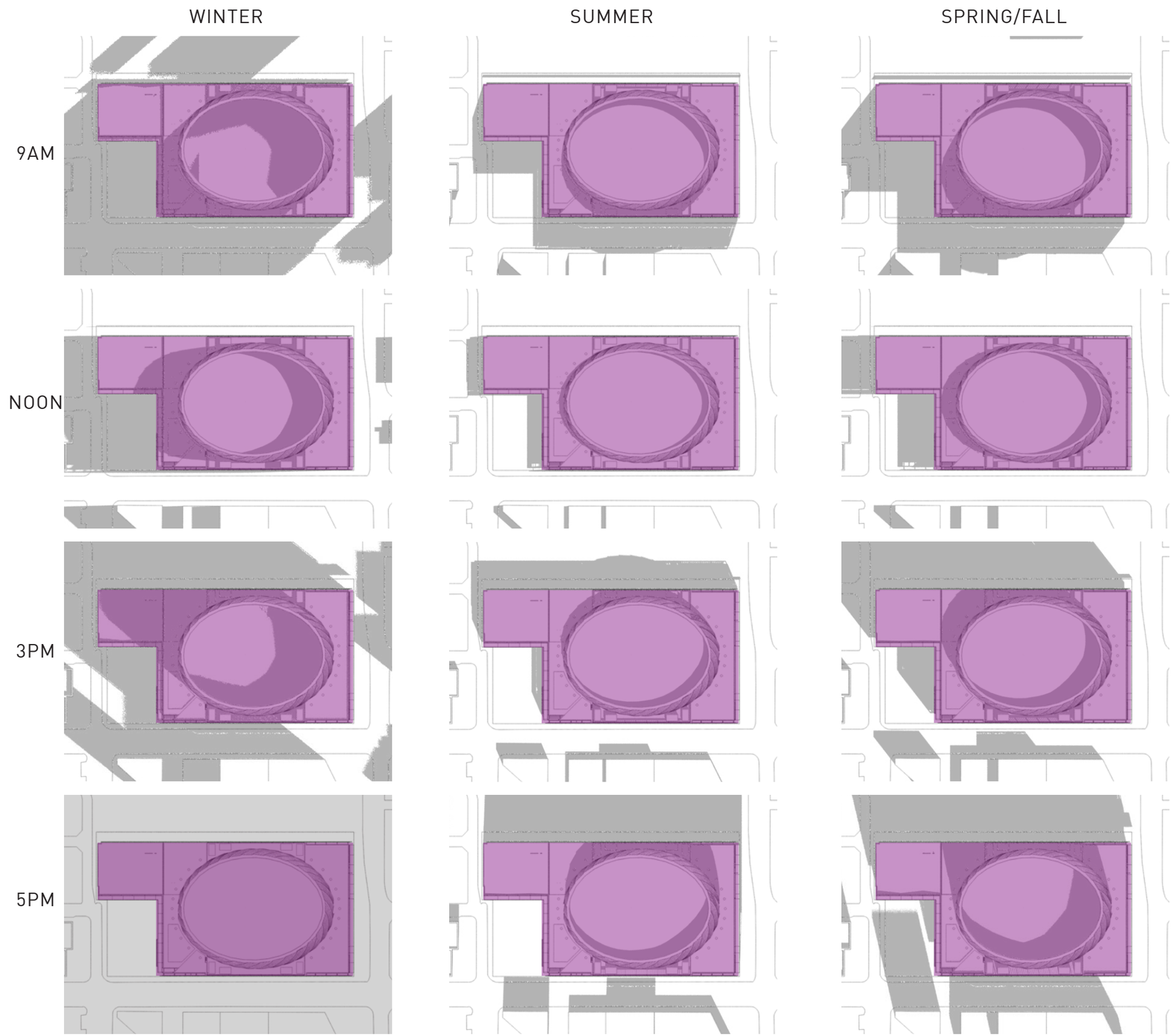
SUN SHADOW STUDY

ANALYSIS:

Does not adversely effect any surrounding property.

Shades primarily the railroad property and parking garage to the east.

Plaza has abundant sunlight during the warmest most active time of the year.



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2.4.F ARENA SUSTAINABILITY

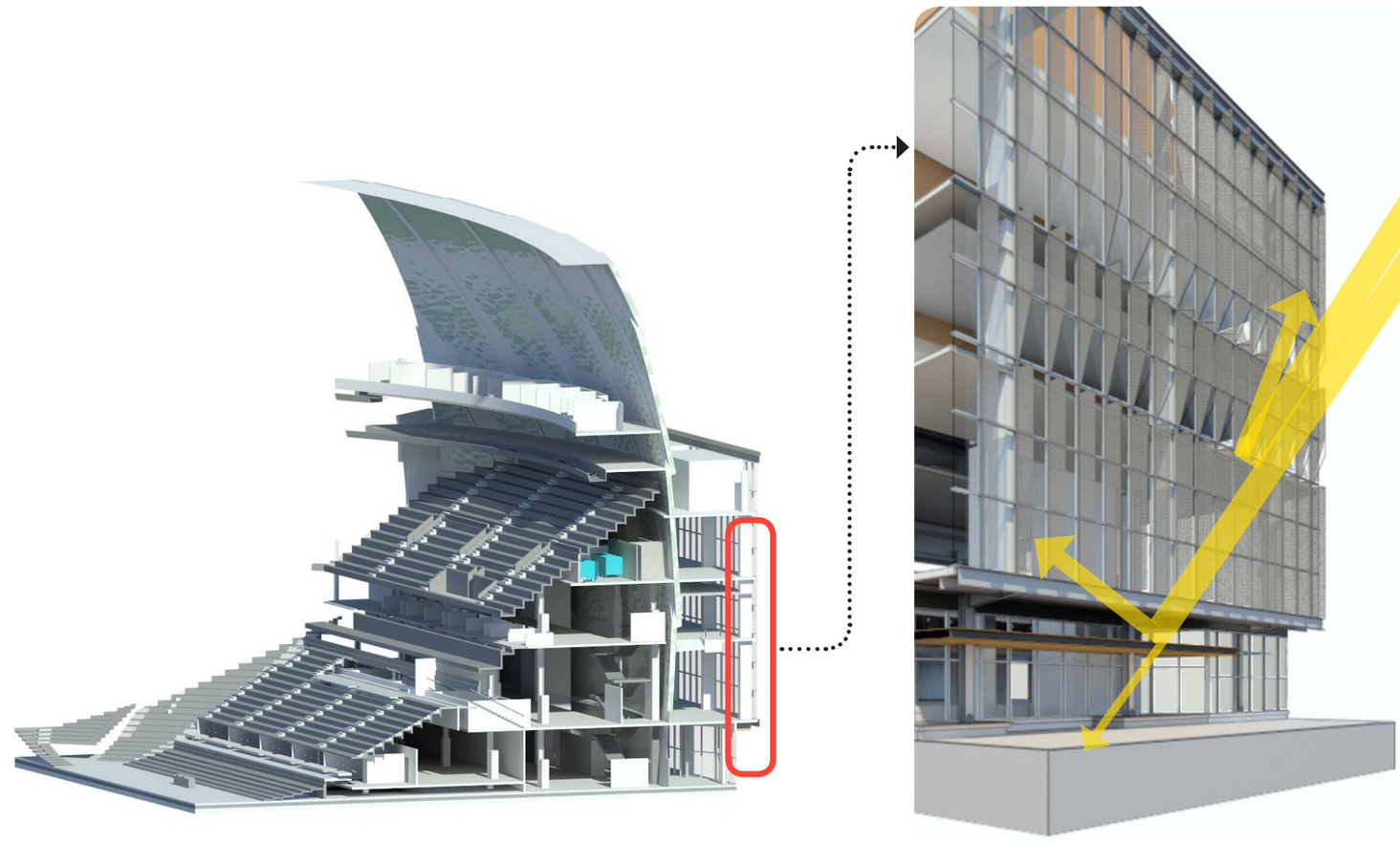
ENVELOPE

DESIGN COMMISSION ACTION [MAY 2, 2013]

5. Pursue a strategy of sustainable design. Continue exploring the potential of sewer mining and other out-of-the box solutions.

EXTERNAL SHADING STRATEGIES:

- Vertical Fins block solar radiation in concourse areas
- Overhangs block solar radiation at ground level
- All shading devices will help to reduce peak cooling loads and annual cooling loads
- Angles of fins selected to maintain views
- High-performance glass is being chosen that selectively reduces solar heat gain and admits natural light



3D BUILDING SECTION

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2.4.F ARENA SUSTAINABILITY

WATER

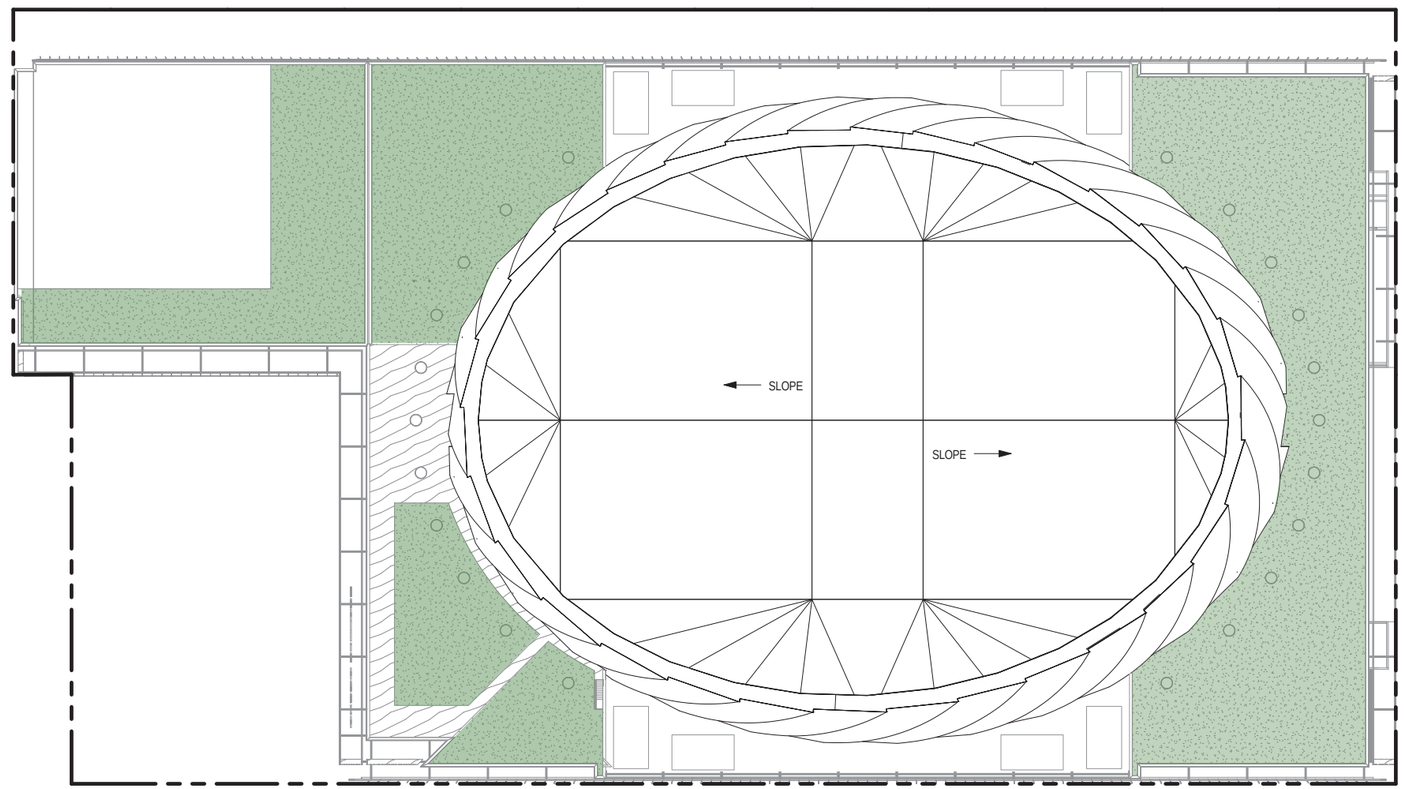
WATER SAVINGS STRATEGY:

- **Rainwater is retained and evapotranspirated by the Green Roof** and roof drainage is collected and stored for storm water control and the rainwater harvesting for non-potable landscape irrigation use

- Plaza paving system includes permeable pavers with sub paver drainage system, bio-swales and 'drumlins'
  - Coordinated with landscape and civil, including water features with seasonal pooling, rainwater collection storage and re-use. 'Living Machine' provides on-site, ecological wastewater treatment, transforming incoming wastewater to reclaimed water available for toilet flushing and irrigation use

- Cooling towers are replaced by the sewerage heat dispersal system, eliminating all makeup water (and chemical treatment) used for heat rejection (building cooling), and for producing ice for the skating rink

- Low-flow plumbing fixtures will be selected and installed in public toilets, team locker rooms and showers



GREEN ROOF DIAGRAM

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2.4.F ARENA SUSTAINABILITY

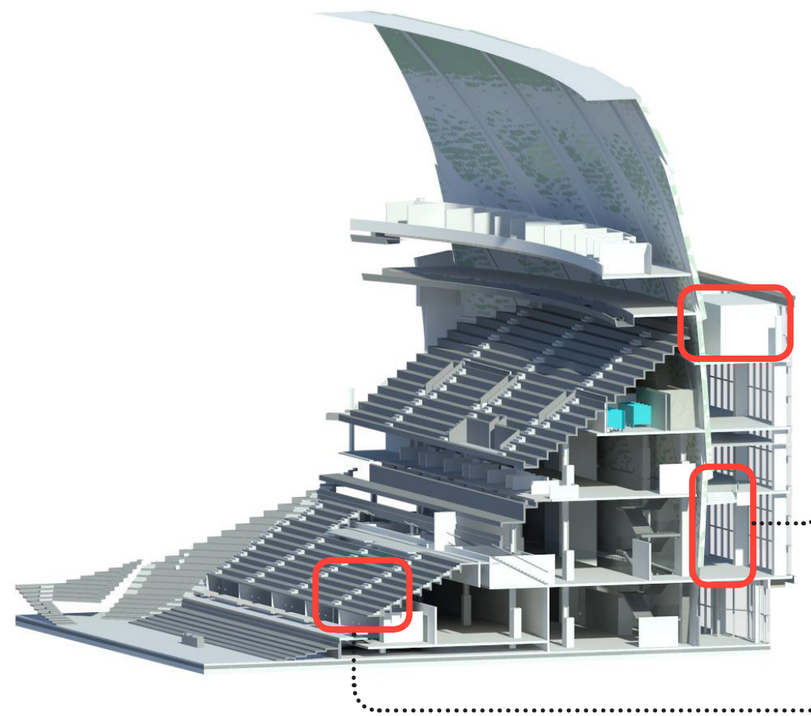
HVAC

HVAC STRATEGIES:

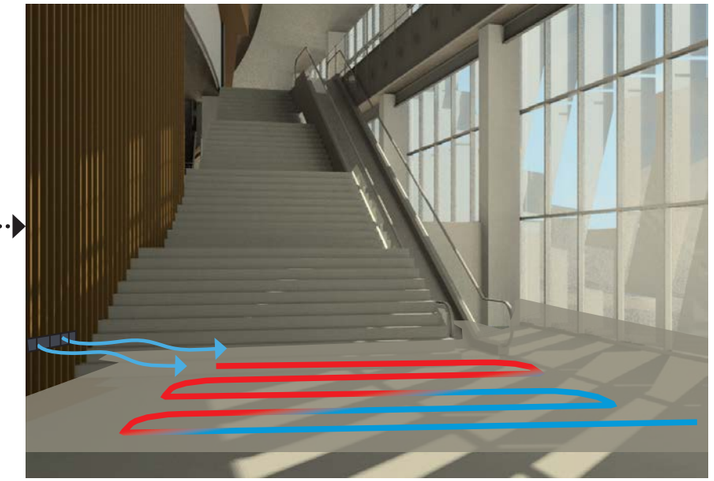
- A displacement ventilation system for the arena bowl supplies air from under the seats, providing occupants with 100% outside air (no recirculation) directly in the occupied zone. This saves energy while improving indoor air quality and thermal comfort
- Air handling units are provided with heat recovery to pre-warm incoming ventilation air. This saves heating and energy use of a traditional 100% outside air system
- Radiant slab heating and cooling in concourse and lobby areas minimizes the amount of heating and cooling required for these spaces by directly offsetting loads from the building's glazing. This eliminates wasteful reheat common to traditional HVAC systems
- Sewer heat transfer is used to both pull heat from the sewer in winter and reject heat to the sewer in summer. This reduces heating energy by approximately 70% while eliminating cooling towers, which would consume approximately 1.8M gallons per year to meet the building's cooling load
- Building and Sports Lighting applications (LEDs vs. Metal Halide); integrated with program and geometry

Ventilation Heat Recovery at Air Handling Units:

- Reduces heating energy required to pre-warm ventilation air
- Enables use of 100% outside air with no recirculation

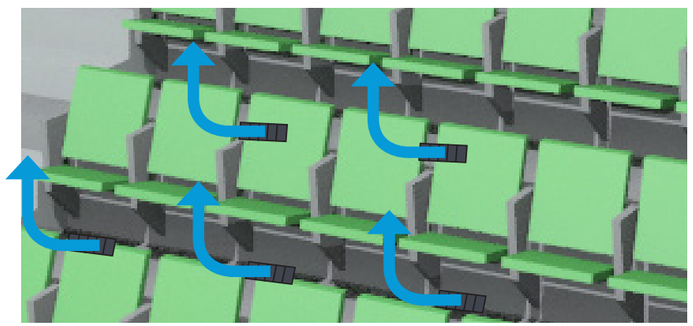


3D BUILDING SECTION



Displacement Ventilation + Radiant Heating/ Cooling:

- Solar loads directly absorbed by radiant slabs
- Heating provided by low energy slab heating
- Ventilation air provided directly to occupied zones



Displacement Ventilation: Seating Bowl

- More direct delivery allows for enhanced thermal comfort in seating areas.
- Higher temperature supply air and stratification saves energy
- 100% outside air with no recirculation

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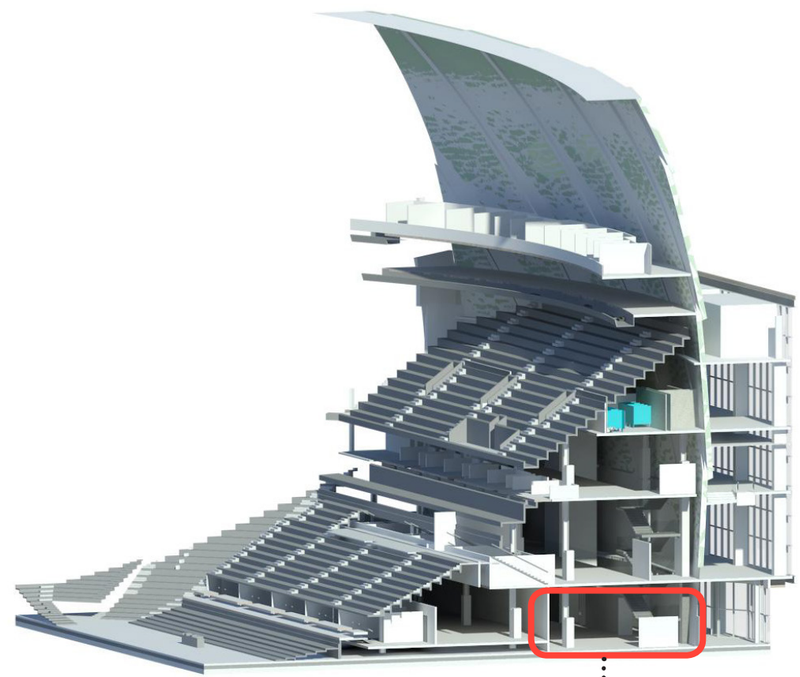
2.4.F ARENA SUSTAINABILITY

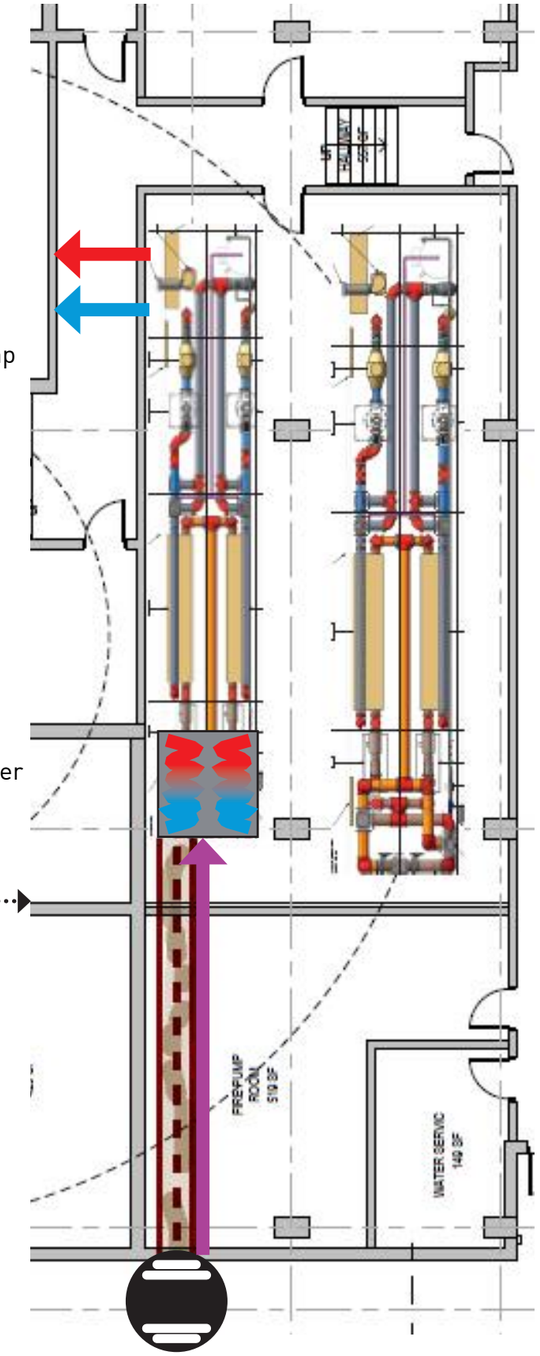
SEWAGE HEAT RECOVERY

SEWAGE HEAT RECOVERY:

- **Reduces heating energy by ~70%**
- Saves large quantities of water
- Enables "Load Sharing" between heating and cooling systems
- Consolidates heating and cooling equipment



3D BUILDING SECTION



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2.4.F ARENA SUSTAINABILITY

SUSTAINABILITY

RENEWABLE ENERGY

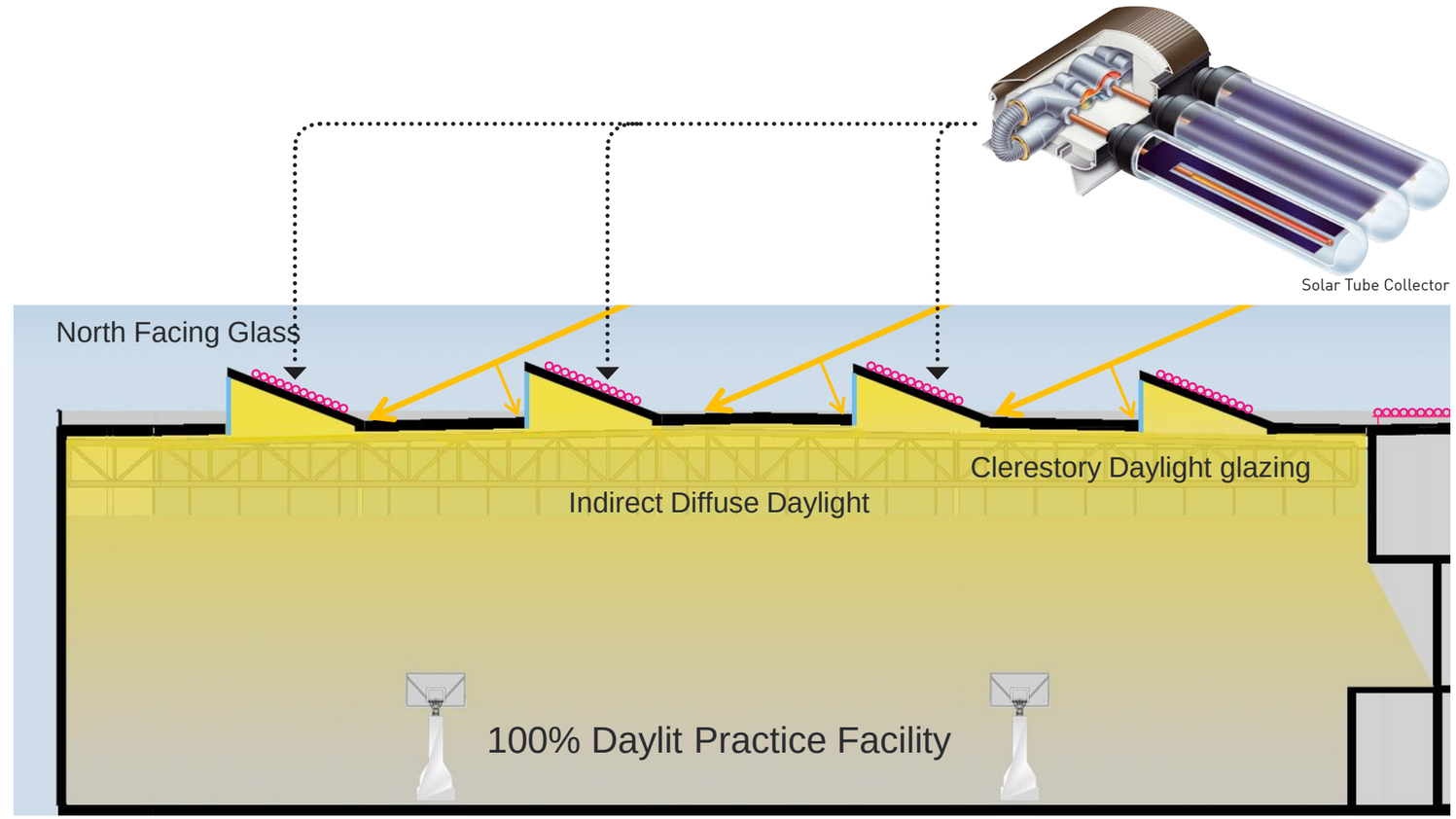
- Allow for future photo-voltaic solar collector array on roof areas as mandated by the City of Seattle codes
  - The area required could possibly be offset by or complement the Green Roof system
- **Integration of solar thermal collectors**

DAYLIGHTING

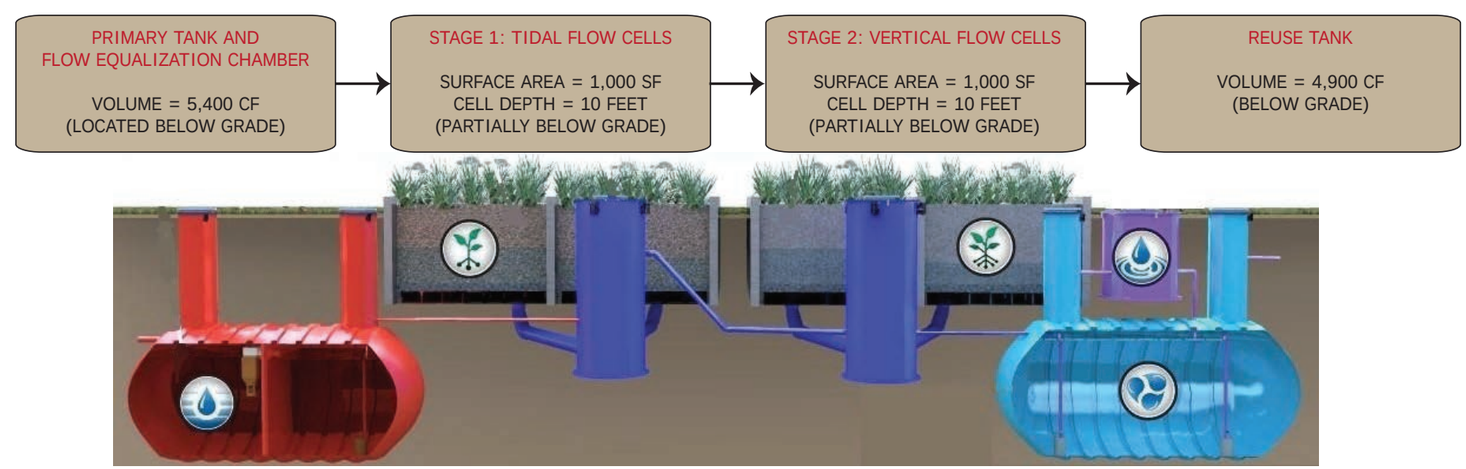
- Daylighting for the Team Offices, Training Areas and NBA Practice Courts will be provided (per NBA)

LIVING MACHINE

- **'Living Machine' provides on-site, ecological wastewater treatment, transforming incoming wastewater to reclaimed water available for toilet flushing and irrigation use**



DAYLIGHTING TRAINING FACILITY



LIVING MACHINE DIAGRAM

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2.4.G ARENA
CITY LANDMARK

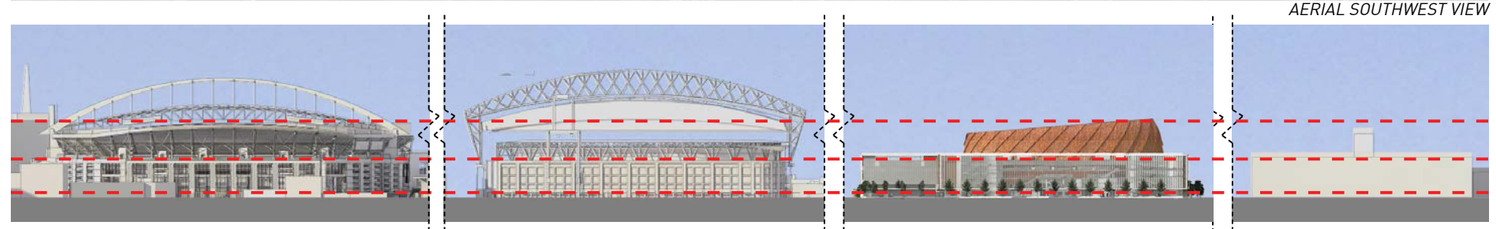
DESIGN APPLICATION:

Context: The arena design provides a facade along First Avenue and S. Holgate which is of a contextual scale to other large form buildings and smaller historic and industrial buildings

Landmark: The arena design architecturally expresses the energy of the performance with a landmark element that can be viewed from distances throughout the city.

Views: The arena provides new view corridors to and from Downtown, the Waterfront and to the south.

AERIAL SOUTHWEST VIEW



CITY SECTION_CONTEXT LINES

CITY SECTION

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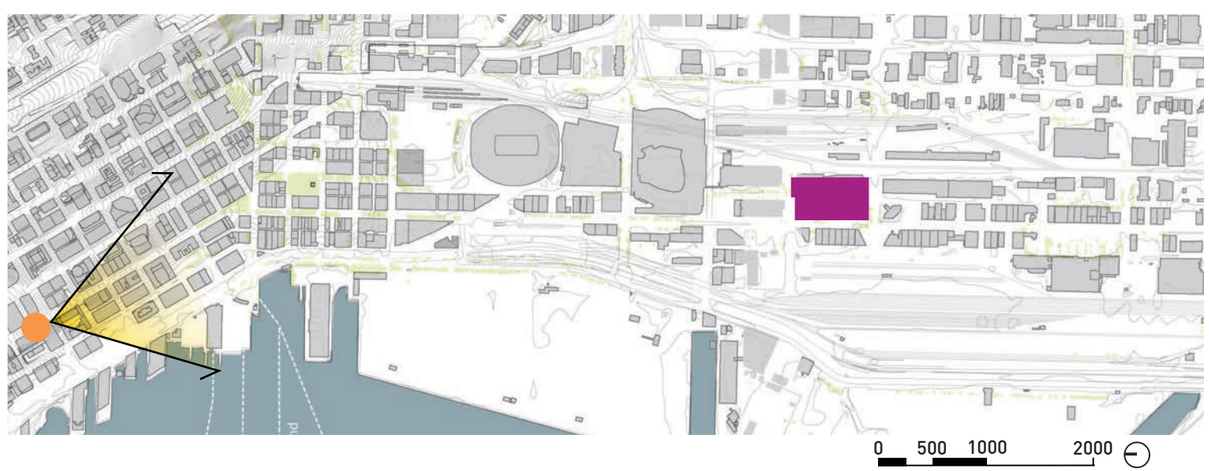
NORTHWEST CONTEXT AERIAL

BEACON HILL VIEW



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SEATTLE ARENA

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3D RENDERING | NORTHWEST AERIAL

3D RENDERING | VIEW FROM BEACON HILL

SEATTLE ARENA

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4.0 PUBLIC BENEFIT

PUBLIC BENEFIT

1. OPEN SPACE

- Public access road
- Public plaza south of Massachusetts St beyond what is required for queuing and entry for ticketing

2. STREETSCAPE IMPROVEMENTS

- 1ST Ave S sidewalk and landscape improvements
- S Holgate St sidewalk and landscape improvements
- Generous building setbacks and sidewalk widths
- High quality site materials and furnishings
- A commitment to public art

3. UTILITY IMPROVEMENTS

- New and updated water and sewer line
- New and updated underground electrical and communication lines

4. SUSTAINABILITY

- Green roof
- New trees contributing to urban forest canopy
- Public sustainability education signage
- Living machine

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SEATTLE ARENA

SEPTEMBER 17, 2013

DOWNTOWN DESIGN REVIEW BOARD | RECOMMENDATION

PROJECT NUMBER: 301 4195 | 1700 FIRST AVENUE SOUTH