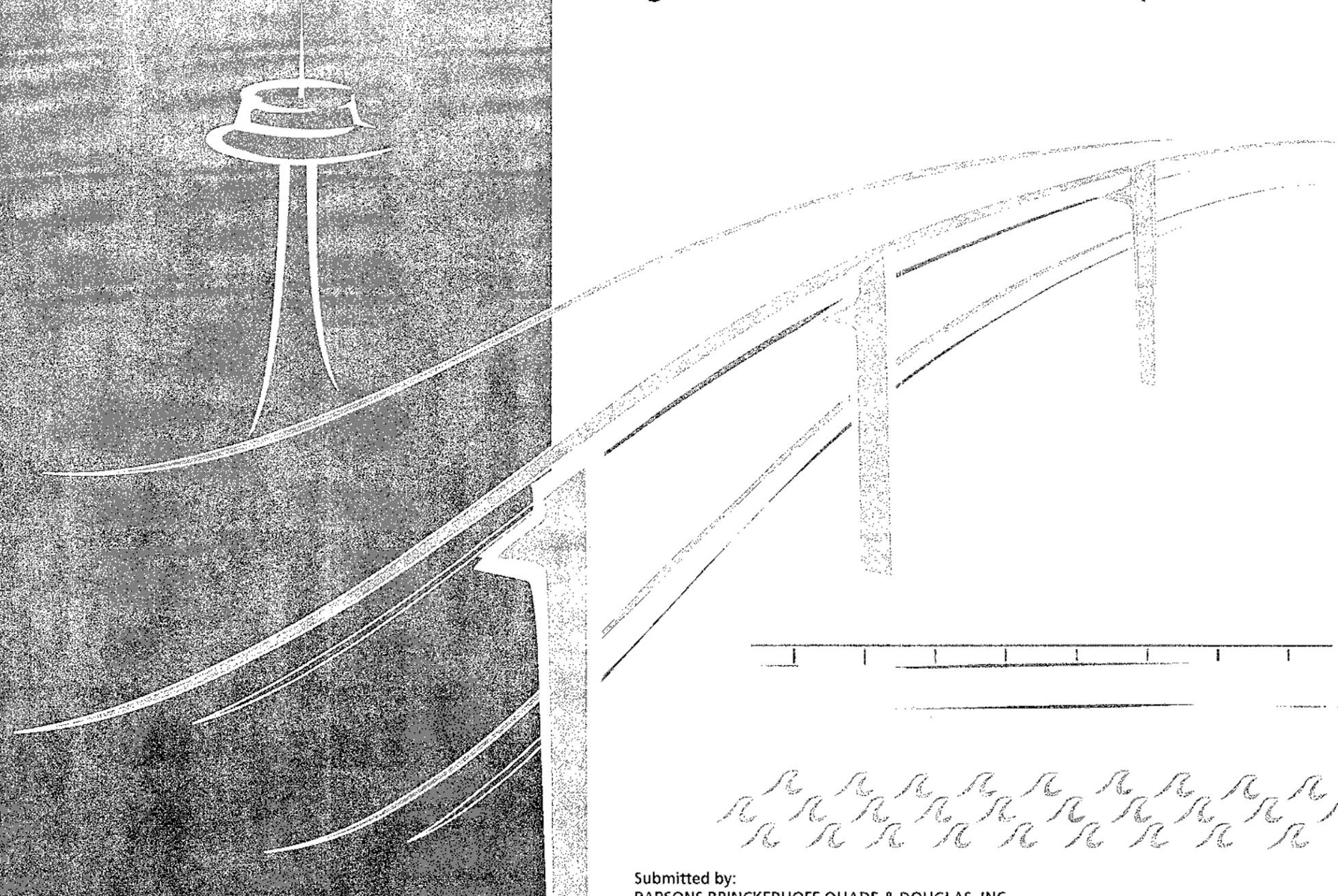


SR 99 ALASKAN WAY MAJORITY & SEAWALL REPLACEMENT PROJECT

Washington State Department of Transportation

# Appendix X Design Variations for Surface Street Improvements



MARCH 2004

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ALASKAN WAY VIADUCT AND SEAWALL PROJECT  
URBAN DESIGN CONCEPTS FOR SURFACE STREET IMPROVEMENTS

*Submitted to the Washington State Department of Transportation and the City of Seattle*

*Submitted by Parsons Brinckerhoff Quade & Douglas, Inc.*

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MARCH 2, 2004

## ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT URBAN DESIGN CONCEPTS FOR SURFACE STREET IMPROVEMENTS

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### Introduction

The surface circulation system components within the project area are an integral part of the Alaskan Way Viaduct and Seawall Replacement Project and its Environmental Impact Statement (EIS). The EIS being prepared for the project evaluates all five alternatives: Rebuild, Aerial, Tunnel, Bypass and Surface, equally. The EIS alternatives evaluation includes detailed quantitative modeling of traffic, noise and air quality as well as other environmental effects. In addition to the alternatives, a number of options, which can be applied in specific areas of an alternative, will also be evaluated. However, these will be evaluated qualitatively (meaning there is no traffic, noise or air quality modeling) and comparatively, in relationship to the alternatives. The options which are being considered are as follows:

- At grade intersections at Atlantic and Royal Brougham rather than grade separated crossings for the Surface Alternative;
- The assumption, in all of the alternatives, that if the underpass at the Olympic Sculpture Park is not implemented, that in the Tunnel Alternative, ramps from the tunnel to Elliott and Western Avenues are provided; similarly in the Bypass Alternative a new surface arterial to Elliott and Western Avenues is provided.
- The lowering of Aurora Avenue as it comes out of the Battery Street Tunnel allowing for a continuation of all cross-streets above Aurora Avenue and the provision of an interchange with SR 99 at Roy and Mercer Streets;
- The maintenance of SR 99 at grade with signalized intersections at cross-streets and the maintenance of a grade-separated but expanded Mercer Street for the Surface Alternative.

The purpose of this paper is to discuss design variations for surface improvement components within the downtown waterfront from King Street to Broad Street. The design variations describe opportunities for how travel lanes, bike lanes, pedestrian pathways, streetcar alignments and on-street parking can be configured while providing to the best of our knowledge at this point in time, the same functionality as the alternatives and options being evaluated in the EIS. In addition to the functional role of the Corridor as an integral component of the citywide and regional circulation system (required to meet the fundamental purpose of the project) the design variations consider the role of the Corridor as a form-giving element of historical, visual, recreational and open space value which provides access to and structure for a wide range of activities along the waterfront.

The design variations, however, will not be evaluated in the EIS and primarily serve the purpose of bracketing the potential configurations that can be considered for surface improvements in the ultimate preferred alternative for the Viaduct and Seawall Replacement Project. In the Final EIS, new configurations can be assembled by mixing and matching from the alternatives, options and design variations presented in the Draft EIS. If additional evaluation is required for the preferred alternative, it will be undertaken at that time.

The opportunity for surface improvements to meet both functional requirements and achieve broader community objectives varies between alternatives. The Rebuild and the Aerial Alternatives meet all of the city-wide and regional transportation functions in an above-grade structures and therefore the surface only needs to meet local access requirements. However, these alternatives will not improve, and may even degrade, the existing conditions that limit the potential of the Corridor to achieve a broader scope of recreational and open space opportunities, and to enhance of the visual, cultural and historical values of the waterfront. Therefore, these alternatives are only generally described and discussed in this paper and design variations are not proposed.

The Tunnel, Bypass, and Surface Alternatives substantially change the existing conditions of the waterfront by removing the existing Viaduct structure. They therefore offer more integrated and diverse ways of meeting the transportation functions of the Corridor and provide greater opportunities to achieve other city-wide objectives. In comparing these three alternatives, clearly the Surface Alternative, which accommodates all city-wide and regional transportation functions as well as local access requirements on the surface, allows the least potential for reconfiguration of the improvements. The Bypass Alternative which provides a tunnel connection from SR 99 directly to the Battery Street Tunnel and optionally to Elliott and Western Avenues offers more opportunities, but is still somewhat limited by the need to utilize the surface street system for some of the regional and citywide transportation functions. The Tunnel Alternative, which places most of the citywide and regional functions below grade, offers the greatest opportunity for reconfiguring the surface circulation improvements and meeting other objectives for the waterfront.

Within the range of opportunities afforded by a replacement project, how the opportunities for the waterfront are ultimately realized depends on the community's vision for the waterfront and its desired future character. Community priorities for how the land is utilized between the cityfront and the waterfront, beyond what is needed for vehicular movement functions, will affect the role the waterfront will play in the future. For example, in the Tunnel Alternative, Alaskan Way surface roadway could be located directly adjacent to the waterfront promenade with the remainder of the land within the right of way utilized along the cityfront for enhancement of pedestrian oriented activities which will extend the fabric of the city closer to Elliott Bay and thus energize the shoreline edge. On the other hand, Alaskan Way could be moved as close as possible to the cityfront and the remaining land could be utilized to enhance further the pedestrian environment, open space qualities and linear recreational activities along the water's edge. A variation on the above would be to

instead use the additional land to create an exclusive transitway for streetcar service and thus reinforce the intermodal transportation identity of the waterfront and its connection to other destinations in the city. Some of these choices appear, although to a lesser degree, in the other alternatives, as does the ability to emphasize any one of them or to create a balance between all of them.

### Urban Design Components

The urban design concepts which were developed as part of this work take into consideration a full range of movement and staying functions for pedestrians, bicyclists, streetcars and buses as well as vehicles. The concepts also seek to identify ways of meeting functional requirements that will also contribute to the visual and open space qualities of the waterfront, the sense of immediacy with the bay, an attractive place to linger and move through and the increased viability of adjacent land uses. The following summarizes each of these functions and the baseline requirements and variations associated thereto.

- **Pedestrian Access.** The waterfront setting is ideally suited for promenading, walking and jogging and its overall success is predicated, to a great degree, on the ability to create a comfortable and safe pedestrian environment and an engaging pedestrian experience. The design of surface street improvements must take into account not only the functional requirements necessary for pedestrian movement, but also the creation of a pedestrian scaled environment with opportunities for “staying activities” such as sitting, viewing and socializing which promote the waterfront as a destination for both residents and tourists.

A pedestrian promenade along the shoreline edge is an essential element of the pedestrian circulation system included in all alternatives. The variations considered relate primarily to the dimension of the promenade area. Existing policies of the City of Seattle call for a minimum 25-foot pedestrian promenade; however, the optimal width of the promenade adjacent to the historic character piers and to the open waterfront is 35 feet. This dimension allows for a 15-foot retail extension zone adjacent to the piers, a 12-foot promenading area and an 8-foot transition area. The retail extension zone would permit outdoor seating associated with eating establishments which would help to activate the waterfront. The curbside transition area provides space for benches, bike racks, kiosks, signage, lighting and landscaping as well as a drop-off area from public transit or adjacent parking. Adjacent to open water areas, a 35-foot promenade could accommodate a 15-foot viewing/sitting area instead of the retail extension zone. This area, at the edge of the seawall, could be at a lower elevation in order to enhance the sense of immediacy with the bay. As in the promenade adjacent to the historic character piers, the promenade would also allow for a 12-foot for pedestrian movement and an 8-foot transition area adjacent to the curb.

Along the cityfront, a minimum 15-foot sidewalk is called for in all of the alternatives and the design variations. This width of sidewalk allows for pedestrian circulation as well as for landscaping, street furniture and a transition zone to adjacent parking or bus stops. To further enhance the pedestrian environment, active ground level uses and additional space for café extension areas associated with adjacent buildings should be encouraged, wherever feasible, along the cityfront.

The promenade and cityside sidewalk are two essential elements for pedestrian movement along the length of the shoreline and Alaskan Way. An additional consideration relative to the creation of an attractive pedestrian environment is the comfort and safety as well as the perception of accessibility for pedestrians crossing the roadway at intersections with the cross-streets which connect to inland areas. As the width of the carriageway and the number of lanes increase, so does the requirement for a median between north and southbound lanes to facilitate pedestrian accessibility and create a “safe haven” for pedestrians who cannot make the crossing in the amount of “green time” allocated to each intersection. For the alternatives, with three or more moving lanes in each direction, a median of a minimum dimension of 10 feet and, more appropriately, 15 feet, is desired. For alternatives and variants with two moving lanes in each direction, a similar median is still desirable but may be optional if adequate “green time” is provided at each intersection. If there is substantial traffic volume and a signal system that favors through movement, and there are three to four travel lanes in each direction, the landscaped median should be increased even further so that the perception of the pedestrian is more of crossing two individual streets rather than one big street. If this option is pursued, consideration could also be given for the use of a wider median as a boarding area for the streetcar or as an exclusive transitway.

In all of the alternatives and variants, the way intersections are designed for vehicular turning movement requirements and how crosswalks and sidewalk ramps are provided will greatly influence the character and quality of the pedestrian experience. In addition to at-grade pedestrian crossings in the Alternatives and design variations, consideration is also given to overhead pedestrian crossings that facilitate movement where there is substantial topographic difference between inland areas and major waterfront activity centers. The existing overhead pedestrian crossings at Marion, Lenora, and Bell Streets will be retained or rebuilt if they are affected by the construction of the project. In addition, new overhead pedestrian crossings could be provided at Madison Street to the Washington State Ferries at Colman Dock and from new open space improvements adjacent to the Aquarium to the Pike Place Market area.

- **Bicycle Access.** The shoreline edge presents a tremendous opportunity for bicyclists. Its unbroken length and relatively flat topography make it an ideal place for both

recreational bicycling and bicycling as an alternative means of transportation. In addition, from the waterfront, bicyclists can readily interface with the Washington State Ferries at the Colman Dock and with commuter rail facilities at King Street Station. Ultimately, Union Station, adjacent to King Street Station, will become the hub for the region's light rail system. Because of the steep topography adjacent to the waterfront, the connections inland to the Midtown and Pike Place area are considerably more difficult. In some of the alternatives and variants, the potential for the development of a new street from Alaskan Way near the Aquarium to Elliott and Western Avenues in the Pike Place Market/Belltown area is explored. This street could include bicycle ways that would provide a direct, relatively low gradient route between the harborfront and the growing residential neighborhoods in Belltown as well as major destinations at Pike Place Market.

There are a number of issues related to the replacement and reconfiguration of bicycle access along the harborfront. Bicycle access could be provided in a Class I, exclusive off-road facility, or in Class II striped lanes within the roadway, or, on a pedestrian/bicycle trail as it is currently. A Class I bike path, or a shared trail, presents many issues for the safety of pedestrians at the numerous crossings that are desired at all street ends along the harborfront. Typically, serious bicyclists who may be traveling at high speeds are not as likely to stop for pedestrians at intersections as they are for vehicles. Similarly, pedestrians are less likely to be aware that they might be in harm's way in a bikeway as they might be in a roadway. A Class I facility or a shared pedestrian bicycle trail is most appropriate south of King Street where there is a substantial volume of truck traffic and where there are very few pedestrian crossings. A shared bicycle/pedestrian trail is also currently in place in Myrtle Edwards Park to the north.

From King Street to Broad Street, there are several options that are considered in the alternatives and variants for bicycle access. In most of them, a Class I facility is indicated from King Street to Yesler Way because of the substantial volume of vehicular traffic required on Alaskan Way. In the reach from Pier 62 to Broad Street, most of the alternatives and variants indicate the continued use of the existing shared pedestrian/bicycle trail on the cityside of the waterfront. In this reach, the right-of-way is more limited than in the Midtown area and the requirements for bus, taxi and other vehicular access at the cruise terminal make Class II bikeways more difficult to implement. In the reach between Yesler Way, Pine Street and the Aquarium, a Class II facility is indicated in many of the Alternatives and design variations because it minimizes the potential conflict with pedestrian crossings and is generally preferred by serious bicyclists. A drawback of the Class II facility in the roadway, however, is that it is less attractive as a recreational facility because it is not directly associated with the shoreline, and is less desirable for young or inexperienced bicyclists. Therefore, a Class I exclusive facility on a greenway separated from the promenade by a frontage road instead of the Class II integrated facility is also considered. Consideration could also be given to the provision of both

a Class II facility on Alaskan Way as well as a Class I facility as described above for the greenway. Alternatively, consideration could also be given to a Class II facility on Alaskan Way and two-way bicycle access provided in conjunction with a one-way frontage road, where the northbound direction would only be for bicyclists and the southbound direction would be shared for vehicles and bicyclists. The southbound direction of the frontage road would provide service vehicle, bus and drop-off access for the historic character piers and the Aquarium.

- **Streetcar and Bus Service.** Within the existing Alaskan Way right-of-way, there is a single exclusive trackway with bypass tracks for the historic Waterfront Streetcar. The historic vehicles that currently operate on the trackway have and can continue to contribute to the historic character of the waterfront, recalling the era when rail tracks and freight trains dominated the shoreline. Today, the Waterfront Streetcar serves a limited area, from Pioneer Square to Myrtle Edwards Park, and primarily serves recreational users and visitors to the city. If, in the future, streetcar service were extended to better connect to inland areas and more important destinations, it could serve a larger number of people and provide for a convenient intermodal transfer to the Washington State Ferries and to commuter rail and light rail facilities at King Street and Union Stations. Options for the extension of the streetcar service to Belltown, Pike Place Market and beyond to the Seattle Center and South Lake Union area are under consideration by the City of Seattle. The consideration of these broader concepts are beyond the scope of the Alaskan Way Viaduct and Seawall Replacement Project, but are important contextual considerations for the required replacement of streetcar service on the waterfront as a part of the project.

Along the harborfront, there are several options for the replacement of the streetcar tracks within the Alaskan Way right-of-way. From a transit service point of view, two tracks are preferable to the existing single track, because they would serve each direction of travel independently, thereby reducing headways and travel time. Single track service must be provided in an exclusive transitway, while two track service can either be provided in an exclusive transitway or can be integrated with vehicular lanes on the roadway. However, if the tracks are located in shared vehicular lanes, and there is a substantial volume of vehicular traffic or congestion on the roadway, then the advantage of the two track service may be substantially diminished in terms of travel time and quality and dependability of service. If the vehicular requirements of the roadway are important as in the Surface Alternative, shared lanes are undesirable because of the reduction in vehicular traffic capacity that will likely result.

Whether a single or a double track, the exclusive right-of-way can either be on the waterside or cityside of Alaskan Way or in the middle. The location on the cityside is least desirable because of the role that Alaskan Way plays in accessing the Midtown area and the number of turning movements that are required at each of the Midtown street intersections. The location of an exclusive trackway in the median

would only create potential conflicts with southbound left turns but it would require that transit patrons cross from either side of the street to board the streetcar. However, a wide transit median in the middle of a wide street can provide a visual and physical interlude that breaks up the expanse of pavement and the barrier effect of the roadway. From a transit service point of view in the Midtown area, the location of an exclusive trackway is best accommodated on the west, or waterside, of Alaskan Way. However, if an exclusive trackway is located on the west side of the roadway, a frontage road should be provided so that vehicular service requirements to the historic character piers and the shoreline promenade are not compromised. In addition, the use of a frontage road adjacent to an exclusive trackway will result in a clearer definition that pedestrian crossings should be at intersections and therefore helps to avoid conflicts between pedestrians and moving vehicles. There are other advantages related to the west side location of the streetcar tracks. This location would bring transit service in closer proximity to the Washington State Ferries, would help to reinforce the identity of the historic character piers and would create a unique vantage point for transit patrons to view and experience the waterfront, particularly during rainy days. North of the Aquarium, because of the narrow right-of-way, the requirements of the cruise terminal for bus, taxi and vehicular access and the more limited requirements for turning movements, the exclusive streetcar tracks should remain in its current alignment with a single track on the east side of Alaskan Way.

There are two options for shared vehicular trackway lanes. One is to locate them on either side of the roadway adjacent to curbside on-street parking. The side location would require the elimination of on-street parking at the transit stops and is problematic for the provision of bicycle lanes within the roadway. Therefore, if the trackway and the bikeway are to be integrated within the roadway, the location of the shared vehicular trackway lanes is best adjacent to the median. In this location, the median would be used for transit stops. In two-way streetcar operations, whether in an exclusive transitway or in the shared vehicular transit lanes, transit stops are best located on the far side of the intersection so that they minimize conflicts with turning movements and the pedestrians crossing the street to board streetcars.

As previously discussed, options for the replacement of the streetcar after the construction of the Viaduct/Seawall project can also take into consideration its relationship to a broader transit service concept. Several options for replacement that also considers the extension of service beyond what is part of this project are included in the variations to the surface street improvement concepts for the Tunnel and Bypass Alternatives.

In addition to streetcar service, bus service is currently provided to the Washington State Ferries and is also required at the cruise ship terminal and the Aquarium. The Aquarium is a destination for school children on field trips and many passengers on the cruise ships transfer via bus to the airport. The provision of appropriate bus stops

is considered to be a required program element for all of the alternatives and variants.

- ***Vehicular Movement and On-Street Parking.*** Alaskan Way today, and in the future, will continue to provide vehicular access to adjacent uses and serve as an attractive scenic Corridor for residents and tourists. In all of the alternatives, Alaskan Way and/or other aspects of the surface circulation system also will continue to provide vehicular access to and from the Washington State Ferries at Colman Dock. Furthermore, with the exception of the Rebuild and the Aerial Alternatives, Alaskan Way also, depending upon the variant and option, provides for varying degrees of regional and citywide vehicular movement as well as local access.

Vehicular access along the harborfront may be provided by a single facility or by a combination of facilities that more readily respond to the multiple demands on the roadway. In many of the alternatives and variants, a frontage road on the waterside is considered in the Midtown area. The combination of a frontage road augmenting the main roadway allows a right-of-way for slower-moving vehicles separate from the main Corridor for through-movement and access to Midtown. The frontage road can also provide for service vehicles and convenient drop-off for autos and buses. It can be paved in cobbles and designed with a distinctive character which reinforces the historic character of the piers and serves as a multi-use space which not only accommodates local access requirements but also, on certain occasions, serves as an expansion area for pedestrian activity and special events.

Currently, there are both short-term and long-term parking spaces provided along the waterfront under the Viaduct and in leftover spaces associated with it. Most of this parking will have to be relocated during construction. Subsequently, this parking may be replaced under Viaduct in the Rebuild and Aerial Alternatives. In the Surface, Bypass and Tunnel Alternatives, it may be replaced curbside to meet service and short term parking needs and in one or more structures for longer term parking. In this manner, the newly uncovered waterfront land within the right-of-way can be more effectively used for more appropriate waterfront purposes. Curbside parking along Alaskan Way is, however, desirable. It is beneficial in calming traffic and enhancing accessibility, particularly for those who are mobility-impaired. In addition, on-street parking often provides a transition and a sense of security for pedestrians from the moving lanes of a roadway to the safety of a pedestrian sidewalk or promenade.

- ***Landscape and Open Space Opportunities.*** An important goal of the improvement program is to enhance the open space qualities of the harborfront. As previously stated, the Rebuild and Aerial Alternatives limit the recreation and open space potential of the waterfront and to, a great extent; degrade it from its current condition. Two important opportunities for waterfront open space are possible with the Surface, Bypass and Tunnel Alternatives. In the Pioneer Square area, with the

possible reconfiguration of Pier 48 and expansion of Colman Dock, the marginal wharf between King Street and Yesler Way would be ideally suited for a major new public open space adjacent to open water. This open space would help to link Pioneer Square to the bay and help to overcome the substantial width of Alaskan Way that is needed in this reach of the waterfront. Adjacent to the Aquarium, a major new open space is created by the removal of the Viaduct (bounded by Pike, Pine, surface Alaskan Way and the existing alignment of the Alaskan Way Viaduct). In the Tunnel and Bypass Alternatives, there is also an opportunity for the creation of a linear open space in the Midtown area, between Yesler Way and University Street. However, in order for this open space to not create conflicts with the need to access the historic character piers, it most appropriately is provided in a median between a frontage road on the waterside and the main roadway.

In addition to these open space opportunities, however, it is important to consider the way in which the roadway and all of the associated transportation improvements can contribute to the open space qualities of the waterfront environment. Streets can play an important role in contributing to the urban forest and in extending the open space qualities of a city. Street trees can create an overhead canopy of green without obstructing movement, help to humanize transportation facilities and establish an attractive and amenable pedestrian scaled environment. Space to accommodate street trees and landscaping are important considerations in establishing the dimensional qualities of the vehicular, transit and pedestrian components of the surface circulation system. For street trees to survive in an urban environment they need to appropriately set back from curbs and catenary wires and located so as not to diminish visibility for pedestrians and vehicles at intersections. There must also be adequate space provided for root systems and tree growth. In general, a continuous planting strip of no less than 5 feet in width and 6 feet in depth should be set aside to create opportunities for the growth of street trees adjacent to sidewalks, medians and promenades within the Corridor.

### **The Rebuild Alternative**

The existing elevated Viaduct provides for vehicular circulation from the south to the Midtown area via ramps on Columbia and Seneca Streets, to the Belltown area and to Ballard Interbay via ramps on Elliott and Western Avenues and through the Battery Street Tunnel and Aurora Avenue to the South Lake Union area and beyond. Alaskan Way, on the surface, provides local access to the Washington State Ferries and to all other uses along this stretch of the waterfront, including the historic character piers, the Seattle Aquarium, and the Cruise Terminal. Although the Viaduct only occupies the surface of the Alaskan Way Corridor for the placement of supporting columns, its visual and physical presence greatly influences the potential role and character of the Corridor. The Rebuild Alternative accommodates Alaskan Way (the surface roadway) west of the rebuilt Viaduct structure, and therefore maintains its existing sky exposure. It also creates opportunities for improved vehicular access to the Washington State Ferries and can accommodate the integration of

bicycle lanes within the roadway which will be of benefit to both bicyclists and pedestrians. However, these potential improvements to the movement functions do not substantially change the role and character of the existing waterfront, nor its ability to attract a wider and more diverse range of activities. In fact, the necessity to rebuild the Viaduct to a side-by-side facility in the Pioneer Square area (King Street to Yessler Way) doubles the cover of the existing Viaduct and further degrades the quality of the environment in this area and the potential for enhancement of open space opportunities. However, even in the area to the north where the size of the viaduct remains the same, as long as the elevated structure is maintained, recreation and open space activities and the potential enhancement of historical and cultural resources will continue to be compromised.

### **The Aerial Alternative**

The Aerial Alternative provides for existing regional and citywide circulation functions in a new improved facility. The replacement of Alaskan Way (surface roadway) can be done in a manner which meets basic functional requirements and, to some degree, improves vehicular access to the Washington State Ferries. However, the increased size of the aerial structure along the entire Corridor necessitates that the northbound lanes of Alaskan Way be relocated underneath the structure and therefore are not open to the sky as they are today. Furthermore, the increased width of the aerial structure results in a further degradation of the overall environmental quality of the waterfront and its potential for open space enhancement and for a more diverse and vibrant range of activities. Although the new stacked structure is further west than the existing Viaduct in the Pioneer Square area and therefore provides more space in front of the historic cityfront buildings, it still limits their adaptive reuse. In addition, due to the increased width of the overhead structure, the quality of the movement experience of the surface circulation system for all modes of travel, including vehicular, streetcar, bicycle and pedestrian within the Corridor is degraded. Of particular concern is that, after a sustained period of intense construction activity, which is required of all the alternatives, the Aerial Alternative will not have changed the role and character of the waterfront. In fact, the Aerial Alternative may diminish its potential even further.

### **The Surface Alternative**

The Surface Alternative seeks to accommodate both the regional and citywide circulation functions of the Viaduct along with local access requirements at grade. Because of the high demand for vehicular traffic in the Corridor, this alternative is more limited than either the Bypass Tunnel or the Tunnel Alternatives in the number of variations for the configuration of surface improvements and for the achievement of broader objectives. From Atlantic Street to Spring Street, this alternative assumes that the main Alaskan Way Corridor has to be augmented with two branches. One of these would provide direct access from Atlantic Street on the west to the Washington State Ferry Terminal and the other from Yesler Way eastward to the Midtown area via Western Avenue.

The access to the ferry terminal on the west side of the main line would be via a new East Marginal Way constructed as a part of this project or on a portion of land currently occupied by Pier 46. East Marginal Way would in turn provide access to a new exclusive three-lane frontage road along the marginal wharf of Pier 48 directly to the ferry terminal. An off-site holding area for the ferry terminal would be located on the west side of SR 99 on land currently occupied by Terminal 46. The ferry terminal would also require a vehicular grade-separated crossing for eastbound vehicles off-loading from the Washington State Ferries. This overpass allows ferry terminal traffic not to impede nor be constrained by the traffic on Alaskan Way and Western Avenue.

Between King Street and Yesler Way adjacent to Pioneer Square, the cross-section of Alaskan Way would need to accommodate seven or eight lanes, depending on whether the northern egress from the Washington State Ferry Terminal would be extended to Yesler Way or limited to Marion Street. At Yesler Way, the two of the four northbound lanes would allow for access on a one-way two-lane Western Avenue all the way to Spring Street.

North of Yesler Way, the main line would narrow to a six-lane facility. Although, from a traffic point of view, additional lanes would be desirable and could be accommodated, the cross-section of the roadway was limited to six lanes in an attempt to balance the need for preserving some measure of pedestrian friendliness and to avoid the creation of a barrier to the water's edge. At approximately the location of the Pike Street Hillclimb, the six-lane facility would veer eastward away from the shoreline to follow the alignment of the existing Viaduct to the Battery Street Tunnel and to provide on and off ramps to Elliott and Western Avenues. As it proceeds eastward, the main line would also start climbing to bridge over the Burlington Northern tracks and, ultimately, over Elliott and Western Avenues directly into the existing four-lane Battery Street Tunnel.

Alaskan Way, between Pier 62 and Pier 70, would generally remain in its current location and configuration. With the new underpass constructed north of Broad Street below the main line tracks and under the proposed Olympic Sculpture Park, the north and southbound lanes will connect directly to Elliott Avenue. Optionally, if the underpass were not constructed, they would connect as they do today at Broad Street. In either case, at approximately what would be the extension of Pine Street or Pier 62, the northern portion of Alaskan Way would elbow eastward to join the main line as it proceeds up the hill and over the mainline railroad tracks. This configuration of the two facilities would also create the opportunity for a new waterfront park directly adjacent to the Seattle Aquarium.

There are several ways in which the basic vehicular functions required for city-wide and regional traffic movements, as described above, can be integrated with the need for local access to waterfront resources, pedestrian and bicycle movement, streetcar service and landscaped open space areas. In the Surface Alternative, because of the high traffic demands, it is especially important to utilize the structure of the circulation system and the elements within it to try to overcome the potential barrier effect for pedestrians crossing the wide roadway and to create an appropriate transition between the waterfront activities and

the waterfront as a recreational and scenic resource and the function of the Corridor for through-movement. However, it is important to recognize that no matter how hard we try to create a better environment through an appropriate configuration of elements within the Corridor, a six-lane facility with 75,000 cars per day on the surface imposes substantial limitations on the potential to create a pedestrian friendly and amenable environment.

As previously stated, all the elements within the portion of Alaskan Way from Pier 62 to Pier 70 would be limited to their existing size, location and configuration. South of Pier 62 to King Street, there are two primary variations for how the elements can be configured. One assumes that a frontage road will be provided between Yesler Way and Pier 62 and locates an exclusive trackway for the streetcar adjacent to it. The other assumes the exclusive trackway to be located between the north and the southbound lanes with in a wide median but does not include the frontage road. Each of the two variants has certain advantages and disadvantages. The frontage road option with the trackway on the west side creates a desirable transition between the scenic, recreational and open space activities associated with the waterfront and the through-movement requirements of the Corridor. The boulevard variation with the wide median and trackway between the north and southbound lanes helps to more effectively break up the size of the roadway and therefore may reduce the perception of it as a barrier for pedestrians crossing at each of the intersections. However, even in the configuration with the frontage road, a 15-foot wide median would still be provided to create a safe haven for pedestrians and for left turns. A variation locating the streetcar tracks in a shared vehicular lane is not a consideration due to the high volumes of traffic that must be accommodated.

In both configurations, a minimum 25-foot promenade can be achieved and a new open space area can be created adjacent to the Seattle Aquarium. Also in both configurations, south of Yesler Way to King Street, with the reconfiguration of Pier 48 and the expansion of Colman Dock and in conjunction with the provision of the new exclusive accessway to the ferry terminal, the opportunity for an important new waterfront open space as well as a waterfront promenade is created. Also in both options, bicycles south of Yesler Way are in a Class I bikeway just east of the exclusive access road to the ferry terminal and adjacent to the potential open space areas. North of Yesler Way to Pier 62 in both options, striped Class II bike lanes within the roadway are provided. The bike lanes can also be extended in both options on the new surface arterial to Elliott and Western Avenues.

### **The Bypass Alternative**

The Bypass Alternative combines the use of a four-lane below-grade tunnel with surface circulation improvements to meet both city-wide and regional transportation functions and local access needs. The below-grade tunnel creates an uninterrupted channel for north and southbound traffic bypassing the downtown waterfront and connecting SR 99 to the Battery Street Tunnel. The Bypass Tunnel follows the shoreline and is integral to the seawall reconstruction. North of Union Street, it sweeps inland to the east and slowly rises out of the ground to become an elevated single-level structure that crosses over the main line

railroad tracks and Elliott and Western Avenues and descends directly into the existing four-lane Battery Street Tunnel. Because some of the transportation functions are located below grade, this alternative offers more opportunities for the location, size and configuration of surface improvements than the Surface Alternative.

**Pioneer Square Area.** From King Street to Yesler Way, the Surface Alternative assumes separate access to and from the Washington State Ferry Terminal along the edge of a reconfigured Pier 48 and expanded Colman Dock. The design variation for this area integrates the access to the ferry terminal with the roadway functions and therefore provides for ferry queuing and access from a holding area on the east side of SR 99. In the Alternative, with separate access to the ferry terminal, Alaskan Way is a six-lane facility. In the design variation with access integrated within the roadway, Alaskan Way in this segment becomes an eight-lane facility. The Bypass Alternative also allows for two variations for how access is provided to the Midtown area. These include the use of Western Avenue to augment Alaskan Way, as is required in the Surface Alternative, or to rely solely on Alaskan Way.

In all configurations, a minimum 15-foot median is suggested between the north and southbound lanes to accommodate two southbound left turn pockets at South Jackson Street and South King Street and to provide a safe haven for pedestrians crossing the street. As in the Surface Alternative, in this reach of the waterfront, there are several choices for how to transition the streetcar from Alaskan Way to the Pioneer Square area. The options to the greatest extent are dependent upon the location of the streetcar tracks in the Midtown area. The options for bicycle access in this area, however, may be limited to a Class I facility on the west side of the roadway adjacent to the marginal wharf area of Pier 48.

This portion of the roadway is adjacent to the historic Pioneer Square District and the removal of the Viaduct will improve the visual environment and the potential of the historic buildings fronting Alaskan Way. However, a six to eight-lane heavily traveled facility like this one is likely to still be a substantial barrier to waterfront resources. If Pier 48 is removed for the expansion of Colman Dock, for the first time in recent history there will be a relationship between Elliott Bay and the historic Pioneer Square area and the potential for a new important public open space and a wide pedestrian promenade adjacent to open water which will help overcome the barrier effect of the roadway.

**The Midtown Area.** As described herein, the Midtown area extends from Yesler Way to Union Street. However, within this area, there are different vehicular access requirements north and south of Spring Street. From Yesler Way to Spring Street, the vehicular movement requirements include the provision of access to the Midtown area and for through-movement to Belltown and Ballard Interbay as well as for local access to activities along the waterfront. North of Spring Street, the access requirements drop off as Midtown access is provided and due to the fact that the cross streets do not connect to the street grid because of the steep topography of Pike Place bluff. South of Spring Street, the vehicular requirements can be met either only on Alaskan Way in a six-lane cross-section (the primary

alternative) or on a combination of Alaskan Way in a five-lane cross-section and a one-way Western Avenue with two lanes northbound. If the vehicular lanes on Alaskan Way are shared with streetcar tracks, six lanes should be provided along with northbound access on a one-way Western Avenue in order to meet vehicular access requirements. North of Spring Street, the vehicular access requirements can be reduced to four lanes if the lanes are not shared with the streetcar.

Even with the Bypass Tunnel, the at-grade Alaskan Way still carries a substantial volume of vehicular traffic. Therefore, consideration can be given to the provision of a frontage road along the waterfront for slower-moving traffic and for service access to the historic character piers, for bus and taxi access to Colman Dock and the Seattle Aquarium and potentially for bicycle access as well. The frontage road can be designed as a narrow (20-foot wide) one-way southbound street with parking on the west side or as a 26-foot wide street with a shared lane for southbound vehicular and bicycle movement and a northbound exclusive bike lane. In this configuration, parking would still be on the west side of the frontage road. If a frontage road is not utilized to provide access to waterfront uses, the distance from the southbound lanes and on-street parking to the piers and other waterfront uses needs to be carefully considered. If the distance is too great, it will be very difficult to efficiently serve the uses and to provide for bus and taxi service as well as disabled access.

In the Midtown area, the Bypass Alternative, as in the Surface Alternative, provides for a minimum 25-foot promenade adjacent to the historic character piers and a 15-foot sidewalk adjacent to the cityfront on the east side of Alaskan Way. In addition, a minimum 10-foot median is provided between the north and southbound lanes as a safe haven for pedestrians and to accommodate southbound left turn pockets at Marion, Spring and University Streets. In addition, left turn pockets to the frontage road can also be provided at alternate intersections. In the design variations, options are explored that allow for a wider promenade and a wider median. The variations include maintaining or removing the frontage road; providing for an exclusive trackway or sharing vehicular lanes with streetcar tracks; or relocating the streetcar altogether to Western Avenue. The implication of these variations allows for the promenade width to vary from 25 to 67 feet and the median to vary from 10 to 15 feet. In the variation with the streetcar in shared vehicular lanes, a minimum 15 foot median is required to accommodate streetcar stops as well as left turn movements and a safe haven for pedestrians. In the design variation without a frontage road, which provides for the widest potential promenade, there is a significant distance for pedestrians to traverse from transit stops, curbside drop-off, disabled and service vehicle parking areas to the historic character piers and ferry terminal. In the design variation where the frontage road is retained and the streetcar is relocated to Western Avenue, a 35-foot promenade is provided as well as a frontage road and, with the additional space, creates a 37-foot wide greenway or linear open space with a Class I bikeway within it.

There are three streetcar variations in the Midtown area. One is for an exclusive single trackway with bypass tracks on the west side of the roadway. The second locates streetcar tracks in shared north and southbound vehicular lanes adjacent to a wide median that can

accommodate transit stops. The median should be a minimum 15-foot wide to provide for streetcar stops, left turn pockets and a safe haven for pedestrians. The third variation is for the relocation of streetcar service to Western Avenue in shared vehicular lanes from Yesler Way to University Street. North of University Street, the streetcar tracks would then go back to the west side of the roadway in an exclusive single trackway, as in the first variant. The tracks would also turn east on Yesler Way to Occidental Avenue and then south to Main Street.

In the Midtown area, bicycle access can best be provided in Class II bike lanes within the roadway for commuters with the least potential conflict with pedestrians. Alternatively, it can be provided in a separate landscaped median on the west side of the roadway in a Class I facility that can serve commuters but in addition offers greater recreational value. Consideration can also be given to the provision of Class II lanes in the roadway in combination with the mixed flow of bicycles and vehicles in a slower moving frontage road as previously discussed.

In summary, the parameters and variations of each of the functional elements can be combined to create four cross-sections for the Midtown reach of the Alaskan Way Corridor. The baseline alternative provides for six moving lanes with Class II bikeways on Alaskan Way from Yesler Way to Union Street as well as two northbound lanes on Western Avenue to Spring Street. It also includes a southbound one-way frontage road adjacent to the waterfront promenade and an exclusive trackway in a landscape median on the west side of the roadway. Variation 1 cross-section is similar to the baseline alternative, with the exception that it reduces the northbound carriageway on Alaskan Way to two moving lanes instead of three. Variation 2 cross-section maintains the six moving lanes on Alaskan Way and the two northbound lanes on Western Avenue, but shares the center lanes with the streetcar tracks and provides a wider median to serve transit stops and the other functions described above. This configuration does not include a frontage road and therefore the alignment of Alaskan Way in the Midtown area can either be moved further west adjacent to a 35-foot promenade, creating an opportunity for the expansion of cityside development or it can be maintained on the east side adjacent to a 15-foot sidewalk and on-street parking allowing for a 67-foot promenade area. The third variation provides for six moving lanes on Alaskan Way and does not include the use of Western Avenue for access to the Midtown area. Instead, it relocates the streetcar from Alaskan Way to Western Avenue to University Street, as described above. In this configuration, bicycle movement is located in a Class I facility on a wide landscaped median west of the roadway and a frontage road is provided for access to Colman Dock and the historic character piers.

**Pike Place and Belltown Area.** This reach of the waterfront encompasses the area along the shoreline from Union Street to Broad Street and the right-of-way of the existing Viaduct to the Battery Street Tunnel. Within this reach, the surface circulation system provides access from SR 99 to Ballard /Interbay either along the waterfront to Elliott Avenue via a new, below-grade underpass at the proposed Olympic Sculpture Park, or along the right-of-way of the Viaduct via Elliott and Western Avenues. The baseline alternative for surface

improvements in this area assumes that the underpass will be constructed and that the roadway will follow the shoreline providing the most direct route to the north. This alternative also includes a connection on a new surface arterial from Alaskan Way to the Elliott and Western Avenues. With both a new surface arterial as well as the underpass, a greater opportunity for the management of traffic in this Corridor is created. For example, truck traffic from Ballard/Interbay can be routed along the waterfront while vehicular access to the rapidly growing Belltown neighborhood could be routed along Elliott and Western Avenues. In this alternative, the number of lanes and the configuration of Alaskan Way between Pier 62 and Pier 70 will remain as it is today.

In the other three variations, it is assumed that the underpass at the proposed Olympic Sculpture Park is not constructed. In these variations, Alaskan Way sweeps eastward to become the new surface arterial, following the right-of-way of the existing Viaduct and creating a direct route to Elliott and Western Avenues. The new surface arterial would be designed as a four-lane facility and could include Class II bikeways as well. The interesting thing about this aspect of the Bypass Alternative is that, through the new surface arterial, an important new connection will be created between the Pike Place Market area and Belltown and the waterfront. The Viaduct, in the same alignment, although providing a direct connection to SR 99, did not provide a connection to the waterfront.

If the new underpass at Broad Street is not constructed the cross-section of Alaskan Way, between Pier 62 and Pier 70, can then be modified somewhat. The existing four lanes could be reduced to three lanes and a wider promenade created instead. The three lanes could be comprised of two southbound lanes and one northbound lane, or two northbound lanes and one southbound lane, depending upon left turn requirements and dominant direction of traffic flow. A bias to the southbound lanes could better provide for the service requirements of the Bell Street Pier and Cruise Terminal and more readily provide for left turns to the hotel and condominium development between the new surface arterial and Alaskan Way. South of the Lenora Street pedestrian bridge, there may be a possibility of further reducing the vehicular lanes to two lanes and making an even wider promenade, since no left turns are required in this area. At Pier 62, Alaskan Way could elbow to the east to connect with the main flow of traffic from Alaskan Way to the new surface arterial. This connection could also provide Class II bikeways to the existing Class I facility east of the tracks.

### **Tunnel Alternative**

The Tunnel Alternative provides for the majority of the citywide and regional transportation functions of the Viaduct to be met with a six moving lane below grade facility that also rebuilds the seawall in an integrated manner. The tunnel extends below grade from south of King Street to the Pike Street Hillclimb and then emerges vertically along the right-of-way of the Viaduct to become an elevated single level structure that provides direct access to the Battery Street Tunnel. The Alternative assumes that ramps are extended from the main line in the vicinity of the Pike Street Hillclimb area to surface directly adjacent to Pier 62 in the

center of this portion of Alaskan Way. Traffic then would proceed from and to the north along Alaskan Way to a new under crossing just north of Broad Street under the proposed Olympic Sculpture Park to directly connect with Elliott Avenue. In this configuration, the potential for the provision of a new surface arterial from the surface Alaskan Way at approximately Union Street to Elliott and Western Avenues still exists, although it is not included in the baseline Alternative. This would provide a direct and separate means of accessing the Belltown area to and from SR 99 and to and from the waterfront. In the Tunnel Alternative, the portion of Alaskan Way between Pier 62 and Pier 70 would remain as a four-lane vehicular facility with all of the remaining functions in their current configuration and location. An option assumes that ramps are provided from the elevated portion of the Tunnel Alternative to Elliott and Western Avenues, much as access is provided today from the Viaduct. In this option, traffic to and from Ballard Interbay would utilize Elliott and Western Avenues through Belltown, also much as it does today. This option also assumes that the underpass at the Olympic Sculpture Park would not be provided and the portion of Alaskan Way from Union Street to Blanchard Street could be narrowed to two lanes. North of Blanchard Street, Alaskan Way would be maintained as a four lane facility to provide for access to the cruise terminal.

The Tunnel Alternative utilizes the surface circulation system to access Midtown and the Washington State Ferries and to provide for local access and circulation needs for waterfront uses and activities. Access to the ferry terminal in this Alternative is on the west side of the SR 99 via a new East Marginal Way constructed, either as a part of this project or independently, on a portion of land currently occupied by Terminal 46. East Marginal Way would in turn provide access to a new exclusive three-lane frontage road along the marginal wharf of Pier 48 directly to the ferry terminal. If an off-site holding area for the ferry terminal is required, it would be located on the west side of SR 99 on land currently occupied by Terminal 46. Access to Midtown is provided on the surface via three northbound lanes through the Pioneer Square area to a two-lane, one-way northbound Western Avenue to Spring Street and the two northbound lanes of Alaskan Way. Southbound access from Midtown is provided by two southbound lanes of Alaskan Way which become three lanes through the Pioneer Square area. An option assumes that ferry terminal access will be integrated with the Alaskan Way roadway functions and therefore provides for ferry queuing and access from a holding area on the east side of SR 99. In this option, in addition to the two northbound moving lanes on Alaskan Way between South Washington and Yesler Way, two left-turn pockets for access to the ferry terminal are provided. In the variants to this option, two additional ways for access to Midtown are explored. They include the use of the two northbound lanes of Alaskan Way as in the alternative, but only utilize one lane access on a two-way Western Avenue instead of the conversion of Western Avenue to a one-way northbound street. The other variation which is considered utilizes only the two lane northbound Alaskan Way for access to the Midtown area.

Since the majority of the Viaduct's regional and citywide vehicular transportation functions are met below-grade, this alternative provides the greatest flexibility for how surface street

improvements can be configured and how other objectives for the waterfront might be met. Therefore, in the variants to this Alternative, several system-wide options related to how streetcar service may be replaced on the waterfront to better serve broader transit service objectives are explored. In these explorations, the extension of streetcar service beyond what is needed to replace the existing trackway disrupted by construction activity is not a part of the project, and is discussed and illustrated only to establish a context for how the replacement portions might relate to broader transit objectives. In the Tunnel Alternative, the existing streetcar service area, which extends from Myrtle Edwards Park to Union Station and Pioneer Square is maintained. Streetcar service on the waterfront is replaced on a single exclusive trackway with bypass tracks. Streetcar service could also be replaced by providing two tracks in shared vehicular lanes between Main Street and Union Street as in the Bypass Alternative.

There are two variants that support the potential expansion of streetcar service as a separate project. The first maintains the existing route of the historic streetcar from Main Street in Pioneer Square to Myrtle Edwards Park but augments it with an additional exclusive track in the Midtown and Pioneer Square area or from University Street to King Street. The exclusive two trackway provides additional capacity allowing for the future extension of streetcar service to Terminal 46 if it is developed for new urban uses. In addition, the two track service on the waterfront would also accommodate the potential extension of streetcar service from University Street northward on Western Avenue to the Pike Place Market area and on Blanchard Street eastward to South Lake Union. The second variant relocates streetcar service from the waterfront to Western Avenue and also extends the service to the Pike Place Market area and northward on Blanchard Street to South Lake Union. In this variant, streetcar service to Pioneer Square is provided from Western Avenue along Yesler Way and Occidental to the existing line on Main Street. Streetcar service from Western Avenue can also be provided with a connection on University Street to Myrtle Edwards Park on an exclusive single trackway along the eastern side of Alaskan Way. If, however, the objective is to provide for more open space opportunities in the limited Alaskan Way right-of-way north of Pier 62, consideration could be given to the elimination of the streetcar connection to Myrtle Edwards Park.

**Pioneer Square Area.** In the Pioneer Square area, surface improvements associated with the Tunnel Alternative provide for vehicular access on a six-lane Alaskan Way and a separate three-lane frontage road with exclusive access to the Washington State Ferries. In addition, the option of meeting all the vehicular access requirements, including those for the ferry terminal, on a six-lane facility with two left-turn pockets at Yesler Way is considered. Streetcar service in this area can either be accommodated on an exclusive single trackway west of Alaskan Way, or in a widened median, or with a southbound track in a shared vehicular lane and the northbound track in the median. If expanded transit service with the potential extension to Pier 46 is pursued, an exclusive two-track transitway on the west side of Alaskan Way can also be considered. With the two track exclusive transitway, consideration should be given to a frontage road to provide access to the reconfigured property on the marginal wharf of Pier 48. In the alternative, options and variants, a Class I

bikeway is proposed west of the roadway as is a waterfront promenade and a cityside sidewalk. Pedestrian crossings at all of the cross-streets are provided as is a median between the north and southbound lanes. The median can serve both as a "safe haven" for pedestrians and to provide southbound left turn pockets on Jackson and King Streets. The most important variations considered for this area have to do not only with the amount of space that ultimately gets devoted to the movement functions, but also with the location of Alaskan Way. The variation with the greatest opportunity for waterfront open space and/or development reroutes the trackway from Western Avenue to Yesler Way and Occidental Avenue and provides approximately 250 feet of depth along the marginal wharf adjacent to the reconfigured Pier 48. The variation with the greatest capacity for intermodal access through this area still provides approximately 180 feet for open space and/or development along the waterfront. Additional variations where space is provided for expansion of cityfront development and waterfront open space and/or development, can also be considered and in these options, the roadway would be located accordingly between them.

**The Midtown Area.** In the Midtown area, between Yesler Way and Union Street, two northbound and two southbound lanes are accommodated in a four-lane configuration on Alaskan Way. If the streetcar tracks are accommodated in an exclusive trackway as previously discussed, a frontage road west of the trackway is desirable to provide access to the historic character piers and to the Washington State Ferries. In the alternative, a minimum of a 35-foot promenade along the water's edge and minimum 15-foot sidewalk are provided. In addition, a 10-15 foot median between the north and the southbound lanes is provided as a "safe haven" for pedestrians and for southbound left turn pockets at Marion, Spring and University Streets. If a frontage road is included in the options, northbound left turn pockets can also be provided to the frontage road at alternate cross-streets (i.e. Columbia, Madison and Seneca Streets). In the alternative and the majority of the variants in the Midtown area, bicycle access is provided on Class II bikeways either curbside or adjacent to curbside parking. In addition to the Class II bikeways, a bikeway could also be integrated with a slightly wider frontage road or a Class I bikeway could be provided in conjunction with an expanded open space adjacent to the frontage road, as discussed in the introduction to this paper.

The major variations related to this alternative are predicated on which objectives are given the greatest priority beyond meeting the basic multimodal transportation requirements of the Corridor. If transit service is given the highest priority, an exclusive two track transitway could be provided with substantial amount of space dedicated for transit stops, lighting, landscaping and other amenities which would enhance the image and identity of the trackway and its role in providing transit service. If open space is given the highest priority, it would best be fitted with the option that relocates the trackway to Western Avenue and the open space should be located on the waterside of Alaskan Way. However, because of the access requirements of the historic character piers and Washington State Ferries, this enhanced open space should be provided in conjunction with a frontage road adjacent to a broad promenade. The frontage road could then be closed for special events, unifying all the open space areas along the waterfront. If this configuration were pursued, a linear parkway

along the entire frontage from Western Avenue to Union Street would be created of approximately 60 feet in width. In conjunction with the frontage road and promenade, this open space would be expanded to 120 feet for special events. If the desire is to create a more intimate character to Alaskan Way and give additional space for the expansion of development opportunities along the cityfront, the roadway in the Midtown area could be relocated so that it is directly adjacent to the 35 foot promenade. In this configuration, the roadway could include the Class II bikeways and curbside parking on both sides of the street. The streetcar could either be relocated to Western Avenue or be integrated in shared vehicular lanes to keep the cross-section of the road as narrow as possible. This would allow for approximately sixty feet of additional depth along the cityfront for development.

**The Aquarium/Pike Street Hillclimb Area.** In the Aquarium/Pike Street Hillclimb area, between Union Street and Pine Street, Alaskan Way could be narrowed to two moving lanes in each direction and can be configured with two vehicular moving lanes in each direction with Class II bike lanes and curbside parking. It can also include a single track exclusive transitway. In all options, the continuation of the pedestrian promenade through this area is maintained. In this area, the below-grade tunnel starts to rise at the Pike Street Hillclimb, and is fully above grade just north of Pine Street. It is assumed that the portal, however, between the Pike Street Hillclimb and Pine Street will be covered in a manner so as to create opportunities for either open space and/or development above. However, there is a substantial grade change (approximately 35 feet) that would be required in the reconfigured ground plane above the covered portal. In this area, the roadway can either be extended parallel to the shoreline next to the pedestrian promenade, providing for an important open space or development area on the east side of the roadway, or it can sweep inland to create an important open space along the bay. An additional variation is to provide a one-lane southbound frontage road and a two-lane roadway without a median which sweeps inland. This variation would be aimed at providing better bus drop-off for the Aquarium and would allow the frontage road to be closed for special events.

**The Belltown Area.** In the area from Pine Street to Broad Street, because of the narrow right-of-way and the requirements of the cruise ship terminal, there are very few options for the reconfiguration of Alaskan Way. In the option with the Elliott and Western ramps and without the underpass at the Olympic Sculpture Park, Alaskan Way can be reduced between Pine and Blanchard Streets to two moving lanes with left turn pockets to inland areas. North of Blanchard to Broad Street, Alaskan Way could remain as a four-lane facility or, as discussed in the Bypass Alternative, be reduced to a three-lane facility with either a northbound or a southbound bias. The streetcar is most appropriately maintained in the existing single track transitway on the east side of the roadway. If additional open space is pursued and the trackway is relocated to Western Avenue, providing a broader service area for the streetcar, then additional space would be made available for the promenade in this reach of the waterfront.

## Key Characteristics of Surface Circulation System on Harborfront

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### REBUILD ALTERNATIVE

#### *Pioneer Square Area*

*Roadway:* Alaskan Way is located on the west side of Viaduct and includes four moving lanes (two in each direction). No on-street parking is proposed and public parking is located under the Viaduct.

*Ferry Terminal Access:* Exclusive access to ferry terminal along Pier 48 marginal wharf and with holding area west of SR 99 and south of King Street.

*Streetcar:* Exclusive single trackway under the Viaduct turning to South Main Street.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 25-foot pedestrian promenade along Pier 48 marginal wharf with sidewalk on the east side of the roadway adjacent to the northbound lanes and along the cityfront. Pedestrian crossings at all intersections.

#### *Midtown Area*

*Roadway:* Alaskan Way is located on the west side of the Viaduct and includes four moving lanes (two in each direction). On-street parking is located on the west side of the southbound moving lanes, providing drop-off, service vehicle and bus access to historic character piers. Additional public parking is provided under the Viaduct.

*Streetcar:* Exclusive single trackway on the west side of the Viaduct, adjacent to the northbound lanes.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 18 foot pedestrian promenade and an approximate 15-foot cityfront sidewalk. Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown*

*Battery Street Tunnel Connection:* The Viaduct connects directly into Battery Street Tunnel and provides on and off ramps to Elliott and Western Avenues.

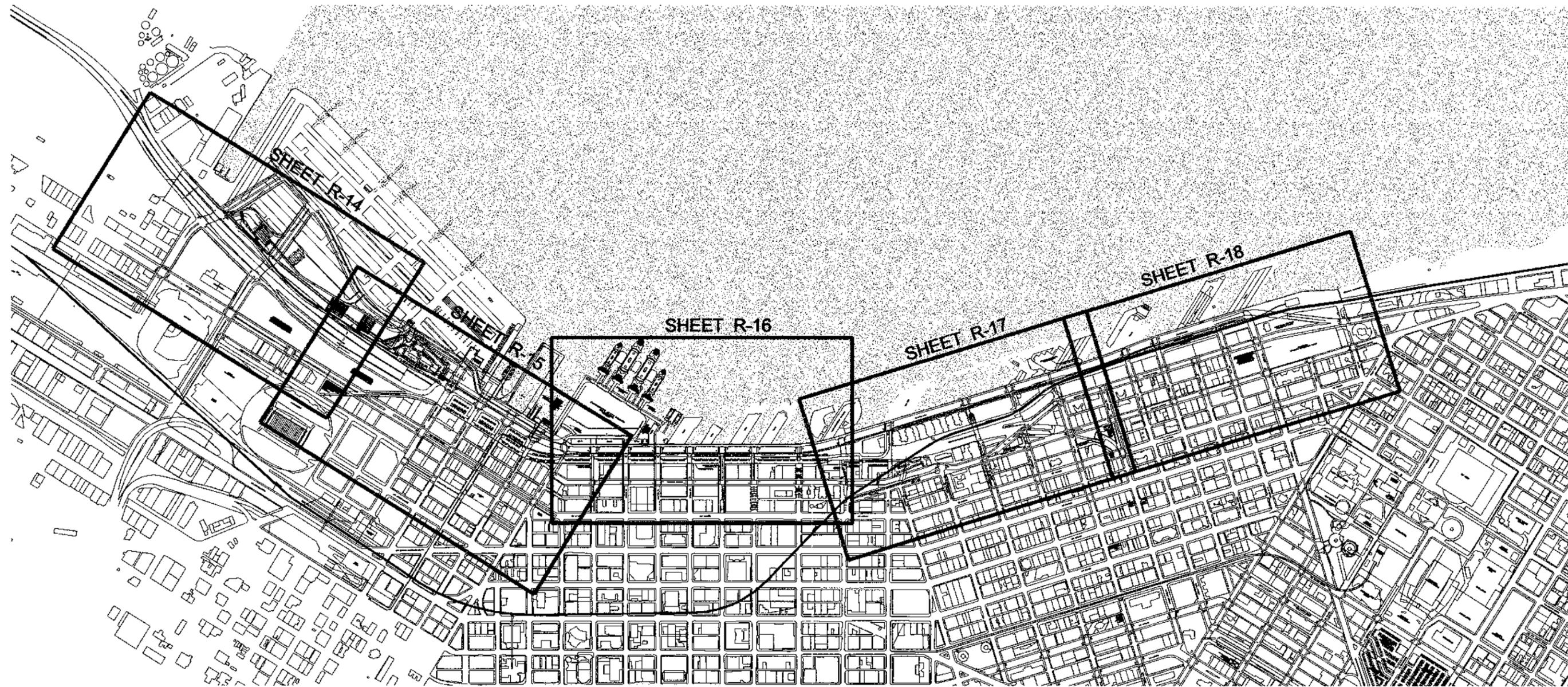
*Roadway:* Alaskan Way is a four lane facility (two lanes in each direction) with on-street parking on both sides of the roadway connecting to Broad Street and via an underpass at the Sculpture Park to Elliott Avenue. On-street parking is provided on both sides of the roadway to Cedar Street.

*Streetcar:* Exclusive single trackway on the eastside of the roadway as it is today.

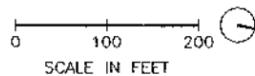
*Bicycle:* Shared bicycle trail east of the streetcar tracks from Pier 62 to Broad Street as it is today.

*Pedestrian:* Approximately 13 feet along the shoreline and an approximate 8-foot cityside sidewalk. Pedestrian crossings at all intersections with the roadway where streets terminate at Alaskan Way.

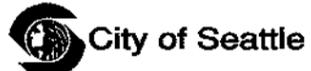
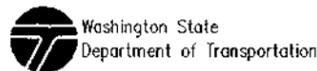
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NOTE:  
ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.



NOTE:  
STRUCTURES AND STREET CHANNELIZATION SHOWN  
BEYOND THE PROJECT BOUNDARY ARE ONLY FOR  
THE PURPOSE OF ESTABLISHING THE CONTEXT FOR  
IMPROVEMENTS WITHIN THE PROJECT AREA

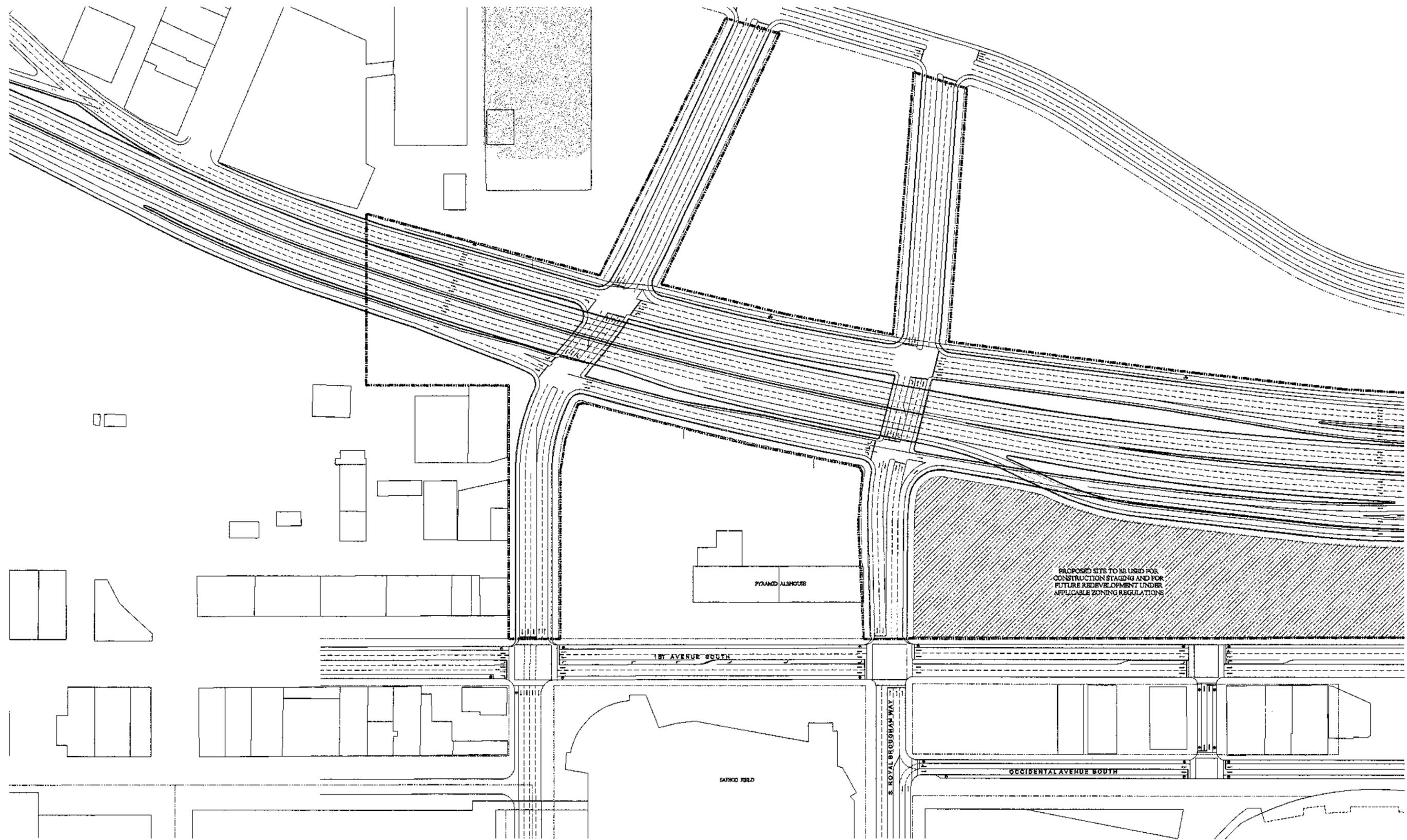


**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

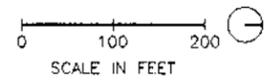
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**KEY PLAN**

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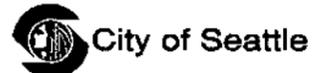
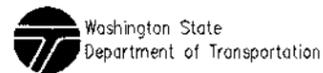
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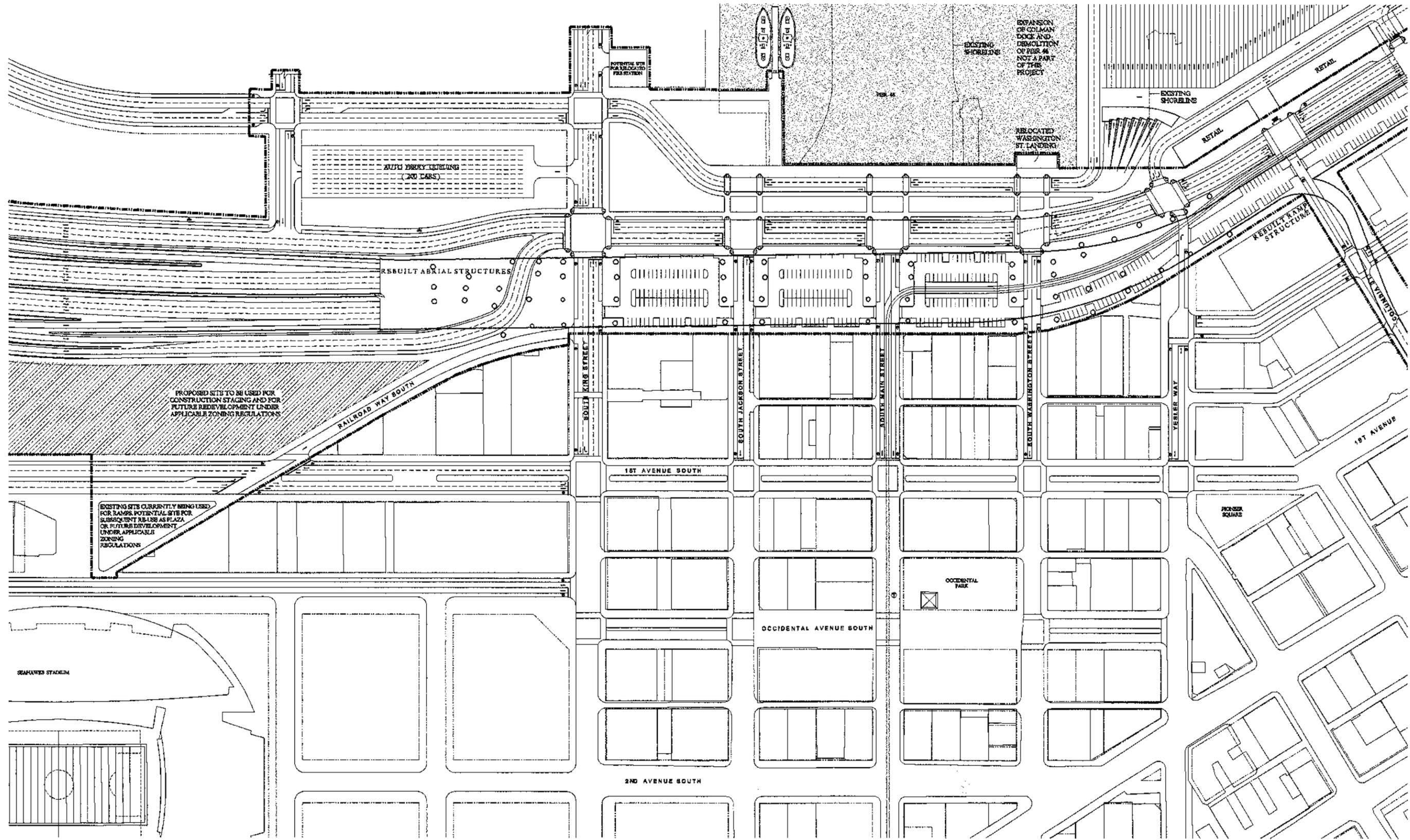
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

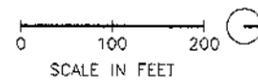
REBUILD ALTERNATIVE  
S. ATLANTIC TO RAILROAD WAY SOUTH

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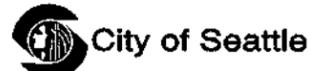
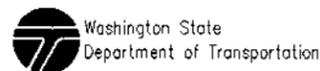


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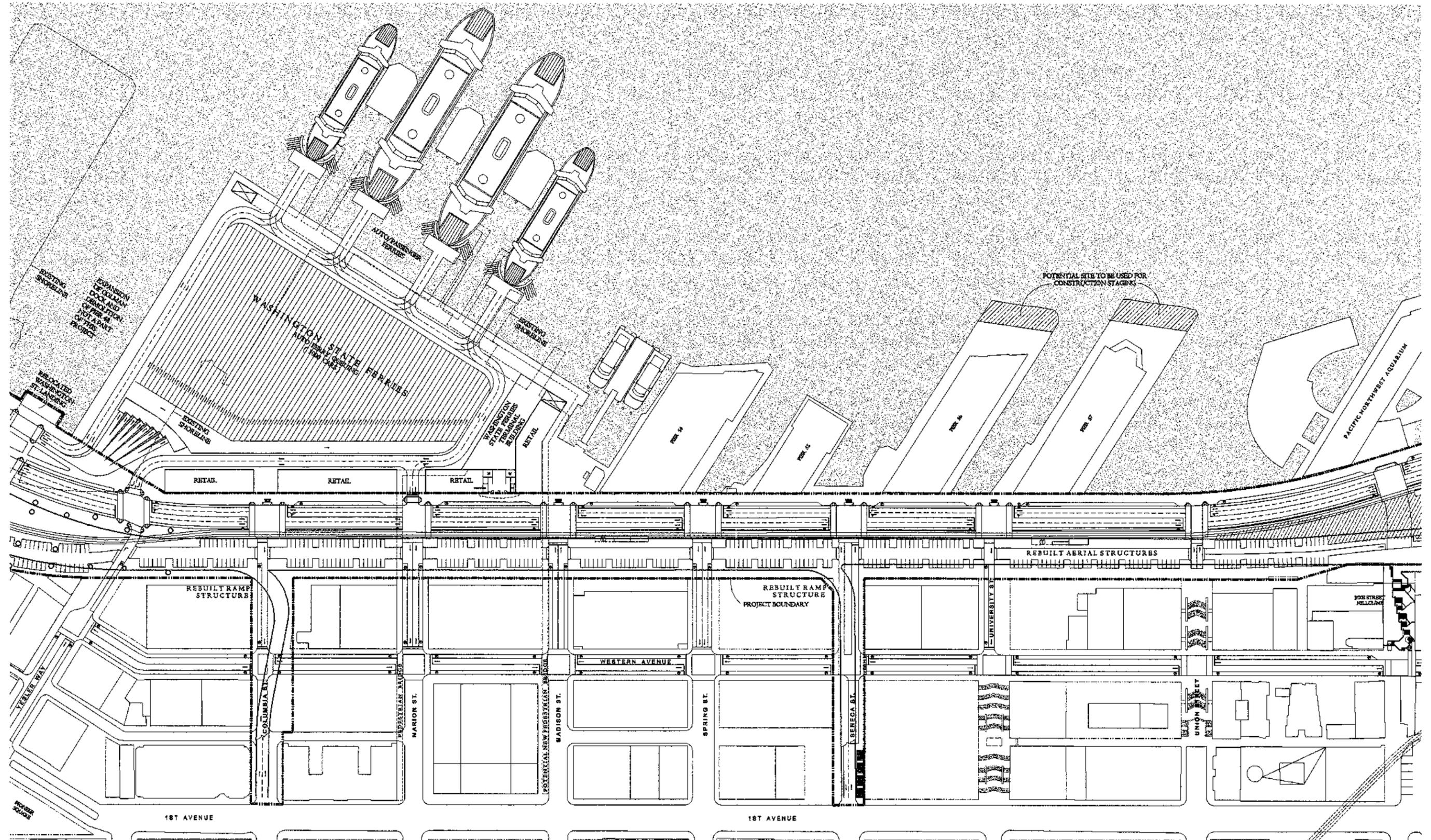


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

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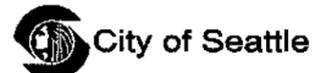
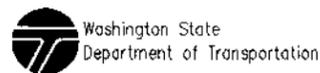
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PLOTTING DATE : 030204



NOTE:  
ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.

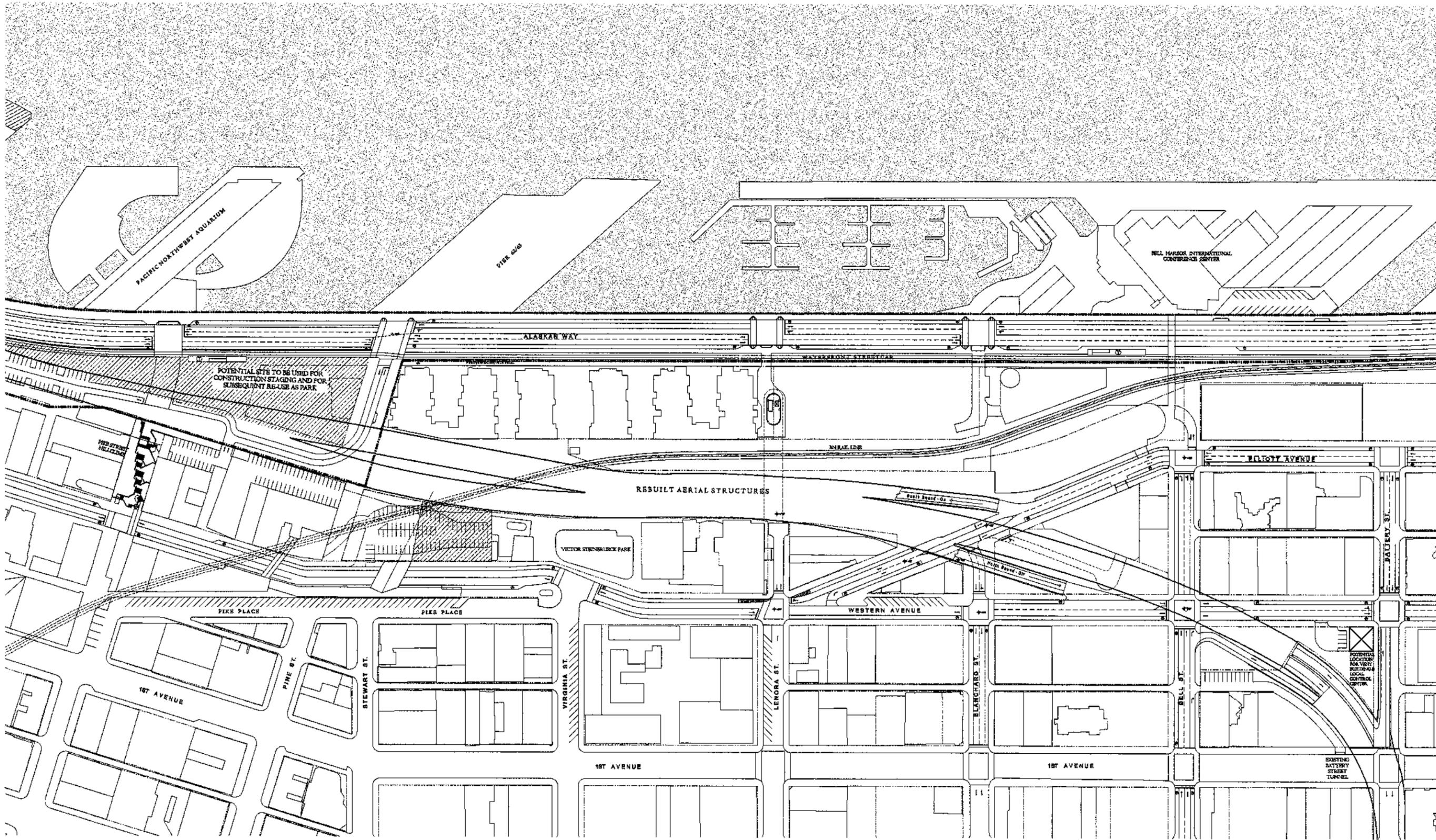
NOTE:  
STRUCTURES AND STREET CHANNELIZATION SHOWN  
BEYOND THE PROJECT BOUNDARY ARE ONLY FOR  
THE PURPOSE OF ESTABLISHING THE CONTEXT FOR  
IMPROVEMENTS WITHIN THE PROJECT AREA



ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

REBUILD ALTERNATIVE  
YESLER TO PIKE

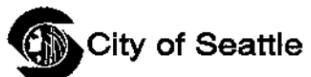
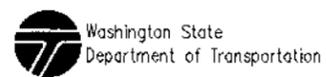
CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION



PLOTTING DATE : 03/02/04

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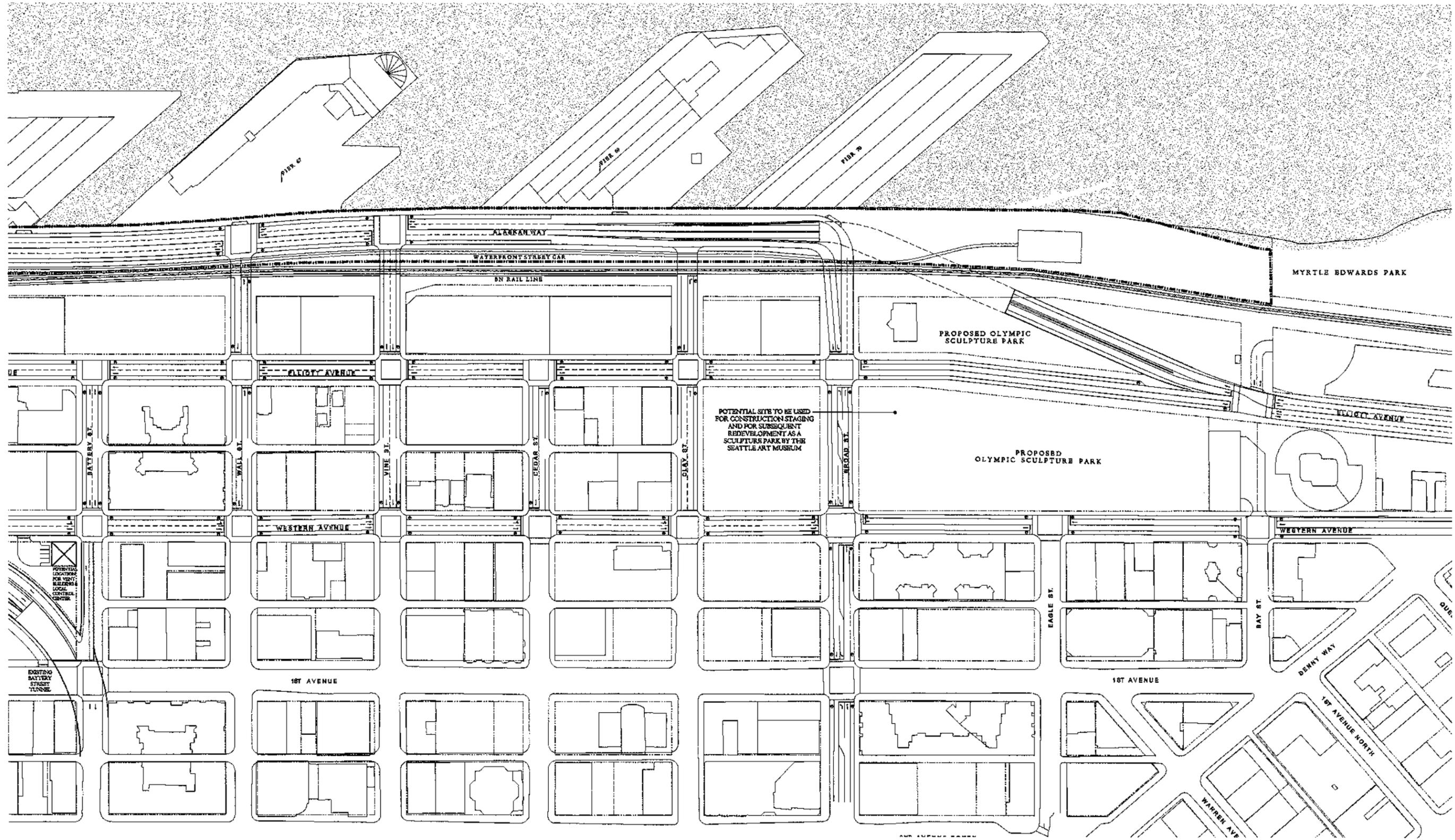
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

REBUILD ALTERNATIVE  
PIKE TO BATTERY

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION



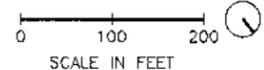
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POTENTIAL SITE TO BE USED FOR CONSTRUCTION STAGING AND FOR SUBSEQUENT REDEVELOPMENT AS A SCULPTURE PARK BY THE SEATTLE ART MUSEUM

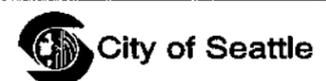
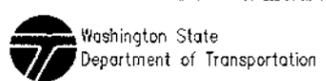
PROPOSED OLYMPIC SCULPTURE PARK

PROPOSED OLYMPIC SCULPTURE PARK

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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

REBUILD ALTERNATIVE  
BATTERY TO SCULPTURE PARK

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

## Key Characteristics of Surface Circulation System on Harborfront

---

### AERIAL ALTERNATIVE

#### *Pioneer Square Area*

*Roadway:* Alaskan Way – south and northbound generally under the Viaduct structure: four moving lanes (two in each direction) with median and left turn pockets. On-street parking on both sides of the roadway.

*Ferry Terminal Access:* Access to and from the ferry terminal is provided by Alaskan Way from a holding area under the new structure south of King Street.

*Streetcar:* Exclusive single trackway under the Viaduct turning to South Main Street.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 25-foot pedestrian promenade along Pier 48 marginal wharf. A wide sidewalk is provided along the cityfront and pedestrian crossings are provided at all intersections.

#### *Midtown Area*

*Roadway:* Alaskan Way – four moving lanes (two southbound located west of the new aerial structure and two northbound lanes located under the new aerial structure) with median and left turn pockets. On street parking is provided on both sides of the street adjacent to the northbound and southbound moving lanes.

*Streetcar:* Exclusive single trackway under the new aerial structure in the median between the north and the southbound lanes.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 30-foot pedestrian promenade with a cityside sidewalk of variable width partially under the new aerial structure. Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown Area*

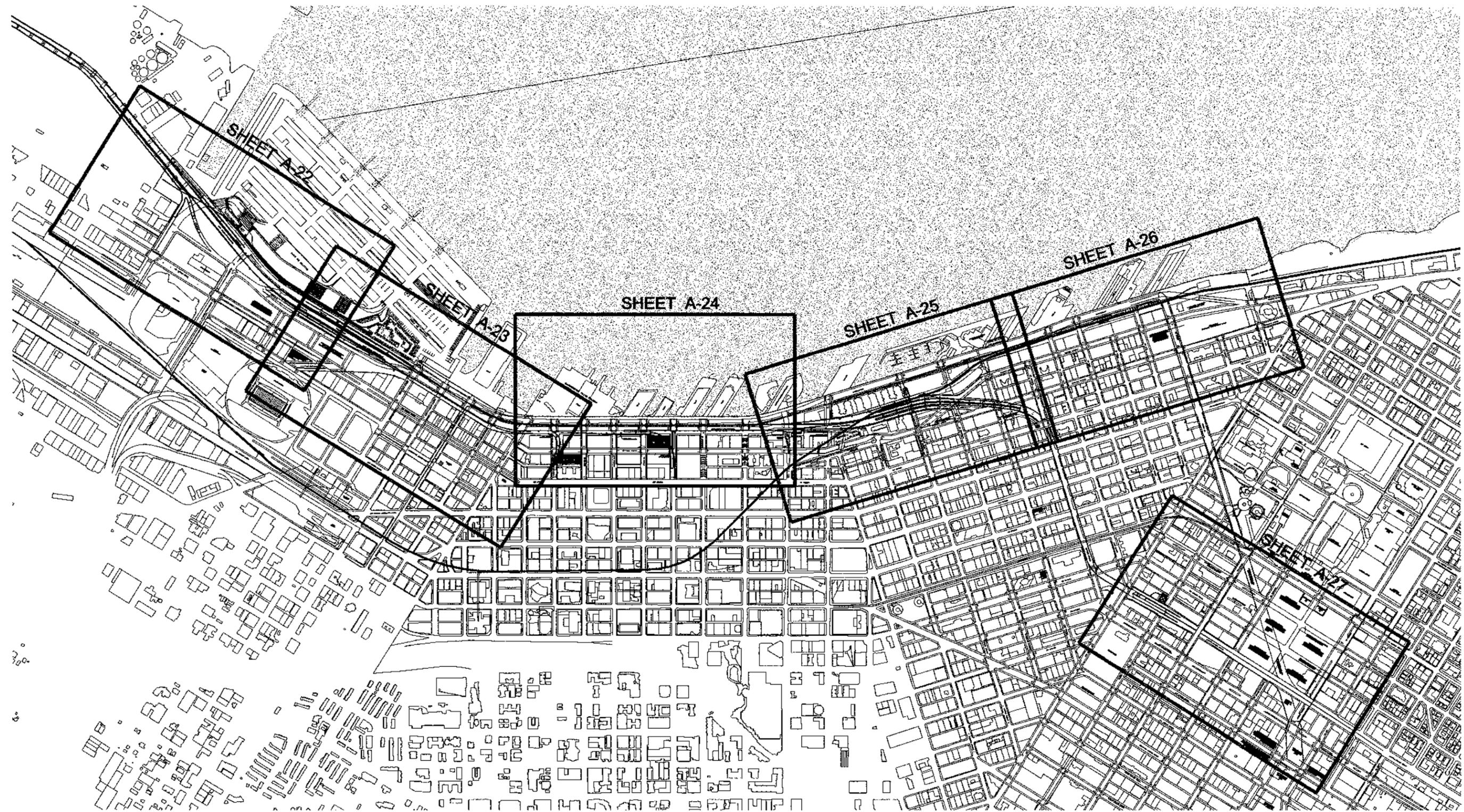
*Battery Street Tunnel Connection:* The Viaduct connects directly into Battery Street Tunnel and provides on and off ramps to Elliott and Western Avenues.

*Roadway:* Alaskan Way is a four lane facility (two lanes in each direction) with on-street parking on both sides of the roadway connecting to Broad Street and via an underpass at the Sculpture Park to Elliott Avenue. On-street parking is provided on both sides of the roadway to Cedar Street.

*Streetcar:* Exclusive single trackway on the eastside of the roadway as it is today.

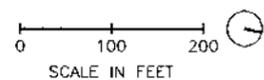
*Bicycle:* Shared bicycle trail east of the streetcar tracks from Pier 62 to Broad Street as it is today.

*Pedestrian:* Approximately 13 feet along the shoreline and an approximate 8-foot cityside sidewalk. Pedestrian crossings at all intersections with the roadway where streets terminate at Alaskan Way.

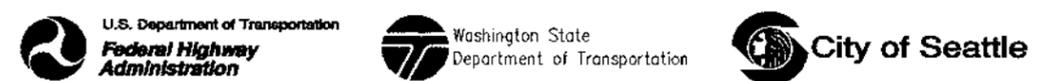


PLOTTING DATE : 03/02/04

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**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

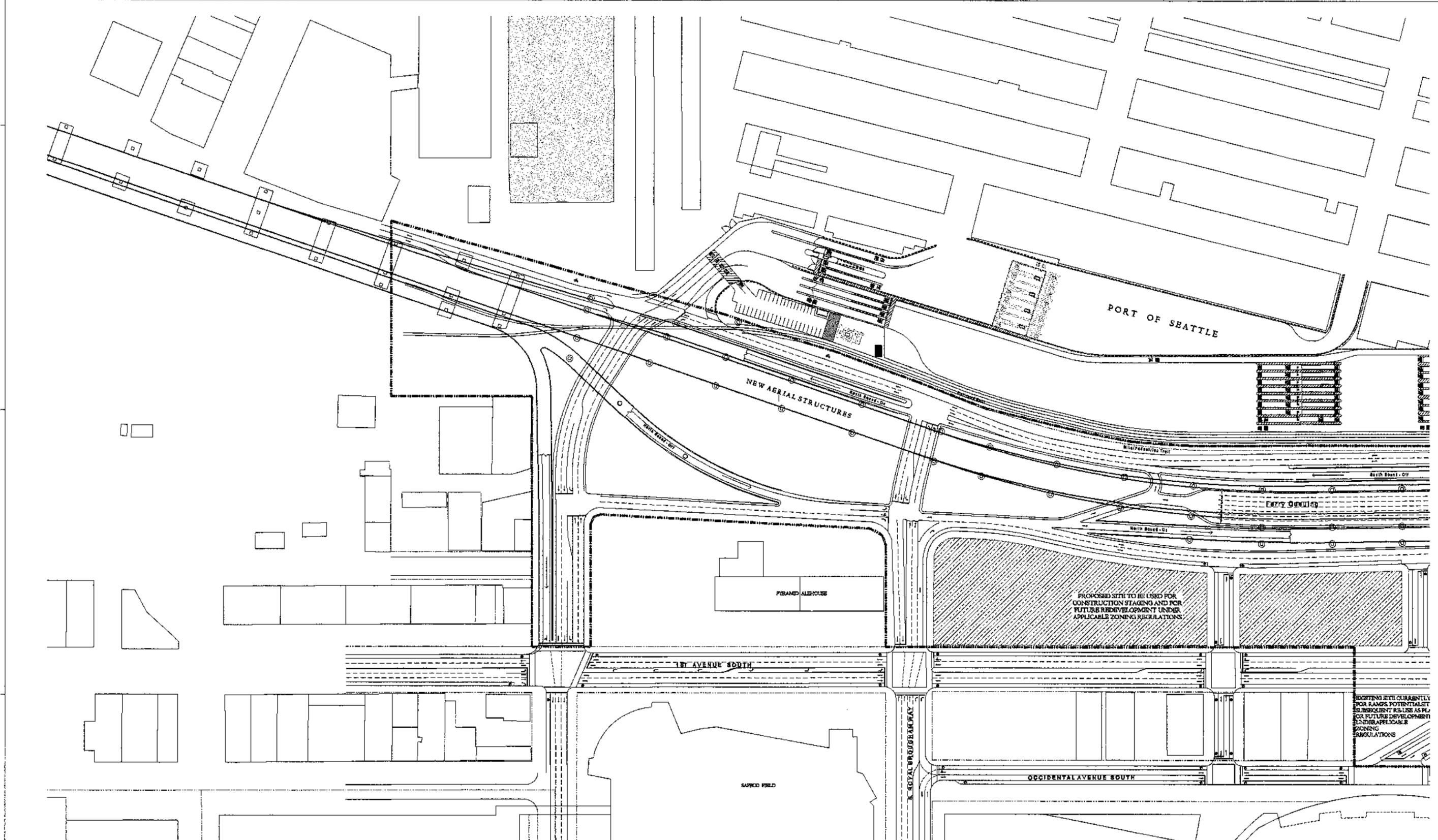
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**KEYPLAN PLAN**

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

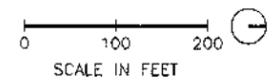
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SHEET  
FIGURE  
NO  
A-21

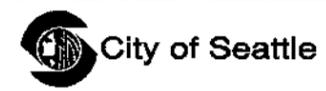
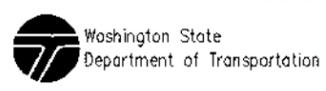
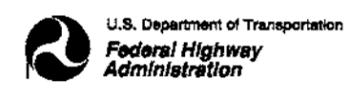
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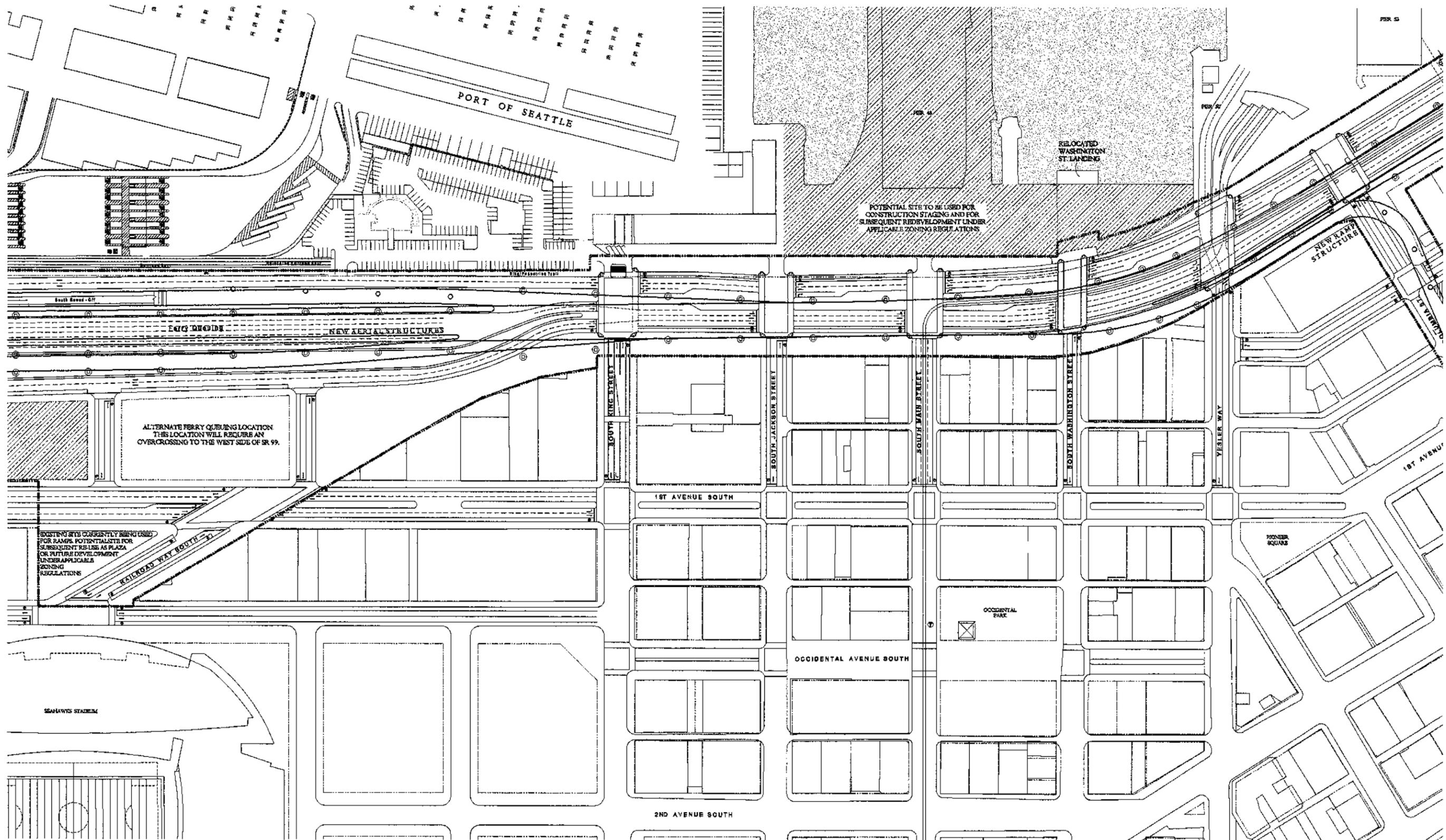


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
 SEATTLE, WA

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

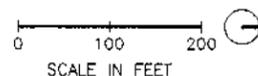
AERIAL ALTERNATIVE  
 S. ATLANTIC TO RAILROAD WAY SOUTH

SHEET  
 FIGURE  
 NO  
 A-22

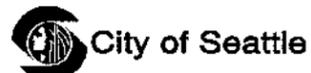
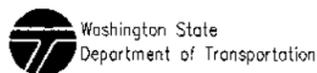


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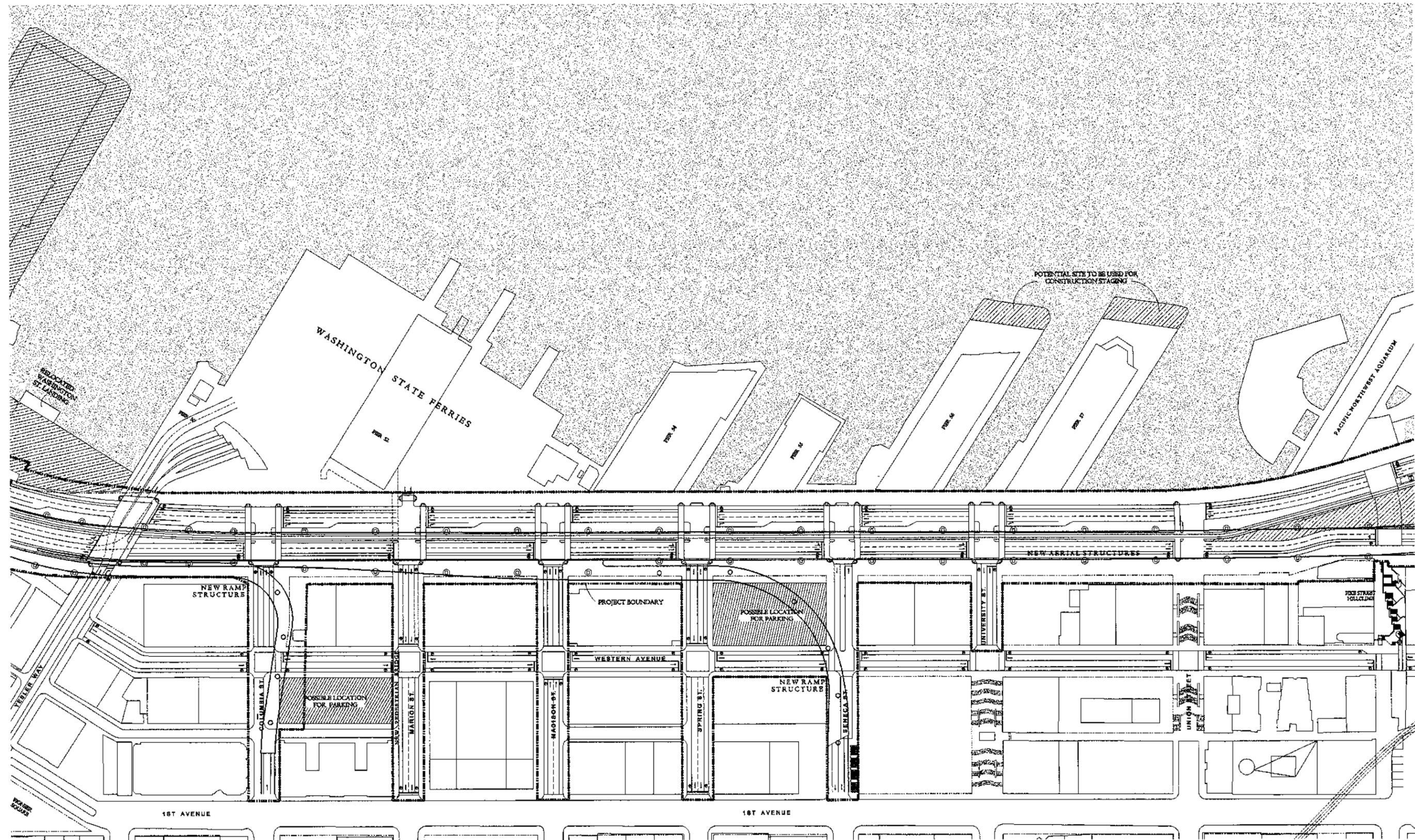


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

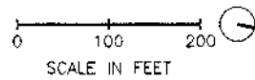
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RAILROAD WAY SOUTH TO YESLER

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

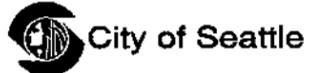
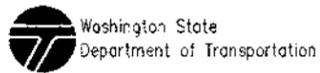
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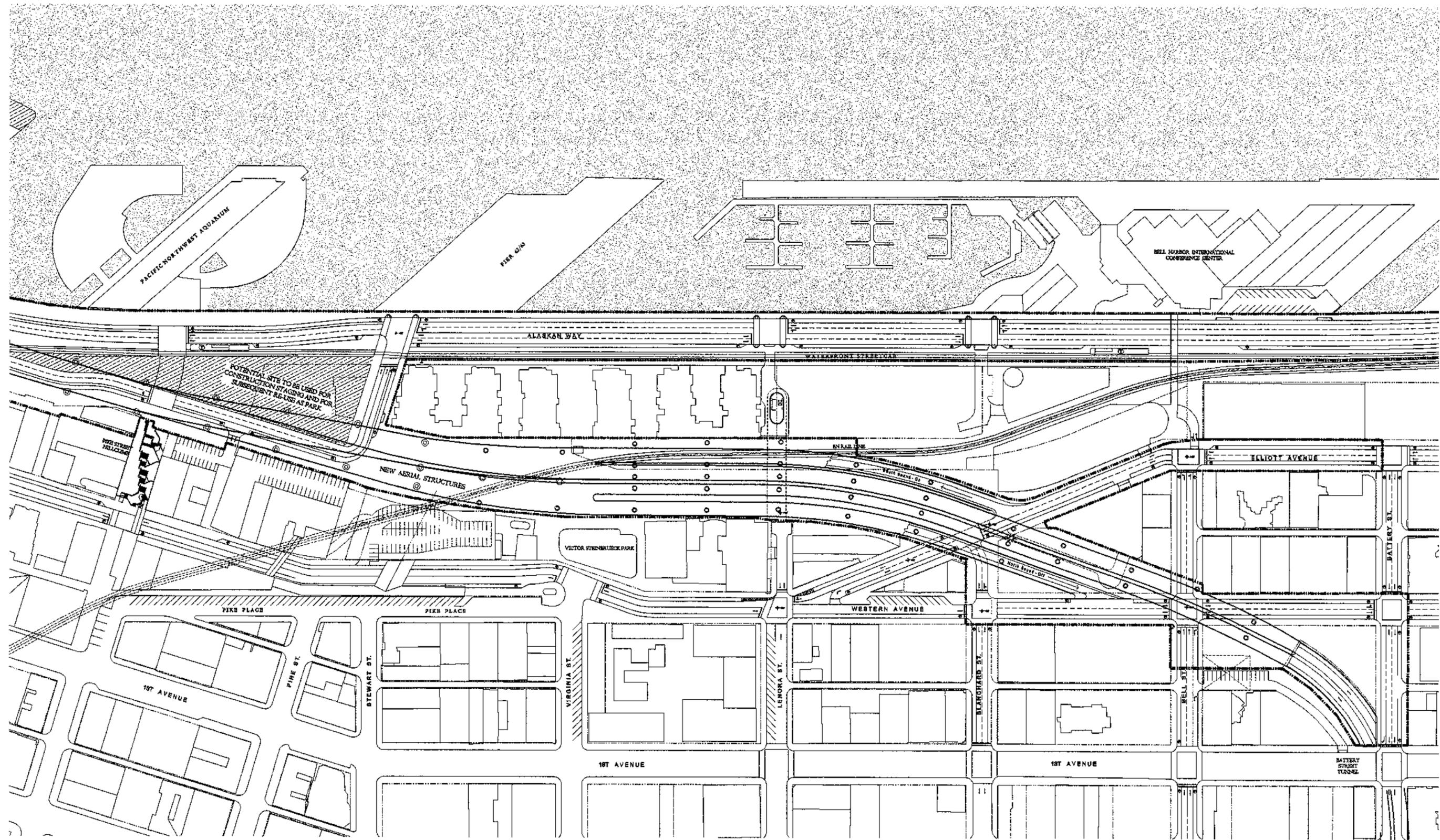
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

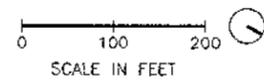
CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

AERIAL ALTERNATIVE  
YESLER TO PIKE

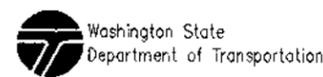


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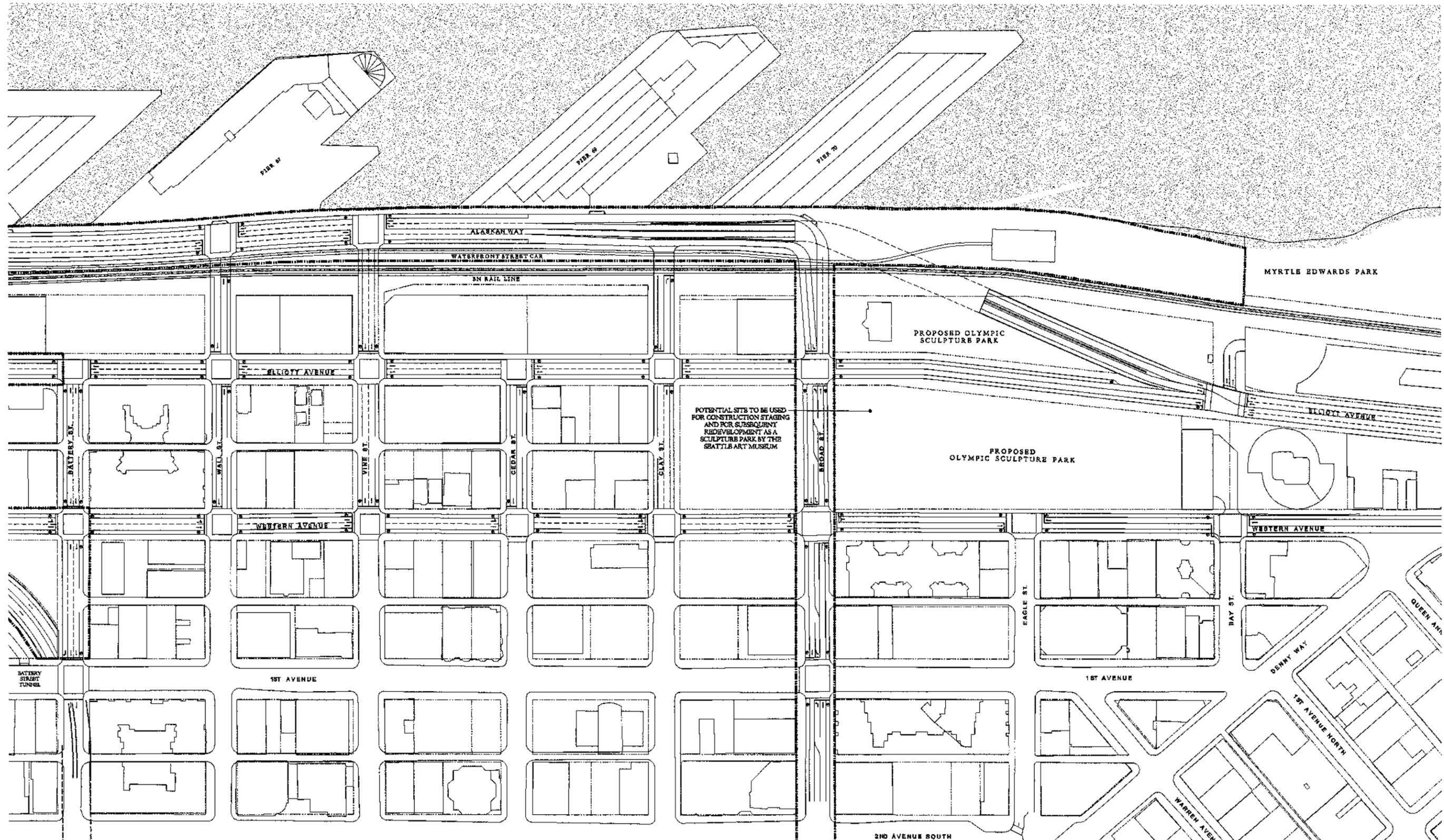
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

AERIAL ALTERNATIVE  
PIKE TO BATTERY

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

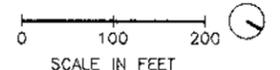


POTENTIAL SITE TO BE USED FOR CONSTRUCTION STAGING AND FOR SUBSEQUENT REDEVELOPMENT AS A SCULPTURE PARK BY THE SEATTLE ART MUSEUM

PROPOSED OLYMPIC SCULPTURE PARK

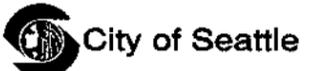
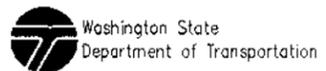
MYRTLE EDWARDS PARK

PROJECT BOUNDARY CONTINUOUS TO 5TH AVE.



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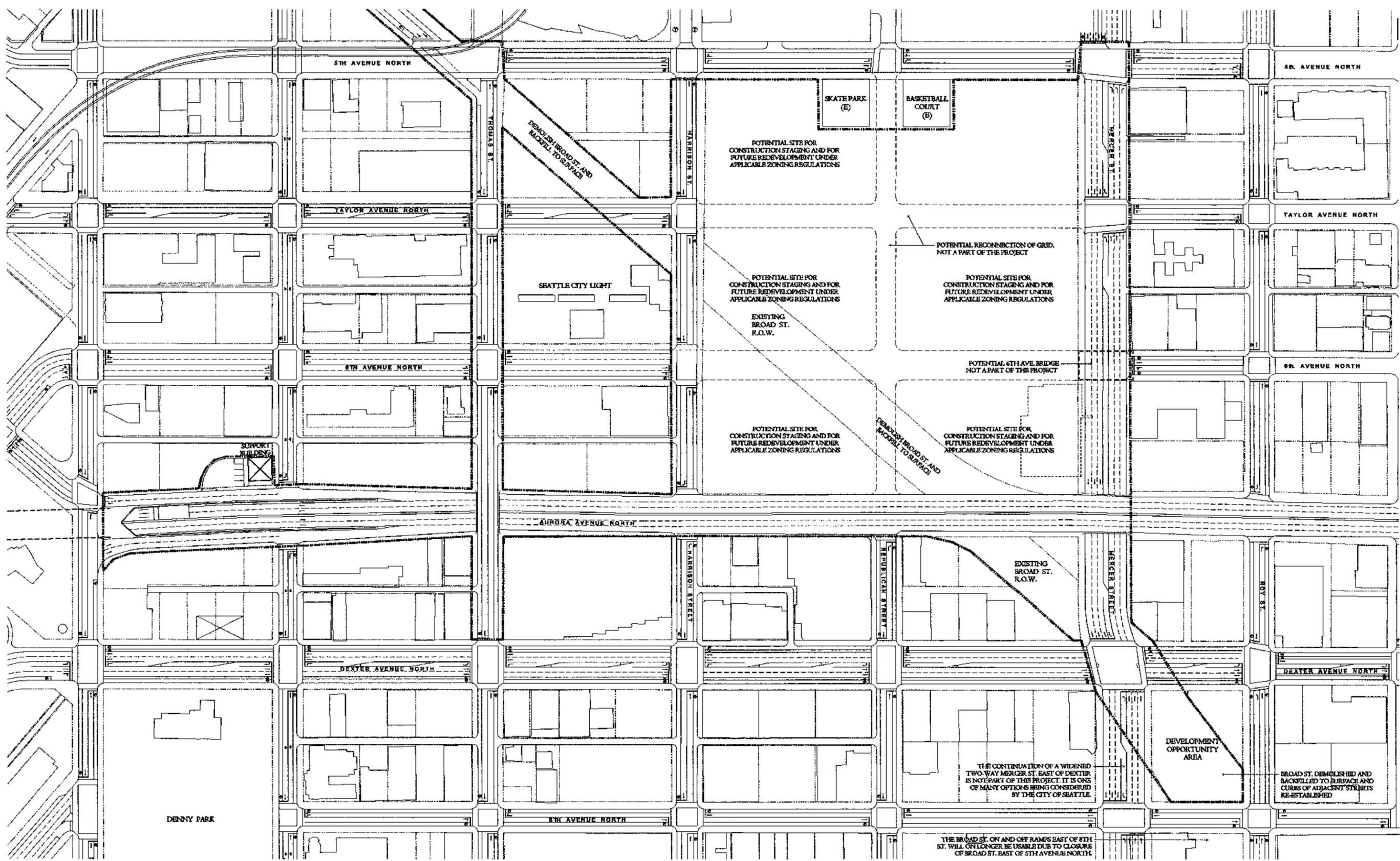
ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

AERIAL ALTERNATIVE  
BATTERY TO SCULPTURE PARK

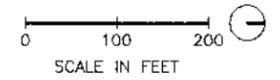
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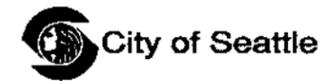
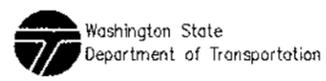
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
 SEATTLE, WA

AERIAL ALTERNATIVE  
 NORTH OF THE BATTERY STREET TUNNEL

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

## Key Characteristics of Surface Circulation System on Harborfront

---

### SURFACE ALTERNATIVE

#### *Pioneer Square Area*

*Roadway:* Alaskan Way – from South King Street to Yesler Way: Eight moving lanes (four in each direction) with median and southbound left turn pockets at South Jackson and South King Streets. On-street parking adjacent to northbound lanes from King Street to Washington Street and adjacent to southbound lanes from King Street to South Main Street. Two lane one-way northbound access from Alaskan Way to Western Avenue at Yesler Way.

*Ferry Terminal Access:* Exclusive access to ferry terminal along Pier 48 marginal wharf and with holding area west of SR 99 and south of King Street.

*Streetcar:* Exclusive single trackway west of vehicular lanes turning to South Main Street.

*Bicycle:* Exclusive bikeway (Class I) west of streetcar tracks and the Alaskan Way roadway.

*Pedestrian:* Approximately 25-foot pedestrian promenade along Pier 48 marginal wharf and an approximate 15-foot wide cityside sidewalk. Pedestrian crossings at all intersections.

#### *Midtown Area*

*Roadway:* Alaskan Way – Six vehicular moving lanes (three in each direction) with median and left turn pockets. On-street parking adjacent to northbound moving lanes from Yesler Way to Union Street.

*Frontage Road:* One-way southbound frontage road with parking on one side adjacent to promenade to provide drop-off, service and bus access to Washington State Ferries and historic character piers.

*Streetcar:* Exclusive single trackway on the westside of roadway.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway transitioning to a pedestrian/bike trail north of Pier 62.

*Pedestrian:* Approximately 25-foot promenade along the shoreline and an approximate 15-foot cityside sidewalk. Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown Area*

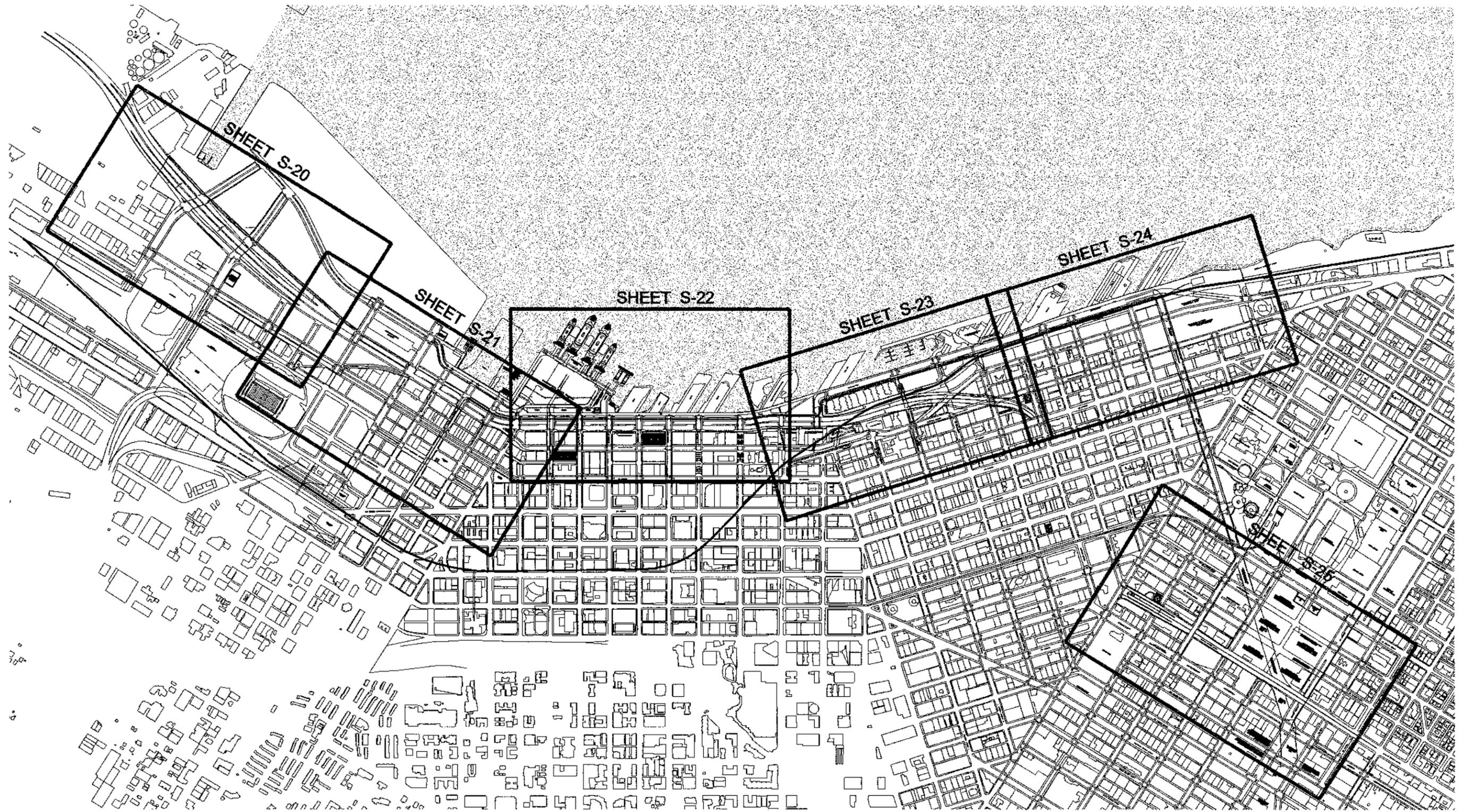
*Battery Street Tunnel Connection:* Roadway proceeds north of the Aquarium following the cityfront and the right-of-way of the existing Viaduct as a six-lane facility to become an aerial structure over the BNSF railtracks, to connect overhead into the Battery Street Tunnel and to provide vehicular and bicycle access to Western and Elliott Avenues.

*Roadway:* Alaskan Way north of Pier 62 along the shoreline is a four lane vehicular facility (two lanes in each direction) connecting to Broad Street and via an underpass at the Sculpture Park to Elliott Avenue. On-street parking is provided on both sides of the roadway to Cedar Street.

*Streetcar* – Exclusive single trackway on the eastside of the roadway as it is today.

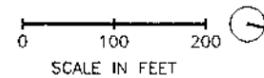
*Bicycle:* Shared bicycle trail east of the streetcar tracks from Pier 62 to Broad Street as it is today.

*Pedestrian:* Approximately 13 feet along the shoreline and an approximate 8-foot sidewalk on cityside. Pedestrian crossings at all intersections with the roadway.

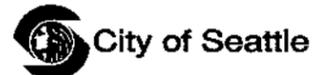
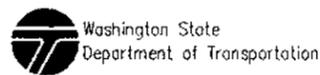


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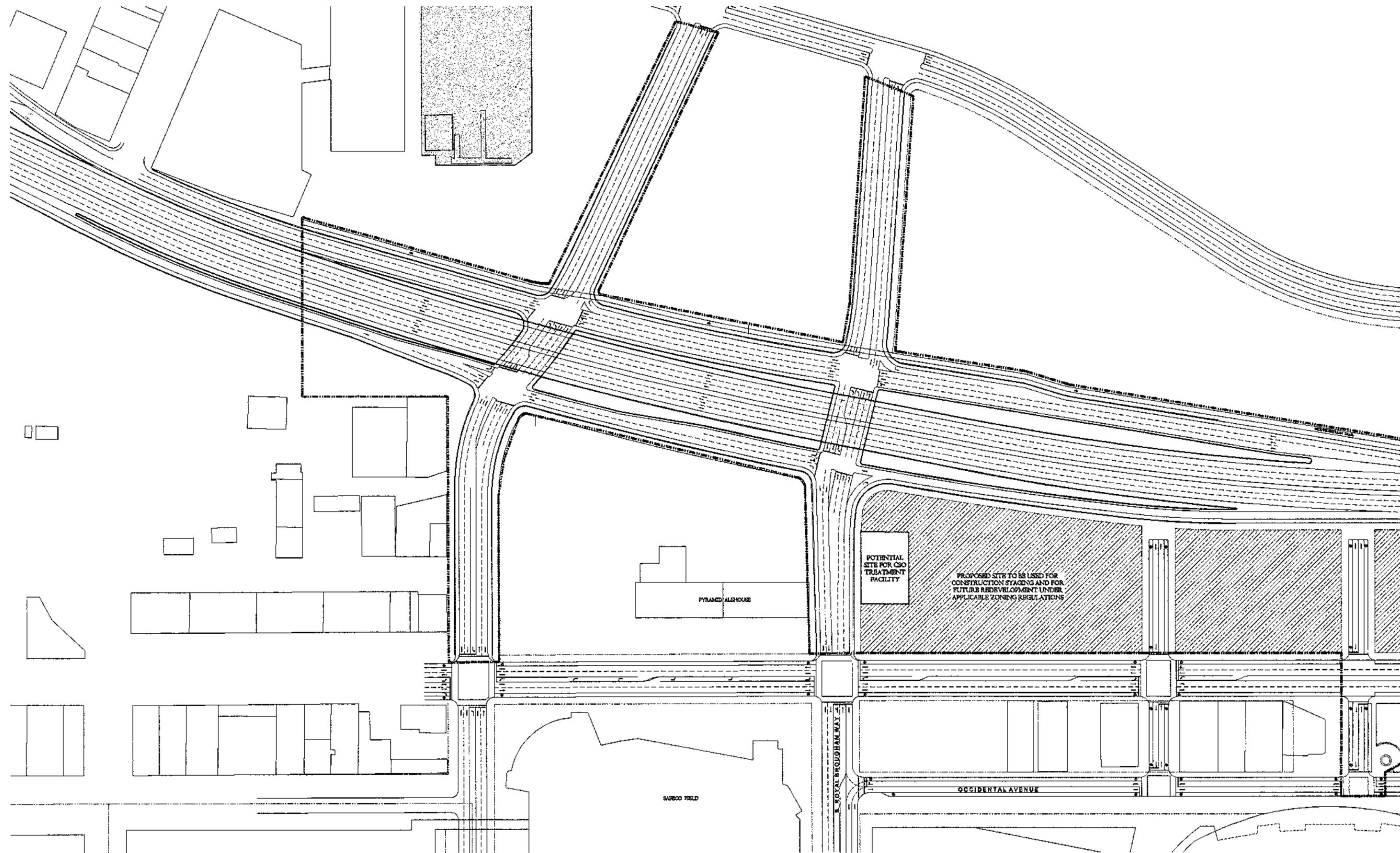


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

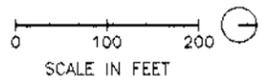
SURFACE ALTERNATIVE  
KEY PLAN

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

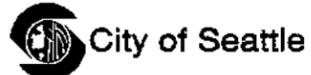
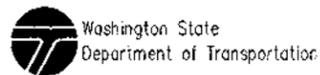
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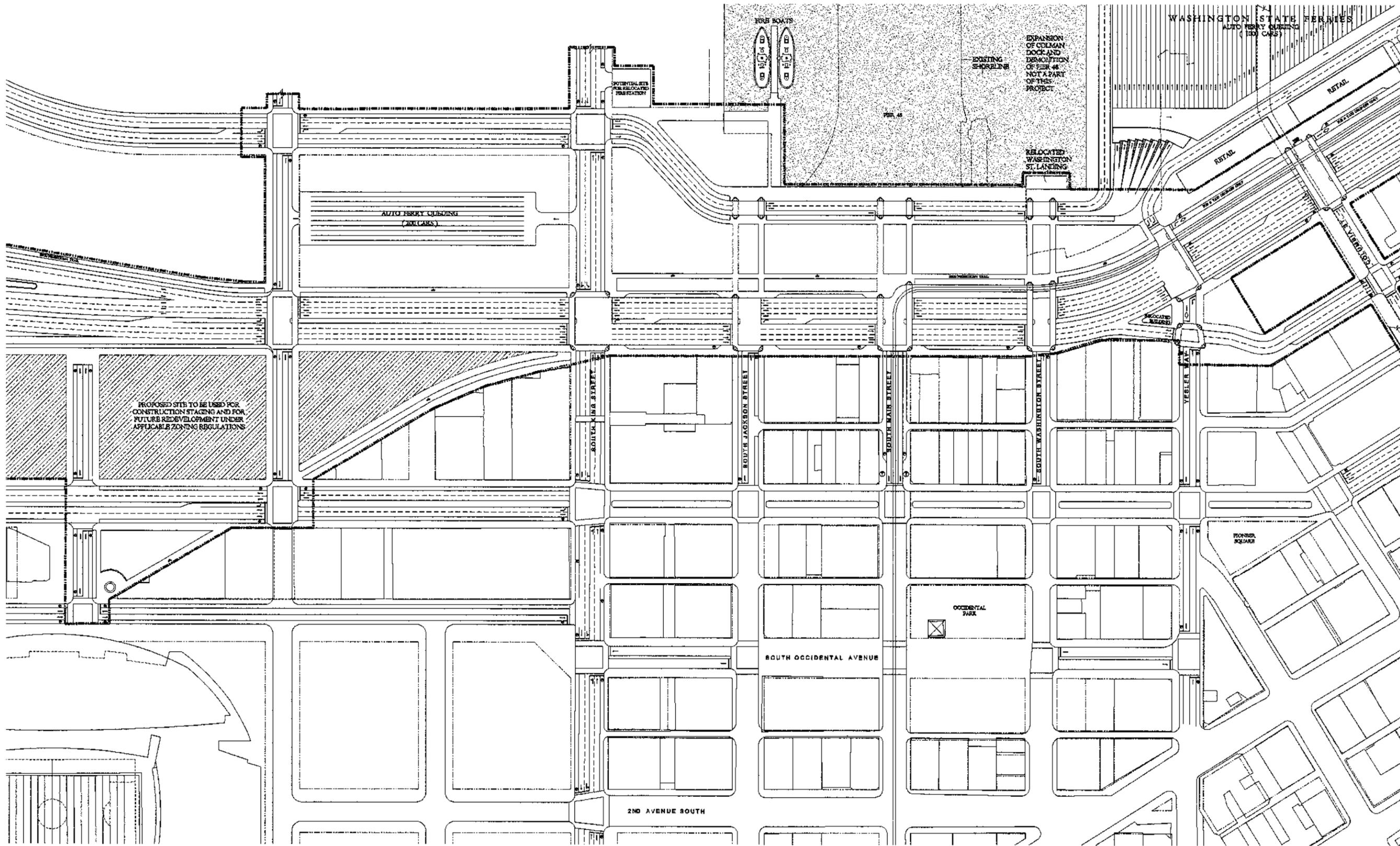


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

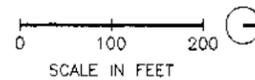
SURFACE ALTERNATIVE  
S. ATLANTIC TO RAILROAD WAY SOUTH

SHEET  
FIGURE  
NO  
S-20

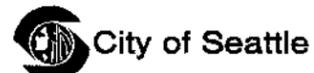
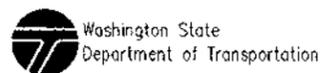


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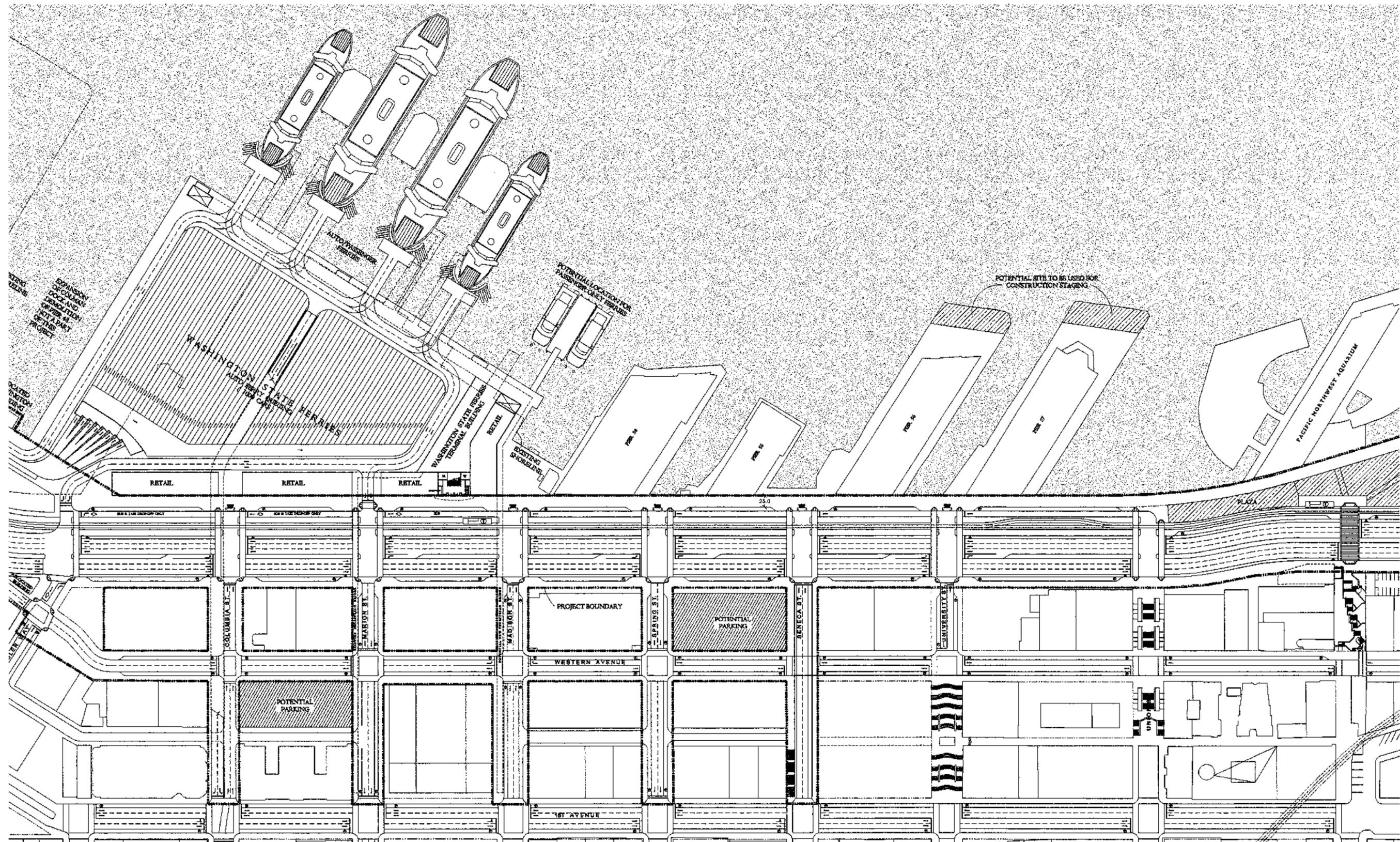
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

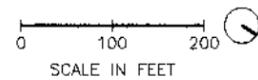
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RAILROAD WAY SOUTH TO YESLER

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

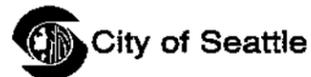
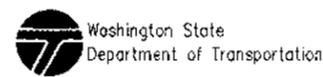


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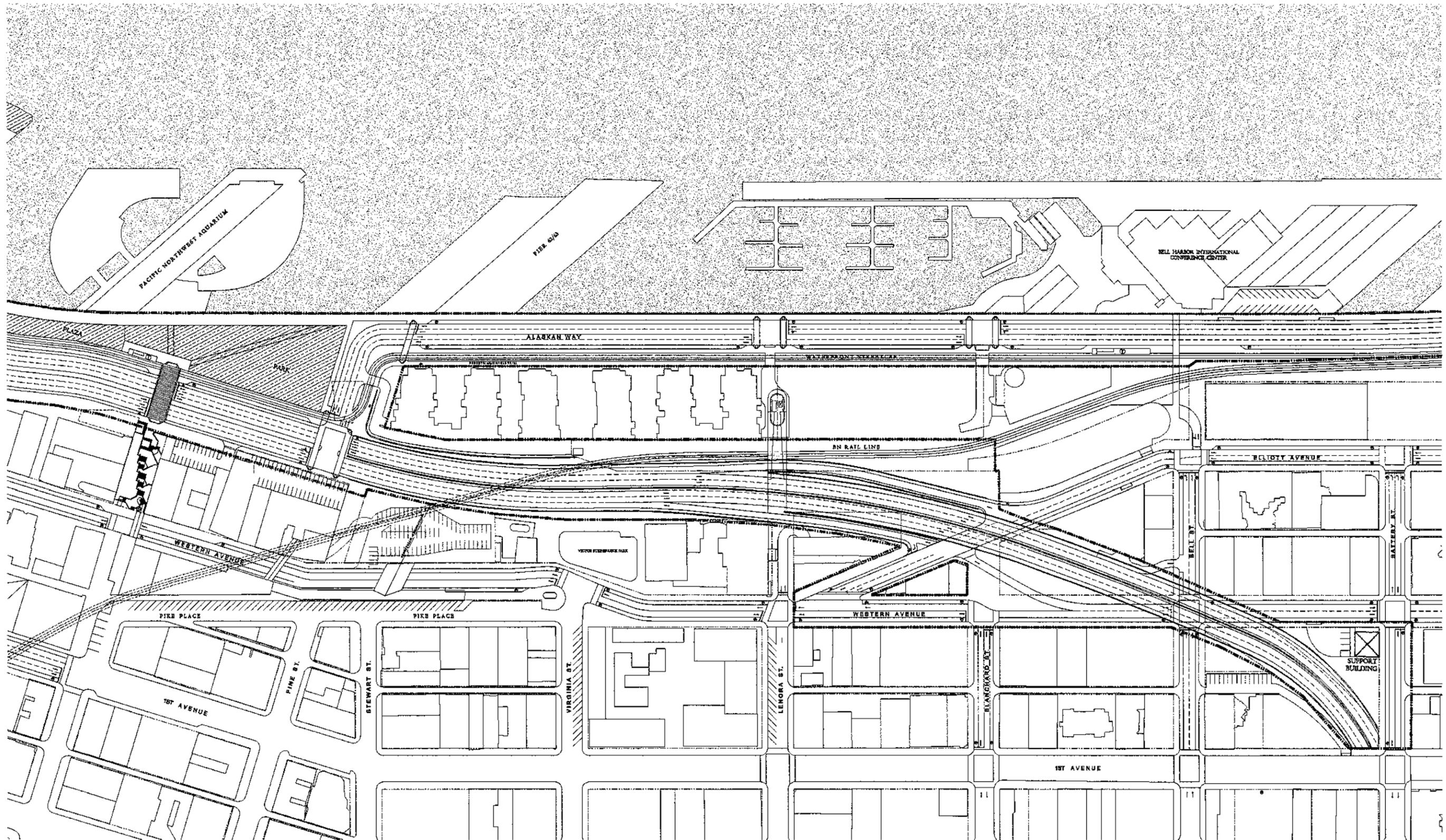
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**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

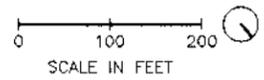
**SURFACE ALTERNATIVE**  
**YESLER TO PIKE**

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

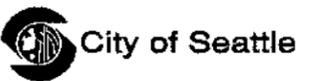
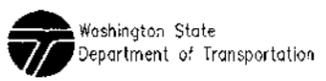


PLOTING DATE : 030204

NOTE:  
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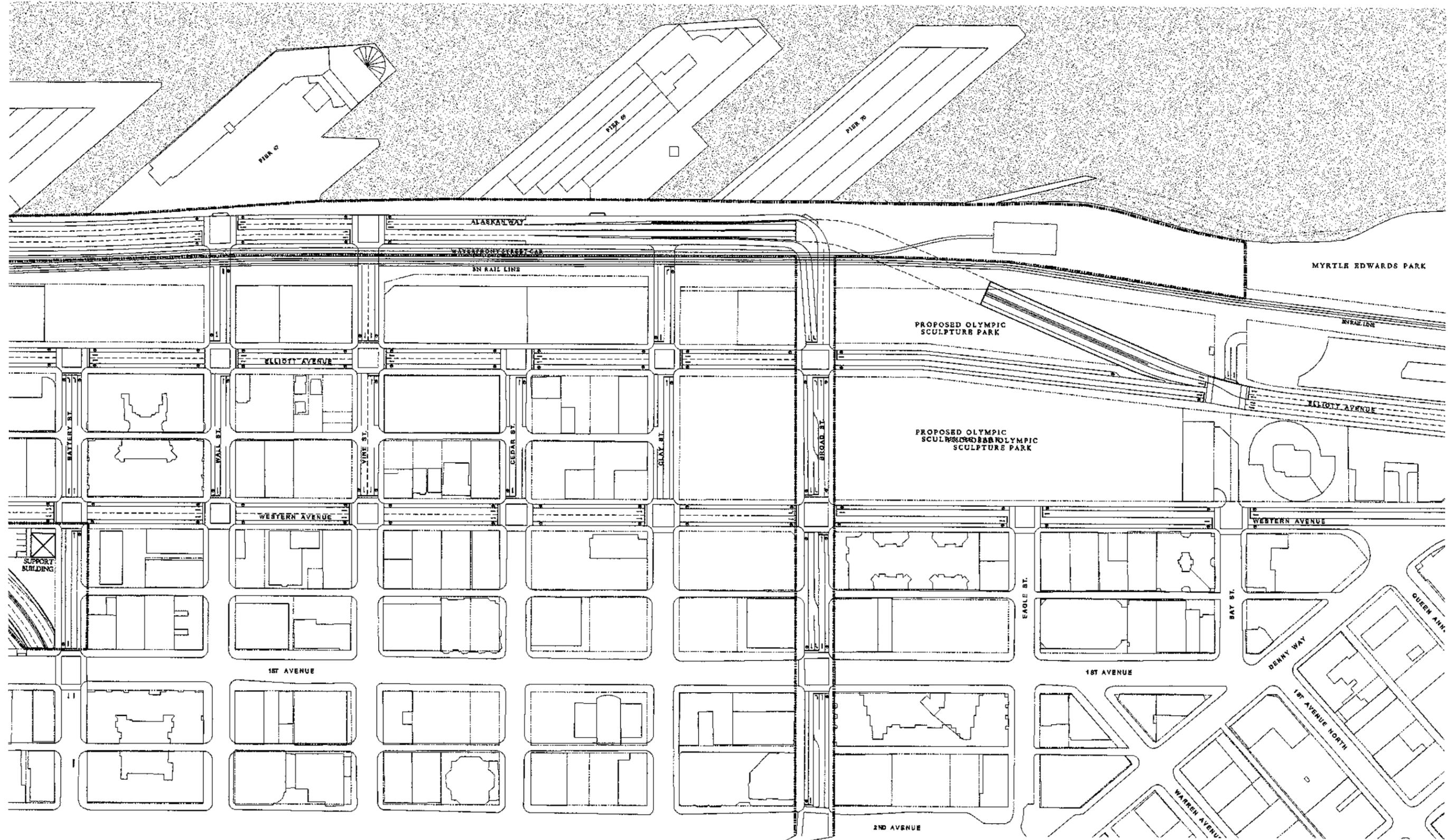
NOTE:  
STRUCTURES AND STREET CHANNELIZATION SHOWN  
BEYOND THE PROJECT BOUNDARY ARE ONLY FOR  
THE PURPOSE OF ESTABLISHING THE CONTEXT FOR  
IMPROVEMENTS WITHIN THE PROJECT AREA



**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

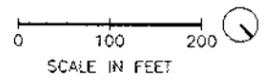
**SURFACE ALTERNATIVE**  
**PIKE TO BATTERY**

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

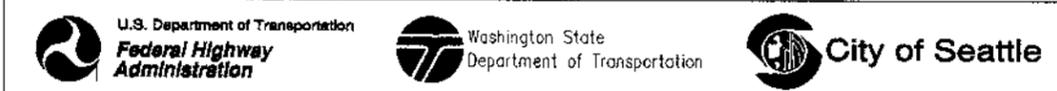


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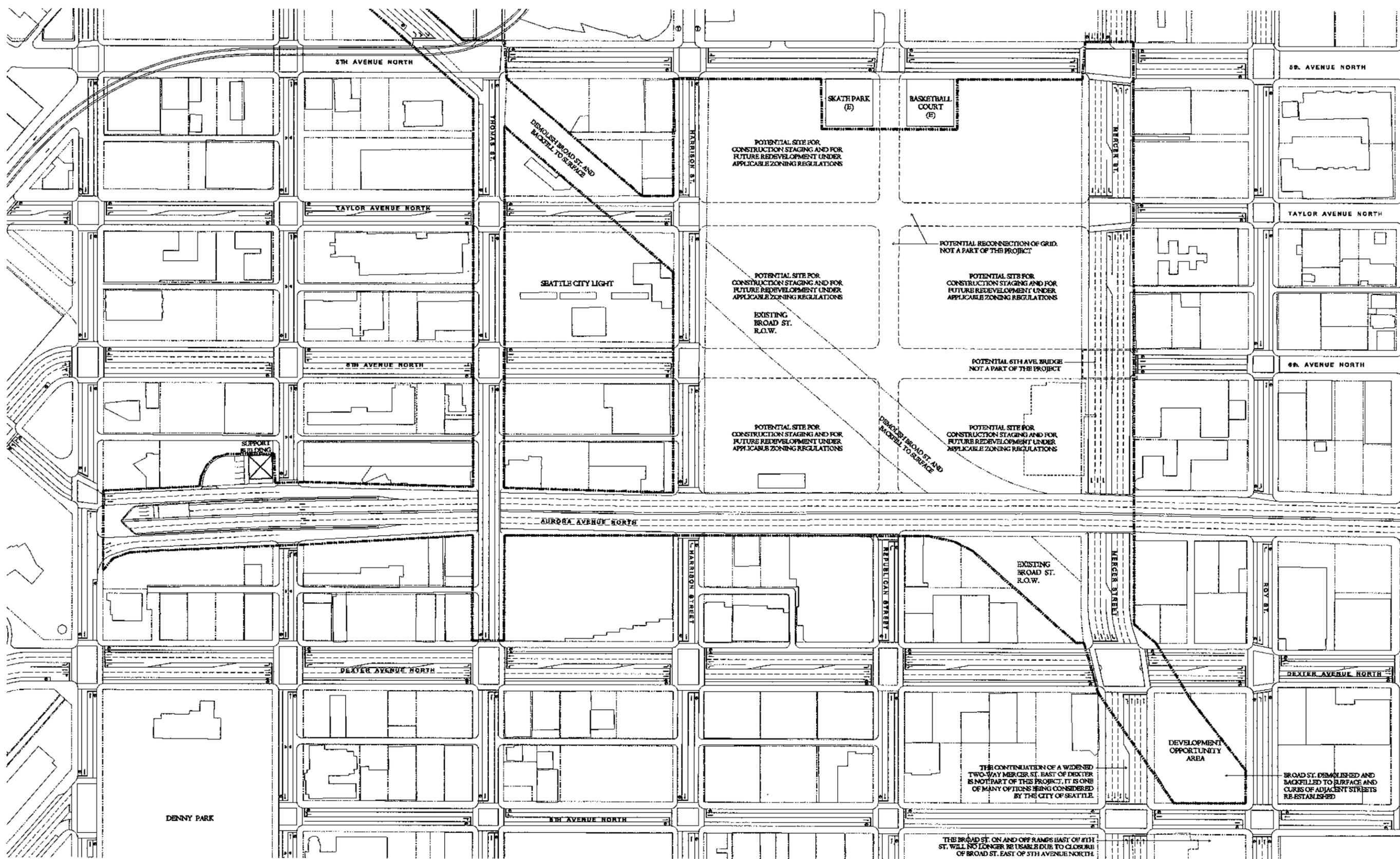
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

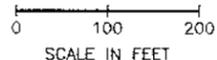
SURFACE ALTERNATIVE  
BATTERY TO SCULPTURE PARK

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION



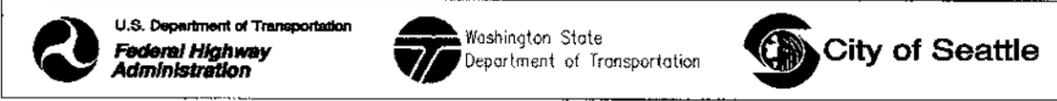
PLOTTING DATE : 03/20/04

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THE BROAD ST. ON AND OFF RAMP EAST OF 8TH ST. WILL NO LONGER BE USABLE DUE TO CLOSURE OF BROAD ST. EAST OF 5TH AVENUE NORTH.

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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

SURFACE ALTERNATIVE  
NORTH OF THE BATTERY STREET TUNNEL

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

## Key Characteristics of Surface Circulation System on Harborfront

---

### SURFACE ALTERNATIVE – VARIANT 1

#### *Pioneer Square Area*

*Roadway:* Alaskan Way – from South King Street to Yesler Way: Seven moving lanes (three southbound and four northbound) with median and southbound left turn pockets at South Jackson and South King Streets. On-street parking is provided adjacent to northbound lanes from King Street to Washington Street. Two lane one-way northbound access from Alaskan Way to Western Avenue at Yesler Way.

*Ferry Terminal Access:* Exclusive access to ferry terminal along Pier 48 marginal wharf and with holding area west of SR 99.

*Streetcar:* Exclusive single trackway in median between north and southbound lanes turning to South Main Street.

*Bicycle:* Exclusive bikeway (Class I) west of the Alaskan Way roadway.

*Pedestrian:* Approximate 25-foot promenade west of Pier 48 marginal wharf and an approximate 15-foot wide cityside sidewalk. Pedestrian crossings at all intersections

#### *Midtown Area*

*Roadway:* Alaskan Way - Six vehicular moving lanes (three moving lanes in each direction) with a large median for streetcar service and left turn pockets. On-street parking on both sides of the street.

*Streetcar:* Exclusive single trackway in median of the roadway.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway transitioning to a pedestrian/bike trail north of Pier 62.

*Pedestrian:* Approximately 40-foot promenade along the shoreline and approximate 15-foot cityside sidewalk. Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown*

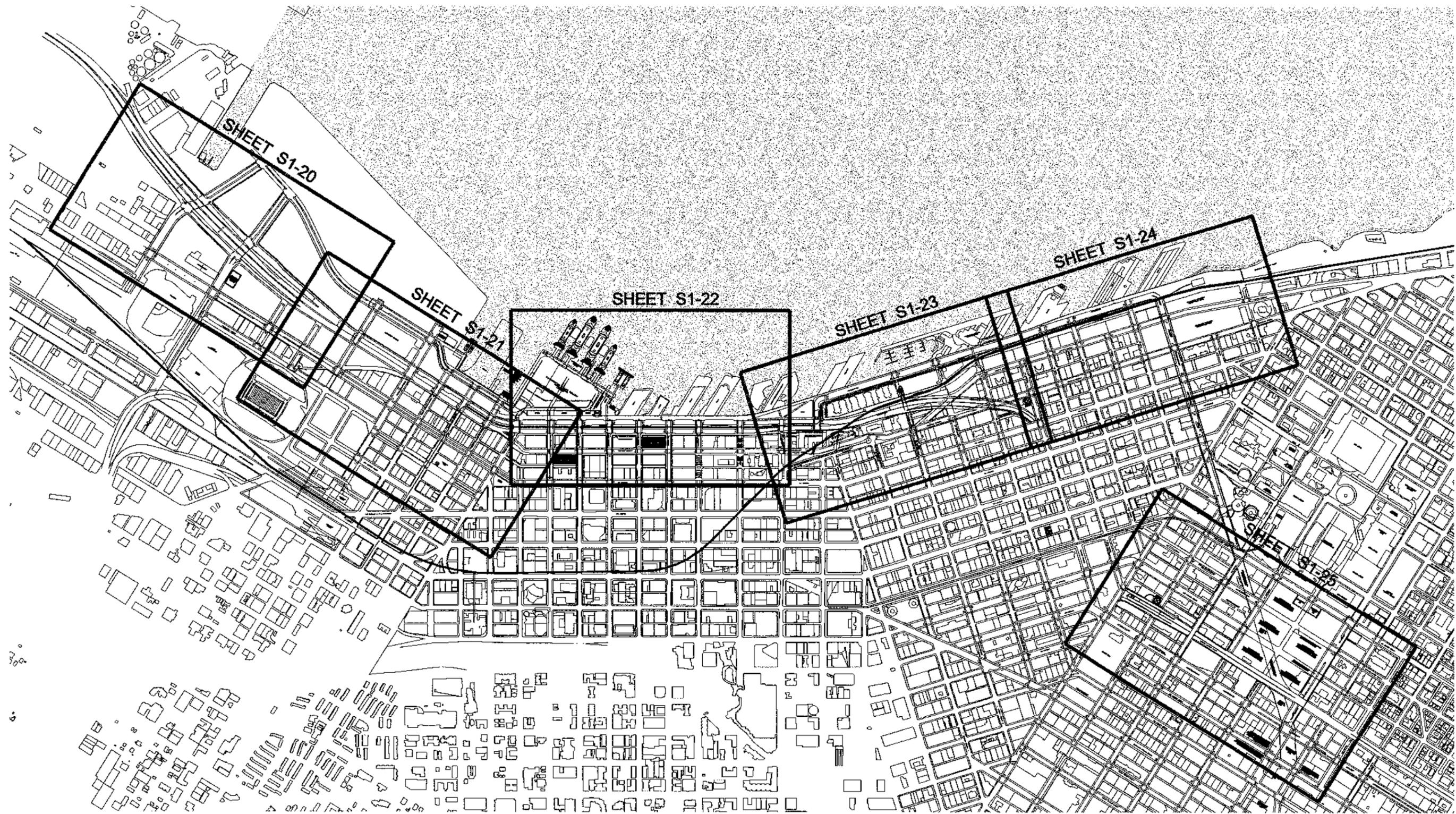
*Battery Street Tunnel Connection:* The roadway proceeds north of the Aquarium following the cityfront and the right-of-way of the existing Viaduct as a six-lane facility to become an aerial structure over the BNSF railtracks, to connect overhead into the Battery Street Tunnel and to provide vehicular and bicycle access to Western and Elliott Avenues.

*Roadway:* Alaskan Way north of Pier 62 along the shoreline is a four lane vehicular facility (two lanes in each direction) to Broad Street. On-street parking is provided on both sides of roadway to Broad Street.

*Streetcar:* Exclusive single trackway on the eastside of the roadway as it is today.

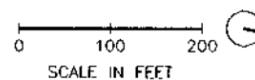
*Bicycle:* Shared bicycle trail east of the streetcar tracks from Pier 62 to Broad Street as it is today.

*Pedestrian:* Approximately 13 feet along the shoreline and an approximate 8-foot sidewalk on cityside. Pedestrian crossings at all intersections with the roadway.

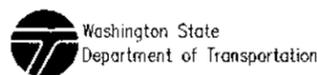


PLOTTING DATE : 03/02/04

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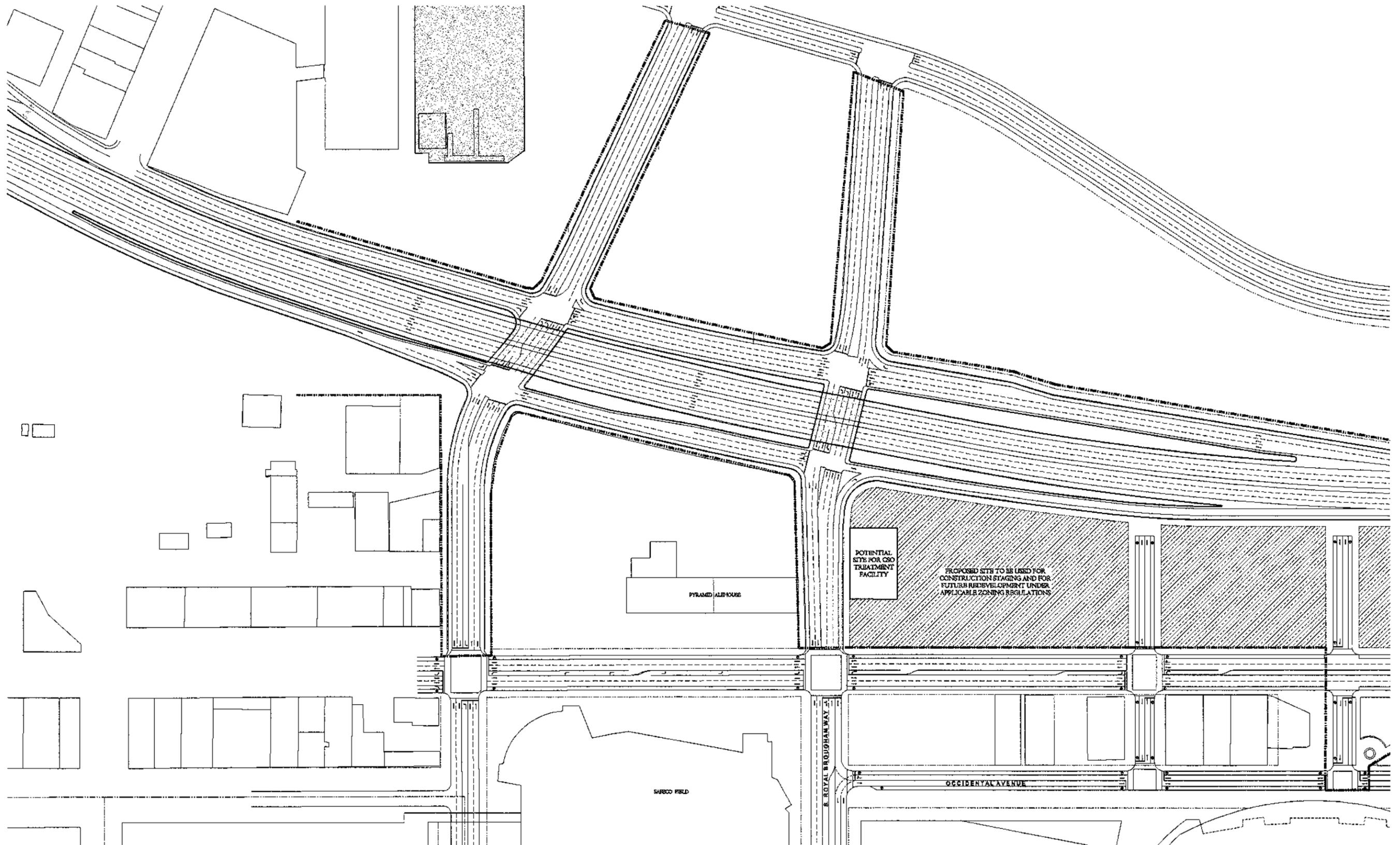


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

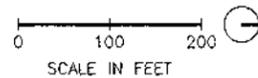
SURFACE ALTERNATIVE - VARIANT 1  
KEY PLAN

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

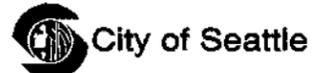
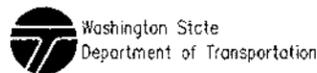
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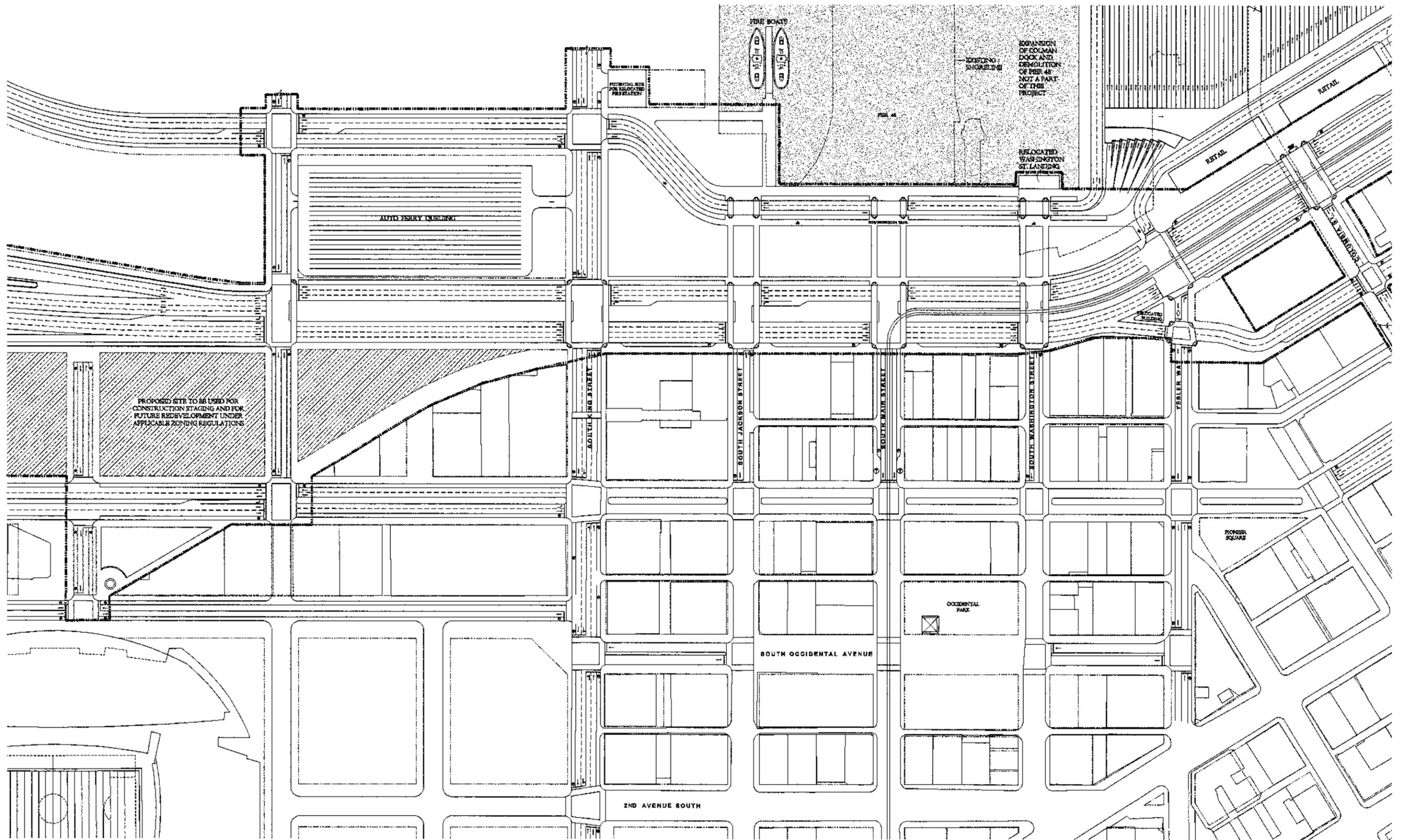
ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

SURFACE ALTERNATIVE- VARIANT 1  
S. ATLANTIC TO RAILROAD WAY SOUTH

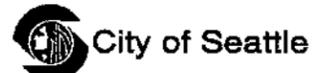
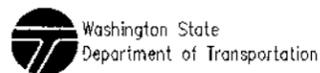
SHEET  
FIGURE  
NO  
S1-20

PLOTTING DATE : 030204



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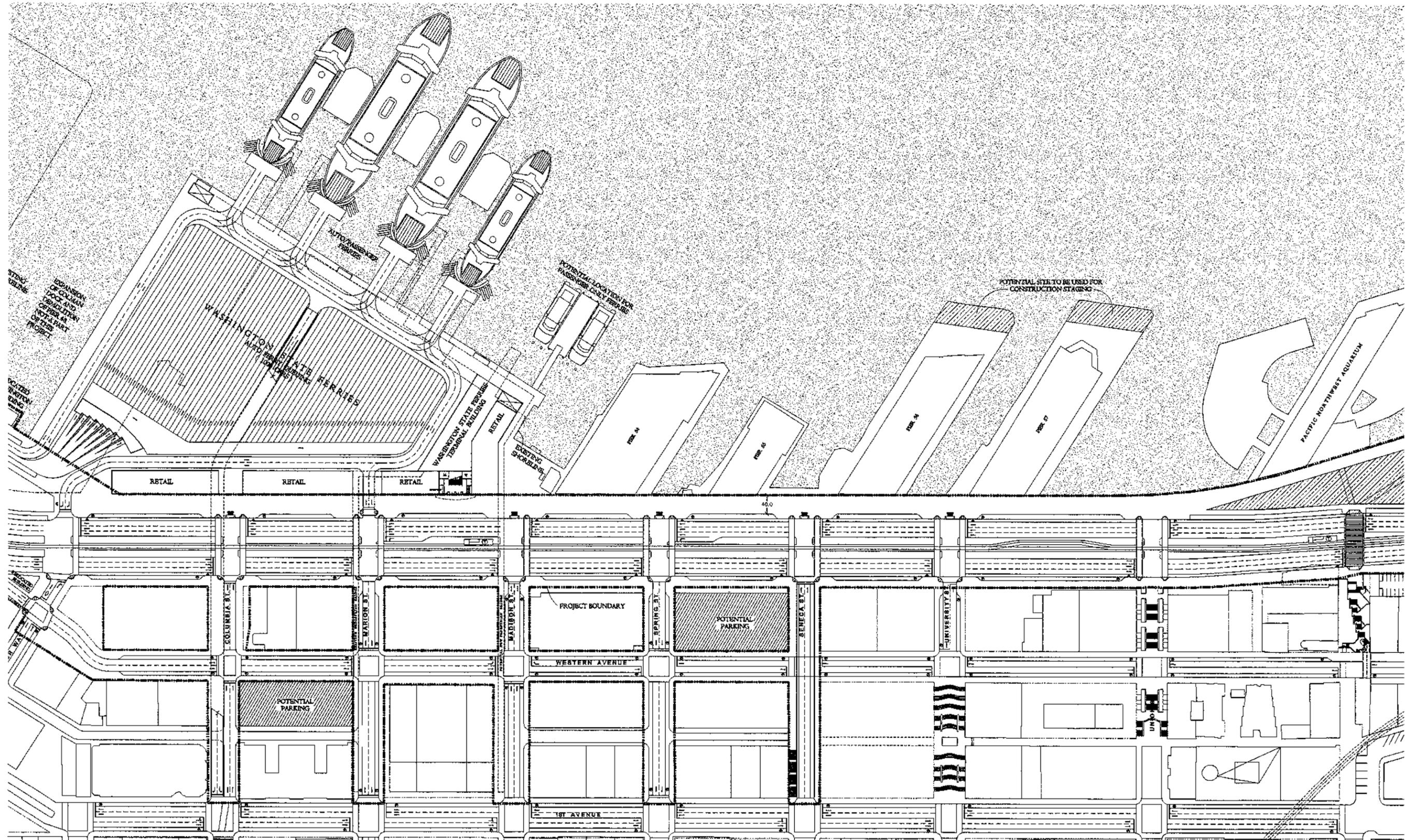


### ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT SEATTLE, WA

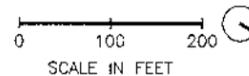
### SURFACE ALTERNATIVE - VARIANT 1 RAILROAD WAY SOUTH TO YESLER

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

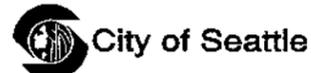
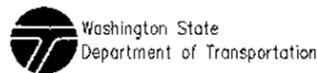
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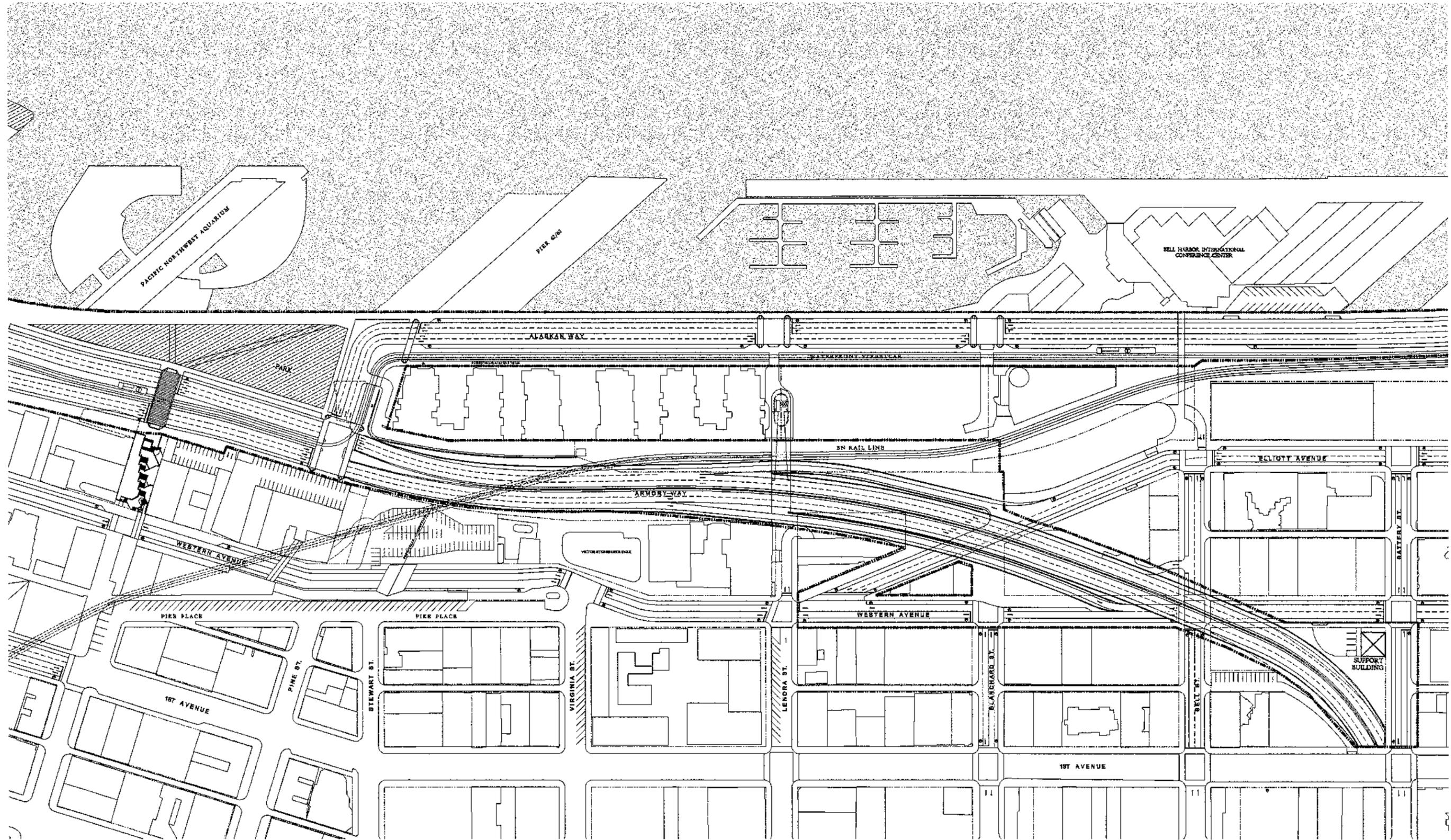
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
 SEATTLE, WA

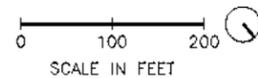
SURFACE ALTERNATIVE - VARIANT 1  
 YESLER TO PIKE

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

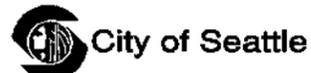
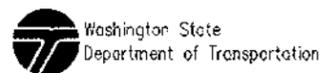


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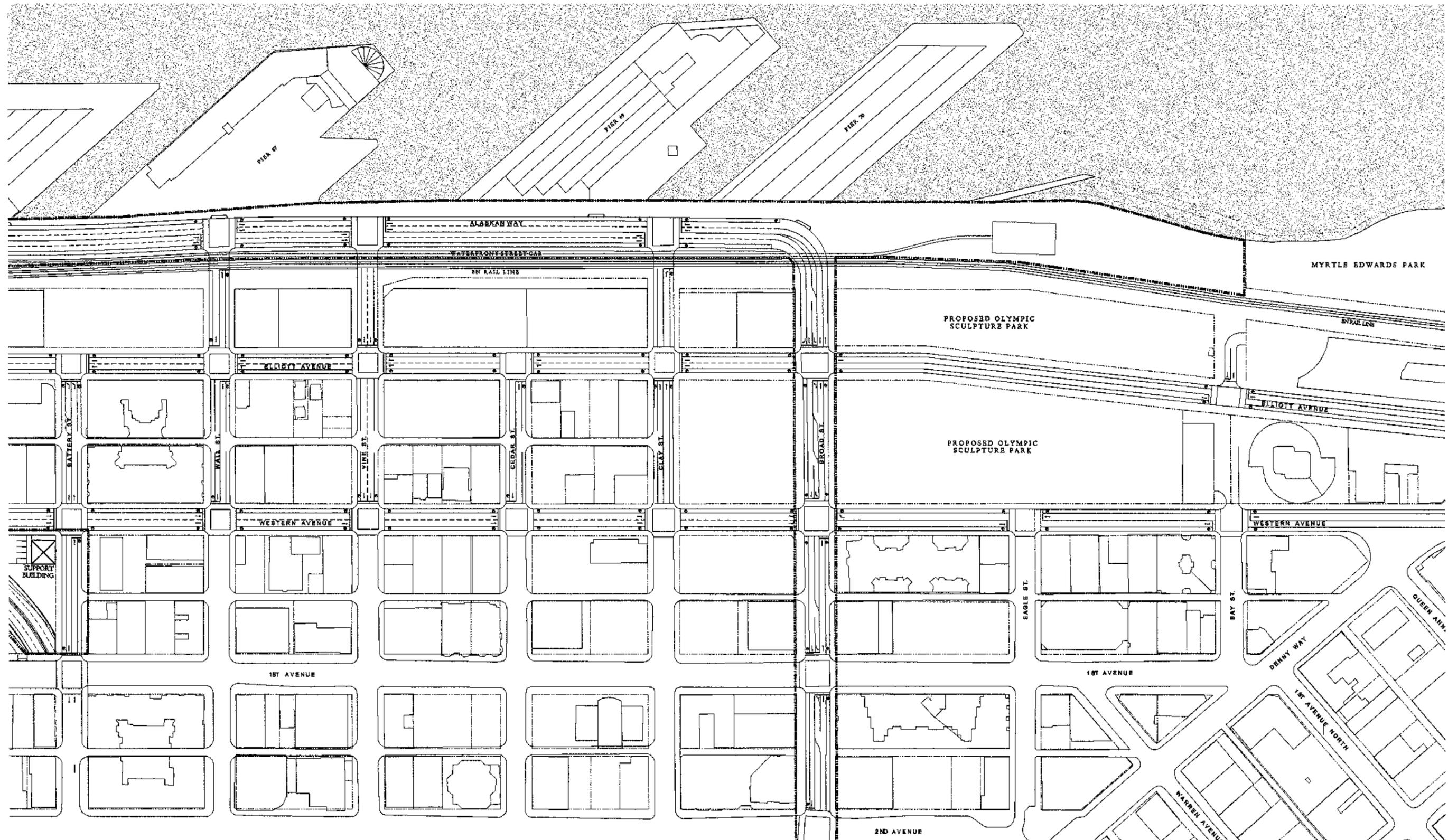
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**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

**SURFACE ALTERNATIVE - VARIANT 1**  
**PIKE TO BATTERY**

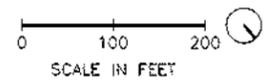
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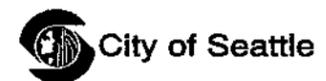
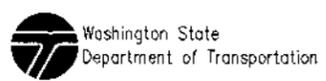
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PROJECT BOUNDARY CONTINUOUS TO 5TH AVE.



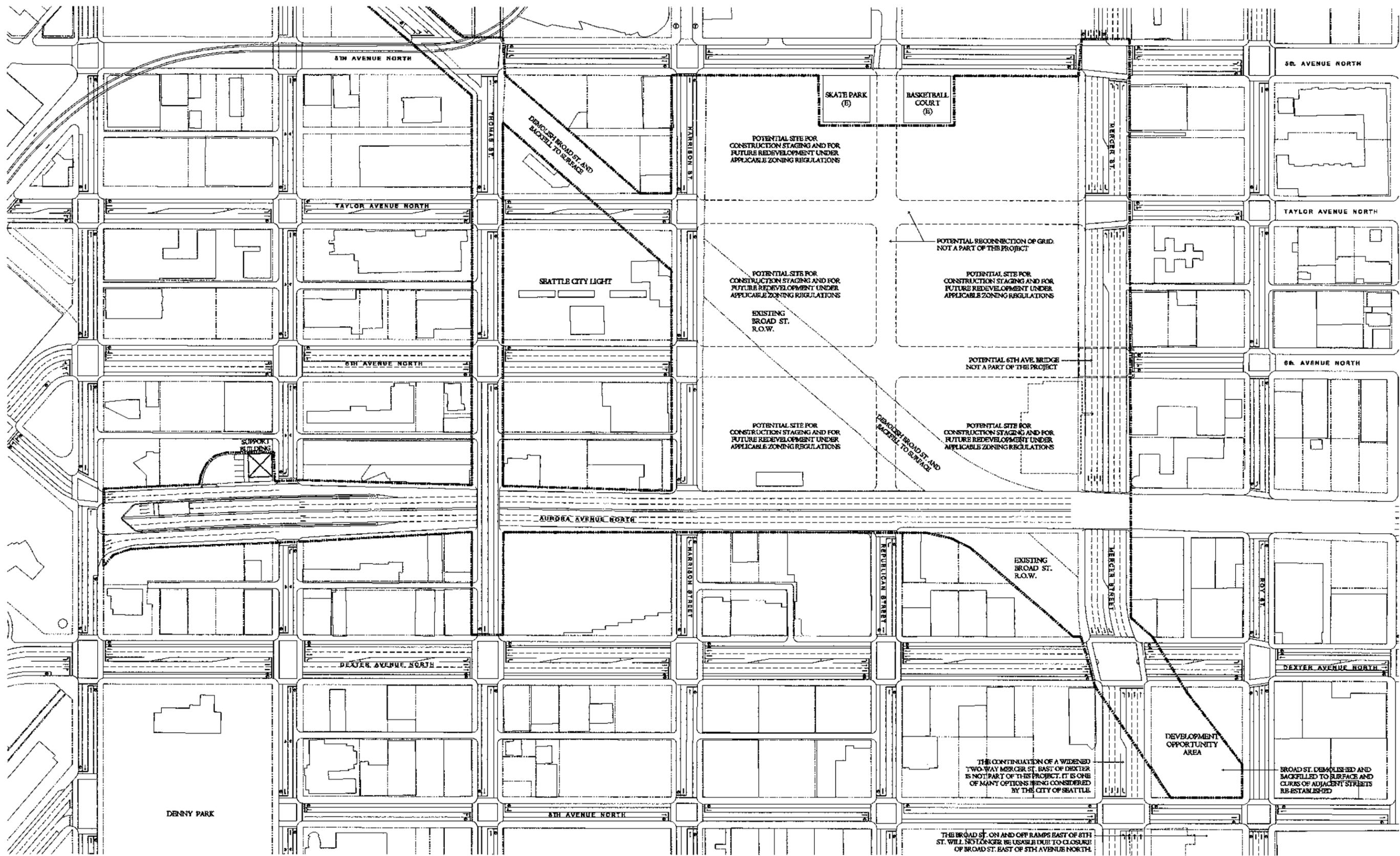
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

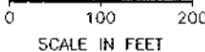
SURFACE ALTERNATIVE - VARIANT 1  
BATTERY TO SCULPTURE PARK

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

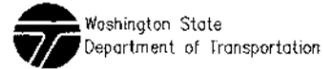


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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

SURFACE ALTERNATIVE - VARIANT 1  
NORTH OF THE BATTERY STREET TUNNEL

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

## Key Characteristics of Surface Circulation System on Harborfront

---

### BYPASS ALTERNATIVE

#### *Pioneer Square Area*

*Roadway:* Alaskan Way – from South King Street to Yesler Way: Six moving lanes (three in each direction) with median and southbound left turn pockets at South Jackson and South King Streets. On-street parking is provided adjacent to northbound lanes from King Street to Washington Street and adjacent to southbound lanes from South Main to King Street. Two lane one-way northbound access is provided from Alaskan Way to Western Avenue at Yesler Way.

*Ferry Terminal Access:* Exclusive access to ferry terminal along Pier 48 marginal wharf and with holding area west of SR 99.

*Streetcar:* Exclusive single trackway west of vehicular lanes turning to South Main Street.

*Bicycle:* Exclusive bikeway (Class I) west of streetcar tracks and the Alaskan Way roadway.

*Pedestrian:* Approximately 25-foot promenade west of exclusive access to ferry terminal and an approximate 15-foot wide cityside sidewalk. Pedestrian crossings at all intersections.

#### *Midtown Area*

*Roadway:* Alaskan Way – from Yesler Way to Union Street: Six moving lanes (three in each direction) with median and left turn pockets. On-street parking is provided adjacent to northbound moving lanes from Yesler Way to Union Street.

*Frontage Road:* One-way southbound frontage road from Yesler Way to Union Street with parking on one side adjacent to promenade to provide drop-off, service and bus access to Washington State Ferries and historic character piers

*Streetcar:* Exclusive single trackway on the west side of roadway between Yesler Way and Union Street transitioning to an exclusive trackway on the east side of the roadway at Union Street and proceeding northward.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 25-foot promenade along the shoreline and an approximate 15-foot cityside sidewalk from Yesler Way to Union Street. Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown Area*

*Battery Street Tunnel Connection:* Four lane tunnel transitions to a viaduct over the BNSF railroad tracks and connects directly to Battery Street Tunnel.

*Elliott and Western Connection:* Potential new arterial connects Alaskan Way roadway along the right-of-way of the existing viaduct providing vehicular and bicycle access to Elliott and Western Avenues.

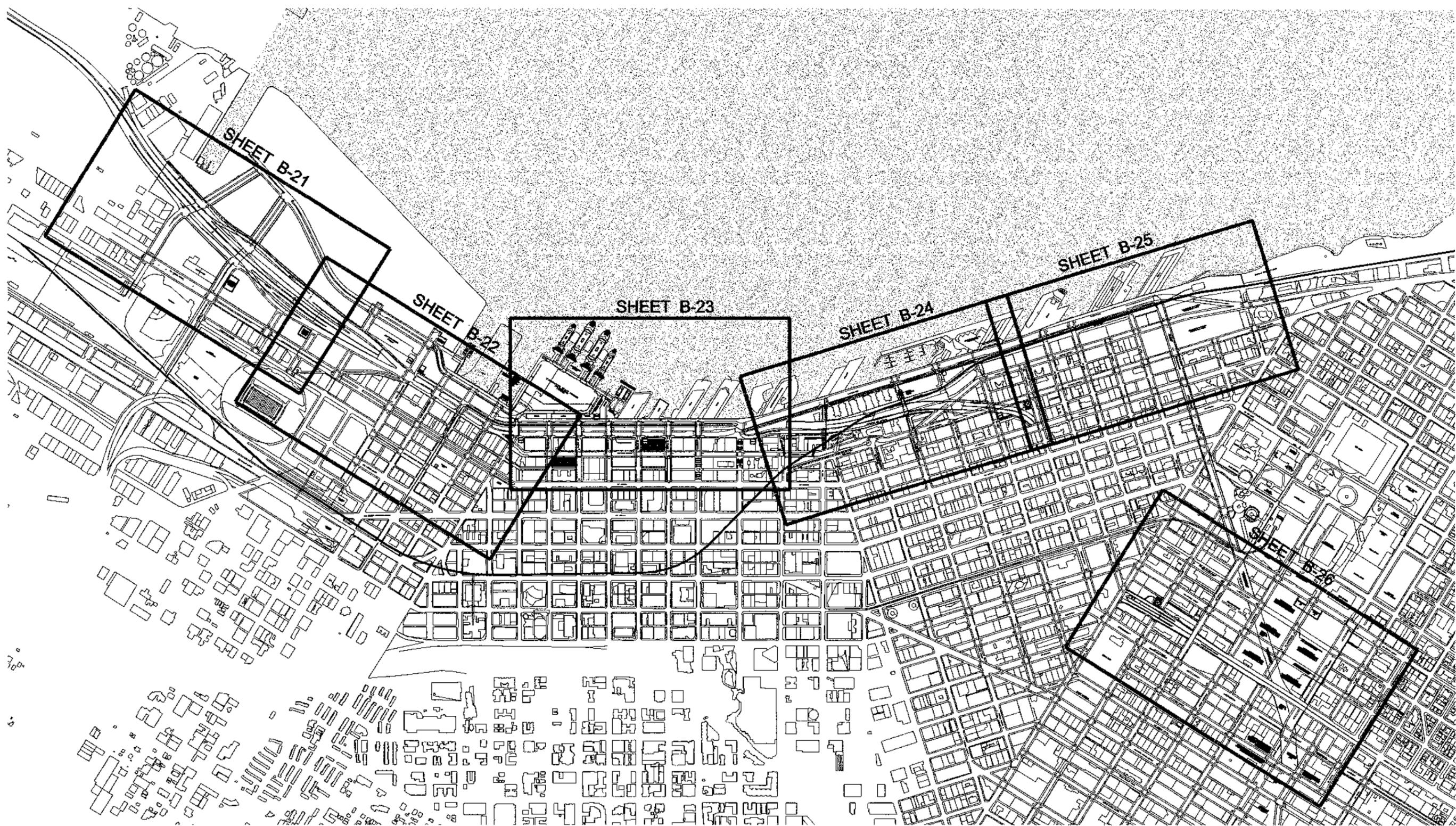
*Roadway:* Alaskan Way north of Pier 62 along the shoreline is a four lane vehicular facility (two lanes in each direction) to Broad Street and via an underpass at the Sculpture Park to Elliott Avenue. On-street parking is provided on both sides of roadway to Cedar Street

*Streetcar:* Exclusive single trackway on the eastside of the roadway as it is today.

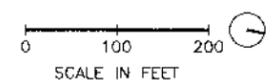
*Bicycle:* Shared bicycle trail east of the streetcar tracks from Pier 62 to Broad Street as it is today.

*Pedestrian:* Approximately 13 feet along the shoreline and an approximate 8-foot cityside sidewalk. Pedestrian crossings at all intersections with the roadway where streets terminate at Alaskan Way.

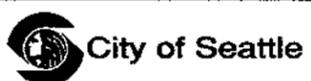
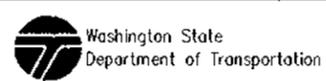
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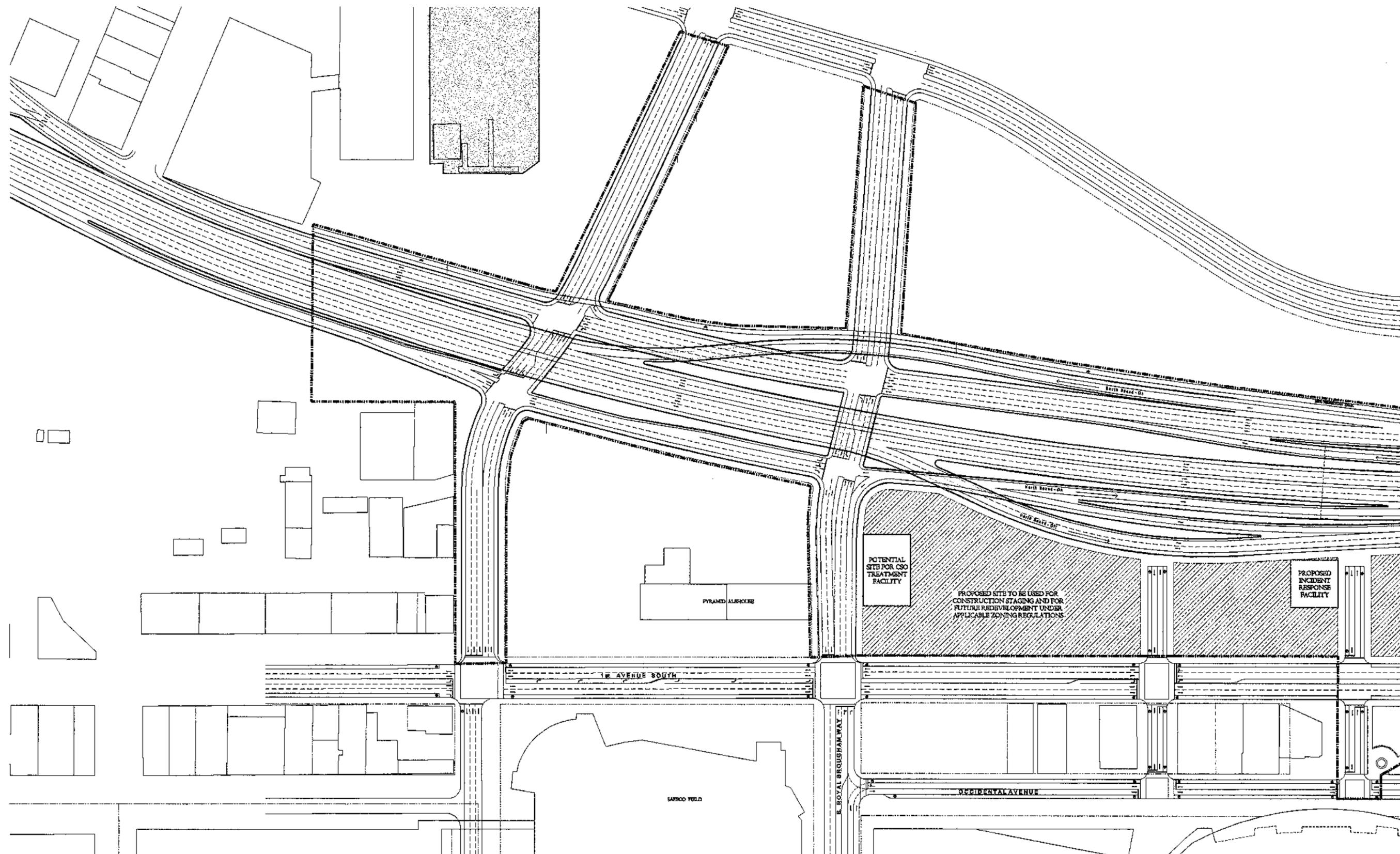


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**SEATTLE, WA**

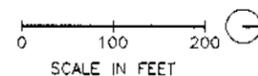
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**BYPASS ALTERNATIVE**  
**KEY PLAN**

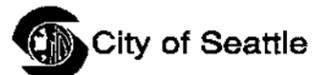
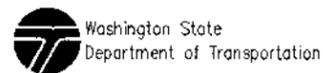
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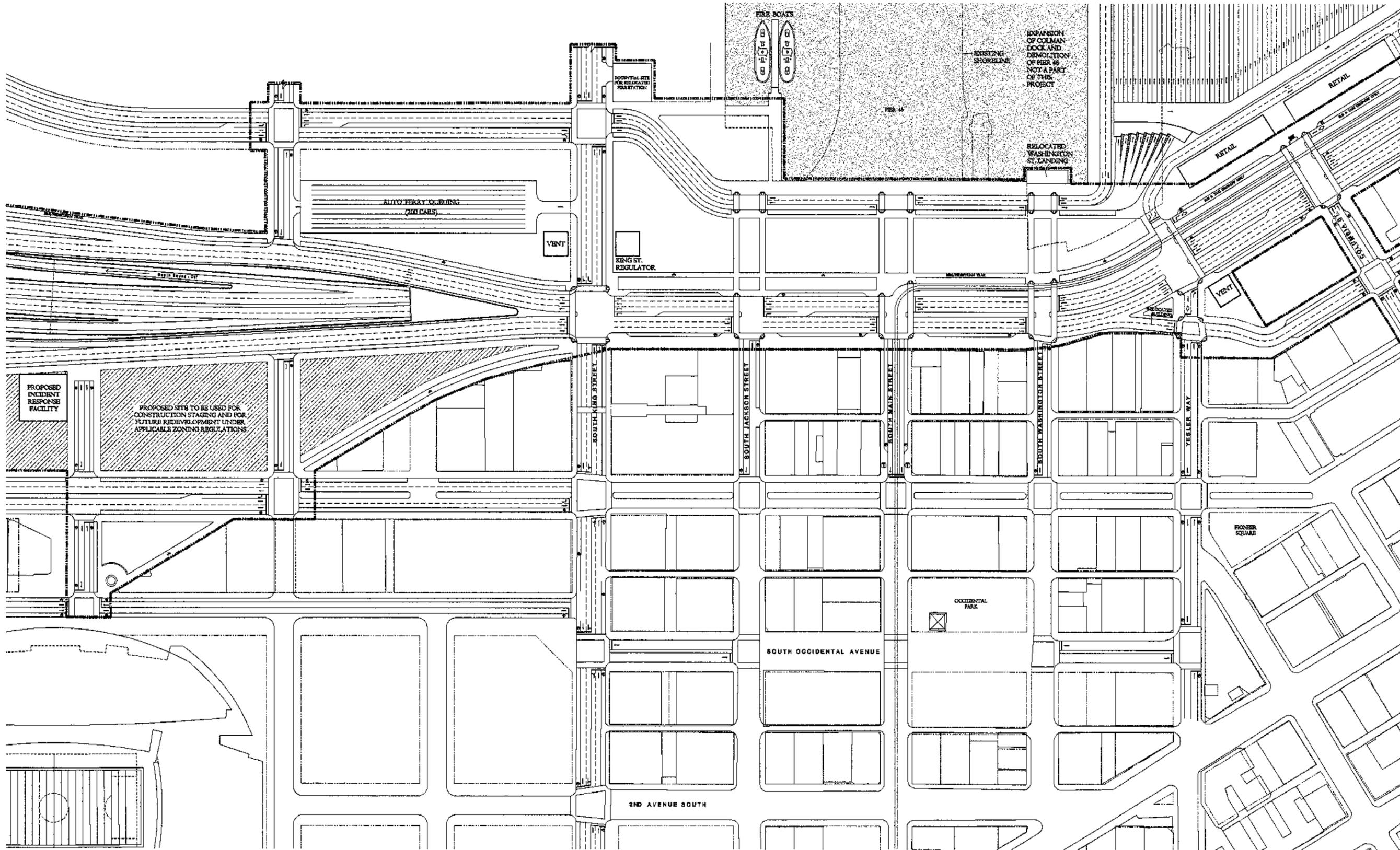


### ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT SEATTLE, WA

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

### BYPASS ALTERNATIVE S. ATLANTIC TO RAILROAD WAY SOUTH

SHEET  
FIGURE  
NO  
B-21

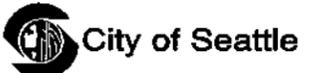
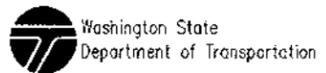


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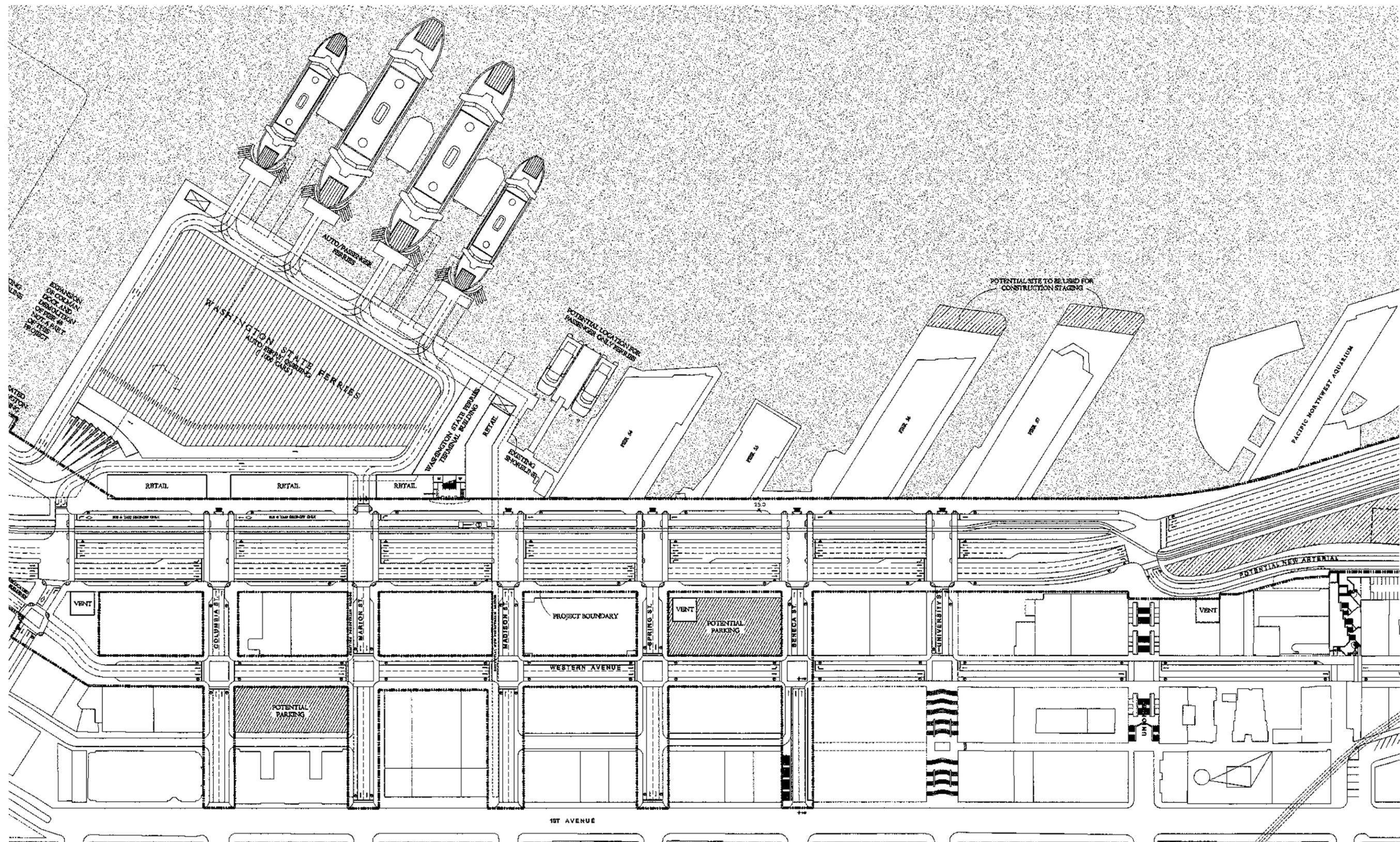


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE  
RAILROAD WAY SOUTH TO YESLER

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

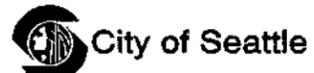
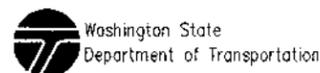
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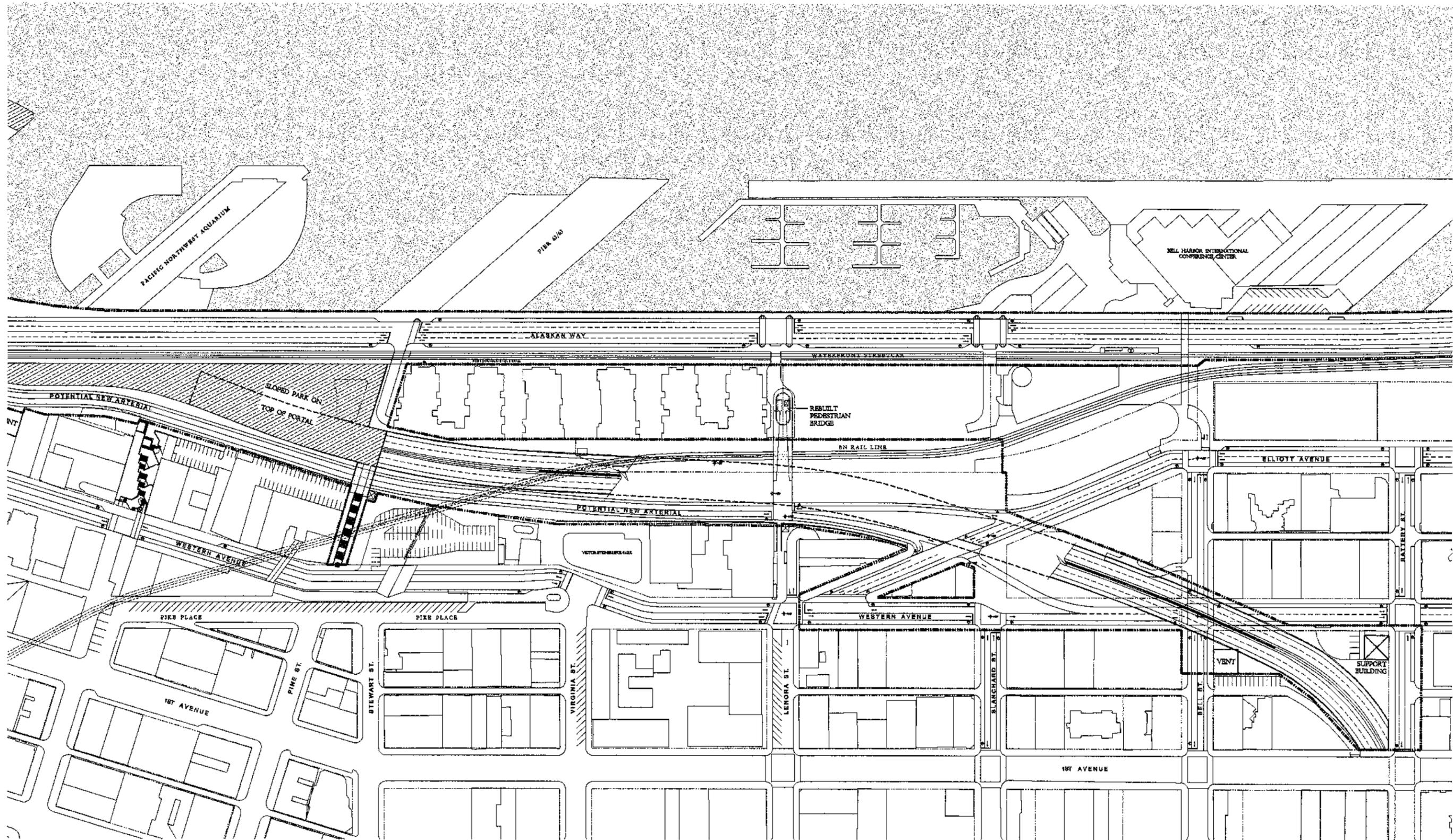
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE  
YESLER TO PIKE

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

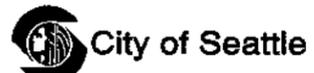
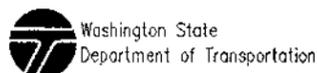


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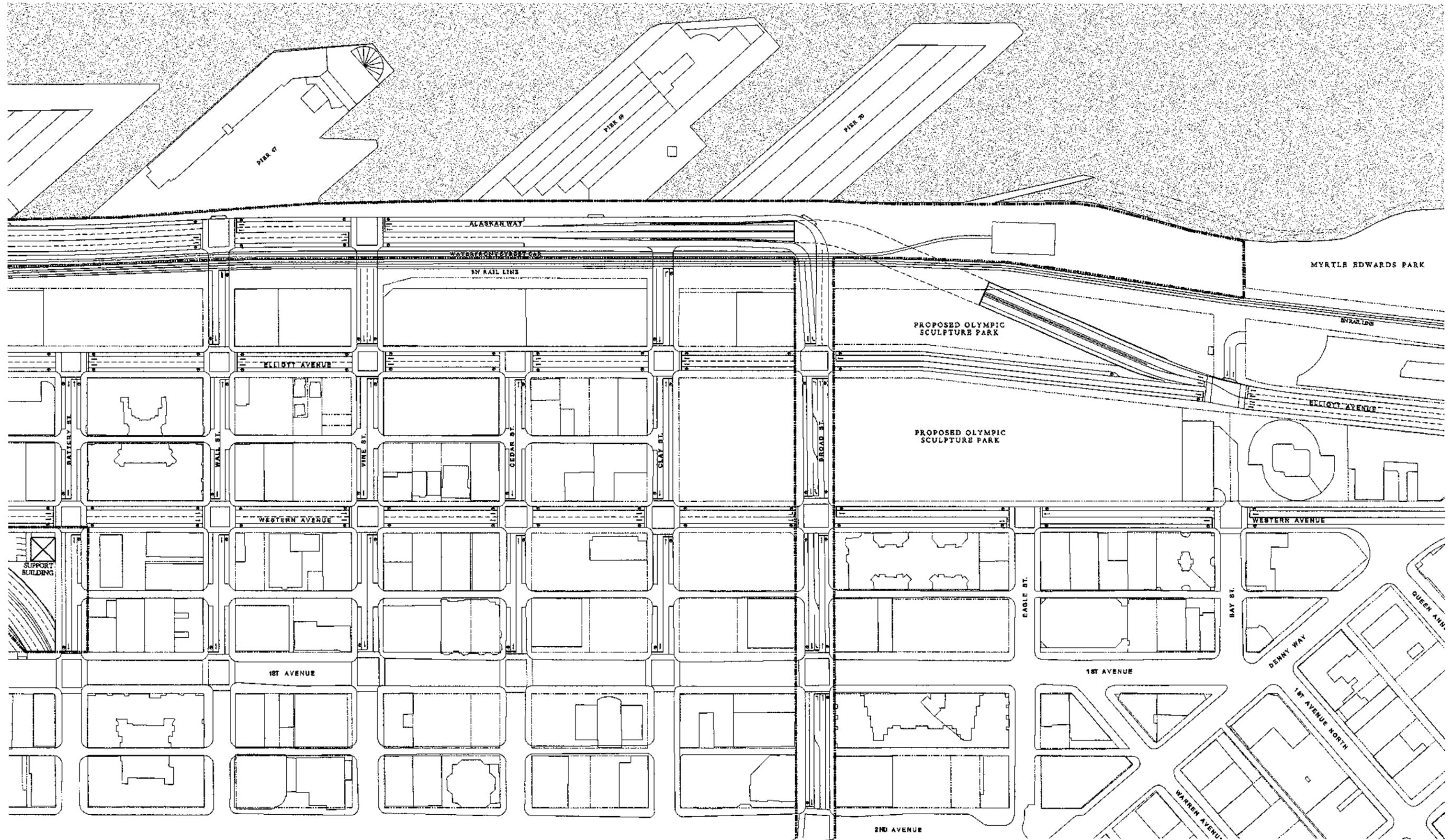


**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

**BYPASS ALTERNATIVE**  
**PIKE TO BATTERY**

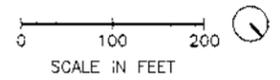
CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

SHEET  
FIGURE  
NO  
**B-24**



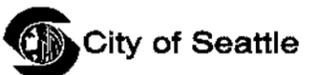
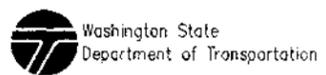
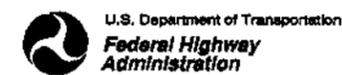
PLOTING DATE : 030204

PROJECT BOUNDARY CONTINUOUS TO 5TH AVE.



**NOTE:**  
STRUCTURES AND STREET CHANNELIZATION SHOWN  
BEYOND THE PROJECT BOUNDARY ARE ONLY FOR  
THE PURPOSE OF ESTABLISHING THE CONTEXT FOR  
IMPROVEMENTS WITHIN THE PROJECT AREA

**NOTE:**  
ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.

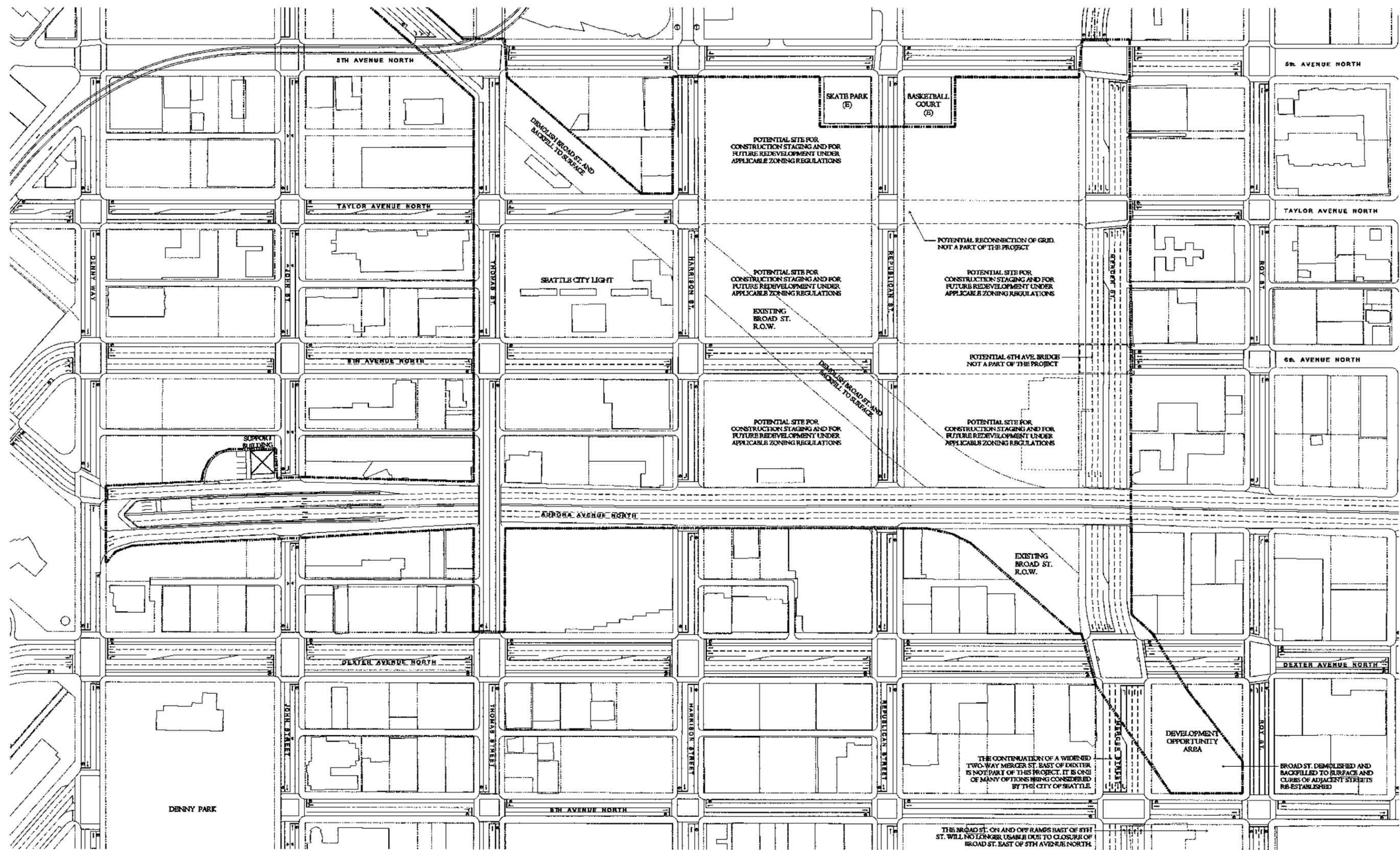


**ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT**  
**SEATTLE, WA**

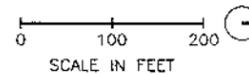
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**BYPASS ALTERNATIVE**  
**BATTERY TO SCULPTURE PARK**

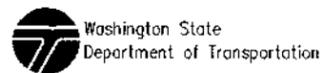
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### ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT SEATTLE, WA

### BYPASS ALTERNATIVE NORTH OF THE BATTERY STREET TUNNEL

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

## Key Characteristics of Surface Circulation System on Harborfront

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### BYPASS ALTERNATIVE – VARIANT 1

#### *Pioneer Square Area*

*Roadway:* Alaskan Way – from South King Street to Yesler Way: Eight moving lanes (four in each direction) with median and southbound left turn pockets at South Jackson and South King Streets. On-street parking is provided adjacent to the southbound lanes from King Street to Main Street and adjacent to northbound lanes from King Street to Washington Street. Two lane one-way northbound access is provided from Alaskan Way to Western Avenue at Yesler Way

*Ferry Terminal Access:* Access to and from the ferry terminal is provided from Alaskan Way with a holding area east of SR 99 and south of King Street

*Streetcar:* Exclusive single trackway west of roadway turning east on South Main Street.

*Bicycle:* Exclusive bikeway (Class I) west of streetcar tracks and the Alaskan Way roadway.

*Pedestrian:* Approximately 25-foot promenade along shoreline of marginal wharf of Pier 48 and an approximate 15-foot wide cityside sidewalk. Pedestrian crossings at all intersections.

#### *Midtown Area*

*Roadway:* Alaskan Way – from Yesler Way to Union Street: Five moving lanes (three southbound and two northbound) with median and left turn pockets. On-street parking is provided adjacent to northbound moving lanes from Yesler Way to Union Street. From Union Street to Pier 62, Alaskan Way continues along the cityfront as a four lane facility (two lanes in each direction).

*Frontage Road:* One-way southbound frontage road from Yesler Way to Union Street with parking on one side adjacent to promenade to provide drop-off, service and bus access to Washington State Ferries and historic character piers.

*Streetcar:* Exclusive single trackway on the west side of roadway between Yesler Way and Union Street transitioning to an exclusive trackway on the east side of the roadway at Union Street and proceeding northward.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 30-foot promenade along the shoreline and an approximate 15-foot sidewalk on cityside from Yesler Way to Union Street. Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown Area*

*Battery Street Tunnel Connection:* Four lane tunnel transitions to a viaduct over the BNSF railroad tracks and connects directly to Battery Street Tunnel.

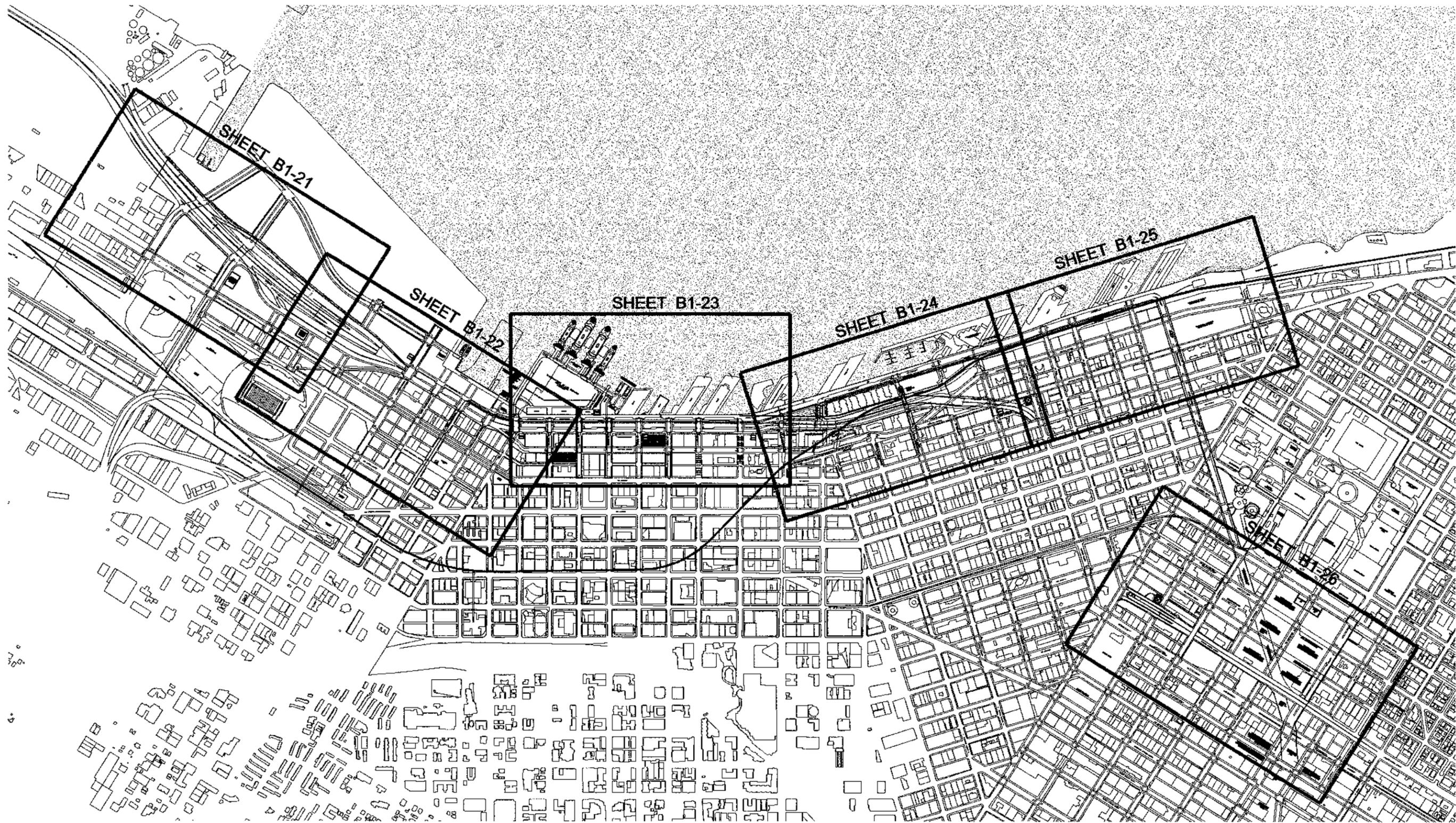
*Elliott and Western Connection:* New arterial connects Alaskan Way roadway along the right-of-way of the existing viaduct providing vehicular and bicycle access to Elliott and Western Avenues.

*Roadway:* Alaskan Way also branches at Pier 62 to follow the shoreline as a two-lane roadway to the equivalent of the Blanchard Street intersection along the waterfront and then widens to a four lane facility for the remainder of the roadway to Broad Street. On-street parking is generally provided on both sides of the roadway

*Streetcar:* An exclusive single trackway is provided on the east side of the roadway as it is today.

*Bicycle:* Bicycle access is provided on an exclusive pedestrian/bicycle way on the east side of the trackway as it is today

*Pedestrian:* Approximately 35-foot promenade adjacent to the two lane roadway and transitions back to an approximate 13-foot promenade adjacent to the four lane facility and an 8-foot sidewalk on the cityfront. Pedestrian crossings at all intersections where streets terminate at Alaskan Way.

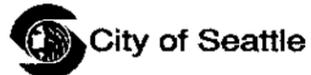
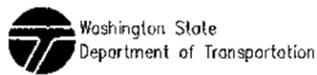


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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

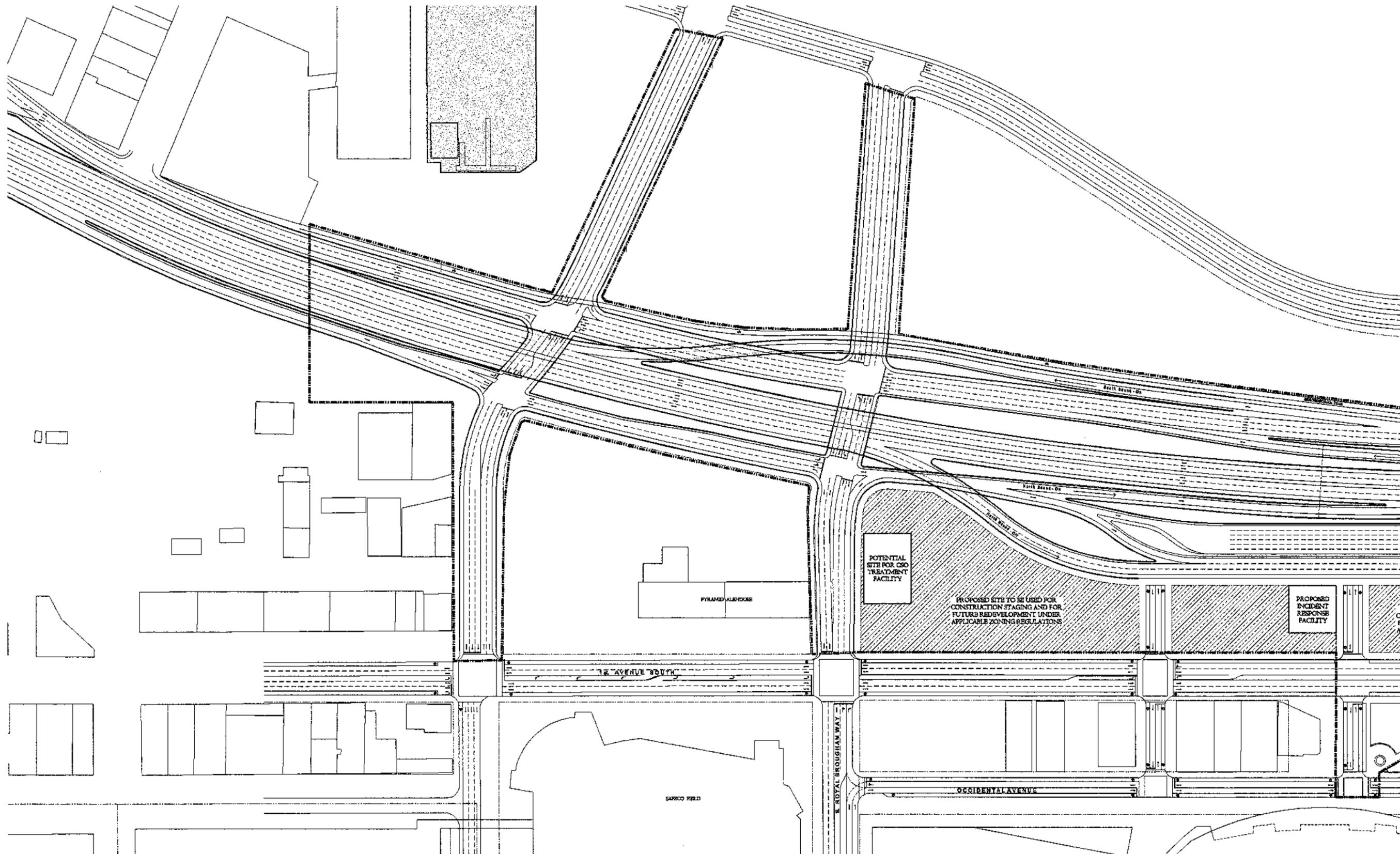
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KEY PLAN

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

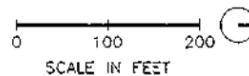
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SHEET  
FIGURE  
NO  
B1-20

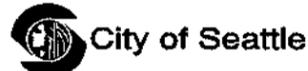
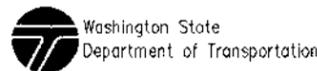
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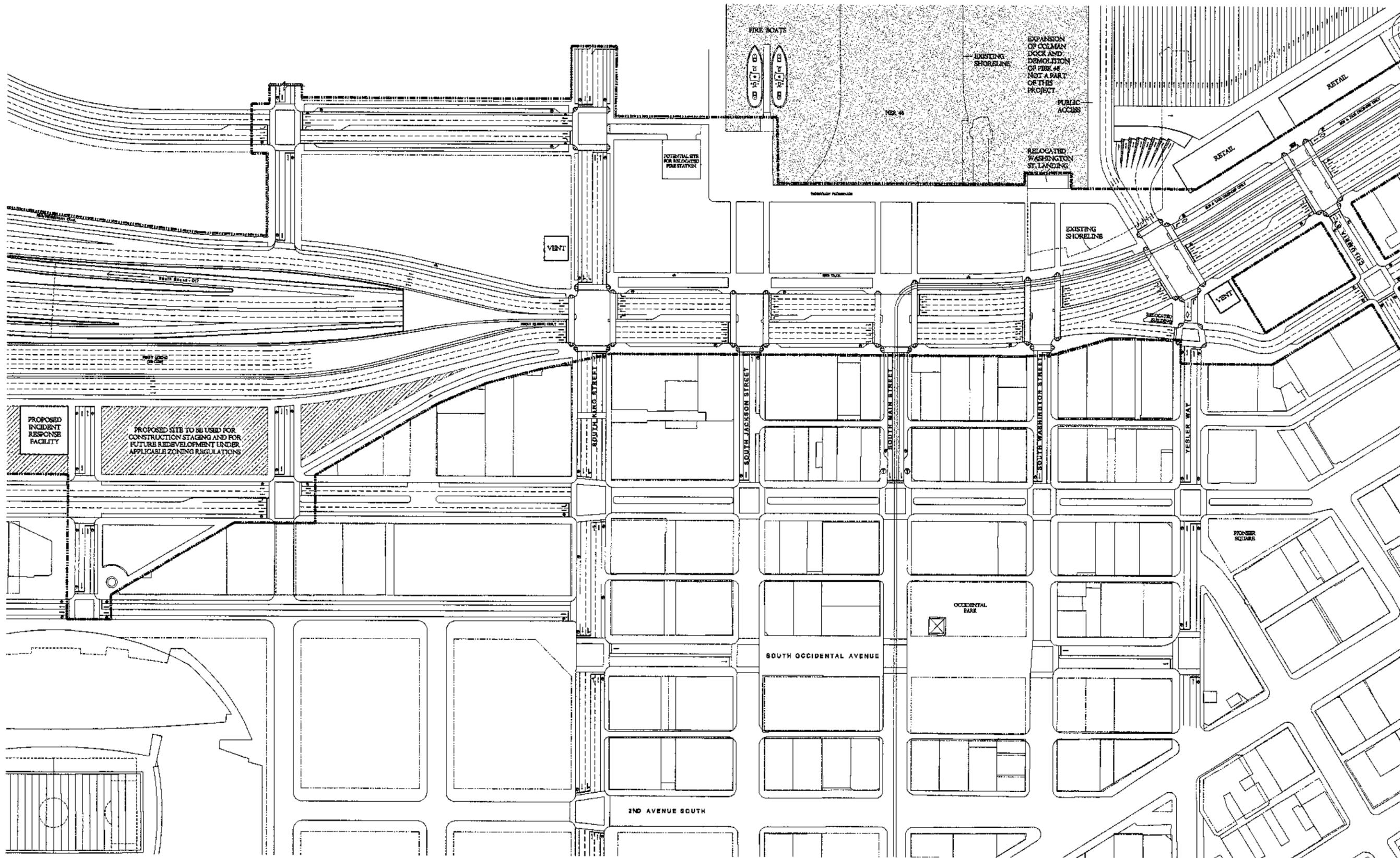
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### ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT SEATTLE, WA

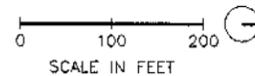
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CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

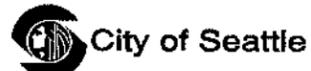
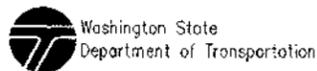


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BEYOND THE PROJECT BOUNDARY ARE ONLY FOR  
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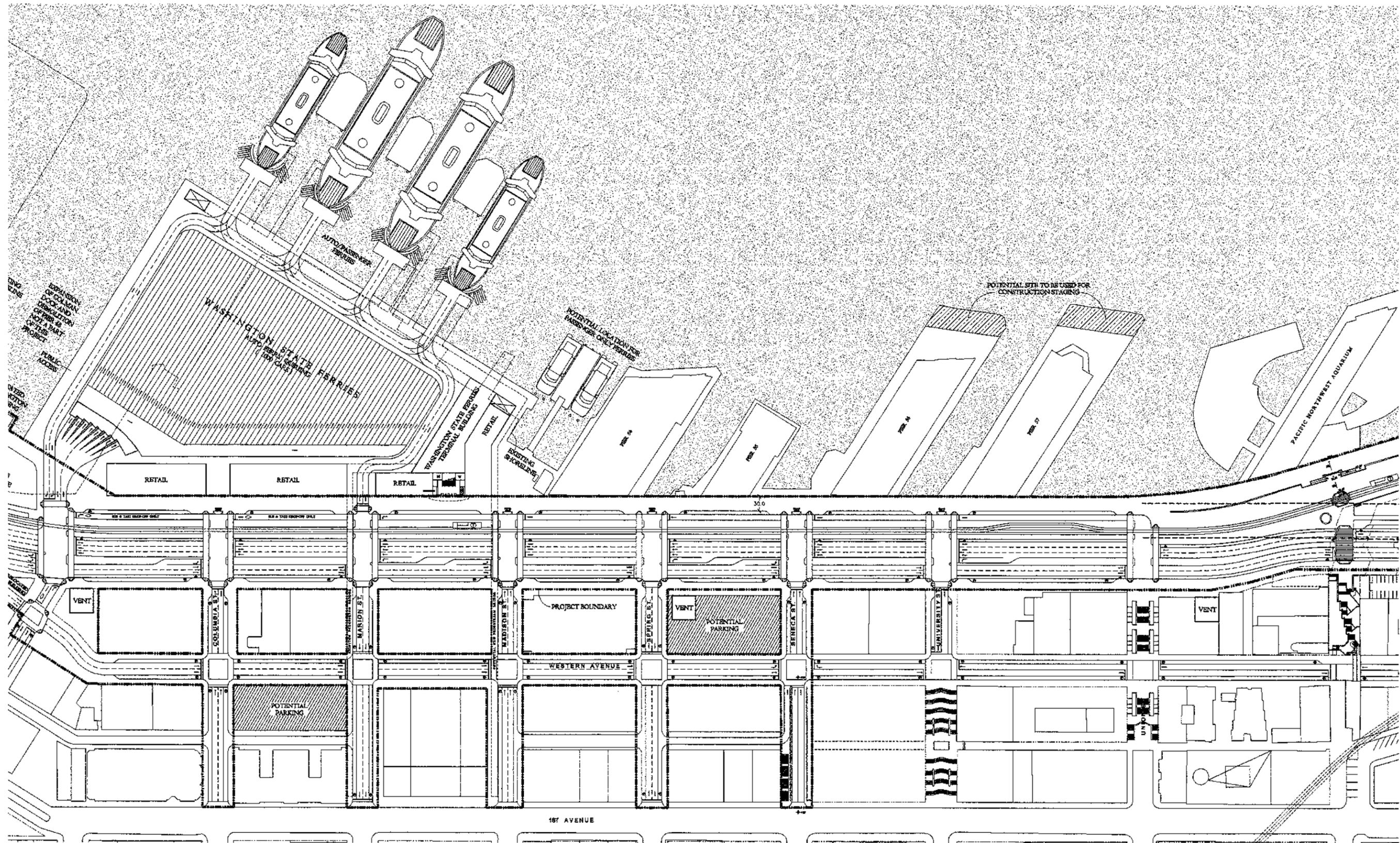
ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 1  
RAILROAD WAY SOUTH TO YESLER

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

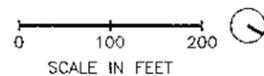
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SHEET  
FIGURE  
NO  
B1-22

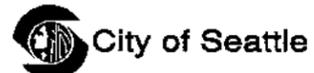
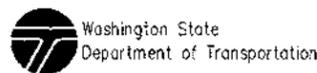


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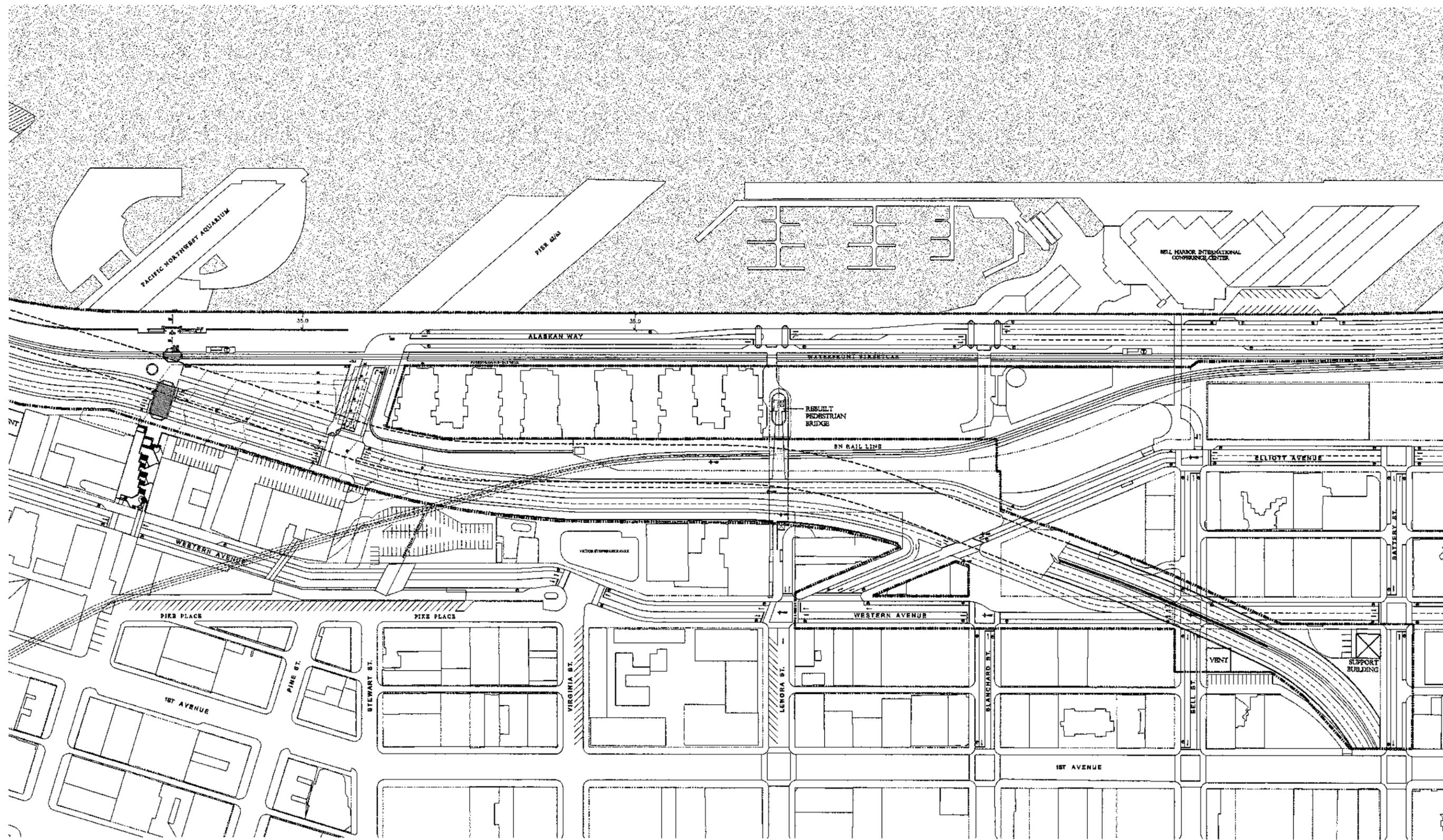
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 1  
YESLER TO PIKE

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

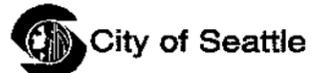
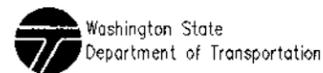


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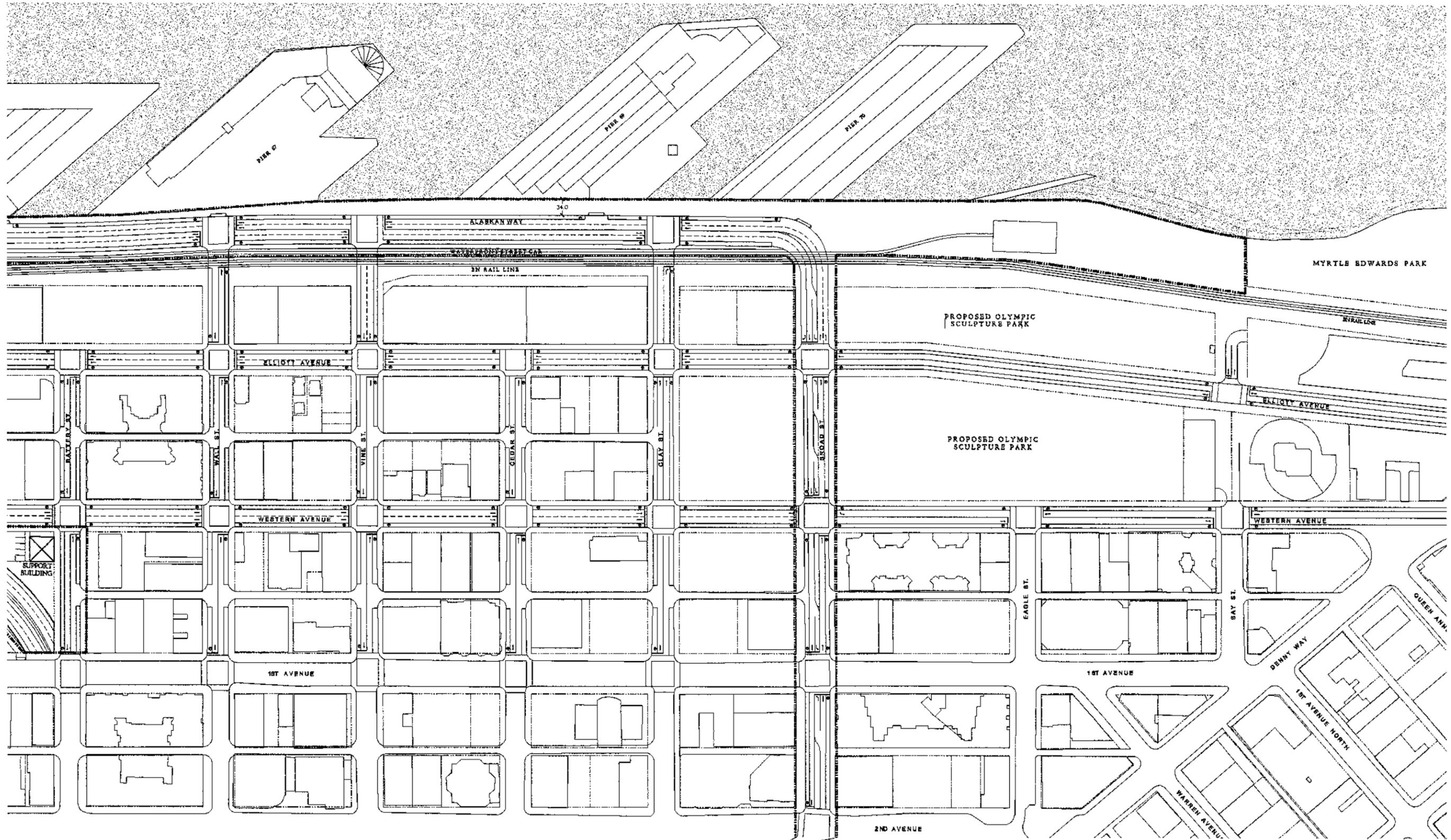
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 1  
PIKE TO BATTERY

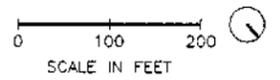
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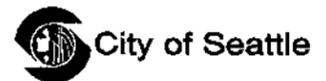
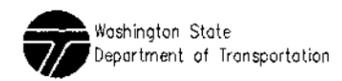
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PROJECT BOUNDARY CONTINUOUS TO 5TH AVE.



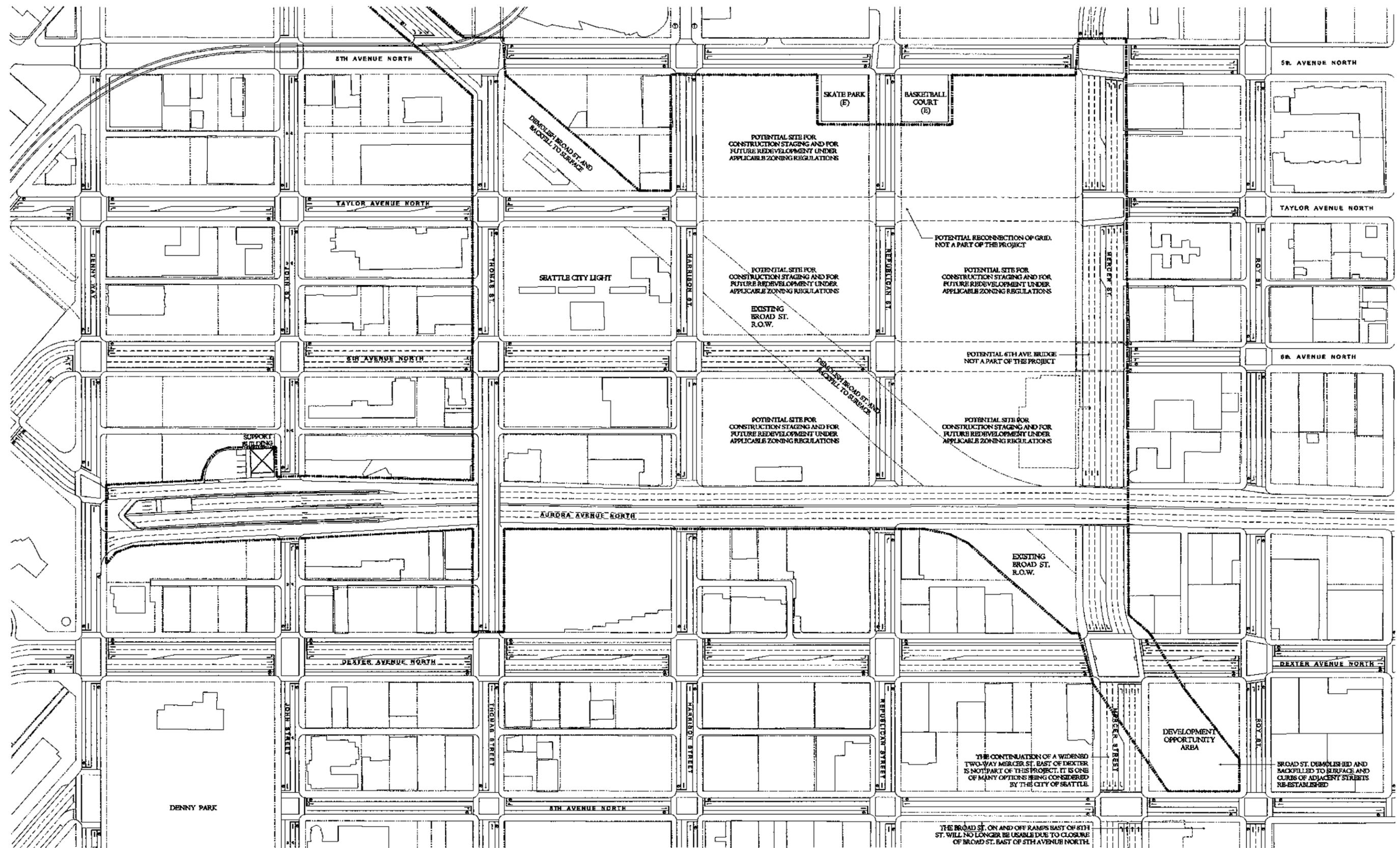
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

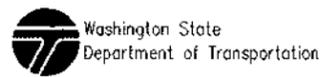
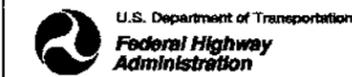
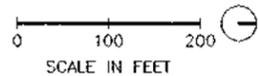
BYPASS ALTERNATIVE - VARIANT 1  
BATTERY TO SCULPTURE PARK

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION



PLOTTING DATE : 030204

NOTE:  
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 1  
NORTH OF THE BATTERY STREET TUNNEL

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

SHEET  
FIGURE NO.  
B1-26

## Key Characteristics of Surface Circulation System on Harborfront

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### BYPASS ALTERNATIVE – VARIANT 2

#### *Pioneer Square Area*

*Roadway:* Alaskan Way is an Eight-lane roadway (four in each direction) from King Street to Yesler Way with a median and left turn pockets at South Jackson and South King Streets. On-street parking is provided adjacent to the southbound lanes from King Street to Yesler Way and adjacent to northbound lanes from King Street to Washington Street. Two lane one-way northbound access is provided from Alaskan Way to Western Avenue at Yesler Way.

*Ferry Terminal Access:* Access to and from the ferry terminal is provided from Alaskan Way with a holding area east of SR 99 and south of King Street.

*Streetcar:* Shared vehicular trackway southbound adjacent to the median and an exclusive trackway northbound in the median turning east on South Main Street as a single exclusive trackway .

*Bicycle:* Exclusive bikeway (Class I) west of the Alaskan Way roadway.

*Pedestrian:* Approximately 25-foot promenade along shoreline of Pier 48 marginal wharf and an approximate 15-foot wide cityside sidewalk. Pedestrian crossings at all intersections.

#### *Midtown Area*

*Roadway:* Alaskan Way - Six vehicular moving lanes (three moving lanes in each direction) with a large median for streetcar stations and left turn pockets. On-street parking is provided on both sides of the street.

*Streetcar:* Shared vehicular trackway adjacent to the median in the roadway from Yesler Way to Union Street. At Union Street, the streetcar transitions to an exclusive single track facility on the west side of the roadway.

*Bicycle:* Striped bikelanes (Class II bikeway) adjacent to vehicular moving lanes on either side of the roadway.

*Pedestrian:* Approximately 67-foot promenade along the shoreline and an approximate 15-foot cityside sidewalk . Pedestrian crossings at all intersections and pedestrian bridges to Washington State Ferries at Marion and Madison Streets.

#### *Belltown Area*

*Battery Street Tunnel Connection:* Four lane tunnel transitions to a viaduct over the BNSF railroad tracks and connects directly to Battery Street Tunnel.

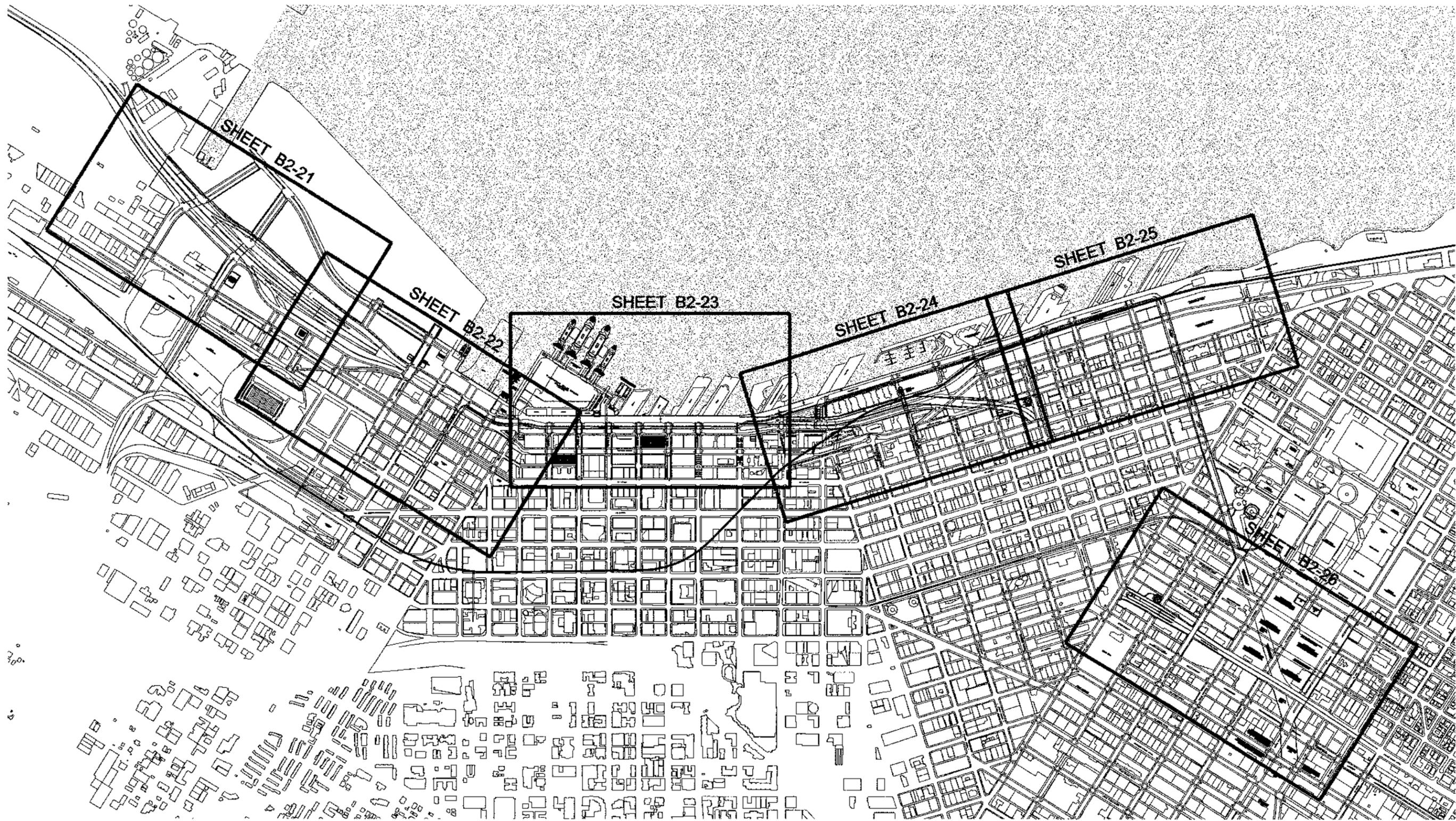
*Elliott and Western Connection:* New arterial connects Alaskan Way roadway along the right-of-way of the existing viaduct providing vehicular and bicycle access to Elliott and Western Avenues.

*Roadway:* Alaskan Way also branches at Pier 62 to follow the shoreline as a two-lane roadway to Broad Street. On Alaskan Way along the waterfront, on-street parking is provided on both sides of the roadway.

*Streetcar:* An exclusive single trackway on the east side of the roadway as it is today.

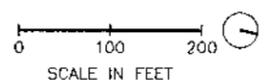
*Bicycle:* Bicycle access is provided on an exclusive pedestrian/bicycle way on the east side of the trackway as it is today.

*Pedestrian:* Approximately 24-foot promenade and wider north of Wall Street adjacent to the shoreline and an 8-foot sidewalk on the cityfront. Pedestrian crossings at all intersections where streets terminate at Alaskan Way.

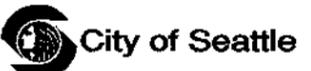
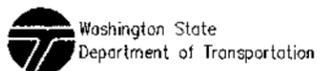


PLOTTING DATE : 03/20/04

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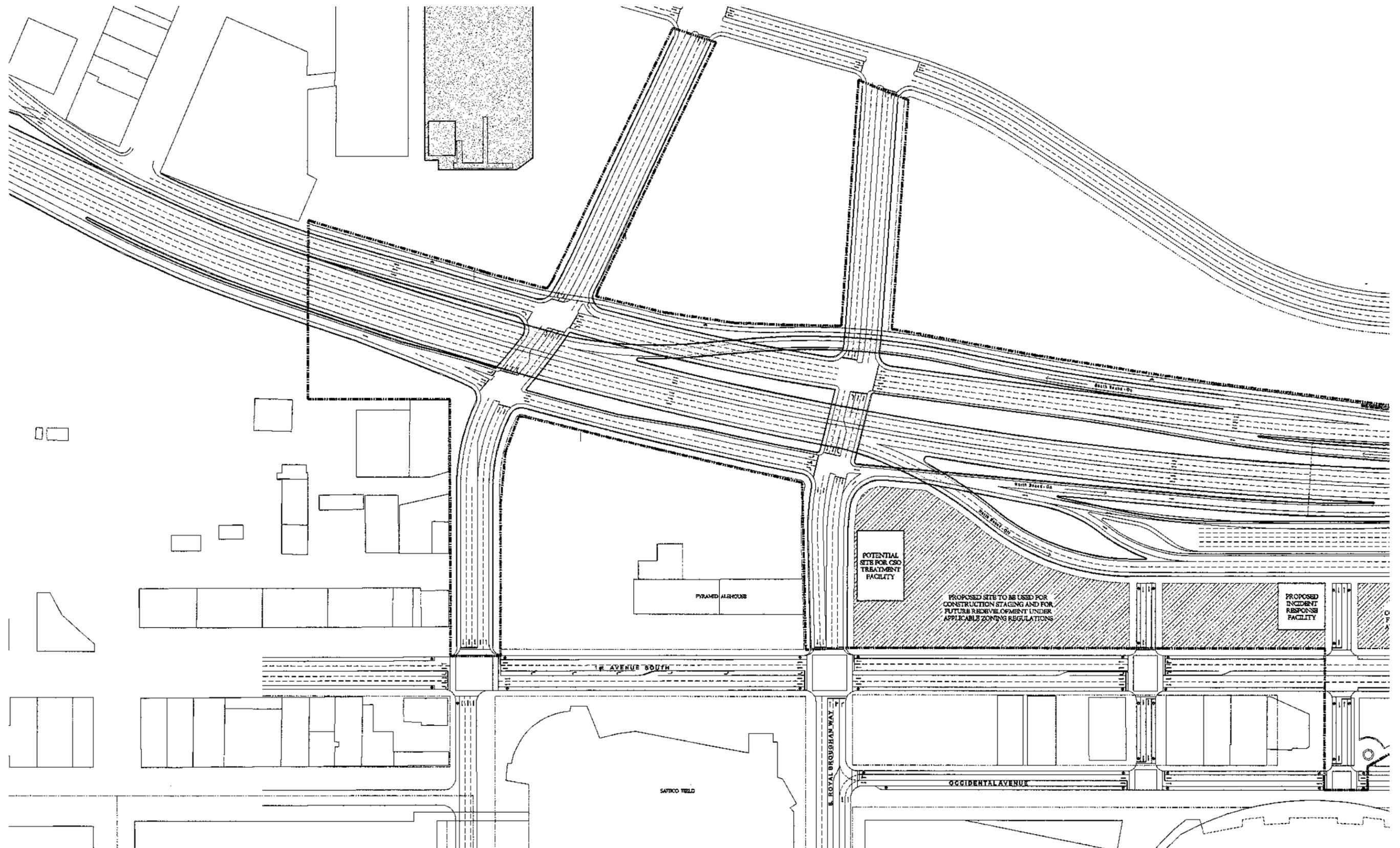
ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 2  
KEY PLAN

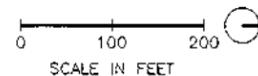
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B2-20

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

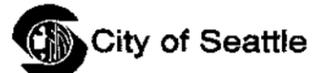
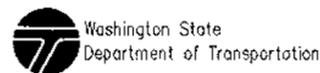
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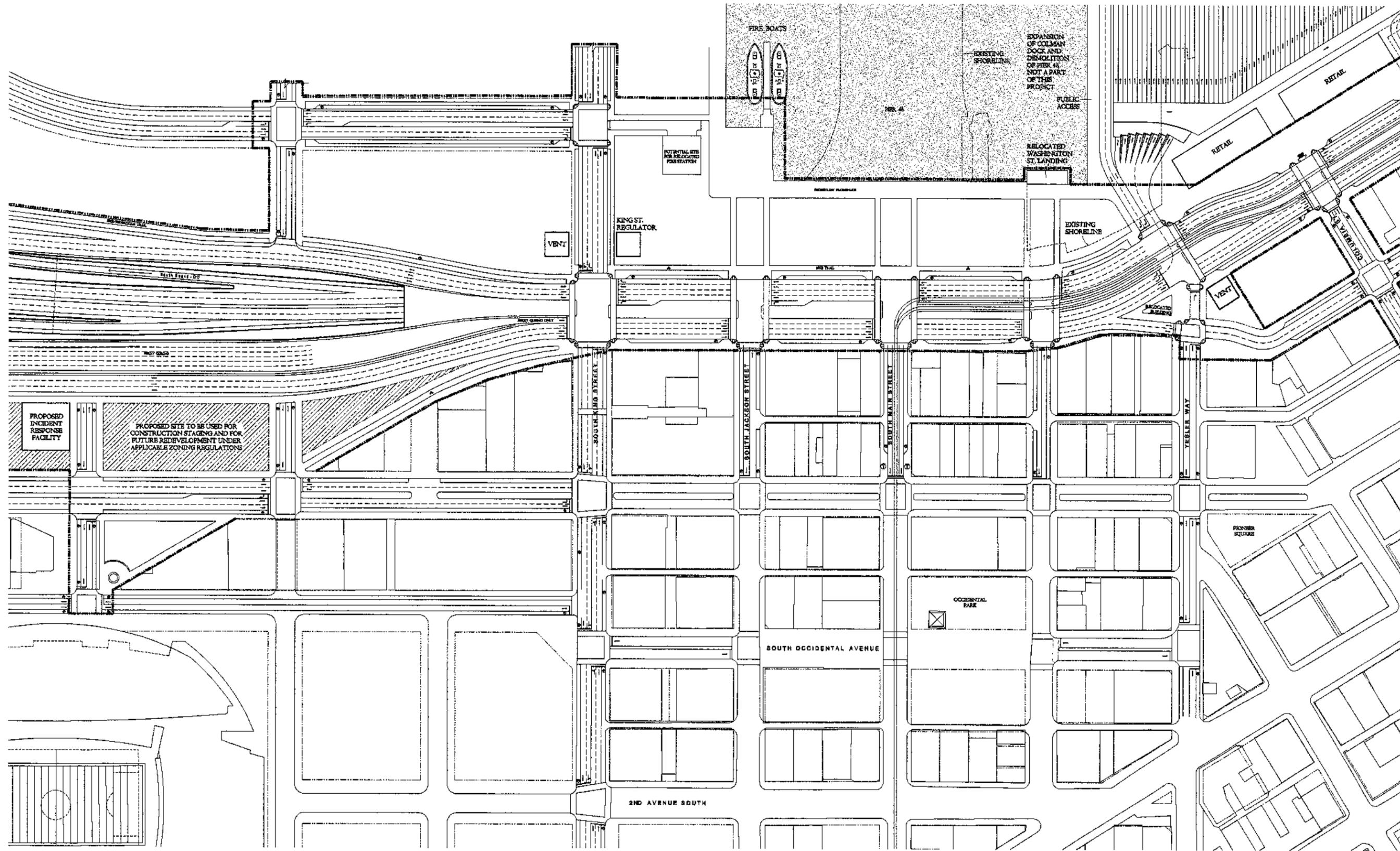
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

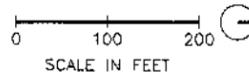
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S. ATLANTIC TO RAILROAD WAY SOUTH

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

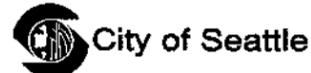
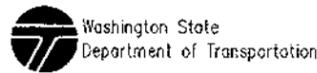


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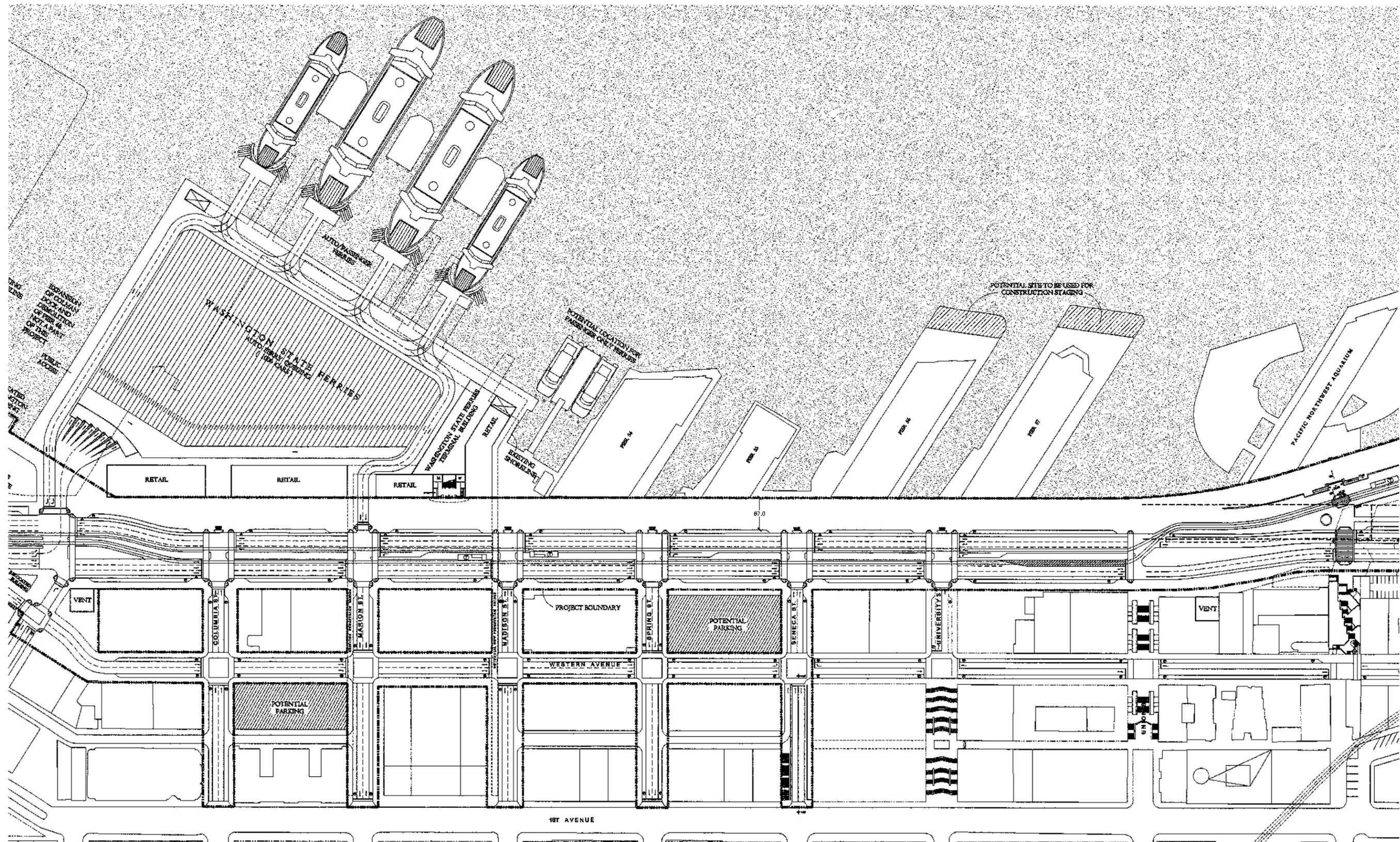


ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

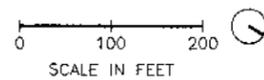
BYPASS ALTERNATIVE- VARIANT 2  
RAILROAD WAY SOUTH TO YESLER

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

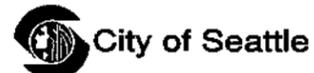
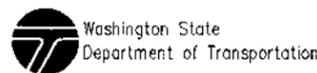
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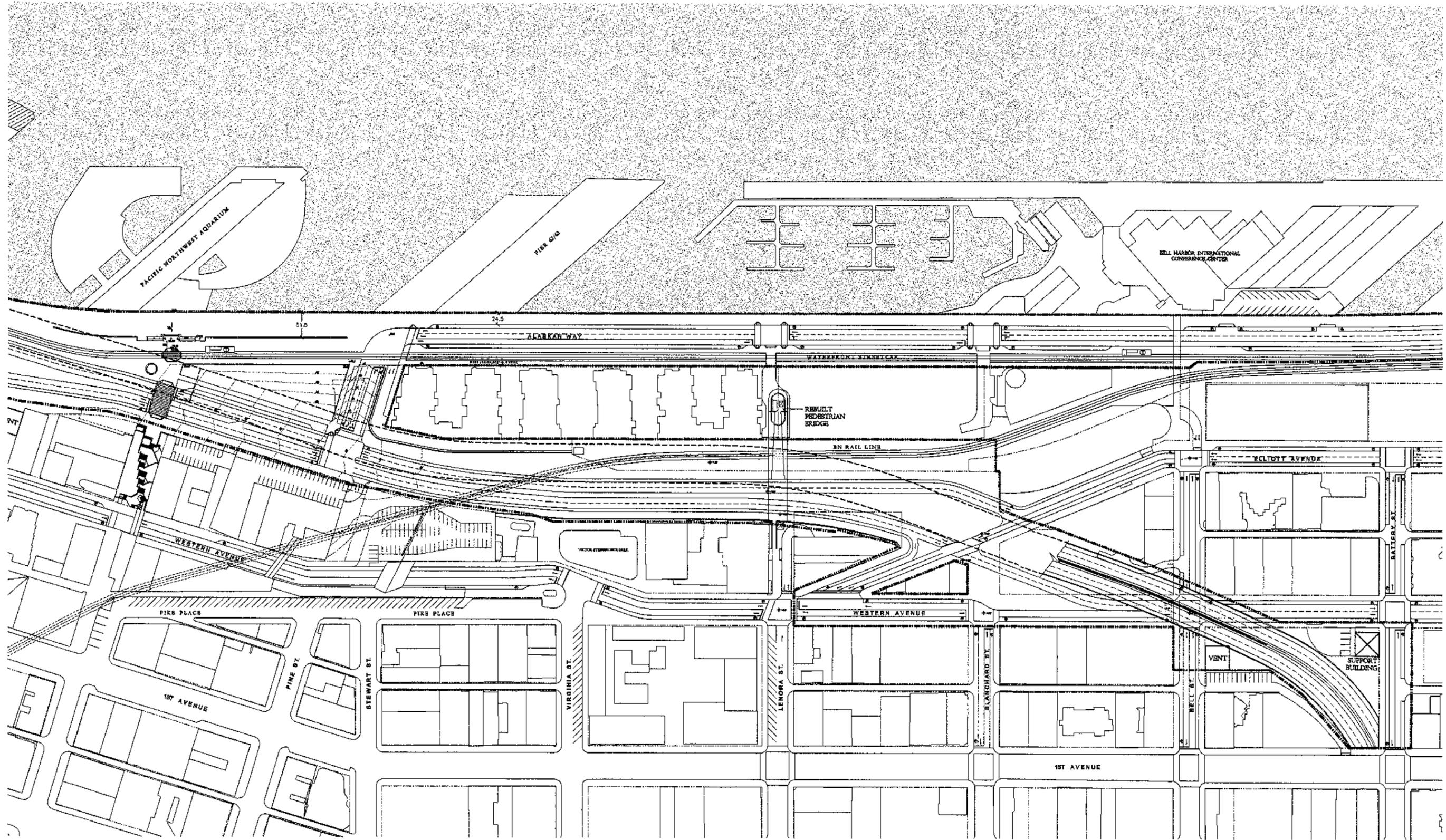
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ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
 SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 2  
 YESLER TO PIKE

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION

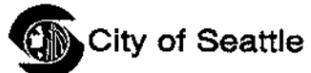
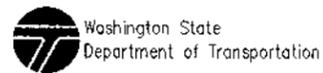


PLOTTING DATE : 03/02/04

NOTE:  
ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.



NOTE:  
STRUCTURES AND STREET CHANNELIZATION SHOWN  
BEYOND THE PROJECT BOUNDARY ARE ONLY FOR  
THE PURPOSE OF ESTABLISHING THE CONTEXT FOR  
IMPROVEMENTS WITHIN THE PROJECT AREA



ALASKAN WAY VIADUCT & SEAWALL REPLACEMENT PROJECT  
SEATTLE, WA

BYPASS ALTERNATIVE - VARIANT 2  
PIKE TO BATTERY

CONCEPTUAL DESIGN - NOT FOR CONSTRUCTION