

Los
Angeles
Union
Station
Master
Plan

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Below:
Proposed Los Angeles Union
Station Master Plan Vision



Introduction

Design Guidelines

Introduction

OVERVIEW

The document presents structured design guidance for those establishing a transit, development, or open space proposal within the Union Station Master Plan (USMP) area. Metro's current holdings of approximately 50 contiguous acres encompass the historic Station, the railyard, associated transportation hub facilities, the Gateway building and a nearby site currently operated by a restaurant. The Design Guidelines are to be used by Metro, the City of Los Angeles, architects, engineers, landscape architects and other related disciplines in designing projects within the Union Station Master Plan boundaries shown in the USMP.

The document is organized into six Chapters as well as an Appendix with supplemental materials. In conjunction with the *Transforming Los Angeles Union Station Report*, Technical Memoranda and the Leadership in Energy and Environmental Design Neighborhood Development (LEED ND) version 3 manual, the sections of this Design Guidelines document communicate the design principles and guidelines which need to be considered during the concept design or later stages of a transit, public or private realm design or improvement project to achieve the overarching goals of the developed Master Plan. It is anticipated that along with *Transforming Los Angeles Union Station* document, the Metro Board will adopt the Design Guidelines after preparation of the Program Environmental Impact Report.

The Design Guidelines document includes both standards which uses language "will" or "shall" and guidelines which typically include the words "should" and "consider". The Design Guidelines allow for the progression of new materials, new technology, and best practices at the time the project is constructed and should be considered flexible in the application of the guidelines. Projects that do not adhere to every provision of the Design Guidelines and can demonstrate that an alternative is superior in meeting the project goals and quality of design will be considered.

The USMP brings together transit, development and open space to create an extraordinary design for the transit hub of Los Angeles County to accommodate a variety of transit modes now and into the future. It ensures flexibility to

allow the Plan to adapt to changes in transit requirements and the needs of multi-phase commercial development. The development projects enhance and protect the historic Station through appropriate re-purposing as well as support Union Station's transit role. Retail to serve transit riders, residents, workers and visitors will be part of a new expanded Concourse and development projects. The development frames a public realm that is clearly legible and forms a network of continuous open spaces, continuity between the surrounding public streets, public spaces, and improved transit access. The open spaces of the USMP must be flexible to accommodate the needs of riders, businesses, residents and visitors, while allowing the opportunity for a range of community activities. Generating activity on site to attract visitors from around the region, development at Los Angeles Union Station (LAUS) will foster urban transformation in the areas around the station and influence growth and change throughout Southern California. As such, access and connectivity of pedestrians and bicyclists around the perimeter of the site must be improved to create a more welcoming environment and integrate the station back into the rest of the city. Concurrent with work such as the Connect US (formerly known as "Linkages Study"), the Plan will forge new connections into surrounding properties such as the Piper Tech Site, and areas such as El Pueblo, the Los Angeles River, Terminal Annex and the Arts District.

For public art guidelines please see Metro's art policy.

USERS GUIDE

The steps for using the Design Guidelines include:

1. Before starting any project, Metro staff and the team in charge of designing any project at Union Station should review the *Transforming Los Angeles Union Station* document, the Design Guidelines, and relevant technical memoranda in order to be familiar with the entire Master Plan.
2. Determine the type of project – transit, development or open space project - and if retail or wayfinding is to be included with the project. Sustainability design guidelines will apply to all project types.
3. Utilize the appropriate sections of the Design Guidelines to guide the design of the project.

4. It is encouraged that Metro project managers and designers meet with the Metro Union Station Project Manager responsible for LAUS to discuss early on the project and its relationship to other components.
5. At least twice in the process the project will be reviewed by Metro. (1) Mid-way through the schematic design when context, site plan, floor plans, cross section and massing have been prepared by the design team. Also, a digital massing model is recommended to show architectural massing. (2) Mid-way through the construction document phase when more precise plans, cross sections, elevations, and material specifications are available. A more complex transit project or development project will likely include more review cycles.

At a later date, a formal process will be developed by Metro with an application, a more detailed description of the review process, and define the reviewers. This process will include all projects within Union Station and is in addition to the City review process for development projects that are subject to the Alameda District Specific Plan and other City processes.

RELATED PROJECTS

- CONNECT US (formerly known as "Linkages Study") A public improvement plan identifying bike and pedestrian improvements to and from Union Station, the 1st/Central Regional Connector Station, and surrounding communities, which was completed at about the same time as the USMP.
- WAYFINDING - New environmental graphics and signage at the station has been added to the existing Union Station, including integration of some contemporary technologies.
- SCRIP - The Southern California Regional Interconnector Project (SCRIP) will add conventional rail run-through tracks to address the constraints of Union Station's stub-end configuration. Modeling indicates a capacity increase of 40% to 50% is likely with the implementation of SCRIP, thereby allowing for improved service frequencies to meet future demand. SCRIP will allow for operational flexibility in train routing, so that trains can originate in one location, run through LAUS, and terminate at the end of a

different line. The Union Station team is working with Metro regional rail and construction departments as the SCRIP run-through project will raise the railyard and provide Metro an opportunity to plan for a new expanded Concourse and more efficient platforms

- SILVER LINE BUS RAPID TRANSIT STATION - The USMP assumes that this previously designed project for a new station along the existing El Monte Busway will be implemented in the near future and be in place in advance of other transport improvements on site.
- LEED NEIGHBORHOOD DEVELOPMENT -The station is registered for LEED ND as administered by the US Green Building Council and has achieved certification under the site location, and linkages LEED ND subcategory. USMP includes a framework for achieving sustainability goals and LEED ND gold certification. The station is also LEED-EBOM.

SUSTAINABILITY

The USMP will incorporate sustainable best practices. The Sustainability Framework (refer to Technical Memorandum - Sustainability Task 3 for more detailed directives) for the Union Station Master Plan was customized for the particular vision of the design team and the unique opportunities and challenges of a large, historic, regional transit hub. LEED ND will be used as the third-party verification for the Master Plan's sustainability efforts and accomplishments. The sustainability framework developed for the USMP is organized into four organizational layers: infrastructure, transit, socioeconomic and identity. Each of these layers contains a number of imperatives (21 in total) that delineate principles, projections, and visions that form the sustainability goals. USMP will stand to the public as a sophisticated and thoughtfully designed and implemented sustainable development which is directly responsive to its site and community.

Throughout this document, all guidelines that are required to achieve certain LEED ND points are marked at the end of each project chapter in the top right hand corner with the LEED ND codes for the specific credit(s) to which the guideline corresponds. In this way, those reading this document can cross reference the LEED ND manual to gain a fuller understanding of the intention(s) and detailed targets for the guideline.

1

Transport Project Guidelines

Transport Projects Overview

OVERVIEW

Serving as the regional hub for Metro's \$25 billion investment in transit, the USMP has to plan for more frequent rail service and provide more space and capacity for increased transit boardings. LAUS is the central point in the growing Metrolink network, serving 5 counties. It receives the 5th highest number of Amtrak passengers around the nation. The Regional Connector Transit Corridor will improve Metro light rail connectivity and enhance access to local and regional destinations. Light rail service expansion could necessitate additional light rail platforms at Union Station to serve the West Santa Ana Branch line (Measure R project), the Glendale/Burbank Line (Long Range Transportation Plan Strategic Unfunded Project), or other future light rail service to Union Station. Allowing for further expansion of transit ridership in and around Los Angeles City and County, the USMP is a collaboration with five related projects mentioned previously that will upgrade and modernize the station environment.

KEY TRANSPORT OBJECTIVES

The key objectives for Transport, which address the findings outlined in *Transforming Los Angeles Union Station* and are described in more detail in Technical Memoranda, are listed below:

- Focusing on transit optimization first in planning the station
- Integrating multi-modal transportation with the historic Union Station, new transit-oriented development and connections to the surrounding neighborhoods
- Providing for the increase in transit ridership, which is forecast to double by 2040
- Reducing bus, pedestrian and auto conflicts
- Providing safety and operational efficiency for the multiple modes of transit
- Providing for clarity of circulation through the station to various transit modes
- Improving the passenger experiences including appropriate amenities and wayfinding
- Strengthening the pedestrian environment around the site perimeter and pedestrian and bicycle connections to adjoining neighborhoods

- Planning physical improvements to accommodate increased capacity on the platforms and on the concourse
- Accommodating new services to Union Station, including the Silver Line/El Monte Station, additional light rail and High Speed Rail

TRANSPORT COMPONENTS

The strategy of collocating the core transport elements reflect the overall Master Plan strategy of transit optimization, coordinated with the new on-site development and improved connectivity into adjacent neighborhoods. Transport is a term that refers to transit and other models of transportation. The transport components that come together in a coherent vision include:

THE NEW PASSENGER CONCOURSE

- At grade and spanning from the historic Station from the west to the new East Entrance to the east, the new Passenger Concourse will meet the future demands of transit while improving passenger connectivity and overall site accessibility.

THE RECONSTRUCTED RAILYARD

- The Master Plan assumes that the new loop track configuration, built as part of the SCRIP project, will extend from four of the western tracks in the existing railyard, allowing for the best tangent lines as the tracks extend over the freeway and curve towards the east. Because the run through tracks have to clear the freeway, the Master Plan team recommends that the entire railyard should be raised by four to six feet. Wider platforms and improved efficiency in track spacing for the entire railyard will also create a new yard that improves current and future operations.

THE RELOCATED PATSAOURAS BUS PLAZA

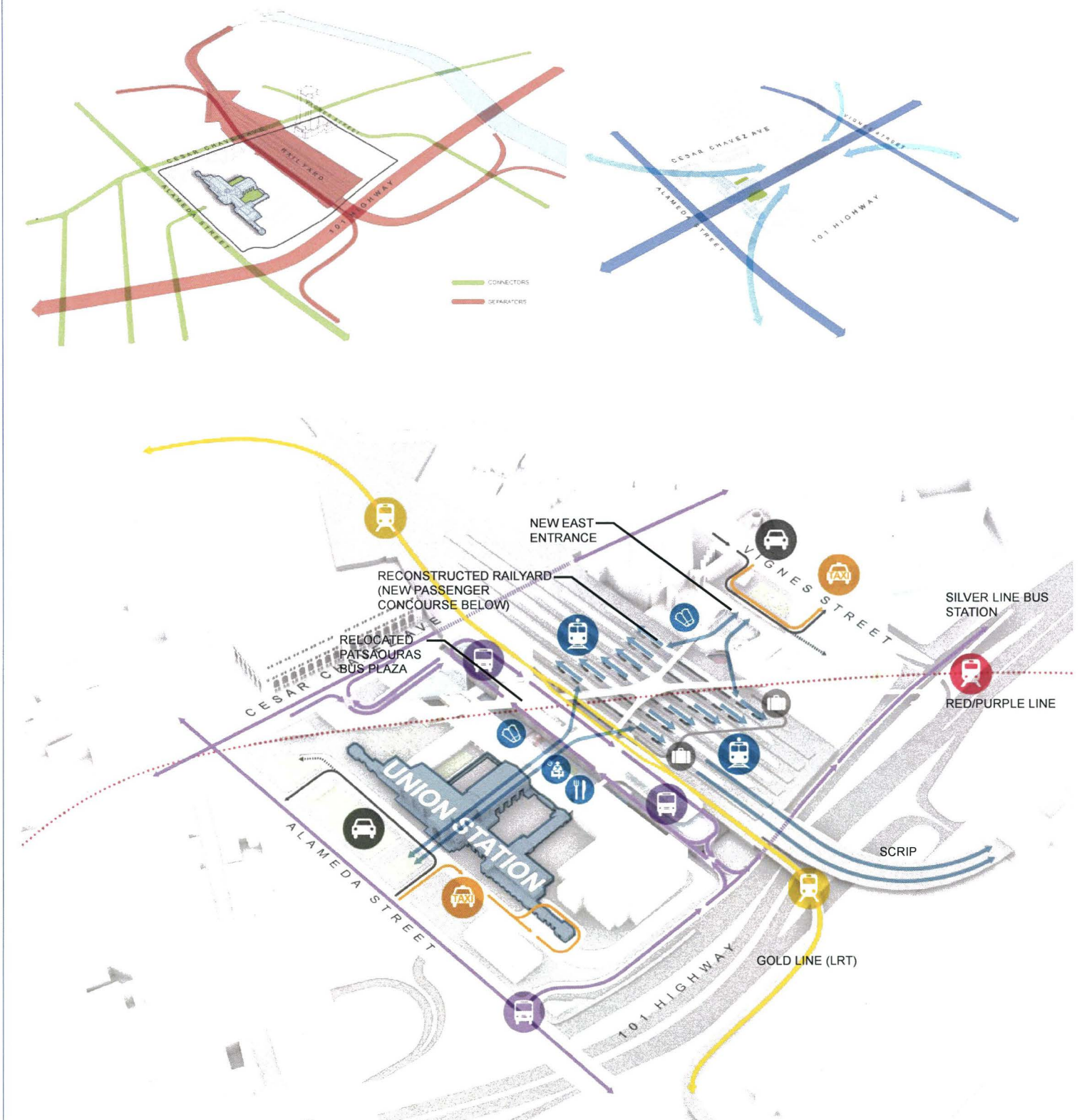
- At the same level as the reconstructed railyard, the Patsaouras Bus Plaza will be to the west of the tracks and accessed from the Passenger Concourse directly to either a local or regional bus island.

THE NEW EAST ENTRANCE

- Completing the at grade connection from the Passenger Concourse to Vignes Street, the new East Entrance which faces Vignes Street will house transit amenities and retail. The large landscaped open court

Below:

Top Row from Left to Right:
Major infrastructural separators and connectors around and through the USMP site.
Proposed circulation scheme.
Wind Rose diagram of the USMP site.
Bottom Row:
The proposed flow of various modes of transit at Union Station.



Transport Projects Overview

in the East Entrance will have knock out panels that will provide an access point to any future high-speed-rail station that is located under Vignes Street.

SILVER LINE BUS RAPID TRANSIT STATION

- The Master Plan assumes that the Silver Line Bus Rapid Transit station, which runs along the El Monte Busway near Vignes Street, will be completed prior to other transit improvements on site. That project indicates a new bridge linking the bus station to the existing gateway plaza. With future development of East Towers, the connector will be replaced by a new link to the Lower East Terrace and the rest of the open space network that ties together transit with new buildings.

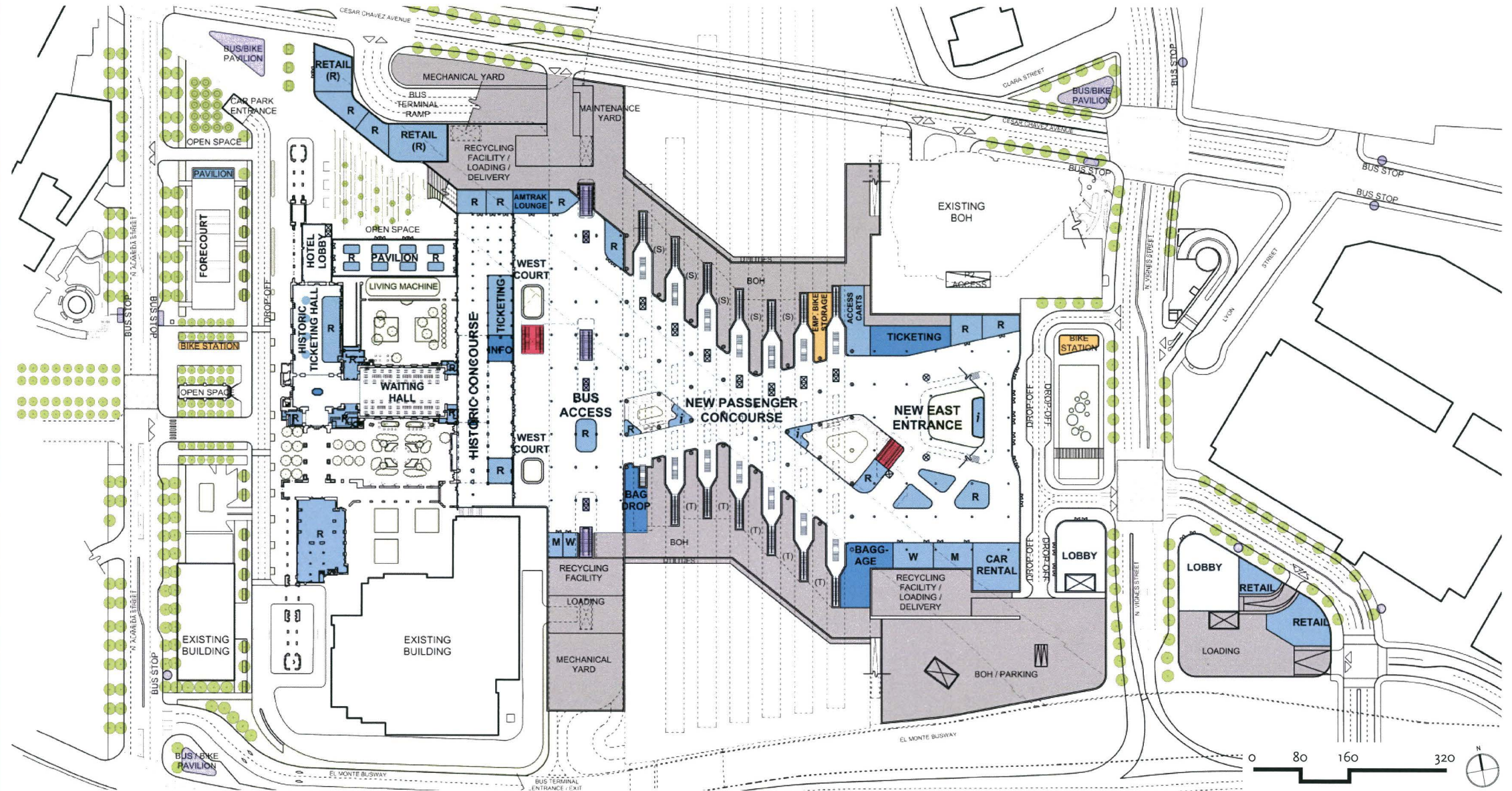
SUBWAYS AND LIGHT RAIL

- Effected subway and light rail elements include a reconfiguration of existing mezzanines and access portals, potentially new structural girders on the center of the existing Red/Purple Line subway box, and a raised Gold Line track and lengthened platform. The USMP also holds potential scenarios for new light rail lines that may enter the site.

HIGH SPEED RAIL

- The representation of the primary transport spaces in the final documents was also based on the premise that the indicative option for integrating High Speed Rail at Union Station would be to the east, under Vignes Street. As described in the High Speed Rail Technical Memorandum, the High Speed Rail station box and Concourse is shown below grade, accessible via a new independent portal on the east side of Vignes Street as well as a direct connection from Union Station via the new East Portal.

Below:
Concourse Level Plan
(Pre-HSR)



Transport Project East-West Passenger Concourse

BUILDING OVERVIEW

The East-West Passenger Concourse should extend from the historic Concourse on the west to the new East Portal that faces Vignes Street on the east.

- The at-grade Concourse should be at the same general level as the historic Station, Alameda Street and Vignes Streets, beneath the train yard and in the center of the area where the majority of transfers between regional rail, subways and buses occur.

BUILDING PROGRAM

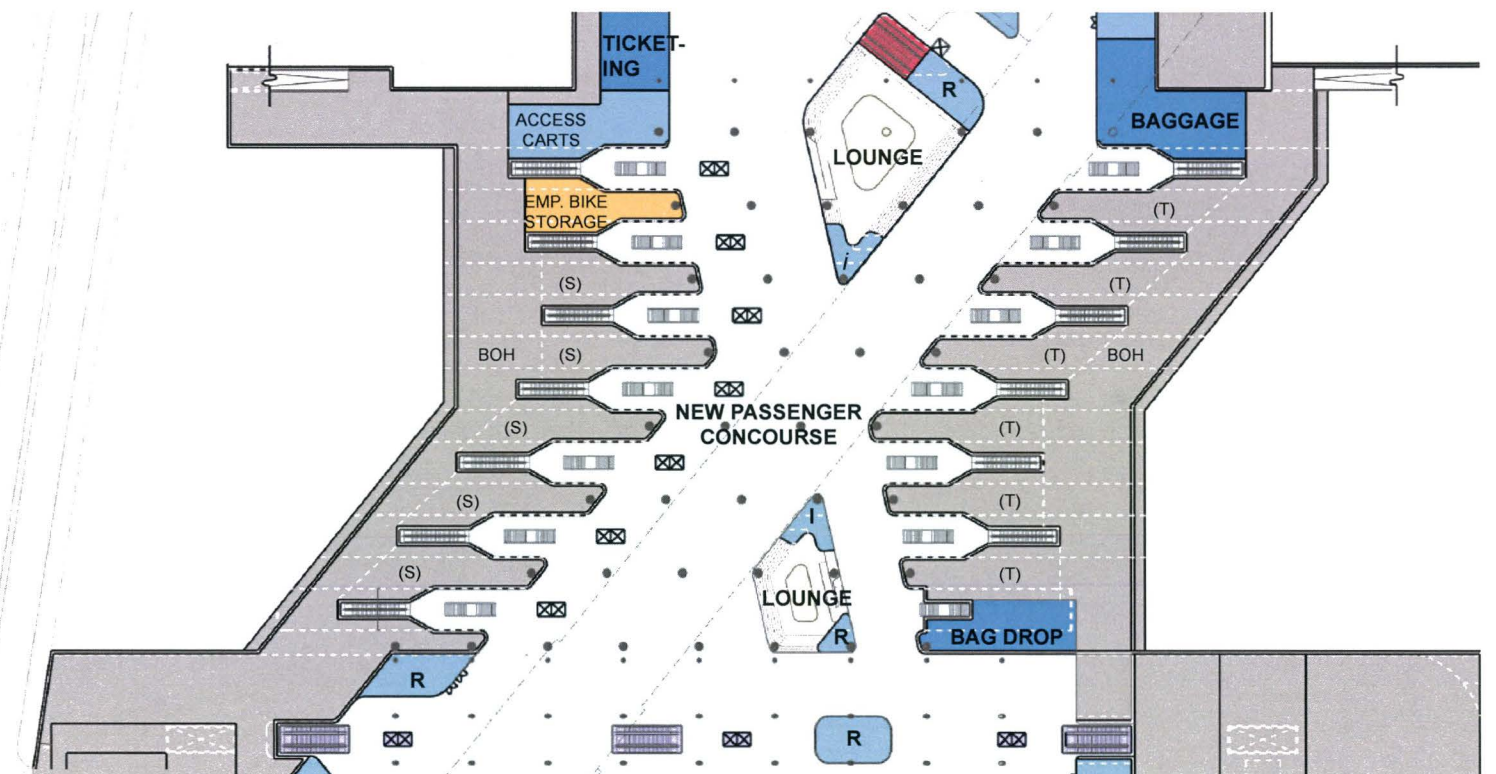
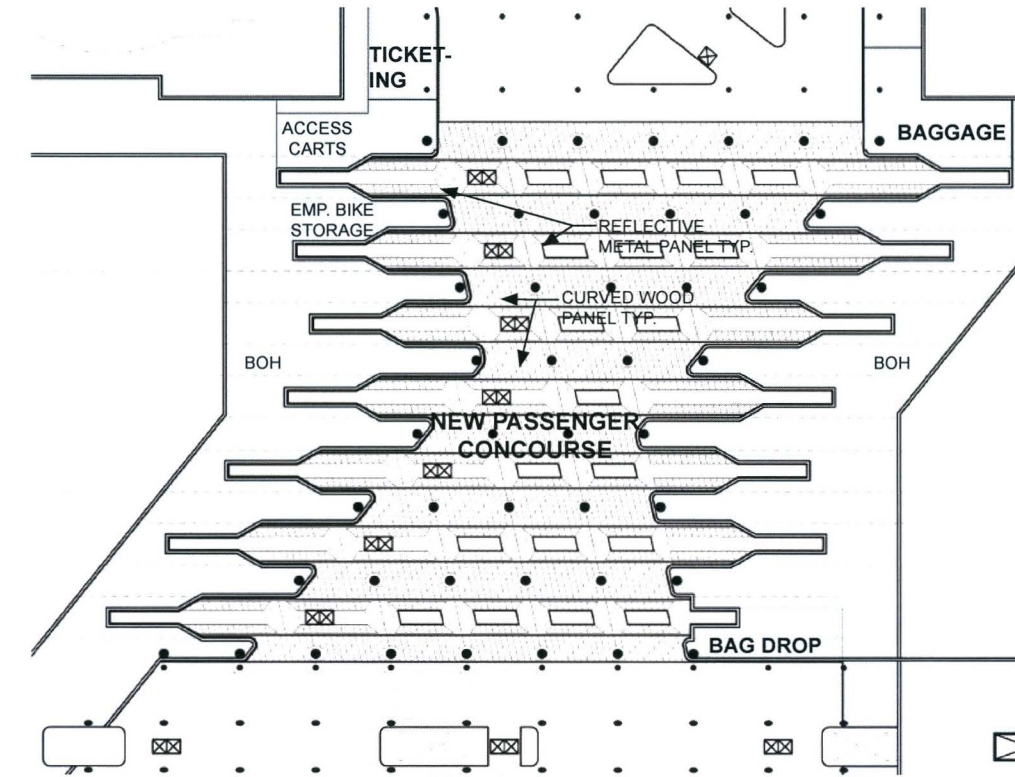
- New expansive areas for visitor amenities and facilities should be located along public circulation areas.
- Expanded passenger restrooms should be located in the adjacent Patsaouras Bus Plaza and East Entrance.
- Two spacious, deep-set lounges should be carved out on opposing sides of the Concourse to offer areas of repose and amenities.
 - For higher ceiling heights and privacy, the lounges should be approximately four feet lower than the rest of the Concourse level with accessible ramps.
 - The lounges which are more proximate to the actual trains and buses than the historic Waiting Hall will allow passengers to dwell in direct proximity to their mode of transport.
- The reconstruction of the railyard will be a part of the SCRIP project and will enable the creation of below track support spaces (BOH) on the north and south sides of the new Passenger Concourse. These should include space for systems, service, storage, maintenance and baggage handling facilities. Additionally, these new BOH areas underneath the tracks should provide better logistical access for deliveries and removals required for smooth functionality of the Concourse.

Below:

From Top to Bottom:
Partial Reflected Ceiling Plan
(RCP) Concourse Plan
Partial Concourse Plan @ Grade

TECHNICAL INFORMATION

- The East-West length from the eastern edge of the Historic Passenger Concourse to the western edge of the Eastern Entrance is 421'.
- Front of House (FOH) general concourse width dimensions range from 446' in the west, 147' in the center, and 309' in the east.
- Back of House (BOH) general concourse width dimensions range from 650' in the west, 506' in the center, and 638' in the east.
- See Appendix A-3 for more detailed dimensioned plans.



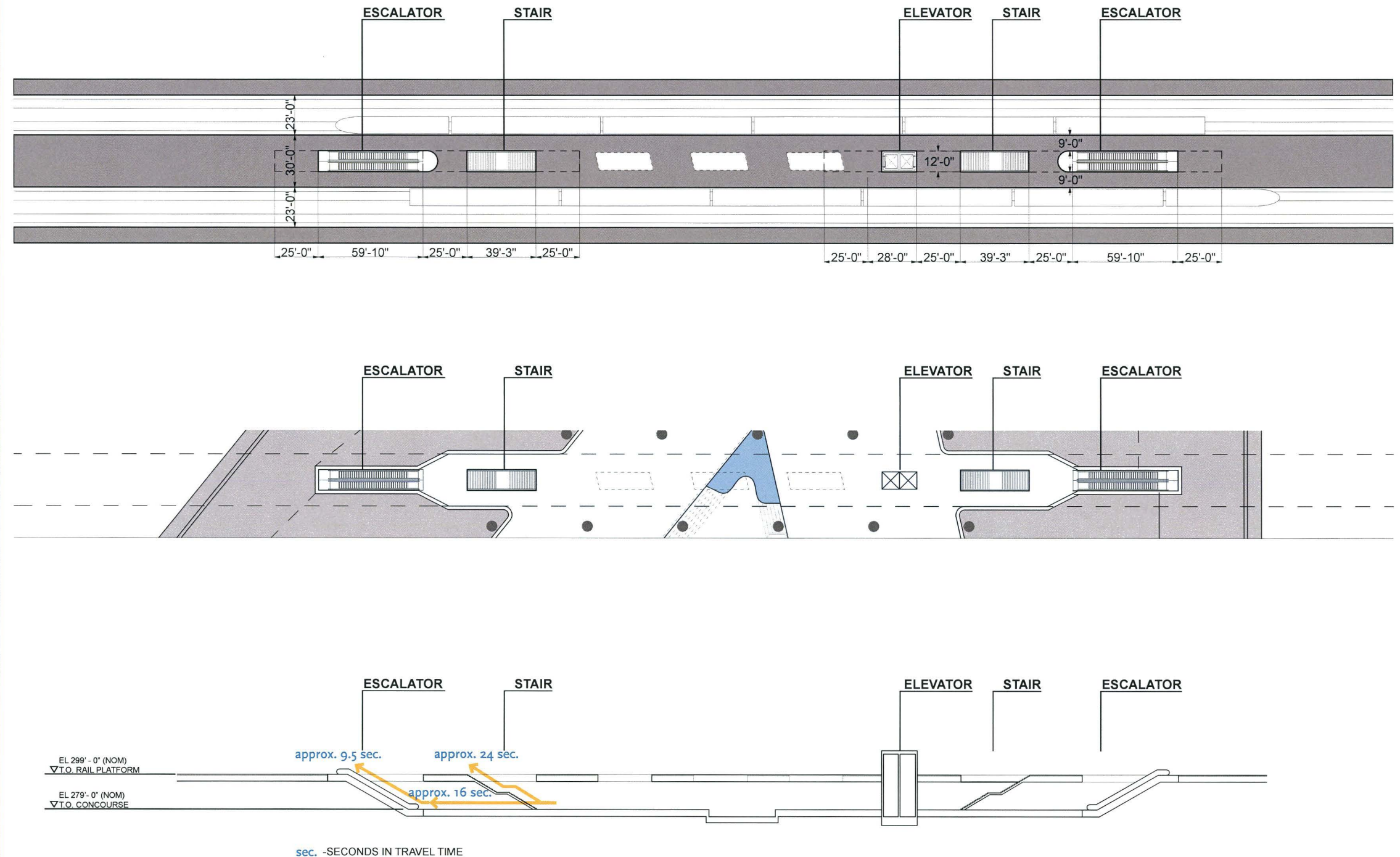
Transport Project East-West Passenger Concourse

ACCESS AND CIRCULATION

From the East-West Passenger Concourse, all the modes of transport are planned to be visible or accessible with bus, light rail and conventional rail above and subway lines below so passengers can make connections quickly and easily.

- In conjunction with the reconstructed railyard project, the platforms should be widened and re-spaced to allow for 7 new access gates from the north and south sides of the new Passenger Concourse.
- Mechanical vertical circulation components such as elevators and escalators must be placed outside the Red/Purple Line box to avoid conflicts between the required elevator and escalator pits and the Red/Purple Line station box which runs diagonally below the Concourse. This determines the location of the access points to the reconstructed platforms above.
- Access control measures such as for control gates or turnstiles should be accommodated at the Gold Line platform/gate.
- One pair of escalators and one nominal 10' wide stair or two nominal 10' wide stairs should be provided on each side of the platform for meeting the appropriate level of service.
- ADA access should be provided via a pair of elevators servicing every platform. These elevators will shorten the walk time required for passengers to reach the platform, provide more comfortable access for passengers with luggage or those with greater difficulty walking, and comply with ADA requirements.
- Daylight for natural wayfinding should be accentuated in the vertical circulation zones or gates by larger openings in the platforms to increase the amount of light around them. This will facilitate intuitive understanding of the location of platform access.

Below:
Platform Access Module with Rail
Platforms @ EL. 299': From Top
to Bottom:
Platform Plan View
Concourse Level
Section



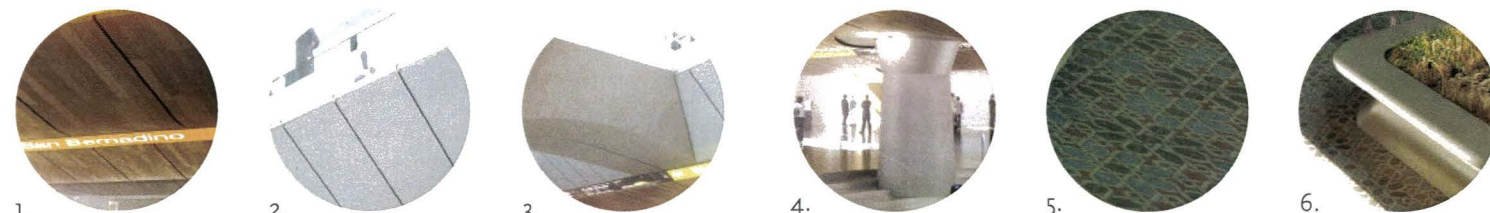
Transport Project East-West Passenger Concourse

ARCHITECTURAL SYSTEMS

An expanded day-lit Concourse will alleviate existing peak time crowding, accommodate the projected growth in ridership, and help in wayfinding to transit facilities.

- Day lighting and material elements in the ceiling of the concourse should echo the layout of the tracks above and help to enable the intuitive way-finding in the Concourse.
- Skylight openings in the new Concourse should be a punctuated array of platform level openings should that increase the level of natural daylight into the subterranean space.
 - In addition to improving the quality of the passenger experience, the openings should serve to orient and direct people as they move across the Concourse to their trains or other modes of transport.
 - The skylights at the platform level should be bounded by glass hand rails that enhance the daylight in the Passenger Concourse.
 - Reflective metal panels or similar reflective material should clad the east and west sides of the skylights to enhance daylight and protect the building from exposure to the elements.
- Structural beams that run east-west on the north and south ends of the skylights should be exposed concrete. This material should be contrasted by the warmth of materials such as the wood panels or slats that clad the underbelly of the box girders that support the train tracks.
- Linear LED screens running between the platform and track elements should be for providing wayfinding information.
- Architectural lighting should enhance the forms of concrete columns and ensure pedestrian visibility while minimizing glare and contrast.
- Benches should wrap around the large planters in the sunken lounges to provide informal seating.
- Floor finish of the two sunken lounges should be glazed tiling, a nod to the abstract tile patterns and distinctive color palette found throughout the original Union Station and a contrasting finish to the polished concrete or terrazzo slabs that are found throughout the Concourse and East Entrance.

1. Platform Underbelly Cladding - Light Wood Panels or Slats
2. Skylight Cladding - Reflective Metal Panels or GFRC
Balustrade - Stainless Steel & Glass
3. Structure - Painted Concrete
4. Columns - GFRC Cladding
Handrails - Stainless Steel
5. Sunken Floor - Tiles
Concourse Floor - Polished Concrete or Terrazzo
6. Benches - Pre-cast Concrete



Transport Project East-West Passenger Concourse

STRUCTURE

Consideration shall be given to the presence of the Red/Purple Line, which extends diagonally across the Union Station site from the northwest to the southeast. The bow tie shape configuration of the Concourse shown in the illustrations was driven by the Red/Purple Line location. The top of subway's structural box was originally placed at an elevation just below the existing passageway.

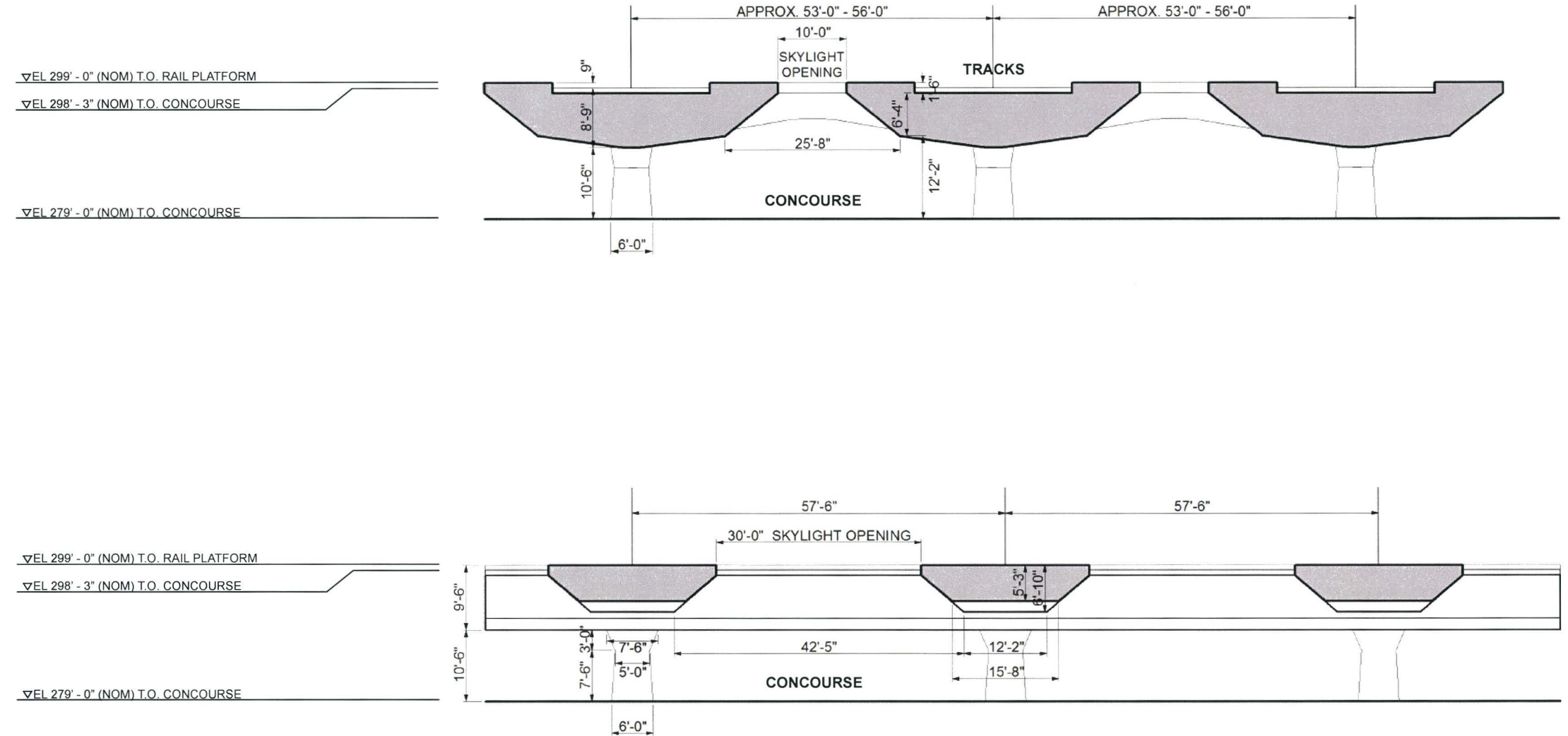
- One option to achieve a balance between structural depths and column spacing is to consider introducing a row of columns above the 80' wide Red/Purple Line.
- Other options for the column grid that should be considered include the use of custom steel truss work to frame the underside of the railyard and reductions in the rail loading criteria.
- For clearance, the Concourse will be phased to work with SCRIP, leveraging the opportunity to realize improvements in the Concourse while accommodating the access changes necessitated by the latter project.
 - Underneath the track beds, the minimum clearance should be 10'-6" from the Concourse floor.
 - Underneath the platforms, the minimum clearance should be 12'-2".
- Based on the documentation available from previous projects, the Concourse is assumed to be at EL.+ 299.00, nom., when the railyard is raised approx. 6'. A more detailed survey and analysis could modify these dimensions.

TECHNICAL CONSIDERATIONS

Dimensions shown in the drawings are based on a structure where the primary rail support structure runs north-south, centered on the track beds.

- The north-south column spacing is approx. 54'-6".
- The east-west columns spacing is approx. 53' - 56' depending on the platform width and track to track spacing above.
- Achieving this spacing may rely on the potential partial bearing on the center-line of the Red/Purple Line box. This option would require further structural analysis of the existing Red/Purple Line box.

Below:
From Top to Bottom:
East/West Section of the
Concourse
North/South Section of the
Concourse



Transport Project East-West Passenger Concourse

BUILDING SYSTEMS

CONDITIONING

There are challenges in meeting comfort criteria for all occupants given different activity levels (for seated and transient occupants). It is important to create spaces that can be more closely conditioned in waiting areas. The following comfort criteria should be met:

- Radiant heating should be effective during the winter months to enhance comfort locally.
- Radiant cooling should be effective at allowing higher air temperatures with enhanced or similar comfort levels to reduced air temperatures. Spot cooling and heating should be provided within the sunken waiting areas and for any open retail areas or enclosed program elements.
- Thermal mass, if utilized effectively with night cooling should be effective at enhancing comfort.
- Air movement should improve comfort in some areas for more active people, but care has to be taken not to negatively impact seated and standing individuals.
- Enclosed retail spaces and other enclosed spaces should be fully conditioned.

WINTER MODE

- Due to the transitional nature of the space, broader comfort criteria should be considered with no heating during the winter.
- Night flushing using the mechanical ventilation system (in conjunction with the radiant slab cooling) should be considered to further enhance this mode of operation by pre-cooling the structure at night.

SUMMER MODE

- During the hot summer months, tempering of the environment should be provided via radiant floor slabs to provide night cooling of the thermally massive structure and cooling throughout the day. Radiant cooling could efficiently reject heat at night through water side economizers in the central plant.
- Radiant ceiling slabs should also be considered to further reduce the impact of radiant surface temperatures within the space. This would permit significantly enhanced comfort with higher air temperatures.
- Any conditioning loads should be supplied by one

Below:

Conceptual Strategies for
Enhancing Passenger Comfort

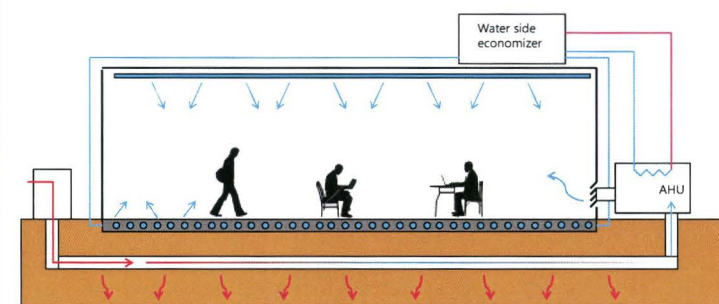
of the central plants proposed as part of the larger Master Plan.

VENTILATION AIR

- Incorporate ventilation features that allow for CO₂ monitoring and demand control ventilation even though they could limit ventilation levels to code minimum.
- Earth tubes should be considered below the Concourse to passively condition the air supplied to the Concourse. Further tempering during peak times could be achieved with free cooling from a waterside economizer in the central plant.

TECHNICAL CONSIDERATIONS

- In the approach described above, the space would not be considered directly conditioned if heating capacity was limited to 10 BTU/(hr-sf) and cooling capacity limited to 5 Btu/(hr-sf).
- The use of this approach and its compliance with Title 24 requirements as a conditioned space for the main Concourse is subject to further discussions with Metro when construction drawings are in preparation for a project.



PLUMBING

- Due to the locations below the tracks, careful consideration of the domestic hot water strategy needs to be developed to avoid gas fired water heaters. Consideration should be given to centralized systems, heat pumps and alternative technologies to minimize electrical demands.

LEED ND Credit:
NPDc4
NPDc9
NPDc11
GIBc2
GIBc12
GIBc16

Transport Project Historic Concourse

BUILDING OVERVIEW

The historic Concourse spans approx. 93' from the eastern end of LA Union Station to the western edge of the West Court. It is approx. 485' wide running North/South.

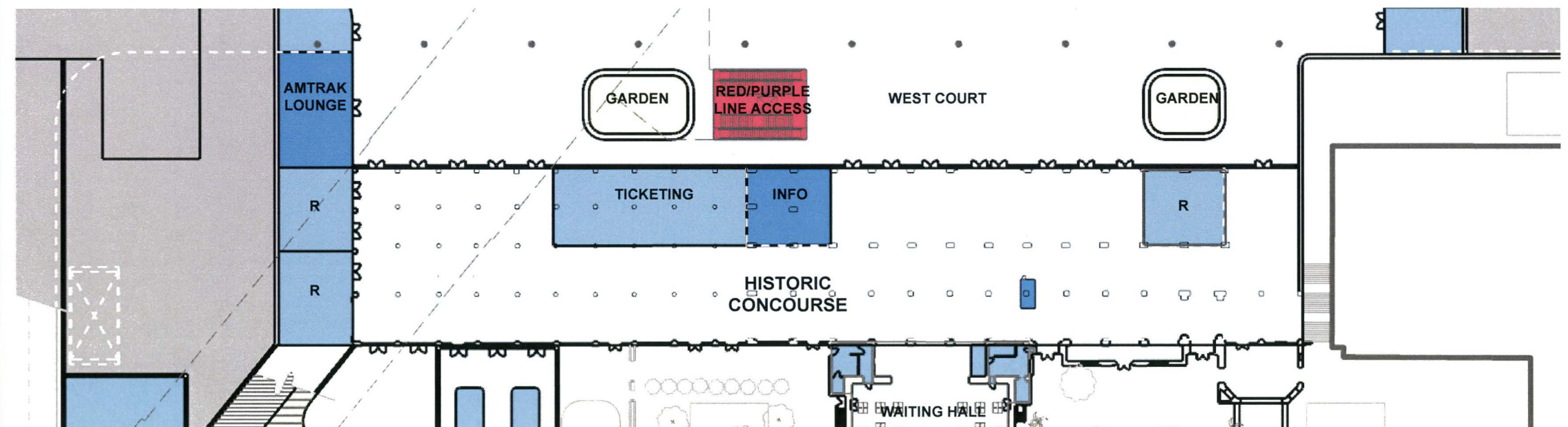
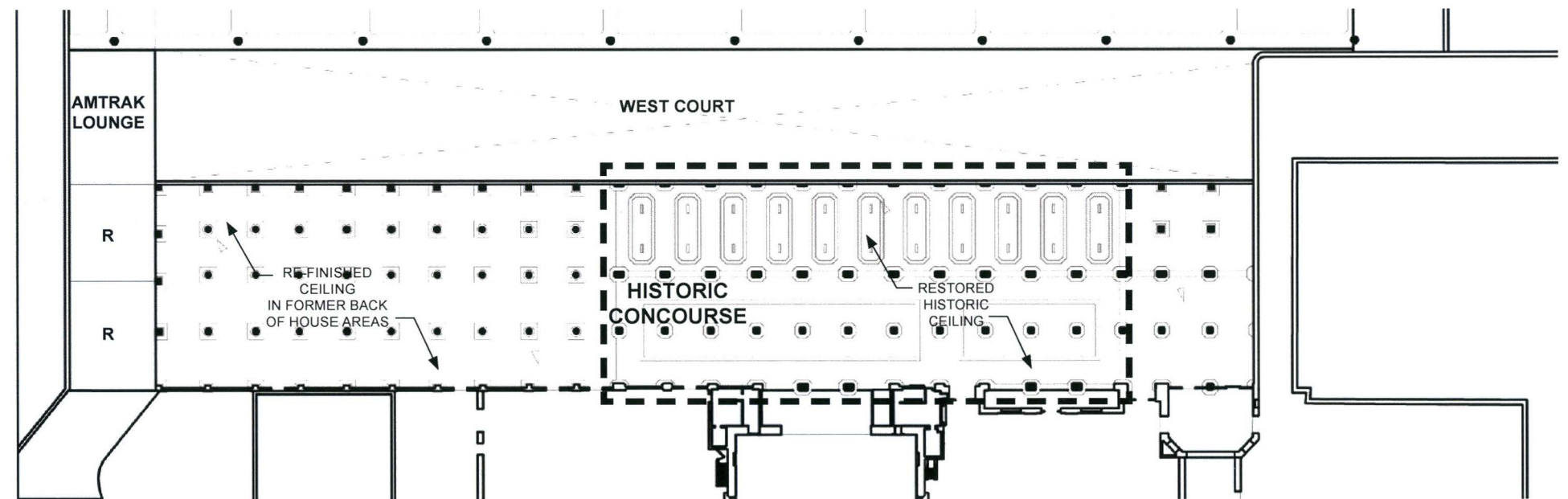
- Contributing portions of the historic Concourse should be restored largely to their original condition and layout of the primary spaces.
- The existing baggage building above the historic Concourse will be removed and replaced with a new low-rise hotel or other amenity structure.
- Non-historic additions and changes should be removed or reversed to reinstate the former design.
- Rehabilitation of the Main Terminal shall be conducted in accordance with the Secretary of Interior's Standards for Rehabilitation. See the Historic Resources Technical Memorandum.

BUILDING PROGRAM

The historic Concourse space will be largely prepared and rehabilitated to serve as a transition space linking historic interiors with the new expanded Concourse.

- Incongruous retail spaces will be relocated to other amenity areas designated in the new Master Plan.
- Aligned with openings in the east of the historic Concourse, less significant back-of-house areas should be cleared out to allow for new ticketing, information and retail kiosks to optimize processing efficiency.
- The inefficiently planned logistical, support and administrative functions of the historic Concourse building will be shifted elsewhere.
- The historic information board shall be re-purposed by using it in the historic Concourse or the new East-West Concourse.

Below:
From Top to Bottom:
Partial Reflected Ceiling Plan (RCP)
Plan of the Historic Concourse
Partial Concourse Level Plan of the
Historic Concourse



R = RETAIL

Transport Project Historic Concourse

LEED ND Credit:
GIBC6
NPDC3
GIBC2

ARCHITECTURAL SYSTEMS

Multiple new openings in the back of the existing retaining wall of the historic Passenger Concourse will facilitate movement to the new West Court.

- The openings should be integrated between the existing historic columns to create a sensitive but clear sense of transition from the historic areas to the new.
- The openings in the back of the existing retaining wall of the historic Passenger Concourse should be framed by stainless steel plate casings. The exterior wall (former foundation wall) seen from the new West Court should be clad in a stone or stucco.
- In order to allow for the potential conditioning of the historic building, the openings should be filled with glazed doorways.

STRUCTURE

Structural changes to the historic Concourse must retain its historic character

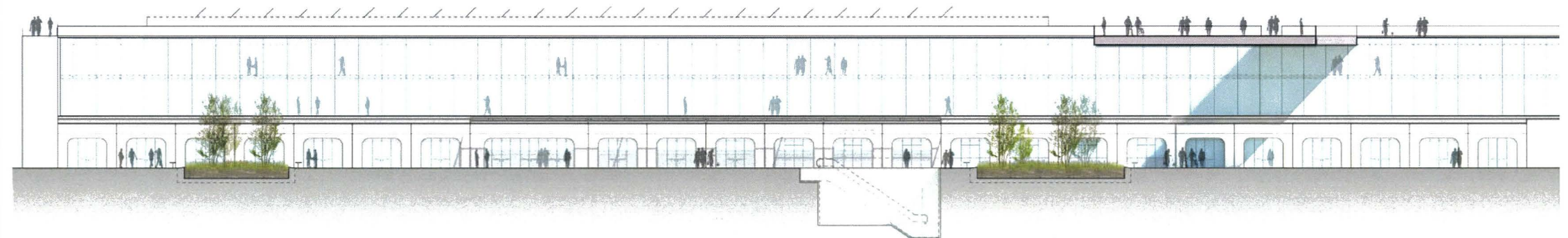
- The historic columns will be retained. In areas where columns need to be replaced, new columns should follow the spacing and character of the historic columns. Columns are spaced 20' to 25' in the E/W direction and 18'-6" to 19' in the N/S direction.
- Clearance of the ground level of the historic Concourse should remain 12'-6".
- The replacement and addition of the new hotel or amenity program on levels 2 and 3 of the historic Concourse should align its structural grid with the existing Concourse columns below.
- If the new development grid does not align with the existing grid, the transfer system that has to be brought through the historic Concourse down to the foundation level should avoid disruption to the historic nature and functionality of the Concourse.
- While it is possible that the existing gravity systems of the historic Concourse do not require significant upgrade, further detailed review of the structural plans and calculations will be required to determine this.

Below:

West Elevation of the West Court showing new openings in the existing retaining wall of the Historic Concourse

BUILDING SYSTEMS

- The historic Concourse and other areas within the historic Station (especially retail) may be partially or fully conditioned pending further study of the impacts on the historic finishes.
- Depending on the ultimate operational requirements, the doors in the back of the existing retaining wall should be held open during times of peak use.
- Automatic operable doors and/or windows should be considered to provide a natural ventilation mode.
- Lighting should be designed to minimize heat gain within the space by minimizing lighting power density and utilizing day light controls on perimeter zones.
- Strategies to minimize infiltration and solar heat gain should be considered.



Transport Project Reconstructed Railyard

BUILDING OVERVIEW

The Master Plan indicates the presence of the run-through tracks that will be designed as part of the SCRIP project. Concurrently, by raising and re-planning the existing railyard, tracks and platforms, the SCRIP project will generate the enabling works to allow for the future Passenger Concourse.

- The new loop track configuration will extend from four of the western tracks in the existing railyard, allowing for the best tangent lines as the tracks extend over the freeway and curve east towards the Keller Yard.
- In order for the associated bridge structure to clear the freeway, the run-through tracks will need to be raised at a higher elevation than the existing ones by approximately four to six feet.
- Metro should consider raising the entire railyard and a portion of the northern approach to match the new elevation of the run-through tracks.
- In addition to avoiding a change in height between the rails, this will reduce potential complications associated with the planning of the merging tracks

Below:
Partial plan of the Reconstructed
Railyard

and crossovers in the north throat of the yard. It will also allow for a more consistent approach to the design of the platform access points.

- The implementation of the yard improvements could be phased from west to east.
- A 6' rise of the rails will bring top of rail (T.O.R.) elevation to 298' -9" nom. Top of platforms will be at 299' nom.
- A 27' clearance from T.O.R. is required for electrification, so the underside of the pedestrian bridges that spans over the railyard must be at least at an elevation of 323' nom.
- Platform canopies should be newly constructed to reflect the new width of the platforms as well as the greater flexibility in vertical clearances required for potential changes in rail stock.
- Platform canopies should have integrated Photovoltaics (PVs) which will provide production capacity of at least 5% of the project's annual electrical and thermal energy cost (exclusive of existing buildings).

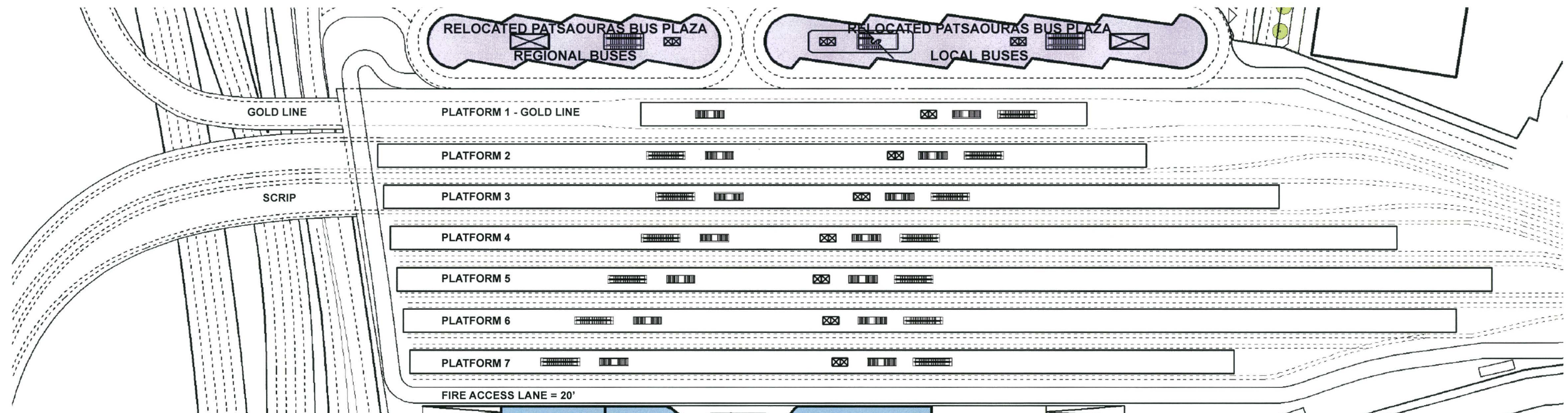
ACCESS AND CIRCULATION

The Master Plan shows a re-planned, new yard that reflects improvements in current and future operations. A number of options for the width and spacing of the tracks and platforms were explored and evaluated.

- Platforms should be re-spaced and wider to physically accommodate the vertical transportation improvements that meet contemporary safety and circulation standards and improve the efficiency of the track spacing. Technical considerations in respacing platforms include:
 - Seven (7) distinct platforms are ideally 30' wide.
 - Depending on the final platform width as well as the center of track to center of track spacing (13', 14', or 15'), the platforms would be approximately 23' to 26' apart or 53' to 56' apart center to center.
 - In the early stages of improvements, the new run-through tracks may provide sufficient capacity to temporarily decommission Platform 7. This would allow the latter to be phased in the ideal configuration, with the removal of the existing

East Portal.

- Each track bed contains 2 tracks.
- The former center tracks between platforms 3, 4, 5 and 6 are eliminated to allow for these improvements.
- New mechanized vertical transportation including elevators and escalators as well as new stairs should be provided to address the increased ridership, expansion of vertical travel, and ADA compliance.
- The vertical circulation components are located in the center of the platforms, resulting in greater amounts of circulation space as well as opportunities for daylight openings to the concourse below around them.
- The Gold Line platform, as described further below in the subways and light rail section, would be replaced by a raised, longer platform with additional vertical circulation.



Transport Project Reconstructed Railyard

STRUCTURE

For information about the structural requirements of the railyard, please refer to the description included with the new Passenger Concourse section.

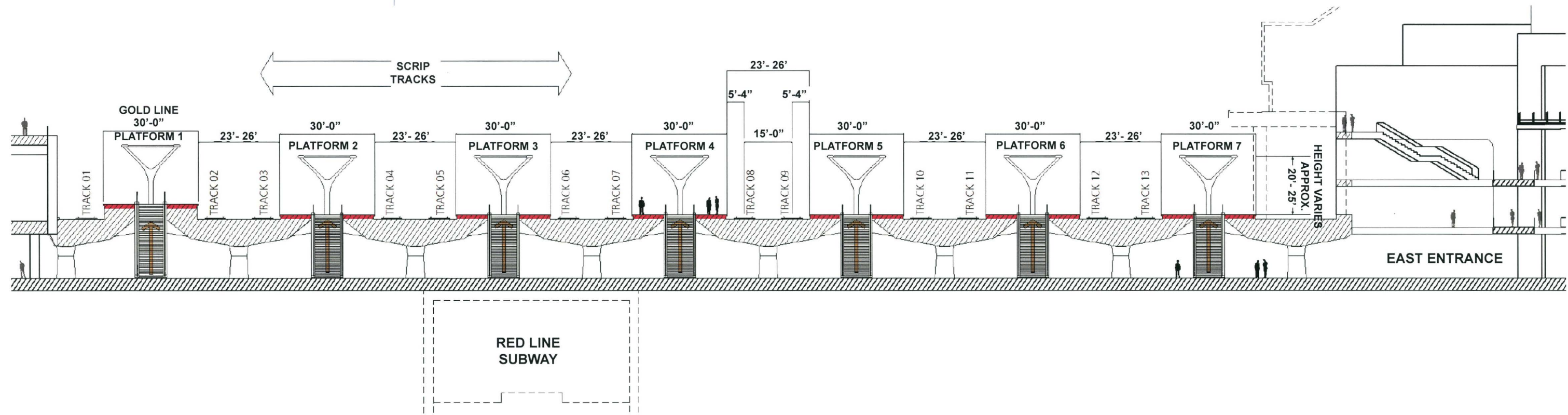
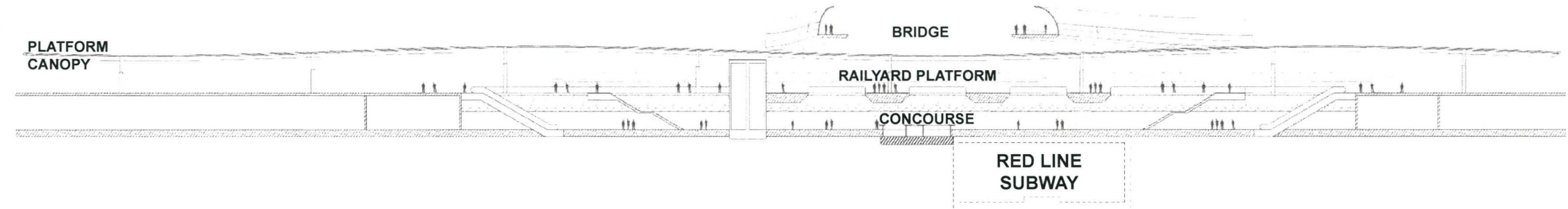
- The railyard structure will need to include the loads from the pedestrian bridge over the railyard. These are transferred via the integrated columns for the new platform canopies.

BUILDING SYSTEMS

Systems will be largely related to the power and communications requirements associated with a functioning railyard including those required for the maintenance of the right of way, train operations, wayside, passenger information and announcements, and emergency communications.

- Where overshadowing is limited, solar PVs should be installed on the platform canopies either through capital purchase or a private purchase agreement.

Below:
From Top to Bottom:
North/South Section through
Platform 06
East/West Section through the
Railyard



Transport Project Relocated Patsaouras Bus Plaza

BUILDING OVERVIEW

Oriented north/south and located the west side of the reconstructed railyard and on the east side of the historic Station, the relocated Patsaouras Bus Plaza essentially occupies the area that was dedicated originally to transport in the form of the baggage express and other delivery tracks.

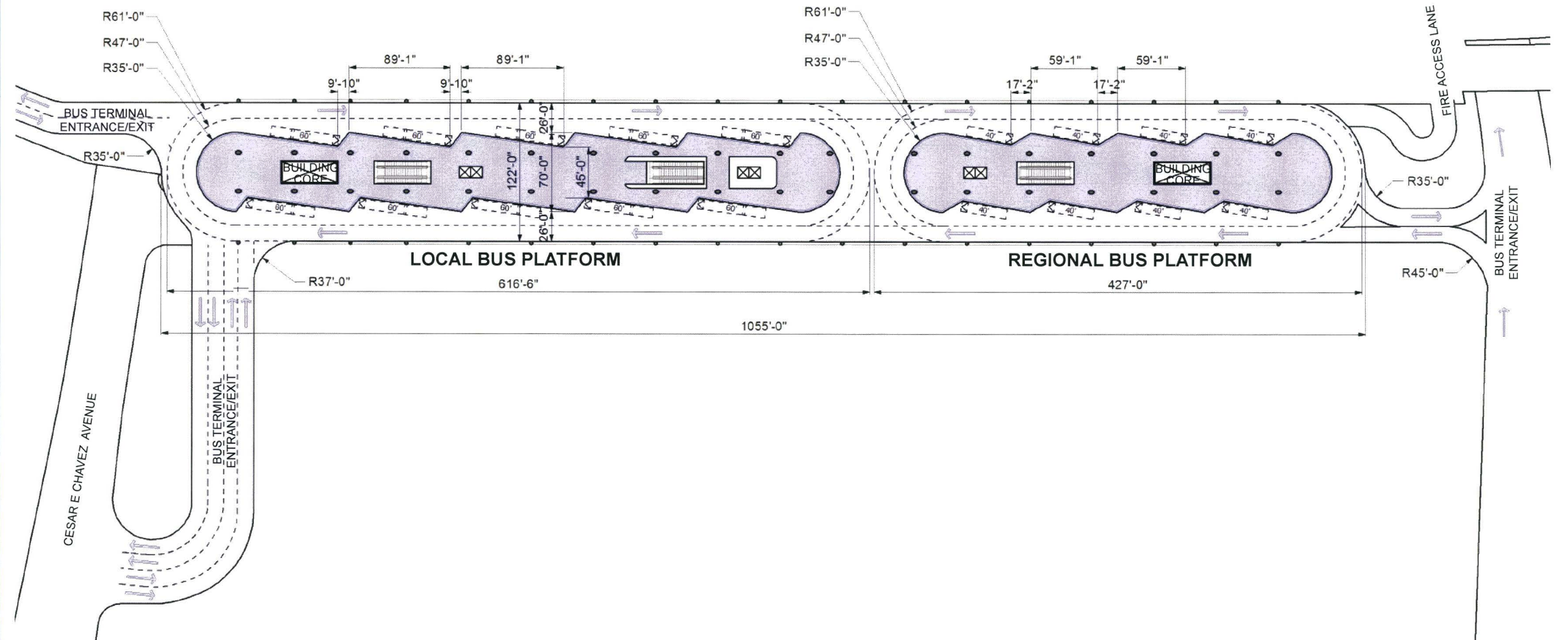
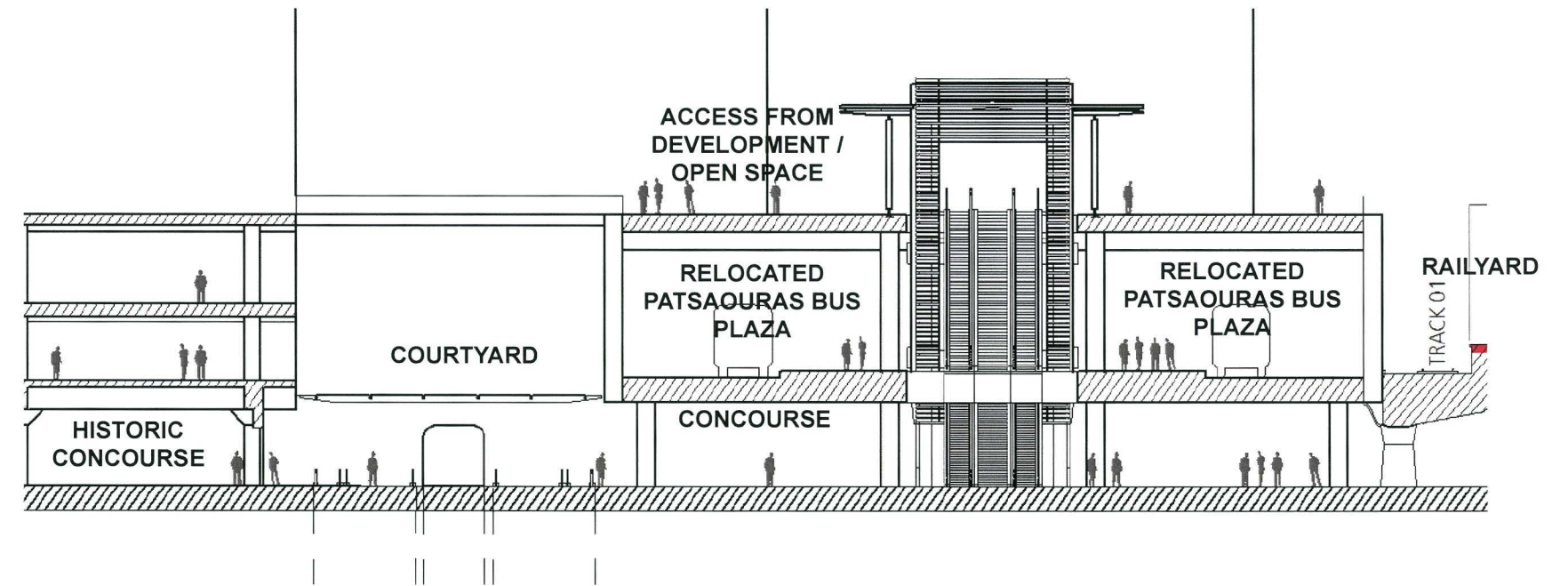
- Overall the Bus Plaza should be approximately 1,050' x 122'.
- The relocated Patsaouras Bus Plaza should be placed on the same approximate elevation level as the railyard.
- The relocated Patsaouras Bus Plaza has an approximately 24' clear height over the bus roadway. The roof of the Bus Plaza must align with the roof of the bar-shaped hotel or other amenity over the historic Concourse as well as the entry points of the bridges that span over the railyard.

BUILDING PROGRAM

Putting local, shuttle and regional buses on one level will provide flexibility to respond to changes in the local/regional mix, i.e. by simple reassignment of bays.

- Two bus islands, one serving local routes (such as Metro bus routes) and the other serving regional routes (such as Amtrak buses, LAX Flyaway, MegaBus, and other longer haul services) should be provided.
- The bus bays in the planning diagram are shown in a saw-tooth arrangement though a straight bus bay is also viable.
- At least 10 local bus bays and 8 regional bus bays should be provided unless a future study determines an adjustment in the number of bays needed.

Below:
From Top to Bottom:
Partial Section of the Relocated
Patsaouras Bus Plaza
Partial Level 2 Plan of the
Relocated Patsaouras Bus Plaza



Transport Project Relocated Patsaouras Bus Plaza

ACCESS AND CIRCULATION

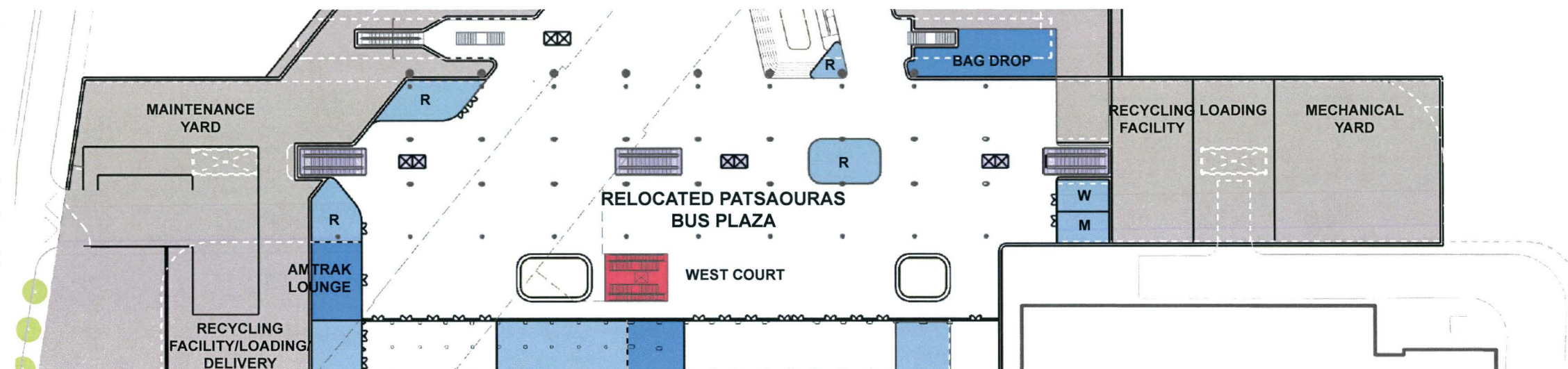
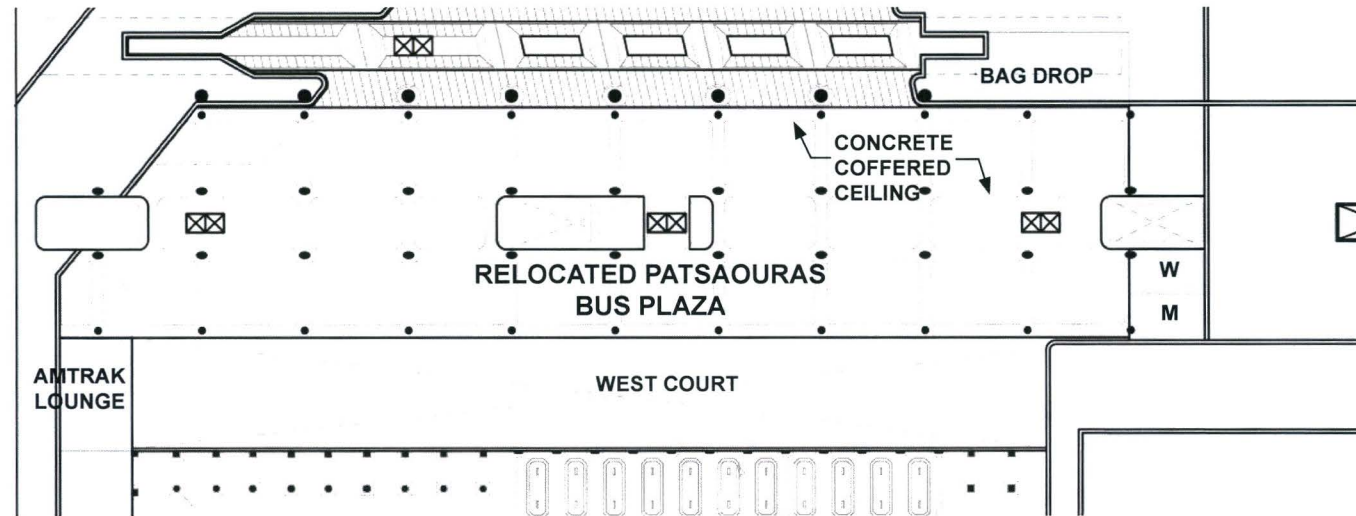
Passengers will ascend to the new Bus Plaza islands from the Passenger Concourse below in a manner similar to the existing conventional rail, creating safe direct routes to the buses. Unlike the existing Patsaouras Plaza, bus passengers will not have a reason to unsafely cross bus vehicular lanes to access bus service.

- The at-grade level shall be an extension of the Passenger Concourse with the buses located at the level above -roughly in the same plane as the railyard.
- This presents similar issues in terms of balancing the requirements for clear heights in the passenger circulation areas with the loads from the buses above.
- The same level of vertical circulation improvements as those planned for rail (the implementation of elevators, escalators and widened staircases) should be provided.
- Mechanical vertical circulation components such as elevators and escalators must be placed outside the Red/Purple Line box.
- Two pairs of escalators and two nominal 10' wide stairs or four nominal 10' wide stairs should be provided in order for the Local Bus Platform to meet the appropriate level of service.
- One pair of escalators and one nominal 10' wide stair or two nominal 10' wide stairs should be provided for the Regional Bus Platform to meet the appropriate level of service.
- ADA access should be provided via elevators (2 pairs for the Local and 1 pair for the Regional Bus Platforms).
- Passenger vehicles and taxis should not be permitted in the relocated Patsaouras Bus Plaza.
- Bus access will shift from Vignes Street to both Cesar E Chavez Avenue and the El Monte Busway.
 - The building of the relocated Patsaouras Bus Plaza in the north-south configuration will connect these two roadway access points. This level of accessibility will improve transit run time and reduce local street congestion on Vignes Street.
 - Additional access to the north around Terminal Annex to Vignes Street should be the preferred route for buses traveling to/from the relocated Patsaouras Bus Plaza and Division 13 to minimize transit run time, and reduce congestion on Cesar E

Below:
From Top to Bottom:
Partial Reflected Ceiling Plan (RCP)
Plan of Relocated Patsaouras
Relocated Patsaouras Bus Plaza
Partial Concourse Level Plan

Chavez Avenue.

- Drop-off lanes and counterclockwise loops should be around each island; lanes should double up at the intersection between the islands and at the two access points.
- Bus passengers will be in close proximity to the other modes of transport as well as the expanded amenities found in the new Passenger Concourse.



Transport Project Relocated Patsaouras Bus Plaza

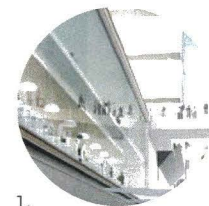
ARCHITECTURAL SYSTEMS

Separated by a courtyard but adjacent to the historic Concourse, the relocated Patsaouras Bus Plaza is envisioned as a contemporary transport building of high quality materials that are differentiated from the palette of materials of the historic structure.

- The west façade of the relocated Patsaouras Bus Plaza should be composed of glazing and vertical terracotta louvers or another similar material to protect the West Court from noise and pollution as well as provide thermal comfort to travelers in the Bus Plaza.
- The columns and ceiling panels should be clad with articulated glass fiber reinforced concrete (GFRC) panels. The columns should have a shape depression that is distinct from the new Passenger Concourse. The inclusion of inset ceiling panels will frame linear lighting coves.
- A featured core in the center of the Bus Plaza brings visitors directly to the level 3 terrace and the two development projects above the Bus Plaza. The vertical circulation elements in this core should be framed by steel or terracotta slats and glass which rise through the Bus Plaza and flourish into a canopy at the terrace level that connects to the Residential Building (West Tower 2) and Transport Office building.

Provide the following material or a similar quality as those listed below:

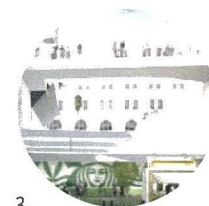
- | | |
|---------------------------------------|--------------------------------------|
| 1. Hotel Façade - Glass | 5. Canopy - Painted Steel & Glass |
| 2. Wall - Stone or Stucco | Balustrade - Stainless Steel & Glass |
| Opening Frame - Stainless Steel | 6. Louvers - Terra Cotta |
| 3. Canopy - Painted Steel & Glass | 7. Columns - GFRC Cladding |
| Bridge Enclosure - Metal Panels | Ceiling - GFRC Cladding |
| 4. Bench - Treated Wood or Stl. Steel | 8. Floor - Stone Pavers |



1.



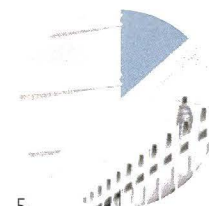
2.



3.



4.



5.



6.



7.



8.

Transport Project Relocated Patsaouras Bus Plaza

STRUCTURAL

As with the Passenger Concourse, portions of the relocated Patsaouras Bus Plaza are above the Red/Purple Line – leading to similar options with respect to the question of spanning over or bearing onto the Red/Purple Line tunnel.

- The loads from the buses are expected to be lower than those from the trains in the rail-yard. The structural grid of the relocated Patsaouras Bus Plaza should be driven primarily by the layout of the bus bays and loop roadways
- Four columns should run in the east-west direction and should be spaced in the north-south direction to match that of the passenger concourse columns in order to maintain the clarity of sightlines and passenger wayfinding.
- The structural system for the relocated Patsaouras Bus Plaza should allow for the construction of the two overbuild development projects above: preliminarily programmed as a residential building on the north end and a commercial/railway administration building on the south end.
- The loads from these buildings will be transferred to the relocated Patsaouras Bus Plaza.
- With the cores and lateral loads from the buildings continuing through the relocated Patsaouras Bus Plaza to ground, the enabling works for the overbuild structures will need to be considered as part of the relocated Bus Plaza construction .

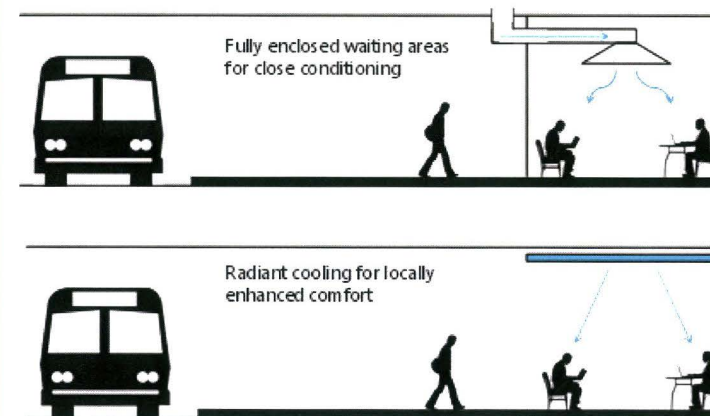
BUILDING SYSTEMS

CONDITIONING

- The Bus Plaza will largely be unconditioned, effectively closed on the west face in order to provide sufficient acoustic protection and air quality control for the open West Court.
- The Bus Plaza should be open on the east face and, thereby, largely unconditioned.
- Shading and thermal mass should be designed to assist in keeping bus passengers comfortable while waiting for buses.
- Conditioned areas served via chilled water and hot water from the new central plant should be limited to the small work areas and kiosks, estimated at

Below:
Conceptual Strategies for
Enhancing Passenger Comfort

- approximately 7,000 sf.
- It is recommended to carefully consider the option of fully enclosed waiting areas in limited areas available between the bus loading bays and vertical circulation elements for close conditioning, or to consider the use of radiant cooling to locally enhance comfort as indicated below.



VENTILATION

- Mechanical exhaust with passive make-up (air inlet openings) through the open East side is proposed to minimize the energy impact of the building.
- Opportunities to fully naturally ventilate the Bus Plaza should be further investigated during design. If sufficient ventilation can not be achieved via natural means balanced against acoustic concerns, a hybrid mechanically assisted natural ventilation should be pursued.
- Demand based ventilation controls should be carefully considered to provide sufficient ventilation while minimizing energy consumption.

LEED ND Credit:
NPDc7
GIBc2

Transport Project New East Entrance & Amenities

BUILDING OVERVIEW

The new East Entrance allows for the continuation of the at-grade path towards Vignes Street. The East Entrance is approx. 231' X 423', set back approximately 150' from Vignes Street.

- At the heart of the new portal, there should be an open court (approximately 120' X 150') that acts as an open air atrium about which the new means of circulation and amenities are organized.
 - The space also provides an opportunity for landscape in the middle of the circulation – landscape which is at grade prior to High Speed Rail, migrating one level down thereafter.
 - The new East Portal project is constructed on the existing garage, requiring removal of the first parking level and reinforcement of the structure below.

BUILDING PROGRAM

Transportation amenities with a combination of entertainment, recreation, and retail should be placed around the entrance East Court and on upper levels and terraces adjacent to the development projects on the southern end of the former Gateway Plaza.

- Enclosed areas for shopping retail should be balanced with complementary spaces that include restaurants, bars, and coffee shops.
- The public terraces and courts of the East Entrance provide a proportional amount of open space for a formal and informal circulation and gatherings and outdoor retail display/seating areas.

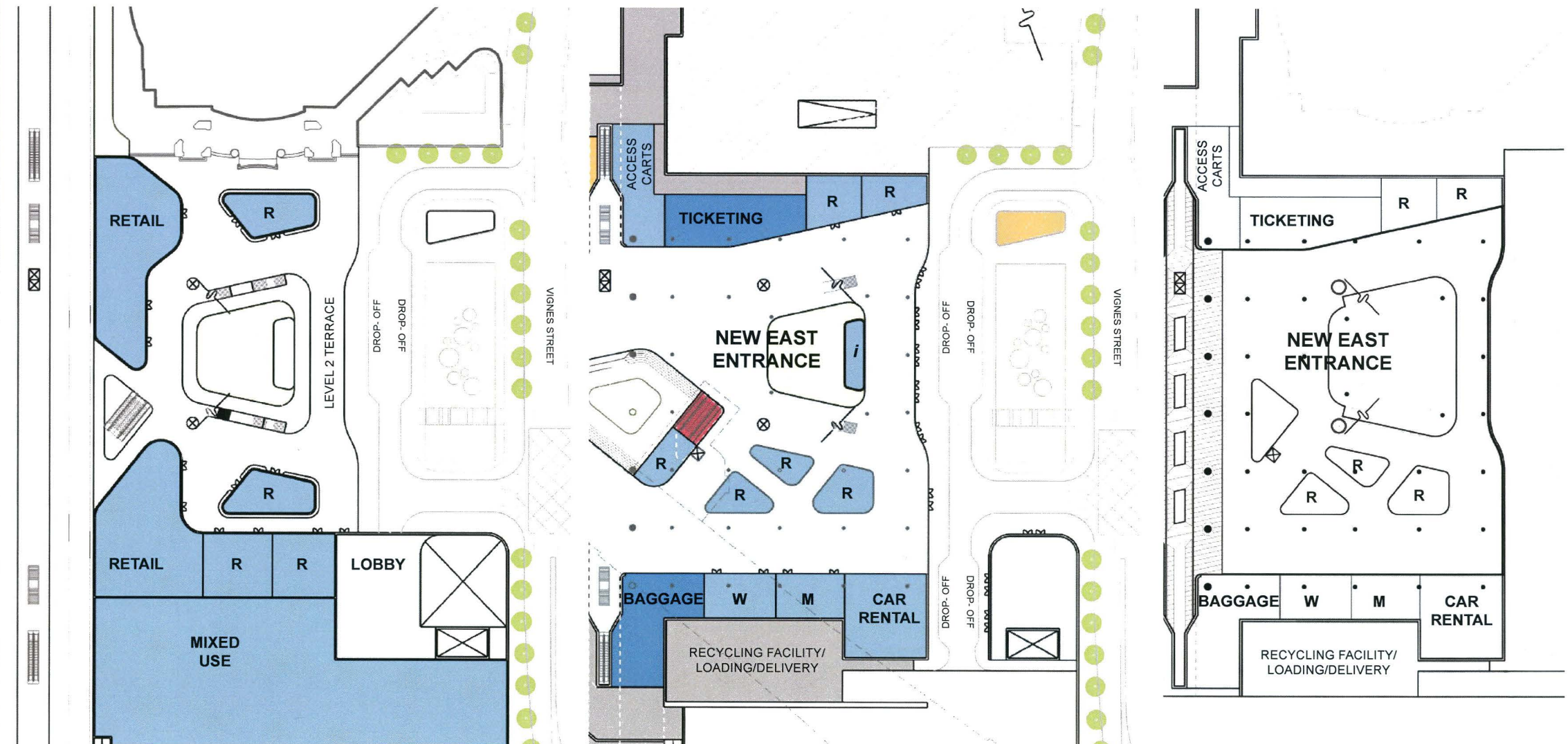
ACCESS AND CIRCULATION

A pair of staircases and elevators at the Open Court form the means by which to circulate from the entrance to the multiple levels of accommodation as well as the adjacent development sites and the existing Gateway Building.

- At the center of the portal and courtyard, knock-out panels in the ground floor could provide an access point to any future High-Speed-Rail station that is located Under Vignes Street.
- A new, street level entrance is envisaged, facing Vignes

Below:
From Left to Right:
Partial Level 2 Plan of the East Entrance
Partial Concourse Level Plan of the East Entrance
Partial Reflected Ceiling Plan (RCP) of the East Entrance

- Street should include a passenger vehicular drop-off loop and pedestrian and bicycle amenities, improving connections and station identity to points eastward.
- A significant portion of the on-site and potential off-site development should be located in and around the new East Portal, linking it to a major new access point to transport.



Transport Project New East Entrance & Amenities

ARCHITECTURAL SYSTEMS

The East Entrance is an extension of the larger Union Station district's contiguous fabric but distinct with the use of materials.

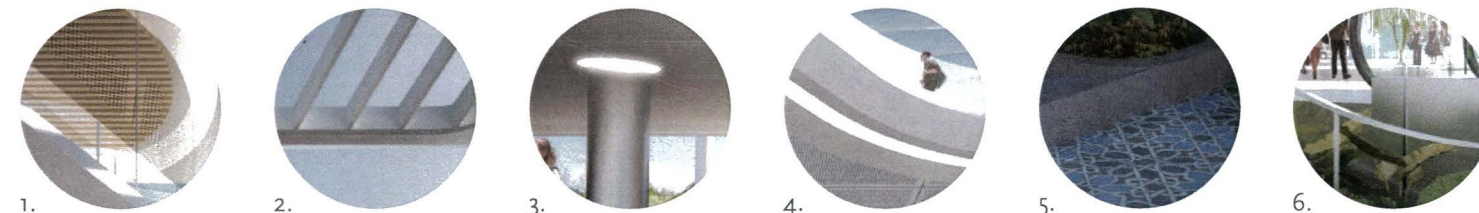
- Users in the sunken lounges of the Concourse should occupy a tiled floor that pays homage to the historic character of the station. From this vantage point, one should be able to view up to the next three levels of retail in the east entrance and to the sky.
- The opening over the sunken lounge and Red/Purple Line portal should be covered by a canopy made of steel and glass.
- Shading should be utilized to enhance comfort and materials with a high SRI value shall be provided to reflect solar heat gain and reduce heat island effects.
- A light weight shading structure is planned over the central portion of the East Entrance, constructed as an open trellis or lamella/lattice over a long-span frame that connect to the large scale perimeter columns.
- Retail units should be articulated as glass pods that are either free standing or punctured through the floors of the building.
- Wood slat soffits or another similar material and lighting should delineate the upper boundaries of the retail capsules, making these spaces distinct from the white perforated metal paneled ceiling system.
- Metal clad columns should be delineated with lighting.
- The openings to the sky in the East Entrance should have beveled edges that are clad with GFRC, fiberglass or stainless steel panels.
- Glass curved handrails should match the floor to ceiling glass façades of the retail pods to promote visual transparency and lighting.

STRUCTURE

A preliminary analysis of the structure for the new East Entrance follows:

- Retrofit of the existing parking garage below will be required as the loading of the public assembly areas created is greater than the existing parking load.
- The long range proposal indicates an additional access way to the new high-speed portal under or over Vignes Street which should be constructed at the level below

1. Retail Pods - Wood Slat Soffits or another similar material
Storefront - Stainless Steel & Glass
2. Canopy - Painted Steel Louvers w/ Glass Panels
3. Columns - Stainless Steel Cladding
Ceiling - Exposed Concrete & Perforated Metal Panels
4. Floor Openings Edges - GFRC, Fiberglass or Stainless Steel Panels
5. Sunken Floor - Tiles
Steps - Polished Concrete or Terrazzo
6. Sunken Area Railings - Stainless Steel and glass



Transport Project New East Entrance & Amenities

LEED ND Credit:
NPDc1
NPDc3
NPDc7
NPDc9
SLLc4
GIBC2
GIBC9
IBC11

- the new East Entrance -entailing further structural removal and changes to the existing parking structure.
- As there is no indication that either the columns or the foundations of the existing parking garage have been designed with an allowance for additional loads to receive future construction, upgrades of the garage will be required.
 - The amount of upgrade on the existing garage building will depend on the amount of projected new construction.
 - If kiosk and concession stands or light structures are located over the garage then it is likely that very little (if any) upgrade will be required.
 - If a new building has more than one floor, then the new building will be adding substantial load onto the existing garage, and will require a lateral system.
- The extent of any retrofit will be dependent on the loads added by the new scheme. Aside from the seismic upgrade, any construction will require that all gravity columns will be upgraded as the review of the available structural information does not show any spare capacity.
- A single story or two-story structure may be possible to add to the existing gravity systems of the garage and not require significant upgrade. However, further detailed review of the structural plans and calculations would be required to determine this.
- Structures above three levels would likely require upgrades to both gravity and lateral systems, however, upgrades may not be significant with lower levels of development. If building on top of any existing structure, the following modifications to the existing structure will have to be considered:
 - Strengthening of the gravity columns to allow for the additional axial load
 - Strengthening of the foundation under the gravity columns
 - The lateral resisting system of the new superstructure will have to be continued through the existing building, all the way to the foundation level (transfer of the lateral force at the ground floor are really hard to achieve)
 - Addition of new foundations for the lateral element of the superstructure
 - Seismic upgrade of the existing building (this is

- usually done in parallel to the third item to couple the two systems and take advantage of the added structure)
- New structural supports should pass through the existing garage to reach the foundation level, entailing reconfiguration of the parking arrangements below.
 - If the new development grid does not align with the garage existing grid, a transfer system should be envisioned to tie the two grids together.
 - Consider columns aligned to the parking columns below in the E/W direction to maximize parking efficiency. From west to east, the column spans in the East Entrance are 37', 53', 48', 60', 60'. From north to south, the column spans are typically 54'-7" but are adjusted around the large opening.

- Even though the transfer system will allow for a proper gravity load path for misaligned columns, the lateral resisting system (shear walls, brace frames, moment frame, etc.) should be carried continuous to the foundation.
- A transfer slab should not preclude the gravity columns of the parking to be upgraded if their actual capacity is inadequate to resist the new imposed loads from the columns above, or from the transfer system.
- The long-span shading structure over the East Entrance Opening should be supported by perimeter columns that will need to extend to new piles and footings at the base of the existing parking structure.

BUILDING SYSTEMS

CONDITIONING

- The public circulation areas would be largely unconditioned due to their open nature.
- All enclosed retail, work and service areas will be fully conditioned. Low output radiant cooling for night cooling and limiting peak day radiant temperatures could be considered for local comfort improvement if outputs are kept below levels that trigger title 24 energy code requirements.



Transport Project Subways and Light Rails

RED AND PURPLE LINE

There are no long term operational impacts to the existing Red and Purple Line tracks and proposed platforms, as a consequence of the Master Plan. However, the mezzanines and access portals would be reconfigured to work with the new layouts of the new Passenger Concourse and East Portal.

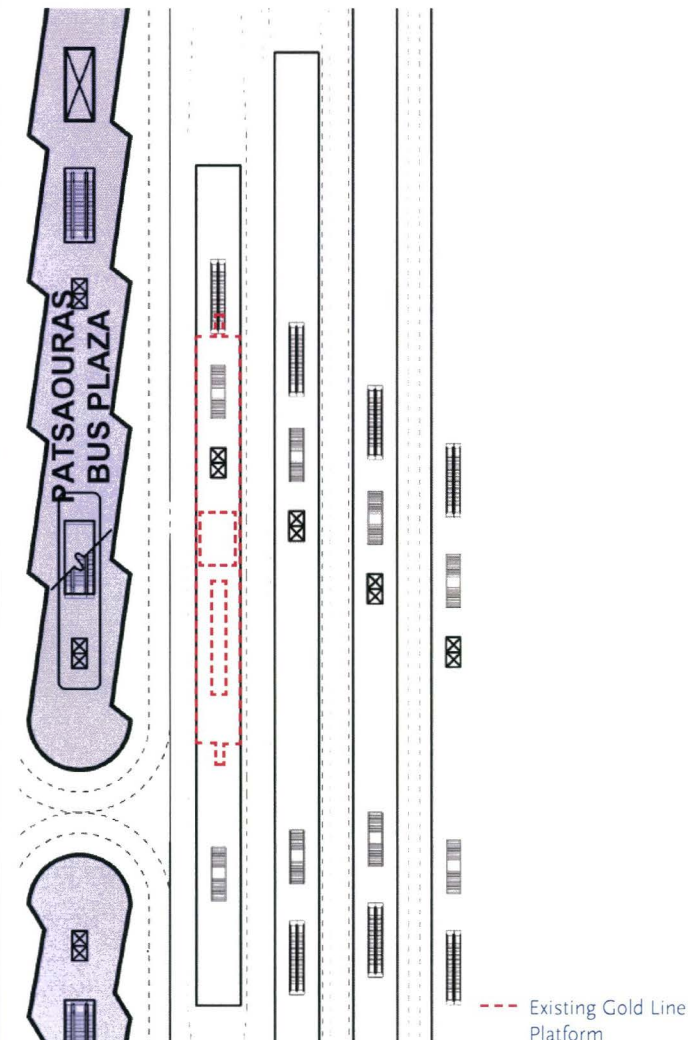
- East side subway access will require the top of the existing circulation point to be renovated with new escalators and balustrades that will be replaced in kind.
- West side subway access should be partially opened up and made more visible. The existing stairs, escalators and elevators should be shifted to the West to allow for construction of the Bus Plaza and better connection with the new Concourse.
- Red/Purple Line station box is located just below the floor of the existing passageway. Potentially in order to facilitate shallower structural members for the reconstructed railyard over the Concourse, columns may be placed on the center of the existing subway box. This could require the new structural girders be located in the upper volume of the existing Red/Purple Line station box.
- This could be constructed in a phased manner with some sort of scaffolding or cordoning off to limit operational impacts to the existing Red/Purple Line station.

Below:
From Left to Right:
Partial Level 2 Plan of the Gold Line
Platform
Potential Options for new Light Rail
Locations

GOLD LINE

The Gold Line will remain in its current horizontal alignment although the platform track bulb out may shift from the east to west side of the platform.

- The vertical elevation of the platform should be raised together with the general reconstruction of the railyard.
- Gold Line platforms should be lengthened to allow for more expanded access and transfers.
- A new Gold Line platform canopy should be provided to match those in remainder of the reconstructed railyard.
- In order to reconstruct the Gold Line rail and



platform, the existing light rail service could be temporarily relocated to the west of the existing platform and/or temporarily single-tracked around the platform to allow for the alteration of each track.

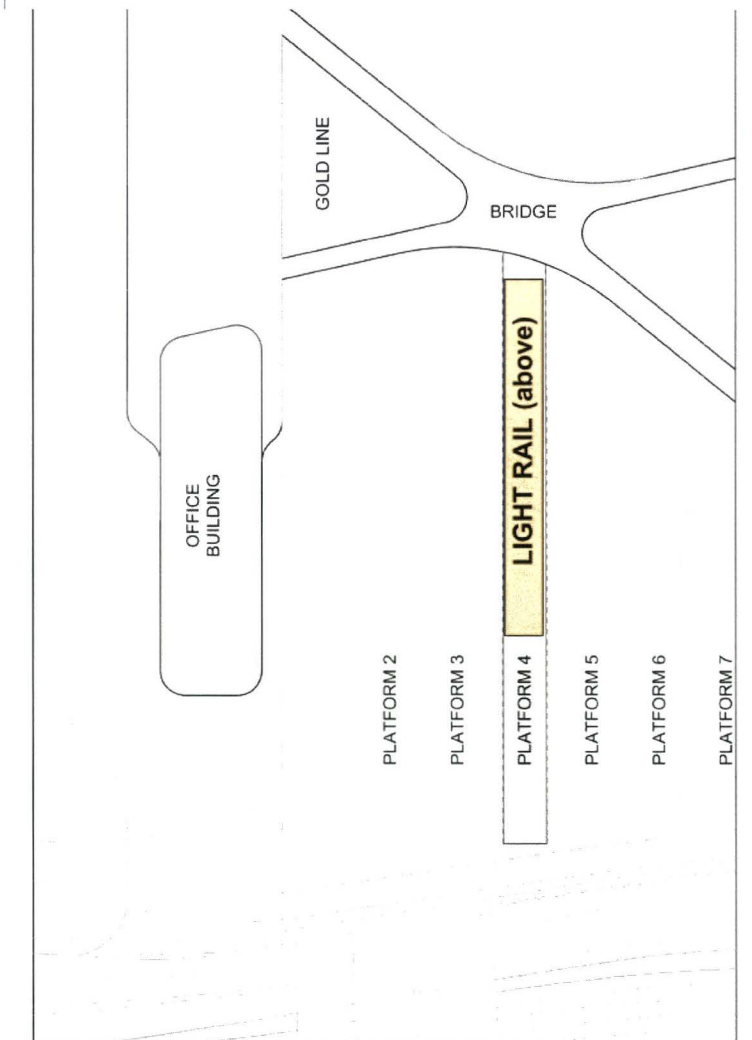
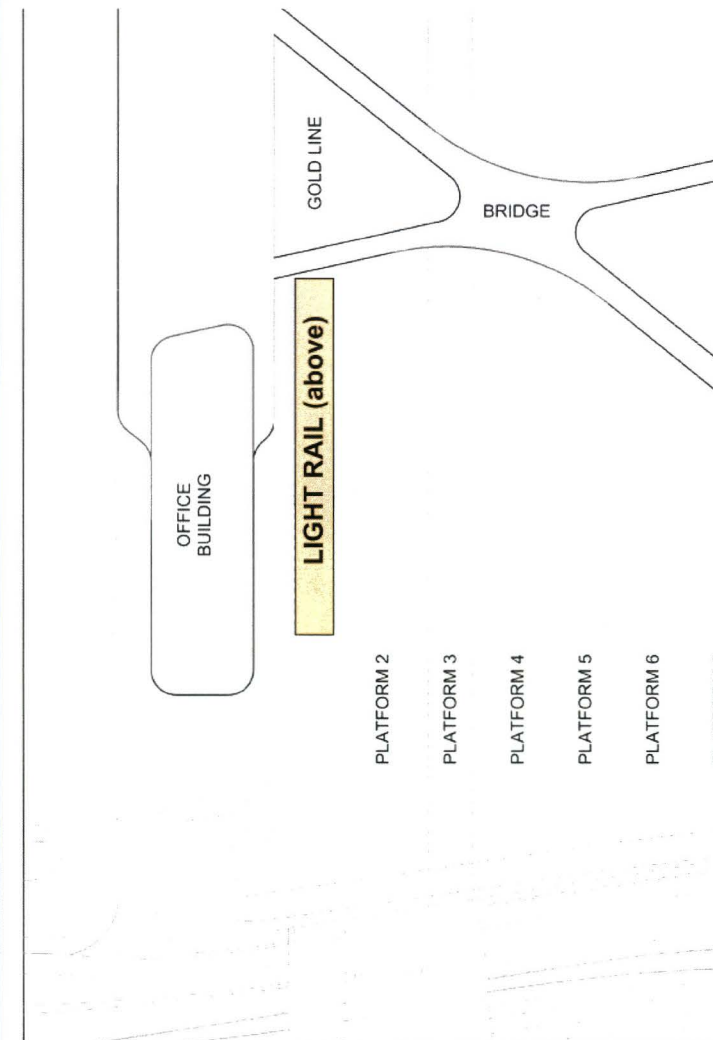
NEW LIGHT RAIL LINES

New light rail lines can be placed in a few possible locations in, around or over the existing railyard. Possible scenarios for further study may include:

- Directly above the Gold Line so that vertical circulation could be shared, although this could have implications to the demarcation of the ticketed zone,
- Directly above other rail platforms so that vertical

circulation could be shared without issues associated with the paid zone, or

- Shared platforms with the Gold Line.



Transport Project High Speed Rail

GENERAL CRITERIA / ASSUMPTIONS

Apart from the current mandatory standards and regulations for this type of infrastructure, some of the most relevant design criteria that have been considered in the development of the High Speed Rail (HSR) alternatives are listed below. All these criteria have already been used in previous analyses made by the California High Speed Rail Authority (CHSRA):

- 6 dedicated high-speed-rail tracks.
- Track gauge: 4.7' (1,435 mm).
- 16.5' track to track center line distance, although 15' can be acceptable if speeds do not exceed 125 mph; in this case, 15' has been adopted at the station.
- Minimum vertical clearance for conventional rail to any overhead structure = 24' ft from top of rail (although 27' would be desirable to allow potential future electrification).
- Minimum vertical clearance from high-speed-tracks (top of rail) to any overhead structure = 27'.
- Minimum vertical clearance for public roads, highways and streets equal to 15', as per CPUC GO-26D.
- Platforms are an island type with tracks on each side.
 - 3 dedicated high-speed-rail platforms, 30' wide each.
 - Minimum length of platforms is 1,370'.
- The CHSRA Technical Memorandum "Alignment Standards for Shared Use Corridors" TM 1.1.6 points out: '...based on use of no less than 190 m radius in Europe and 200 m radius in Japan, and the use of 190 m radius in Taiwan with Japanese equipment, and Japanese concerns that were not backed by any technical analysis that anything under 200 m would cause difficulties with the equipment.'
- The minimum radius on the CHSRA's South Consolidated Shared Tracks alternative is 650' (195 m), so this value has been considered as well as an absolute minimum for HSR tracks in the Master Plan.

HORIZONTAL ALIGNMENT PARAMETERS

The most important constraints that have influenced the alignment design are the following:

- The existing historic Station
- Existing transit facilities at LAUS

- The 101 Freeway
- The Metro Gold Line
- The Metro Red/Purple Line
- Piper Tech Building
- Los Angeles County Jail
- The Los Angeles River and associated bridges
- The SCRIP project

VERTICAL ALIGNMENT PARAMETERS

According to the Technical Memorandum, *Alignment Design Standards for High-Speed Train Operation*, TM 2.1.2, Section 3.3 vertical alignment, 3.3.1 Grades:

- Desirable grades shall be as low as reasonably practical, with a limit of 1.25%
- Maximum grades: above 1.25% and shall be as low as practical up to 2.50%
- Exceptional grades: above 2.50% and shall be as low as practical up to 3.50%

TURNOUTS AND CROSSOVERS

Turnouts and crossovers should be placed in straight segments, avoiding nonstandard configurations, granting acceptable ride quality and safety as well as minimizing initial investment and future maintenance costs.

- CHSRA's turnouts and crossovers have been inserted onto grades limited to 2%.
- Every turnout/crossover for the two alternatives should be designed as close to the HSR station platforms as feasible.

HIGH SPEED RAIL OPTIONS

Meetings with the California High Speed Rail Authority indicated three likely feasible alignments: Over the Railyard, Above Vignes and Under Vignes. The Above Vignes and Under Vignes options present the best balance of connectivity between modes, flexibility, implementation and preservation of the historic Station without reducing existing railyard capacity.

ABOVE VIGNES OPTION

The HSR infrastructure would be migrated virtually entirely off site, allowing it to be developed separately from the on-site projects. The alignment of this approach is similar to the Under Vignes option discussed on the next page, except that the rail infrastructure would be elevated over the street rather than contained below.

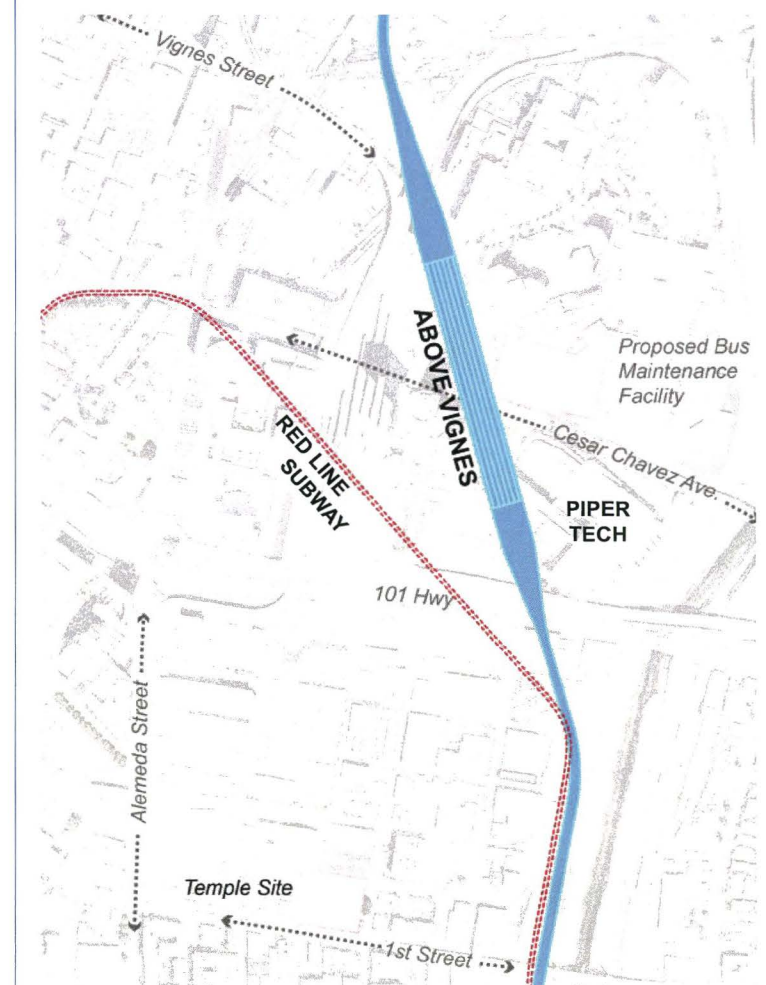
HORIZONTAL ALIGNMENT

- The northern approach to the station shows a minimum 665' radius curve
- The southern one contains a 650' (minimum) radius curve, which limits the train speed to 20 miles per hour. This last curve avoids any additional vertical constraints due to a possible clearance issue that would have to be considered in case of crossing over the Red/Purple Line.

VERTICAL ALIGNMENT

- The elevation at LAUS is 337' with a maximum grade of 3.5%, with the approach grades to the station limited to 2% to allow for turnouts.
- The proposed elevation at LAUS allows this track alignment to pass over the existing tracks via a bridge structure (with a deck depth of 8'), as well as over the Busway with enough clearance (considering a minimum deck depth of 5', using a slender bridge structure).
- This vertical alignment is also compatible with crossing under the 1st Street Bridge with a minimum clearance of 24.5' (as per CHSRA's drawings).
- The vertical alignment constrains the position of the platforms of the station, so that their southernmost edges would be at least 500' northbound away from the 101 Freeway.

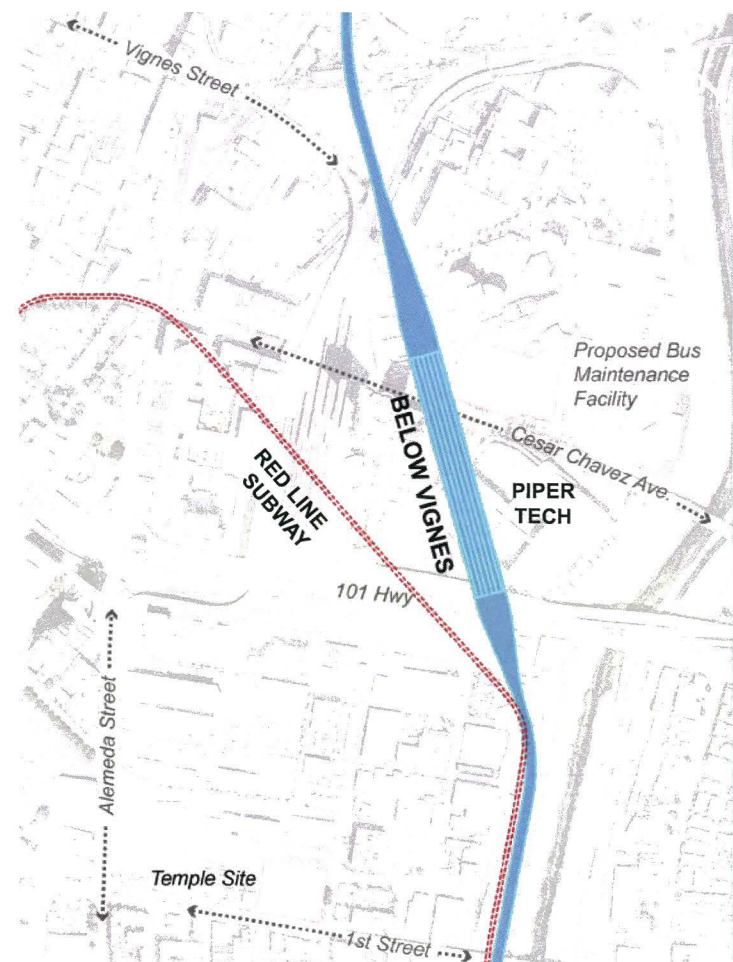
Below:
Above Vignes Option for High
Speed Rail



Transport Project High Speed Rail

BELOW VIGNES OPTION

By taking advantage of the open sites on the eastern side of the site, this HSR alignment disperses infrastructure across and beyond the Union Station property, reducing the pressure on the historic core and railyard. The Passenger Concourse and relocated Patsaouras Bus Plaza projects could be planned largely independently of the HSR station. There would be no need to build foundations for HSR in the railyard early on. A below-grade alignment placing the HSR station below Vignes Street would not need to pass underneath the Red/Purple lines. The angle of the approach was bounded by the Metro building to the west and the buildings on the Los Angeles County Jail site to the east. In order to avoid these buildings, a portion of the HSR station would be placed under the Piper Tech facility, resulting in its partial removal.



HORIZONTAL ALIGNMENT:

- This alternative allows for a straighter track geometry on the northern approach to the station than the earlier above the railyard scenario under consideration by the California High Speed Rail Authority.
- The southern approach to the station includes a 665' radius curve, which limits train speed to 20 mph, allowing HSR trains to avoid any crossing over or under the existing Metro Red/Purple Line.
- The station platforms can be designed relatively centered with the Patsaouras Plaza, offering convenient access to the rest of the station.

VERTICAL ALIGNMENT:

- The elevation considered for the platforms at LAUS has been 234'. The maximum grade along the vertical profile is 1.5%.
- This vertical alignment has been designed considering that the bored tunnel (compatible with a TBM construction method) approaching from the north could be extended to a point south of the LA State Historic Park, so that the new HSR station box at LAUS could be mostly cut and cover type construction.
- The crossings under the existing tracks and under the US 101 Freeway could likely be accomplished by specific tunneling methods to be defined after further study.
- This alternative daylights south of LAUS, connecting with the existing BNSF storage tracks that run along the west side of the Los Angeles River.
- This option would continue below grade under the existing tracks, below Metro's Division 20 yard, and daylight near the 6th Street Bridge.
- This option is predicated on the same assumptions as CHSRA regarding the use of the BNSF storage tracks. Other locations for daylighting of this HSR alignment are considered feasible but would require further detailed study.

Below:
Partial Concourse Level Plan with
HSR Access and HSR Portal

LEED ND Credit:
NPDc7
GIBc11



Transport Project High Speed Rail Concourse

BUILDING OVERVIEW

For seamless but non-reliant integration of High Speed Rail, the Master Plan depicts the Under Vignes option. The following guidelines are for this option.

- The HSR station box should run at a southeast-northwest angle – extending from Freeway 101, under the existing Piper Tech building up to the bail bonds sites.
- The tracks and platforms should be two levels below grade, nominally.
- The primary access portal should be free-standing above-grade structure on the east side of Vignes Street, on portions of the Piper Tech site.

ACCESS AND CIRCULATION

The passenger access to other modes of transport should be similar in distance to the existing Patsaouras Bus Plaza. Both sides of the site would become clear entrance portals to all transportation options at Union Station.

- The HSR station on the east side of Vignes Street should be designed to provide pedestrian activity and uses on both sides of the street and connections to foster growth and development to points east.
- Access includes both at- and below-grade connections between Union Station and HSR.
 - At grade a clear pathway(s) should be provided for passengers to simply continue on their west-east journey across the new Passenger Concourse, through the new East Entrance and across Vignes Street at Ramirez Street to arrive at the HSR portal.
 - Below grade from the East Entrance, access should be at the level of the Red/Purple Line mezzanine, below Vignes Street to the HSR concourse. The distance from the Red/Purple Line mezzanine to the HSR station box is 650'.
 - The open courtyard in the East Entrance would contain a landscaped environment about which passengers and visitors would move. Upon the arrival of HSR, the environment should be shifted down one level, to make way for a new opening between the at-grade level and the level below.
 - This opening should link the below-grade mezzanine or transit level with the at-grade Concourse Level.

STRUCTURE

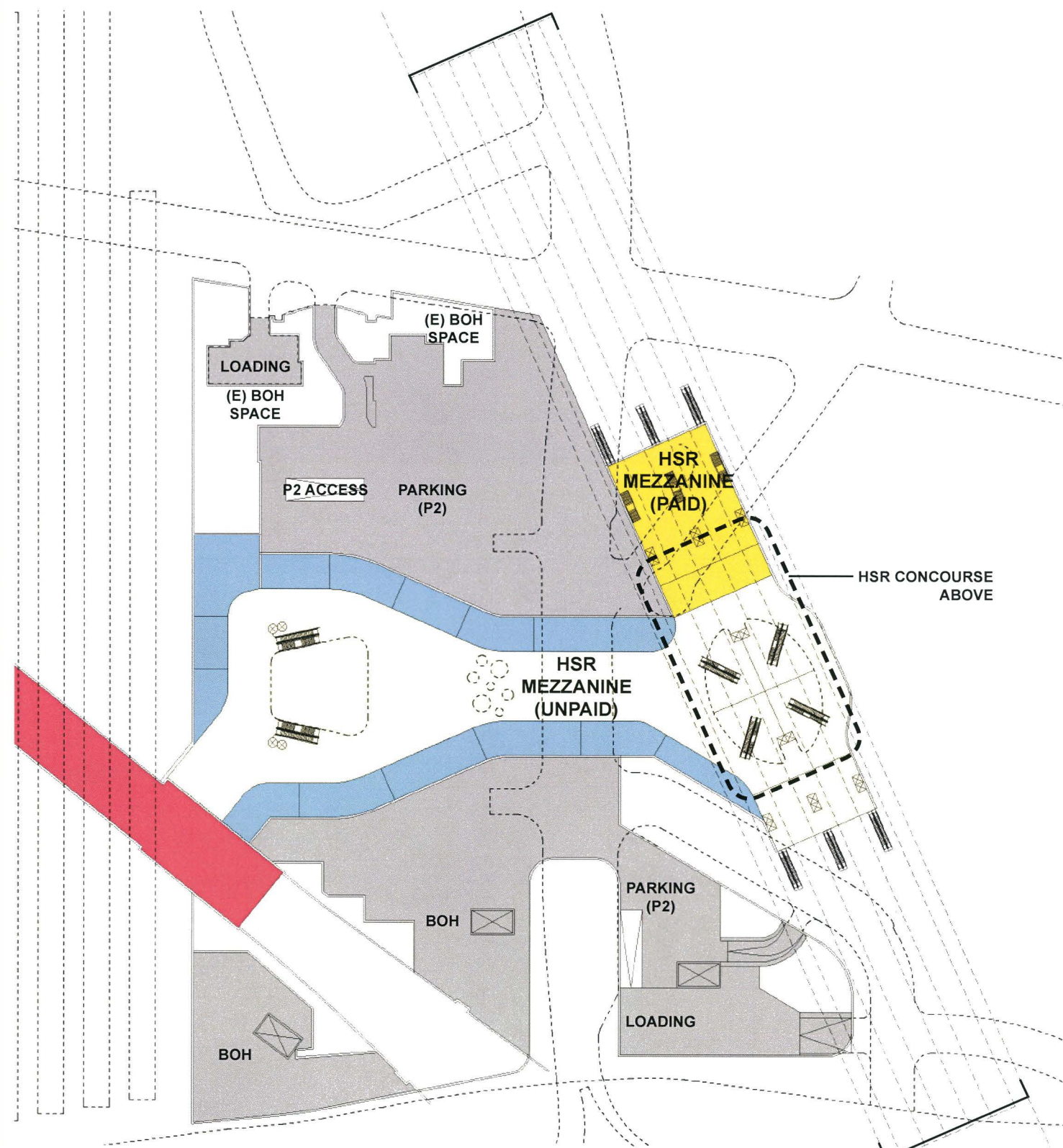
The enabling works for the below-grade link would need to be realized in conjunction with the construction of the new East Entrance. This will include alterations to the northern portion of the Gateway garage.

- In addition to the columns and pile-work required for the structure of the East Entrance, other work will potentially need to provide the basis for which to construct the mezzanine connection in the future.
- Importantly, the actual construction of the HSR will result in the removal of those portions of the Gateway garage located under Vignes Street, as well as the helical ramp from the street to the garage on the east side of Vignes Street.
- HSR at this location greatly diminishes the level of impact upon the historic Station. Both in its distance as well as its potential elevation, the large-scale infrastructure is sufficiently distant from the original buildings to not alter their composition or character.
- At least one section of the Piper-Tech building will be removed as part of the construction of the station and the entrance portal.
- To allow for a cut-and-cover approach, some buildings on the bail-bond block may also be removed as part of this process.

BUILDING SYSTEMS

- Due to the unknown time frame for HSR and the eastern side development, it is proposed that any heating and cooling plant should be independent from the Union Station property along with any additional building systems.

Below:
Partial Mezzanine Level Plan with
HSR Access and HSR Portal



Transport Project Site-wide Access & Circulation

OVERVIEW

The Master Plan proposes improvements to the function and character of the site and streets around Union Station to generate a tangible change in the level of connectivity to the adjoining neighborhoods, especially for passengers arriving by foot or bike.

Perimeter streets, sidewalks and street-crossings improvements:

- New sidewalk furnishings, planting and medians should be provided to fulfill the objective of making Union Station more easily reached on bus, foot or on bike, while improving the appearance and sense that the station is a part of the City.
- Major perimeter bus stops, including those at the El Monte Busway, the intersections of Alameda Street and Cesar E Chavez Avenue, Vignes Street and Cesar E Chavez Avenue and others will be upgraded with new bus shelters, and other stop amenities.
- Increased bike parking, sharing and related services on site at the main forecourt entrance, at the corner of Alameda Street and Cesar E Chavez, at the corner of Vignes Street and Cesar E Chavez, and at the new East Entrance, amongst others will be provided. New pedestrian/bicycle site access will be provided through the site.

Bus access:

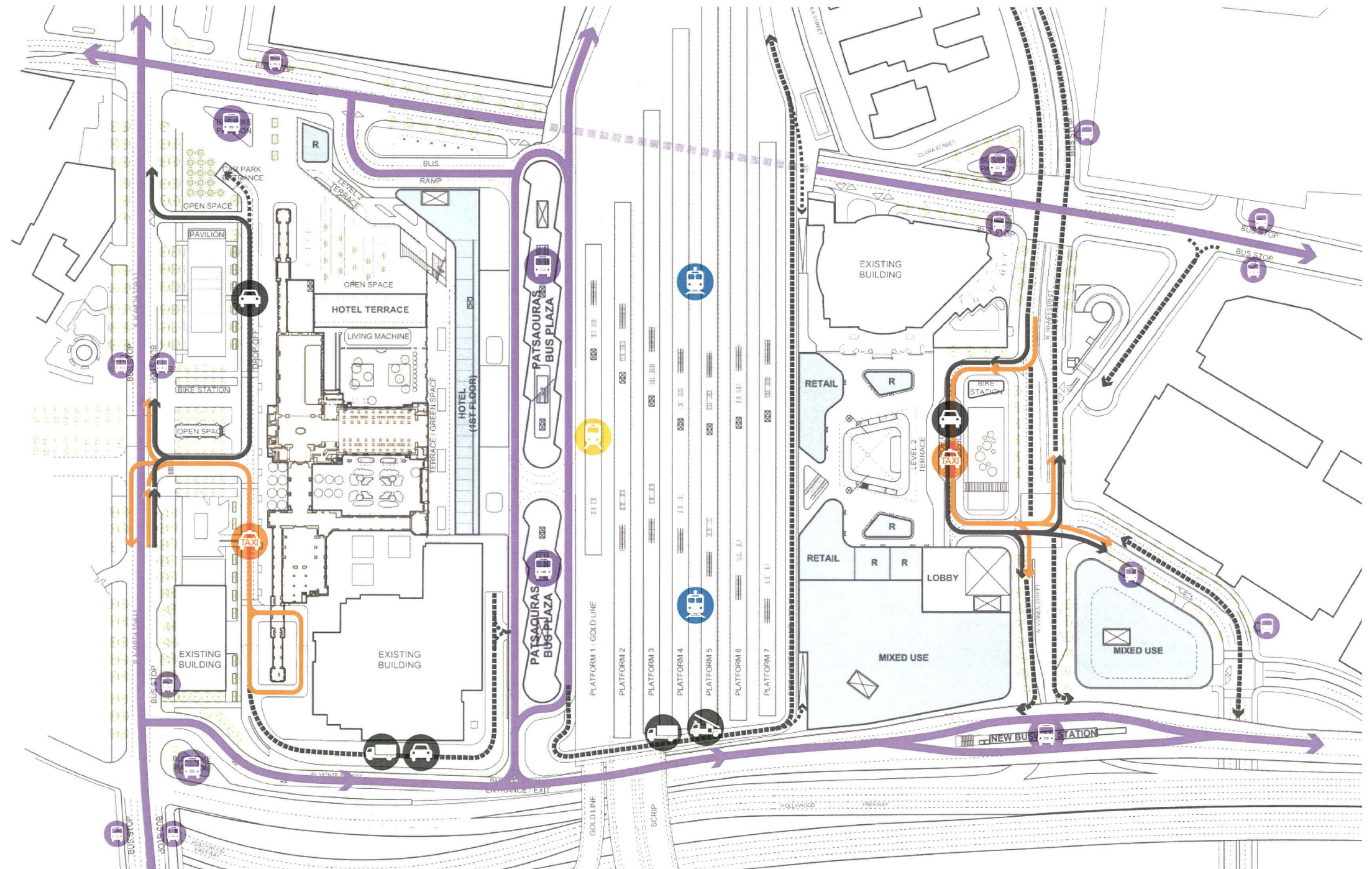
- Signalized access for exclusive bus and shuttle use from Cesar E Chavez Avenue will be provided in the approximate location of the existing signalized intersection at the Mozaic Apartments.
- A secondary bus only access point will be provided from the El Monte Busway, and a potential third bus only access point should be provided to Vignes Street along the railyard.

Vehicular access, drop-off and parking:

- There should be two major automobile and taxi access points and drop-offs to the site: one on the west in front of the historic Union Station from Alameda Street and one on the east from Vignes Street.
- In addition, there will be several access points to underground parking facilities, primarily from perimeter streets.

Below:

Bus Stops, Taxi Stops, Vehicular Drop-Off Areas, and Fire Access Routes at the Union Station Site



LEED ND Credits:
SLLc4
NPDc1
NPDc6
NPDc7

Transport Project Site-wide Access & Circulation

INTERNAL ROADWAYS

The existing entrance and exit to Union Station from Alameda Street will be consolidated into the southernmost entrance opposite Los Angeles Street to strengthen the connection between the historic center of Los Angeles (El Pueblo) and the historic Union Station. Internal drop-off for vehicles and taxis and access for other facilities in the western portion of the site, will use this consolidated entrance. A secondary internal exit roadway to Alameda Street will be created closer to Cesar E. Chavez Avenue. See Section 5. Open Space Guidelines for more detailed information on Alameda Street improvements and the new entrance configuration. Internal roadways will be reconfigured to provide for vehicular access and clearer, wider, and more attractive pedestrian walkways.

- At the southwest corner of the site, at the corner of Alameda Street and El Monte Busway, wider, better furnished walkways and safer crossings should be provided. In part, this could be achieved by reducing the size of the non-historic drop-off loop at the end of the south breezeway.
- The roadway that leads to the Metropolitan Water District (MWD) garage is wider than required, given the volume of cars. While still providing sufficient emergency and logistical access, a buffer between the roadway and the freeway/busway should be provided, reducing the number of lanes from four to two.
- The existing roadways to the Mozaic apartments and the Amtrak bus yard will be removed.
- On the eastern side of the site, the new drop-off loop will also provide access to the development parcels on the southeast corner of the site. This route should also provide any prospective developer the connection point to a below grade garage if they choose to include one.

PARKING ACCESS

While no new parking will be needed for the proposed transit improvements to the station, the Master Plan envisions additional underground parking for development. Parking access to underground parking will be primarily from perimeter streets.

- West Basement Parking (formerly the Mozaic apartments)—Access to the below grade parking

should be at the northern end of the internal roadway in front of the historic Station, with the option of an additional right-in/right-out unsignalized driveway onto Cesar E Chavez Avenue near the overcrossing. The existing parking underneath the historic Station would be accessed via an underground connection from this garage.

- Alameda Street/Forecourt—The existing surface parking lot in front of the station will be removed to accommodate the proposed plaza/open space of the forecourt. See Open Space Guidelines for more detail.
- South Basement—Access to new parking facility behind Metropolitan Water District (MWD) will be from the existing roadway.
- Gateway 2—To serve development, an above-grade podium structure should be accessed on the south side of the courtyard proposed in the current Patsaouras Plaza location.
- Gateway Garage—The existing access to the P1 level at the intersection of Vignes Street and Ramirez Street should be removed. The existing access on Cesar E Chavez Avenue should remain, as would the helix ramp on the east side of Vignes Street. The entrance underneath the childcare building would remain closed. Increasing the capacity of the helix ramp could be considered if needed to serve future development.
- Ramirez Street—If a High Speed Rail station is constructed on the Piper Tech site, the helix ramp could be removed and replaced with a new parking access location on the north side of Ramirez Street.
- Ramirez Parcel (currently a Denny's site)—Garage access should be provided via a signalized intersection on Ramirez Street.
- Offsite Parking—Off-site parking should be a strategy considered in the Master Plan to support development on the Vignes side of the site, such as in the freeway adjacent structure south of the US 101 freeway (connected by a pedestrian bridge), or at the current bail bonds site on the north side of Cesar E Chavez Avenue. If the bail bonds site is used for additional parking, the northern connection from the relocated Bus Plaza to Vignes Street should be the preferred routing for buses traveling to/from the Bus Plaza and Division 13, to avoid congestion at the Cesar E Chavez Avenue/Vignes Street intersection.

For more detail on parking refer to Appendix A-4 and Task 3 Parking Technical Memorandum

LOGISTICAL ACCESS AND MAINTENANCE ROUTES

Four primary points of logistical support access for both transit spaces as well as future development projects, at the southwest, northwest, northeast and southeast sides of the site should be provided:

- Southwest—Located between the Metropolitan Water District (MWD) access drive and the relocated Patsaouras Bus Plaza, this zone includes a loading dock as well as a mechanical yard that can be filled with building systems or central plant equipment.
- Northwest—Located underneath the northern side of the relocated Patsaouras Bus Plaza, this zone should include a loading dock as well as a mechanical yard that can be filled with building systems or central plant equipment.
- Northeast—The existing loading dock underneath the Gateway building will remain in operation, with an added below grade connection to the concourse back of house areas.
- Southeast—By agreement with the prospective developer of the site, additional loading access should be provided at though the base of the new buildings above.

The logistical points should be connected under the railyard on both the north and the south sides of the concourse which will afford access to the transit support functions that border it.

THE EXISTING RAILYARD ACCESS AND MAINTENANCE ROADWAYS

Existing railyard access and maintenance roadways should be provided as follows:

- The entry gate and ramp from Bauchet Street and N. Vignes Street will remain in place, connecting to the access road along the east side of the railyard. The latter will be shifted further east to accommodate the re-spacing of the platforms. The project will include new ramps from this road down to the north and south below-yard back-of-house areas.
- The access road along the south side of the railyard will be elevated along with the rest of the yard. With the construction of the run-through tracks, the

at-grade track crossing over the Gold line will be widened.

- The existing parking area and related access along the west side of the yard will be removed to allow for the relocated Patsaouras Bus Plaza. However, maintenance vehicles will be able to continue along the bus loop, if necessary.
- The ramp and access road to the private rail car yard will be replaced by a new access point from the western side of Bauchet Street (Rosabell) - that also provides the additional bus ramp from the terminal to points northward.

EMERGENCY VEHICLE ACCESS

Please refer to the *Fire/Life-Safety Technical Memorandum* for a review of the emergency vehicle access provisions.

Transport Project Perimeter Improvements

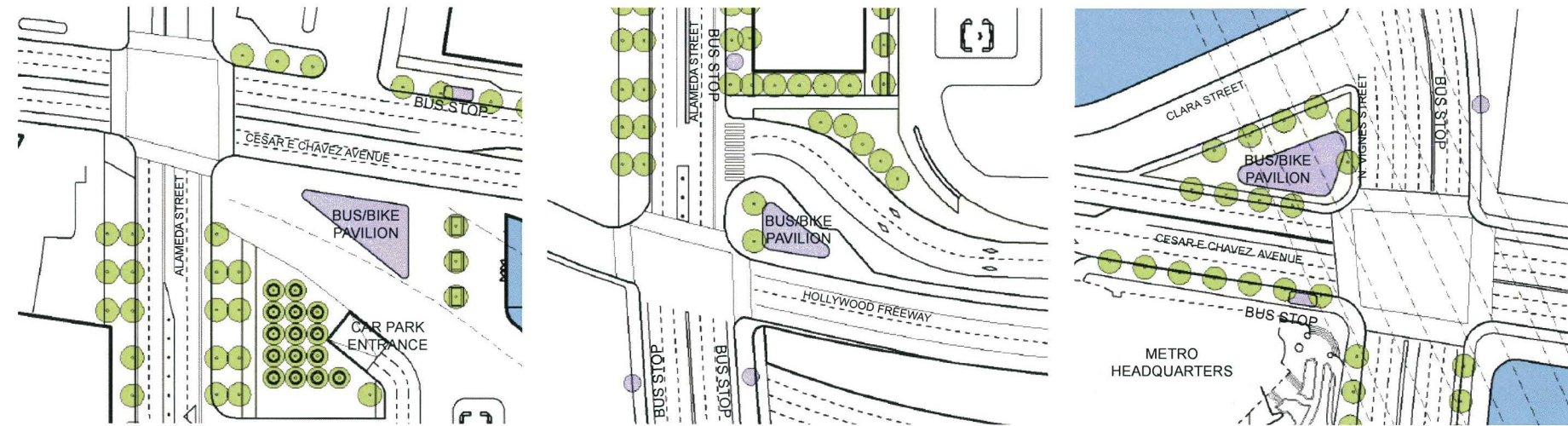
LEED ND Credit:
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NPDc7
NPDc1

EL MONTE BUSWAY SILVER LINE STATION

The El Monte Busway Silver Line Station shown on the illustration, near Vignes Street, is currently planned to be in place well in advance of the proposed Master Plan improvements

- That project indicates a new bridge linking the bus station to the existing gateway plaza which should be reconfigured when Patsaouras Plaza is relocated and/or when development occurs.
- With the onset of development proposed on the Union Station site, the connector should be replaced by a new means of circulating from the Silver Line station to the system of elevated open space terraces that link together the new buildings.

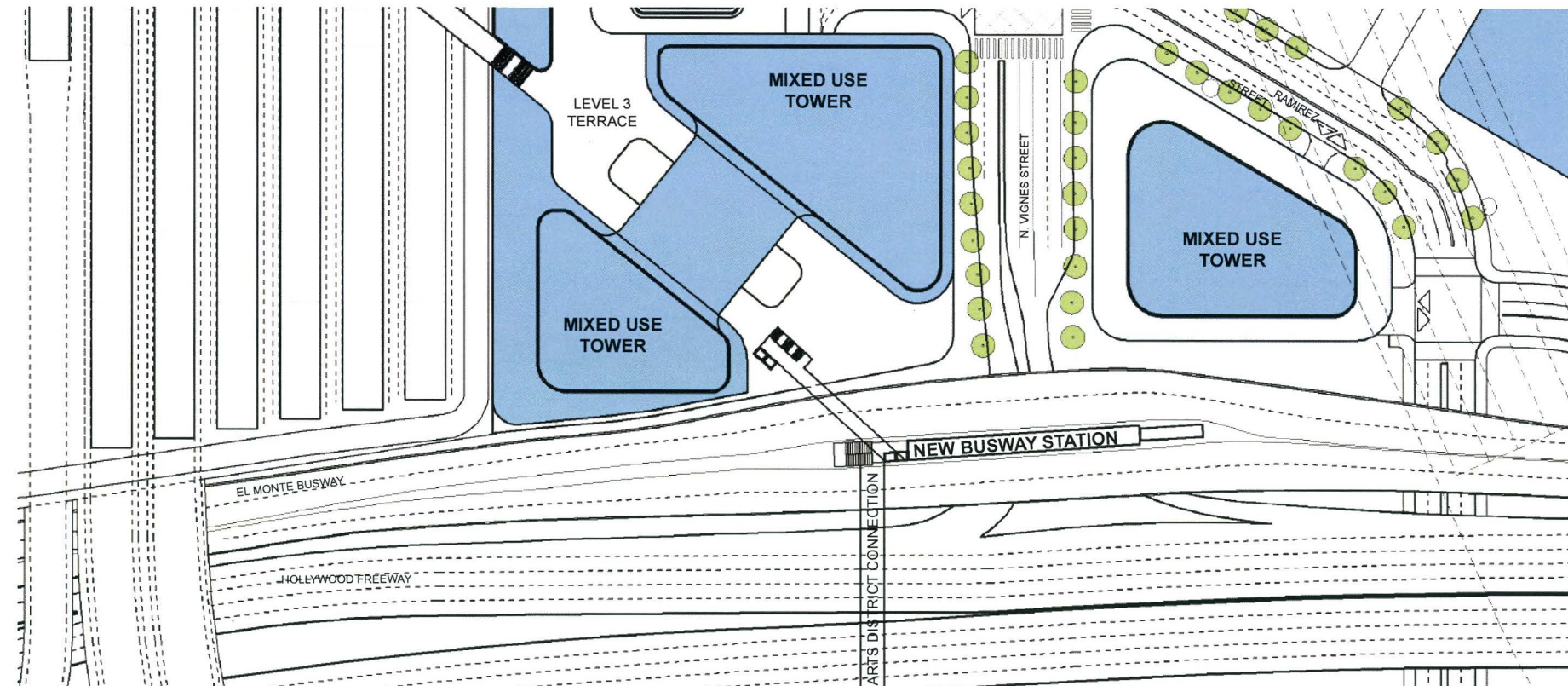
Below:
Clockwise from the Top Right:
Partial Plan of the Northwest Bike Pavilion
Partial Plan of the Southwest Bike Pavilion
Partial Plan of the Northeast Bike Pavilion
Partial Plan of the Silver Line Station



BUS AND BIKE PAVILIONS

New bus stops and bus/bike pavilions around the edges of the station will increase the utility of Union Station to local bus patrons. These are located at the corners of the site: at Vignes Street/Cesar E Chavez Avenue; at Alameda Street/Cesar E Chavez Avenue and Alameda Street/El Monte Busway. The purpose of these pavilions is to improve the level of accessibility to Union Station from as many directions as possible. They should allow for dramatic increases in the capacity of at-grade, on-site bike parking, in accordance with the sustainability goals for the project.

- There will be limited and automated retail vending in these pavilions.
- The bus/bike pavilions should be designed with off-grid power systems as a demonstration and pilot project.
- The structures should achieve one of the following: living building challenge net zero energy certification, petal recognition or full certification.



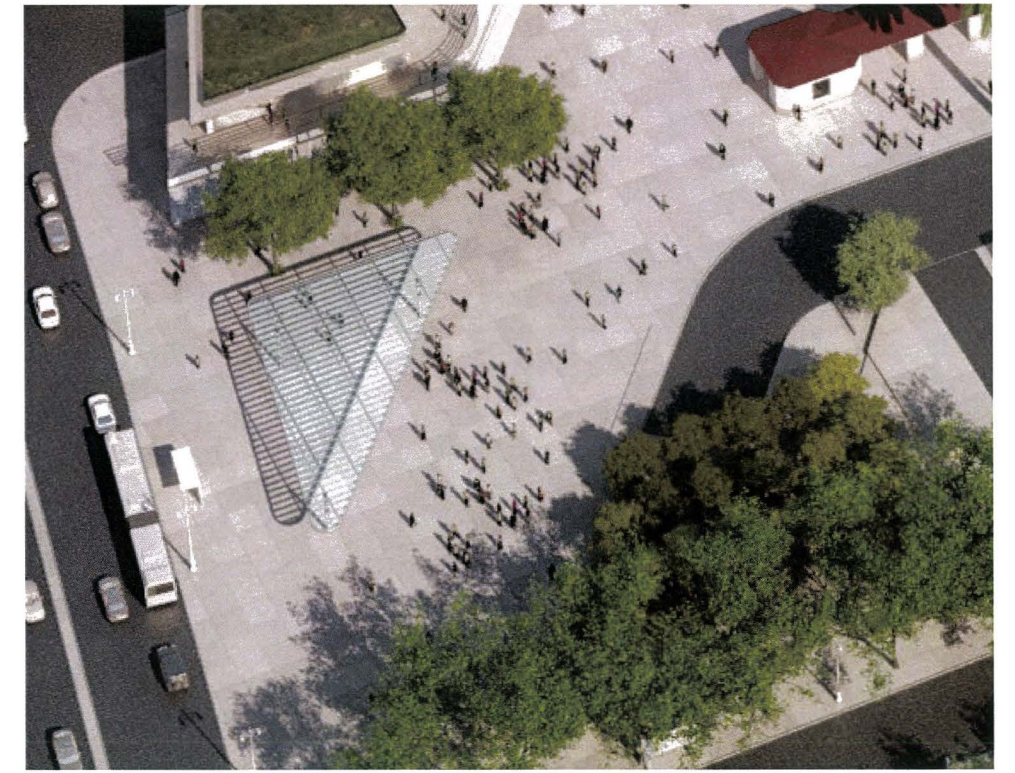
Transport Project Perimeter Improvements

BUS AND BIKE PAVILIONS

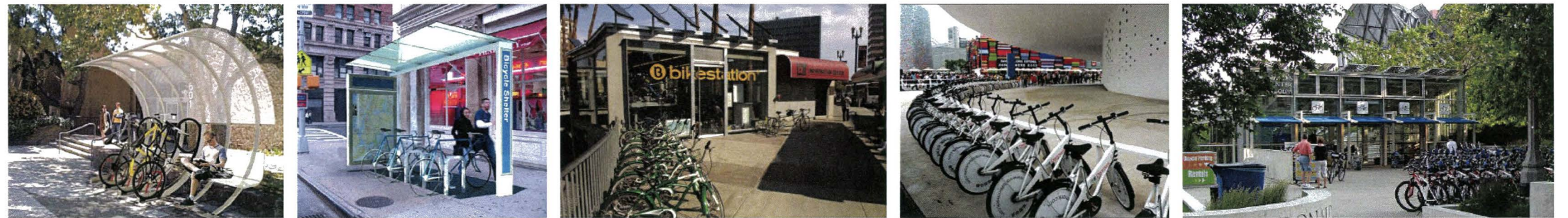
Encouraging commuter and leisure bicycling, the bike pavilions around Union Station will facilitate the growing awareness of the need for greener transportation methods.

- The bike pavilions vary in scale, as will the range of amenities provided in each pavilion.
- Depending on the level of amenity provided by the pavilion, there will be enclosed and open pavilions.
- Services provided should include:
 - rental
 - parking
 - lockers
 - repair
 - information kiosks
 - vending

Below:
From Top to Bottom:
Aerial and Perspective Illustrations
of the Bus/Bike Pavilion near the
intersection of Alameda Street and
Cesar E Chavez Avenue.
Precedents of different architectural
systems for the Bike and Bus
Pavilions for the Union Station
Master Plan



BIKE PARKING AND STATIONS



BIKE PAVILION BUILDINGS



Transport Project Material and Finishes Criteria

MATERIALS CRITERIA

The choice of materials for transportation architecture should consider the historic Station and other notable structures in the vicinity. The materials used in the new transport projects shall express a degree of permanence appropriate to the civic character of the precinct. High quality materials will provide an enduring presence for these projects. The appearance, safety, sustainability and durability of materials should be taken into account.

APPEARANCE

The appearance of the materials chosen should facilitate passenger guidance, information, safety, and security in a pleasing manner that contributes to overall design excellence. Colors should be consistent with system-wide identity colors, compatible with the project's surroundings, and of sufficient contrast and accent to attract the eye, convey feelings of warmth, and conceal soiling. Materials with long lasting color and appearance over the time of their use and with exposure to the elements should be chosen.

SAFETY

Fire resistance materials with minimal burning rates to reduce smoke generation should be used. Fasteners and bonds should minimize dangers of dislodgement due to temperature change, vibration, wind, seismic forces and aging. Materials must secure the safety of visitors and accommodate the specific needs of the mobility disadvantaged.

SUSTAINABILITY

The selection of materials must consider the life cycle energy demands, life span, resourcing, recycled content, and low-emitting paints, sealants, adhesives. Sustainable measures and materials are discussed in further detail in the following 'Sustainability' chapter.

DURABILITY AND MAINTENANCE

The ease of replacement and maintenance of materials are a factor in choosing materials with optimal strength and quality. Installed with a high level of workmanship, the materials should also maintain a high level of performance criteria in regards to combustion, acoustics, and

retrofitting. They should be easily cleaned and repaired, readily available, and resistant to vandalism.

ARCHITECTURAL SYSTEMS AND FINISHES

FAÇADES

New façades of transport projects should respond to adjacent buildings (historic and contemporary), public spaces, and internal uses through their articulations and proportion systems. Buildings shall employ the same system of articulation for the entire length of the façade. The number of primary materials used in a given façade should be limited to two or three (excluding glazing, trim, mullions and building accessories). Within a single system of articulation, variations can account for difference of exposure, orientation, or use. While the application of shading devices may vary depending on a façade's orientation, the four façades of a building shall incorporate a consistent system of scaling elements for the articulation of the façade. Reveals, joints or mullions that follow a rational system should balance the visual weight of horizontal and vertical components.

- Buildings with long façades, such as the east façade of the East Entrance at grade, should employ methods to provide a variety of façade articulation, change of plane, or variation in materials to create visual interest and engagement for pedestrians.
- The major entries to a building or ground floor uses should be visually emphasized through a variation of articulation, enhanced lighting, color, material, art, or greater level of detail.
- The roofs of buildings shall consider proper organization, appearance, and quality. Mechanical equipment shall be screened from view. Stair bulkheads, penthouses, and other enclosed building elements shall be clad by an enclosure system of comparable quality to that of the principal façades. Solar, wind and other energy collection systems shall be allowed and incorporated into the rooftop design.
- Parapets and other forms of terminating the building shall be detailed with a coping or cap piece appropriate to the building enclosure system.

SUGGESTED EXTERIOR BUILDING MATERIALS

- Glazed cable wall systems
- Glazed curtain wall systems

- Metal panel curtain wall systems
- Natural stone
- Architectural cast stone
- Architectural pre-cast concrete
- Terracotta
- Architecturally finished structural steel

PROHIBITED FAÇADE MATERIALS OF NEW TRANSIT BUILDINGS

- Exterior insulation and finishing systems (EIFS)
- Stucco
- Tilt-up concrete panels
- Concrete masonry units
- Synthetic materials that imitate natural materials are not permitted.

GLAZING

- Clear or Neutral Tint
- Transmittance -highest possible
- Solar Heat Gain Coefficient (SHGC) -lowest possible
- Reflectance/Glare -reduce glare when viewed from the inside and outside.
- Insulated
- Dual seals
- U Value -lowest possible
- Low-E Coatings
- Ground floor façades facing streets or public open spaces shall provide no less than 60 percent glazed area, unless the use requires a solid/opaque façade.
- Façades above the ground floor shall provide no less than 40 percent glazed area, unless the use requires a solid/opaque façade.
- Sun shading devices are permitted, as long as they are part of a comprehensive façade design.

OTHER WALL ELEMENTS

Open wall elements refer to the finish of vertical wall surfaces that provide enclosure while permitting ventilation and/or views into and out of station areas.

SUGGESTED FINISHES AND MATERIALS

- Expanded metal
- 16 gauge or heavier Perforated metal
- 12 gauge or heavier Stainless steel railing system, including cable stays
- Metal louvers

PROHIBITED FINISHES AND MATERIALS

- Welded-wire mesh chain-link
- Fabric

METALLIC SURFACES AND FIXTURES

Wall panels, posts, columns, fences, trash containers, bench supports, miscellaneous metal. Finishing of steel should have a satin finish and high performance coatings wherever possible.

SUGGESTED FINISHES AND MATERIALS

- Painted galvanized steel
- Stainless steel (areas of high pedestrian use)
- Painted galvanized steel
- Porcelain enamel on steel
- Factory applied hard-baked enamel on steel or tempered aluminum plate
- Factory applied powder coating on steel

VERTICAL CIRCULATION ELEMENTS: ELEVATORS, STAIRS AND ESCALATORS

- Elevator cores and cabs should have glass sides.
- Atypical glazing sizes may be used at elevator shafts, escalators, and stairways to meet the dimensional criteria of the elevator.
- All elevator materials and finished surfaces exposed to public view shall be stainless steel with glass panels.
- Because the escalators and elevators will be exposed to sun, wind, rain and dust, type 316 steel and laminated safety glass should be used.

BALUSTRADES

- All balustrades found in the new transit buildings should be made of type 316 steel and laminated safety glass.
- The balustrade glass should follow the previously mentioned glazing requirements. The glass should be clear and limited in glare to promote sightlines throughout the buildings and concourse and not obstruct the visibility of transportation vehicles.
- Like the other Building Accessories mentioned below, balustrades should be integrated into the building design with high quality construction rather than simply utilitarian.

Transport Project Material and Finishes Criteria

FLOORS

The general walking surfaces in the transit buildings should avoid creating floor patterns that are disorienting to patrons moving across them due to high contrast or distracting patterning. Materials should be non slip to secure pedestrian safety and accommodate individuals with disabilities. Materials should also be highly resistant to vandalism, and retain their original appearance with a minimum amount of maintenance and repair. A preliminary list of generic paving materials meeting these criteria include:

- Terrazzo
- Concrete
- Tile

BUILDING ACCESSORIES

Examples of building accessories include canopies, awnings, ramps, stairs, and balconies.

- Building accessories should be complementary to and integrated with the building and public space design.
- All building accessory materials shall be custom-detailed, constructed of high-quality materials, and produced according to high standards of craftsmanship.
- Building accessories on façades directly fronting on public spaces should take into account both the specific design of the building façade to which they are attached, as well as the public space design.
- If accessories are seasonal, they should be able to be removed without detriment to the building finishes, appearance and façade design.
- Such elements shall be purpose-designed and constructed with high-quality materials. Off-the-shelf assemblies such as typical chain-link fencing shall not be permitted.
- These elements should be “decorative”, the product of thoughtful design and quality construction, rather than simply utilitarian.

PLATFORM CANOPY MATERIALS

SUGGESTED FINISHES AND MATERIALS

- Baked/coated steel roofing
- Aluminum roofing
- Structural steel
- Laminated tempered glass
- Translucent panels

Below:

Precedents of different architectural systems and finishes for vertical circulation elements and balustrades for transit projects in the USMP

PROHIBITED FINISHES AND MATERIALS

- Tile roofing
- Built-up roofing

LIGHTING

Building lighting should not compete with the historic lighting of the historic Station and Concourse buildings. The lighting should work to light the building generally or focus on specific building elements in order to draw attention to public entrances and other key functional elements. Building lighting should complement and defer to the public space lighting scheme and promote a sense of safety.

- Lighting fixtures shall be of architectural quality, consistent with the design of the building, or hidden from view.
- The lighting should not illuminate or cast glare onto adjacent buildings or private areas.
- Junction boxes, conduits, and other functional elements shall be concealed from public view and access.

SEATING

Seating at stations may or may not be an element of waiting area design. Where seating is provided, materials should be selected to discourage use as sleeping facilities, and designed for ease of installation and repair. Where provided, seating placement should prevent access to overhead heaters. The location of seating should not impede customer access to station platforms and should be controlled by the lead transit organization.

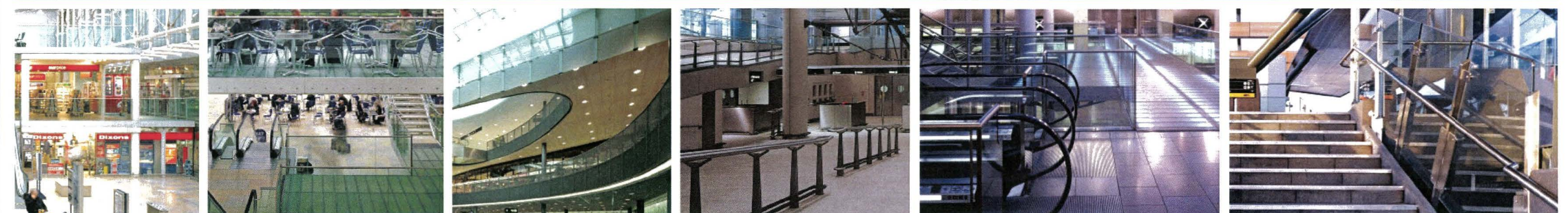
LITTER RECEPTACLES

Litter receptacles should be provided at all transit projects to minimize litter and debris. Litter receptacles may be provided in passenger waiting areas and on platforms, based on local conditions and with Metro approval.

VERTICAL CIRCULATION ELEMENTS



BALUSTRADES



2

Retail Guidelines

Retail Overview

INTRODUCTION

The Union Station Master Plan includes the following guidelines to ensure that the retail components at Union Station are designed to the highest standards possible. These guidelines offer the specific criteria for design that should extend and supplement the lease to any potential retailer within the Union Station Master Plan precinct, regardless if Metro leases to tenants directly or engages a Master Lessee to manage retail tenants.

The following design objectives have been developed to:

- Guide potential retailers to quality design solutions, resulting in a premier shopping and dining experience.
- Set up a framework that allows the potential retailer to incorporate their unique design and operating philosophy in coordination with the design standards of the completed project.

All of the retail in the Master Plan will contribute to the plan's overall direction towards sustainable design practices. The Union Station Master Plan is being submitted for LEED ND Certification. Any work by the potential retailer should meet the latest LEED fit-out requirements at a minimum, which could include LEED for Retail guidelines or the latest version of LEED for Interior Design and Construction.

These guidelines are intended to encourage design of the retail space which is both individualized and sensitive to the historic Union Station building and its surroundings. The approximate retail spaces are not intended for construction, and the actual configuration and design of spaces within Union Station may vary in certain aspects from such renderings, drawings, and floor plans.

Metro will oversee a design review process which will assess the retailer's conformance to the Design Guidelines described herein. The process is required to be followed by the retailer in all areas of the Master Plan precinct. The potential retailer will be responsible for submitting all required plans and material on behalf of itself and its Subtenants. Subtenants shall not submit any materials nor engage in correspondence directly with Metro. All improvements are subject to Metro's approval and shall conform to all Design Guidelines.

The retail components into the Union Station Master Plan consist of fit-out retail storefronts and kiosks found throughout the Master Plan. The retail components include:

- Bus and bike pavilions at the perimeters of site which include limited and automated vending
- Forecourt Pavilion fit out
- Kiosks
 - Union Station Ticketing Hall
 - Pavilion Building and Terrace
 - Historic Concourse
 - Hotel Terrace
 - Passenger Concourse sunken lounges
- Kiosks and fit-outs
 - Bus Plaza
 - East Entrance
 - Podium levels of development projects.
 - Pedestrian levels (at Terraces) of development projects

See the Appendix A-1 for locations of retail envisioned in the Master Plan. It is the intention of the Master Plan to provide unimpeded at-grade pedestrian movement and sightlines across the street-level plane, accessible from the street in all directions via Alameda Street and Cesar E Chavez Avenue. The clarity and openness of the circulation continues through the historic Station and Concourse, to the new Passenger Concourse and transit platforms, through the East Entrance to Vignes Street. The retail components are organized to align with this objective.

RETAIL PLACEMENT

HISTORIC UNION STATION

Los Angeles Union Station was constructed in the 1930's and identified as a Los Angeles Historic Cultural Monument in 1972 and on the U.S. National Register of Historic Places in 1980. Given the historical and architectural significance of Union Station, the incorporation of any new retail or even the refurbishment of any existing retail will require careful review and consideration to conform to established standards for working in historic environments.

- Retailers must refer to the *Los Angeles Union Station*

Historic Structures Report, prepared in 2014 by the Architectural Resources Group which documents the property's history and existing conditions as well as provides guidance for any proposed changes to be designed and constructed in a manner that protects the historic features of the building.

- Retail spaces in the historic Station and Concourse shall be designed to limit impact to its historic integrity and ensure that architectural significance of the building is maintained.
- The Ticketing Hall will be repurposed with retail –with kiosks and seating to the west and fit-outs within the original 110' long counter that runs along the west side of the hall. The mobility of the kiosks will allow for the grand hall to be used for larger private events.
- A good location for a new restaurant tenant, the former Fred Harvey restaurant and cocktail lounge has been unoccupied since the 1960s. The new retailer must make use of the existing interior finishes and furnishings in order to maintain the integrity of this space.
- The restaurant and bar now occupied by Traxx in the former drugstore space and telephone room will remain.
- The Master Plan intends to move the freestanding news stand kiosk in the Waiting Room to another area within the concourse and replace it with the original seating layout.

THE HISTORIC CONCOURSE

- The Master Plan also calls for clearing-out the non-historic retail in the historic Concourse to facilitate passenger movement and reinstate the historic finishes and "room" or ceiling configurations.
- There is retail space located outside the original historic Concourse structure on the north side and another space on the south side of the Concourse.

PAVILION BUILDING

The Pavilion Building will link the new hotel lobby in the historic Union Station frontage along Alameda Street to the historic passenger Concourse. The Pavilion Building and its occupied roof is engaged with Union Station and the Northwest Passage in a transparent fashion.

- The lower level will be focused on open retail that also allows for public circulation.

- The kiosks within the Pavilion space are independent elements floating within the space. All of the interior street-level retail kiosks are designed to be visible from the open space.
- Operable glazing panels will allow the north face of the pavilion to open up to the Northwest Passage so that tables and chairs can expand into the space.
- Clear sightlines through the Pavilion Building to the Living Machine on the southern side of the Building will be maintained in order to draw customers into the building by displaying the activity within.

BUS PLAZA

The relocated Patsaouras Bus Plaza should provide retail at the following locations if the circulation zones and sightlines are not impeded.

- Northern end of the concourse at grade
- In between the vertical circulation elements

PASSENGER CONCOURSE

The new Passenger Concourse aims to facilitate natural wayfinding by increasing daylight that aligns to transit and by improving circulation. The existing passageway will be replaced by a streamlined, open zone that improves transfers and train access. Daylight is provided from platform access points and from skylights above.

- The at-grade retail and amenity spaces should run along the perimeters of the historic Concourse, relocated Patsaouras Bus Plaza and new East Entrance, but should keep the east/west circulation zones to rail platforms in the new Passenger Concourse clear for sightlines to the transit signage and platform access points.
- Two spacious, deep-set lounges are carved out on opposing sides of the concourse to offer information and open concessions. These should only reach counter height so as to not obstruct views above them for visitors to see across the Concourse.

EAST ENTRANCE

- At the street level, retail and amenities are placed at the perimeter to the East Entrance as well as south of the open court, where there is area for sufficient stand-alone retail while still providing circulation zones and sightlines to transit.
- In this zone and in the north perimeter retail, there

is the possibility to have 2 story commercial use that internally connects the Concourse Level retail to retail at the Level 2 Terrace.

- Level 2 and 3 of the East Entrance includes large areas for kitchens and bathrooms to be fit-out by the potential retailers, with the idea that these areas are well suited to restaurant uses.
- Concourse level also has the ability to provide some light food preparation areas.
- All levels of the East Entrance are provided with additional stairs and elevators that would allow them to be linked into a unified retail experience. See Appendix A-1.

FIT-OUT PRINCIPLES

Given the historic significance of the Union Station's exterior and interior spaces, retail spaces shall be designed to be as lightweight as possible so that the original materials, features, proportions and massing read through. Differentiated from the original design of Union Station and historic Concourse, the retail spaces shall be non-stylistic in nature so they do not detract from or compete with the historic character or architectural style of the building. They should also be constructed in such a way that they can be removed without impairing the form and integrity of the historic Station or historic Concourse.

The guidelines for determining appropriate retail standards in the historic properties will also apply to the rest of the retail within Union Station Master Plan site – to foster coherence and to give a sense of commonality and continuity across the precinct.

- The potential retailer is not permitted to alter existing base building elements including exterior and interior wall surfaces, or any finish applied to columns, floors, and ceilings.
- The potential retailer is not permitted to fasten elements to or penetrate historic surfaces.
- As a minimum, the fit-out of the commercial usage areas should aspire to the same level of quality as the public circulation areas.
- An equal level of attention to the planning, layout, detailing, material selection, and fixture placement is expected.
- The following are the guiding principles that should

inform the design of the commercial areas:

- Visibility into and across the spaces.
- Upholding wayfinding and organization of the building as not to impede Metro Transit operations, with careful attention given to the organization and appearance of displays, merchandise and the associated casework and furnishings.
- Invisibility of work zones, storage, back-of-house or preparation areas to the public.
- Clear distinction between base building components and fit-out components.
- Containment of fit-out within commercial usage areas.
- No interference with the base building architecture, structure or systems.
- In addition to the general design criteria for retail spaces and fit-out, the retailer should be aware of some other specific aspects of the provided spaces.
 - The Station building will provide the storefront and entries to these spaces. The fit-out work will be restricted to the interior of the spaces themselves.
 - The at-grade level retail spaces within the Bus Plaza, Passenger Concourse and East Entrance that float within an open circulation zone (not on the perimeter of the concourse) are envisioned to be similar in character to airport open concessions.
 - It is assumed that kiosks will be surrounded by tables and chairs. Additional displays may be proposed for review by Metro as long as they are in keeping with the primary goals of ground plane transparency and open circulation.
 - The base building will provide all the finishes in the historic Station and historic Concourse. The fit-out work will be limited to the kiosks, displays and furnishings, as described in more detail under retail kiosks below.
 - In addition to the general requirements, the fit-out design for outdoor retail or retail at the street level adjacent to an exterior façade shall take extra care to consider their appearance from the outside.
- Please refer to the conceptual floor plans and illustrative views of the potential uses imagined for the building in the Appendix.

PUBLIC CIRCULATION AREA INTERIOR FINISHES

In order to ensure that the design of the retail areas are compatible with the public circulation areas of the Bus Plaza, Passenger Concourse and East Entrance, the following is a summary of proposed materials and finishes. The retailer shall consider the finishes below to ensure the spaces are complementary.

Area	Floor Finish	Wall Finish	Column Finish	Ceiling Finish
Bus Plaza	Polished Concrete / Terrazzo	Storefront Glazing	GRFC Cladding	GRFC Cladding
Passenger Concourse	Polished Concrete / Terrazzo	Storefront Glazing	GRFC Cladding	Light Wood Panels or Slats
Sunken Lounges	Glazed Tile	Storefront Glazing		Reflective Metal Panels or GRFC (skylights)
East Entrance	Polished Concrete / Terrazzo Pavers	Storefront Glazing	Stainless Steel Cladding	Exposed Concrete and Perforated Metal Panels
Commercial Areas	Polished Concrete / Terrazzo	Storefront Glazing		Wood Slat Soffit

FIT-OUT DESIGN CRITERIA

- Retailers should be required to provide a complete, high quality interior environment. Interior finishes for flooring, walls, ceiling, lighting, cabinetry, furnishings and décor are to be long-lasting and of superior commercial quality, in keeping with the design established in the public circulation areas. All fixtures shall be new and of durable quality and finish consistent with anticipated heavy duty public use.
- The color, tone, detailing and pattern of these materials shall be appropriate to the condition and location of the finishes. Finishes that are immediately adjacent to and visible from public circulation areas shall strive to create a sense of common quality and appearance. Fixtures shall be laid out in a precise and organized fashion.
- The base building architecture and finishes shall be maintained without modification. Fit-out elements shall not alter, cover or be fastened to the public circulation area finishes.

CEILING

- Where not provided by the base building, ceiling surfaces shall be flat, smooth, solid and simple in nature.
- Fixtures and MEP/Fire Protection/Lighting/Communications related components shall be well coordinated, to achieve an organized and integrated appearance.
- Any existing fire-rated ceiling soffits and fascias shall not be altered.

WALLS

- Demising walls will be provided by the base building. Where not finished, it shall be the responsibility of the retailer to finish walls, maintaining their fire ratings and structural stability.
- No additional walls shall be constructed without review and approval of Metro.
- Perimeter storefront and balustrades will be provided as per the Master Plan Design Guidelines. The independence and transparency of these surfaces is to be maintained.

FLOORS

- Floor surfaces shall be cohesive with public circulation area floor layout with no sudden shifts or transitions in color, tone or pattern.
- Fit-out floor surfaces shall be at the same elevation with and contiguous to the floor finishes.
- Fit-out wall bases are to be the same as the floor material, matching the height of the adjacent base building bases, but no less than 6" in height.

LIGHTING

- The general intention is to achieve good color rendering and light level to match the temperature and brightness of the base building lighting.
- Lighting shall be designed to emphasize the food and merchandise displays, and to make any signs and menu boards or displays easy to read.
- Fit-out lighting shall be glare free and all light sources must be shielded from view.
- The fit-out lighting shall be complementary to the base building architecture and lighting.
- Surface mounted fixtures must be discrete, small

- and of contemporary design.
- Recessed fixtures shall be round and no larger than 6" in diameter.

MEZZANINES

- The fit-out work may not include the construction of any mezzanines.

COUNTERS AND EQUIPMENT

- Counters and cabinetry shall be set back from the storefronts, balustrades, glazing systems and other base building surfaces and finishes.
- Counters and cabinetry shall be streamlined and flush detailed for ease of maintenance and simplicity of appearance.
- Equipment shall be concealed within counters. Equipment shall be finished with the same face panels as the counter cabinetry. Only new, contemporary equipment shall be used.
- Sneeze guards shall be glass without heavy-looking supports.
- Cash-wraps shall be recessed and hidden.
- Paper goods, supplies and other clutter must be stored in areas not visible to the public.
- Condiment and utensil retainers must be constructed of stainless steel and integrated into the counters and cabinetry.

ADVERTISING AND INFORMATION DISPLAYS

These signage elements include the video-walls, advertising panels, totems et al.

- The display casework and electronic components will be included as part of the base building - and shall not be modified or altered as part of the fit-out work.

SUGGESTED FINISHES, MATERIALS, FIXTURES AND LIGHTING

The suggested finishes, materials, fixtures and lighting determined for retail spaces in the historic Station and historic Concourse should reduce visual clutter and give the new interventions a harmonious appearance within its context. Again, these materials and fixtures also apply to the rest of the retail components within the Union Station Master Plan site. The palette relies on robust and refined

set of materials and systems suited to a high-quality public space.

The following list has been prepared to illustrate the type and quality of contemporary materials and fixtures that are encouraged by Metro:

- Wood - Painted or Lacquered or Oiled.
- Glass - Laminated Safety Glass – clear or translucent
- Metal – Stainless steel, Natural aluminum, Powder coated steel
- Natural Stone – Granite, Slate
- Composite –Terrazzo
- Concrete: Polished, Glass Fiber Reinforced Concrete (GFRC), or Painted
- Tile – Mosaic, Porcelain or Glass
- Plaster - Polished Plaster
- Lighting – covered/indirect fluorescent lighting, down lights, LED's, cove lighting, architectural grade.
- Electronic Fixtures – communication, audio, video and fire safety devices that are integrated discretely into the adjacent finishes.
- Plumbing Fixtures and Equipment – streamlined, automatic, built-in.
- Air registers – linear diffusers or concealed or architectural grade diffusers.
- Solid surface materials e.g. Corian

PROHIBITED FINISHES, MATERIALS, FIXTURES AND LIGHTING

The following list includes type and quality of materials, finishes, fixtures and lighting that are unacceptable to Metro. Prohibited finishes include:

- Accordion, roll-down or sliding grilles, barriers or gates.
- Plywood or other composite boards without a hardwood veneer.
- Wire glass and tinted glass.
- Wallpaper (allowed on interior walls only).
- Lay-in, exposed tee ceiling in public areas or areas that are visible by the public.
- Exposed fluorescent fixtures and tubes.
- Industrial lighting fixtures.
- Flashing, revolving, or strobe lighting or signage.
- Bright lighting, spot lighting, monitors, projectors or lighting that interferes with the base building lighting, signage or way-finding.

- Exposed heat lamps.
- Highly textured paints, stucco, or fluorescent paint.
- Curtains and other shielding devices behind the storefront.
- Artificial versions of stone, brick, wood, metal, etc.
- Plastic laminates within display areas.
- Slat-wall
- Vinyl and linoleum.
- Brass, bronze or other yellow metals.
- Exposed masonry.
- Exposed piping, sprinklers, cabling or conduits.
- Exposed ductwork or mechanical equipment; air grilles or louvered diffusers.
- Materials that, in Metro's opinion, are of low quality, non-durable, and/or difficult to maintain.
- Any material that would constitute a fire, smoke and/or public hazard.
- Any floor materials that do not meet Metro criteria for slip resistance.
- Any finishes, materials, fixtures, devices or fittings attached to or covering base building finishes.

FURNITURE

Movable fixtures and furnishings in publicly accessible commercial usage areas shall be of a similar robust and durable nature as the finishes. While allowing for the specific branding and character of the commercial establishment, the fixtures and furnishes shall strive to be of a current nature suited to a modern environment.

Movable fixtures and furnishing shall be restricted to the commercial usage spaces themselves except as follows:

- Sunken Lounges – only during the hours of operation
- Open Space Courtyards and Terraces -Fixtures and furnishings in this area that are found to obstruct the free movement must be removed at the request of Metro.

All movable back-of-house fixtures and furnishings not visible to the public, including but not limited to office equipment, office furniture, and communication devices and computers are the responsibility of the retailers and do not require Metro approval.

STOREFRONT AND GLAZING SYSTEMS

As part of the base building, storefronts will be provided at the public sides of all self-contained commercial spaces.

Commercial spaces that are a continuous part of the public concourses will remain open, with the exception of balustrades at the edges of floor openings.

- Retail construction shall not project beyond the lease line which shall be behind the storefront, balustrades and or glazing systems, including signage, moldings, or any other architectural elements.
- Avoid any obstructions of the glass or glazing systems by other materials.
- Advertising media is not to be applied to storefront glazing.
- Screens with moving or flashing images within 6' of the storefront, will not be permitted.
- Storage areas are not permitted to be visible from or about the storefront.
- Blacking out or applying solid panels to glazing of storefronts is not permitted.
- Canopies are not permitted.
- Rolling shutters and gates are not permitted.
- Storefront electronic security systems and any other shoplifting detection devices must avoid the base building storefront design and glazing systems. Any such devices must be concealed from view.
- Subtenants shall maximize the use of glass to maintain a show window type concept. The storefront shall be a minimum of 70% transparent.

Retail Kiosks and Signage

SELF-CONTAINED KIOSKS

Kiosks in historic buildings and throughout the precinct should be designed to minimize the impact to the character and fabric of their environment. They should be light and open, and appear as freestanding elements within their context.

- The locations of the free-standing, open and self-contained kiosks are more precisely indicated in the plans. They can be found in the following areas within the Master Plan precinct:
 - Pavilion Building
 - Ticketing Hall
 - Passenger Concourse
 - East Entrance
 - Lower West Terrace
 - Hotel Terrace
 - Upper West Terrace
 - Upper East Terrace
 - Lower East Terrace
 - East CourtPlease see plans in Appendix A-1 for locations of these spaces.
- Kiosks and kiosks signage should not exceed a maximum height of 8'; the plan extents should not exceed what is indicated in the plans.
- The placement of kiosks must not impede pedestrian flow or egress strategies.
- The design of the kiosks must respond to the architectural conditions in which they are placed.
- A high quality outer appearance and interior environment should be provided.
 - Finishes are to be long-lasting and of superior commercial quality.
 - All fixtures shall be new and of durable quality and finish consistent with anticipated heavy duty public use.
 - Finishes and related details shall follow the same high standard for commercial usage finishes and avoid prohibited finishes as indicated above.
- In all conditions, the views into and through the kiosks, including from above, should be taken into account when designing the unit.
- The color, material and finish of base building surfaces adjacent to or within the retailer's location shall not be changed.

- Kiosks must adhere to all applicable local, state and national codes, including but not limited to the ADA accessibility guidelines. The potential retailer shall be responsible for modifications to the HVAC or fire protection systems should the kiosk in any way interfere with their function.
- Approval of the design of kiosk will be based, in part, on the following:
 - Notwithstanding any additional requirements on the kiosks, kiosks shall maintain a distance of at least 5'-0" from any base building wall, cladding, glazing or column surfaces.
 - Kiosks shall be located and designed so as to come into contact only with the floors of the building. In areas where the base building provides the finish floor, the kiosks shall be installed without damage to the finish.
 - To ensure that wayfinding is not impeded, the zone above the counters shall be as open and free as possible - notwithstanding permitted signage.
 - Graphics may be integrated in the kiosk wall design if they are placed behind glass. No surface mounted graphics.
 - Graphic light boxes where used, must be integral to the shop design and construction.
 - Cash registers and other equipment must be recessed such that at no point will they extend more than 9" above the counter. Projections and displays are not allowed outside the kiosk perimeter.
 - Storage shall be concealed from public view.
 - For food use, sneeze guards shall be provided when required by local health department codes.
 - All conduit, raceways, crossovers, wiring, ballast boxes, transformers and other equipment must be concealed.

RETAIL SIGNAGE

There will be a number of different signage and display components throughout the Master Plan. Design criteria and considerations for each of the categories are outlined below.

STOREFRONT SIGNAGE

In order to promote individuality along the storefront, the tenants are encouraged to provide interesting and unique storefront signs in the areas designated. Approval of the design of the primary signage will be based, in part, on the following general precepts:

- Signage shall be designed by a trained graphic designer, in a coherent and consistent manner.
- Signage designs and the associated graphics and text shall be artful, lively, simple and clear.
 - Commercial signs are limited to trading names and logos. Listing of merchandise, sale, advertisements or descriptions of category are not permitted, except as noted below for menu boards and displays.
 - Any non-illuminated signs proposed for the Subtenants storefront must be of a high quality. Formed plastic letters and simple painted signs will not be allowed.
- Commercial signs shall not interfere with the public circulation area signage.
- Commercial signs shall be discrete in order to maintain the clarity of the public space and project goals for ease of use and intuitive wayfinding.
- Commercial signs shall not be attached to or covering the base building components, finishes or surfaces.
- All retailers must have one primary storefront sign for the purpose of store identification.
- Projecting signs or 'bus-stop' type signs are not permitted.
- Storefront signage is restricted to a signage zone identified by Metro.
 - Signage on Concourse, Platform, and Interior - metal panel above the storefront glazing, shall not exceed 60% of the storefront length and cannot exceed 1'-6" in height
 - All signage shall be contained as part of the self-contained retail unit. No signage shall be

allowed on exterior building façades, glazing, balustrades, column covers or underside of the ceilings.

- Level 2 and Level 3 Commercial Usage Spaces of the East Entrance- signage must be set back 4 feet from the outer glazing surface. No signage shall be allowed on the glazing, soffit or column covers.
- Illuminated or non-illuminated signs comprising the main retail signage are limited to the following types:
 - Plastic face, metal return.
 - Metal face, metal return with raised or etched letters and/ or logo.
 - Glass: Painted, silk-screened, etched to surface of glass.
 - Metal channel with back lighting
 - Time clocks are required to control storefront lighting and signage.
 - Neon signage is not permitted
 - Surface mounted box signs are not permitted.
 - No flashing, blinking, animated or audible signs will be permitted.
 - Visible or exposed light sources will not be permitted, except for LED type.
 - Signage is not to have exposed fixings, screws or rivets.
 - All signage materials and supports shall be coated and/or self-finished and non-corroding.
 - All conduits, transformers or other related equipment must be completely concealed from view. Exposed brackets or fastenings must be painted out to minimize their appearance. Manufacturers' or government labels must be concealed from view.
 - Decals for credit cards and hours of operation are permitted if integrated into the commercial area counters and cabinets and nominal in size.
 - Menu boards and other information displays shall also be subject to review. No sale signs, advertisements or other garish or back-lit graphics may be visible on the boards and displays.

Retail Kiosks and Signage

KIOSK SIGNAGE

To have uniformity with the kiosks throughout the site, the potential retailers are encouraged to follow kiosk signage guidelines below:

- Signs mounted on a pole will not be allowed. Signs must be integrated within the overall kiosk design.
- All signage must be three-dimensional and be illuminated by a light source fully integrated with the architecture of the kiosk.
- Signage and graphics design and placement shall complement the overall kiosk design.
- Signage is limited to a maximum of one (1) double-faced primary sign.
- Wording of the primary signage shall be limited to the retailer name, and shall not include specification of merchandise sold or services rendered.
- Lettering height of primary sign is limited to 8"
- Signs must be equal in quality of design with nearby storefronts.
- Graphics may be integrated in the kiosk wall design if they are placed behind glass. No surface mounted graphics.
- Graphic light boxes where used, must be integral to the shop design and construction.

Below:
Precedents of different architectural systems for the various retail elements

MARKET RETAIL



FURNITURE



KIOSKS



3
Wayfinding
Guidelines

Wayfinding Overview

OVERVIEW

Los Angeles Union Station will continue to carry a diverse range of passengers on both business and leisure journeys. The primary aim of the long-term wayfinding strategy will be to help passengers easily navigate their way through the new station environment, facilitating efficient movement of passengers to and from trains, buses, subways and other areas.

WAYFINDING AND SIGNAGE PRINCIPLES

The three fundamental principles that define the wayfinding and signage strategy are:

- Progressive Disclosure - Put the right message in the right place. Provide only the information required at that point in the customer journey
- Accessibility - Ensure that information is made available to customers of all abilities, and from as many ethnic backgrounds as possible and meeting Metro's criteria.
- Simplicity and Clarity - Ensure that the information provided is as simple and clear as it can be

The development of the wayfinding strategy for Union Station should be considered holistically in terms of information management whereby signs, customer information and advertising have been treated as complementary parts of a unified system of visual information in order to allow for a phased but coherent implementation across multiple projects. The final design and approach will require validation with the station's future approved operational strategy.

The Master Plan assumes that the combination of information elements – signage, station environment graphics and integrated advertising – will support passenger movements at all stages of the journey to their destination station and beyond. Effective wayfinding and information will be essential if passengers are to have a positive journey experience.

The wayfinding strategy addresses the following:

- The needs of all visitor groups – regardless of language, gender or mobility needs
- Principal destinations within station environments
- Routes to/from principal origins/destinations
- Means by which to inform passengers of train services and journey options, including train dispatch and platforms
- Station exits and principal external destinations or onward journey points
- Delivery of intuitive wayfinding and clear movement paths from origin to destination
- Sign locations and information based on identified passenger movement needs with directional and locational signage being required to support passenger movement throughout the station environment
- Station information that enables passengers to locate facilities (e.g. lifts, security gates, escalators, ticket offices, platform, gates, machines), navigate to platforms, and from platforms to their preferred exit and immediate external destinations
- Due to the predicted passenger volumes, highly visible, simple wayfinding that guide passenger movements from entry to gate to carriage boarding-points on platform, with passengers ready to board when trains arrive
- Station designs that aim to separate inbound and outbound passenger movements, minimizing cross-flows and simplify wayfinding options

Below:

Platform signage totem at Southern Cross Station in Melbourne, Australia. The streamlined design integrates digital monitor and analog signage to provide clear and simple information to passengers



Wayfinding Signage

OVERVIEW

Signage will be a major component of the successful wayfinding strategy. This report establishes the goals for the signage system in order to develop a clear and effective vision that will complement and enhance Metro's existing standards in a fashion that is appropriate to the unique condition of and aspirations for Union Station. The goal is to establish a common and coordinated approach to signage and way-finding across the entire master plan.

SIGNAGE TYPES

Most signs can be divided into four functional groups:

- Information Signs - These are the main signs for orientation; they would include identifying the building, car park and other main locations inside the building. These include directories, maps and plans.
- Direction Signs - These direct users to destinations using arrows. Often they carry several destinations in a bank of signs and care has to be taken with the use of arrows to avoid confusion.
- Identification Signs - These signs - always without an arrow - are located at individual destinations to indicate the location of a facility or a service, a room or a person, once a destination has been reached. Some identification signs can be short; others may contain several levels of information. This category includes mandatory signs, such as the station identification sign on platforms that can be found at all rail stations.
- Regulation Signs - These signs are essential for the safety of users and can be either a warning or prohibitive signs. They will always be positioned at strategic points to give warning of a hazard. They include exit signs and details about fire equipment.

SIGNAGE PLACEMENT

Fixing height

- Standard fixing heights need to be established for suspended or bracketed signs, to ensure optimum visibility for the station user and allow for unimpeded operational activity within the station environment.
- Whenever possible, signs should be installed with a common baseline height specific to each zone. For example, all concourse signage should have baseline height x, all platform signage should baseline height y and so on. The fixing heights for other signs and notices will relate to architectural feature such as fascias, entrance canopies and doors.
- The placement of signs to maximize their legibility and use in operation is based on the average eye level and height of a person.
- Information in busy environments needs to be placed high up, where it can be read above other people's heads.
- The human eye has a natural angle of vision, based on that from a distance of about 32ft the viewer can perceive the writing on a ceiling without having to raise their head unnaturally.
- While it is essential that adequate signing is provided for customers to find their way safely to and from platforms and exits, it is necessary to ensure all suspended and wall-hanging signs are located to be unobstructed by other objects.
- A clear principle that for a passenger to clearly see a sign from 32ft, any other signs placed in front of it must be a minimum of 11.5 feet away. This rule allows both the minimum and maximum height users to clearly view the sign.

Below:

Sample systemwide components of a comprehensive wayfinding system. The design for the individual components is cohesive and carries the same underlying principle of consistent color, typography and graphics.

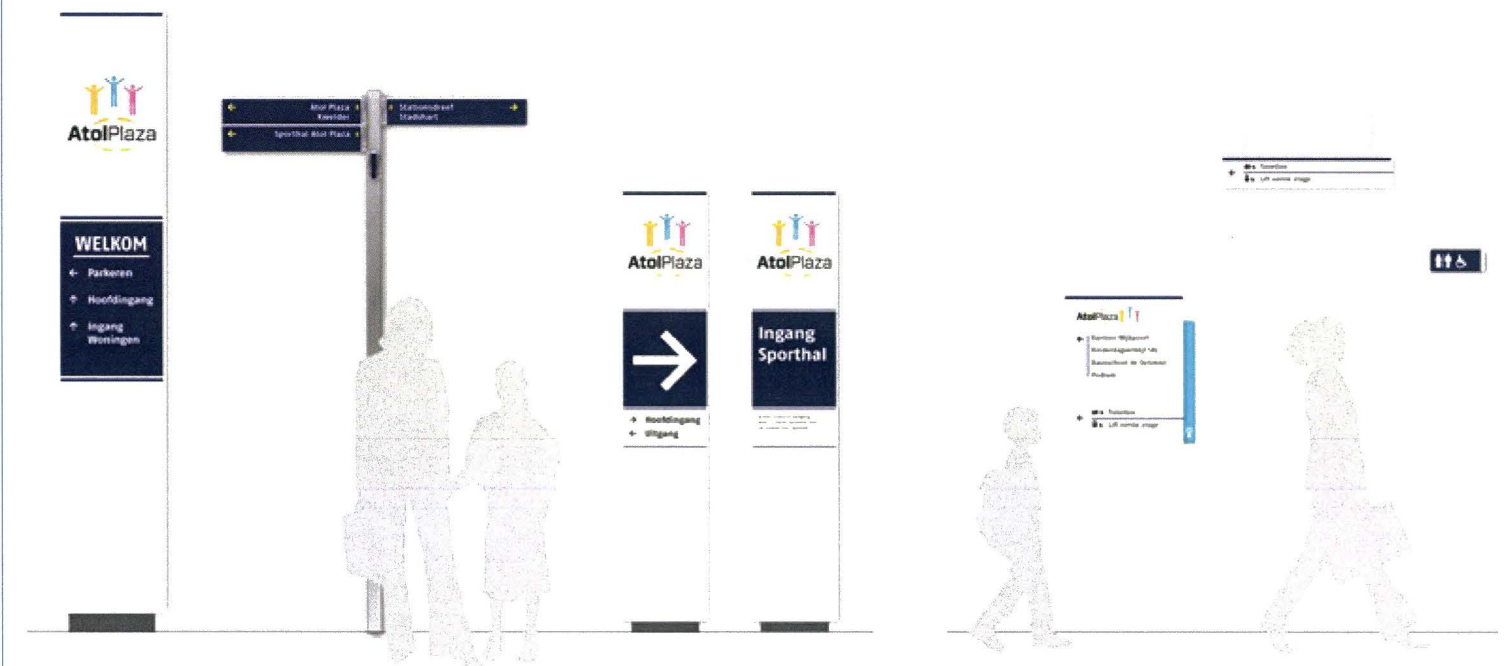
SIGNAGE COMPONENTS

Creating a family of components with similar graphics ensures a mode of continuous recognition, forming the basis of an effective signage system. The wayfinding signage system will include the following components:

- Surface-Mounted Signage
- Free-standing Totem/Post Signage
- Suspended Signage
- Sign Box Enclosure
- Customer Information System Display
 - Static Display
 - Dynamic / Interactive Display
- Symbols and Pictograms
- Typeface

In order for the components to function as a cohesive and effective system, an overall design approach will be implemented based on these principles:

- Adopt a consistent font, symbol and color system
- Size of lettering and pictograms on the signs will be established in relation to the intended reading distance based on standard industry metrics
- Illuminate all transit related signage and others required by existing Metro standards
- Illuminated signs will have tube mount w/ concealed power/data for future panels
- All surface mounting components will be concealed
- Component materiality should be robust, durable and low-maintenance

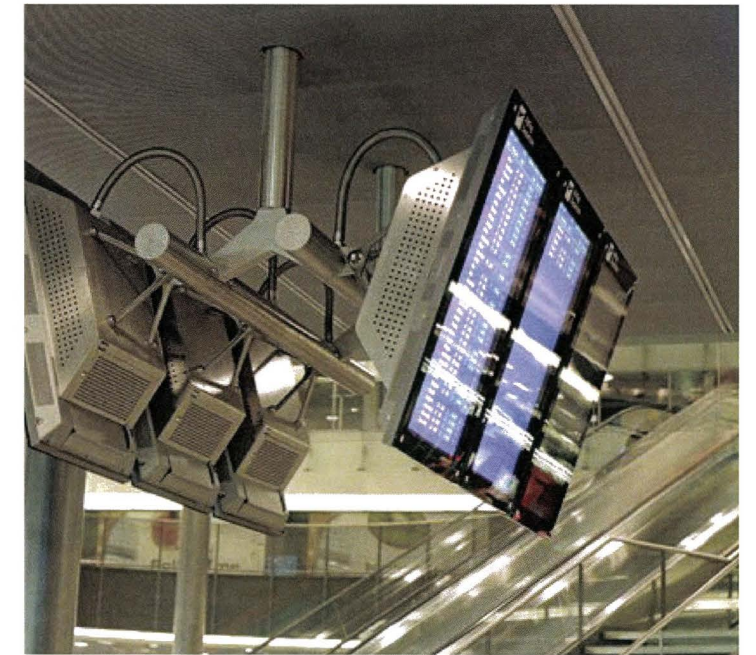
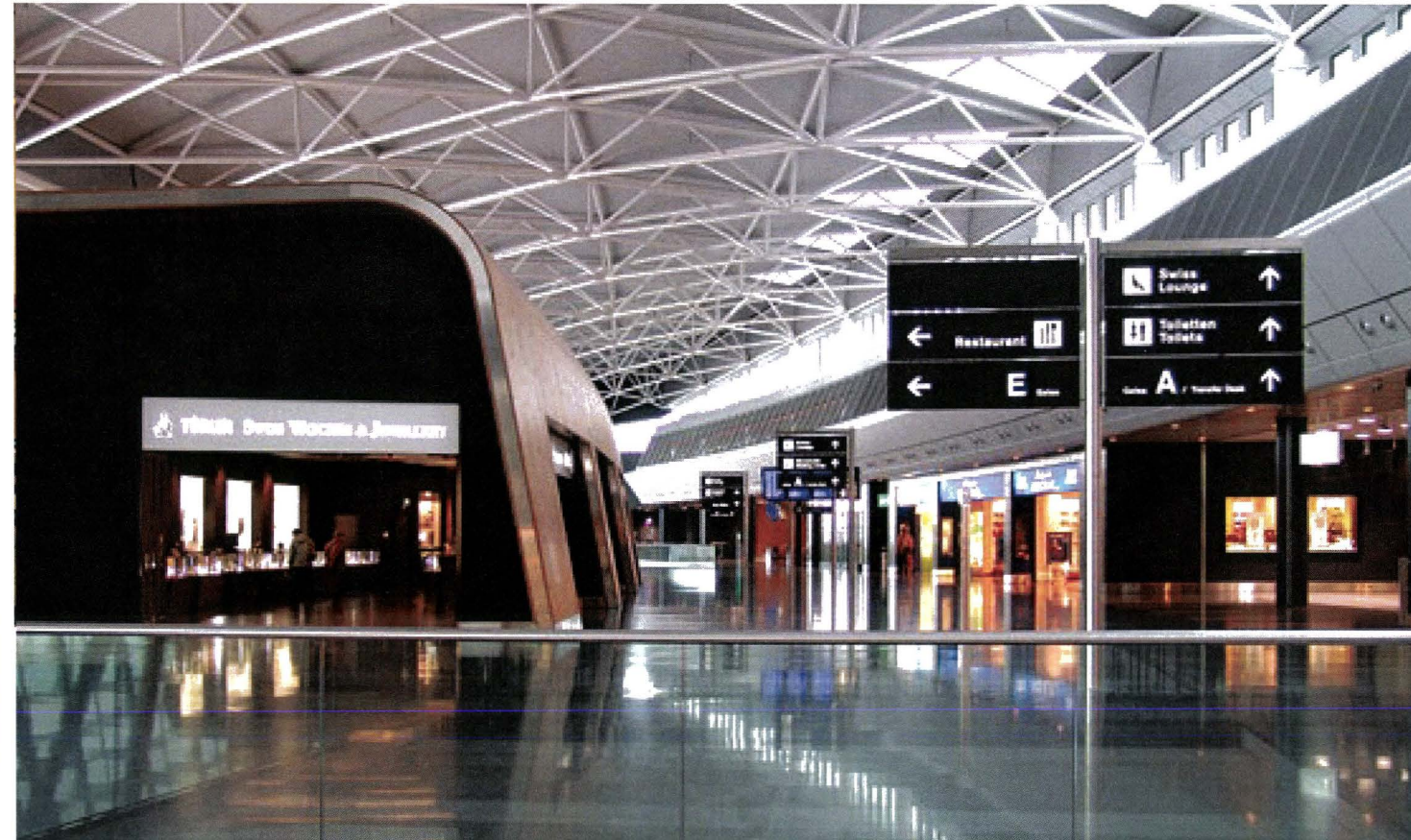


Wayfinding Signage

Below:
A combination of suspended and surface mounted signage as well as free-standing totems and digital displays can be implemented at Union Station

SIGNAGE LOCATION

- The physical location of each sign needs to be considered in relation to the architecture of the station.
- Signs are placed at decision points along the routes taking into account viewing distances and sight lines. In all instances, ensure that the customer is provided with a continuous trail of information to their destination. Decision point signs typically provide directional information to way out routes, inter-modal transport connections, platforms and key facilities.
- It is important to maintain a clear physical separation between signage and advertising. If the two become indistinguishable, this will adversely affect pedestrian flow and consequently impact upon the functionality of the station.
- When positioning signage structures, maximum care must be taken to ensure that these never impede main passenger flows - particularly in situation of critical capacity such as platforms. Consideration should be also given to the fact that signs - particularly busy ones - will attract passengers, who will naturally tend to get close to read them. Size and legibility of information should assume many people will be trying to read at once.



Wayfinding Station Environment Graphics

STATION ENVIRONMENT GRAPHICS

Clear and legible environmental graphics will be another important aspect of a comprehensive wayfinding approach. The balanced implementation of the following, in concert with the Metro Wayfinding Standards within the station environments must be considered carefully.

- color
- typography
- symbols and pictograms
- art
- light
- materials

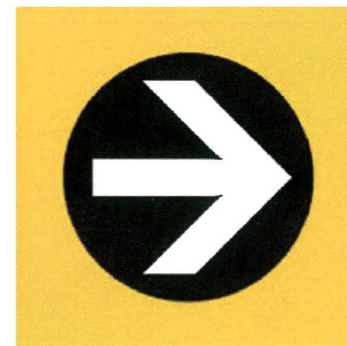
CONSIDERATIONS

When selecting the final environmental graphics the following considerations must be taken into account:

- The graphic treatment must work in unison with the architectural environment. Be careful that graphics don't clash with the station's visual appearance.
- Consider the legibility and contrast of any chosen graphic treatment.
- Consider visibility i.e. how big or small a graphic treatment should be
- All graphic treatment should not detract from signage or negatively affect the wayfinding strategy
- Consider lighting conditions
- Consider the material selection
- Consider Metro's visual identity
- Consider simplicity and universality

Top:
Examples of effective use of typography, pictograms and symbols

Bottom:
Metro's standard for environmental graphics



APPROVED LOGO

APPROVED SECONDARY LOGOS



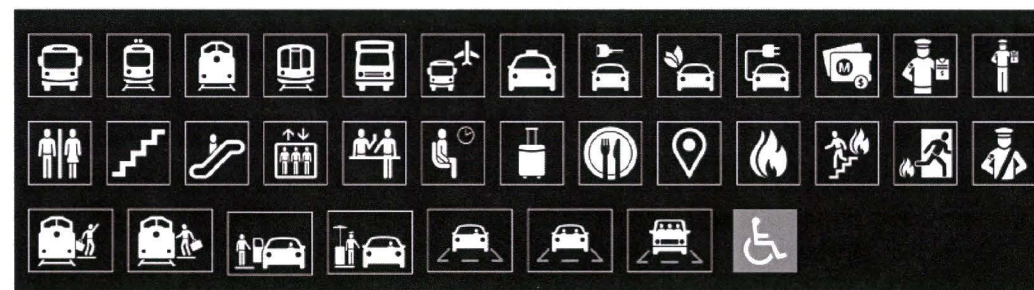
Metro



Metro

M Metro

PICTOGRAMS



TYPESTYLE STANDARDS

Scala Sans Bold

LETTERSPACING 0

ij Modified dots on 'i' and 'j'
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789

BRAND IDENTIFICATION

DIN Bold

LETTERSPACING -45

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz 0123456789

WAYFINDING
TACTILE/BRILLE
REGULATORY
SAFETY

DIN Medium

LETTERSPACING -45

ABCDEFGHIJKLMNOPQRSTUVWXYZ
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SPANISH
SECONDARY MESSAGES

EXIT GRAPHIC



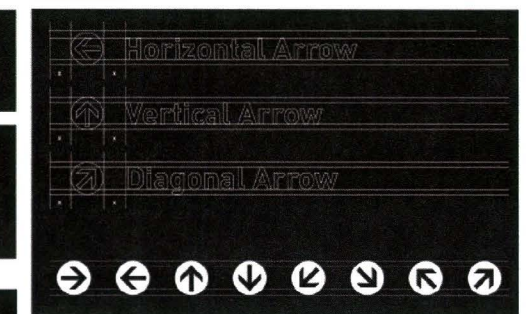
SLASH SYMBOL



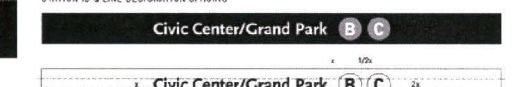
TYPICAL DIRECTIONAL LAYOUT



WAYFINDING ARROWS



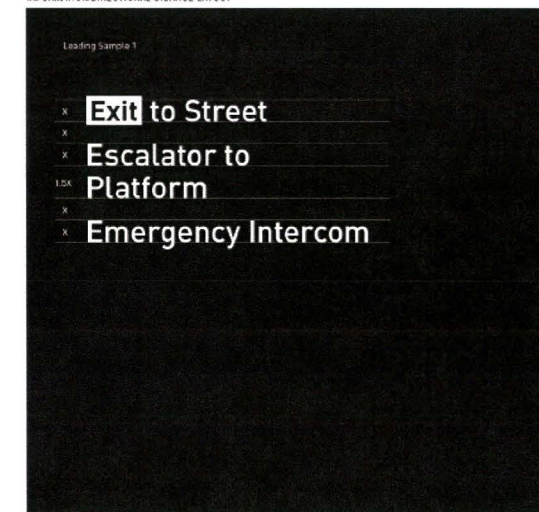
STATION ID & LINE DESIGNATION SPACING



STATION ID & LINE DESIGNATION SPACING - SECONDARY OPTION



INFORMATION/DIRECTIONAL SIGNAGE LAYOUT



ADA SIGNAGE LAYOUT



Wayfinding Integrated Advertising

ADVERTISING

Public spaces are often compromised by the need for advertising revenue. Unconstrained advertising with no vision or clear strategy would be disastrous for wayfinding, undermining the passenger experience and, ironically, reducing the margins on revenue. The advertising strategy at Union Station has clear goals and definite borders that allow for high revenue while resulting in a better passenger experience.

The approach will be to maintain a controlled and coherent visual environment, defining the relationship between commercial demands and customer information. However, it is recognized that the requirements for any strategy will need to be flexible and adaptable to any future trends.

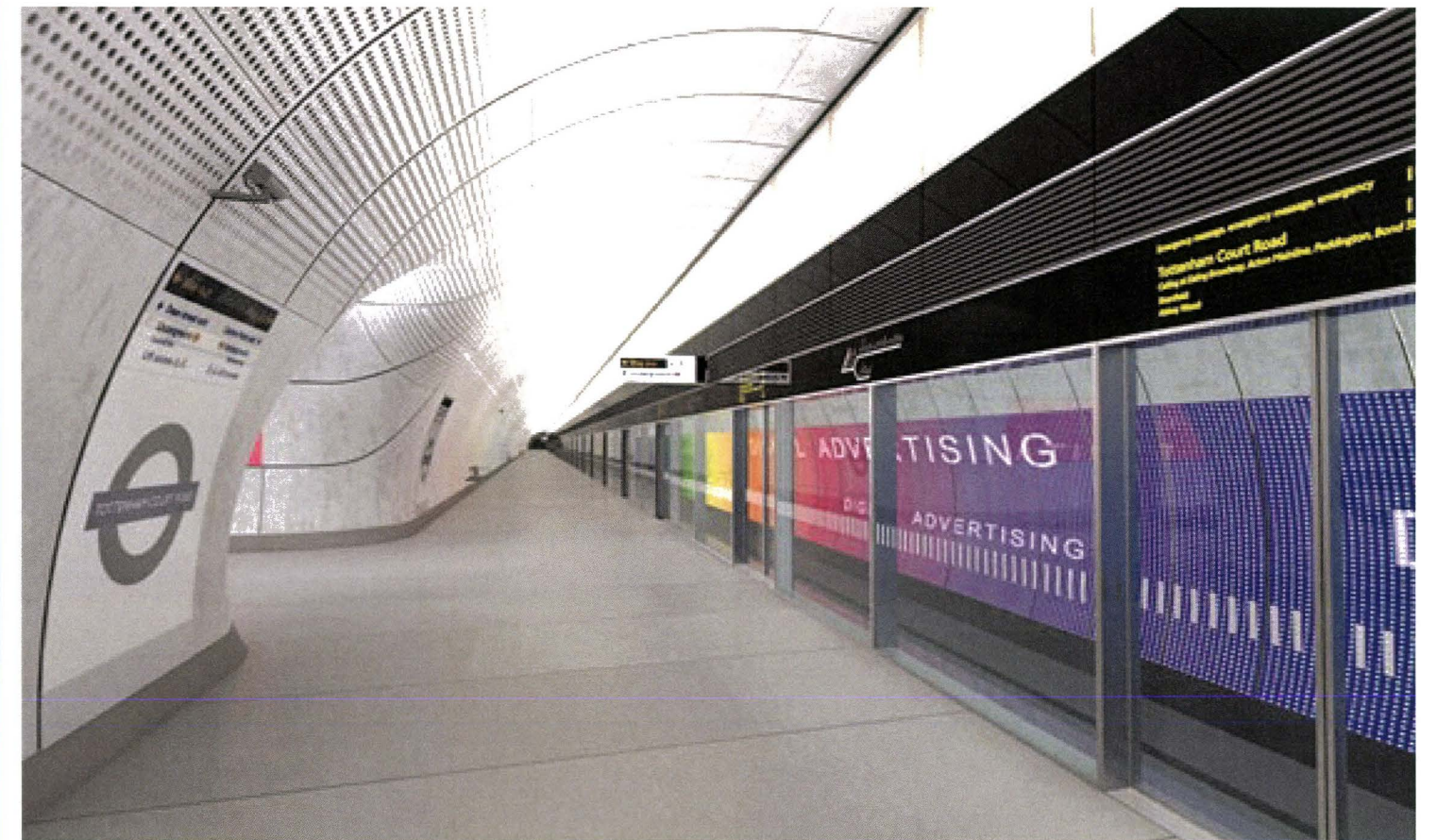
ADVERTISING APPROACH

Within the historic portions of Union Station, advertising shall only be allowed in certain very limited instances. Advertisement may be integrated discretely within the design of the new retail structures or within the interior of retail spaces in accordance with the retail guidelines. There shall be no advertisement on, attached to or blocking any other interior or exterior historic surfaces, finishes or elements.

Within the new Passenger Concourse, relocated Patsaouras Bus Plaza and East Entrance areas, the advertising approach should be coordinated with the architecture of the space in a fashion that is distinct from the way-finding system. Advertising panels may be integrated within designated metal casework that is built into portions of the walls or appropriately scaled and located free-standing totems where there is exposure to pedestrians, so long as pedestrian circulation is not impeded and the ads do not clash or compete with wayfinding. It may not be applied to architectural elements such as columns, doorways, and glazing enclosures, nor to floor, wall or ceiling finishes. It will be limited in size and location for specific purposes to not compete with or obstruct way-finding devices or the overall architectural intent of the transport spaces. Advertising that disrupts the natural flow of traffic by creating a distraction shall be prohibited. Efforts should be made to minimize non-transit oriented visual information while providing effective opportunities for timely advertisement, thereby enhancing the experience for transit passengers as well as visitors to Union Station.

Below:

The effective integration of advertising within a transit environment can reinforce the architecture of the station while enhancing the transit passenger experience.



Wayfinding Proposed Signage Zones Concourse Level

The wayfinding system is structured on the principle that travelers need information first and locations second. Signs are positioned and disclose information progressively on this basis.

EXTERIOR PERIMETER

Exterior departure and arrival wayfinding signs include information and directions for these key areas:

- Building entrance / exit
- Passenger drop-off
- Vehicle and bicycle parking
- Bus and taxi access
- Local landmarks / destinations / districts

HISTORIC UNION STATION

Interior departure wayfinding signs in the Waiting Hall and Concourse areas include information and directions for:

- Bus and train schedules and status
- Train platform and bus bay number
- Ticket purchase and check-in
- Baggage check-in / claim
- Interactive systems information (routes, maps, etc...)

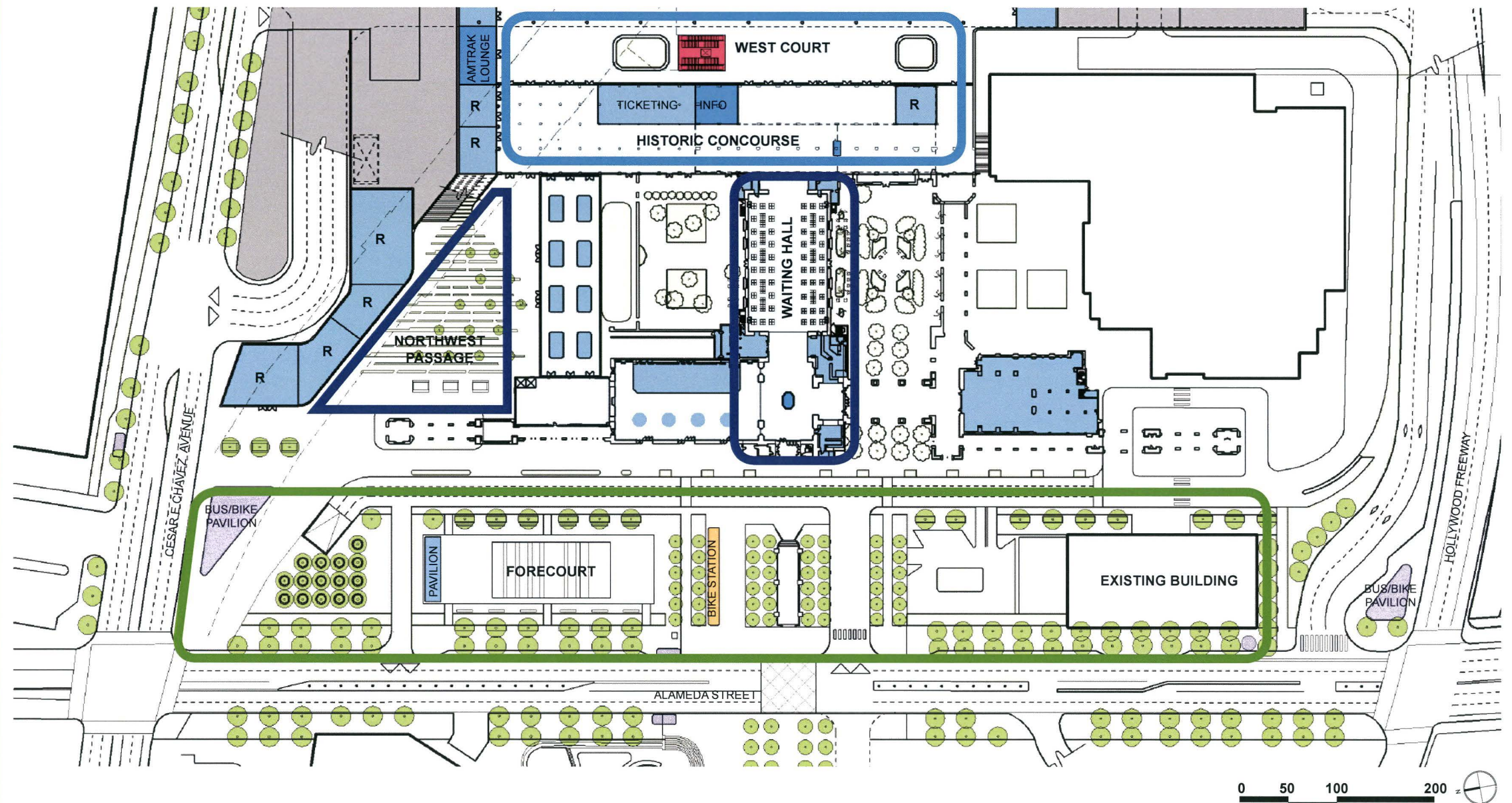
Arrival wayfinding signs include information and directions for these key areas:

- Exit
- Vehicle and bicycle parking
- Bus and taxi access
- Vehicle rental services
- Transfer to other transit modes

Additional signs include information and directions for:

- Information Services
- Restrooms
- Security
- Restaurants/Bar
- Amenities

Below:
Concourse Level Partial Plan West Side
and keyed signage precedents



Wayfinding Proposed Signage Zones Concourse Level

INTERIOR BUS ACCESS & PASSENGER CONCOURSE

Departure wayfinding signs in the Bus Access and Passenger Concourse areas include information and directions for:

- Bus and train schedules and status
- Train platform and bus bay numbers and access points
- Interactive systems information (routes, maps, etc...)

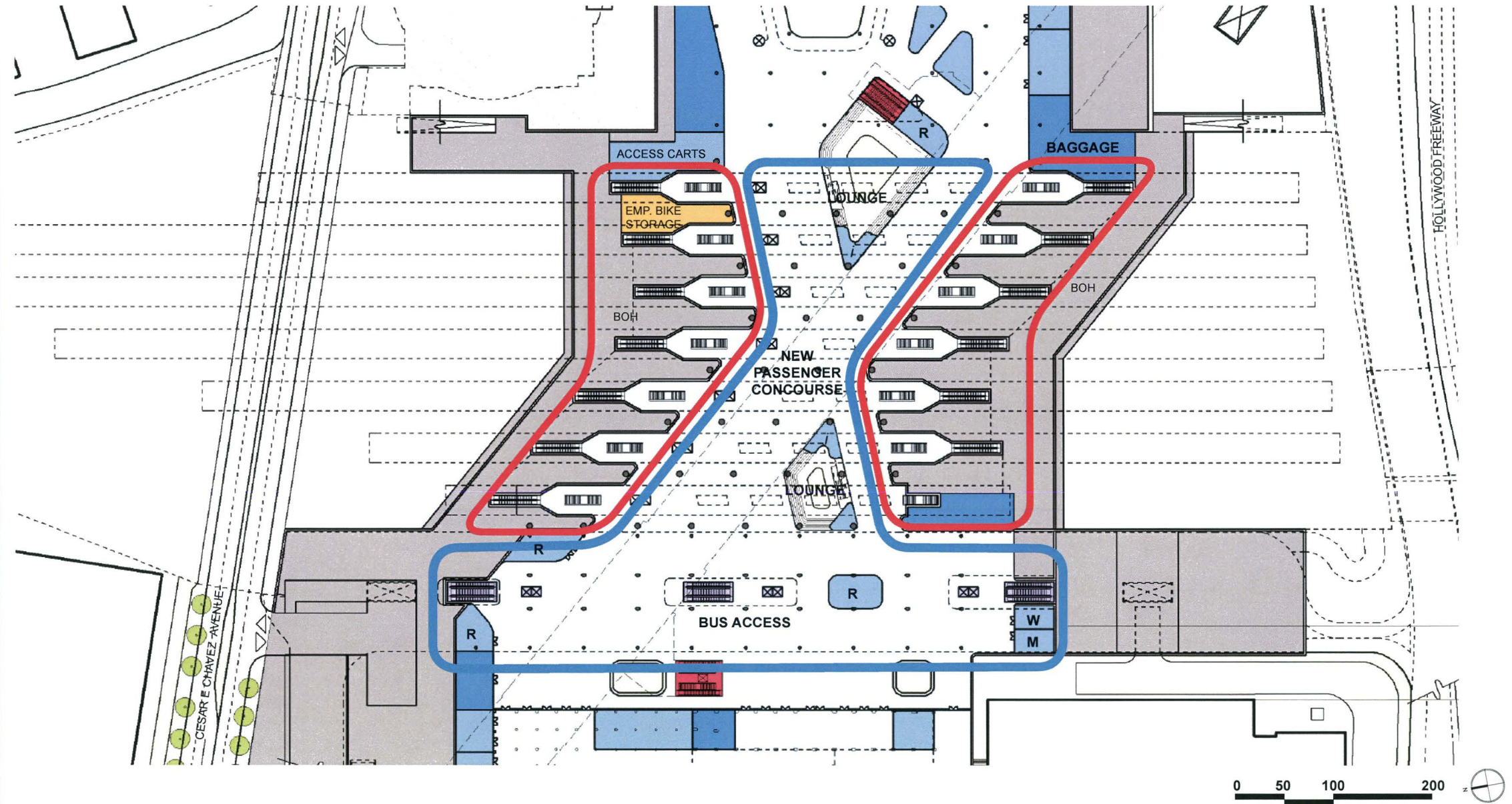
Arrival wayfinding signs include information and directions for these key areas:

- Exits
- Vehicle and bicycle parking
- Bus, taxi and public transportation
- Vehicle rental services
- Transfer to other transit modes
- Baggage check-in / claim

Additional signs include information and directions for:

- Information Services
- Restrooms
- Security
- Restaurants/Bar
- Amenities

Below:
Concourse Level Partial Plan New
Passenger Concourse- and keyed signage
precedents



Wayfinding Proposed Signage Zones Concourse Level

EXTERIOR PERIMETER

Exterior departure and arrival wayfinding signs include information and directions for these key areas:

- Building entrance / exit
- Vehicle and bicycle parking
- Passenger drop-off
- Bus and taxi access
- Ticket purchase and check-in

NEW EAST ENTRANCE

Interior departure wayfinding signs in the New East Entrance and Passenger area include information and directions for:

- Bus and train schedules and status
- Train platform and bus bay number
- Ticket purchase and check-in
- Baggage check-in / claim
- Interactive systems information (routes, maps, etc...)

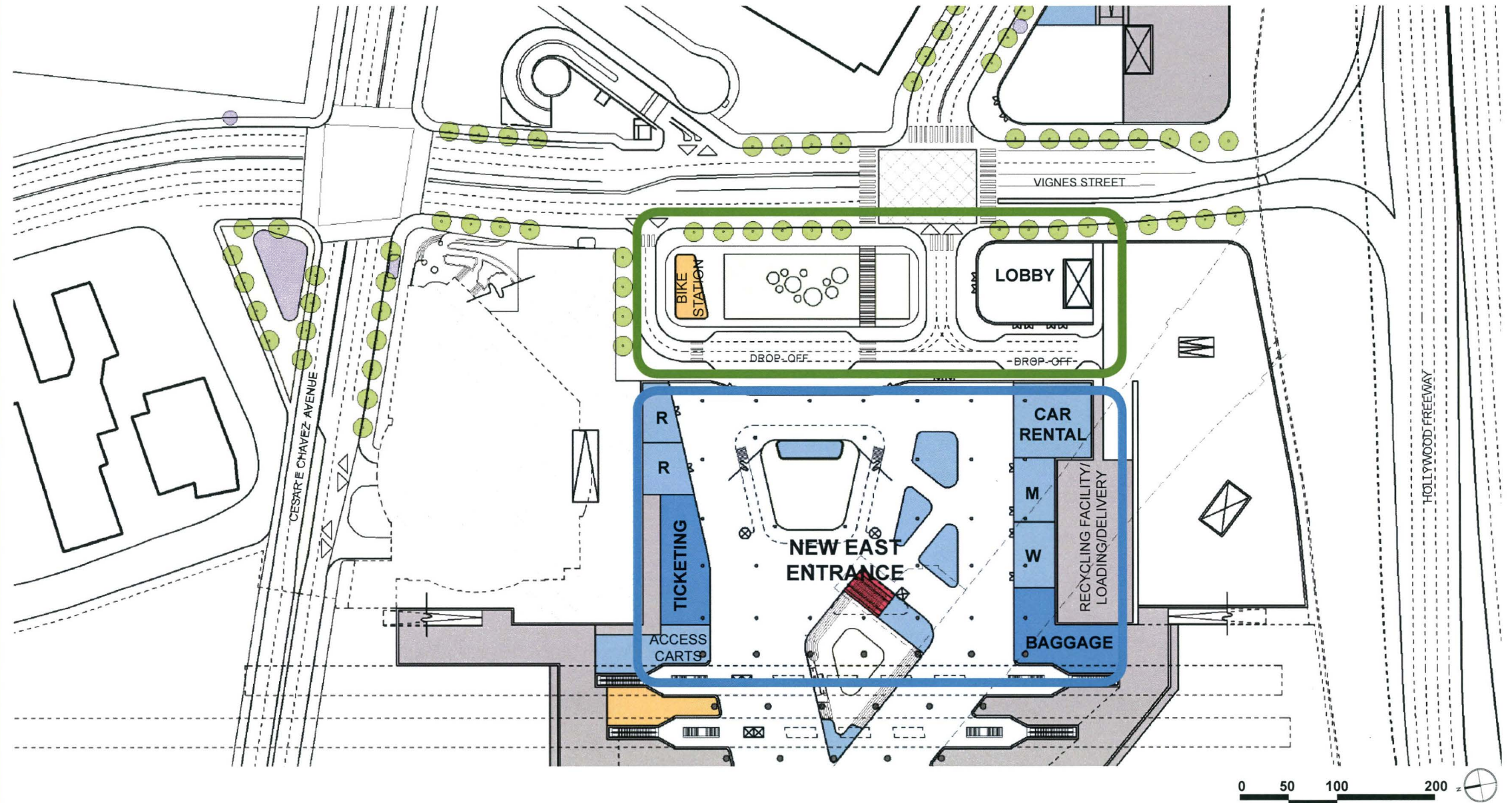
Arrival wayfinding signs include information and directions for these key areas:

- Exit
- Vehicle and bicycle parking
- Bus and taxi access
- Vehicle rental services
- Transfer to other transit modes

Additional signs include information and directions for:

- Information Services
- Restrooms
- Security
- Restaurants/Bar
- Amenities

Below:
Concourse Level Partial Plan East Side
and keyed signage precedents



Wayfinding Proposed Signage Zones Platform Level

RAIL AND BUS PLATFORMS

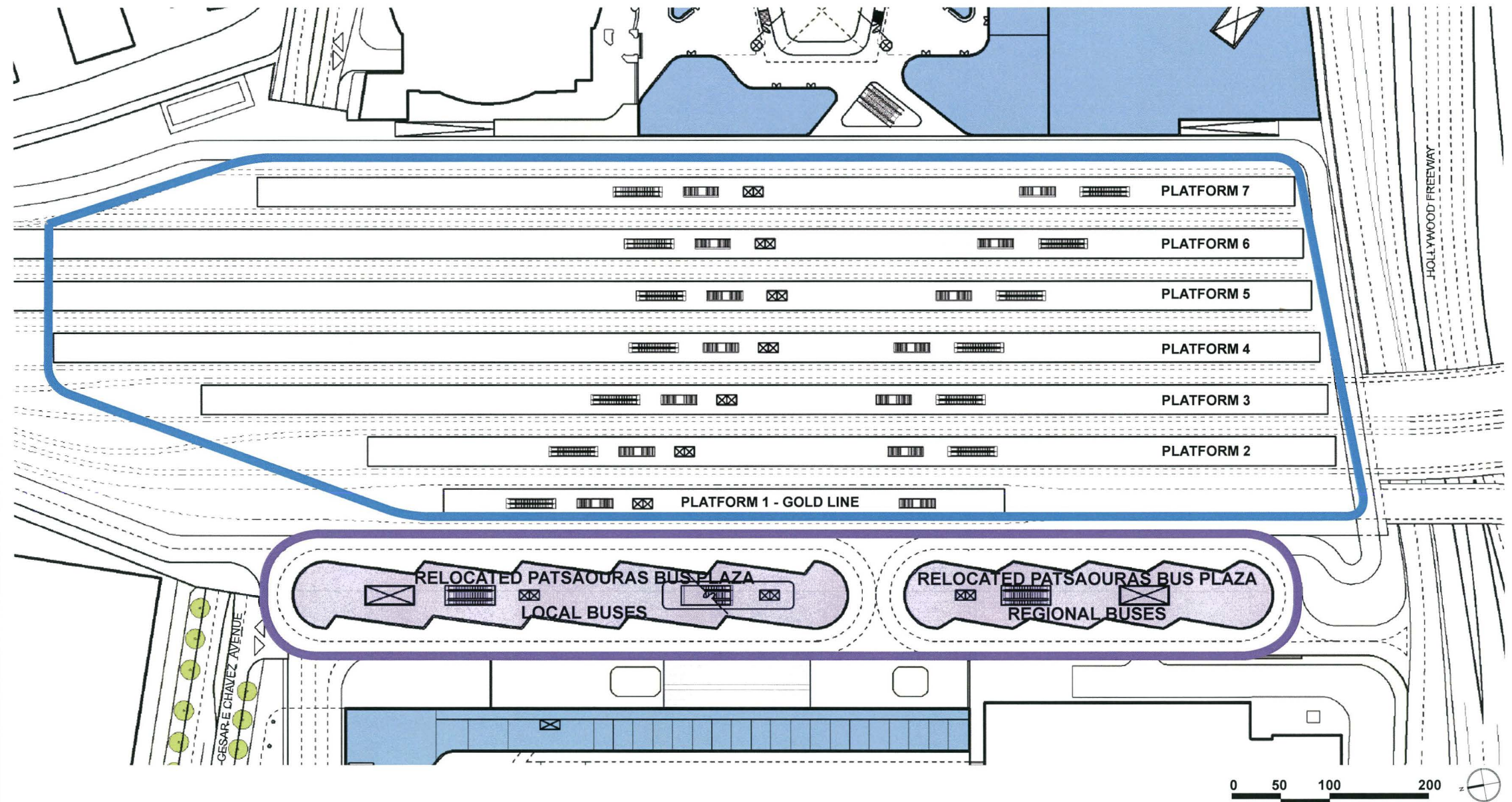
Departure wayfinding signs on the train platforms and bus bays include information and directions for:

- Train and bus schedules and status
- Train platform and bus bay number
- Interactive systems information (routes, maps, etc...)

Arrival wayfinding signs include information and directions for:

- Transfer to other transit modes
- Amenities
- Exits

Below:
Level 2 Partial Plan Railyard and keyed
signage precedents



Wayfinding Proposed Signage

WEST COURT

Various signage types can be deployed within the area of the West Court, the transition space between the historic Union Station building and the new expanded Passenger Concourse and relocated Patsaouras Bus Plaza.

Signage totems with integrated static and dynamic displays shall be installed in the open-air space to provide optimal presence while remaining visually unintrusive.

The exterior surface of the historic Concourse wall provides opportunity for surface mounted signage above the entry doors. Similar surface mounted signage can also be integrated into the slab edge of the bus platform or suspended from the underside of the slab structure.

Exterior wayfinding signs in the West Court include information and directions for these key areas:

- Bus and train schedules and status
- Interactive systems information (routes, maps, etc...)
- Access to train and bus platforms
- Ticket purchase and check-in
- Transfer to other transit modes
- Vehicle and bicycle parking
- Bus and taxi access
- Vehicle rental services

Additional signs include information and directions for:

- Information Services
- Restrooms
- Security
- Restaurants/Bar
- Amenities

Below:
West Court view at Concourse level looking northeast with potential locations for different signage types and their precedents



Wayfinding Proposed Signage

PASSENGER CONCOURSE

The Passenger Concourse area demands a highly organized system of wayfinding elements in order to coordinate the efficient movement of the passengers as they board or exit the station.

As such, signage are proposed to be along the wall framing the access points to the platforms. The use of clear and direct environmental graphic elements to indicate platform numbers on the wall frees up the overhead space from excessive signage elements.

Static and dynamic displays can also be integrated into the architecture of the space to communicate train schedule and status. Digital displays can also be deployed in specific areas along the primary circulation path to provide information without interfering with passenger movements.

Wayfinding signs include information and directions for these key areas within the Passenger Concourse:

- Building Exits
- Bus and train schedules and status
- Interactive systems information (routes, maps, etc...)
- Train platform and bus bay number
- Ticket purchase and check-in
- Baggage check-in / claim
- Transfer to other transit modes
- Vehicle and bicycle parking
- Bus and taxi access
- Vehicle rental services

Additional signs include information and directions for:

- Information Services
- Restrooms
- Security
- Restaurants/Bar
- Amenities

Below:
Passenger Concourse view at
Concourse level looking north
with potential locations for
different signage types and
their precedents



Wayfinding Proposed Signage

NEW EAST ENTRANCE

The new East Entrance is an important part of the sequence for passengers and visitors arriving via Vignes Street and exiting the Metro rail and subway system.

Wayfinding signage shall be integrated within the fascia of the slab edge or suspended from the underside of the slab edge with minimal visual disturbance.

Due to the low floor to ceiling height of the space, totem panels with integrated static and dynamic/digital displays shall be used and deployed in specific areas along the path of travel.

Totem panels can also be used on the two upper terrace levels in strategic area as determined through passenger traffic modeling.

Wayfinding signs include information and directions for these key areas:

- Building exits
- Bus and train schedules and status
- Interactive systems information (routes, maps, etc...)
- Train platform and bus bay number
- Ticket purchase and check-in
- Baggage check-in / claim
- Transfer to other transit modes
- Vehicle and bicycle parking
- Bus and taxi access
- Vehicle rental services

Additional signs include information and directions for:

- Information Services
- Restrooms
- Security
- Restaurants/Bar
- Amenities

Below:
East Entrance view at
Concourse level looking East
towards Vignes with potential
locations for different signage
types and their precedents





4
Development
Project
Guidelines

Development Project Overview

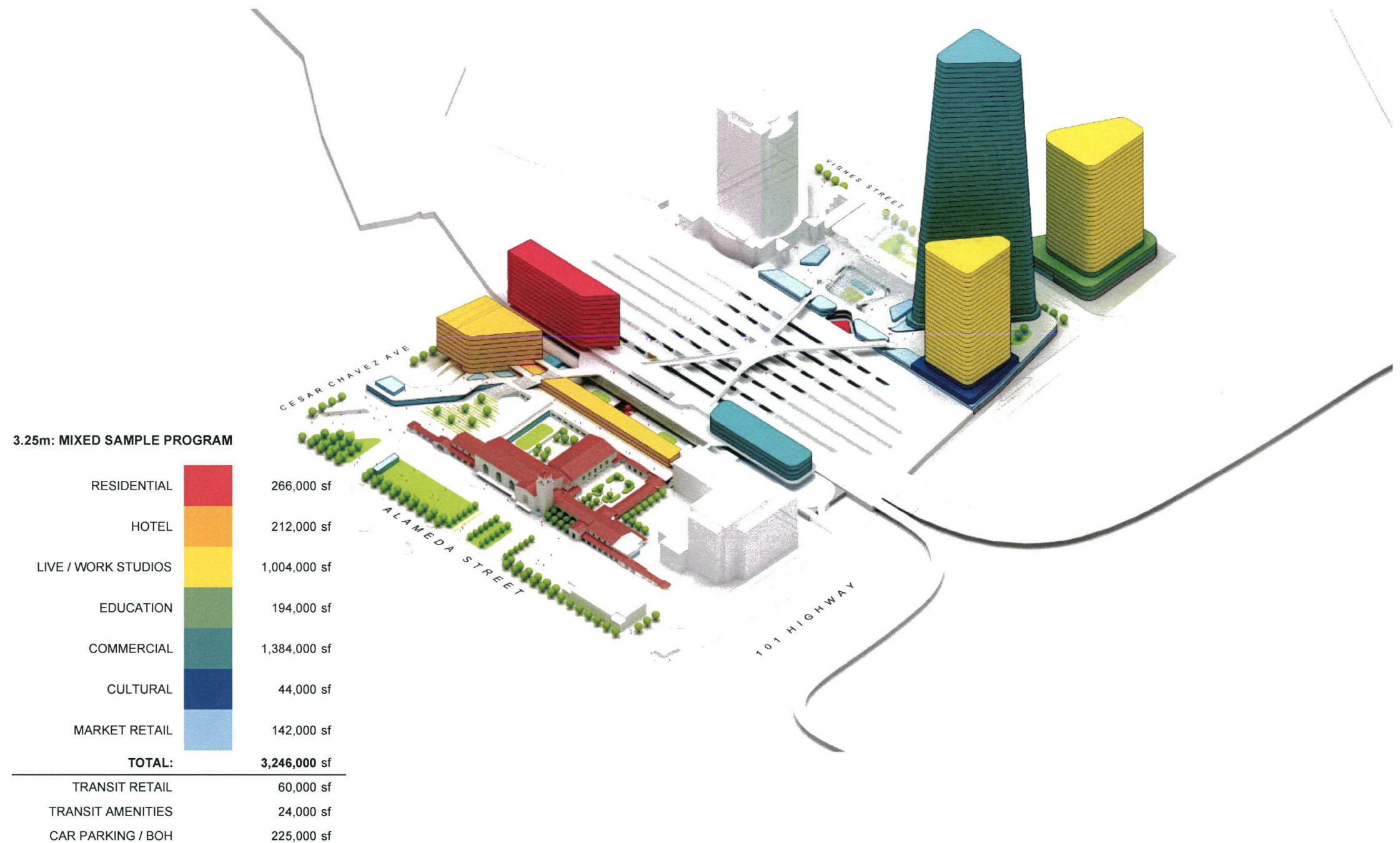
The simultaneous planning of transit improvements and new development on the Los Angeles Union Station (LAUS) site will allow for both a coordinated implementation of the Union Station Master Plan (USMP), as well as flexibility to realize a destination-based mixed use program. Serving as a catalyst for progressive development, a revitalized station can re-establish Union Station as the gateway to Los Angeles and a new downtown destination. As adjacent neighborhoods thrive and a new demographic of users emerge, USMP will forge new connections with its neighbors, bridge the west with the east, and activate dormant sites that extend to the Los Angeles River. The immediate opportunities are directly linked to transit, access, and circulation improvements. Strategically placed amenities, adaptive reuse of the historic Station and open space programming will begin this journey of change. Visitors, encouraged to stay and linger, will activate the site and create the impetus for larger investments. A dynamic mix of civic, cultural, retail, housing and non-traditional and flexible commercial development will bolster the site's unique and special character and provide the ingredients for healthy and sustainable urban living.

OBJECTIVES

Key objectives for development formulated during the data analysis and the programming phases of the project include:

- Planning development that does not compromise the proposed transit improvements and that fits within the broader programming themes for USMP: 1) transit optimization; 2) destination; and 3) connectivity.
- Creating a transit-based destination by coordinating development with transport improvements and making a vibrant mixed-use place for transit users, visitors, and residents to work, play, live, eat and relax.
- Supporting the passenger's experience by providing as a part of development projects retail, dining, and other attractions that will complement the passenger amenities and support spaces within and adjacent to the Concourse.
- Designing development in a manner that reinvigorates the historic Station and its courtyards and links strongly to the surrounding neighborhoods.
- Considering LAUS as a catalyst for transformative projects near by.

Below:
Program Distribution Axonometric



LEED ND Credit:
SLLc5
NPDc2
NPDc3
NPDc4

Development Project Overview

DEVELOPMENT PROGRAMMING

Robert Charles Lesser & Co. (RCLCO), with PKF Consulting and LiveWorkLearnPlay, provided Metro with an independently commissioned market feasibility report and identified the development opportunities. Their research concluded that the Union Station site has the opportunity to add around **3.25 million square feet of Class "A" residential, office, and hotel space by 2030.**

- USMP shows a maximum demand potential projected for up to:
 - 1,270,000 square feet of residential/live/work
 - 1,526,000 square feet of office towers and retail
 - 212,000 square feet of hotel
 - 238,000 square feet of education and cultural uses
- The program for 3.25 million square feet and the individual projects described in this section are illustrative.
- While market conditions will dictate the eventual development on site, the USMP allows considerable density and a wide range of uses.
- The sites on the northwest are placed far enough away from the historic Station so as to not interfere with its main elevation. The intensity of development increases towards the east, farther away from the historic Station.
- In alignment with the Master Plan goals, the drawings indicate a sustainable and forward-thinking set of preliminary building designs with a robust range of programming on-site to achieve a high variety of mixed uses. And while it identifies more detailed programmatic prospects than the broad categories listed in the market study, specific land uses are seen in the Master Plan as flexible within the overall building envelopes and principles established for the location and massing.

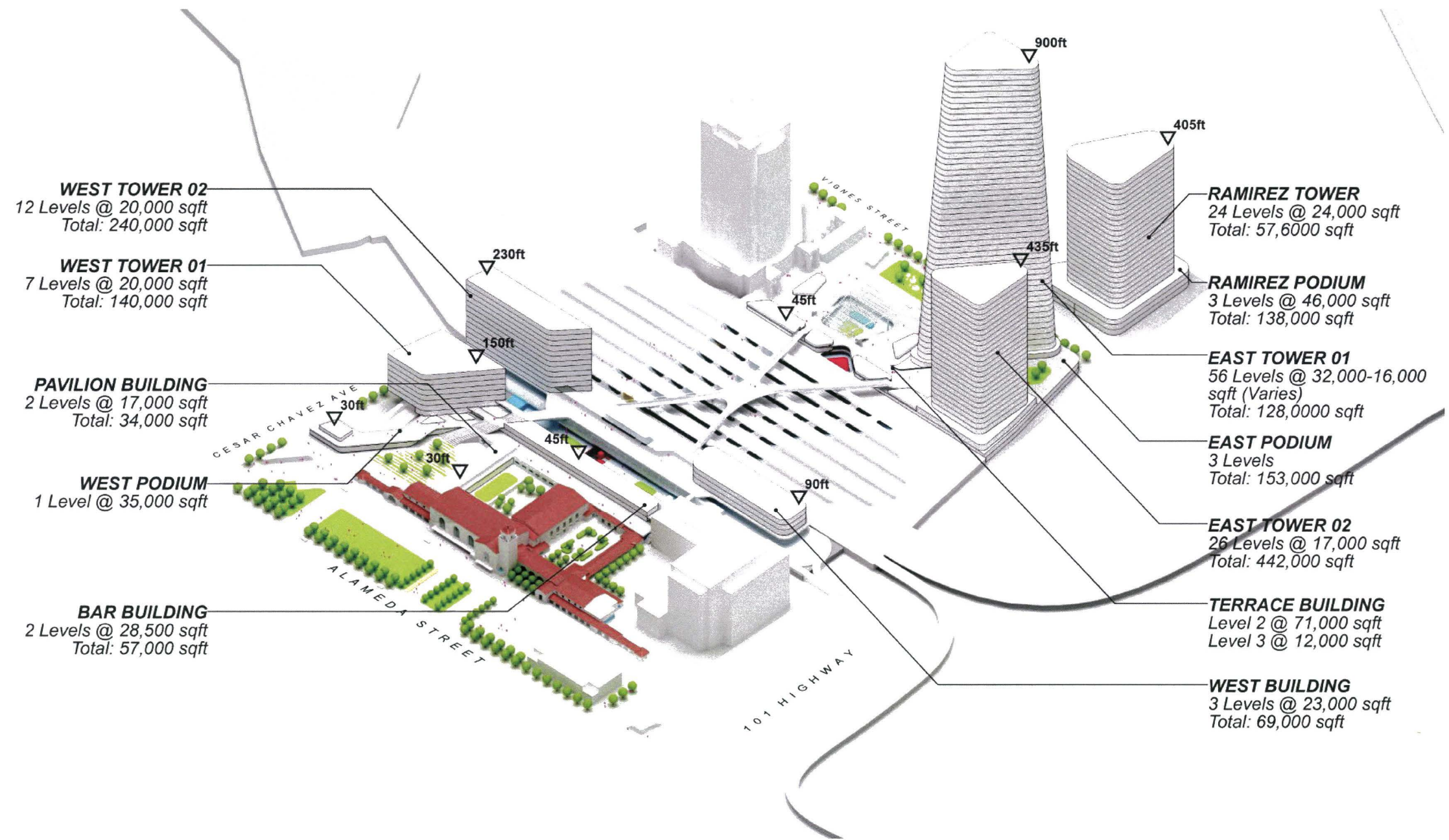
DEVELOPMENT DISTRIBUTION

For development distribution the USMP champions a strategy that pursues a sensitivity to the historic and cultural setting and an optimization of real estate values.

- The development projects should frame and support the civic nature of the transit function of Los Angeles Union Station, and should define and activate the public spaces.
- The extent and density of development should vary

Below:
Development Related Projects

LEED ND Credit:
NPDc2
NPDc3
GIBC6



Development Project Systems

across the site so that it is appropriately sensitive to the historic Station on the west side while depicting greater density concentrated on the east side.

- The areas for development should be oriented diagonally across the site from the northwest corner at Alameda Street and Cesar E Chavez Avenue to the southeast corner at the convergence of the Busway, 101 Freeway and Vignes Street.
- The historic Station building's presence should be preserved from major vantage points.
 - The sites on the northwest should be placed far enough away from the historic Station so as to not interfere with its main elevation.
 - This gradient of development ascending away from the historic Station should preserve views from and prevents shadowing of the historic courtyard gardens.
- A migration of amenities should be encouraged eastward to catalyze new development opportunities.
- The largest development should be reserved for a parcel on the east of the site, affording tremendous views to the Los Angeles River, as well as to the Arts District and Downtown.
- Development should avoid bearing down upon the subterranean structure of the Metro Red/Purple Line. However, a number of the building sites are adjacent or near to the tunnel, which will entail considerations for underpinning portions of the tunnel.

BUILDING SYSTEMS / SUSTAINABILITY

Conceptualizing development together with major transit and sustainable initiatives allows for more holistic and flexible planning.

- New development spaces above the new Union Station program and independent development parcels would be served by independent and local HVAC systems fed from a central plant.
- Buildings on independent development parcels would also have independent infrastructure directly from the relevant utility (electricity, gas, water, sanitary, storm).
- Any development above Union Station program should utilize shared infrastructure (power, gas, water, sanitary and storm). This strategy maximizes the programmatic efficiency of the development and minimizes acoustic and visual impacts.
- The relocated Patsaouras Bus Plaza will need to

Below:
Proposed Los Angeles Union
Station Master Plan Vision



LEED ND Credit:
GIBC2
GIBC5
GIBC12
GIBC14

Development Project Systems

incorporate enabling utilities and infrastructure for the buildings program above.

- Any residential or hotel development should consider the application of grey water systems with recycled water provided for reuse for toilet flushing, process cooling (at the central plant), or for irrigation.
- These programs could also provide grey water to the new transit areas for reuse for toilet flushing.
- The opportunity to integrate storm water capture schemes with grey water reuse schemes or providing storm water to the central plant for process cooling should be investigated.
- All buildings should follow LEED certification, with a minimum of Gold certification.
- All buildings should target net zero electrical energy use.

ARCHITECTURAL SYSTEMS

Extending beyond the general design intent for the overall Master Plan area, the development guidelines also provide more specific parameters on architectural and landscape based criteria. While flexible enough to encourage original design expression, these parameters relate to the character, form and performance of individual parcels and reflect best practice approaches for developers and design/engineering consultants. They serve to protect the property value and investment of land by ensuring quality and consistency of design.

ORIENTATION

- The orientation of proposed buildings and screen walls should support the view corridors of the Master Plan to strengthen a sense of centrality and wayfinding
- Solar orientation should include 50% more glazing area on N/S facing walls than on E/W walls.
- The orientation of buildings should prioritize:
 - access to open space/public space
 - historic preservation
 - daylight and views

SURFACE FINISHES

- Surface materials should use colors and textures that are appropriate to the context – particularly when contributing to the setting of the historic Los Angeles Union Station.

Below:

Precedents of different architectural and cladding systems for the various development projects for the Union Station Master Plan

- Light colored materials should be used as they reduce solar heat gain and heat island and radiation effects.
- Surface materials should be fit for purpose and acknowledge predicted pedestrian loadings.
- Hardscape materials with a solar reflectance index (SRI) of at least 29 should be used.
- Outdoor paving systems should be an open-grid (at least 50% pervious).

MATERIAL QUALITIES

Materials should be chosen based on the following criteria:

- Low Emitting Materials

- Recycled Content/Materials Reuse
- Rapidly Renewable Materials
- Regional Materials

STRUCTURE:

- Superstructure should be either reinforced concrete or fireproofed steel.
- No load bearing walls should be used.
- No combustible framing or sheathing systems should be used.

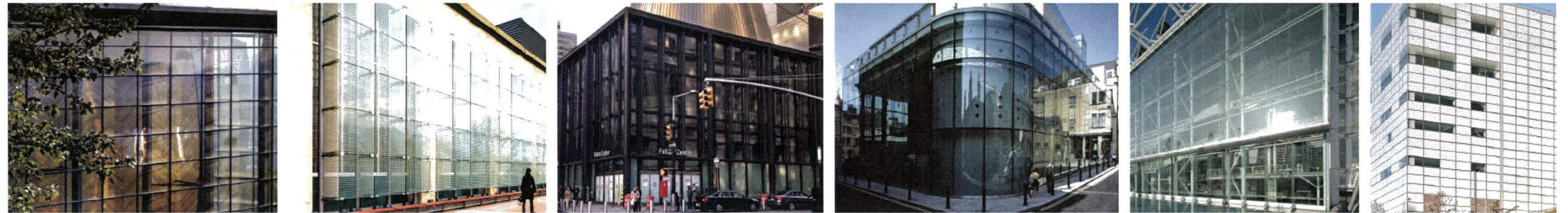
BUILDING ENVELOPE

WALL SYSTEMS

The wall systems in development projects should have the following:

- Continuous air barriers (AB) and water resistant barriers (WRB)
- Continuous high levels of thermal insulation.
- Vapor control with any potential condensation outside of the water control line
- UV and thermal protection of sensitive membranes and seals
- Shingling of layers of membranes, sheets, and flashing

CURTAIN WALLS



RAINSCREENS



INTEGRATED SHADING FAÇADE SYSTEMS



Development Project Systems

- in the direction of water flow
- Accommodation of building structural movement
- The ability to effectively construct joints between the various wall systems and other enclosure components such as roofs, waterproofing and fenestration

CURTAIN WALL

Curtain walls in development projects should adopt the following features:

- Pressure-equalized system
- Spandrels, shadow boxes and interface with adjacent construction maintaining the continuity of the air barrier and rainscreen
- Joints to accommodate thermal expansion and differential movement between panels
- Thermal breaks
- Loading- wind and seismic
- Deflection
- Water and air infiltration
- Sound transmission -
 - Attenuation infill
 - Glass thickness
 - Laminate layer
- Insulation
- Impact resistance
- Material finish/durability

FENESTRATION SYSTEMS

The fenestration systems in buildings should include:

- Air-sealing and weatherstripping of walls, chases doors and windows (leakage of .30 CFM50 minimum per square foot of enclosure).
- Operable windows in lieu of controls for occupants located 20 feet inside and 10 feet to either side of the operable part of a window.

GLAZING

The glazing used on exterior façades should have the following characteristics:

- Clear or Neutral Tint
- Transmittance -highest possible
- Solar Heat Gain Coefficient (SHGC) -lowest possible
- Reflectance/Glare -reduce glare when viewed from the inside and outside.
- Insulated
 - Dual seals

Below:

Precedents of different architectural and cladding systems for the various development projects for the Union Station Master Plan

- U Value -lowest possible
- Low-E Coatings

RAINSCREEN SYSTEMS

Rainscreen systems should have the following:

- Pressure-equalized system
- Open joints between panels
- Moisture and air penetration resistance
 - Maximum air leakage rate of 0.1 L/s m² @ 75 Pa
 - Minimize water penetration
- Minimum cladding vent area
- Minimize movement due to load, moisture and temperature
- Thermal and fire resistance
- Durability

ROOFING SYSTEMS

- When possible, install and maintain a vegetated roof that covers at least 50% of the roof area.
- Use solar reflectant materials for roofs.

INTEGRATED SHADING

- Where possible, seating and shading should be provided in all station public realm areas.

- By passively cooling the outdoor environment, exterior spaces can be used throughout the entire day.
- Ample shade is to be provided along main pedestrian routes and gathering spaces through tree planting, colonnades and shade structures.
- Provide shade from structures covered by solar panels that produce energy used to offset some nonrenewable resource use.
- Provide shade from architectural devices or structures that have a SRI of at least 29.
- Typical South Face should include:
 - Horizontal overhang or projected shading
 - Segmental mask characteristics
 - 90% of south facing glazing should be shaded in the summer, potentially unshaded in the winter.
- Typical East and West Faces should include:
 - Vertical devices with radial shading masks
 - 90% of west facing glazing should be shaded in the summer, potentially unshaded in the winter.
- Typical North Face should include:
 - Fixed vertical shading devices

INTEGRATED PLANTING WITH DEVELOPMENT

The use of trees and shrubs in the public realm is important to establish the character of the streets and station. Tree and shrub planting should enhance the design of public spaces and help define routes.

- Tree species should:
 - Vary according to the situation, function and scale of the space.
 - Maintain a 2.5m-high zone free from branches to allow clear views towards entrances.
 - Be selected for their tolerance of the growing conditions on site.
- See Section 5 - Open Space for more detail.

SHADING CANOPIES



INTEGRATED LANDSCAPES



Development Project Systems

VERTICAL CIRCULATION ELEMENTS

The public vertical circulation elements -stairs and elevators- in the Master Plan link open space, transit and development together. They serve as significant wayfinding tools for visitors, lending clarity to accessibility. And they serve as organizing tools for the adjacent program. The elevators should stand out in color and materiality; sightlines to the vertical circulation elements from major vantage points should remain unobstructed.

STAIRS

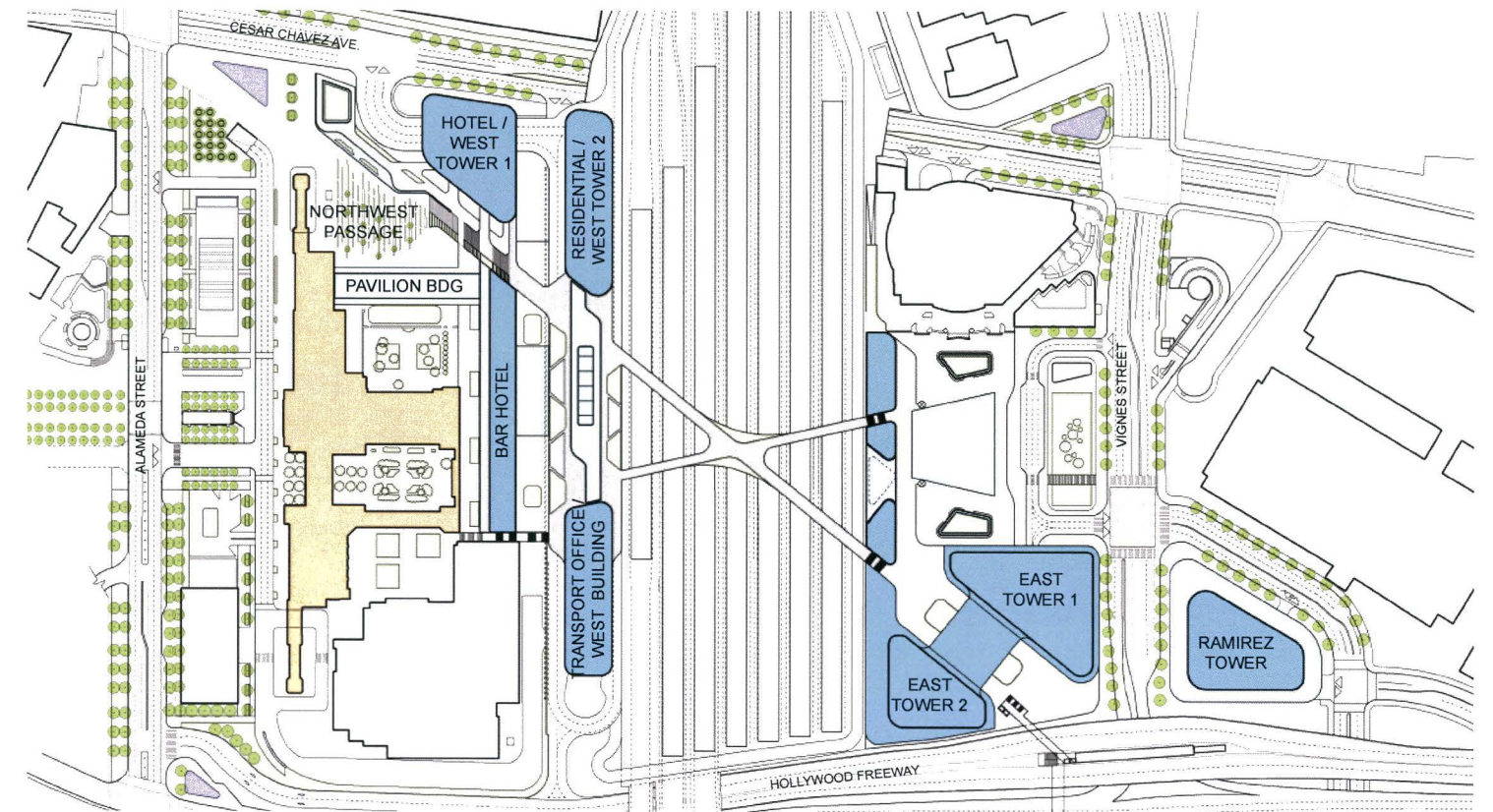
- Materials of major public stairs should be consistent with the construction of the building or surrounding structures.
- Adequate drainage, specifically weep holes, proper slope, drainage channels in some cases, and a gravel bed beneath the concrete, helps avert moisture and subsequent cracking problems.
- To prevent slips, a coarse finish should be used on the tread surface.
- A slope of about 2 percent or 1/4 inch of rise per foot of run is necessary to prevent ponding on the treads.

ELEVATORS

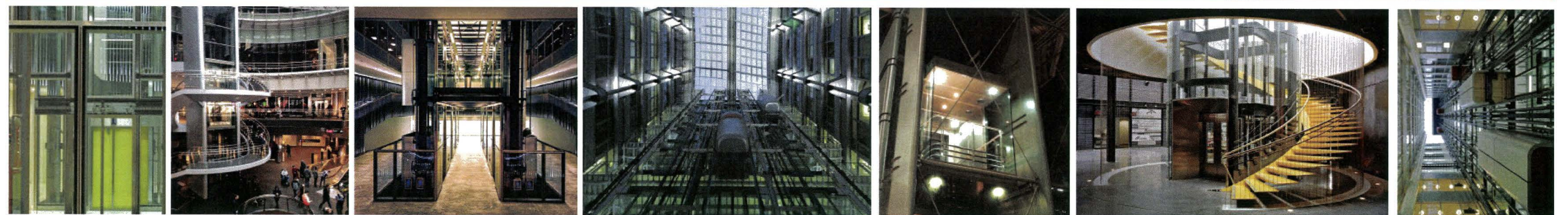
- As an integral part of the accessible route, interior and exterior elevators should link development and open space.
- Elevators should feature bright colors and be composed of durable finishes.
- The placement of elevators should be near the entrance of a building or open space and made accessible with no change in level from the entrance.

Below:
Fourth level Plan with all major development projects identified

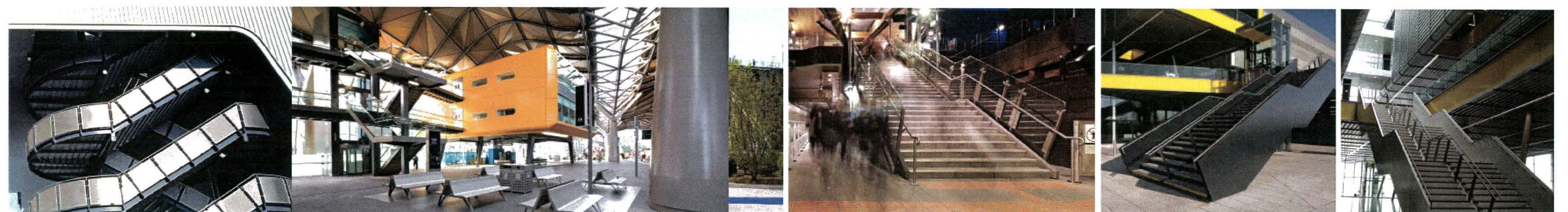
Precedents of different vertical circulation systems for the various development projects for the Union Station Master Plan



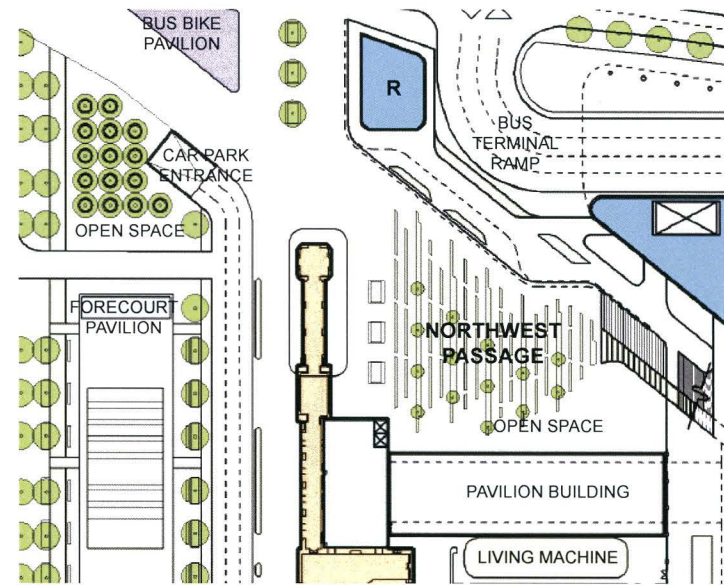
ELEVATORS



PUBLIC STAIRWAYS



Development Project Pavilion Building & Northwest Passage



BUILDING OVERVIEW

The Pavilion Building links the new hotel lobby to the historic Passenger Concourse. It is approximately 200' x 32'.

BUILDING PROGRAM

Coupled with the new vibrant Northwest (NW) Passage, the unique retail and dining spaces of the Pavilion Building will complement the full array of transit facilities and new development projects.

- The Pavilion Building is intended to house a unique and burgeoning array of shop and restaurant kiosks.
- The Pavilion Building should be open to the events and entertainment in the NW Passage.
- With this open space programming as well as those in the station's forecourt, this site could become a premiere urban destination in its own right.
- The roof of the Pavilion Building should serve as a direct passageway from the Hotel lobby to the bar-shaped hotel. The roof terrace should contain an outdoor bar and lounge that is paved and planted.

OBJECTIVES

Pedestrian access to the Pavilion Building is from three sides with vehicular access and drop-off at the western face of the historic Union Station building.

- Pedestrian access should be from the west through the new hotel lobby (formerly office spaces), from the

east through the historic Concourse, and from the north through the Northwest Passage.

- Pedestrian links to the Pavilion Buildings from other development project above is through amphitheater steps, planters, and terraces to the Northwest Passage, a new courtyard lined with retail.

ARCHITECTURAL SYSTEMS

The architecture of Union Station is respected as the Pavilion Building will be a recessed, simply articulated clear glass, curtain wall addition compatible yet differentiated from the historic building to which it attaches.

- Operable and transparent walls should echo the rhythm and size of the historic building's window and door openings that face the courtyards. These windows and doors should fold open to the event and entertainment programming in the Northwest Passage, becoming an arcade on an urban piazza.
- The terrace on the roof of the Pavilion Building should be programmed with entertainment uses such as a hotel bar and lounge and should be covered by a trellis that runs along its length. This trellis could integrate planting and fabric canopies to provide shade and protection from rain.

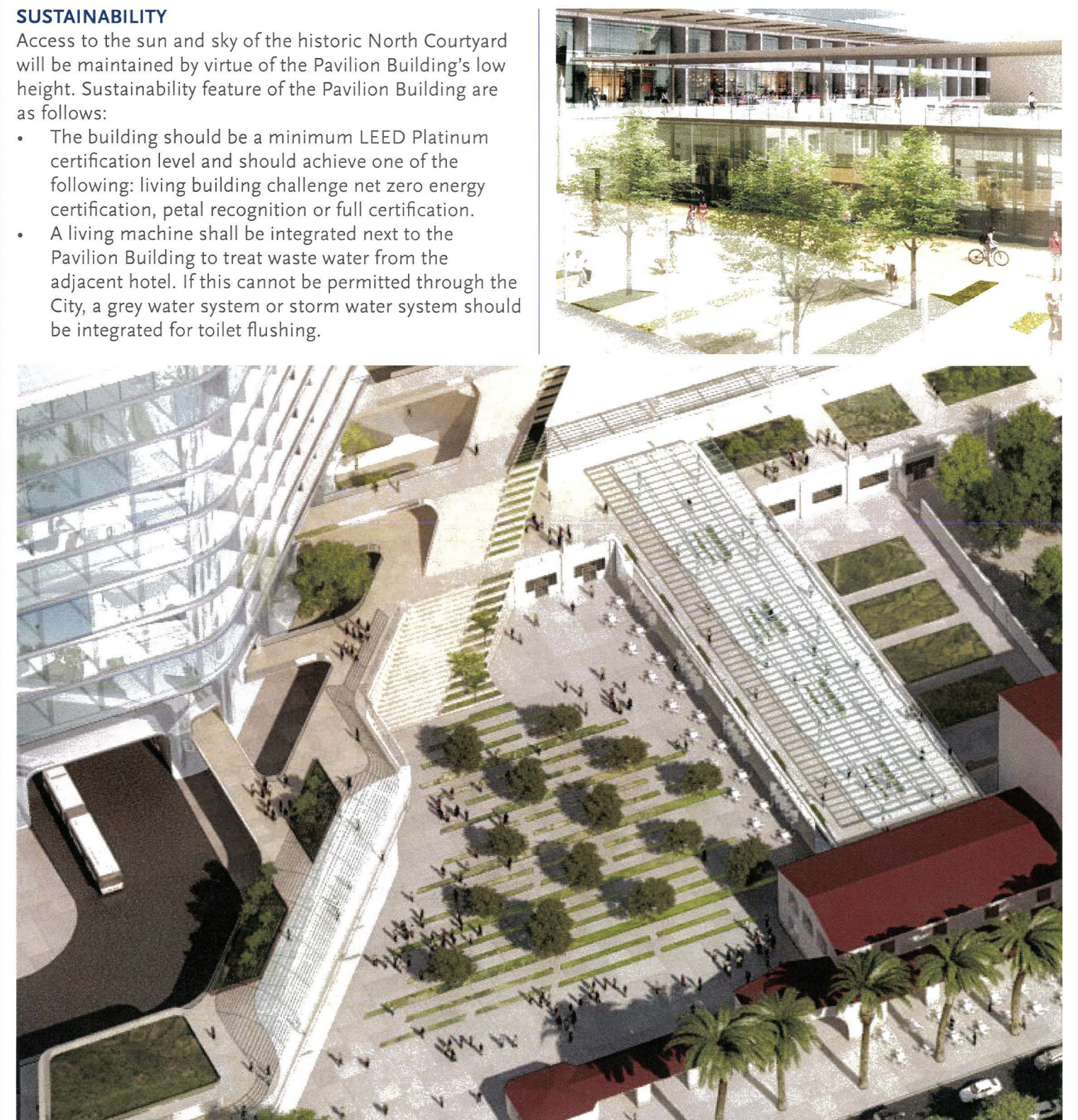
BUILDING SYSTEMS

Mechanized, electrical and specialty systems will incorporate sustainable features:

- Mixed mode systems utilizing natural ventilation with AC for peak conditions should be employed.
- The building will be provided with chilled water and heating hot water from the central plant.
- The project should integrate solar PVs to offset electrical consumption with studies into the feasibility of achieving net zero electrical energy use.
- Passive day lighting opportunities should also be maximized through day light analysis.
- Domestic hot water needs should be addressed for common areas and retail functions in the most efficient manner possible and consider solar thermal or heat pump technologies.
- The project should be plumbed to facilitate reuse of recycled water from either the Alameda Esplanade storm detention system or from the adjacent Living Machine waste water treatment system.

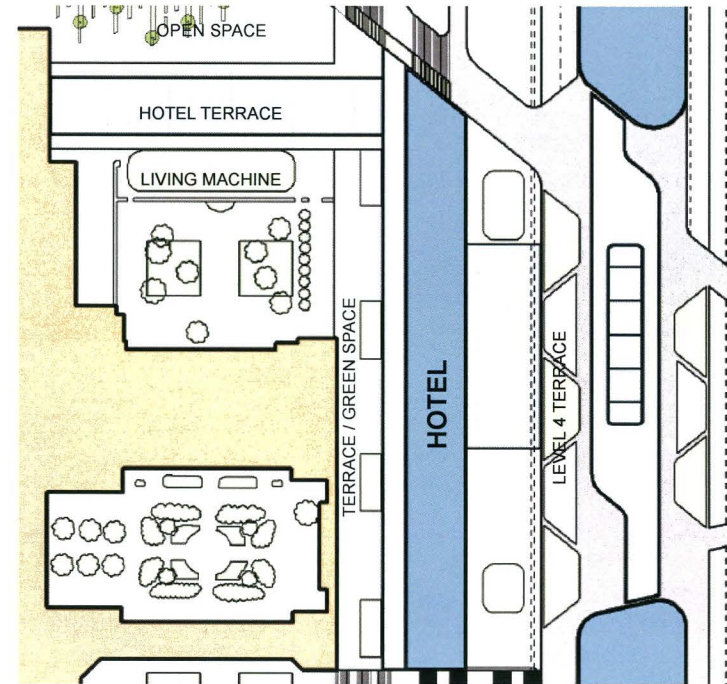
Below:

Clockwise - Aerial View Illustration of the Northwest Passage and Pavilion Building, View of the Northwest Passage from the Lower Terrace, Partial Plan of the Northwest Passage



LEED ND Credit:
NPDc3
NPDc9
GIBc8
GIBc9

Development Project Bar Hotel



BUILDING OVERVIEW

The hotel lobby, located in the original Station's north wing, currently holds non-historic offices. This space, adapted into the lobby of a hotel, would give the accommodation an address on Alameda Street. The Bar Hotel measures approx. 435' X 45' and is approximately 57,000 sf.

- Two-stories of single-loaded hotel rooms/suites running north to south should be located over the historic Concourse similar to and approximately in the same location of the existing Baggage/Office Building.
- The bar shape should echo the strong linear form of the transit infrastructure on site as well as the original baggage express building that was removed previously.

ACCESS AND CIRCULATION

From the lobby in the historic Station, visitors will be welcomed to ascend one flight to a terrace with the hotel's bar and lounge. The bar hotel will extend into the elevated lobby and conference rooms of a new mid-rise hotel/residential building planned at the north.

ARCHITECTURAL SYSTEMS

With the station's iconic courtyards and extensive façade setting the view for the hotel terraces, the hotel's west

façade is comprised of compartmentalized inset balconies that are arrayed along its western side to create private spaces for individual units which can directly engage the landscaped terrace that runs along the entire length of the hotel.

- See the Elevated Network: Hotel Terrace for information about this linear open space.
- On its east façade, a double-heighted glass curtain wall should be framed by steel beams.

STRUCTURAL

- It is likely that seismic retrofit would be required for the building to comply with current building codes due to the level of construction above.
- Existing foundation and supporting columns through the historic Passenger Concourse will have to be evaluated for the new loading of the Bar Hotel.
- A lateral resisting system of the hotel will have to carry through the Concourse to the foundation in a historically appropriate fashion.
- The terrace/green space that replaces existing parking will need to be reviewed since green space loading might be much higher than typical parking loading.

BUILDING SYSTEMS

The Bar Hotel project's mechanical, electrical, and specialty building systems will incorporate sustainable features.

- The building will be provided with chilled water and heating hot water from the central plant.
- The project should consider the feasibility of combined heat and power engines or micro combined heat and power for generation of domestic hot water.
- The project will provide waste water or grey water to the Pavilion Building water recycling system.
- The building will be plumbed such that irrigated areas can easily be switched over to recycled water.

SUSTAINABILITY

In addition to the features measured under Building Systems, additional sustainable features include:

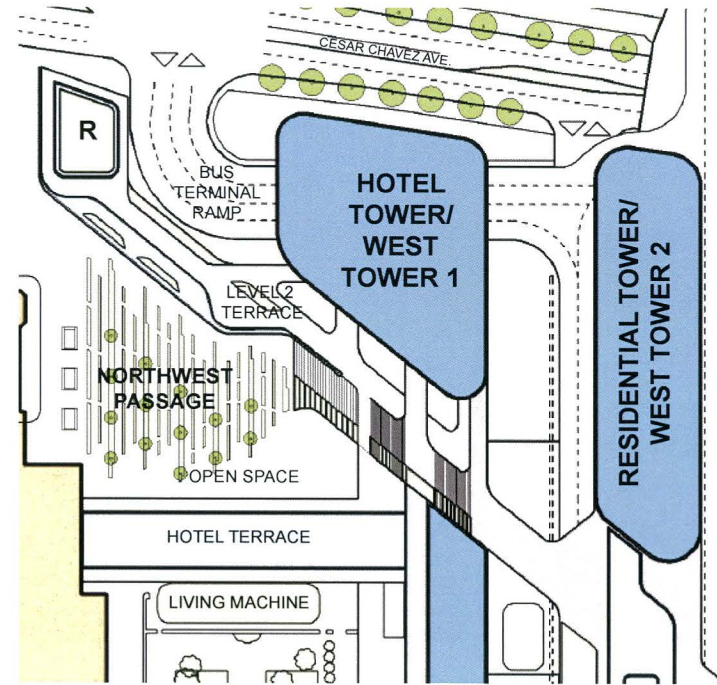
- Rooftop solar PVs should be integrated for local hot water generation.

Below:
Clockwise - Aerial View Illustration
of the Bar Hotel, Partial Plan of the
Bar Hotel



LEED ND Credit:
NPDc1
GIBc8
GIBc9

Development Project Hotel /West Tower 1



BUILDING OVERVIEW

Hotel/West tower 1 sits over the bus ramps that run from Cesar E Chavez Avenue to the relocated Patsaouras Bus Plaza. The approximate length is 158' and the width ranges from 106' to 198'.

BUILDING PROGRAM

The Hotel/West tower 1 is scaled at 7 stories with 140,000 sf of accommodation.

- The rooftop should be occupied with hotel amenities, possibly a restaurant, bar, spa and pool.
- At the northwest tip of the Level 2 Terrace, there sits an approximately 3000 sf retail space that could extend from Level 1. This is an opportune location for a restaurant and private events with outdoor seating that the spills out to the Level 2 Terrace. This retail space should be linked to the Hotel Tower.

ACCESS AND CIRCULATION

Access is directly linked by the bar hotel from the south and from the new Northwest access courtyard, which has been transformed and activated by retail and open space.

- The Northwest Passage enables additional visitor and passenger access directly from a level 2 terrace.
- The tower structure should come down to grade on

its north side that faces Cesar E Chavez Avenue and the Terminal Annex Building. Landscaping and public art in this area should encourage a sense of place and a create an attractive setting for pedestrians to move through and out through an opening in the existing wall to the sidewalk along Cesar Chavez Avenue.

ARCHITECTURAL SYSTEMS

The Hotel/West Tower 1 must be integrated with the design for the ramp to the relocated Patsaouras Bus Plaza, be sensitive to the Terminal Annex and the concrete wall along Cesar Chavez Avenue, incorporate access to the underground parking garage below it, and link to the Bar Hotel, Northwest Passage, and development on the Level 2 Terrace.

- The base of the southern façade along the open space should provide a minimum of 80% transparency to activate a pedestrian friendly ground plane inviting pedestrians into retail, conference and banquet areas.
- The western façade should slant back towards the east, reducing the building volume in this area in order to preserve the elevation of the historic Station.
- The modulation of residential or hotel units should be expressed from behind the glass curtain wall and screening systems, conveying individual occupancies.
- Balconies are revealed from the north and south façades to face the historic Terminal Annex building and station courtyards, an extension of the communal and open realm into this building above. These balconies should amount to at least 50% of their elevations, running approximately 116' in length to offer a varied architectural treatment and different materials to accentuate the building form.

STRUCTURAL

The Hotel/West Tower will have to take into account the new Bus Plaza access ramp to Cesar E Chavez Avenue.

Two structural solutions are envisioned:

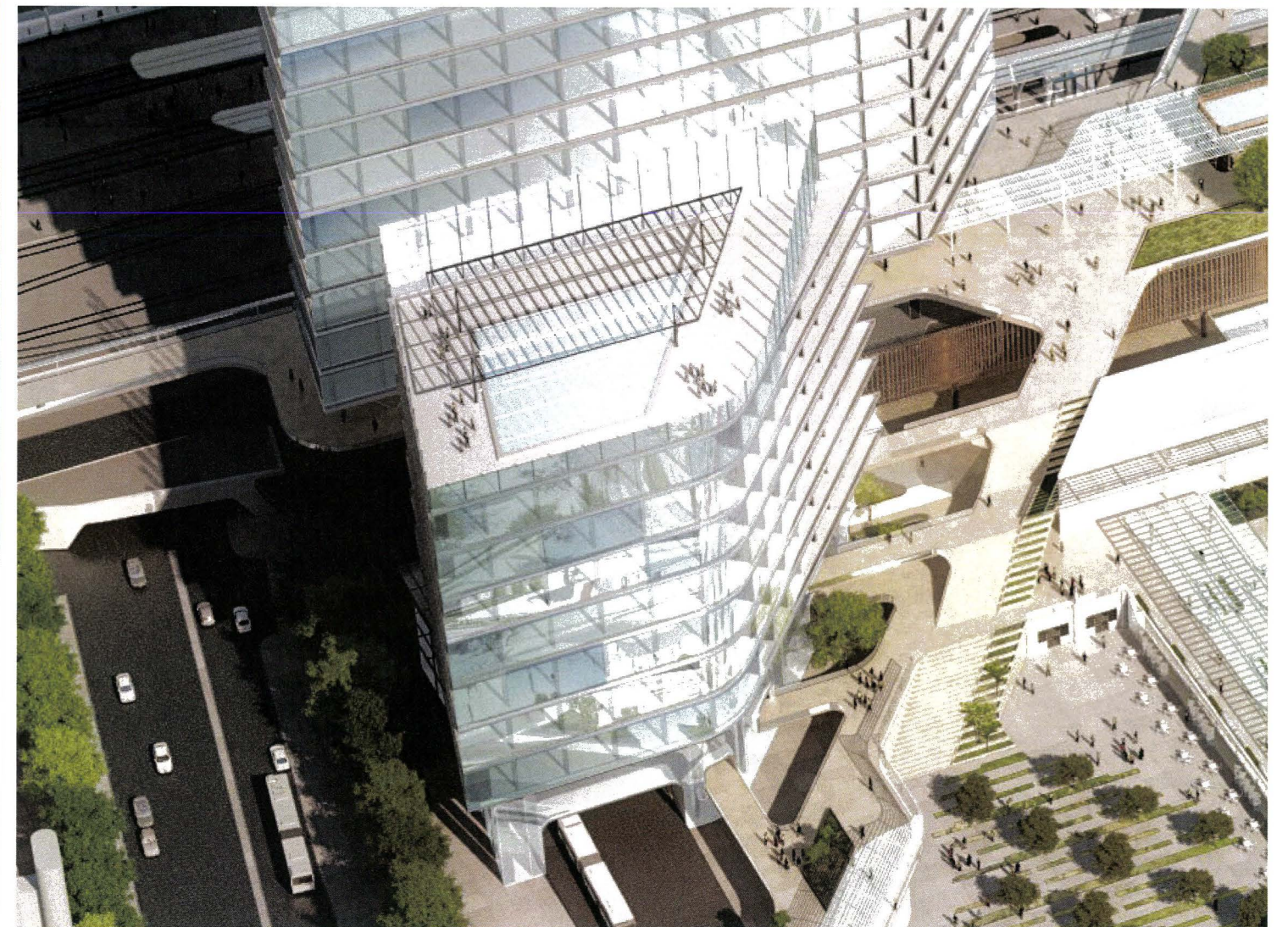
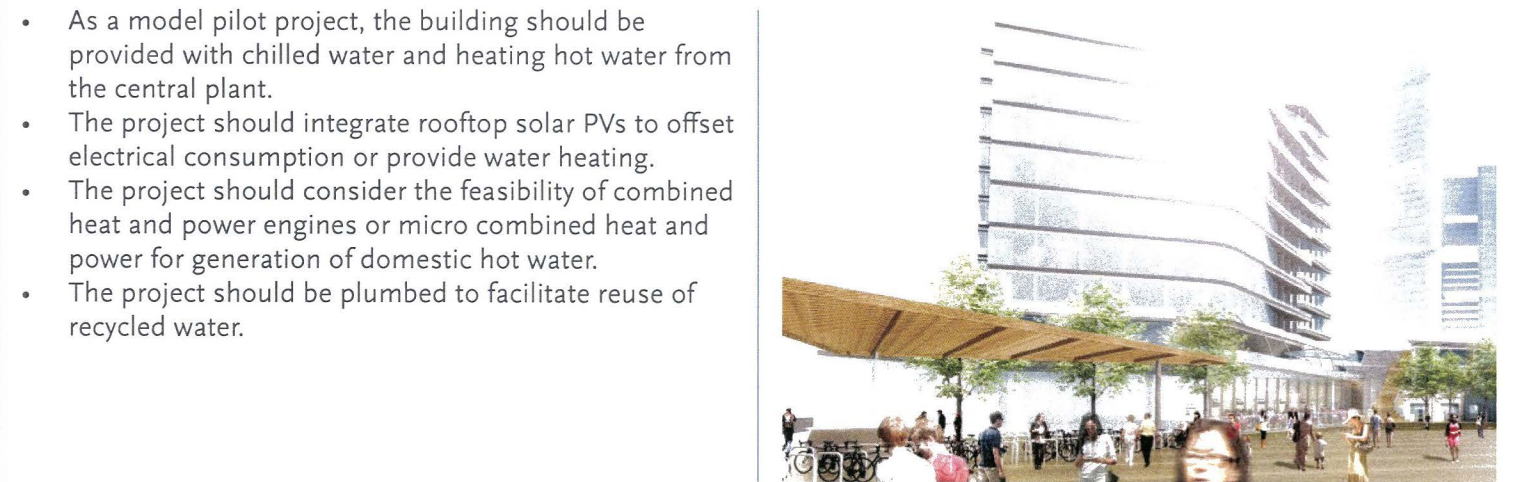
- Long spans at the locations required to be column free by the bus path.
- Column transfers in the superstructure to allow for a column free space at bus level.

BUILDING SYSTEMS

Mechanical, electrical, and specialty building systems will incorporate sustainable features such as these listed:

Below:

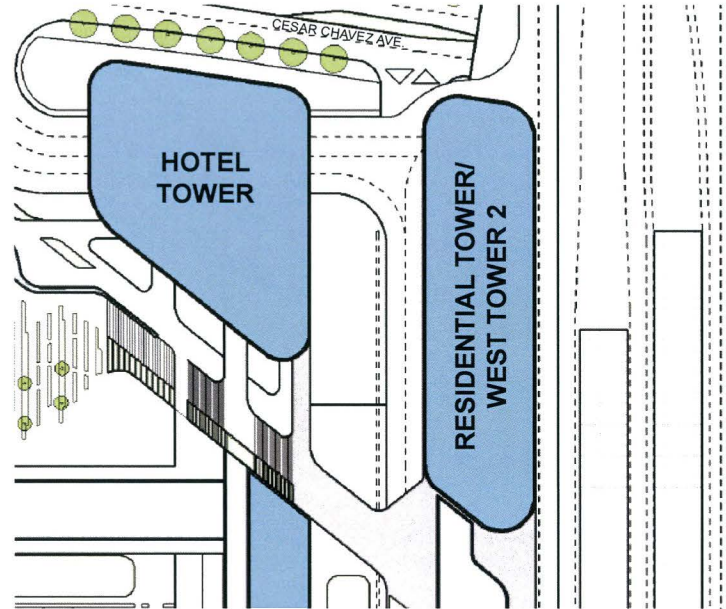
Clockwise - Aerial View Illustration of the Hotel Tower, View of the Hotel Tower from the Corner of Alameda Street and Vignes Street, Partial Plan of the Hotel Tower



- As a model pilot project, the building should be provided with chilled water and heating hot water from the central plant.
- The project should integrate rooftop solar PVs to offset electrical consumption or provide water heating.
- The project should consider the feasibility of combined heat and power engines or micro combined heat and power for generation of domestic hot water.
- The project should be plumbed to facilitate reuse of recycled water.

LEED ND Credit:
NPDp2
GIBc8
GIBc9
NPDc1
NPDc2
NPDc9

Development Project Residential Building / West Tower 2



BUILDING OVERVIEW

The residential building's dimensions (80' X 300') mimic the bus platform below as the aligned structure carries through both functions. At 12 floors, the building offers a double-loaded residential project of 240,000 sf.

BUILDING PROGRAM

This tower could be all residential as shown or could contain live-work units.

- Both live-work loft and residential development will be particularly challenging to design in a railway environment as safety, noise and vibration issues must be addressed.
- To help mitigate these problems, developers should use extensive vibration isolation as well as heavy insulation, thicker structural walls and double or triple-pane windows.

ACCESS AND CIRCULATION

The Residential Building/West Tower 2 is connected to the levels below by a main vertical circulation element that brings visitors, residents, and employees up above the terminal to the Upper Terrace that is centered between the Residential building to the north and Transport Office Building to the south.

- From this central location, one passes through the active and passive open space programming on

the terrace to access either building's highly visible lobbies.

- The lobbies of these two buildings should be at the same level of the level 4 Terrace and their glass envelopes should be setback by a minimum of 10' from the floor slabs above to give the impression that the office buildings are floating above the terrace.
- Consider linking this building to the hotel to create serviced apartment dwellings.

ARCHITECTURAL SYSTEMS

The residential tower sits over the relocated Patsaouras Plaza Bus Plaza should share the hotel's character and expression with a modulated and glass façade.

- Balconies should face north and south away from the railyard.
- Rooftop amenities with shade should be provided.
- As much of the façade is east/west facing, solutions for shading will be critical.

STRUCTURAL

The Residential Tower/West Tower 2 will have to take into account the buses below in the spatial planning of the column layout.

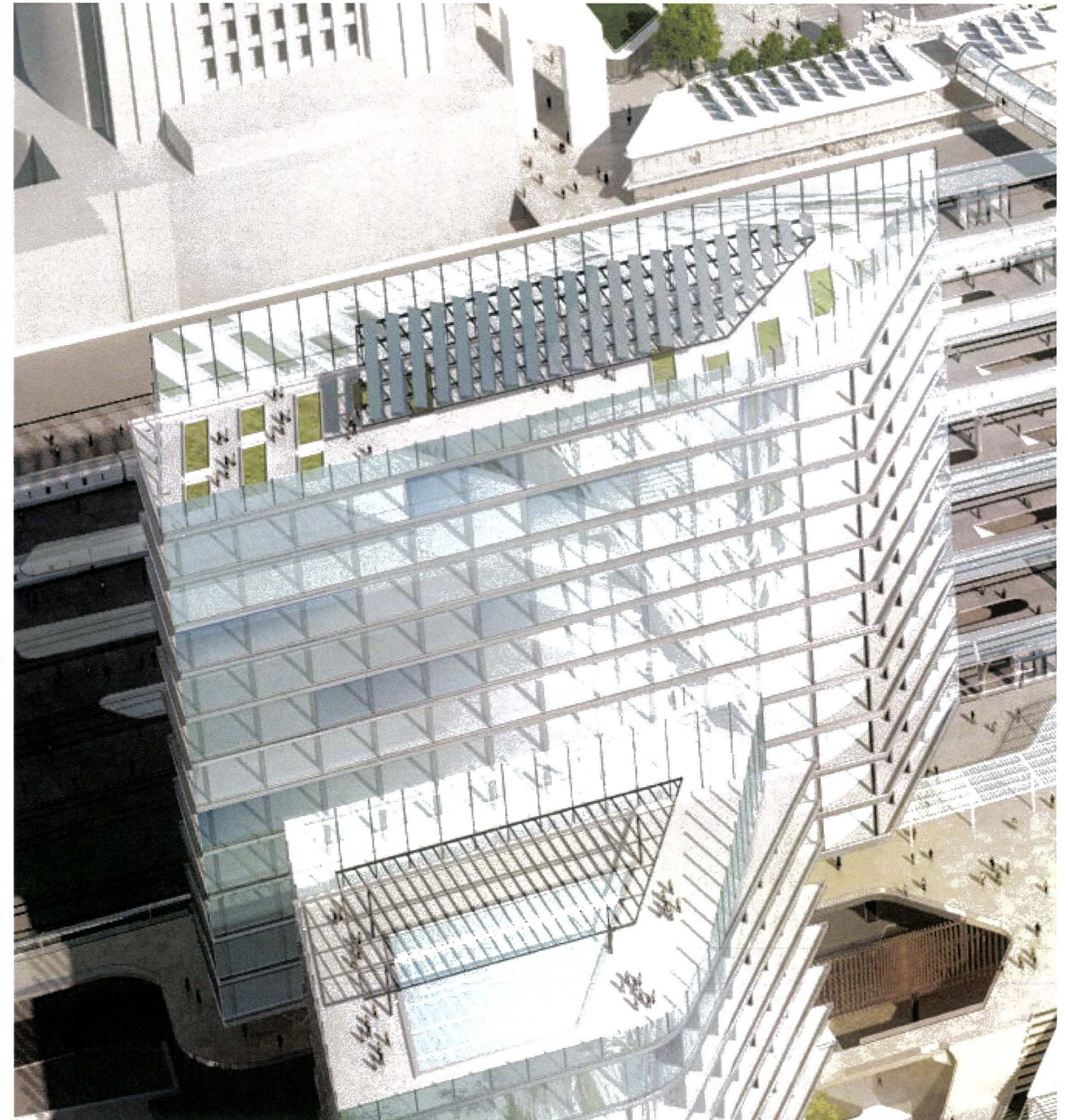
BUILDING SYSTEMS

Mechanical, electrical, and specialty building systems will incorporate sustainable measures as listed below:

- The building should carefully balance the benefit of natural ventilation against air quality.
- The building should be provided with chilled water and heating hot water from the central plant.
- The project should integrate rooftop solar PVs to offset electrical consumption or provide hot water.
- The project should consider the feasibility of combined heat and power engines or micro combined heat and power for generation of domestic hot water.
- The project should be plumbed to facilitate reuse of recycled water.

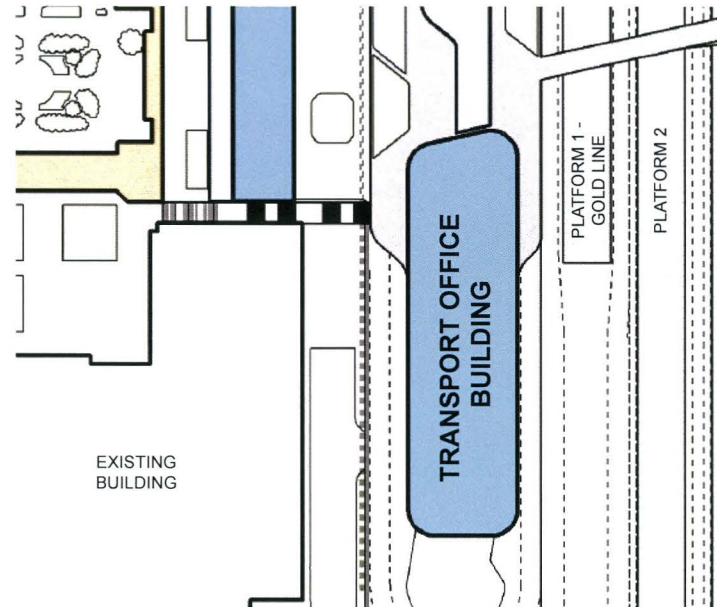
Below:

Clockwise - Aerial View Illustration of the West Tower 2, View of the West Tower 2 from the West Court, Partial Plan of the West Tower 2



LEED ND Credit:
NPDp2
NPDc2
NPDc3
NPDc4
NPDc9
GIBc8
GIBc9
GIBc10

Development Project Transport Office Bldg / West Building



BUILDING OVERVIEW

The Transport Office building likewise echoes the relocated Patsaouras Bus Plaza configuration below. It is approximately 80' X 280'.

- The western side of the Transport Office building is approximately 75' away from its neighbor, the Metropolitan Water District (MWD) Building.
- Three floors above the Patsaouras Plaza Bus Plaza will offer 69,000 sf of office accommodation.

BUILDING PROGRAM

This building is planned to accommodate functions requiring relocation after the removal of the non-historic baggage building.

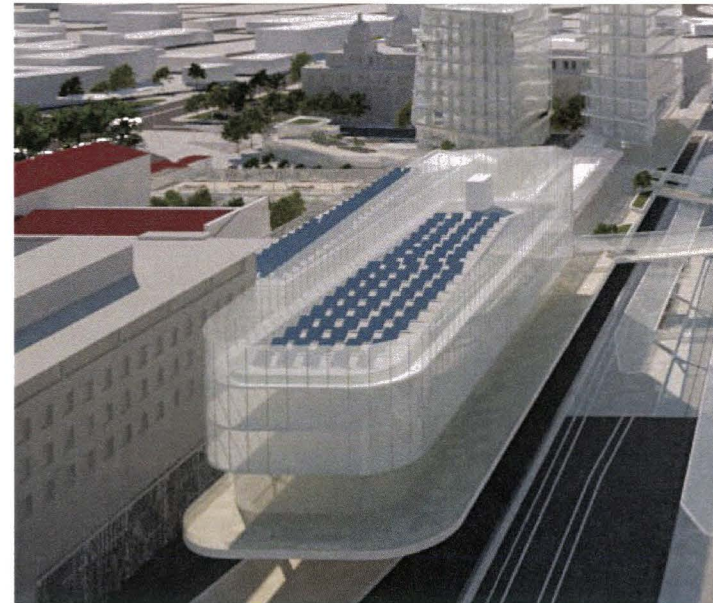
- Office space for the site and rail operator's offices and administration should be provided.

ACCESS AND CIRCULATION

See West Tower 2 for pedestrian access. Vehicular access should be from the internal access roads to parking below the Transport Office Building.

ARCHITECTURAL SYSTEMS

As the building is adjacent to rail and near the freeway, noise, and air quality as well as adequate sunlight are considerations for design.



- This functional commercial building should always allow for the proper access to daylight and reduced glare for optimal working conditions.
- A utilitarian curtain wall or rainscreen system should be considered for this building.

STRUCTURAL

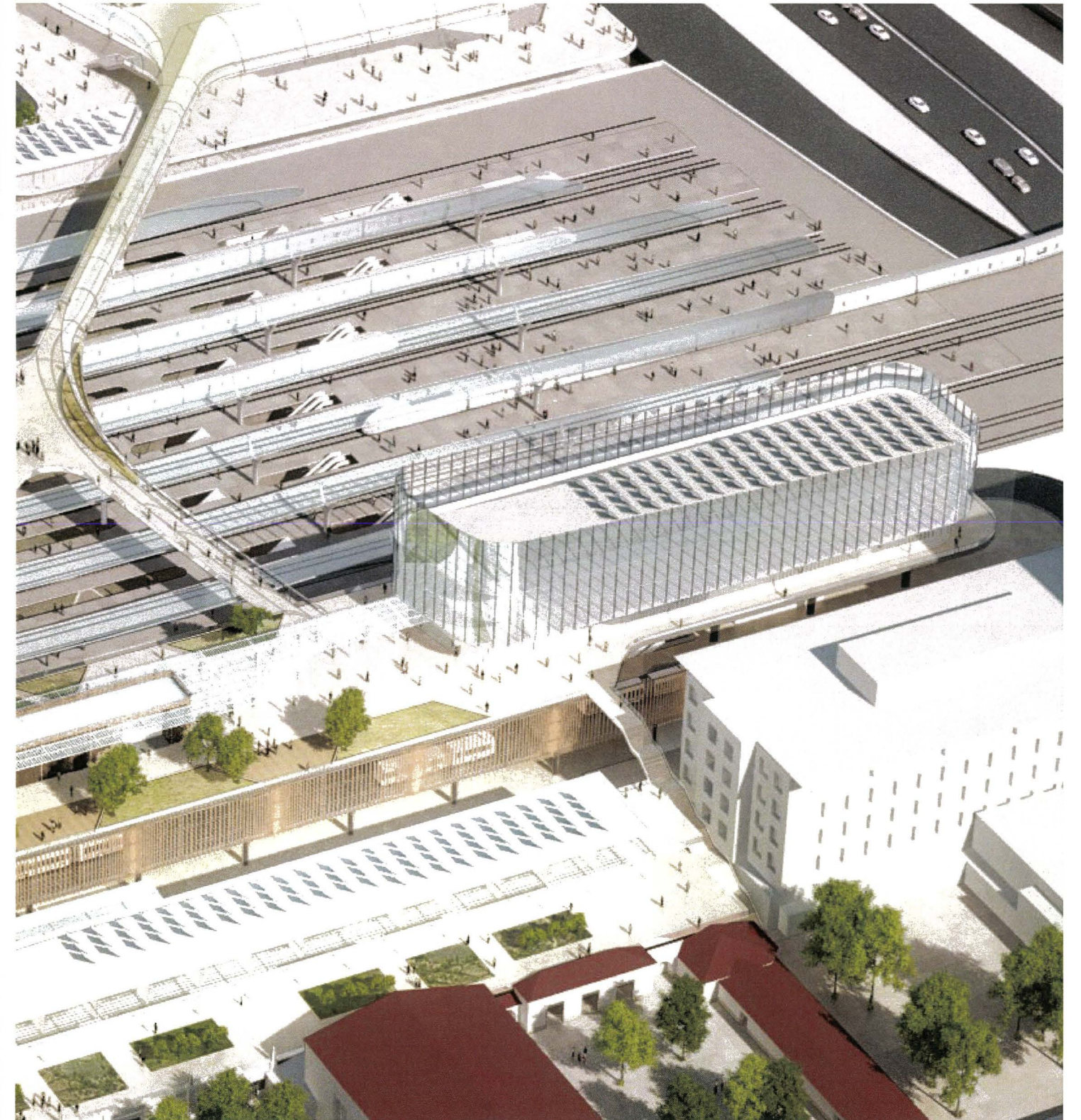
Like the Residential Tower/West Tower 2 to the north, this Transport Office Building/West Building will have to take into account the buses below in the spatial planning of the column layout.

BUILDING SYSTEMS

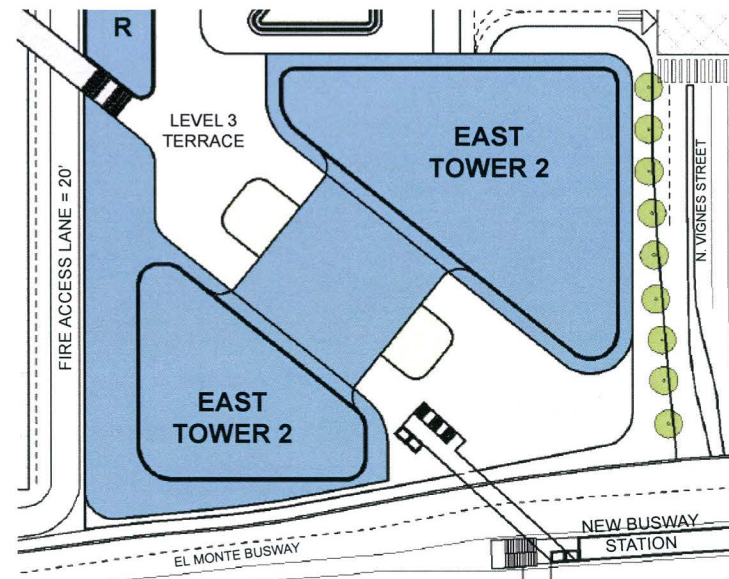
Mechanical, electrical, and specialty building systems will incorporate sustainable features.

- The building should consider low energy alternative HVAC systems to suit the building program.
- The building should be provided with chilled water and heating hot water from the central plant.
- The project should integrate rooftop solar PVs to offset electrical consumption.
- The project should be plumbed to facilitate reuse of recycled water.

Below:
Clockwise - Aerial View Illustration
of the West Building, View of the
West Building from the South,
Partial Plan of the West Building



Development Project East Tower 1 & Tower 2



BUILDING OVERVIEW

The building envelopes include a 56 story mixed-use tower to the north and a 26 level tower set upon a 3 level podium (approx. 390' X 339') equaling 153,000 sf.

- The mixed-use tower at the southern side of the site should be composed in three parts arranged to structurally span over the Red/Purple Line box below.
- As the east tower rises from the Level 3 Terrace of the East Entrance, there should be a 2 story façade setback of at least 10' from the planes of the façade above.
- Tapering in plan as they rise, a bridging floor plate should span portions of the two towers to create larger, more contiguous floor plates where needed.

BUILDING PROGRAM

The program includes a wide range of uses -offices, cultural, educational, retail, restaurants, entertainment and live-work.

- The lobby of the towers at-grade extends to the Terrace Level above and should be located at the northwest corner of the property facing Vignes Street and the drop-off roundabouts.
- Back-of-house facilities and parking should fill in the southern and eastern sides of the podium at-grade which faces Vignes Street and the freeway. Levels 2 and 3 of the podium house a variety of retail and restaurants.
- The diverse range of commercial spaces should be provided to make the development lastingly successful,

offering the full spectrum of accommodations from the top floor of the iconic tower to the inherently more adaptable space within a deeper low to mid-rise floor plate.

- Periodically the tower and/or bridging elements should have double height atria floors to allow for sky gardens and dramatic atria for events offering exceptional views to Downtown LA and the River.

ACCESS AND CIRCULATION

The towers will be accessed from the East Entrance, the related drop-off, and the network of elevated open spaces.

- Drop-off should extend into the building, and onward into the new parking garage below.
- The Level 3 Terrace should accommodate a new connection to the El Monte Busway Station.

ARCHITECTURAL SYSTEMS

As these towers and their podiums will be highly visible from the 101 Freeway, from Vignes Street, and a large part of the City, special treatments to address this visibility is critical.

- The south and east sides of the podium that house parking and BOH facilities should be an integral part of a multi-functional development which maintains space for profitable business activities. The parking garage and podium façade should be articulated with a landscaped screen or integrated planters that elevate the public Level 3 Terrace above.
- As slabs of the towers are expressed through the façade, the double height floors should have a larger percentage of glazing than the typical floors.
- A high quality curtain wall system with integral shading will combine the benefits of natural daylight and outside views.
- A rainscreen system should be considered to provide sustainable design advantages and optimal performance in thermal, air and water infiltration, and structural integrity.

STRUCTURAL

Given the proximity these two towers will have to the Red Line, structural consideration will need to be addressed:

- The foundation walls of the towers have to be set a certain distance from the Red/Purple Line box. This offset is to ensure that any settlement of the soil

Below:

Clockwise - Aerial View Illustration of East Tower 1 & 2, Partial Plan of East Tower 1 & 2

due to the tower weight will not affect the tunnel's structural integrity. This distance will also act as a barrier, dampening vibrations from the Metro Red/Purple Line propagating through the soil.

- Strengthening of the Metro Red/Purple Line walls will be required if the foundations elevation of any building is above the bottom elevation of the tunnel.
- In the event that the foundation elevation of the new tower falls below the bottom elevation of the tunnel, underpinning of the tunnel will be required.
- The underpinning method (i.e. secant piles of diaphragm walls) will have to minimize soil displacement below the tunnel.

BUILDING SYSTEMS

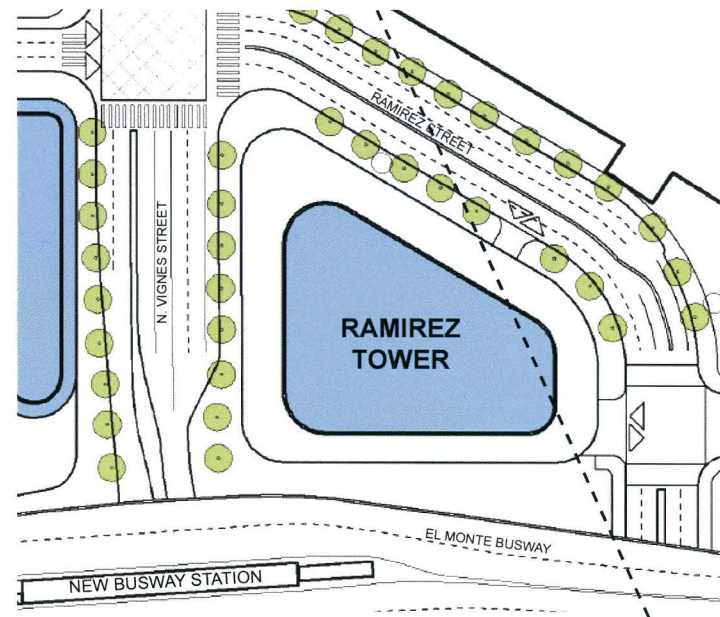
Mechanical, electrical, and specialty building systems will incorporate sustainable features.

- The building should consider low energy alternative HVAC systems to suit the building program.
- The building will be the catalyst for a new central plant on the east side of the site. This should be carefully planned for future development.
- The project should integrate combined heat and power engines or micro CHP for generation of domestic hot water for relevant program.
- The project should be plumbed to facilitate reuse of recycled water and should integrate local grey water recycling for any residential program with reuse in the central plant and for irrigation.



LEED ND Credits:
NPDp1
NPDp2
NPDc1
NPDc2
NPDc3
NPDc4
SLLc5

Development Project Ramirez Tower



BUILDING OVERVIEW

The Ramirez Tower site is bounded by Vignes Street, Ramirez Street, and the El Monte Busway. The building envelope is a 3-level podium of approximately 138,000 sf and a 24 level tower of approximately 576,000 sf.

- The Ramirez Tower should be oriented for views to Downtown Los Angeles and the River.
- A pedestrian friendly treatment of the ground plane which includes retail and amenities, street furniture, and planters along Ramirez Street should be provided.

BUILDING PROGRAM

The program for this site is flexible and could include live-work units or other uses listed below:

- With the concentration of world-class research universities in the Los Angeles County supporting the regional workforce development, uses that support an innovation economy should be considered.
- As schools increasingly collaborate with local businesses to develop new programs in growth industries, and the site's fortunate proximity to transit. Educational programs or schools should be considered on the site.

ACCESS AND CIRCULATION

- Garage access should be provided via a signalized intersection on Ramirez Street.

- At the Mezzanine Level, the level below grade, there should be a connection from the parking at the Ramirez site to the parking underneath the East Entrance under Vignes Street near the intersection of Vignes and Ramirez Streets.

ARCHITECTURAL SYSTEMS

Similar to the East Towers, the podium and tower would be visible from the 101 Freeway, Vignes Street, and Ramirez Street. Therefore, special treatments to create a positive impression for the entire LAUS is critical.

- Like the its neighbors, the east towers, the Ramirez Tower should have a 10' façade setback above the 3 story podium that serves as a clerestory to bring light and air to the deep podium floorplates. Tower columns rooted from the podium are revealed in this opening.

STRUCTURAL

The Ramirez Tower stands on its own development parcel and construction does not impact the existing parking garage or any other structures.

- Construction will need to be coordinated with the implementation of High Speed Rail in the Vignes alignment.

BUILDING SYSTEMS

Mechanical, electrical, and specialty building systems will incorporate sustainable features such as:

- Low energy alternative HVAC systems should be considered if it suits the building program.
- The building should tie into the new central plant on the east side of the site
- The project should integrate combined heat and power engines or micro CHP for generation of domestic hot water for relevant program.
- The project should be plumbed to facilitate reuse of recycled water and should integrate local grey water recycling for any residential program with reuse in the central plant and for irrigation.

Below:

Clockwise - Aerial View Illustration of the Ramirez Tower, Partial Plan of the Ramirez Tower



LEED ND Credits:
NPDp2
SLLc5
NPDc1
NPDc3
NPDc4

5
Open Space
Guidelines

Open Space Overview & Key Objectives

OVERVIEW

The Master Plan provides the opportunity to: 1) enhance the series of the historic open spaces 2) tie together the remnant conditions of site, and 3) utilize new open space opportunities to create meaningful spaces that relate to both existing and planned conditions of the station. It is the ambition of the Master Plan to both improve the ease of navigation throughout the site, as well maximize the potential for spaces to be useable, flexible and vibrant environments to occupy and enjoy. The open space design is directly tied to the overall station design, circulation, infrastructure, and sustainability components while honoring the existing and historic open space framework and the unique experience it provides.

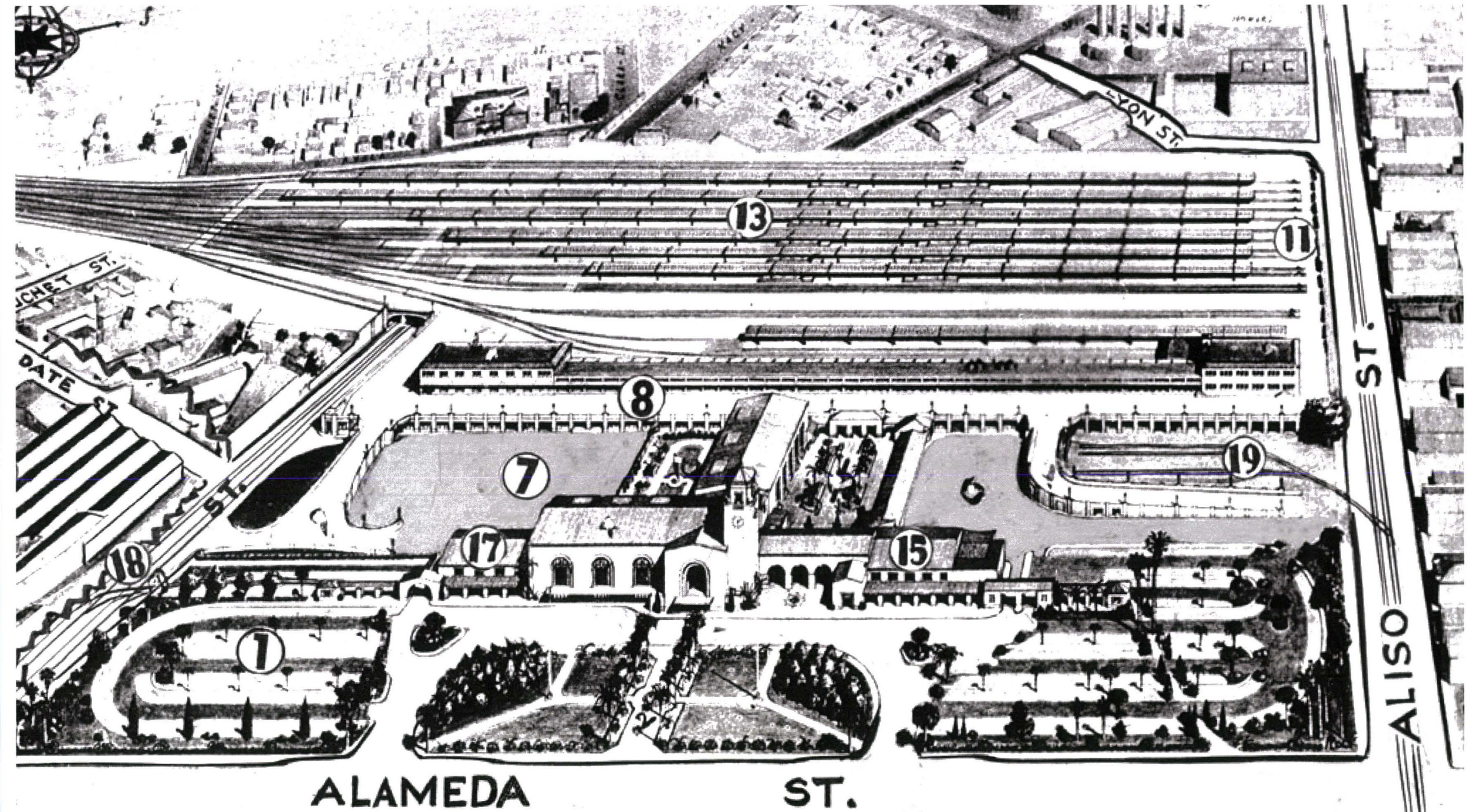
KEY OBJECTIVES

The key objectives, ambitions and terms related to the Open Space element of the Master Plan are listed below:

- Enhancing the quality of the historic Union Station
- Celebrating the Southern California experience (indoor/outdoor character, plant species)
- Improving pedestrian and cycling environment as a means to encourage transit ridership
- Reconfiguring Alameda Street, creating the Alameda Esplanade (in conjunction with Connect US/Linkages Plan)
- Promoting high quality, timeless site character, and a “sense of place”
- Providing sustainable site systems: stormwater, recycled water, climate comfort, urban ecology
- Programming for a diversity of open space uses: active, passive, flexible, interpretative spaces
- Planning for the Near Term: Alameda Street/Union Station Forecourt
- Improving the passenger and visitor experience at LAUS

Below:
Union Station Axonometric Drawing illustrating opening ceremony events + access (1937) Los Angeles, CA

View from City Hall (1939), Union Station (1944), Union Station at Night, Zanja Madre Aqueduct System on Figueroa Street, Union Station Formal Dedication Ceremony (1939)



Open Space Open Space Network

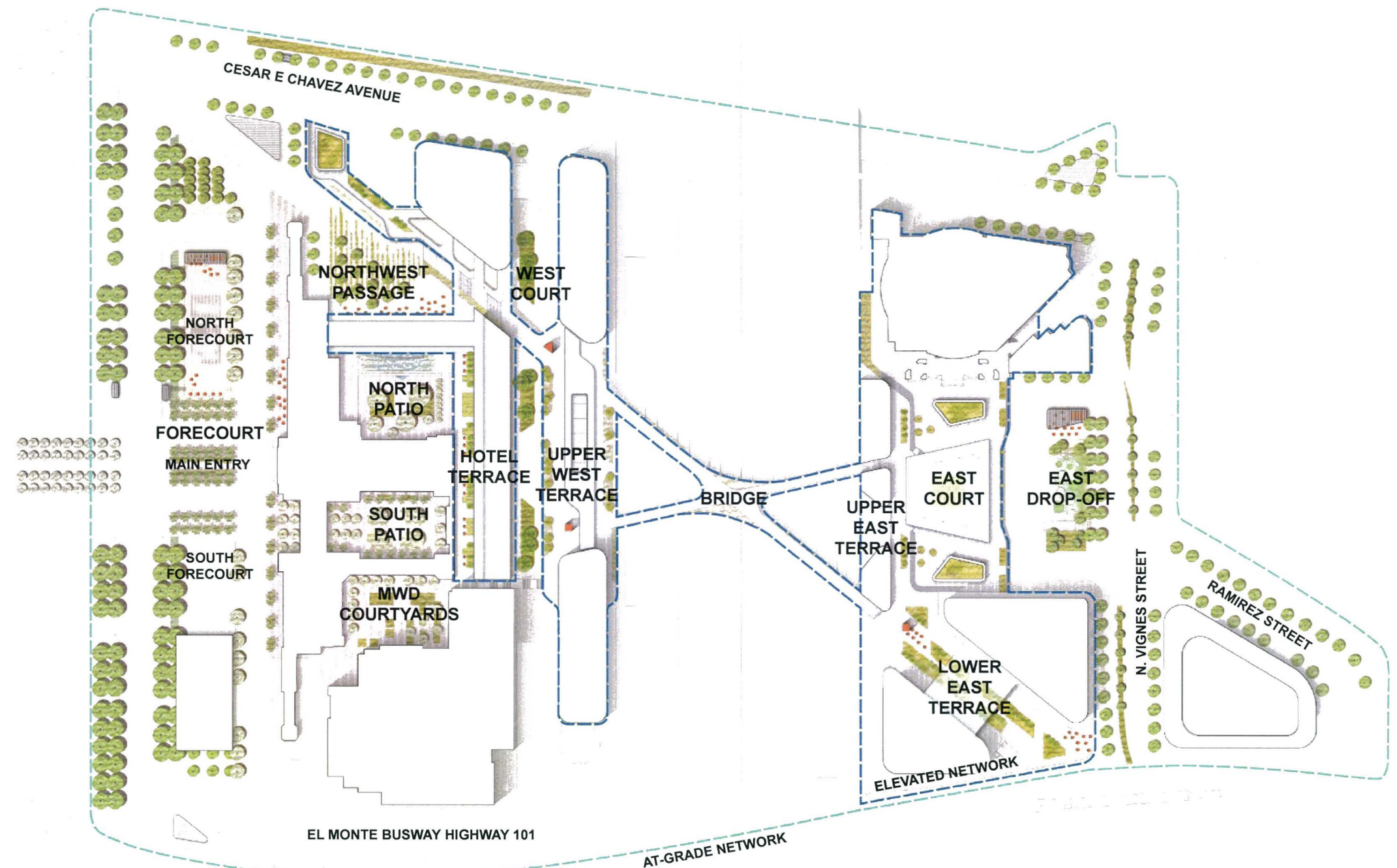
Below:
Illustrative Landscape Plan
showing the network of open
spaces

LEED ND Credits:
NPDc1
NPDc6
NPDp1

OPEN SPACE NETWORK AND CONNECTION

The USMP site is linked to a larger urban network of open spaces. Programmatic synergies and public spaces at multiple scales are co-located to offer strong connectivity and a vibrant public life. From streets and sidewalks to courtyards and gardens, a well-connected network of open spaces gently follows the topography of the site and provides pedestrians and bicyclists easy access to key destinations.

- Direct links include a connection to El Pueblo and a future connection to the High Speed Rail portal and Los Angeles River.
- Indirect links rely on street connections along Alameda Street (north to Chinatown, south to Little Tokyo), Cesar E Chavez Avenue (east to Boyle Heights), Ramirez/Center Street (south to Arts District), and Los Angeles Street (west to Downtown).
- Coordination with future projects:
 - The Los Angeles River revitalization has continued to develop political and legislative vigor, making the transformation a clear priority for the City.
 - Connect Us and the City of Los Angeles Great Streets Initiative will improve the site's perimeter streets and overall network for vehicles, pedestrians and bikes, improving connectivity to adjacent neighborhoods and facilitating accessibility to the USMP site.



Open Space Bicyclist & Pedestrian Network

AT-GRADE NETWORK

The design proposes significant expansion of the existing ground plane to allow better transfers between modes of transport as well as proper access across the entire site – from East to West.

- Feature open spaces at the main entries to the west and east highlight the circulation pattern through the site.
- The scale of the center passageways allow for significantly increased pedestrian circulation capacity and reduced congestion around access points to the station's rail platforms. Bicycle users will be able to share many of the same new routes across the Station as pedestrians, albeit on foot.
- Canopy trees and other vegetation frame clear sight lines.
- There are two ecological types: Riparian and Mesic, plus the Living Machine (see next page for illustration of plant ecologies).

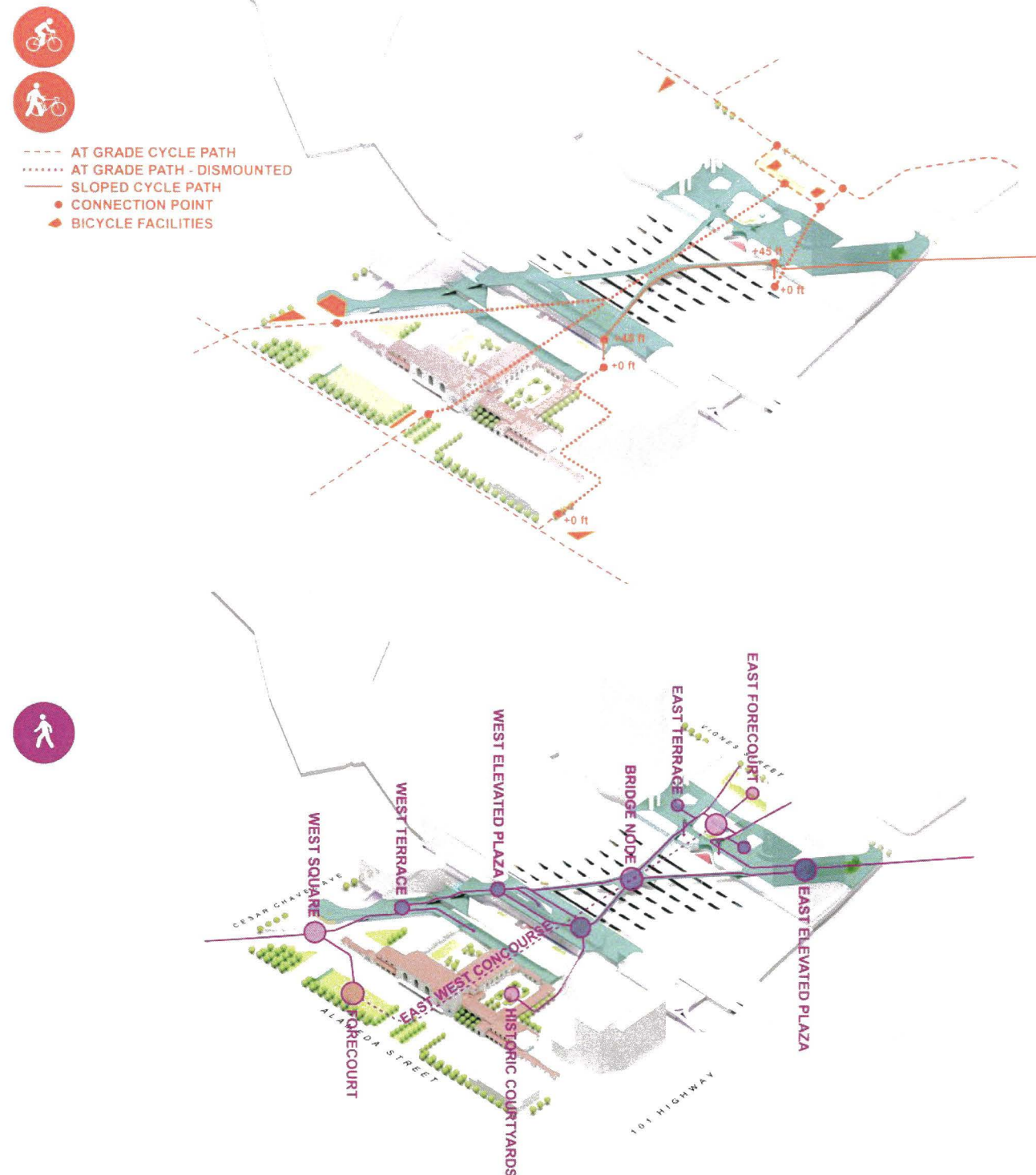
UPPER LEVEL NETWORK

To complement the improved access at the ground level, the plan shows an additional layer or network of connectivity over the site that would allow for greater movement across the site and between the new development projects.

- The assembly open spaces comprised of terraces, walkways, steps and bridges afford moments of respite in the journey through the site.
- The organization of the network responds to the organization of the station elements.
- The upper level network links the development parcels, and are enhanced by vertical circulation.
- Crucial view sheds are accentuated within and off site.
- Three ecological types are featured: Chaparral, Grasslands, and Xeric/Desert.

Below:

From Top to Bottom:
At Grade Bicycle and Pedestrian
Network, Upper Level Pedestrian
Network



LEED ND Credits:
NPDp1
NPDc1
NPDc6
NPDc9
NPDc14
GIBc8
GIBc9

Open Space Overall Landscape Concept

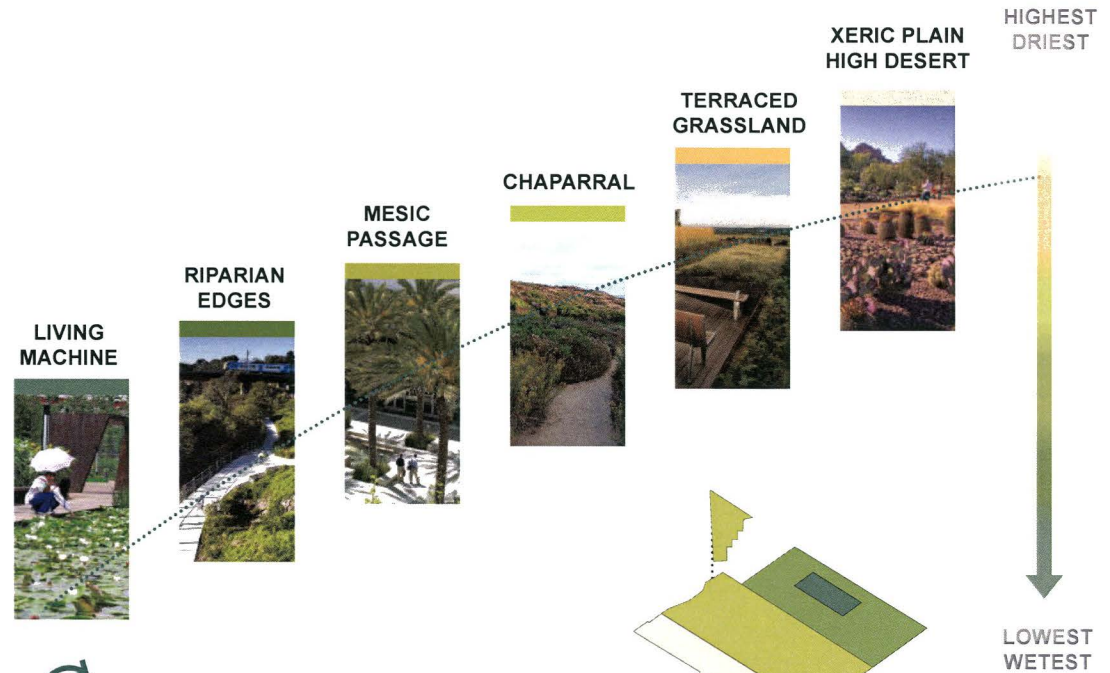
THE SOUTHERN CALIFORNIA EXPERIENCE

A series of meaningful outdoor spaces should be rooted to the region's vernacular, integrating the following factors:

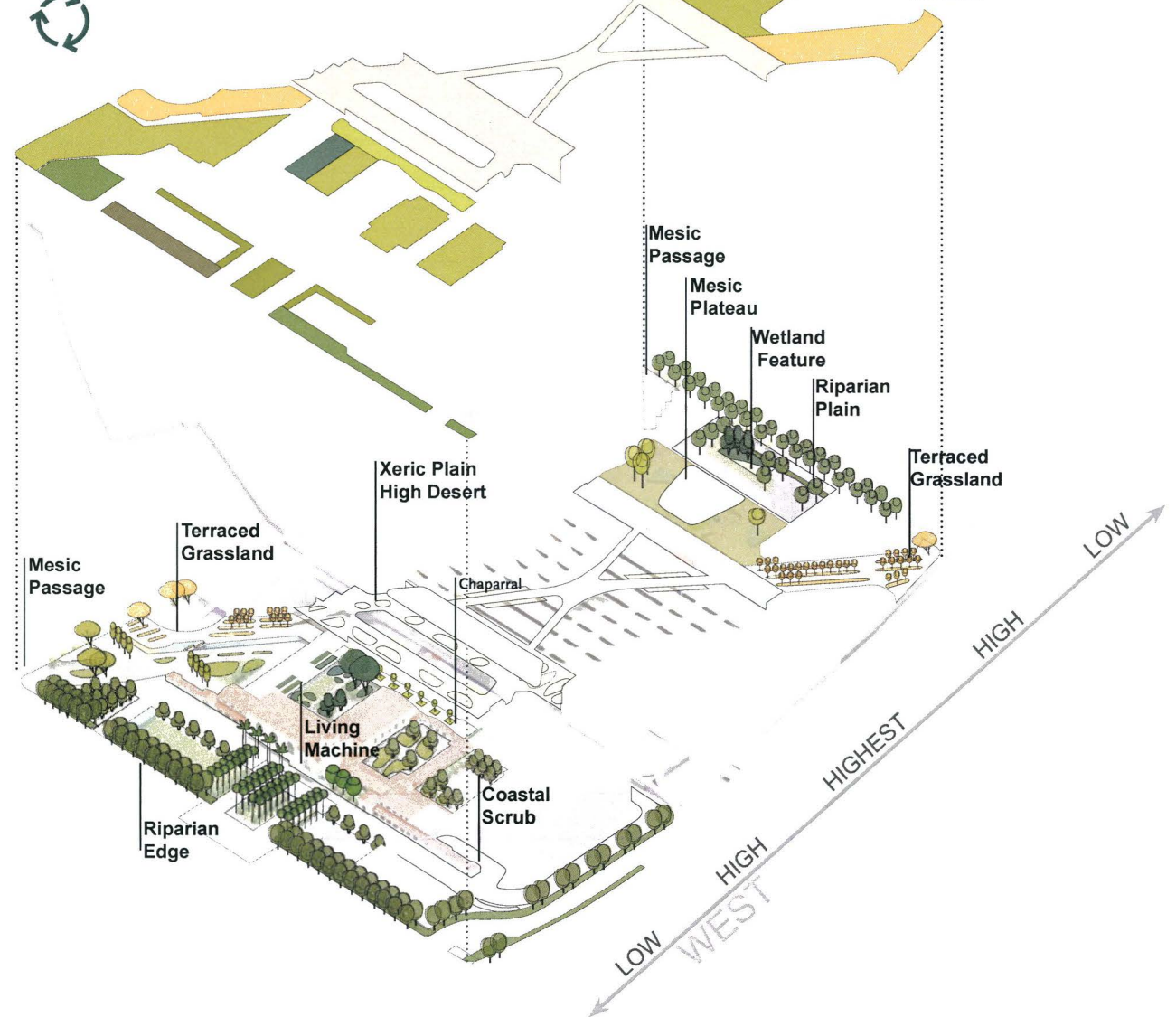
- Temperate climate - The open space network should capitalize on Southern California's mild climate with expansive indoor/outdoor conditions.
- Diversity of plant materials - With more than 5,500 native plant species (more than any other US state), California's plant life is remarkably diverse. The open space network should reflect these varied plant ecologies pairing appropriate species with different ecological zones of the outdoor experience. These should include:
 - High Desert Plains
 - Chaparral
 - Valley Grasslands
 - Mesic Habitat
 - Riparian Edges

Below:
Overall Landscape Concept
diagram of the Union Station
Master Plan

PLANT ECOLOGIES



ECOLOGICAL ZONES



AXONOMETRIC VIEW

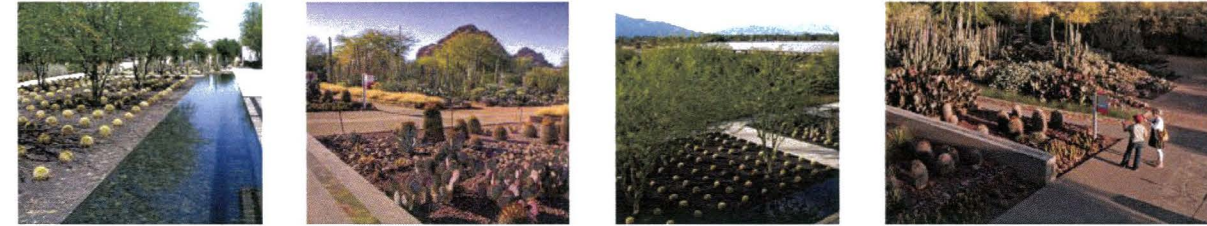
Open Space Plant Ecologies

THE SOUTHERN CALIFORNIA EXPERIENCE

- Topography and Latitude - California's topographical multiplicity plays a critical role in preserving species richness offering opportunity for varied distinct habitats and natural communities. Plant ecologies supported by the various micro climates found within Southern California should be organized throughout the sequence of levels and spatial conditions of the proposed station, creating unique experiences driven by access to sun, water, and wind.
- Use of materials - Softscape and hardscape materials should appropriately highlight and support the differing character of each ecological zone.

Below:
Ecologies of Southern California

XERIC PLAIN HIGH DESERT



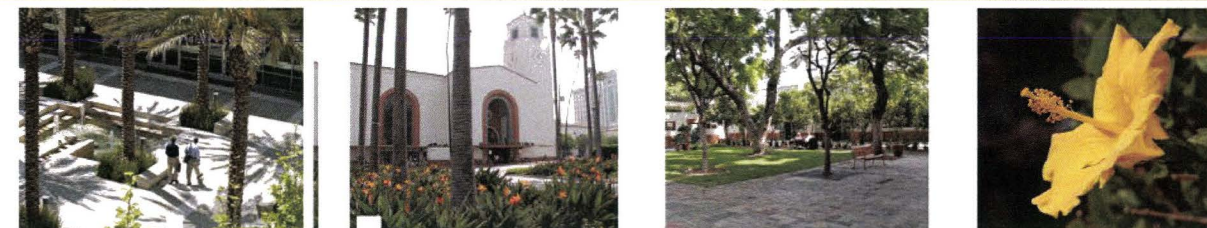
TERRACED GRASSLAND



CHAPARRAL



MESIC PASSAGE



RIPARIAN EDGES



LIVING MACHINE



Open Space Alameda Street Improvements

OVERVIEW

The Alameda Street improvements are significant because they are key features in changing the overall pedestrian environment and will make connections to the surrounding neighborhoods. Changes in the design of Alameda Street will fulfill the basic goal of strengthening the connections between the historic center of Los Angeles in El Pueblo and the historic Station, creating a unified urban ensemble.

DRIVEWAYS

To strengthen the pedestrian connection between the historic Union Station and the historic El Pueblo District/La Plaza, the pedestrian entrance and exit to the historic Union Station from Alameda Street will be consolidated into one main entrance for access and egress.

- The northern (outbound) driveway will be closed to vehicle traffic, and will be used for pedestrian circulation and bike sharing amenities.
- The southern driveway will have two-way traffic and the traffic will be consolidated around the Forecourt.
- A new outbound driveway/egress lane will be added to the northern end of the forecourt.

GRAND CONSOLIDATED PEDESTRIAN CROSSING (Between El Pueblo and Union Station)

To further enhance the connection between Union Station and the historic El Pueblo District/La Plaza a grand consolidated pedestrian crossing across Alameda Street is a major feature in the USMP.

- The two existing east-west crosswalks across Alameda Street should be consolidated into one grand pedestrian crossing between the Union Station forecourt and El Pueblo. The signalization for the intersection would provide a pedestrian only phase (some non-conflicting vehicle turning phases could run concurrently) on the north side of the reconfigured Los Angeles Street/Alameda Street intersection.
- Phased closure of Los Angeles Street should be considered by the City as a part of the Connect Us project.
- In the first stage of implementation, the northern leg of Los Angeles Street should be closed to vehicular traffic, and two-way traffic should be consolidated on the southern leg.

Below:
Illustrative Plan of the Alameda Esplanade

Opposite:
Sections of the Alameda Esplanade

- In the long-term, Los Angeles Street at Alameda Street and potentially the northbound US 101 on ramp access from Los Angeles Street would be permanently closed.

PEDESTRIAN/BICYCLE IMPROVEMENTS

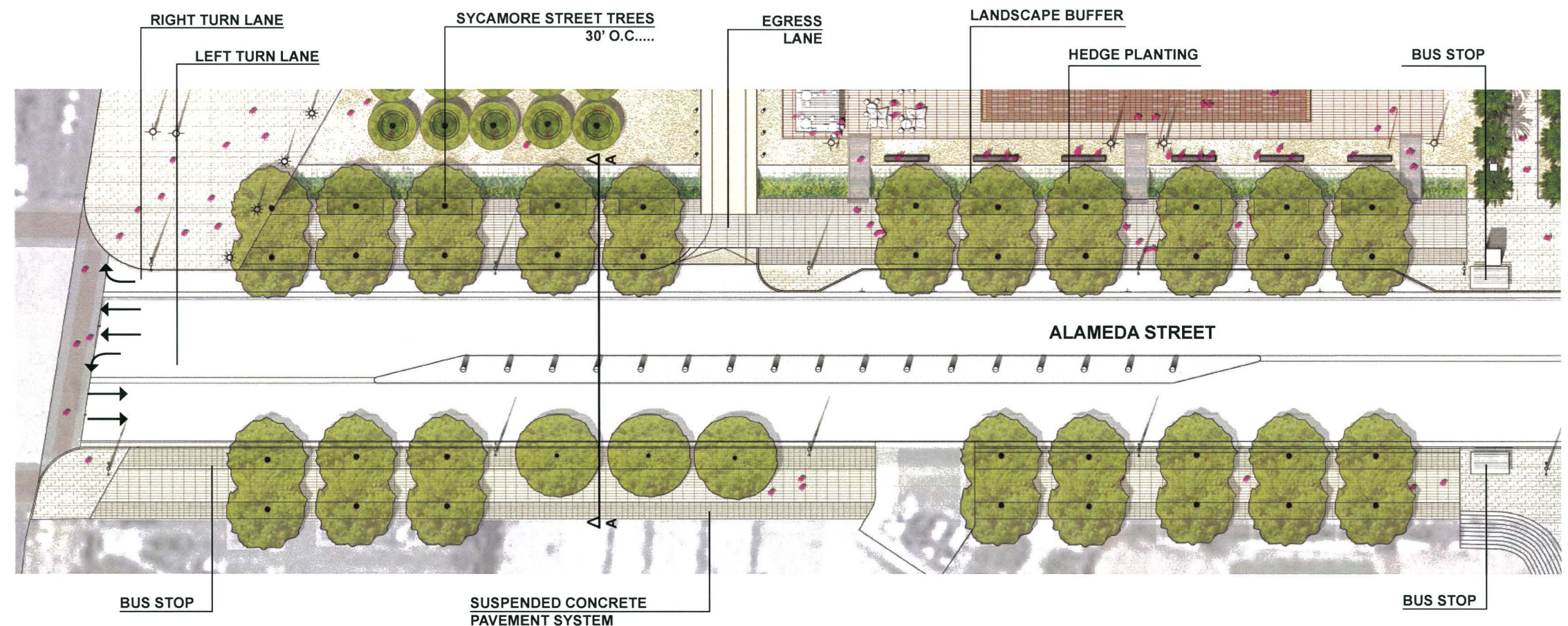
Alameda Street is reconceived as a verdant tree-lined street with wide walkways (the Esplanade) that support pedestrian and bike circulation to the station and along the frontage. Narrowing of the traffic lanes will further support the pedestrian connection between Union Station and El Pueblo/La Plaza.

- As a part of the USMP and the Connect Us plan, the number of through travel lanes should be reduced from six to four, plus left-turn, right-turn and drop-off lanes illustrated in the concept drawings.
- Sidewalks will be widened to accommodate more

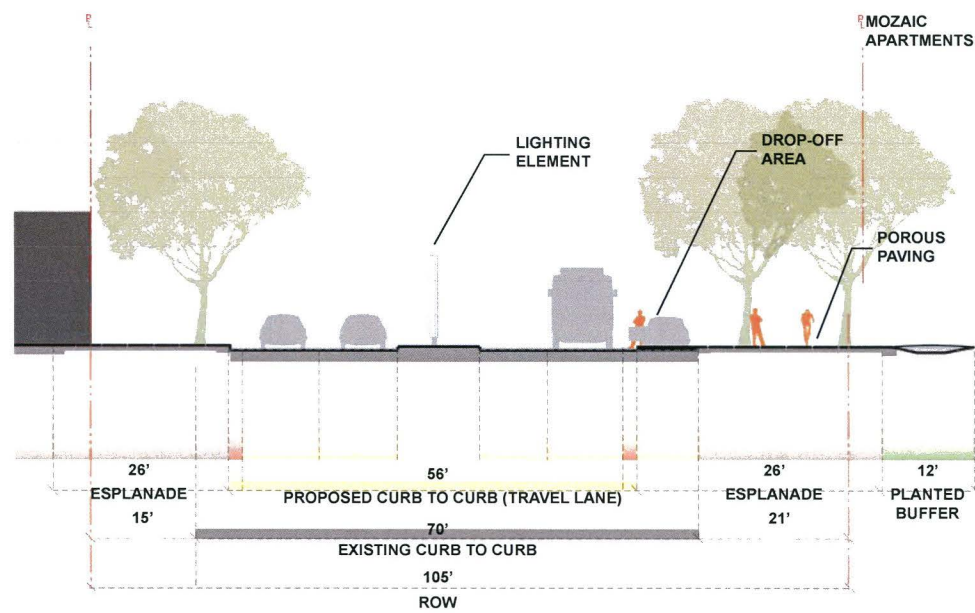
areas for pedestrians, drop offs and bikes.

- East side of Alameda Street: a two-way pedestrian/bicycle esplanade will be provided on the east side of Alameda Street, in front of Union Station. This esplanade should be a mixed use path (pedestrians and bicyclists would share the same right of way) with a row of trees on either side of the path to provide ample shade.
- On the west side of Alameda Street, the sidewalks should be widened, eliminating one vehicle lane southbound.
- A new curbside vehicular drop-off zone should be along the east side of Alameda Street at select locations (this would eliminate one vehicle travel lane northbound on Alameda Street). A right turn lane to Cesar Chavez Avenue from Alameda Street should be provided.

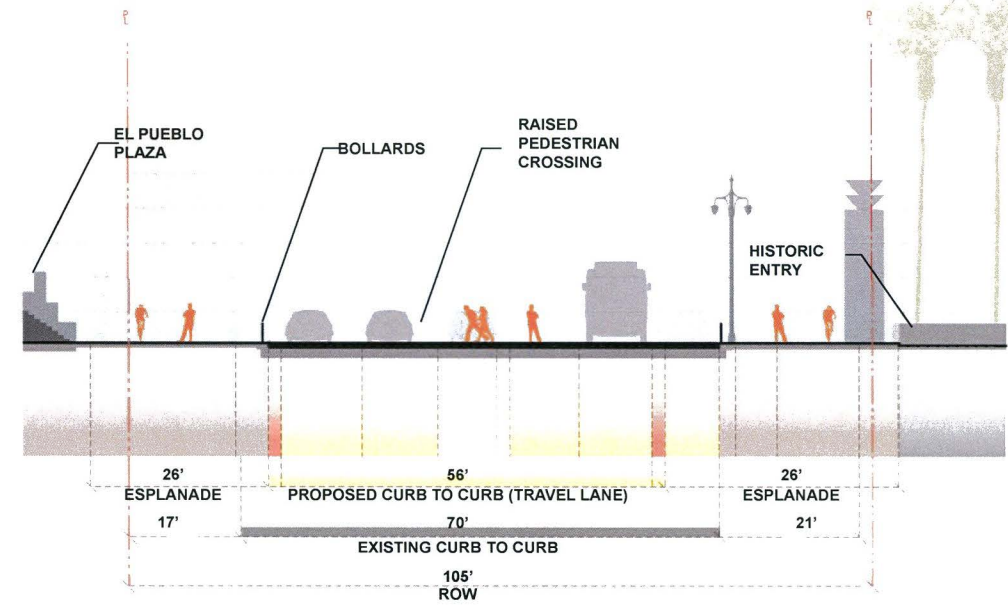
- In addition to the curbside drop-off on Alameda Street, a valet-only drop-off zone should be in front of the historic ticketing hall and proposed hotel on the Union Station site.
- Taxi zone along the curbside of the historic Station building should be south of the entry driveway, also on the Union Station site.



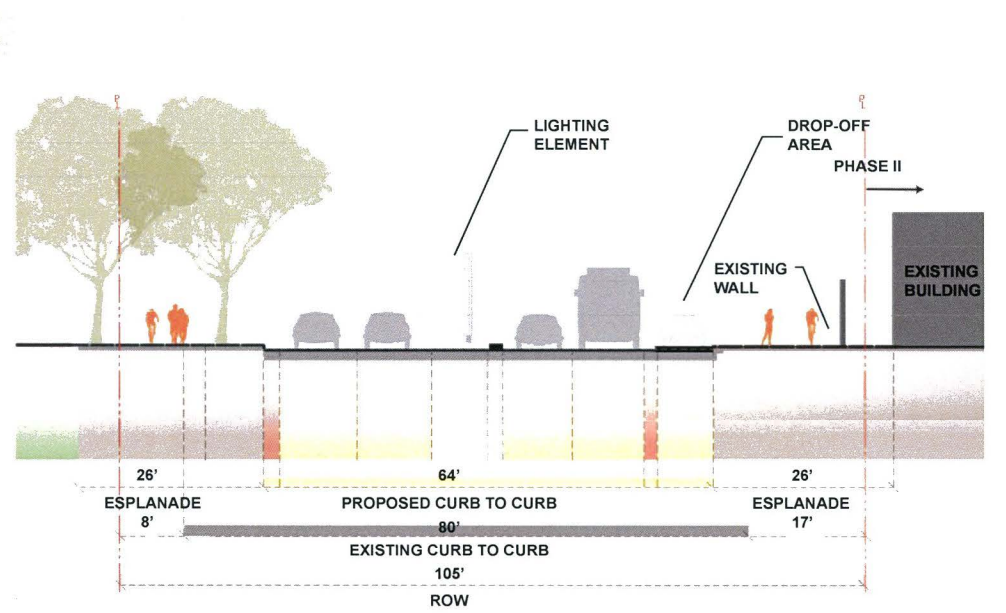
LEED ND Credits:
NPDp1
SLLc4
NPDc1
NPDc14
NPDp1
GIBc8



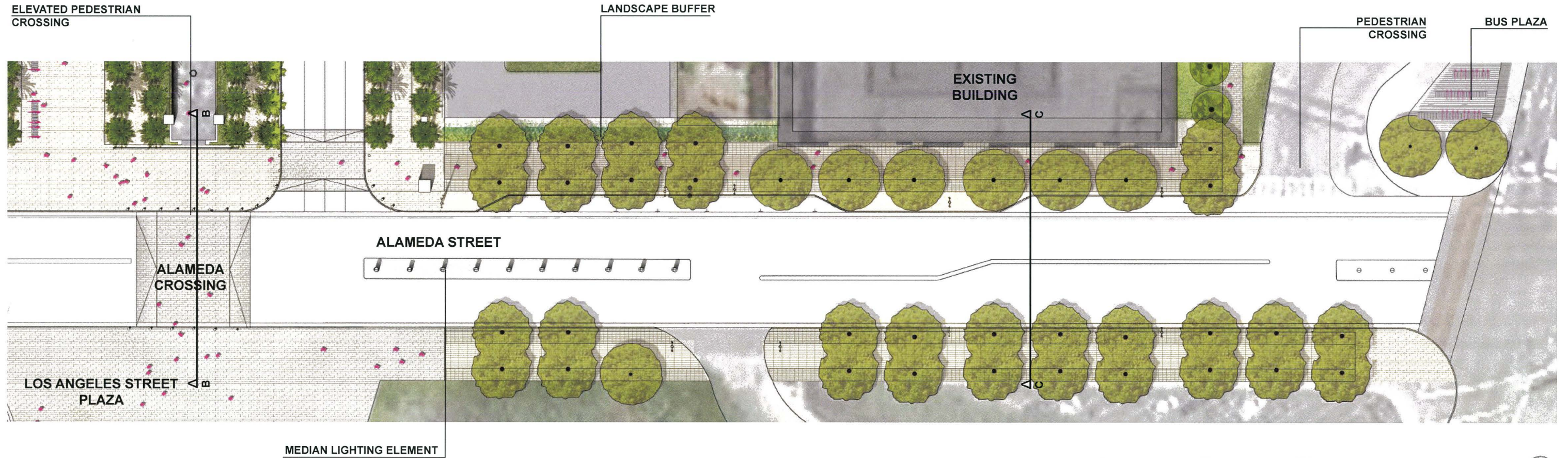
SECTION A'-A



SECTION B'-B



SECTION C'-C



Open Space Forecourt Concept

OVERVIEW

The Forecourt is a civic open space that encourages pedestrian, bike and transit use. The overall space is oriented north-south and comprised of three areas:

- North Forecourt
- Main Entry Area
- South Forecourt (currently owned and utilized by First 5 LA)
- The Riparian ecological condition is designed to receive the majority of the site's stormwater drainage.
- Vehicular circulation is integrated with the Forecourt to maximize pedestrian use and appropriately sized to support arrival and parking functions.
- Sight lines to the façade of the historic Union Station are enhanced/framed by tree planting and site elements.
- The space is comprised of a simple and consistent formal vocabulary as a means to complement the historic nature of the station.

HARDSCAPE

- The majority of the surfaces will be comprised of porous paving materials including concrete pavers, porous concrete and decomposed granite.

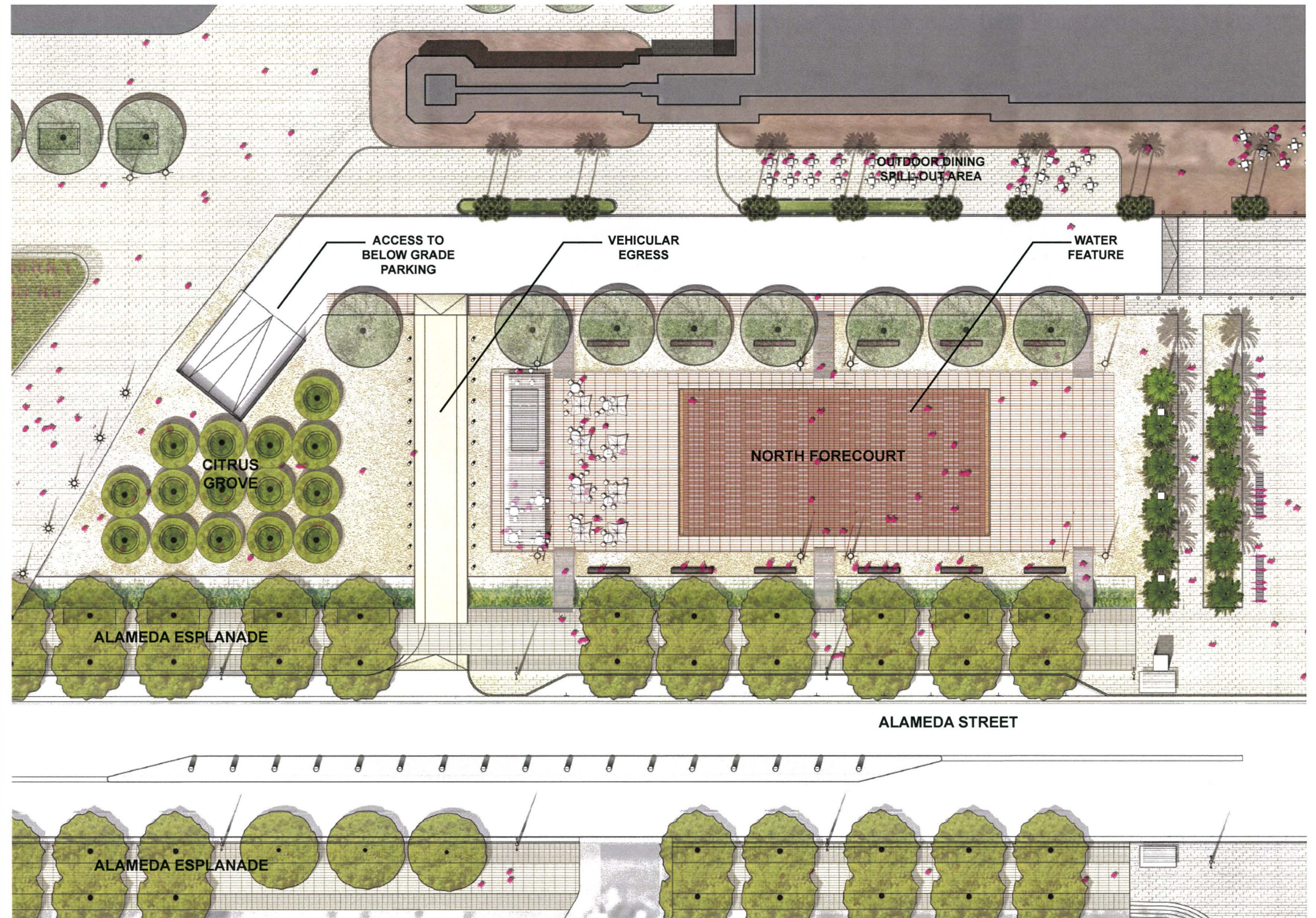
SOFTSCAPE

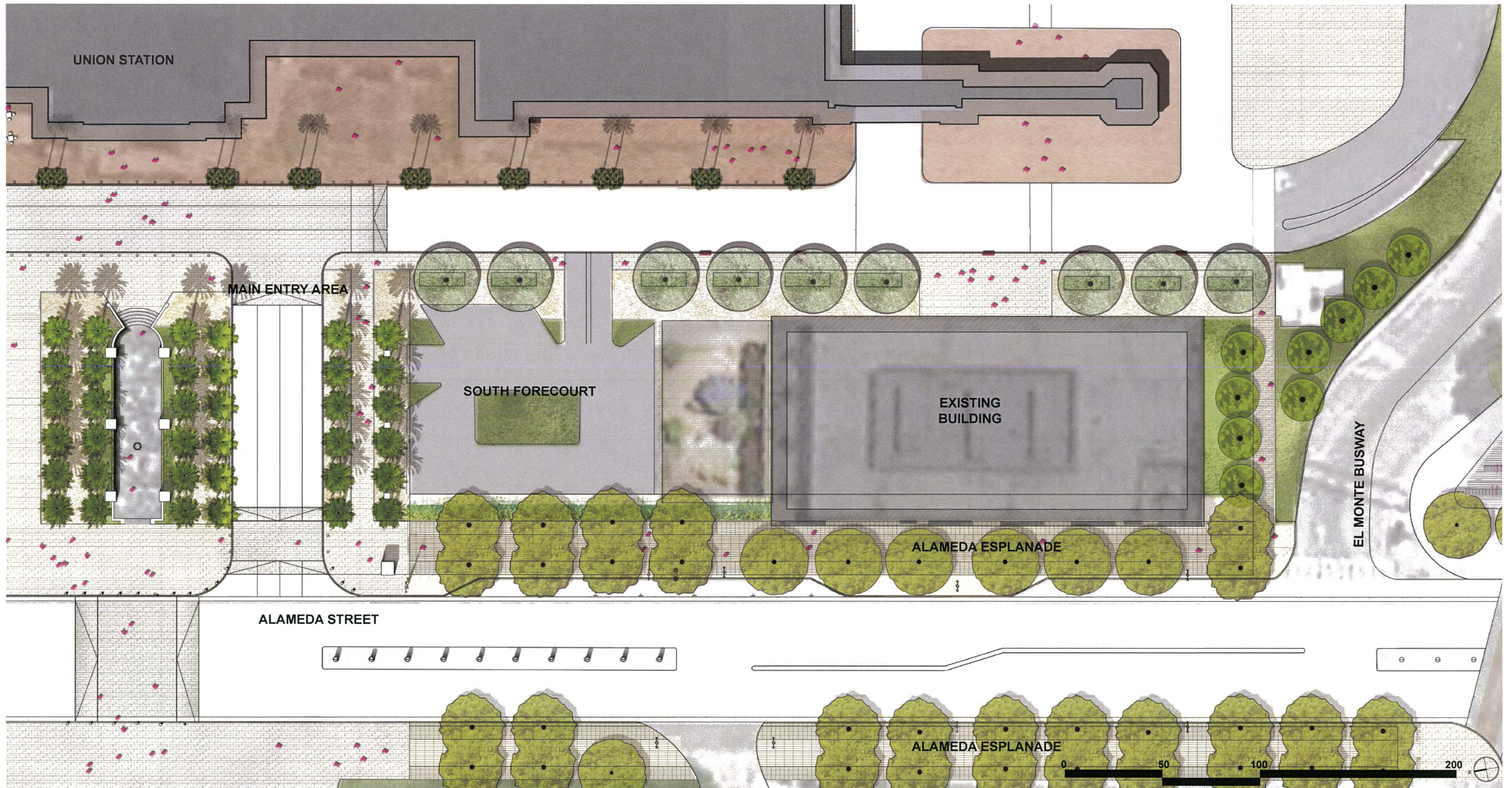
- The eastern edge is defined by a lineal alignment of Olive trees planted along the reconfigured driveway parallel to the historic Station to the east.



Below:
Proposed Concept Design Plan of
the Forecourt

Illustrative View of the Forecourt
Looking South from the Pavilion





Open Space At-Grade Network Northwest Passage

OVERVIEW

Beginning from the corner of Alameda Street and Cesar Chavez Avenue, the Northwest (NW) Passage provides a clear and direct connection for pedestrians and cyclists to access the Central Concourse of the station via the refurbished base of the original baggage building/historic Concourse.

- The diagonal orientation of the passage has a direct relationship with the Metro Red/Purple Line, providing a new opportunity for unencumbered access to, into and through the site.
- Bicycle pavilion at the west entry encourages and facilitates cycling transit users.
- The space is framed and activated by new development program opportunities.
- The West Court and Pavilion Building act together to connect the historic office wing to the baggage building/historic Concourse.

HARDSCAPE

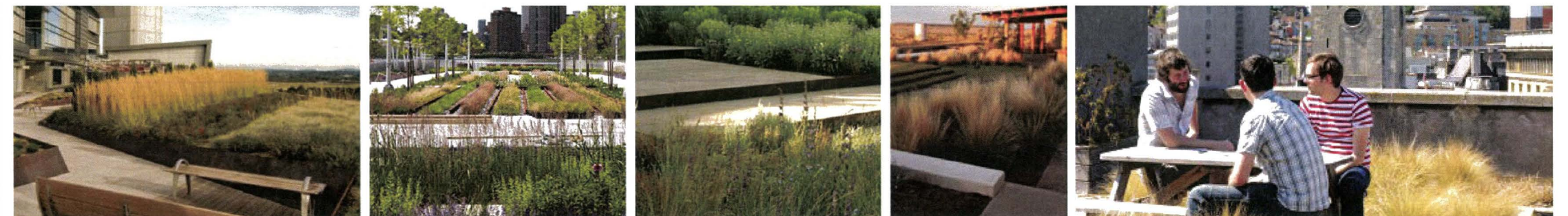
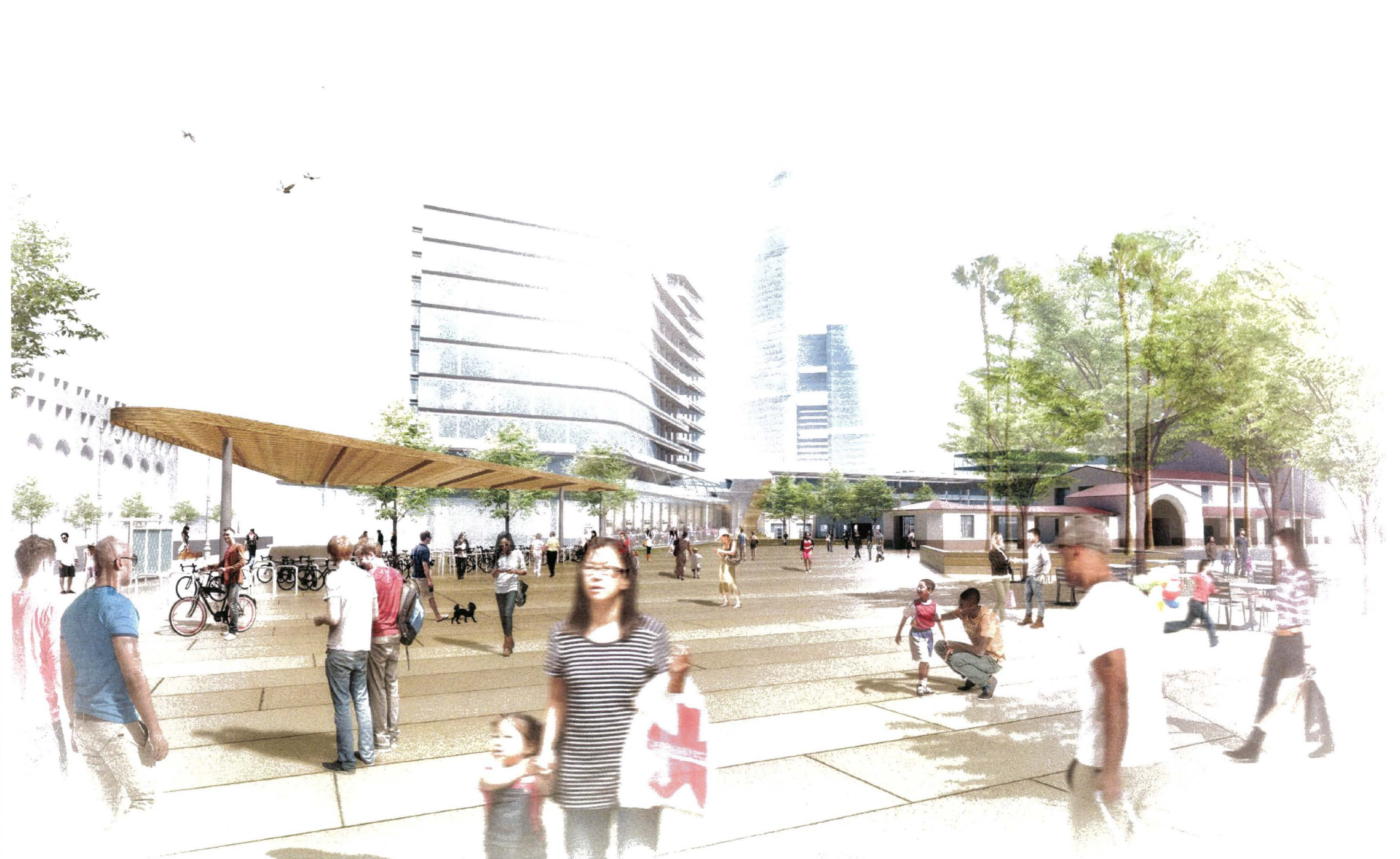
- Paving will be of a high-quality, consistent character.
- As a means to capture the surface runoff shedding from the passage, the construction of the paving and drainage will direct the runoff into a discrete, lineally arranged drainage element that conveys the water to the north portion of the Forecourt.
- The Pavilion's offering of food and beverage, a series of movable tables and chairs would populate a portion of the NW Passage as "spill-out" space creating a pleasant day-to-day experience. Permeable bands of planting and concrete pavers, accentuated by staggered rows of trees and seating elements, should contribute to the "piazza-like" nature of the space.

SOFTSCAPE

- The surface of the passage is conceived to have a continuous materiality that offers moments of permeability (offered at the surface and through a series of planter elements) but will largely be an impervious surface.

Below:
Illustrative View of the Northwest
Passage from the Corner of
Alameda Street and Vignes Street

Precedent Softscape and Plantings
for the Northwest Passage



LEED ND Credits:
SLLc4
NPDc7
GIBc8
GIBc9

Open Space At-Grade Network West Court

OVERVIEW

Located east of the historic Passenger Concourse before one arrives at the relocated Patsaouras Bus Plaza, the West Court is a contemporary rendition of the series of courtyards/ patio spaces found within the historic Station.

- The West Court should be open, with a view to the sky as well as a clear view of the adjacent hotel, Bus Plaza and Terminal Annex. This arrangement will make the wayfinding through the station more intuitive for arriving and transferring passengers
- The flexible space should be designed for passive and active uses and also to act as a “green filter” or moment of respite for users circulating to and from the Concourse.

HARDSCAPE

- A consistent paving system will extend from the interior of the concourse through to the exterior of the space, promoting a continuous and seamless indoor-outdoor experience.
- Seating elements will be incorporated with the planting areas to provide seating throughout the space.

SOFTSCAPE

- A series of planter areas will provide space for both groupings of columnar trees and low-understory plantings.
- The planters provide opportunities as stormwater collection points for the immediate surface areas.

Below:
Illustrative View of the West Court

Precedent Softscape and Plantings
for the West Court



Open Space At-Grade Network East Drop-Off

OVERVIEW

Accentuating the new arrival experience from Vignes Street, the East Drop-Off creates an improved means for passenger vehicles to access Union Station.

- The drop-off island is planned to receive and detain stormwater run-off shedding from the eastern portion of the site.

HARDSCAPE

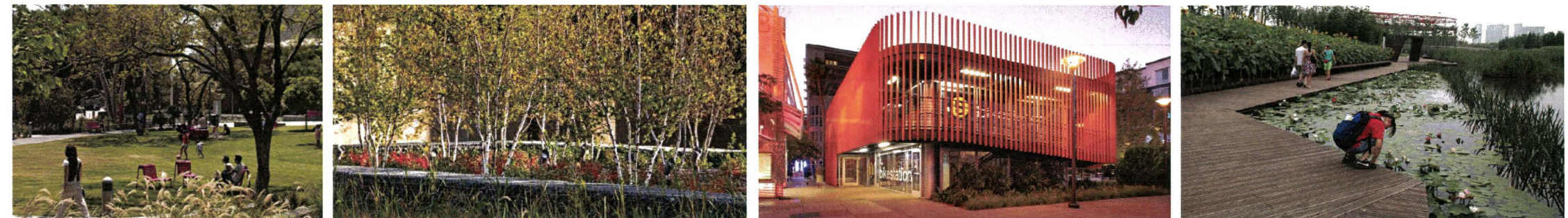
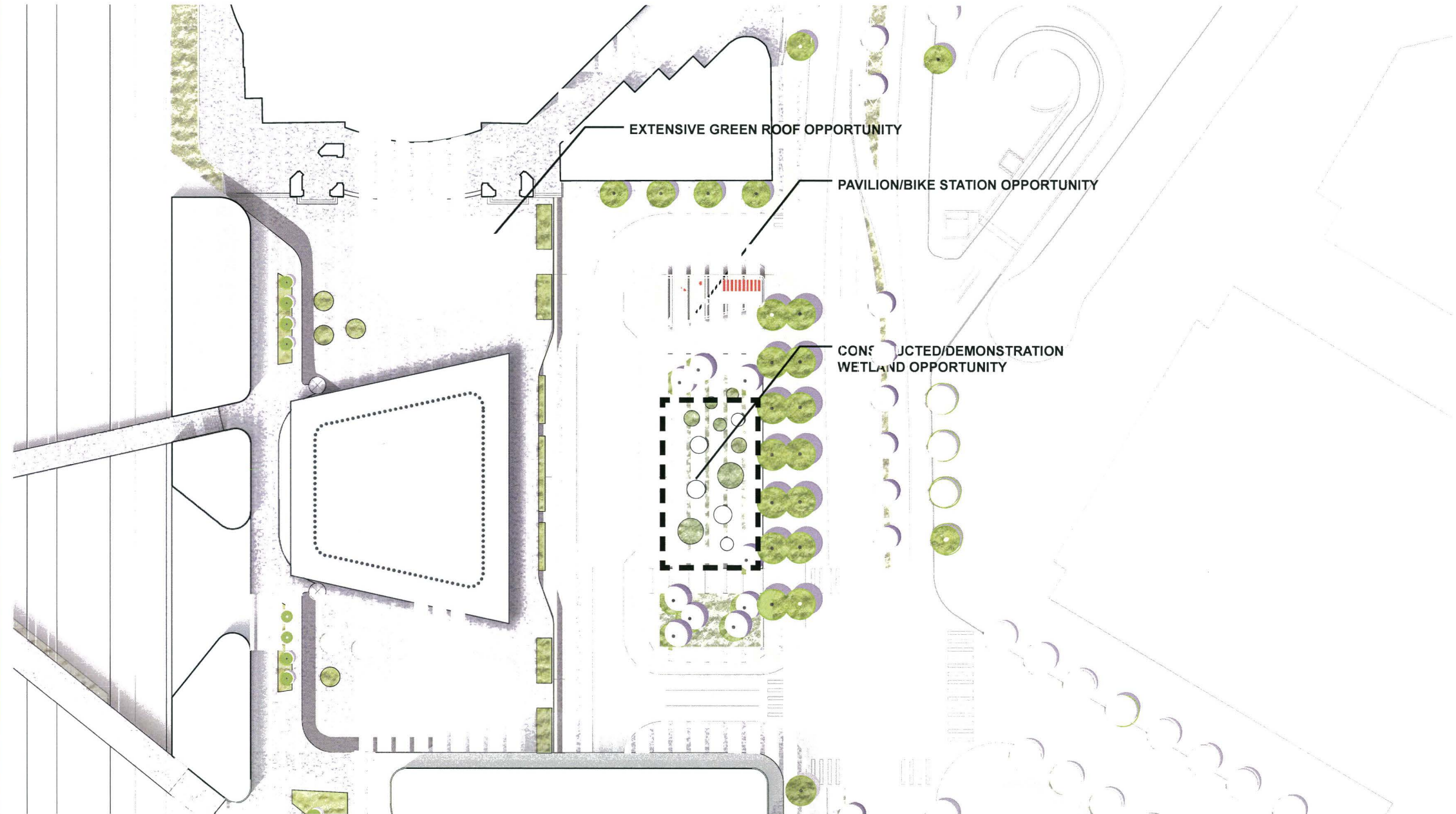
- Transitioning from the extents of the Concourse, impermeable paving will transition to more porous paving surfaces that connect to Vignes Street.
- A demonstration wetland within the Drop-Off is spatially designed to receive stormwater runoff as well as localized grey water sources from adjacent on-site development.
- Walkways, integrated seating, and interpretative signage will frame and provide a means to access the demonstration wetland, creating a unique experience that highlights the Riparian ecology found within the Los Angeles River.
- Skylights interspersed throughout the landscape will bring day-light down to the sub-grade connection with the advent of High Speed Rail.
- A pavilion located on the north side of the Drop-Off island serves as the station's eastern "bike station" to provide services for cyclists and amenities to patrons.

SOFTSCAPE

- The demonstration wetland will attract a variety of small terrestrial, aquatic, and aviary species; providing an unexpected glimpse of nature at the east gateway to Union Station.
- Bio-filtration planters will ensure adequate water levels for the system to achieve healthy growth and stabilized conditions.

Below:
Enlarged Plan of the East Drop Off

Precedent Softscape and Planting
for the East Drop Off



LEED ND Credits:
SLLc4
GIBc8

Open Space Elevated Network Lower West Terrace

OVERVIEW

Overlooking the length of the Northwest Passage, the Lower West Terrace consists of a series of informal seating areas at the base of the hotel tower.

HARDSCAPE

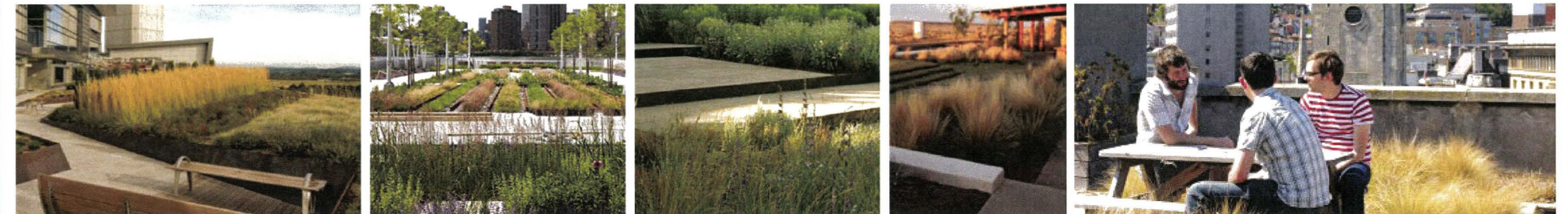
- A feature restaurant at the western most position of the Lower West Terrace is planned to serve as an anchor for activity drawing visitors up to the terrace and maximizing the value of this “promontory” location.
- A shade structure along the southern edge of the Lower West Terrace will provide protection from solar exposure and partial protection from rainstorm events.
- A feature stairway leads to the upper levels from the Northwest Passage and is visible from the corner of Alameda Street and Cesar E Chavez Avenue.
- Stairway planters provide room for a series of California native plants that include small trees, shrubs, and groundcovers that provide an interpretative indication of the overall Landscape Concept and transition of plant ecologies.
- A means to convey and treat stormwater collected from the upper levels, the stairway planters’ drainage system would direct stormwater through the planting and soil strata providing enhanced filtration benefits.

SOFTSCAPE

- The grasslands of the Southern California region are showcased in planters that provide informal seating.
- Stormwater is captured from the site as well as drainage from adjacent structures.
- A variety of native bunch grasses, sedges and ground covers would be organized in separate runs to provide a bold visual element of color and texture.

Below:
Illustrative View of the Lower West Terrace

Precedent Softscape and Planting for the Lower West Terrace



LEED ND Credits:
NPDc3
NPDc9
GIBc4
GIBc8
GIBc9

Open Space Elevated Network Hotel Terrace

OVERVIEW

The Hotel Terrace provides a continuous space that runs north-south along the length of the hotel. Elevated above the historic courtyards/patios, the Terrace offers guests and visitors a unique vantage point to overlook the historic grounds. Organized as a linear sequence of spaces that includes an outdoor bar, gathering areas, screening space, and various intimate garden “rooms” for eating and drinking.

- Leading up from the Northwest Passage stairway, the various landings lead to the entries related to the proposed hotel and commercial program.
- The hotel is also accessible via an open terrace on the top of the new pavilion structure.
- The Terrace environment complements the nature of the hospitality program.

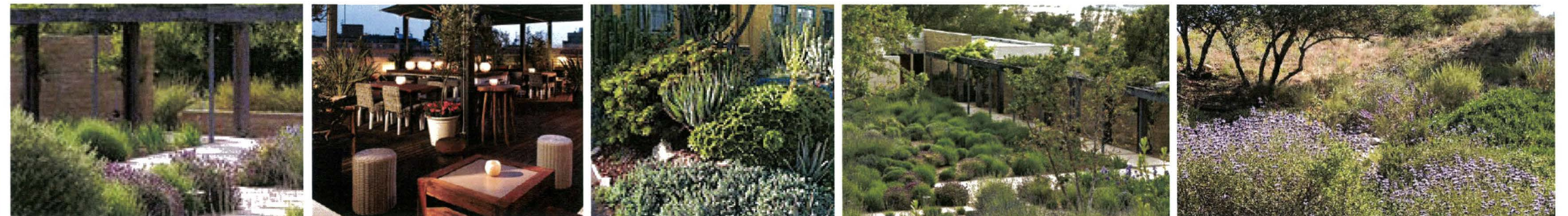
HARDSCAPE

- Paving will be of a high-quality, consistent character and designed to direct drainage to adjacent planters or sub-grade drainage system.
- A linear walk provides clear sightlines along the corridor of the Terrace while maintaining degrees of privacy for guests occupying these various spaces.
- As the Terrace will be constructed atop an existing structure, the surface will be constructed as a decking system and all vegetation elements would be in planters.
- The site furnishings would include movable tables and chairs, integral seating elements and shade elements.

SOFTSCAPE

- As an elevated space that is west facing, the Terrace is designed to support a Chaparral ecology.
- The planter areas provide space for small trees for shade and a variety of shrubs and ground covers.

Below:
Illustrative View of the Hotel
Terrace
Precedent Softscape and Planting
for the Hotel Terrace



Open Space Elevated Network Upper West Terrace

OVERVIEW

There are multiple routes to the roof of the relocated Patsaouras Bus Plaza and the sky lobbies for adjoining development including continuing up the stairway from the Northwest Passage, from the Upper West Terrace, and via the vertical circulation tower from the Concourse below. Active and passive program opportunities would include spaces for outdoor classrooms, botanic gardens and group fitness used by occupants of the various development sites.

- Views over the site include:
 - Bus Plaza roof
 - Bus Plaza overbuild structures
 - The West Court

HARDSCAPE

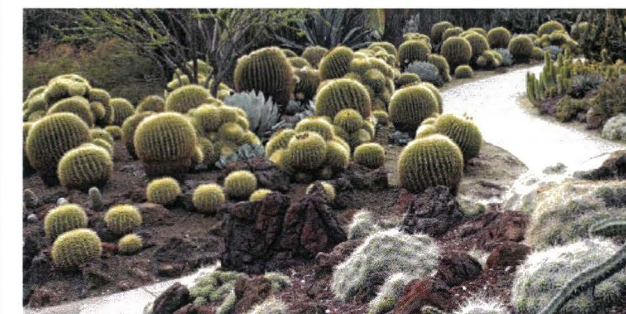
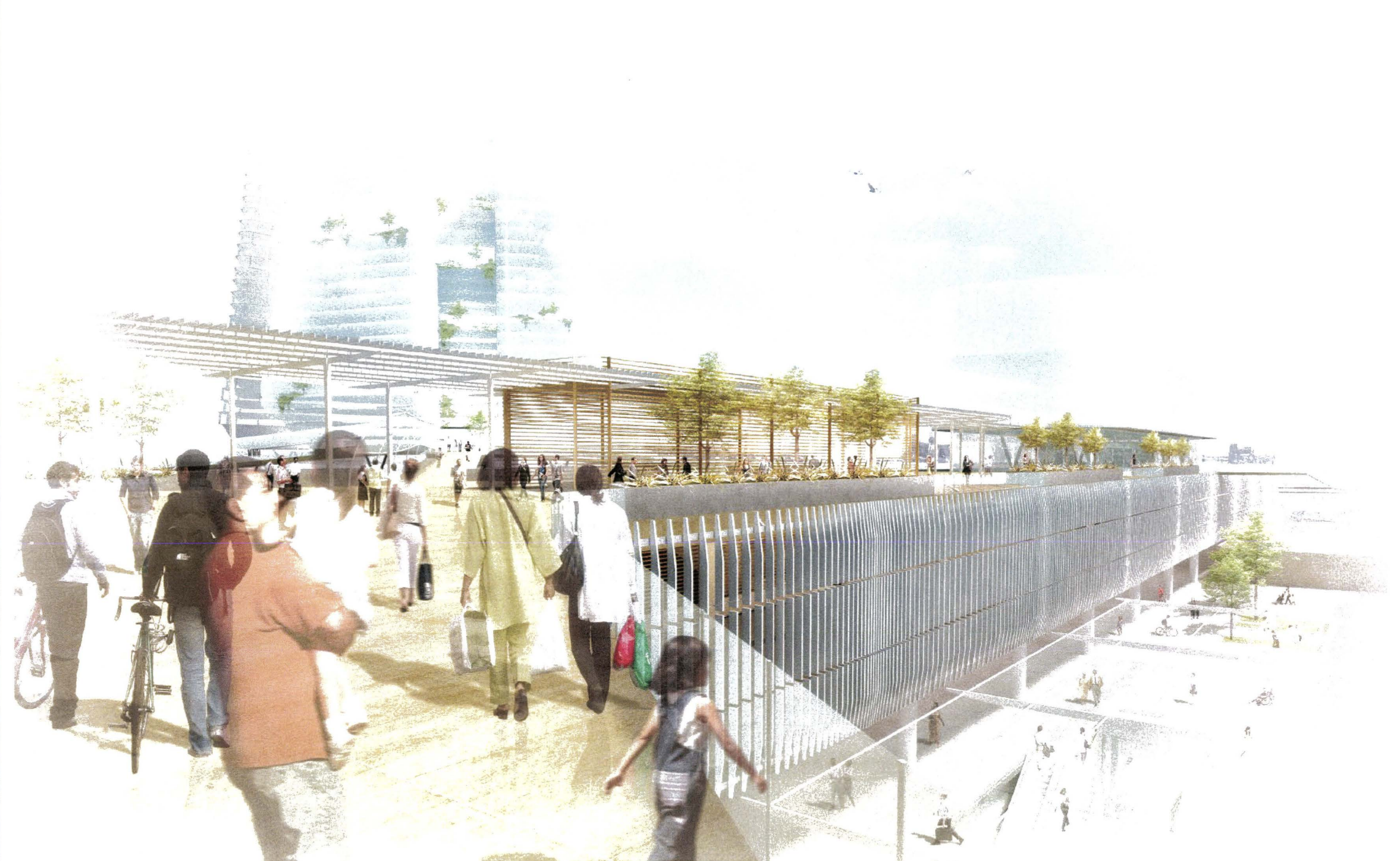
- Paving will be of a high-quality, consistent character and designed to direct drainage to adjacent planters or a sub-grade drainage system.
- Planters and stairways provide informal seating.
- Shade structures and screen elements should provide year round protection from solar exposure, partial protection from rainstorm and wind events.
- Large expansive areas should consider crushed rock/gavel material associated with planter areas as a means to create more permeable areas and reduce thermal gain.

SOFTSCAPE

- Receiving maximum exposure to sun and wind, the Upper West Terrace is designed as a Xeric Plain High Desert Ecology.
- Planters that increase the ability to receive stormwater captured from the site as well as drainage from adjacent structures should be used.
- Mature trees in raised planters should be considered where structurally appropriate as a means to provide shade, create habitat and spatial interest.

Below:
Illustrative View of the Upper West Terrace

Precedent Softscape and Planting for the Upper West Terrace



LEED ND Credits:
NPDc9
NPDc10
GIBC4
GIBC8
GIBC9

Open Space Elevated Network Bridges

OVERVIEW

Two primary skywalk bridges traverse across the railyard and connect the upper terrace levels for pedestrian and bike access.

- The bridges cross one another at the center location above the rail platform providing a central moment for visitors and train enthusiasts to gaze over the activity of trains moving through the station.
- The skywalk bridges provide the proper clearance over tracks, even if the tracks should require electrification in the future.

HARDSCAPE

- Paving will be of a high-quality, consistent character.
- An integral shade canopy should be incorporated to create a comfortable experience for users to appreciate the bridges.
- Edge planters provide informal seating along the perimeter of the bridge.

SOFTSCAPE

- Receiving maximum exposure to sun and wind, the bridge is designed as a Xeric Plain High Desert Ecology.
- Planting areas would consist of a mix of cacti, succulents, low mounding shrubs, vines, and groundcovers that thrive in arid climates.

Below:
Illustrative View of the Bridges
Looking West

Precedent Softscape and Planting
for the Bridges



LEED ND Credits:
GIBc8
GIBc9
NPDc1
NPDc6
NPDc9
SLLc4

Open Space Elevated Network East Terrace

OVERVIEW

Located between the two future development pads, the East Terraces provides a comfortable outdoor setting for passive use, informal dining, and small gatherings, adjacent to the high level of retail and other amenity spaces at each level.

HARDSCAPE

- Paving will be of a high-quality, consistent character and designed to direct drainage to adjacent planters or sub-grade drainage system.
- A large shade canopy floats between the terraces and developments providing climate comfort and creating an “atrium-like” spatial volume.

SOFTSCAPE

- A series of grassland planters provide informal seating opportunities and receive and filter stormwater from the site and adjacent buildings.
- The rooftops of the two pavilion type buildings on either side of central space should feature extensive roof gardens providing habitat for pollinators species.

Below:
Illustrative View of the East Terrace

Precedent Softscape and Planting
for the East Terrace



Open Space At-Grade Network Existing Courts, Arcades and Breezeways

OVERVIEW

Improvements to the series of existing courts and breezeways will include minor retrofits to improve wayfinding, safety, and means to coordinate with the overall station enhancements.

HARDSCAPE

- Site elements should consider historic context of specific siting.
- New site elements should have a simple, refined quality to their formal language and materiality.
- Where feasible and particularly in areas that are not over subgrade parking/structure, paved areas should be retrofitted to become permeable surfaces that also reflect heat gain.

SOFTSCAPE

- Planting areas should be reviewed in more detail as a means to make them low-maintenance and update their irrigation design to promote low water use as appropriate.
- Adding historically relevant plantings or removing non-historical plantings should be considered within context of specific areas.

Below:
Union Station South Courtyard.

LEED ND Credits:
G1Bc4





6

Overall Site-Wide Sustainability Guidelines

Site-Wide Sustainability Overview

The Sustainability Framework for the Union Station Master Plan is comprised of four layers: infrastructure, transit, socioeconomic, and identity. Within these four layers are 21 imperatives. Each imperative has a stated objective, metric on which that objective will be measured, a key performance indicator, and lists the projected physical consequences for the Master Plan and the necessary policies to achieve and monitor the imperative.

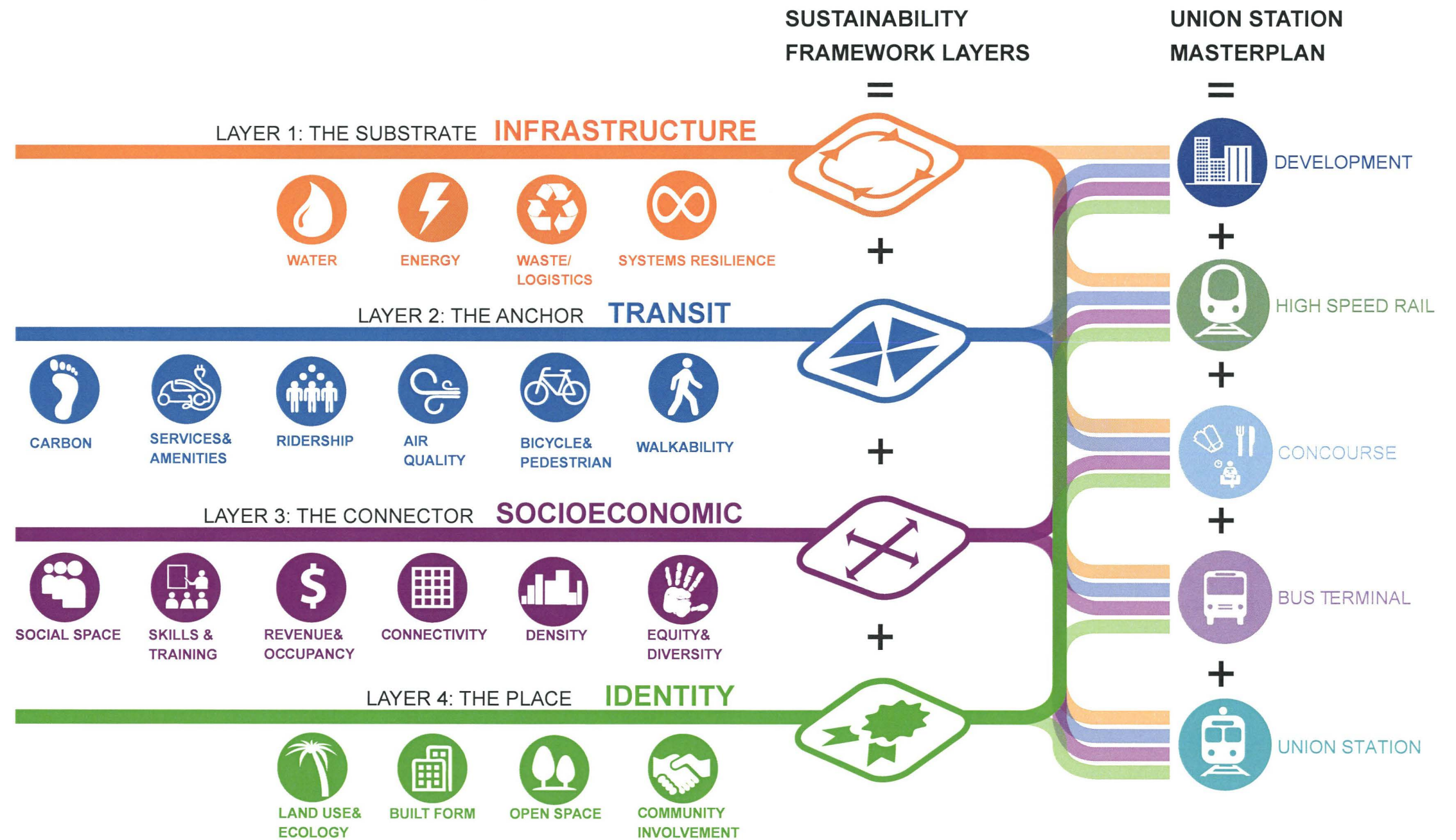
To ensure that the USMP Sustainability framework is truly holistic and relevant to both the city and county in which it sits and the organization that owns it, each of these imperatives is cross referenced to Metro's organizational sustainability targets, the Leadership in Energy and Environmental Design Neighborhood Development (LEED ND) scorecard, and the Los Angeles 2021 Vision, the foundation document for the Mayor's forthcoming Los Angeles sustainability framework.

These 4 layers with 21 imperatives form a broad base that is all-inclusive and yet specific and aggressive in its goals. LEED ND will bring visibility to Metro's commitment to its city and neighbors through their sustainability efforts. LEED ND will further offer transparency, structure, and continuity to the monitoring of the sustainability objectives for the design and construction teams through the lengthy Master Plan realization.

In the preceding five chapters, the codes for the specific credit(s) to which the guideline corresponds is listed in the top right hand corner of each project page. However, there are a host of sustainability guidelines that relate to all components of the Master Plan and to which all operating in USMP must adhere. These universal guidelines are outlined in this chapter and flagged as "Required," as these are required (in addition to the specific credits in the preceding chapters) to achieve USMP's LEED ND certification target of Silver. Additionally, this chapter includes a category called 'Recommendations' – which are not mandated guidelines, but challenges to outperform the designed sustainability baseline. Following the listed recommendations would enable USMP to reach a higher LEED ND certification. Finally, some of recommendations are specifically titled "Recommended to Metro" to highlight that Metro (rather

Below:
Sustainability Framework with 4 Layers and 21 Imperatives

than the developer) has the power to implement these specific elements. The appendix of this document has the projected LEED ND scorecard for USMP to offer a total picture of the complete certification ambitions and the credits necessary to succeed.



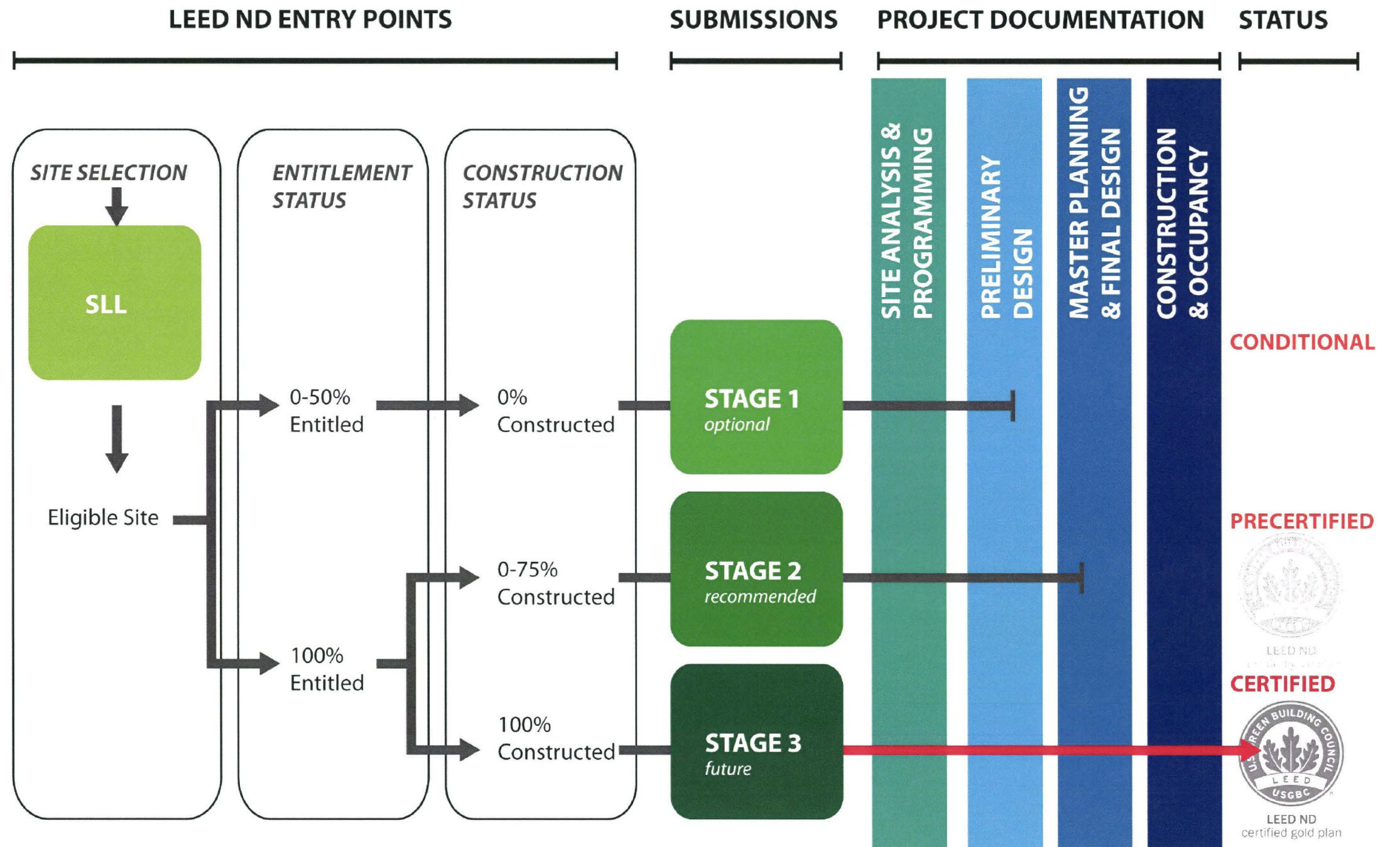
Site-Wide Sustainability Overview

TIMEFRAME FOR LEED ND CERTIFICATION

At the time of the Design Guidelines writing, Metro was pursuing LEED ND Stage 2 pre-certification. This Design Guidelines document is written as the legal binding basis for this pre-certification for the LEED ND Silver Certification target. Documentation of the work produced by those parties developing within the USMP site will be subject to the LEED ND Stage 3 final certification that occurs upon built completion of the entire master plan. This document is written to give clear guidelines on how to develop within USMP to adhere to the LEED ND Silver goal. If these guidelines are followed and referenced, LEED ND reference credits tracked, USMP is set to achieve LEED ND final stage 3 certification. Please see the general timeline for the LEED ND stages of certification in the adjoining diagram.

Below:
Outline of Roadmap to Certification

LEED ND: Roadmap to Certification

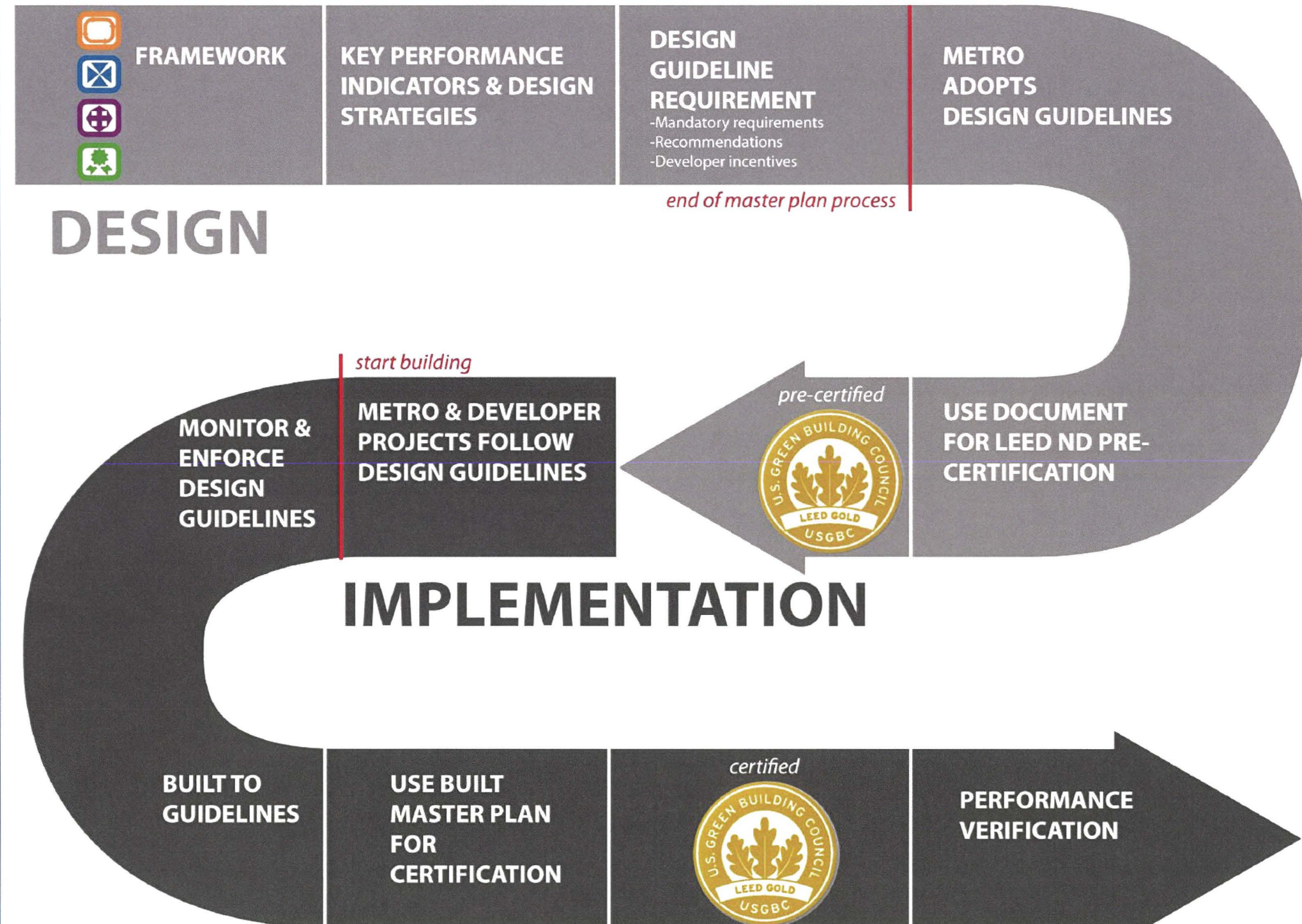


Site-Wide Sustainability Overview

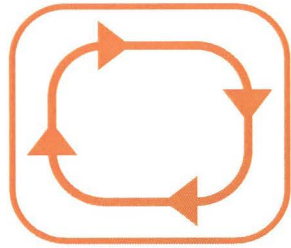
LEED ND PROJECT BOUNDARY

The LEED ND boundary is determined by the area over which Metro has jurisdiction and therefore can legally enforce the sustainability target requisite for LEED ND certification. Thus, the USMP boundary, Metro's holdings, and the LEED ND boundary are all the same. The site is classified as an infill, previously developed project under LEED ND.

Below:
Proposed implementation process, starting with the framework established during the Master Plan, the creation of design guidelines, project implementation and full LEED ND certification



Site-Wide Sustainability Infrastructure



OVERVIEW

The infrastructure layer to the sustainability framework is based on the principle that an efficient, robust, centralized infrastructure, which is scalable over time, is the substrate from which a thriving development grows. At the basis of sustainable building is the infrastructure that serves it. An infrastructure system cannot be easily, retroactively modified once built, thus a substantial, upfront investment in centralized waste, water, energy, and logistics systems is necessary for supporting a long term, thriving development. Infrastructure can be scalable overtime by designing centralized nodes for waste, water, energy, and logistics that work as a network for coordinated reception and dissemination of resources on site. A clear back of house service entrance and exit to the site collapses travel distances and streamlines traffic to minimize congestion and wait times on site. A central plant optimizes the financial cost for waste, water, and energy and significantly reduces the site's carbon footprint.



WATER

REQUIRED:

- All buildings meet a 40% reduction from the baseline in building water demand stipulated by LEED ND. GIBp3, GIBc3
- Reduce water consumption for outdoor landscape irrigation by 50% from a calculated midsummer baseline case. GIBc4
- Per development parcel, implement a comprehensive stormwater management plan that retains on-site, through infiltration, evapotranspiration, and/or reuse, the 90% of the rainfall volume of a 100 year storm. GIBc8
- Per development and transit project, low flow

fixtures should be pre-plumbed for reclaimed water throughout. The facilities and projects should retain on-site at least 25% of the average annual wastewater generated by the project (exclusive of existing buildings), and reuse that wastewater to replace potable water. GIBc14

- Dual plumbing is required for all new buildings constructed on site.
- Sub-metering is required throughout development.



ENERGY

REQUIRED:

- Every new building must demonstrate an average of 26% improvement over LEED ND referenced standard. GIBp2, GIBc2
- Incorporate a district heating and/or cooling system for space conditioning and/or water heating of new buildings such that at least 80% of the project's annual heating and/or cooling consumption is provided by the district plant. GIBc12
- Sub-metering is required throughout development to facilitate measurement and verification of energy use.

RECOMMENDED:

- Initiatives for solar domestic hot water (SDHW) for hotel and residential.
- Investing in renewables for development blocks, such as micro-grid for photovoltaics.

RECOMMENDED TO METRO:

- Design, purchase, or work with the municipality to install all new infrastructure, including but not limited to traffic lights, street lights, and water and wastewater pumps, to achieve a 15% annual energy reduction below an estimated baseline energy use for this infrastructure.



WASTE

REQUIRED:

- Each contractor must create and submit a Construction Waste Management Plan to recycle and/or salvage at least 50% of non-hazardous construction and demolition debris. GIBc16
- Use materials for new infrastructure such that the sum of postconsumer recycled content, in-place reclaimed materials, and one-half of the pre-consumer recycled content constitutes at least 50% of the total mass of infrastructure materials. GIBc15
- Include as part of the project at least one recycling or reuse station. GIBc16
- Include as part of the project at least one drop-off point, available to all project occupants, for potentially hazardous office or household wastes; or locate the project in a local government jurisdiction that provides collection services. GIBc16
- Include as part of the project at least one compost station or location, available to all project occupants, dedicated to the collection and composting of food and yard wastes; or locate the project in a local government jurisdiction that provides composting services. GIBc16
- On every mixed-use or non-residential block or at least every 800 feet, whichever is shorter, include recycling containers adjacent to other receptacles or recycling containers integrated into the design of the receptacle. GIBc16



SYSTEMS RESILIENCE

REQUIRED:

- Demand response required for all development.

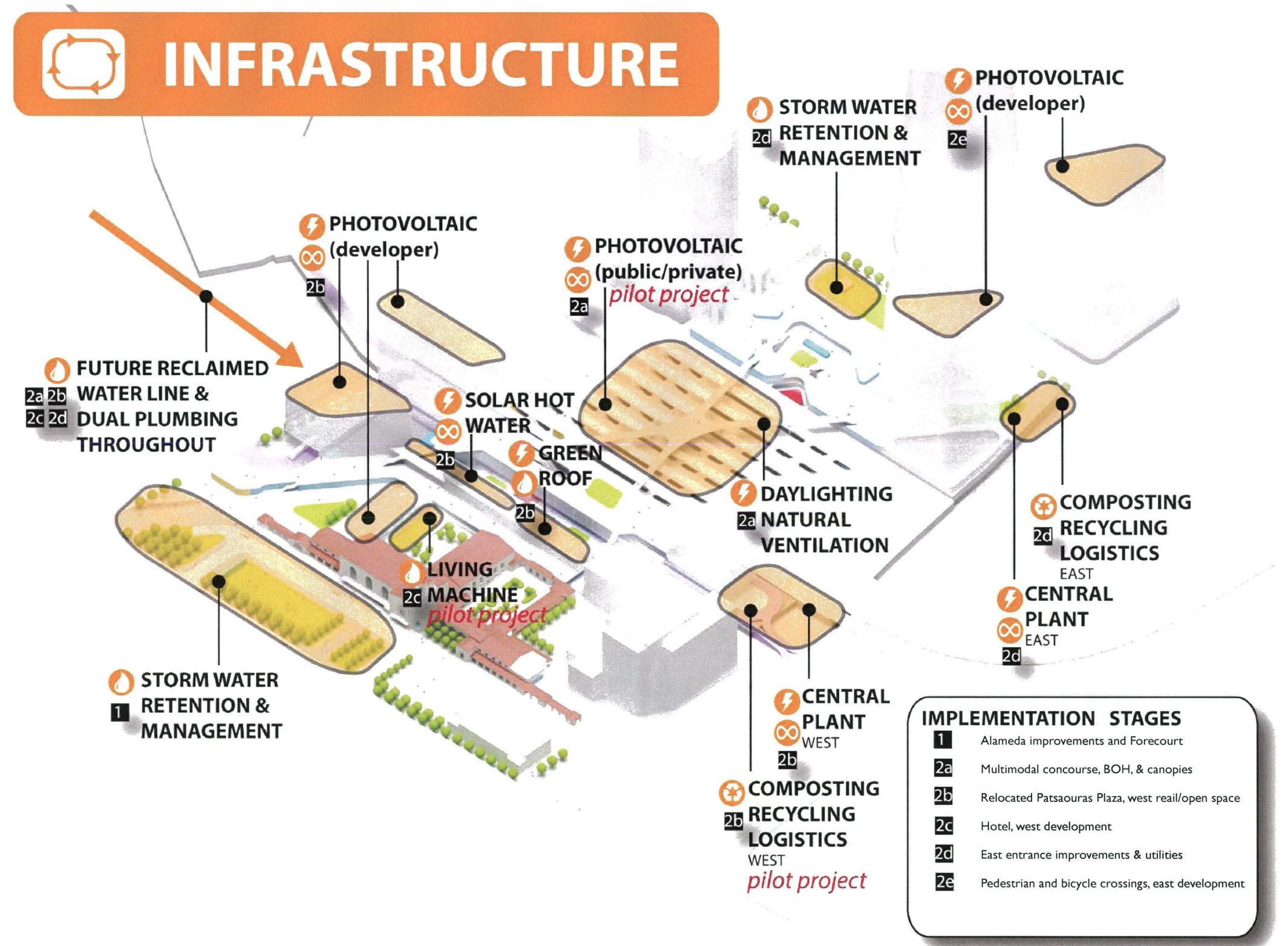
RECOMMENDED:

- Implement demand shift strategies.
- Implement continuous commissioning for ongoing building operations monitoring.

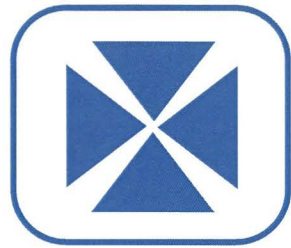
Site-Wide Sustainability Infrastructure

RECOMMENDATIONS

- Consider as part of each central plant the feasibility of integrating high efficiency fuel cells for increased grid resilience.
- The central plant shall incorporate high efficiency gas condensing boilers and be designed for low temperature operation with a supply temperature no greater than 140 F.
- The central plant shall incorporate high efficiency chillers (magnetic bearing recommended) with all variable plant controls and pressure independent controls valves on all coils greater than 1 GPM.
- Consider the integration of thermal storage for load shifting using chilled water stores or ice storage.
- Hotel and residential buildings shall consider building scale, base loaded combined heat and power systems for generation of domestic hot water.
- Look for opportunities to integrate grey water recycling within all new program elements.
- The facilities should be provided with low flow fixtures throughout and be pre-plumbed for reclaimed water throughout.
- Due to the location below the tracks, consider that the domestic hot water strategy needs to be developed to avoid gas fired water heaters.
- Consideration should be given to centralized systems, heat pumps and alternative technologies to minimize electrical demands.
- Consider collecting stormwater in tanks under the concourse to meet the precinct's toilet flushing and irrigation demands.



Site-Wide Sustainability Transit



OVERVIEW

The transit layer of the Sustainability Framework is motivated by the principles that a clearly legible, highly-utilized transit hub is a catalyst for thriving development. A multi-modal transit hub fosters compact, mixed-use, transit-oriented development at market densities and can improve the overall economic and social environment of an area. Transit centers that coordinate intuitive transfers between their multi-modal transit options are more legible to users and provide easier transitions between modes, thus better coordinating dispersal into the surrounding development's social and economic fabric. Transit centers that are easier to use and include compact, walkable, viable development inspire greater ridership. Convenient transit centers with strong connections to surrounding neighborhoods make the choice of foregoing the use of the car easier for those living, working, and playing in the surrounding areas.



CARBON

RECOMMENDED TO METRO:

- Create a Los Angeles Union Station Master Plan Climate Action Plan.
- Required reporting of scope 1,2,and 3 emissions and offsets.



SERVICES & AMENITIES

REQUIRED:

- Provide carpool and/or shared-use vehicle parking spaces equivalent to 10% of the total automobile parking for each nonresidential and mixed-use building on the site. NPDc5
- De-couple parking space allotment from lease or owner agreement in residential units.

RECOMMENDED TO METRO:

- Expand services of Metro application for smart phone to on-site amenity booking (e.g. bicycle share booking, car share booking, rideshare booking, availability of car and bicycle parking spaces).
- Implement a bicycle share scheme that is integrated with the City of Los Angeles.



RIDERSHIP

REQUIRED:

- Create a Transportation Demand Management Plan. NPDc8

RECOMMENDED TO METRO:

- Conduct annual surveys of Master Plan users to locate successes and issues within the Master Plan.



AIR QUALITY

RECOMMENDED TO METRO:

- Institute a low emitting vehicle program.
- Limit construction emissions allowed.



BICYCLES AND PEDESTRIANS

REQUIRED:

- Expand bicycle network to fill gaps suggested by Connect Us. SLLc4
- Improvement of tunnel passageway experience.
- Meet the following bicycle and shower guidelines per development type. SLLc4:
 - Retail Development- Provide at least one secure, enclosed bicycle storage space per new retail worker for 10% of retail worker planned occupancy. Provide visitor or customer bicycle racks on-site, with at least one bicycle space per 5,000 square feet of retail space, but no fewer than one bicycle space per business or four bicycle spaces per project site, whichever is greater.

Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.

- Multi-unit residential- Provide at least one secure, enclosed bicycle storage space per occupant for 30% of the planned occupancy but no fewer than one per unit. Provide secure visitor bicycle racks on-site, with at least one bicycle space per ten dwelling units but no fewer than four spaces per project site.
- Metro- Provide at least one secure, enclosed bicycle storage space per new occupant for 10% of planned occupancy. Provide visitor bicycle racks on-site with at least one bicycle space per 10,000 square feet of new commercial non-retail space but not fewer than four bicycle spaces per building. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.



WALKABILITY

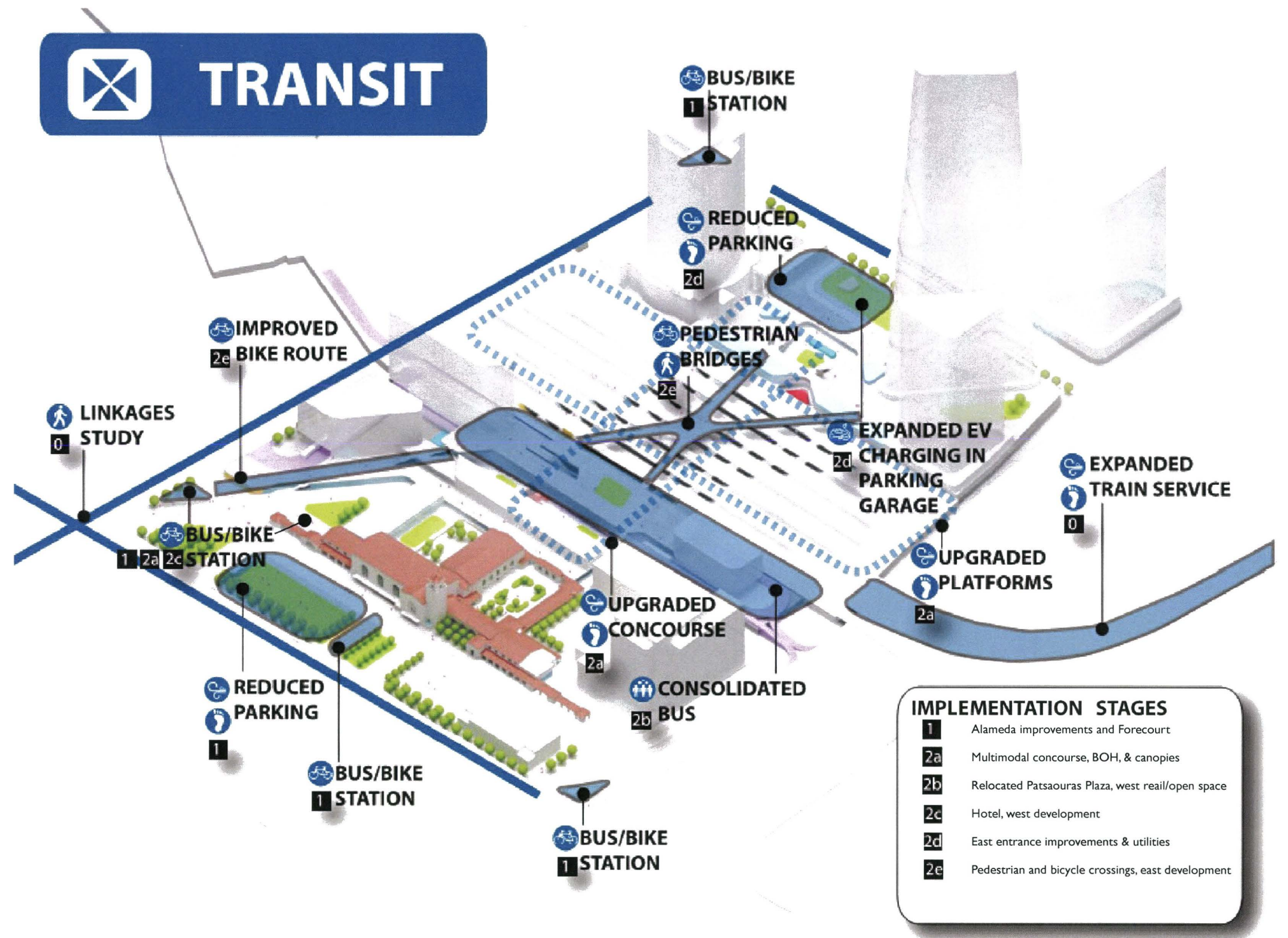
REQUIRED:

- For all new building frontage, a principal functional entry on the front façade faces a public space, such as a street, square, park, paseo, or plaza, but not a parking lot, and is connected to sidewalks or equivalent provisions for walking. NPDp1
- Per development parcel, limited interruption of pedestrian mobility by garage and service bay opening. At-grade crossings with driveways account for no more than 10% of the length of sidewalks within the project. NPDp1, NPDc1
- Per development parcel, at least 40% of all street frontage has a minimum building-height-to-street-width ratio of 1:3, excluding the frontage along Alameda Street. NPDp1, NPDc1
- Continuous sidewalks or equivalent provisions for walking are available along both sides of all streets within the project, including the project side of

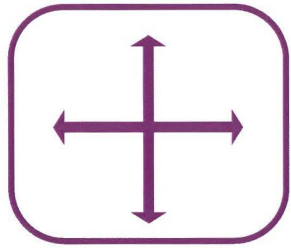
streets bordering the project. New sidewalks, whether adjacent to streets or not, must be at least 10 feet wide on retail or mixed-use blocks and at least 5 feet wide on all other blocks. NPDp1, NPDc1

- 70% of new nonresidential and/or mixed-use streets within the project are designed for a target speed of no more than 25 mph. NPDc1

Site-Wide Sustainability Transit



Site-Wide Sustainability Socioeconomic



OVERVIEW

The Socioeconomic layer of the Sustainability Framework operates under the principle that development with clearly hierarchical circulation corridors that reinforce pre-existing patterns of travel across the site create the backbone off of which 24/7 activity thrives and connects to surrounding communities. Humans are creatures of habit and every site has pre-existing conditions of engagement already established by its neighbors. Capitalizing on these habits makes the flows of people across the site more convenient and likely. Sustained 24/7 activity across the site ensures a thriving and sustained economic market on site. Sustained 24/7 activity across the site creates a sense of place and vibrancy important to a perception of a thriving development.

Los Angeles has a sub-tropical climate that is conducive to year-round utilization of outdoor space. The site is designed to capitalize on access to sunlight and fresh air that inspire population of public spaces. Leveraging existing initiatives and surrounding development plans synergistically helps to ensure that the sum is greater than the parts.



SOCIAL SPACE

RECOMMENDED TO METRO AND DEVELOPERS:

- Incentivize diversity of services throughout the Master Plan. NPDc3, NPDc9, NPDc10

REQUIRED:

- Design the development parcel such that functional entries to the building occur at an average of 75 feet or less along nonresidential or mixed-use buildings or blocks. NPDc1
- Locate and/or design the project such that a civic or passive-use space, such as a square, park, paseo, or

- plaza, at least 1/6 acre in area lies within a 1/4-mile walk distance of 90% of planned and existing dwelling units and nonresidential building entrances. NPDc9
- Locate and/or design the project such that the median size of civic or passive-use spaces within and/or contiguous to the project is at least 1/2 acre. NPDc9
- Locate and/or design the project so that a publicly accessible outdoor recreation facility at least 1 acre in area, or a publicly accessible indoor recreational facility of at least 25,000 square feet, lies within a 1/2-mile walk distance of 90% of new and existing dwelling units and nonresidential building entrances. NPDc10



SKILLS AND TRAINING

RECOMMENDED TO METRO AND DEVELOPERS:

- Work with developers to provide skills and training opportunities to incentivize commercial and residential mix throughout the Master Plan. SLLc5, NPDc



REVENUE AND OCCUPANCY

REQUIRED:

- All ground-level retail, service, and trade uses that face a public space have clear glass on at least 60% of their façades between 3 and 8 feet above grade. NPDc1
- If a façade extends along a sidewalk, no more than 40% of its length or 50 feet, whichever is less, is blank. NPDc1
- Any ground-level retail, service, or trade windows must be kept visible (unshuttered) at night. NPDc1



CONNECTIVITY

REQUIRED:

- Design and/or locate the project such that a through-

- street and/or nonmotorized right-of-way intersects or terminates at the project boundary at least every 400 feet or at existing abutting street intervals and intersections, whichever is the shorter distance.
- Locate and/or design the project such that its internal connectivity and/or the connectivity within a 1/4-mile distance of the project boundary falls within one of the ranges. NPDp3, NPDc6

RECOMMENDATION FOR METRO:

- Incentivize diversity of services throughout the Master Plan. NPDc3



DENSITY

REQUIRED:

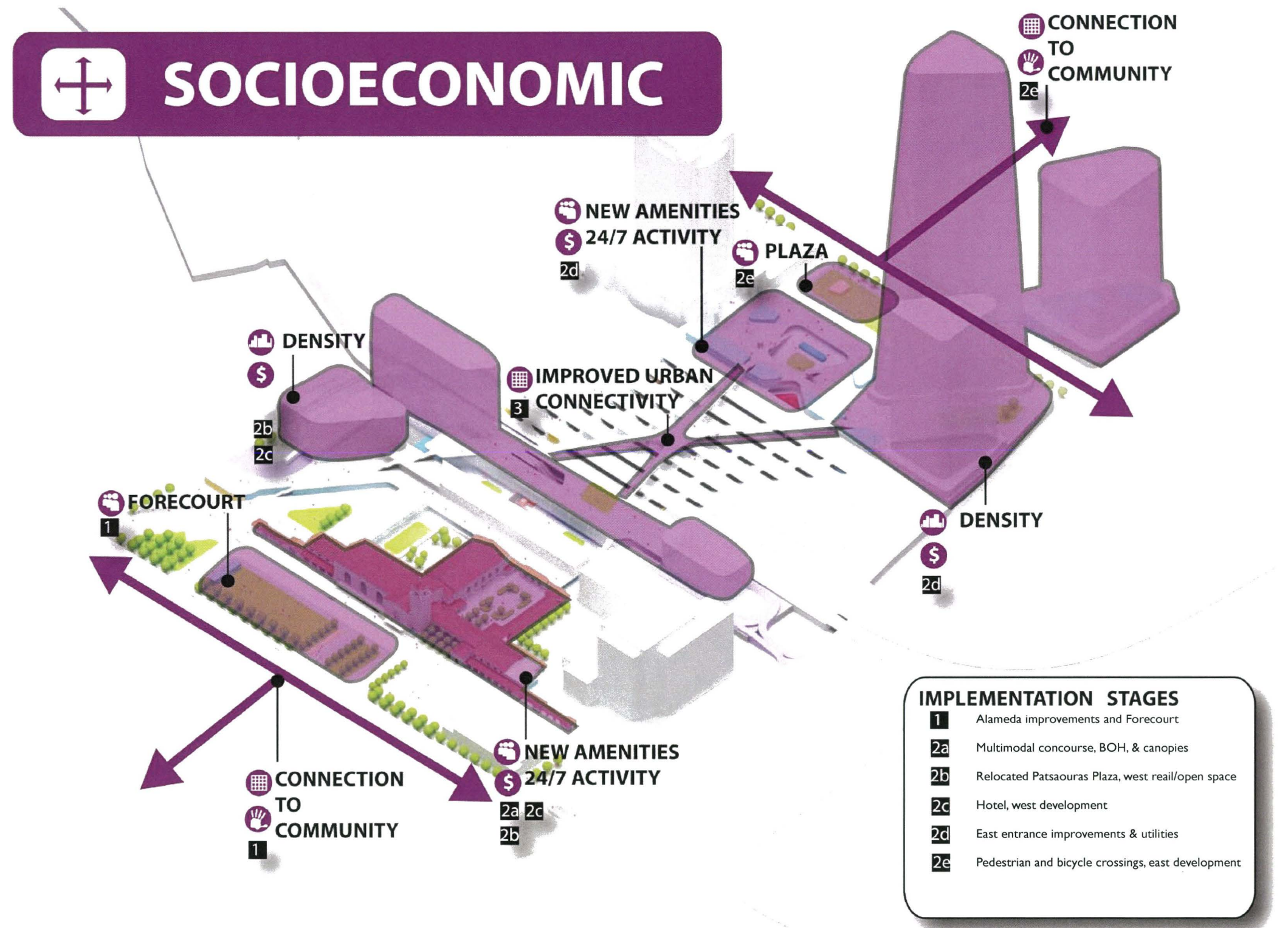
- Design and build the project to achieve the following densities NPDp2, NPDc2:
 - Residential- Dwelling Unit/acre is greater than or equal to 18.
 - Non residential- Floor Area Ratio is greater than or equal to 1.25.



EQUITY AND DIVERSITY

RECOMMENDATION:

- Include a proportion of new rental and/or for-sale dwelling units priced for households earning below the area median income (AMI) in the City of Los Angeles. NPDc4
- Include a sufficient variety of housing sizes and types in the project such that the total variety of planned and existing housing within the project achieves a Simpson Diversity Index score greater than 0.5. NPDc4



Site-Wide Sustainability Identity



OVERVIEW

The Identity layer of the Sustainability Framework is crafted under the understanding that committed, present transit-users and employees perpetuate pride and care necessary for a long term thriving development. Neighborhood or district identification creates a sense of ownership over a development and greater care for its built form. Built form can be tailored to a site and climate to maximize energy performance and passive opportunities. Developments that encourage a variety of users create a diverse economic market for business development. A whole development does not have to meet aggressive sustainability targets to make significant contributions to environmental betterment. A continuum of commitment can exist throughout a master plan with one district being zero carbon and another having more flexible metrics of compliance. This variety works in concert with goals of a mixed-use development to attract a variety of residents.



LAND USE AND ECOLOGY

REQUIRED:

- 100% use of native or adaptive plantings. GIBc4
- Create and implement an erosion and sedimentation control plan for all new construction activities associated with the project. GIBp4
- Complete brownfield remediation. SLLc2
- No disturbance of slopes over 15% for any development project. SLLc6
- Establish covenants, conditions, and restrictions (CC&R) or other forms of deed restrictions that do not prohibit the growing of produce in project areas, including greenhouses, any portion of residential front, rear, or side yards; or balconies, patios, or rooftops. Greenhouses but not gardens may be prohibited in front yards that face the street. NPDc13



BUILT FORM

- Minimum of LEED Silver certification for all buildings. GIBp1, GIBc1



OPEN SPACE

REQUIRED:

- Design and build the project to provide street trees on both sides of at least 60% of new and existing streets within the project and on the project side of bordering streets, between the vehicle travel way and walkway, at intervals averaging no more than 40 feet (excluding driveways and utility vaults). NPDc14
- Trees or other structures provide shade over at least 40% of the length of sidewalks on streets within or contiguous to the project. Trees must provide shade within ten years of landscape installation. NPDc14
- For all development parcels, use any combination of the following strategies for 50% of the nonroof site hardscape: (a) Provide shade from open structures, (b) Use paving materials with an SRI of at least 29, (c) Install an open-grid pavement system that is at least 50% pervious, (d) Provide shade from tree canopy (within ten years of landscape installation). GIBc9
- For all development parcels, for a minimum of 75% of the roof area, use roofing materials that have an SRI equal to or greater than 78 for roofs equal to or less than 2:12 or 29 for slopes greater than 2:12 or install a vegetated ("green") roof for at least 50% of the roof. GIBc9



COMMUNITY INVOLVEMENT

REQUIRED:

- For all development projects, meet with adjacent property owners, residents, business owners, and workers; local planning and community development officials; and any current residents or workers at the project site to solicit and document their input on the proposed project prior to commencing a design. NPDc12

RECOMMENDATION:

- Conduct a design charette or interactive workshop of at least two days and open to the public that includes, at a minimum, participation by a representative group of nearby property owners, residents, business owners, and workers in the preparation of conceptual project plans and drawings. NPDc12

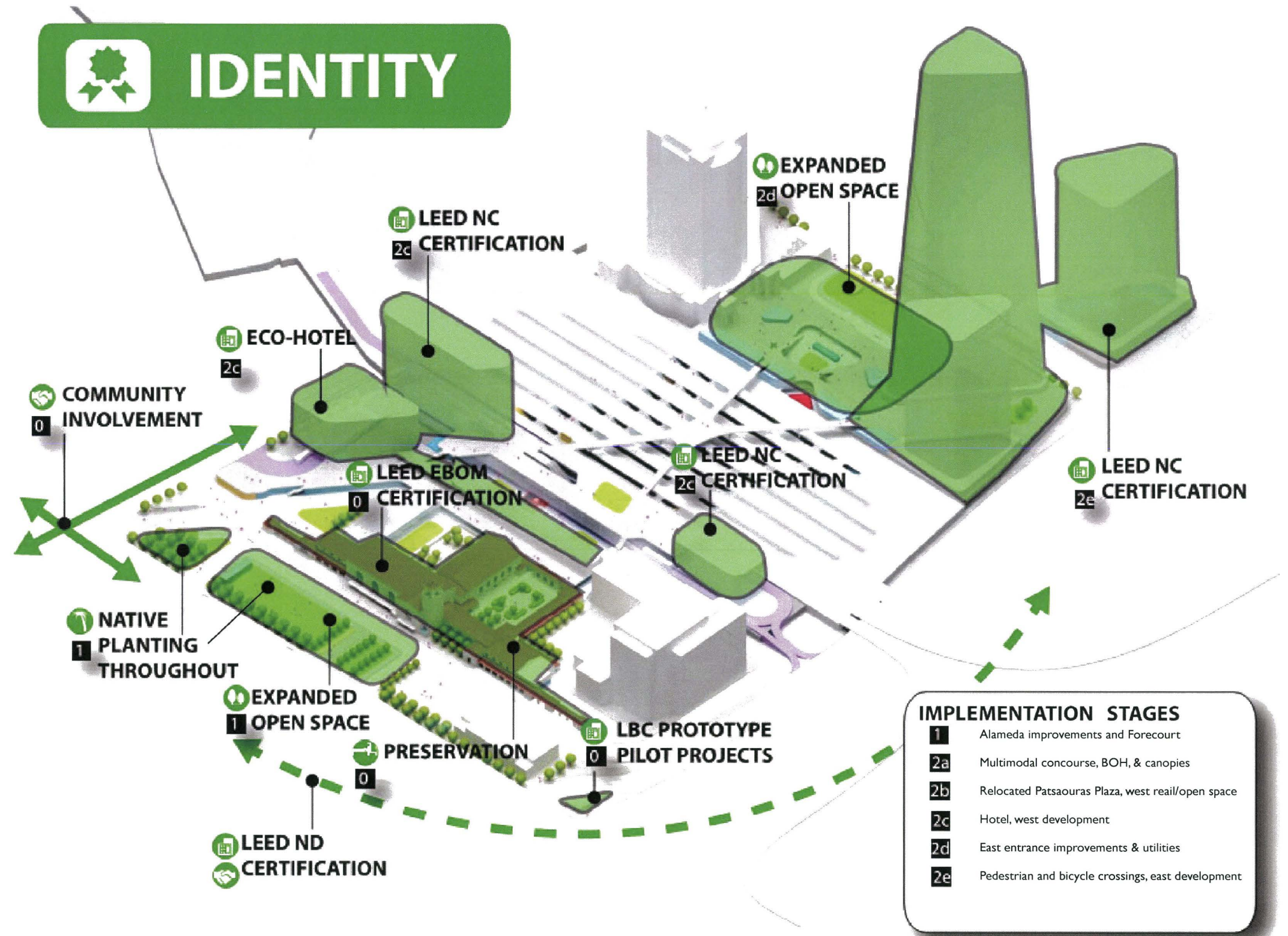


HISTORIC AND CULTURAL

REQUIRED:

- Do not demolish any historic buildings, or portions thereof, or alter any cultural landscapes as part of the project. GIBc6

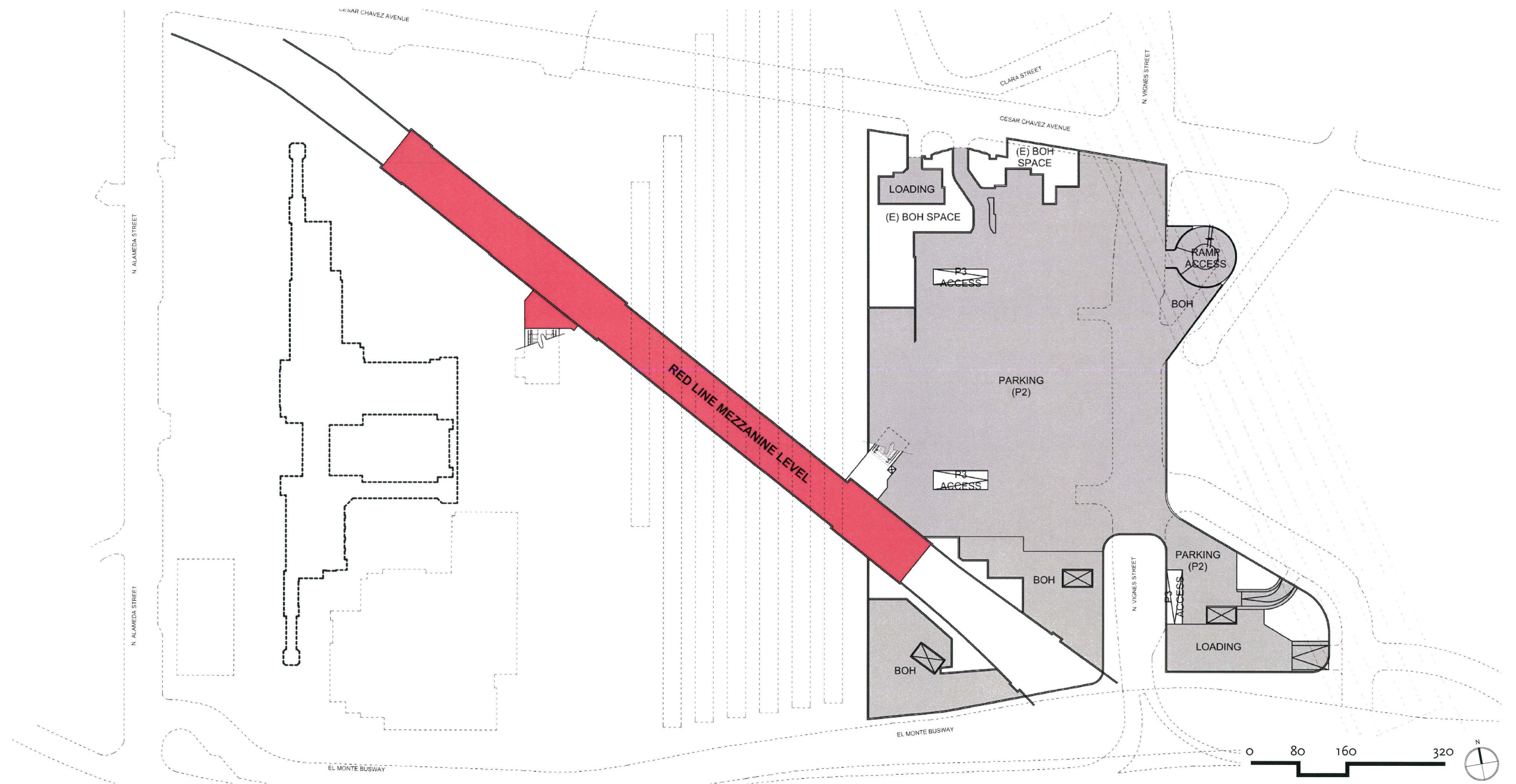
Site-Wide Sustainability Identity



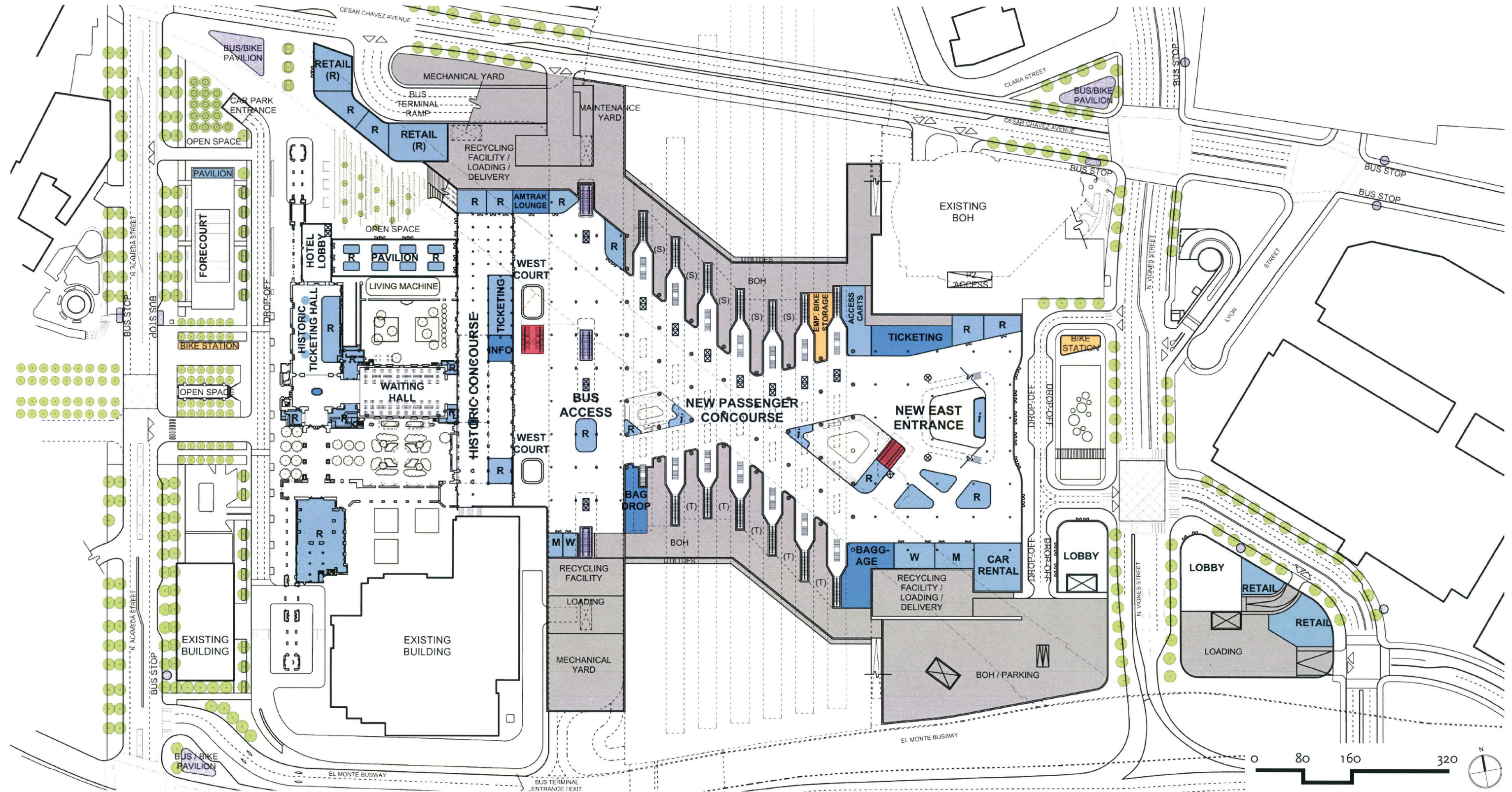
7 Appendix

- A-1. Architectural Drawings
- A-2. Phasing Plans
- A-3. Development Envelope
- A-4. Parking
- A-5. Site-wide Sustainability
- A-6. Forecourt Concept Design

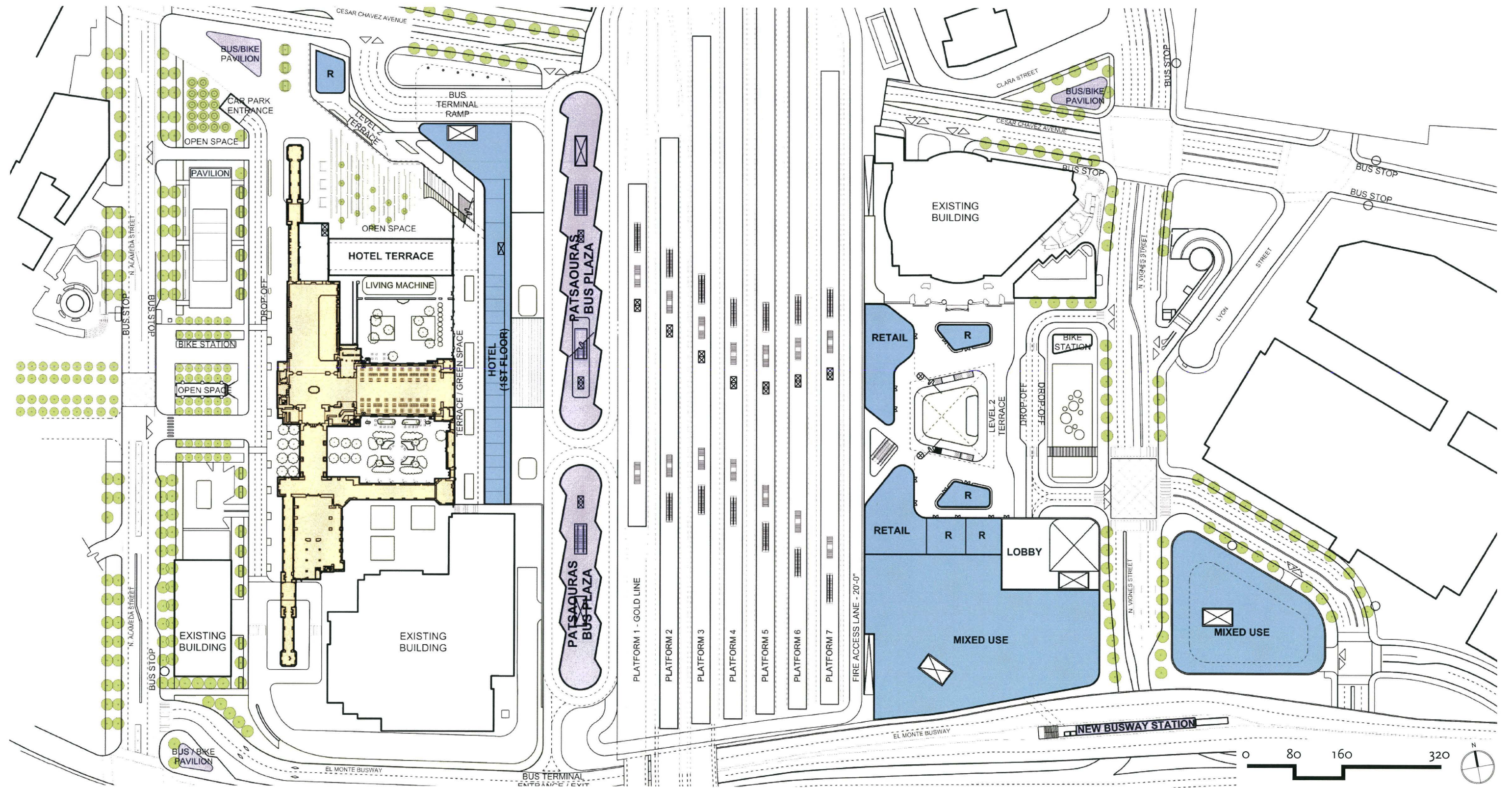
A-1 Plan (Pre-HSR) Mezzanine Level



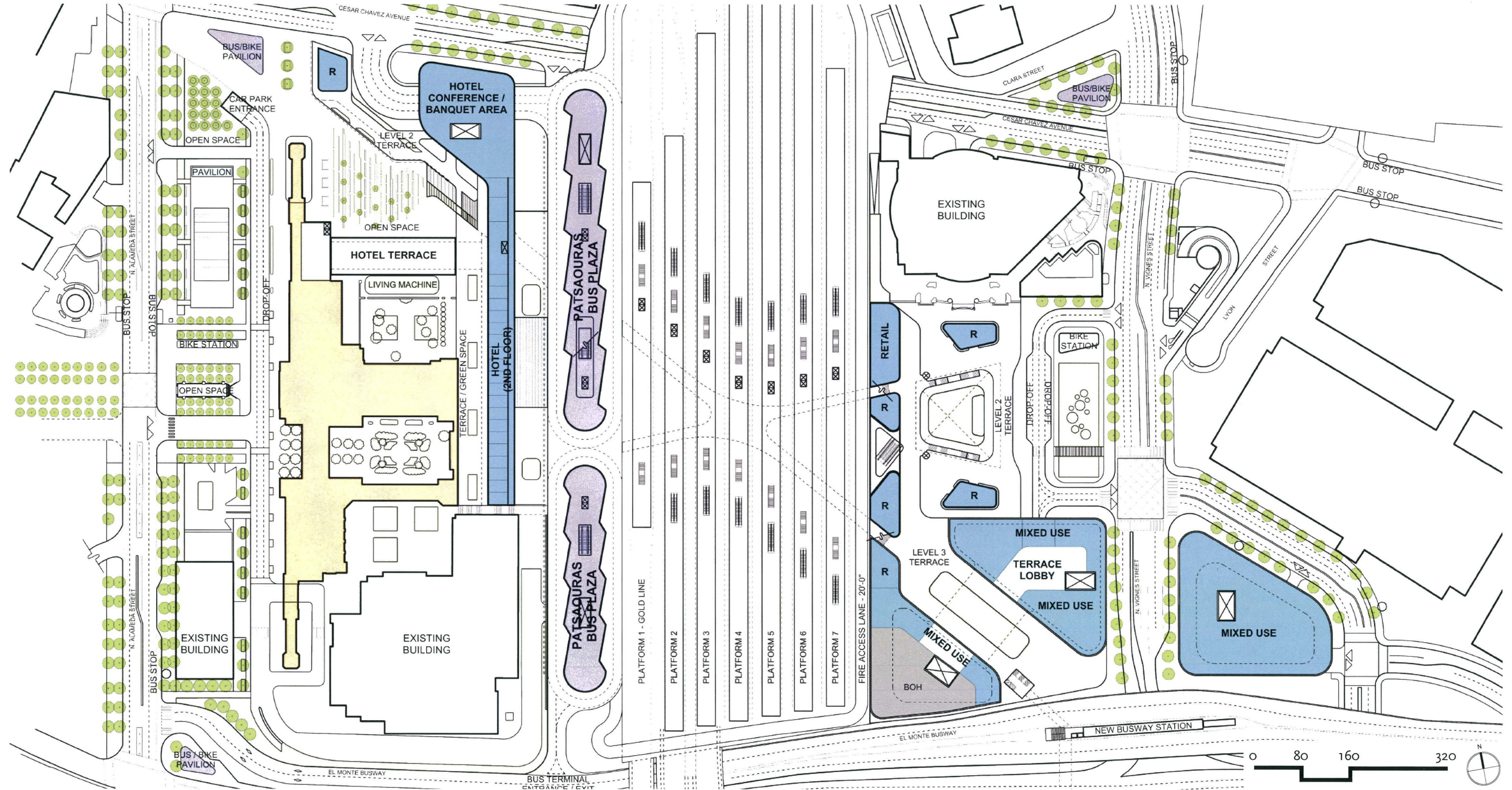
A-1 Plan (Pre-HSR) Concourse Level



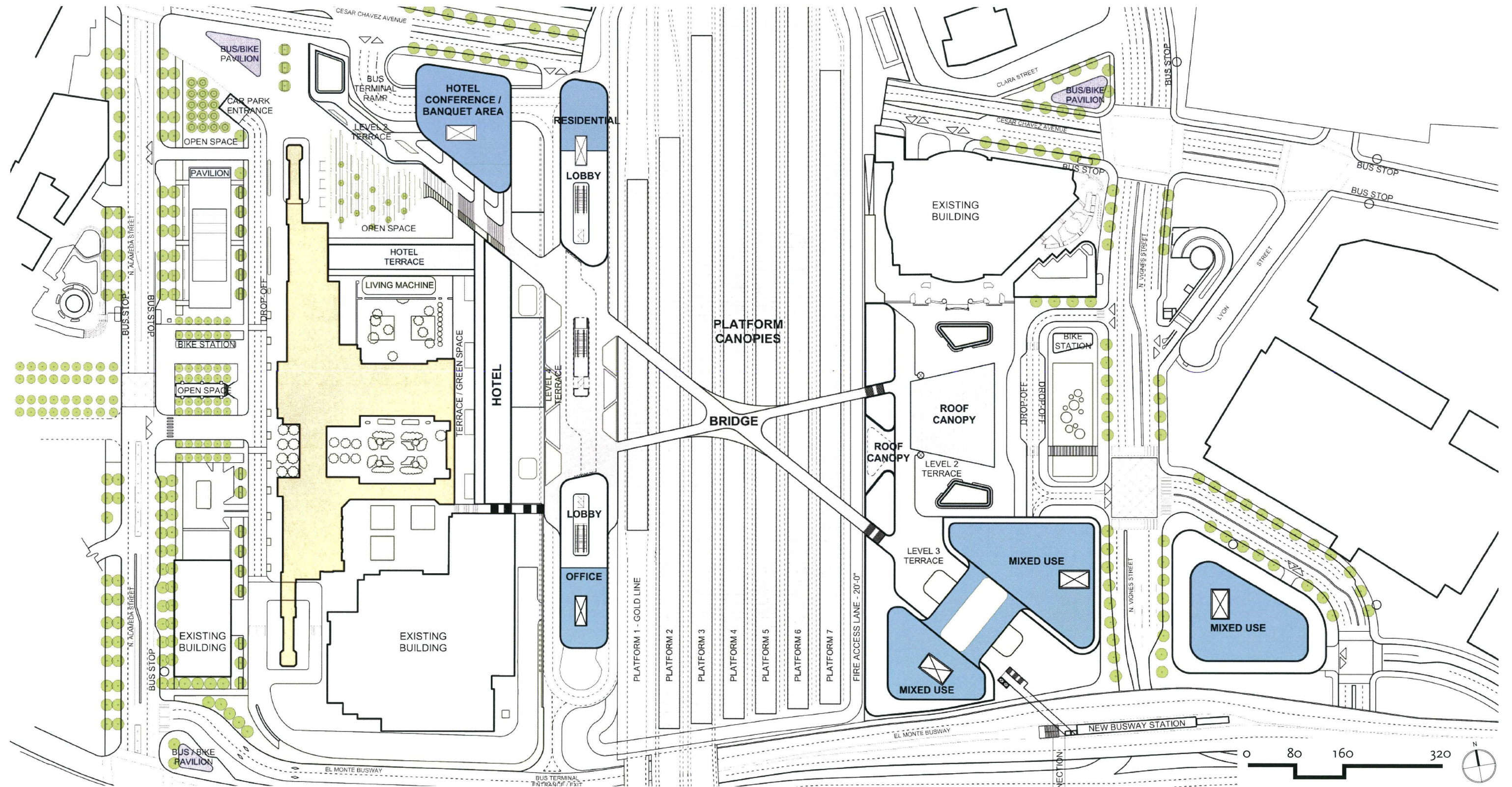
A-1 Plan (Pre-HSR) Platform Level



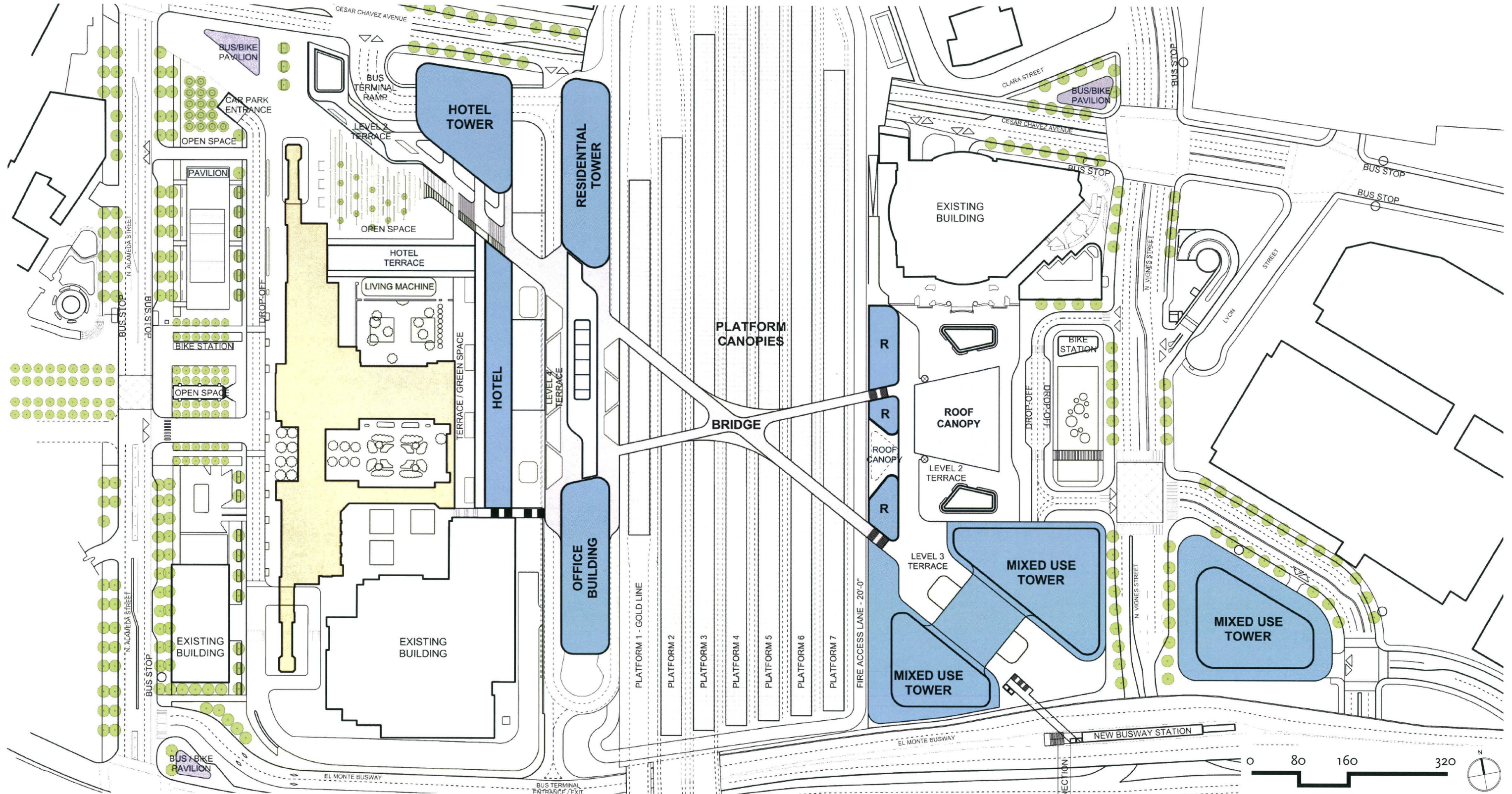
A-1 Plan (Pre-HSR) Level 3



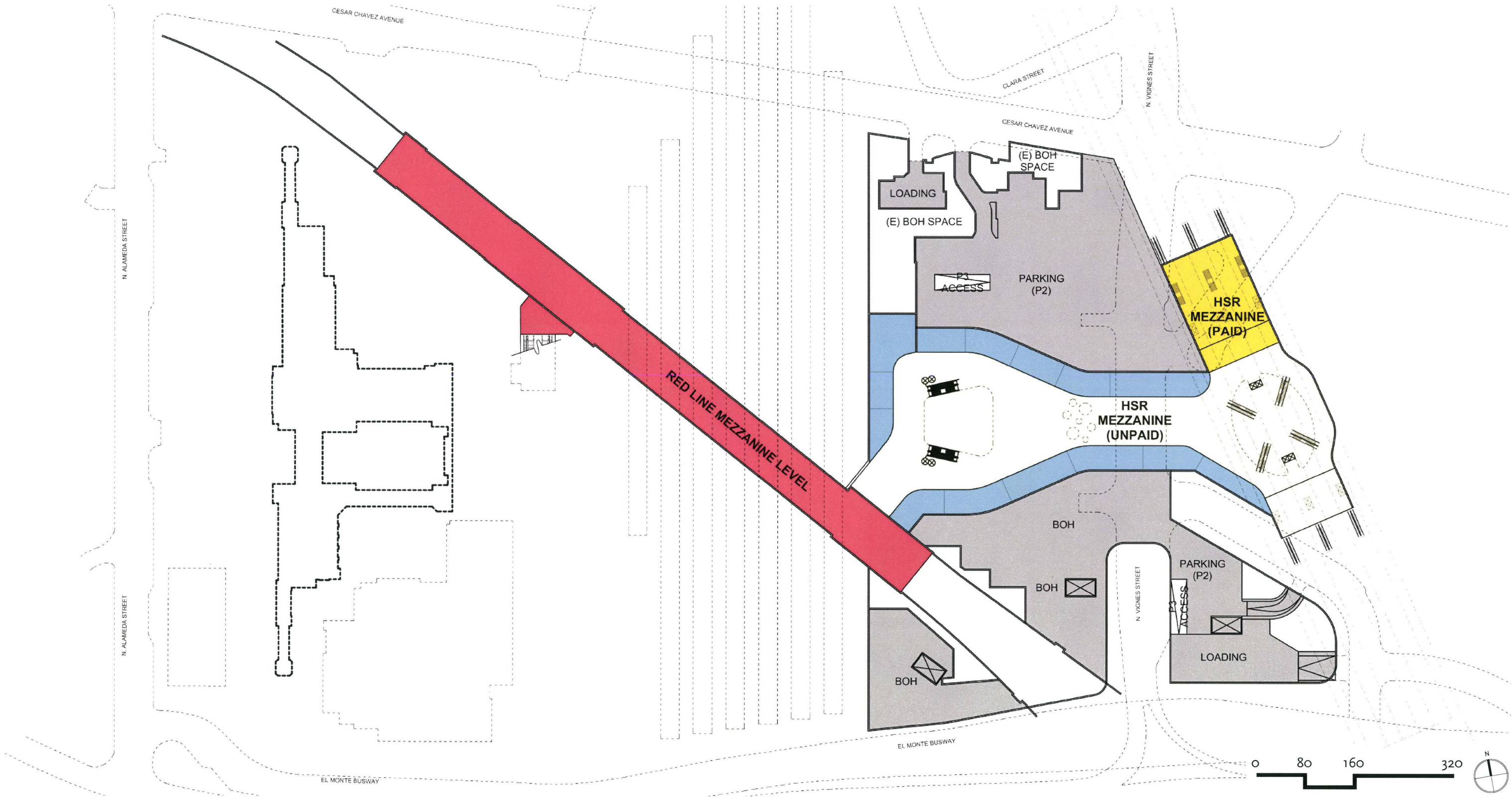
A-1 Plan (Pre-HSR) Level 4



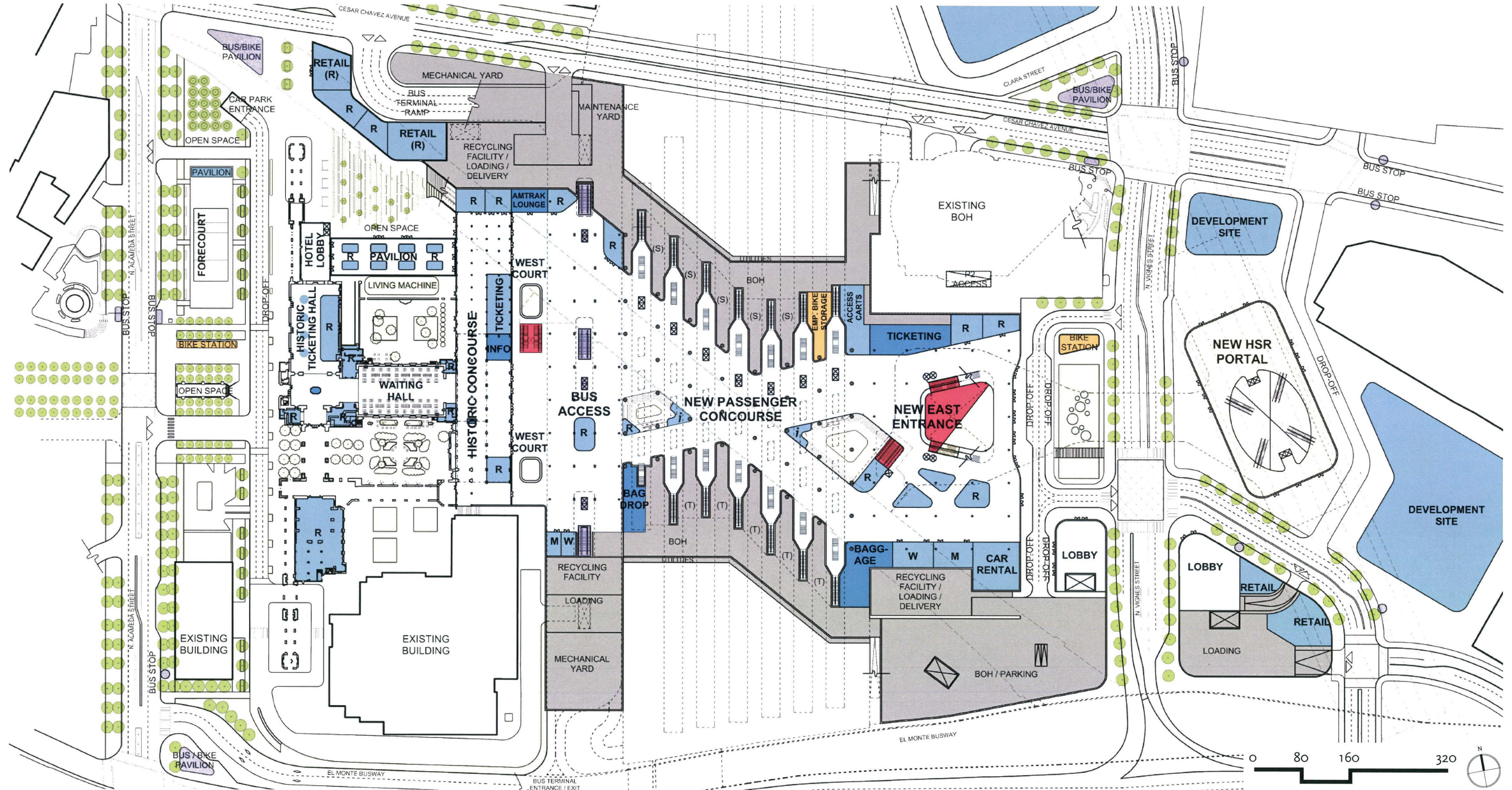
A-1 Plan (Pre-HSR) Roof Level



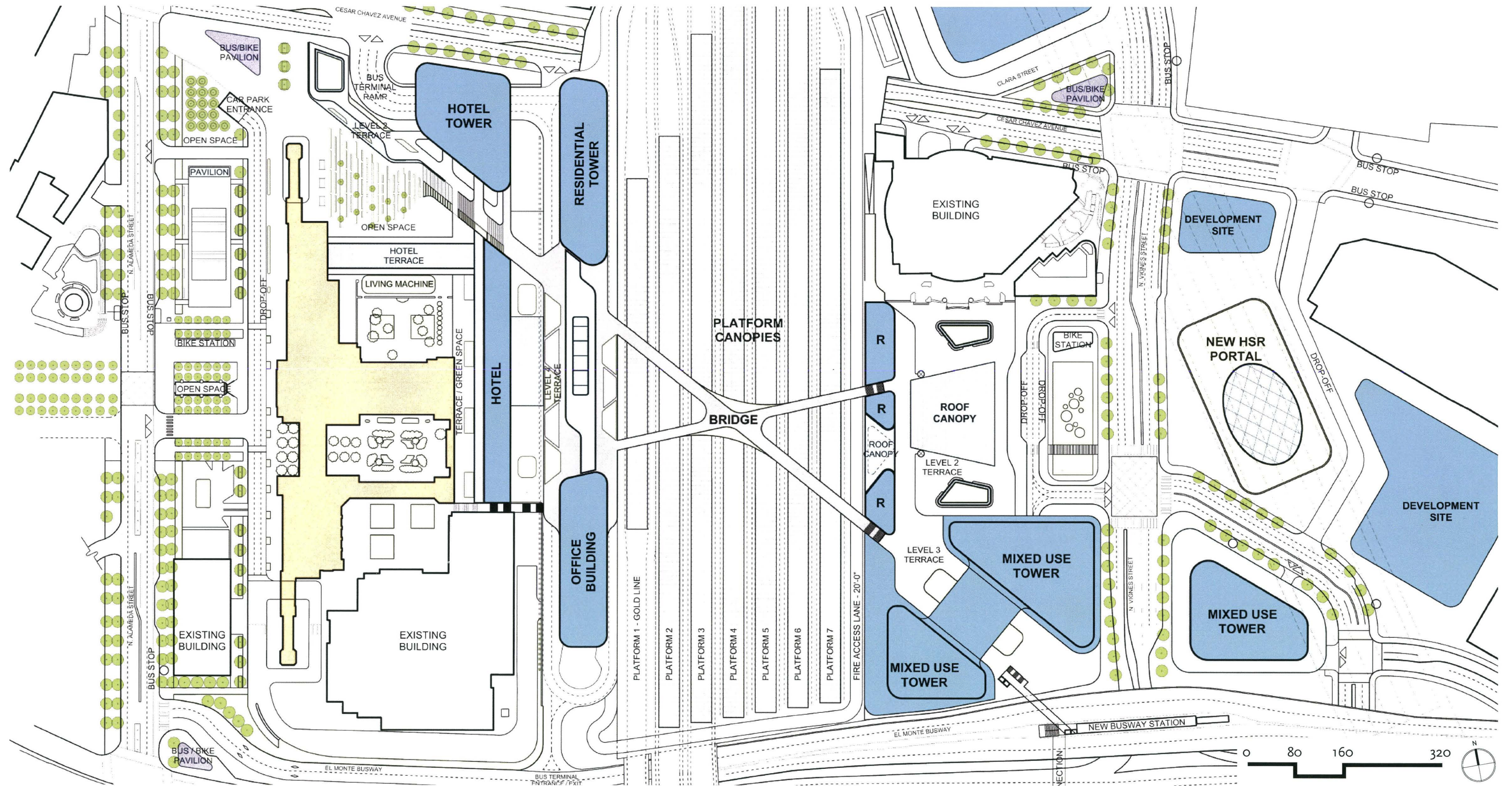
A-1 Plan with HSR Mezzanine Level



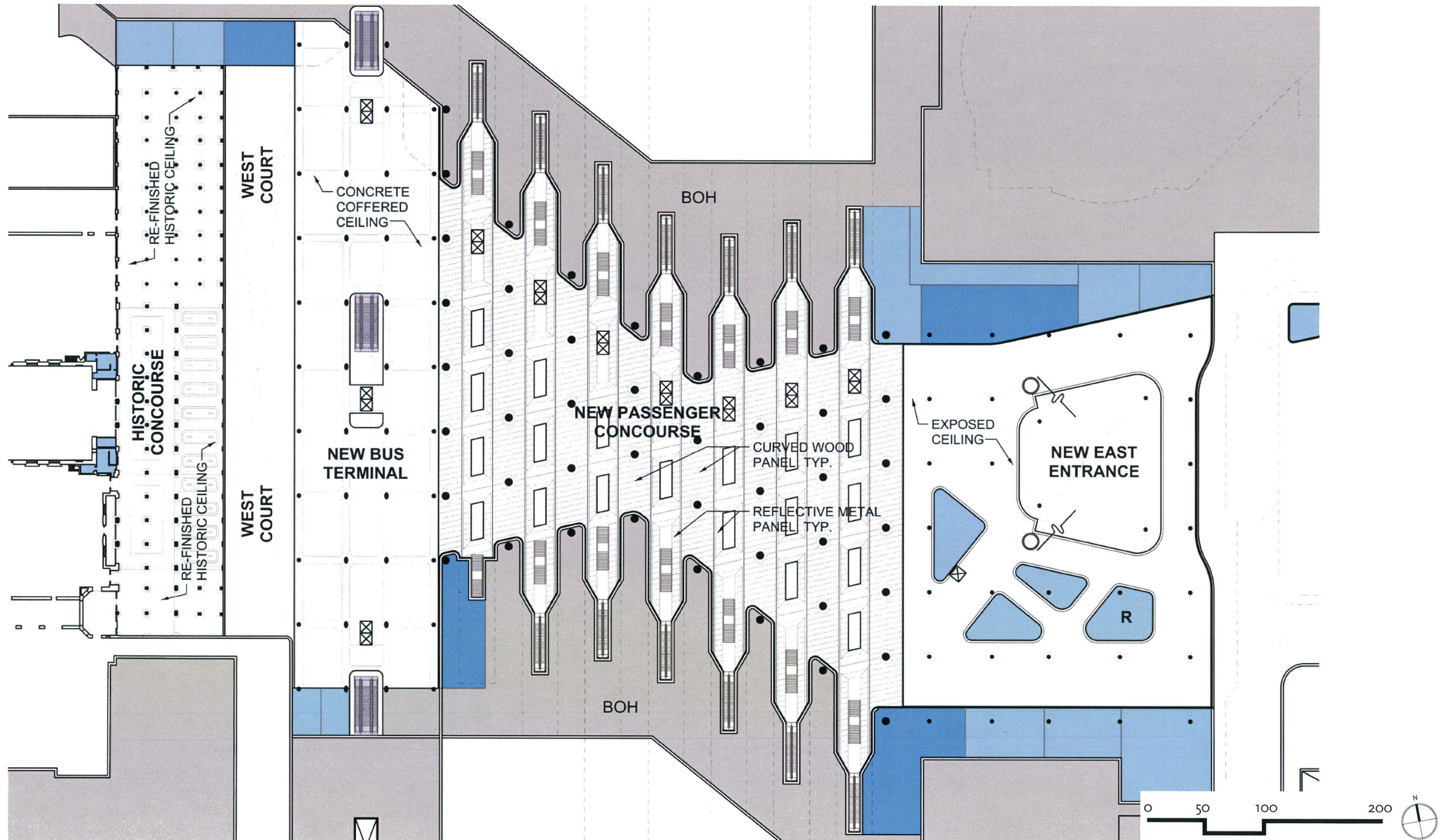
A-1 Plan with HSR Concourse Level



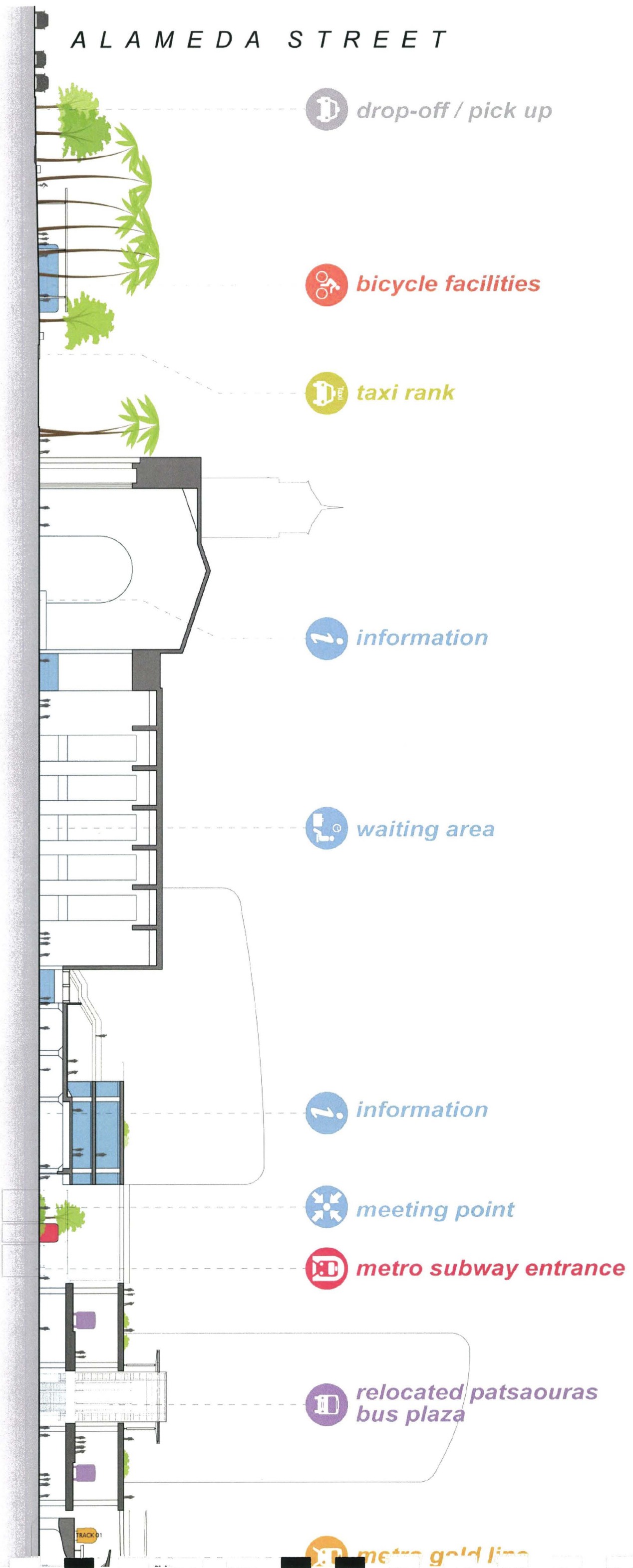
A-1 Plan with HSR Roof Level

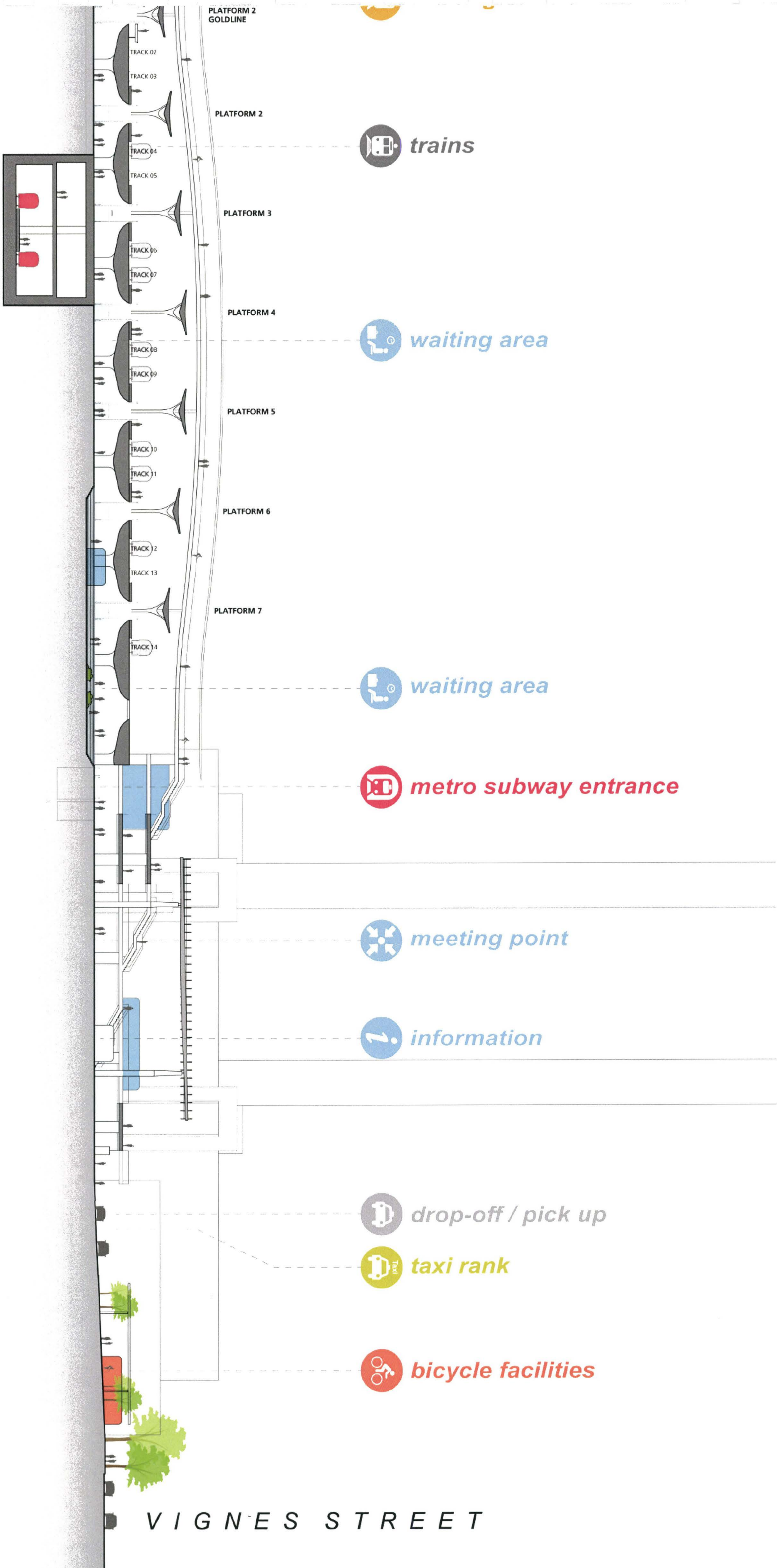


A-1 RCP Plan Concourse Level

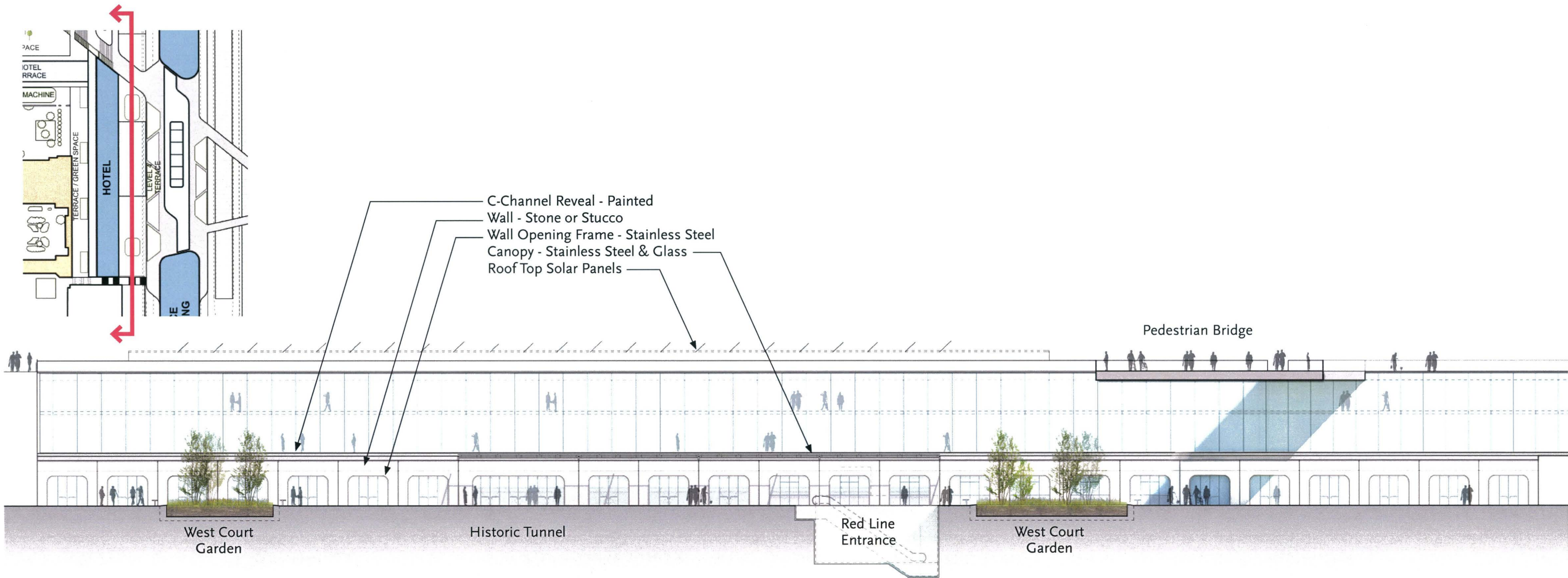


A-1 Section
East-West

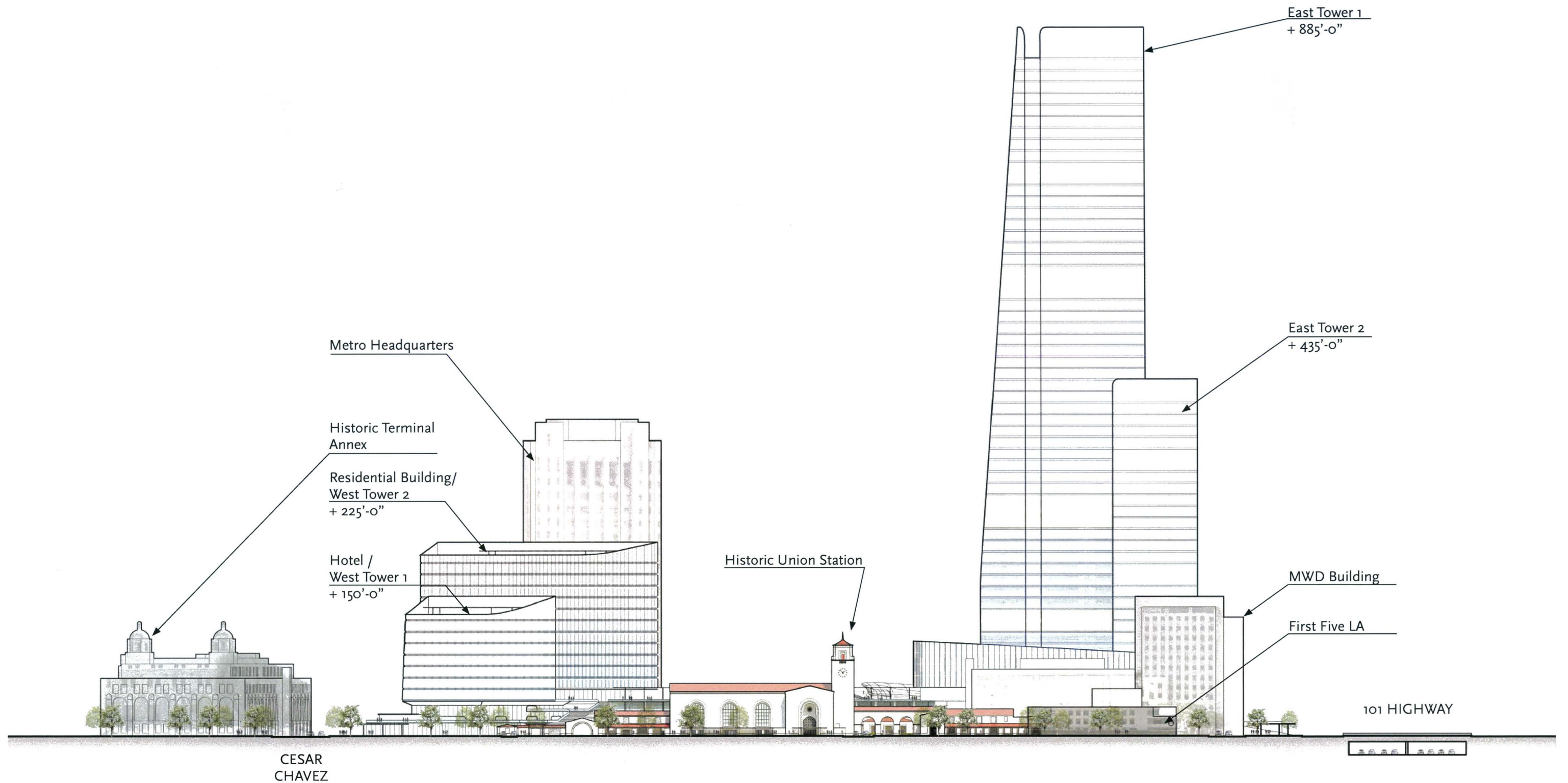




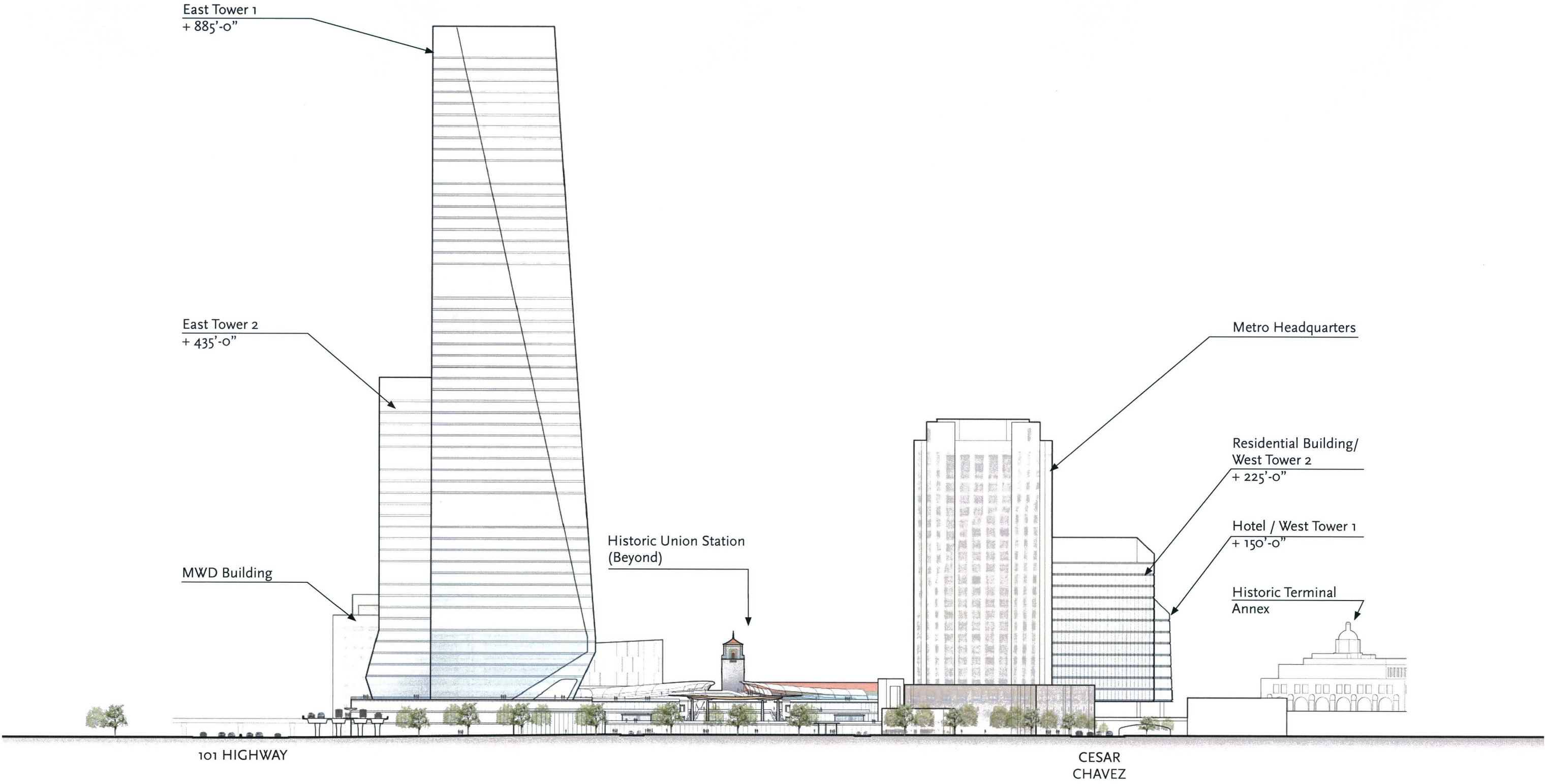
A-1 Section North/South Section Through West Court Historic Concourse East Façade



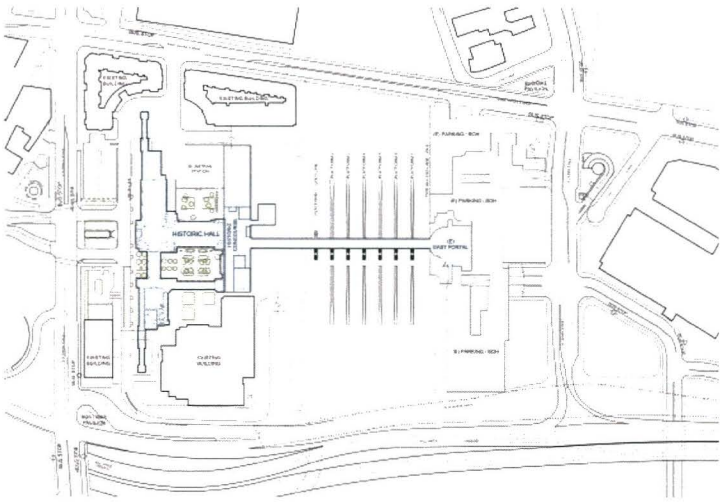
A-1 Elevation West Elevation Alameda Street



A-1 Elevation East Elevation Vignes Street



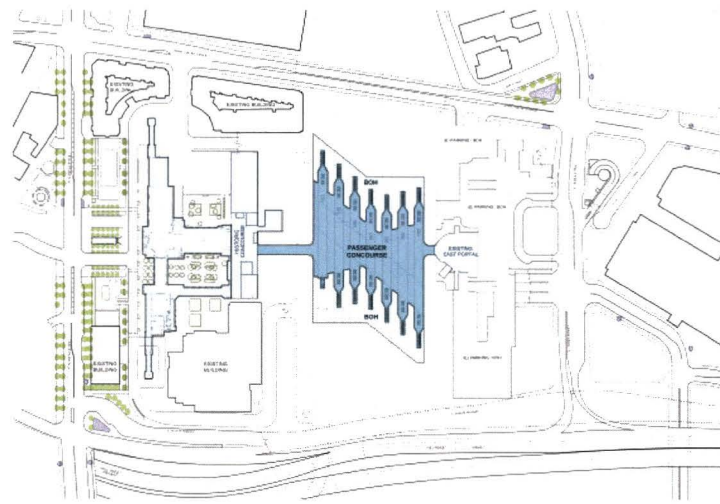
A-2 Phasing Plan Phase Existing -P2B



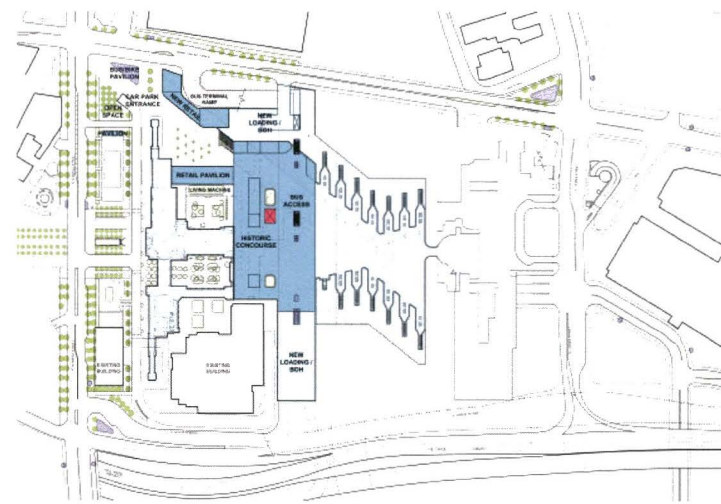
EXISTING - CONCOURSE LEVEL



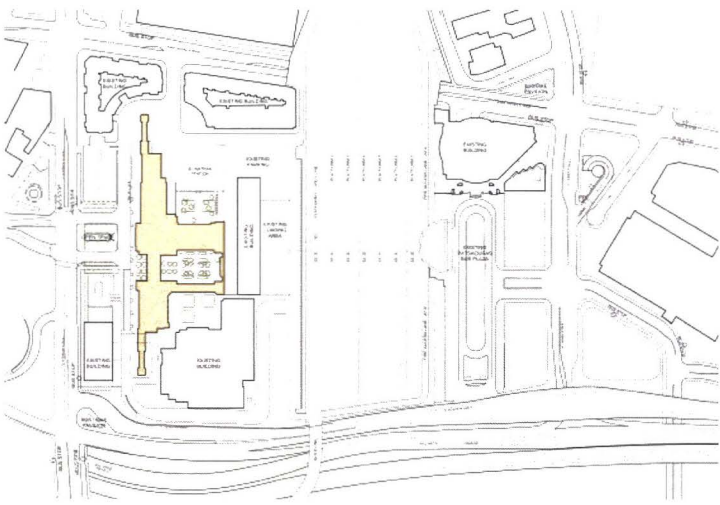
PHASE 1



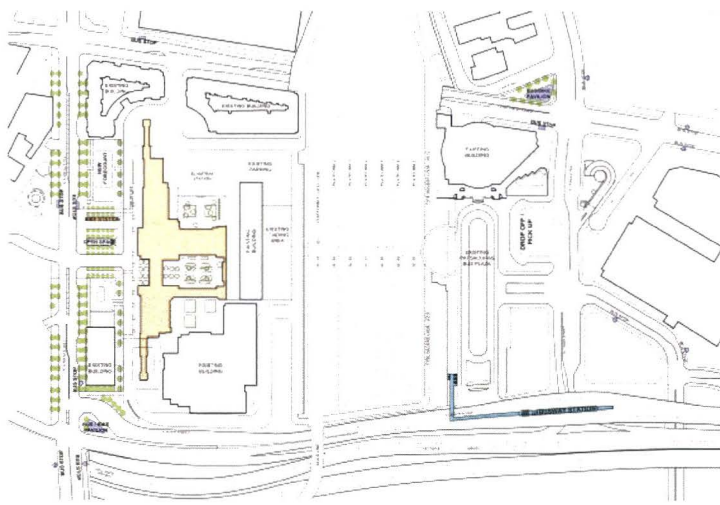
PHASE 2A



PHASE 2B



EXISTING - ROOF LEVEL



PHASE 1

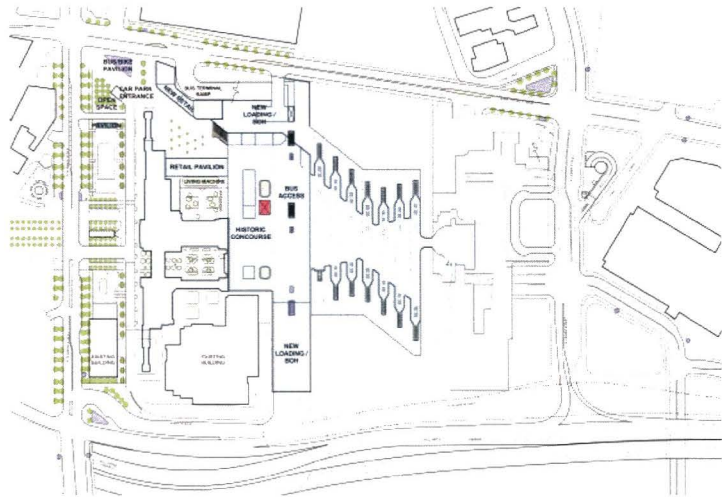


PHASE 2A

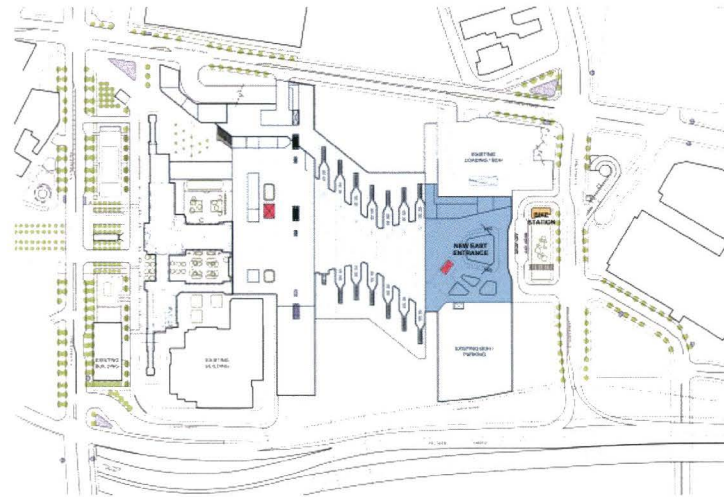


PHASE 2B

A-2 Phasing Plan Phase P2C - P3



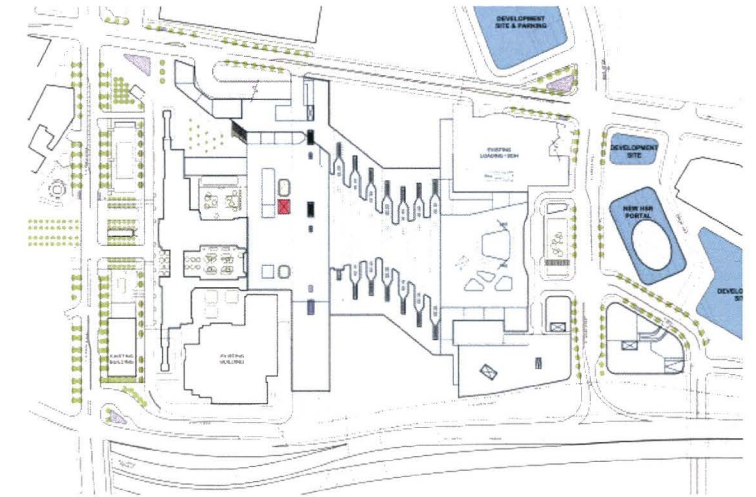
PHASE 2C



PHASE 2D



PHASE 2E/2F



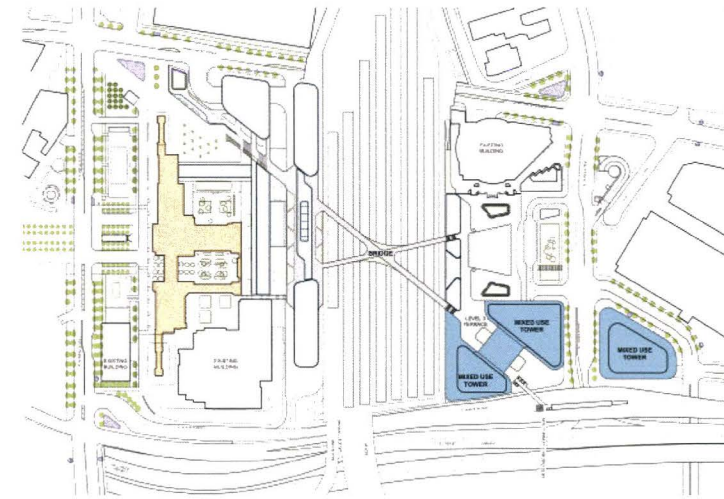
PHASE 3



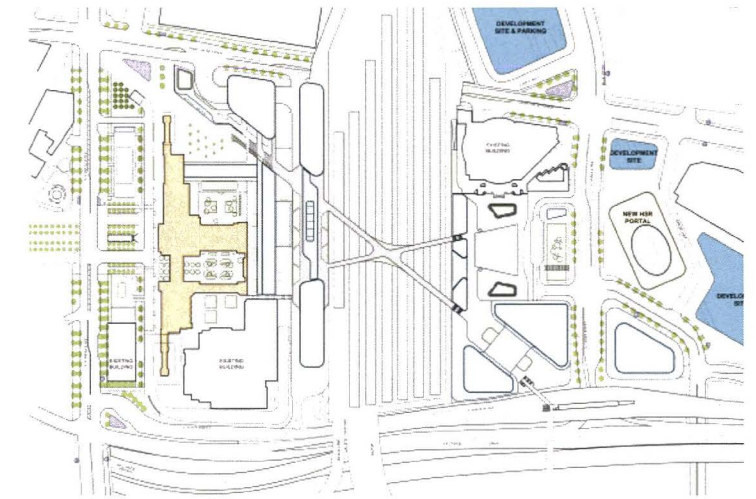
PHASE 2C



PHASE 2D

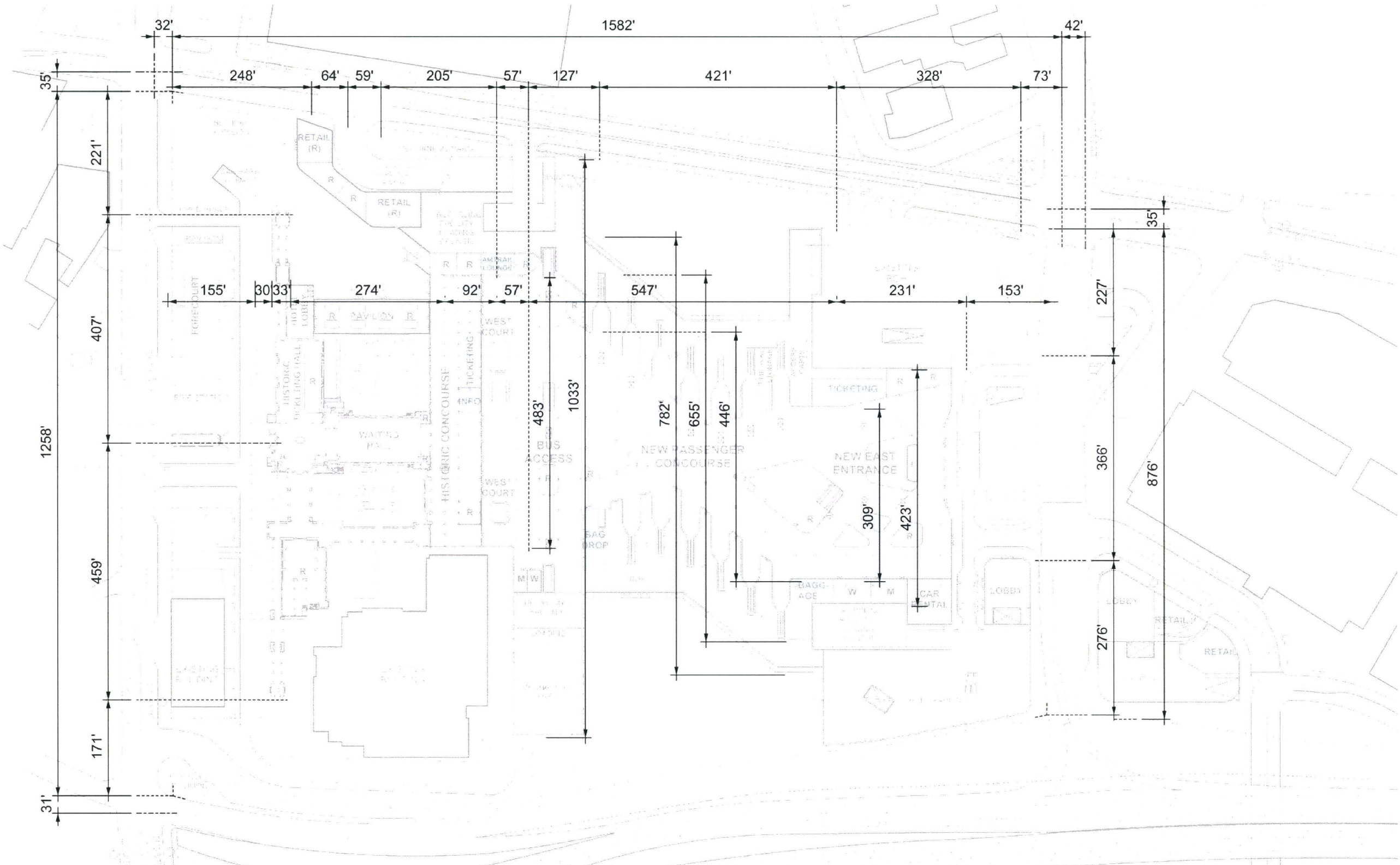


PHASE 2D/2F

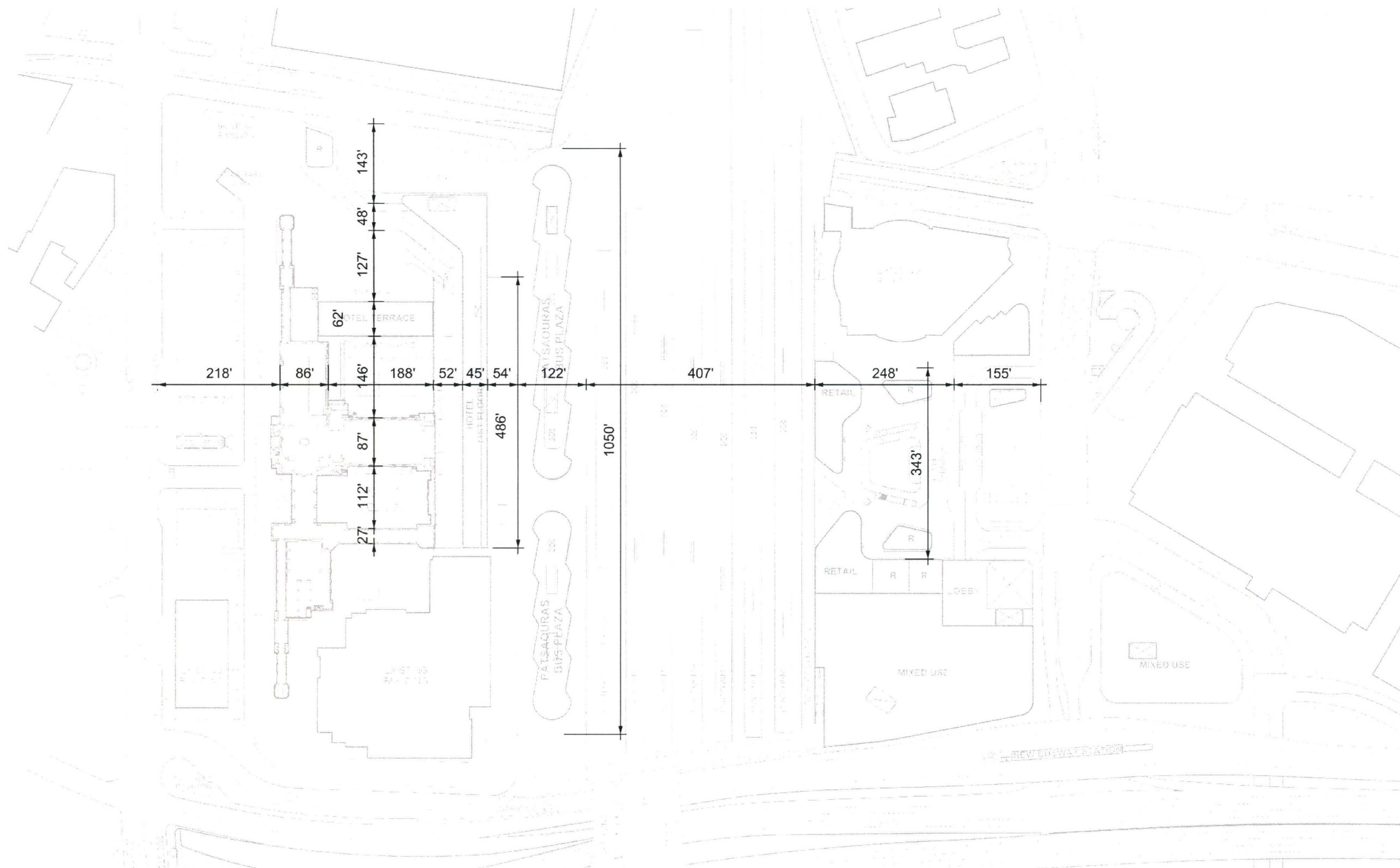


PHASE 3

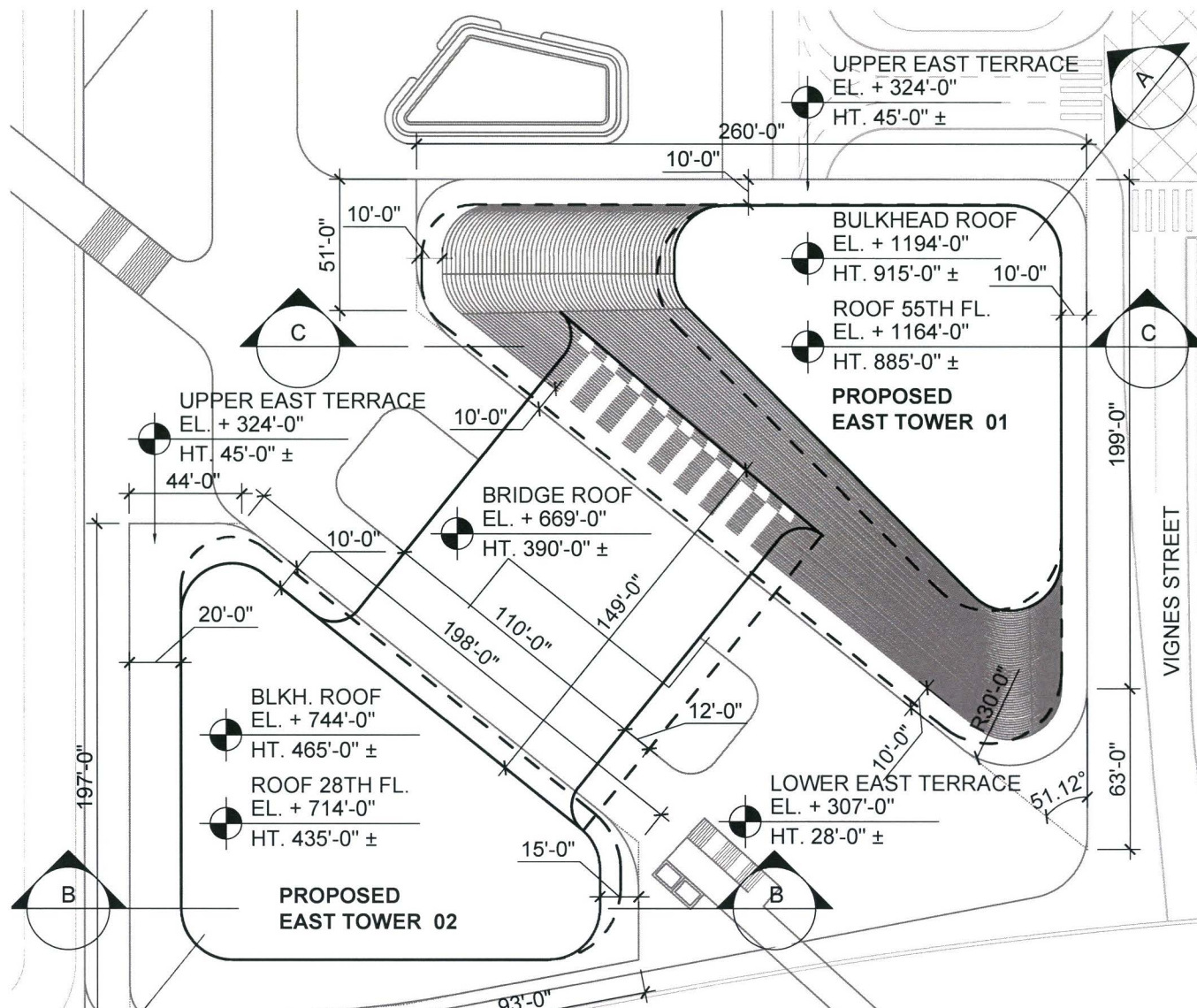
A-3 Dimension Plan Concourse Level



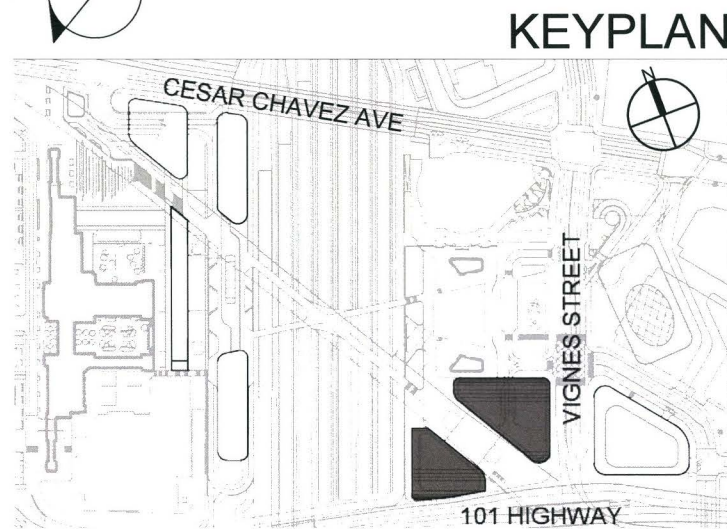
A-3 Dimension Plan Platform Level



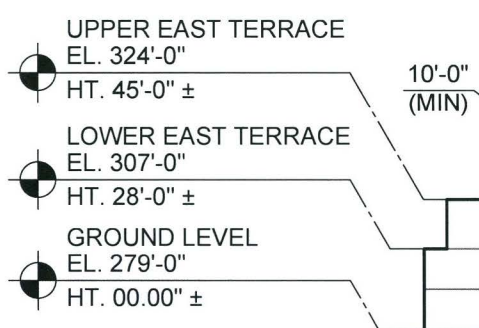
A-3 Plot Plan East Tower 01 & 02



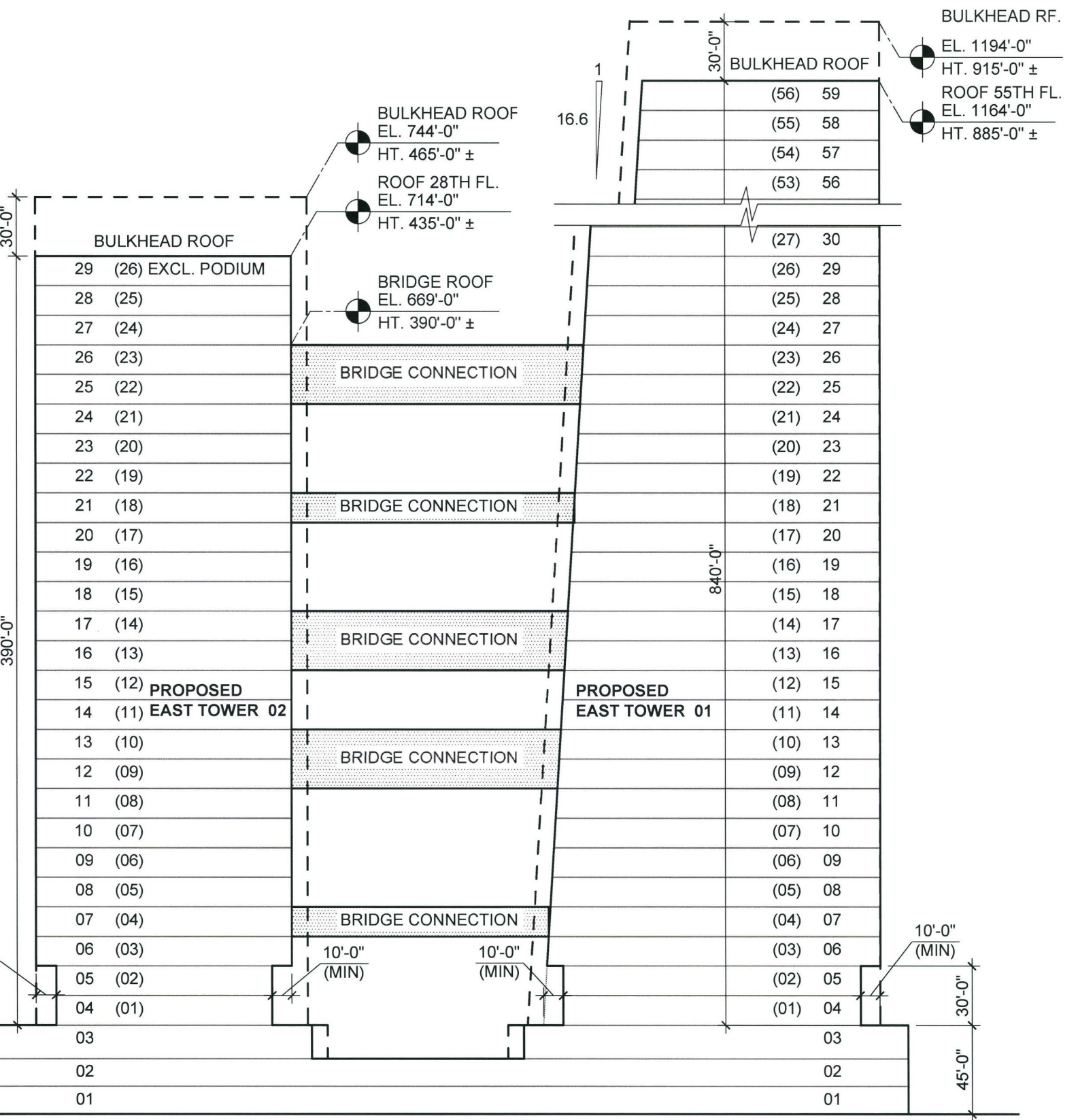
1 PLOT PLAN
SCALE: 1" = 64'-0"



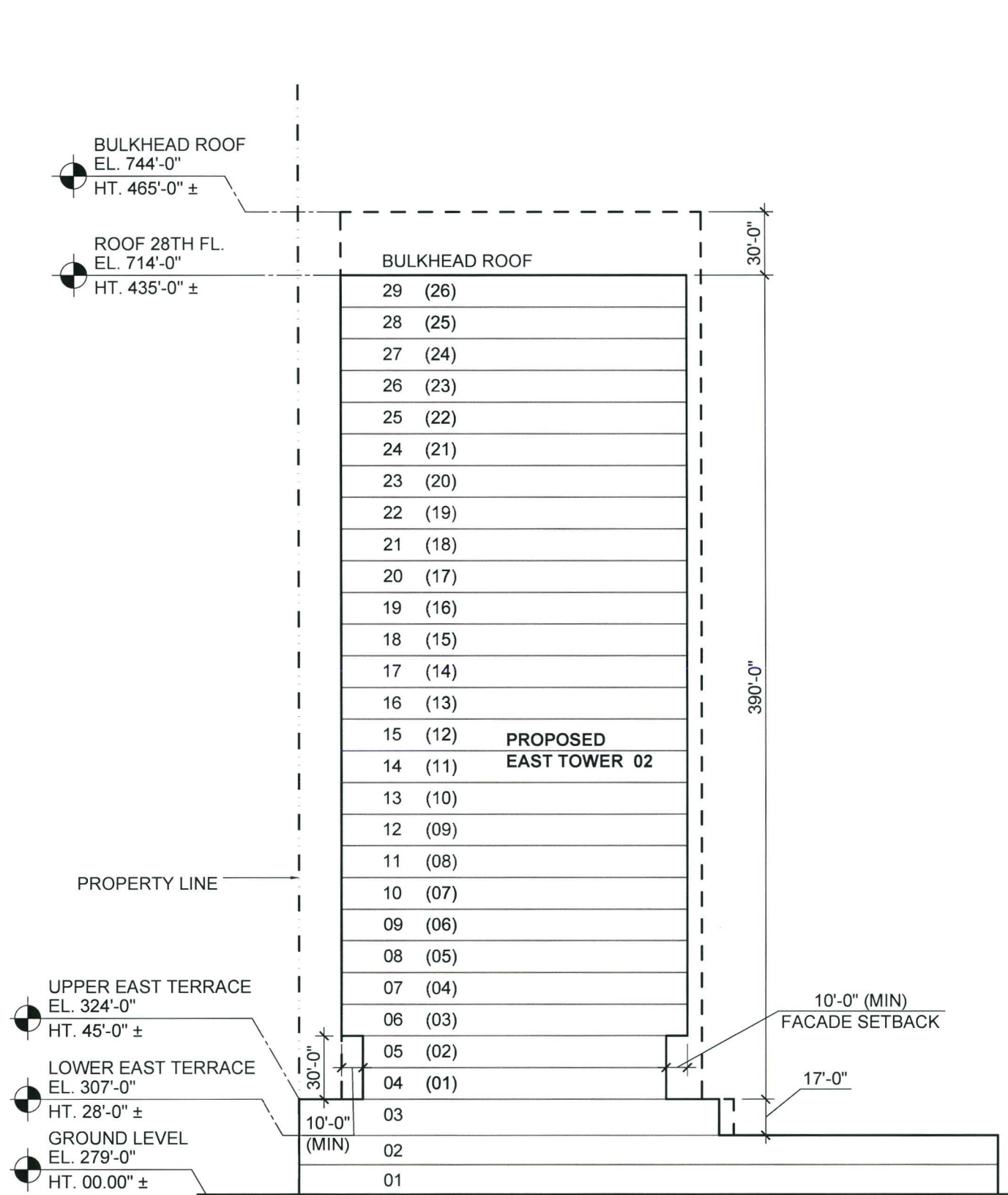
KEYPLAN



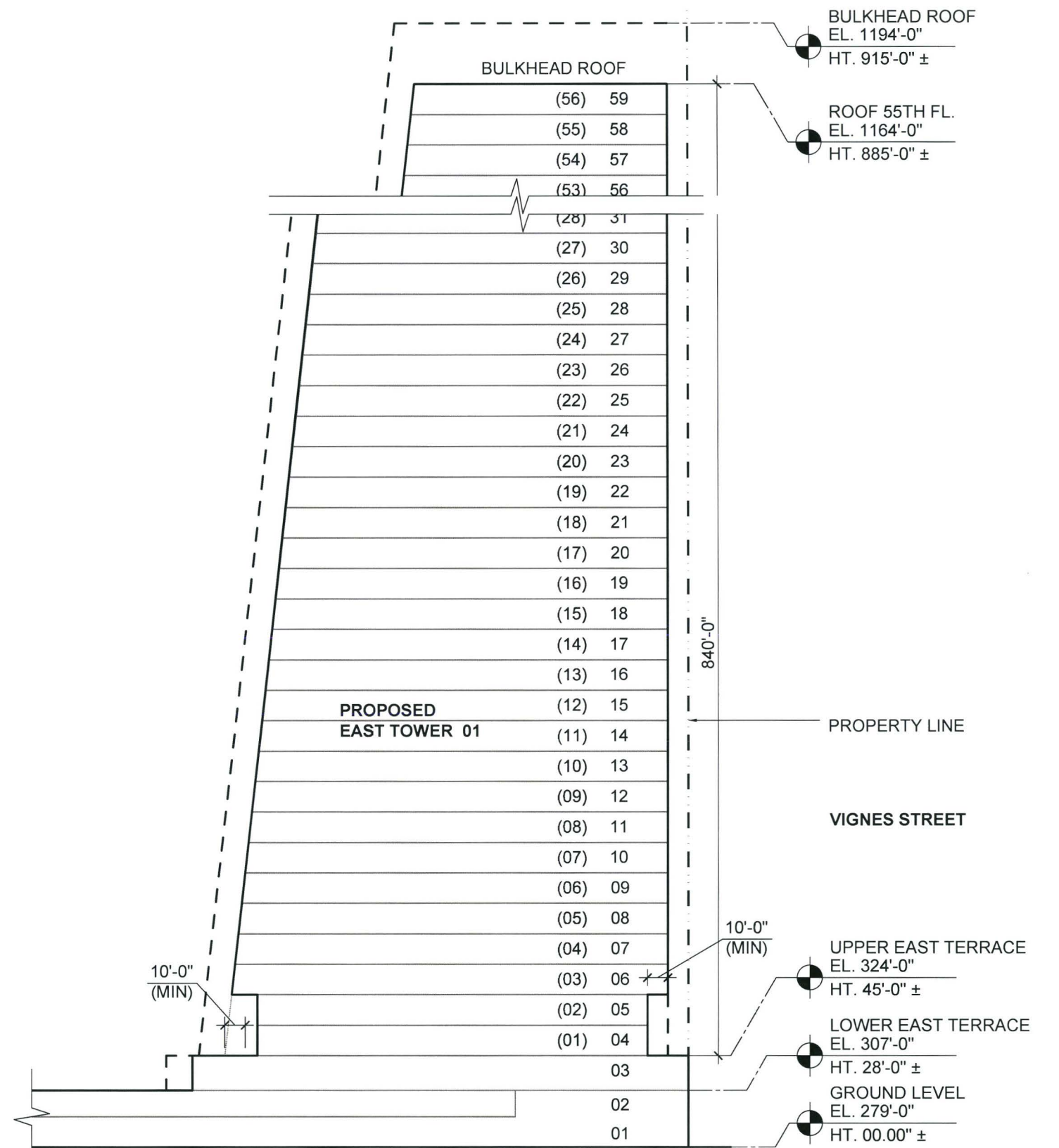
A SECTION A-A
SCALE: 1" = 64'-0"



A-3 Plot Plan East Tower 01 & 02

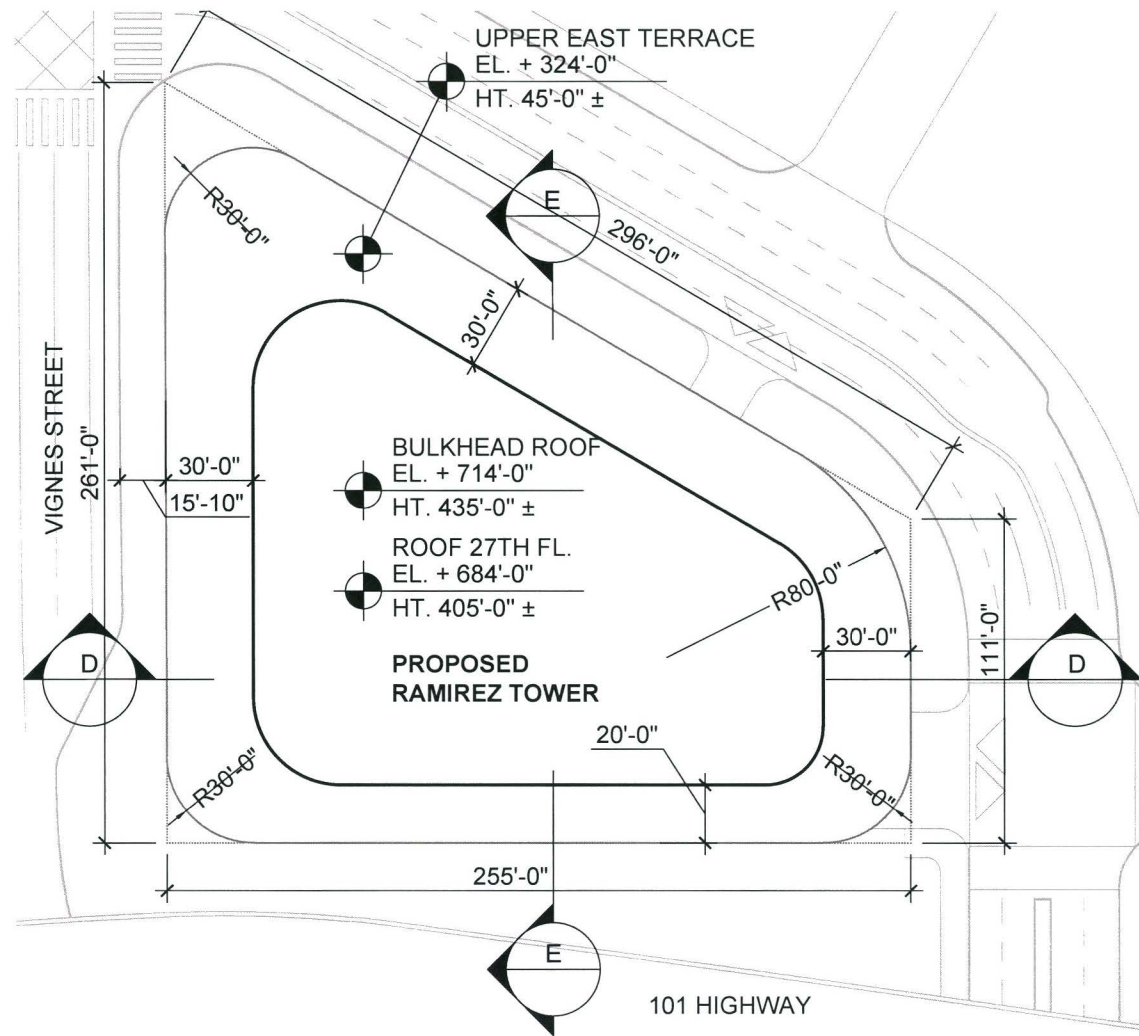


B SECTION B-B
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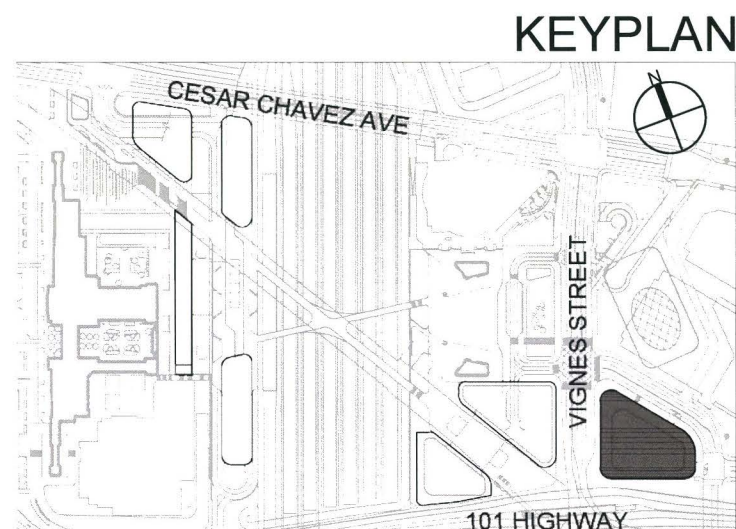


C SECTION C-C
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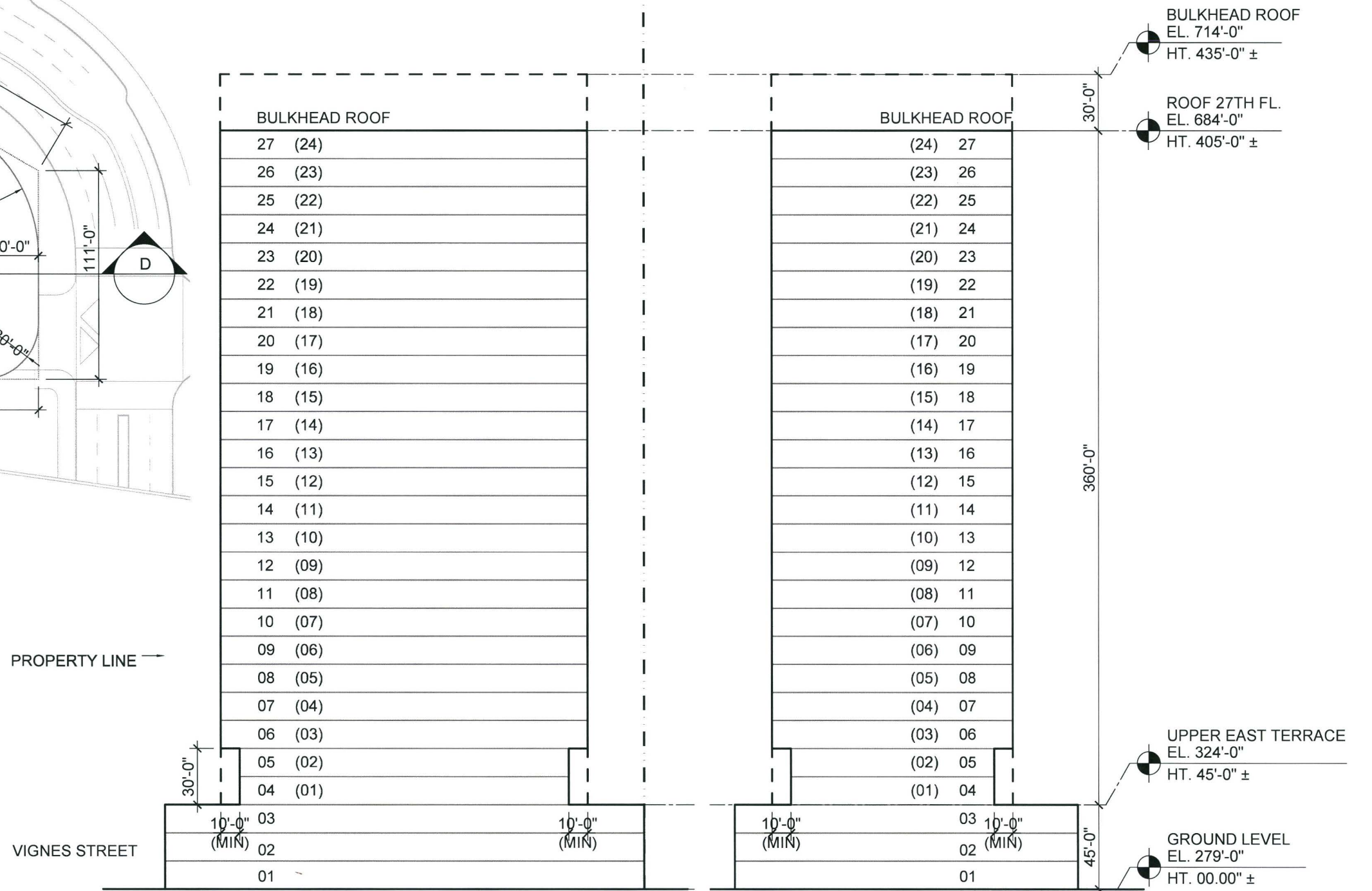
A-3 Plot Plan Ramirez Tower



1 PLOT PLAN
SCALE: 1" = 64'-0"



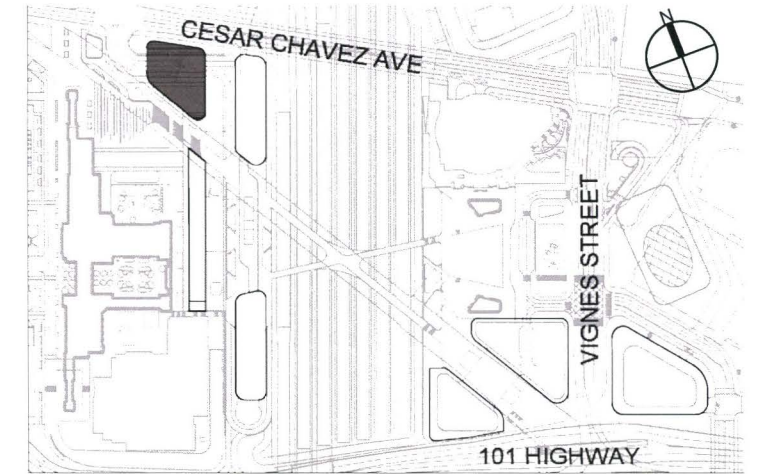
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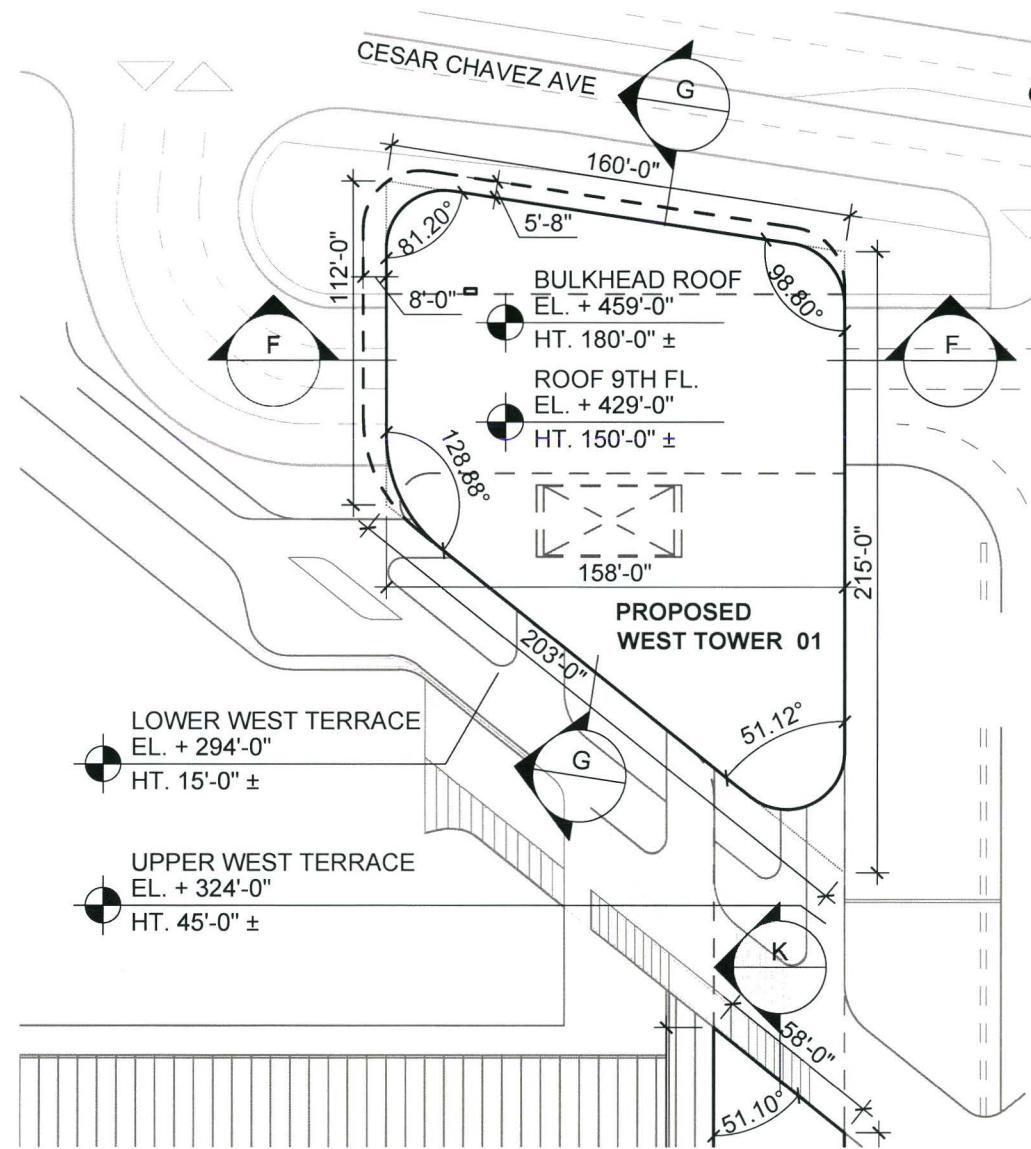
D SECTION D-D
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E SECTION E-E
SCALE: 1" = 64'-0"

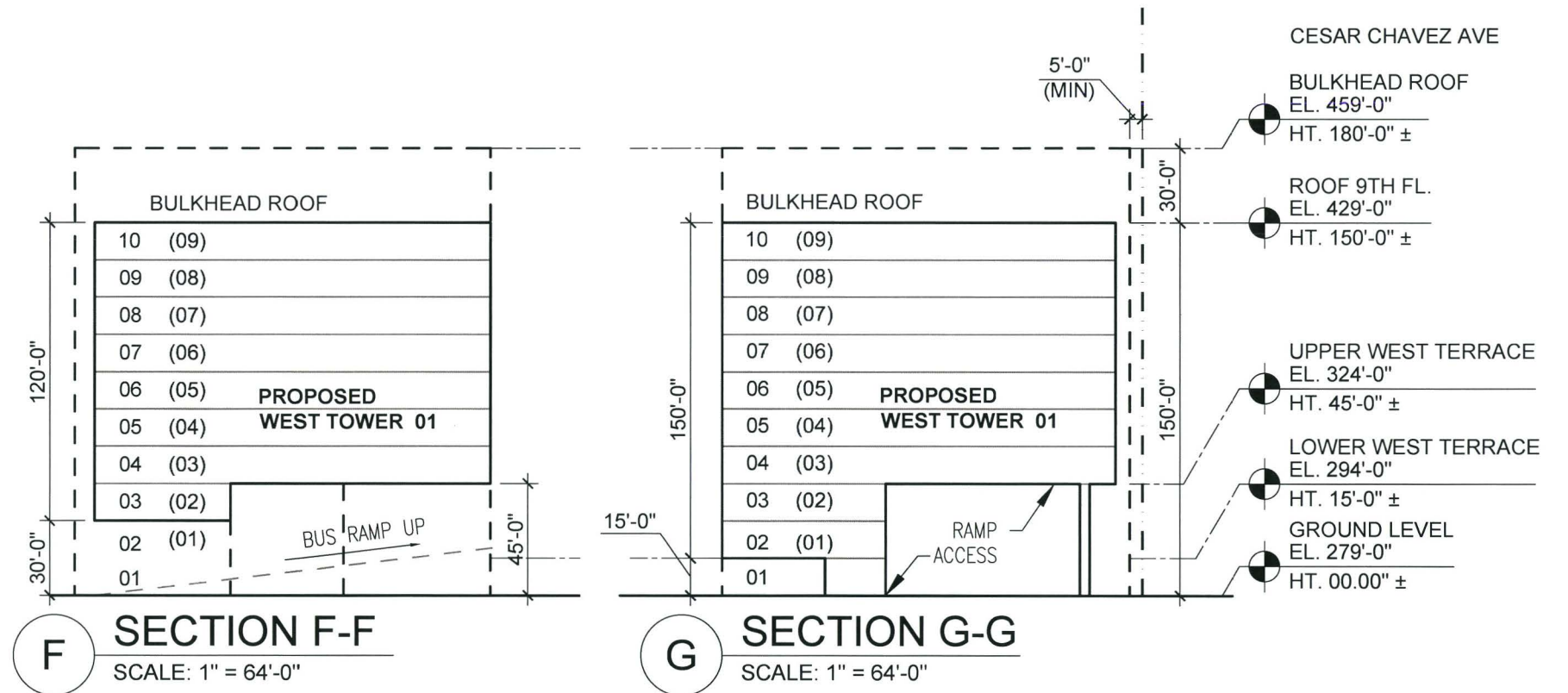
A-3 Plot Plan West Tower 01



KEYPLAN



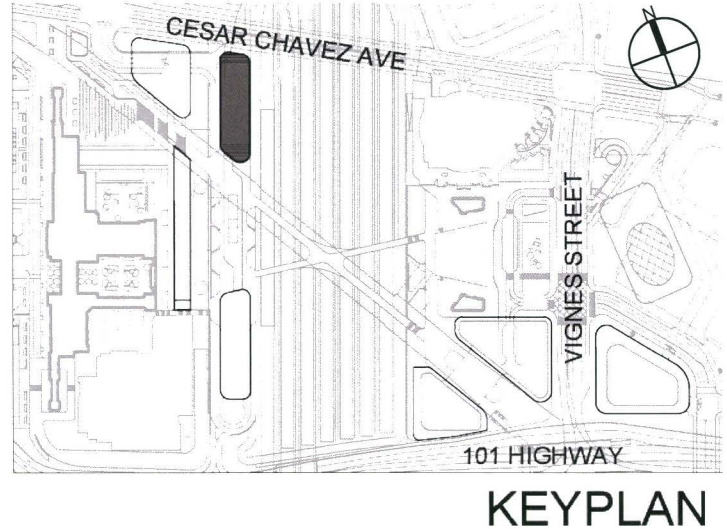
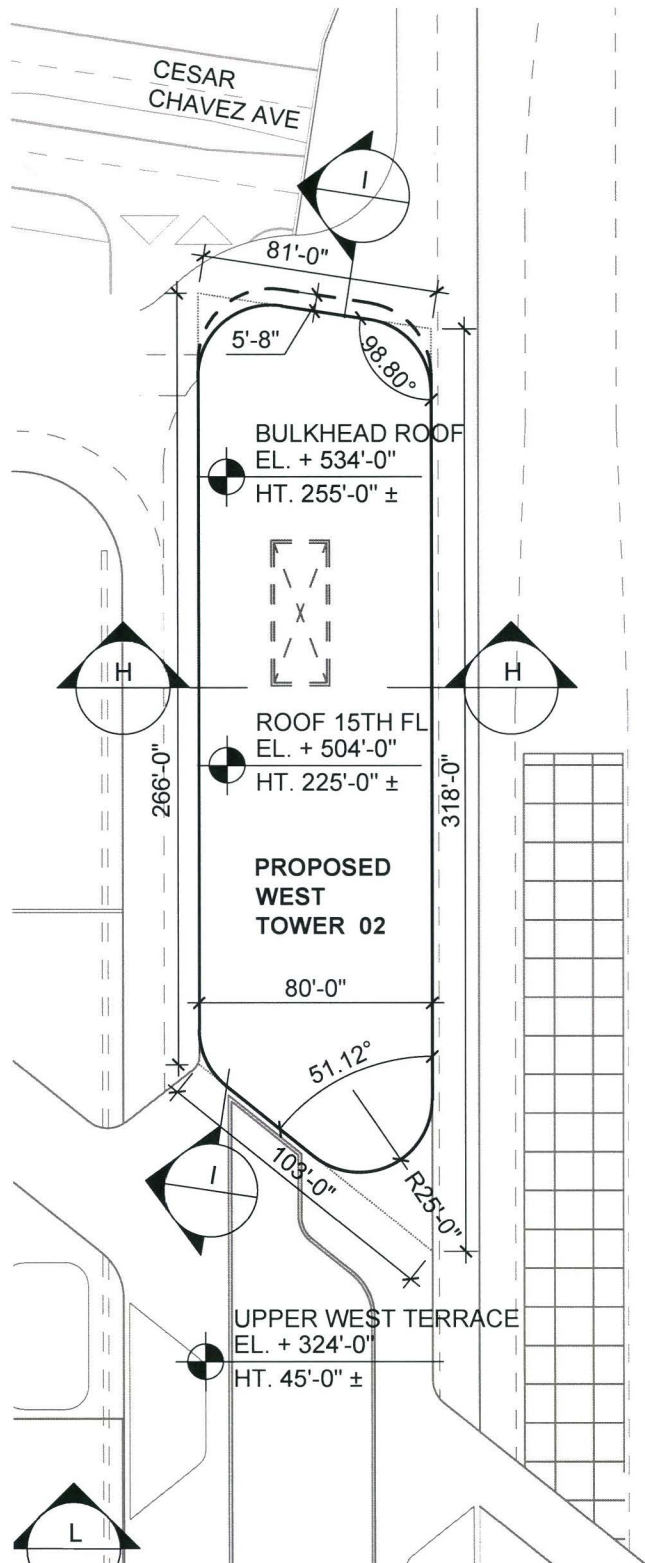
1 PLOT PLAN
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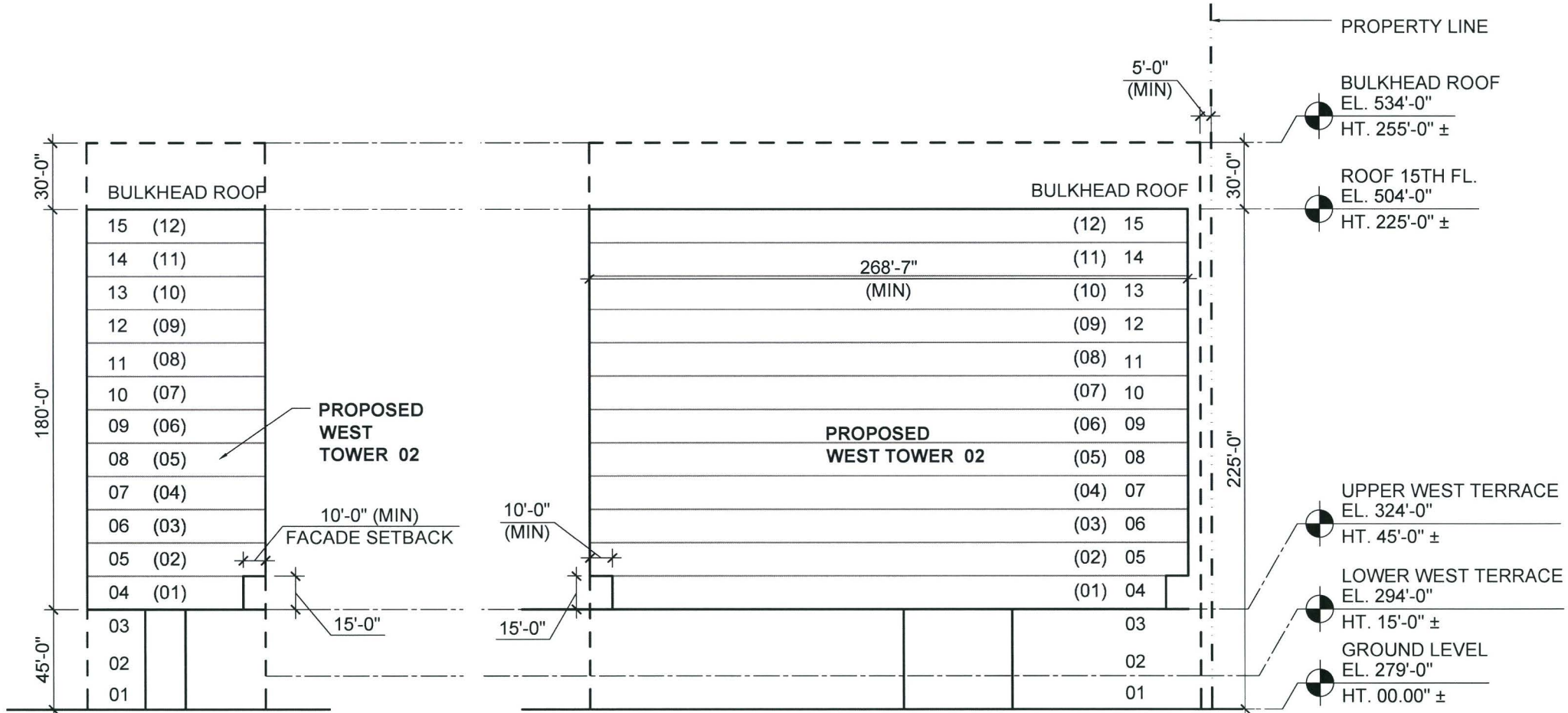
F SECTION F-F
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G SECTION G-G
SCALE: 1" = 64'-0"

A-3 Plot Plan West Tower 02



KEYPLAN

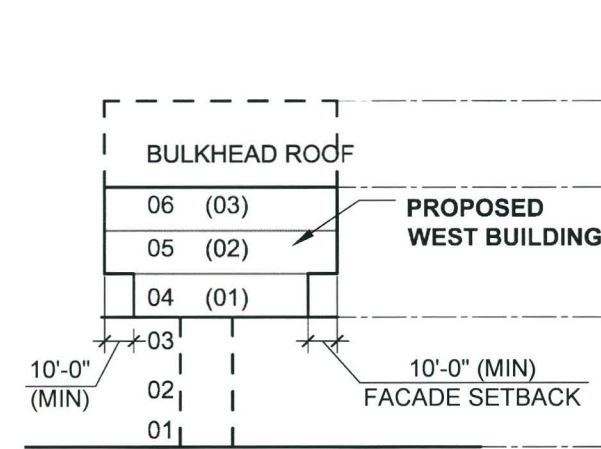
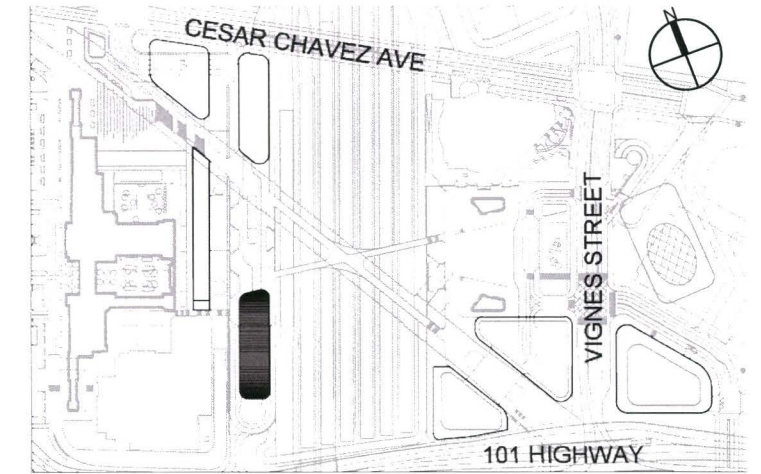
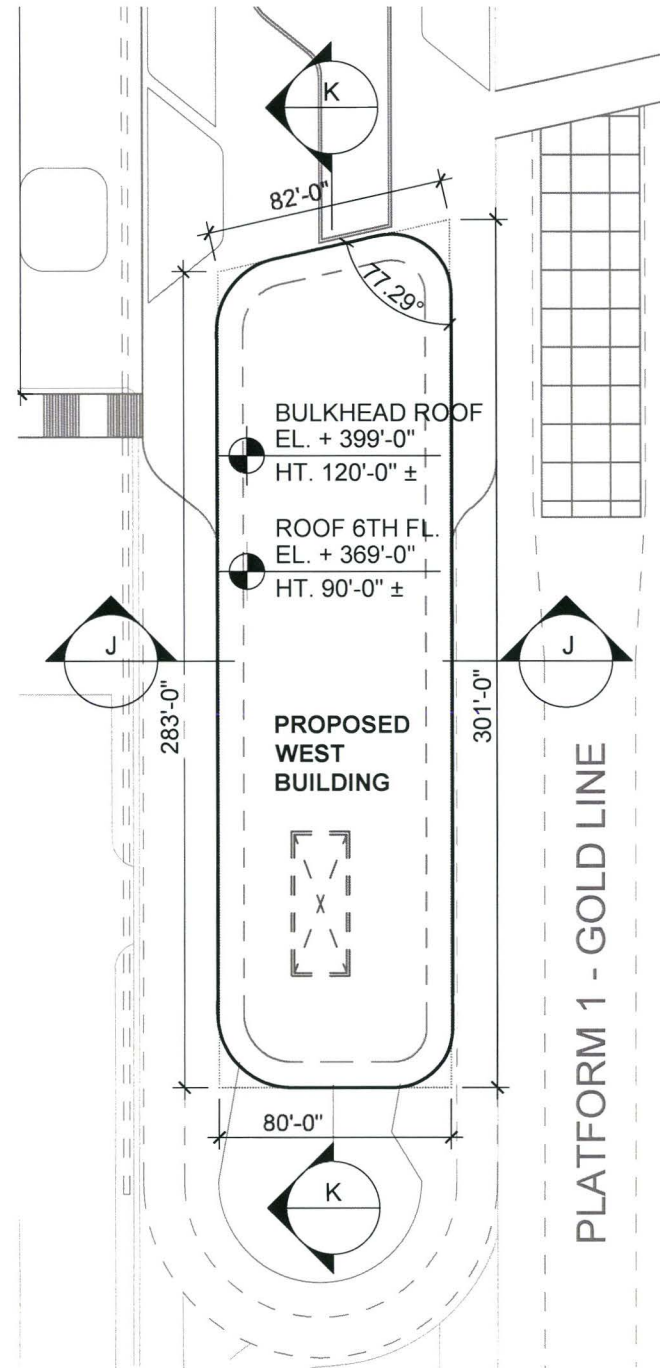


H SECTION H-H
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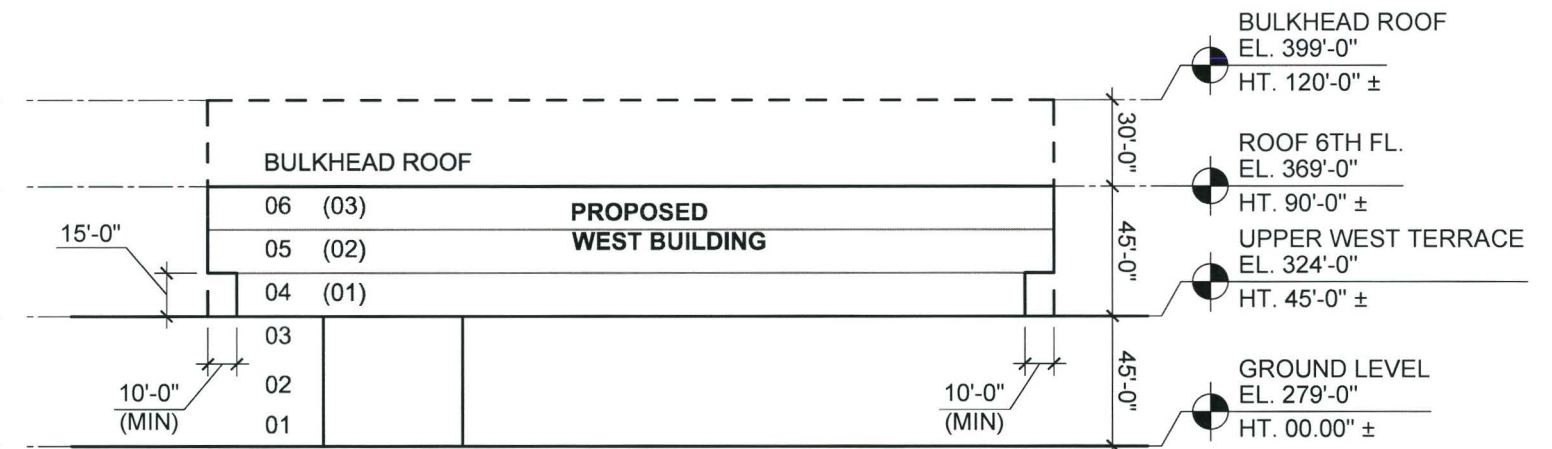
I SECTION I-I
SCALE: 1" = 64'-0"

1 PLOT PLAN
SCALE: 1" = 64'-0"

A-3 Plot Plan West Office Building



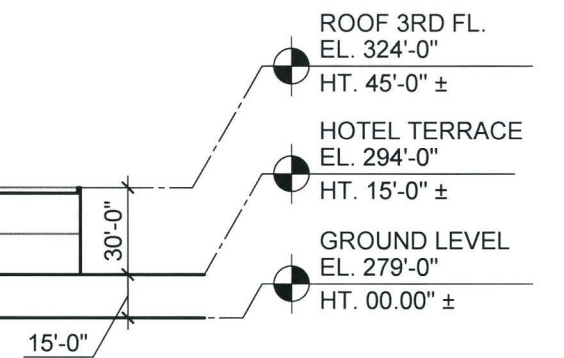
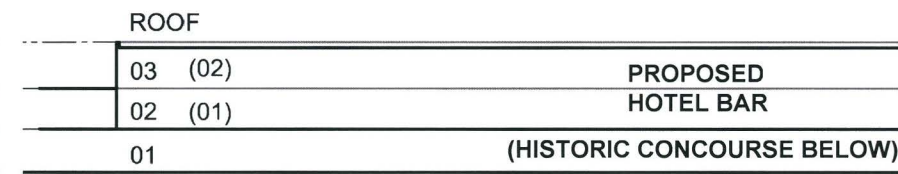
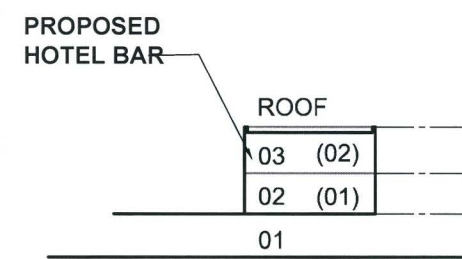
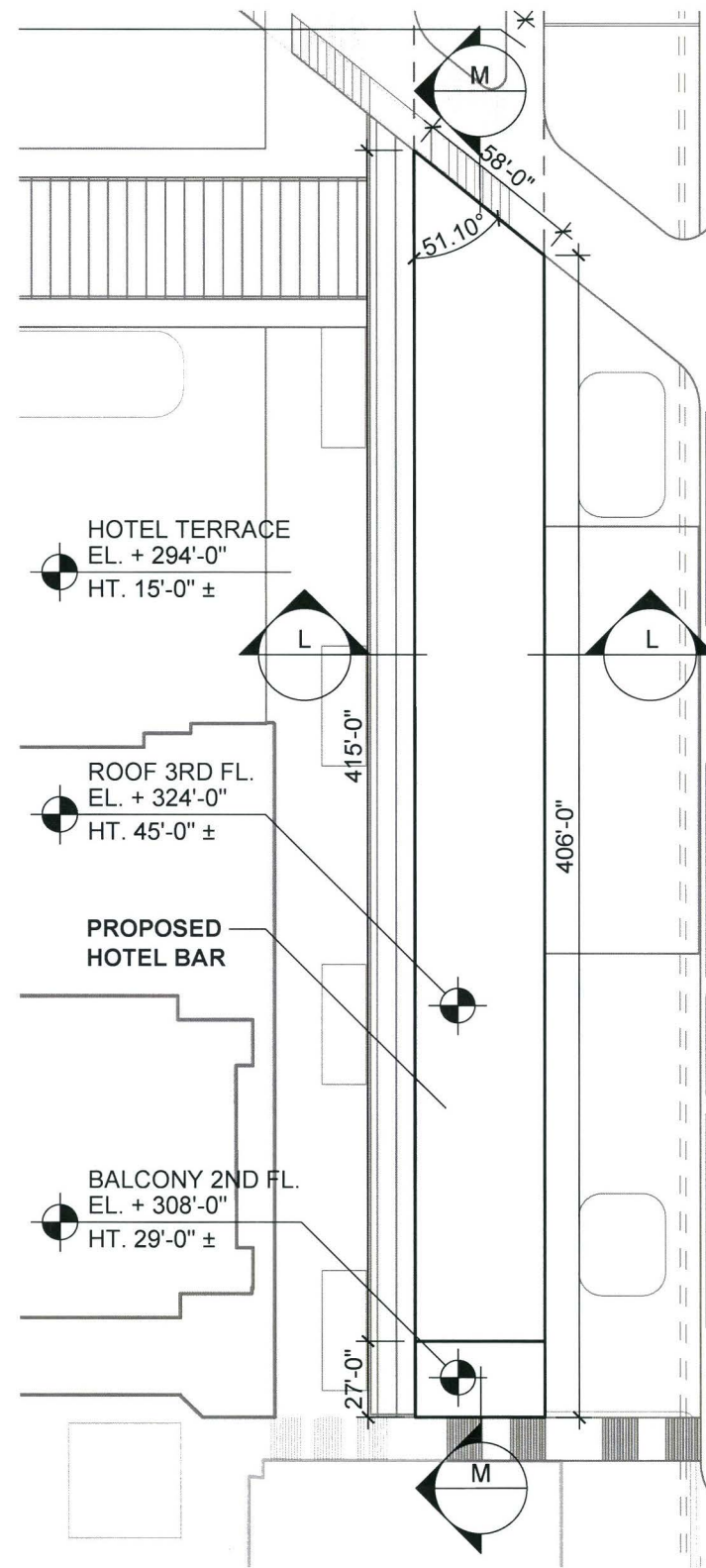
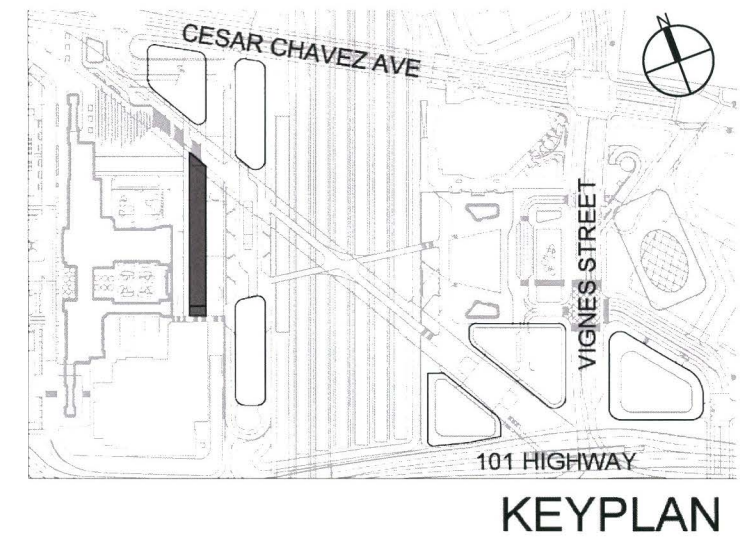
J SECTION J-J
SCALE: 1" = 64'-0"



K SECTION K-K
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1 PLOT PLAN
SCALE: 1" = 64'-0"

A-3 Plot Plan Hotel Bar

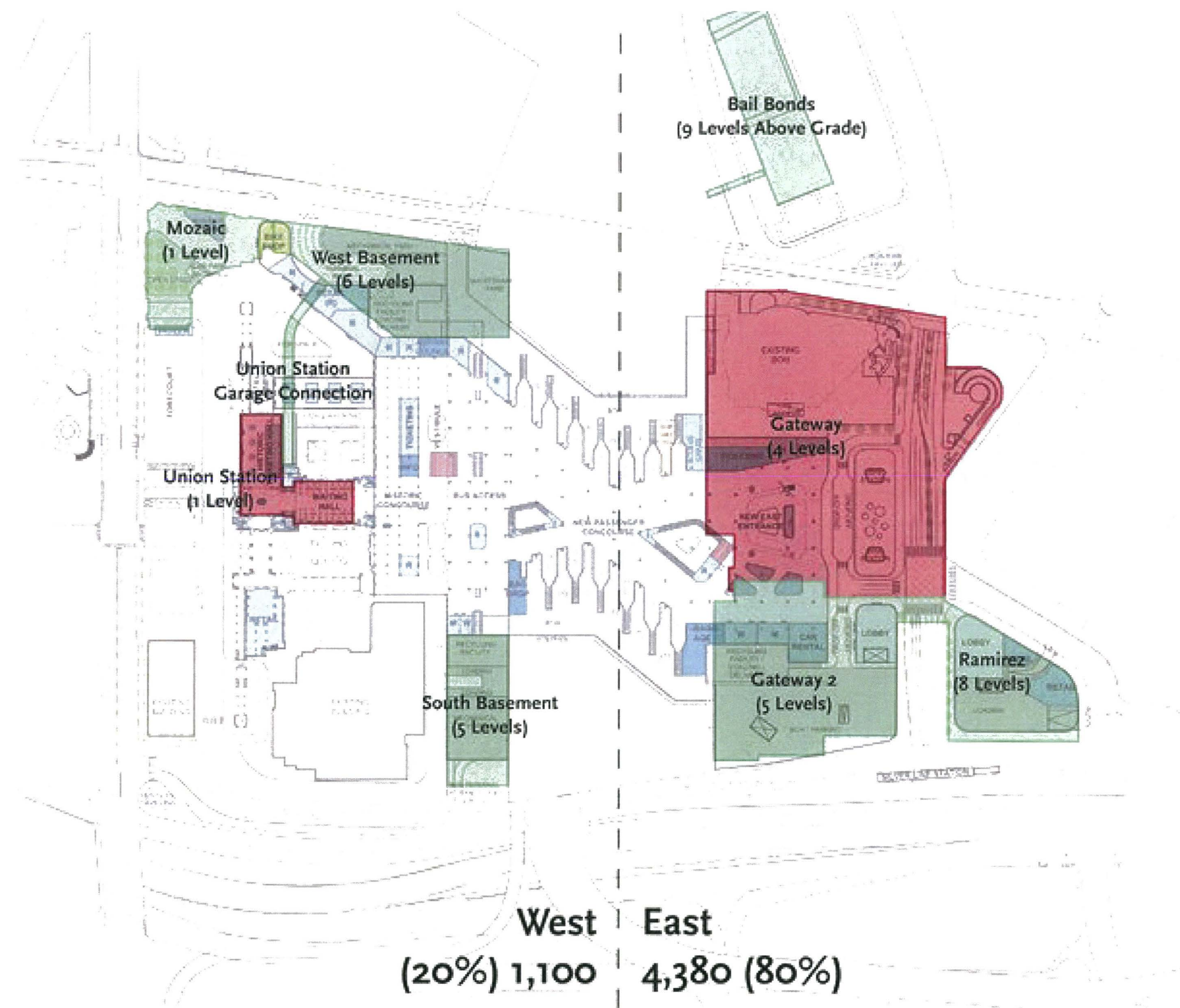


1 PLOT PLAN
SCALE: 1" = 64'-0"

A-4 Parking Remote Parking with 3.25M sq. ft. of Development

Structure	Spaces
West Basement	518
Mozaic	86
South Basement	380
Union Station	116
Gateway	2,383
Construction of new East Plaza	-165
Construction of Gateway 2	-276
Gateway 2	687
Ramirez	557
Bail Bonds'	1,194
Parking needed @3.25m	5,480²
1. Above grade parking	
2. Fehr & Peers 4/16/2014 Parking Demand Estimate (50/50 Retail/Food Mix)	

■ New Parking (3,422)
■ Existing Parking to Remain (2,058)



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GENERAL SUSTAINABILITY GUIDELINES

SLL c 2 Brownfield Redevelopment (comply for 1 point)

Locate the project on a site, part or all of which is documented as contaminated (by means of an ASTM E1903-97 Phase II Environmental Site Assessment or a local Voluntary Cleanup Program), or on a site defined as a brownfield by a local, state, or federal government agency; and remediate site contamination such that the controlling public authority approves the protective measures and/or cleanup as effective, safe, and appropriate for the future use of the site.

SLL c 4 Bicycle Network and Storage (comply for 1 point)

The USMP will strive to provide an estimated 110 bike lockers and 350 racks for the site. Metro should provide the entire amount or mandate developers to comply in this effort.

Retail

Provide at least one secure, enclosed bicycle storage space per new retail worker for 10% of retail worker planned occupancy. Provide visitor or customer bicycle racks on-site, with at least one bicycle space per 5,000 square feet of retail space, but no fewer than one bicycle space per business or four bicycle spaces per project site, whichever is greater. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.

Multi-unit residential

Provide at least one secure, enclosed bicycle storage space per occupant for 30% of the planned occupancy but no fewer than one per unit. Provide secure visitor bicycle racks on-site, with at least one bicycle space per ten dwelling units but no fewer than four spaces per project site.

Metro Transit

Provide at least one secure, enclosed bicycle storage space per new occupant for 10% of planned occupancy. Provide visitor bicycle racks on-site with at least one bicycle space per 10,000 square feet of new commercial non-retail space but not fewer than four bicycle spaces

per building. Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.

SLL c 5 Housing and Job Proximity (for 1-3 points)

OPTION 2. Project With Residential Component (2 points)
Include a residential component equaling at least 30% of the project's total building square footage (exclusive of parking structures), and locate and/or design the project such that the geographic center (or boundary if the project exceeds 500 acres) is within 1/2-mile walk distance of existing full-time-equivalent jobs whose number is equal to or greater than the number of dwelling units in the project.

OPTION 3. Infill Project with Nonresidential Component (1 point)

Include a nonresidential component equaling at least 30% of the project's total building square footage (exclusive of parking structures), and locate on an infill site whose geographic center (or boundary if the project exceeds 500 acres) is within 1/2-mile walk distance of an existing rail transit, ferry, or tram stop and within 1/2-mile walk distance of existing dwelling units whose number is equal to or greater than 50% of the number of new full-time-equivalent jobs created as part of the project.

SLL c 6 Steep Slope Prevention (for 1 point)

On portions of previously developed sites with existing slopes greater than 15%, restore the slope area with native plants or noninvasive adapted plants according to below.

Table 1. Required restoration area of slope

Slope	Restoration
> 40%	100%
26% to 40%	60%
15% to 25%	40%

NPD p 1 Walkable Streets REQUIRED

For 90% of new building frontage, a principal functional entry on the front façade faces a public space, such as a street, square, park, paseo, or plaza, but not a parking lot, and is connected to sidewalks or equivalent provisions for walking. The square, park, or plaza must be at least 50 feet wide at a point perpendicular to each entry. At

least 15% of existing and new street frontage within and bordering the project has a minimum building-height-to-street-width ratio of 1:3 (i.e., a minimum of 1 foot of building height for every 3 feet of street width). Continuous sidewalks or equivalent all-weather provisions for walking are provided along both sides of 90% of streets or frontage within the project, including the project side of streets bordering the project. New sidewalks, whether adjacent to streets or not, must be at least 8 feet wide on retail or mixed-use blocks and at least 4 feet wide on all other blocks. Equivalent provisions for walking include woonerfs and all-weather-surface footpaths. Alleys, driveways, and reconstructed existing sidewalks are excluded from these calculations. No more than 20% of the street frontages within the project are faced directly by garage and service bay openings.

Projects in a designated historic district subject to review by a local historic preservation entity are exempt from (b), (c), and (d) if approval for compliance is not granted by the review body. Projects in historic districts listed in or eligible for listing in a state register or the National Register of Historic Places that are subject to review by a state historic preservation office or the National Park Service are exempt from (b), (c), and (d) if approval for compliance is not granted.

NPD c 1 Walkable Streets for 1-12 points

Façades and Entries

- At least 80% of the total linear feet of street-facing building façades in the project is no more than 25 feet from the property line.
- At least 50% of the total linear feet of street-facing building façades in the project is no more than 18 feet from the property line.
- At least 50% of the total linear feet of mixed-use and nonresidential street-facing building façades in the project is within 1 foot of a sidewalk or equivalent provision for walking.
- Functional entries to the building occur at an average of 75 feet or less along nonresidential or mixed-use buildings or blocks.
- Functional entries to the building occur at an average of 30 feet or less along nonresidential or mixed-use buildings or blocks (items d and e are

cumulative).

Ground-Level Use and Parking

- All ground-level retail, service, and trade uses that face a public space have clear glass on at least 60% of their façades between 3 and 8 feet above grade.
- If a façade extends along a sidewalk, no more than 40% of its length or 50 feet, whichever is less, is blank (without doors or windows).
- Any ground-level retail, service, or trade windows must be kept visible (unshuttered) at night; this must be stipulated in covenants, conditions, and restrictions (CC&R) or other binding documents.
- On-street parking is provided on a minimum of 70% of both sides of all new and existing streets, including the project side of bordering streets. The percentage of on-street parking is calculated by dividing the length of street designated for parking by the total length of the curb along each street, including curb cuts, driveways, and intersection radii. Space within the parking lane that is occupied by corner bulb-outs (within 24 feet of an intersection), transit stops, and motorcycle or bicycle parking may be counted as designated for parking in this calculation. Woonerfs are not considered streets for this subsection.
- Continuous sidewalks or equivalent provisions for walking are available along both sides of all streets within the project, including the project side of streets bordering the project. New sidewalks, whether adjacent to streets or not, must be at least 10 feet wide on retail or mixed-use blocks and at least 5 feet wide on all other blocks. Equivalent provisions for walking include woonerfs and all-weather-surface footpaths at least 5 feet wide. Note that these requirements specify wider sidewalks than required by NPD Prerequisite 1, Walkable Streets.
- If the project has ground-floor dwelling units, the principal floor of at least 50% of those units must have an elevated finished floor no less than 24 inches above the sidewalk grade. Below-grade basement spaces and/or accessory dwelling units are exempt from this requirement.
- In nonresidential or mixed-use projects, 50% or more of the total number of office buildings include ground-floor retail along 60% of the length of the street-level façade; 100% of mixed-use buildings

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include ground-floor retail, live-work spaces, and/or ground-floor dwelling units along at least 60% of the street-level façade; and all businesses and/or other community services on the ground floor are accessible directly from sidewalks along a public space, such as a street, square, paseo, or plaza, but not a parking lot.

m. At least 40% of all street frontage within the project has a minimum building-height-to-street-width ratio of 1:3 (i.e., a minimum of 1 foot of building height for every 3 feet of street width).

- Nonmotorized rights-of-way may be counted toward the 40% requirement, but 100% of such spaces must have a minimum 1:1 ratio of building height to street width.
- Projects with bordering street frontage must meet only their proportional share of the height-to-width ratio (i.e., only on the project side of the street).
- Street frontage is measured in linear feet.
- Building height is measured to eaves or the top of the roof for a flat-roof structure, and street width is measured façade to façade. For block frontages with multiple heights and/or widths, use average heights or widths weighted by each segment's linear share of the total block distance.
- Alleys and driveways are excluded.

Design Speeds for Safe Pedestrian and Bicycle Travel

n. 75% of new residential-only streets within the project are designed for a target speed of no more than 20 mph.

o. 70% of new nonresidential and/or mixed-use streets within the project are designed for a target speed of no more than 25 mph. A multiway boulevard, with travel lanes separated from access lanes by medians, may apply this requirement to its outer access lanes only (through-lanes are exempt), provided pedestrian crosswalks are installed across the boulevard at intervals no greater than 800 feet.

Sidewalk Intrusions

p. At-grade crossings with driveways account for no more than 10% of the length of sidewalks within the project.

NPD c 2 Compact Development for 1-6 points

Residential density (DU/acre)	Nonresidential density (FAR)	Points
> 10 and ≤ 13	> 0.75 and ≤ 1.0	1
> 13 and ≤ 18	> 1.0 and ≤ 1.25	2
> 18 and ≤ 25	> 1.25 and ≤ 1.75	3
> 25 and ≤ 38	> 1.75 and ≤ 2.25	4
> 38 and ≤ 63	> 2.25 and ≤ 3.0	5
> 63	> 3.0	6

NPD c 3 Mixed-Use Neighborhood Centers for 1-4 points

Locate and/or design the project such that 50% of its dwelling units are within a 1/4-mile walk distance of the number of diverse uses in Table 1, including at least one use from each of the four categories. For projects with no dwellings, 50% of dwelling units within 1/4 mile of the project boundary must be within a 1/4-mile walk distance of the number of diverse uses specified in Table 1, including at least one food retail store and at least one establishment from each of two other categories. Establishments may be inside or outside the project and may be existing or planned diverse uses. If under 40 acres:

Diverse uses square footage	Percentage occupancy of total Points	Points
4–6	20%	1
7–10	30%	2
11–18	40%	3
≥ 19	50%	4

NPD c 4 Mixed-Income Diverse Communities for 1-7 points

NPD c 5 Reduced Parking Footprint for 1 point

For new nonresidential buildings and multi-unit residential buildings, do not build new off-street parking lots. Provide carpool and/or shared-use vehicle parking spaces equivalent to 10% of the total automobile parking for each nonresidential and mixed-use building on the site. Signage indicating such parking spots must be provided, and the parking spots must be within 200 feet of entrances to the buildings served.

NPD c 6 Street Network for 1-2 point

Design and/or locate the project such that a through-street and/or nonmotorized right-of-way intersects or terminates at the project boundary at least every 400 feet or at existing abutting street intervals and intersections, whichever is the shorter distance. Include a pedestrian or bicycle through-connection in at least 90% of any new culs-de-sac. This does not apply to portions of the boundary where connections cannot be made because of physical obstacles, such as prior platting of property, construction of existing buildings or other barriers, slopes over 15%, wetlands and water bodies, railroad and utility rights-of-way, existing limited-access motor vehicle rights-of-way, and parks and dedicated open space.

Locate and/or design the project such that its internal connectivity and/or the connectivity within a 1/4-mile distance of the project boundary falls within one of the ranges listed

Points for connectivity:

Street intersections per square mile	Points
> 300 and ≤ 400	1
> 400	2

All streets and sidewalks that are counted toward the connectivity requirement must be available for general public use and not gated. Gated areas are not considered available for public use, with the exception of education and health care campuses, and military bases where gates are used for security purposes.

NPD c 7 Transit Facilities for 1 point

NPD c 8 Transportation Demand Management 1-2 point

Coordinate separately with Metro – no guideline needed

NPD c 9 Access to Civic and Public Space for 1 point

Locate and/or design the project such that a civic or passive-use space, such as a square, park, paseo, or plaza, at least 1/6 acre in area lies within a 1/4-mile walk distance of 90% of planned and existing dwelling units and nonresidential building entrances. Spaces less than 1 acre must have a proportion no narrower than 1 unit of width to 4 units of length.

AND

For projects larger than 7 acres, locate and/or design the project such that the median size of civic or passive-use spaces within and/or contiguous to the project is at least 1/2 acre.

NPD c 10 Access to Recreation Facilities for 1 point

Locate and/or design the project so that a publicly accessible outdoor recreation facility at least 1 acre in area, or a publicly accessible indoor recreational facility of at least 25,000 square feet, lies within a 1/2-mile walk distance of 90% of new and existing dwelling units and nonresidential building entrances. Outdoor recreation facilities must consist of physical improvements and may include “tot lots,” swimming pools, and sports fields, such as baseball diamonds.

NPD c 13 Local Food Production for 1 point

Establish covenants, conditions, and restrictions (CC&R) or other forms of deed restrictions that do not prohibit the growing of produce in project areas, including greenhouses, any portion of residential front, rear, or side yards; or balconies, patios, or rooftops. Greenhouses but not gardens may be prohibited in front yards that face the street.

NPD c 14 Tree-Lined and Shaded Streets for 1-2 points

Design and build the project to provide street trees on both sides of at least 60% of new and existing streets within the project and on the project side of bordering streets, between the vehicle travel way and walkway, at intervals averaging no more than 40 feet (excluding driveways and utility vaults). Trees or other structures provide shade over at least 40% of the length of sidewalks on streets within or contiguous to the project. Trees must provide shade within ten years of landscape installation. Use the estimated crown diameter (the width of the shade if the sun is directly above the tree) to calculate the shaded area.

GIB c 1 Certified Green Buildings for 5 points

All individual building projects within the master plan reach a minimum LEED NC or EBOM certification of Silver or higher

GIB c 2 Building Energy Efficiency for 2 points

New buildings must demonstrate an average 18% (1

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point) or 26% (2 points) improvement over ANSI/ASHRAE/IESNA Standard 90.1–2007 (with errata but without addenda). Buildings undergoing major renovations as part of the project must demonstrate an average 14% (1 point) or 22% (2 points) improvement over ANSI/ASHRAE/IESNA Standard 90.1–2007.

GIB c 3 Building Water Efficiency for 1 points

Indoor water usage in new buildings and buildings undergoing major renovations as part of the project must be an average 40% less than in baseline buildings. The baseline usage is based on the requirements of the Energy Policy Act of 1992 and subsequent rulings by the Department of Energy, the requirements of the Energy Policy Act of 2005, and the fixture performance standards in the 2006 editions of the Uniform Plumbing Code or International Plumbing Code as to fixture performance. Calculations are based on estimated occupant usage and include only the following fixtures and fixture fittings (as applicable to the project scope): water closets (toilets), urinals, lavatory faucets, showers, kitchen sink faucets, and pre-rinse spray valves.

GIB c 4 Water-Efficient Landscaping for 1 points

Reduce water consumption for outdoor landscape irrigation by 50% from a calculated midsummer baseline case.

GIB c 8 Storm Water Management for 3 points

Implement a comprehensive stormwater management plan for the project that retains on-site, through infiltration, evapotranspiration, and/or reuse, the 85% rainfall event (total volume to be retained).

GIB c 9 Heat Island reduction for 1 point

Non-Roof Measures:

- Provide shade from open structures, such as those supporting solar photovoltaic panels, canopied walkways, and vine pergolas, all with a solar reflectance index (SRI) of at least 29.
- Use paving materials with an SRI of at least 29.
- Install an open-grid pavement system that is at least 50% pervious.
- Provide shade from tree canopy (within ten years of landscape installation).

Roof Measures:

Use roofing materials that have an SRI equal to or greater than the values:

Roof slope	SRI
Low ($\leq 2:12$)	78
Steep ($> 2:12$)	29

GIB c 11 On-Site Renewable Energy Sources for 1 point

Incorporate on-site nonpolluting renewable energy generation, such as solar, wind, geothermal, small-scale or micro hydroelectric, and/or biomass, with production capacity of at least 5% of the project's annual electrical and thermal energy cost (exclusive of existing buildings), as established through an accepted building energy performance simulation tool.

GIB c 12 District Heating and Cooling for 2 points

Incorporate a district heating and/or cooling system for space conditioning and/or water heating of new buildings (at least two buildings total) such that at least 80% of the project's annual heating and/or cooling consumption is provided by the district plant. Each system component that is addressed by ANSI/ASHRAE/IESNA Standard 90.1–2007 must have an overall efficiency performance at least 10% better than that specified by the standard's prescriptive requirements. Additionally, annual district pumping energy consumption that exceeds 2.5% of the annual thermal energy output of the heating and cooling plant (with 1 kWh of electricity equal to 3,413 Btus) must be offset by increases in the component's efficiency beyond the specified 10% improvement. Combined heat and power (CHP) district systems can achieve this credit by demonstrating equivalent performance.

GIB c 13 Infrastructure Energy Efficiency for 1 point

Design, purchase, or work with the municipality to install all new infrastructure, including but not limited to traffic lights, street lights, and water and wastewater pumps, to achieve a 15% annual energy reduction below an estimated baseline energy use for this infrastructure. The baseline is calculated with the assumed use of lowest first-cost infrastructure items.

GIB c 14 Waste Water Management for 1 points

Design and construct the project to retain on-site 25% of the average annual wastewater generated by the project (exclusive of existing buildings), and reuse at least 25% wastewater to replace potable water.

GIB c 15 Recycled Content in Infrastructure for 1 point

Use materials for new infrastructure such that the sum of postconsumer recycled content, in-place reclaimed materials, and one-half of the preconsumer recycled content constitutes at least 50% of the total mass of infrastructure materials. Count materials in all of the following infrastructure items as applicable to the project:

- Roadways, parking lots, sidewalks, unit paving, and curbs.
- Water retention tanks and vaults.
- Base and subbase materials for the above.
- Stormwater, sanitary sewer, steam energy distribution, and water piping.

GIB c 16 Solid Waste Management Infrastructure for 1 point

Meet at least four of the following five requirements and publicize their availability and benefits:

- Include as part of the project at least one recycling or reuse station, available to all project occupants, dedicated to the separation, collection, and storage of materials for recycling; or locate the project in a local government jurisdiction that provides recycling services. The recyclable materials must include, at a minimum, materials paper, corrugated cardboard, glass, plastics and metals.
- Include as part of the project at least one drop-off point, available to all project occupants, for potentially hazardous office or household wastes; or locate the project in a local government jurisdiction that provides collection services. Examples of potentially hazardous wastes include paints, solvents, oil, and batteries. If a plan for post-collection disposal or use does not exist, establish one;
- Include as part of the project at least one compost station or location, available to all project occupants, dedicated to the collection and composting of food and yard wastes; or locate the project in a local government jurisdiction that provides composting

services. If a plan for post-collection use does not exist, establish one.

d. On every mixed-use or nonresidential block or at least every 800 feet, whichever is shorter, include recycling containers adjacent to other receptacles or recycling containers integrated into the design of the receptacle.

e. Recycle and/or salvage at least 50% of nonhazardous construction and demolition debris. Develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and specifies whether the materials will be stored on-site or commingled. Excavated soil and land-clearing debris do not contribute to this credit. Calculations can be done by weight or volume but must be consistent throughout.

GIB c 17 Light Pollution Reduction for 1 point

Use BUG (Backlight, Uplight, and Glare) rated fixtures for external lighting.

A-6 Alameda/Forecourt Concept Design Appendix

Alameda / Forecourt Concept Design

This section outlines the conceptual design of the Union Station Forecourt and a portion of Alameda Street with the goal to describe the design intent sufficiently so that the work can be further developed in keeping with the Master Plan as a separate but near-term project.

Included are programming ideas that can be implemented immediately, as a pilot program, to coordinate with the 75th Anniversary of the Station.

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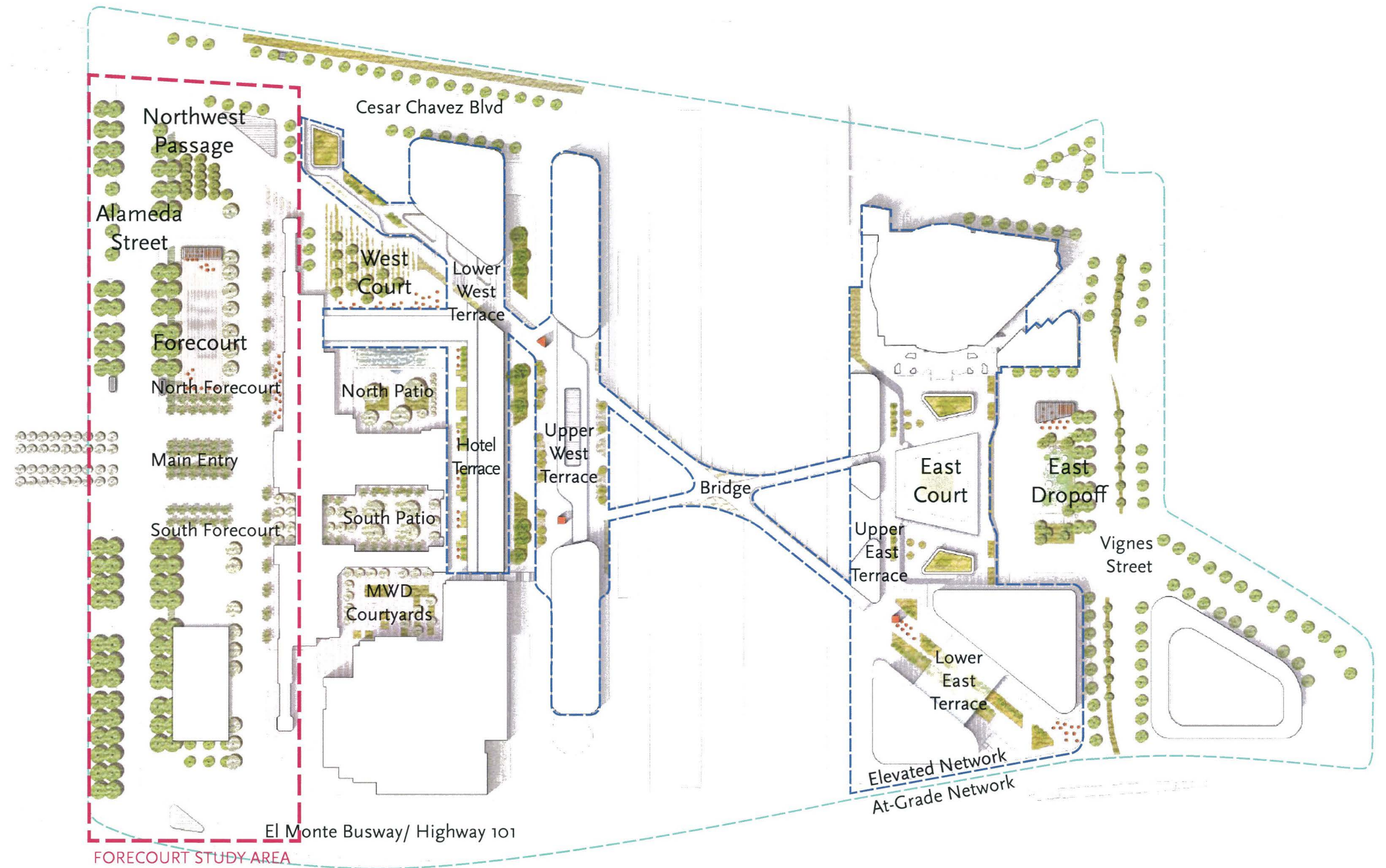
OVERVIEW



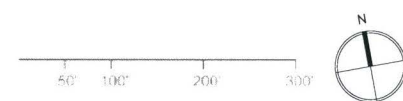
Overall Master Plan Bird's

MASTER PLAN

Stemming from the original intent of the historic station design, the landscape provides travelers and visitors of the station with a “Southern California experience” – where the diversity of the plant palette, temperate climate, and use of materials are showcased to create a series of meaningful outdoor spaces that are rooted in the Southern California vernacular. Expanding further, the overall strategy for the master plan site promotes a series of open spaces that highlight the various plant ecologies found within the region of Southern California – from the High Desert Plains, to the Valley Grasslands, to the Riparian Edges. The Union Station Master Plan establishes two primary means for users traversing the site - 1) an At-Grade Network and 2) an Elevated Network. The At-Grade Network through the new passenger concourse expands upon the existing sequence of spaces while promoting enhancements that support improved circulation and clear sight lines to connect with transit components; provides framing by canopy trees and other vegetation; enables various program opportunities through flexible space; and is distinguished by two ecological types: Riparian and Mesic. The Elevated Network establishes a new layering of spaces that respond to the organization of the station elements while linking the development parcels; enhanced by vertical circulation; accentuating view sheds within and off site; and is distinguished by three ecological types: Chaparral, Grasslands, and Xeric/Desert.

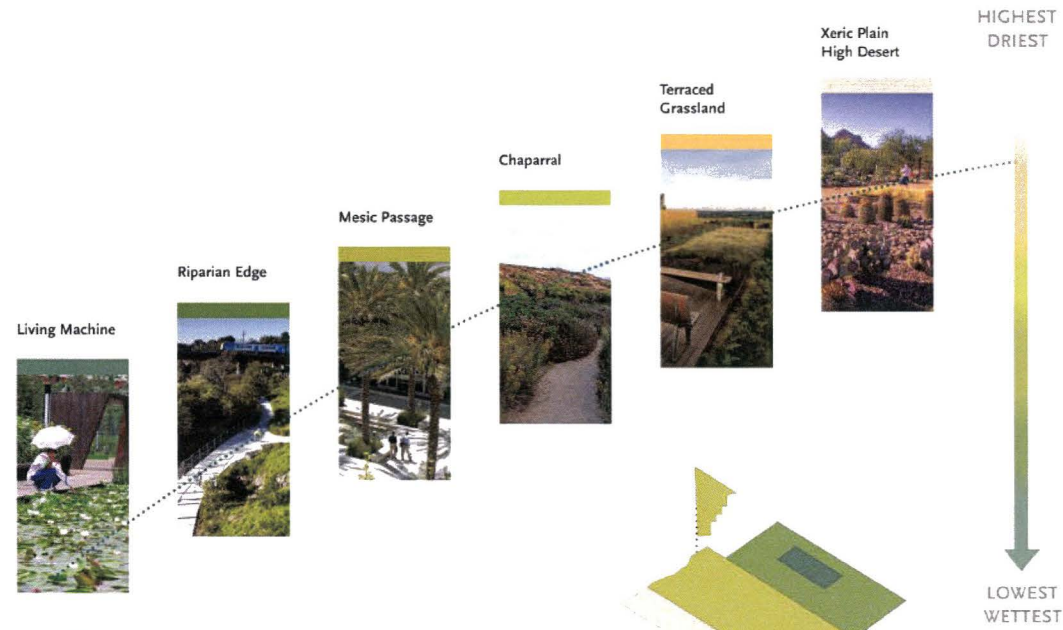


Illustrative Land-

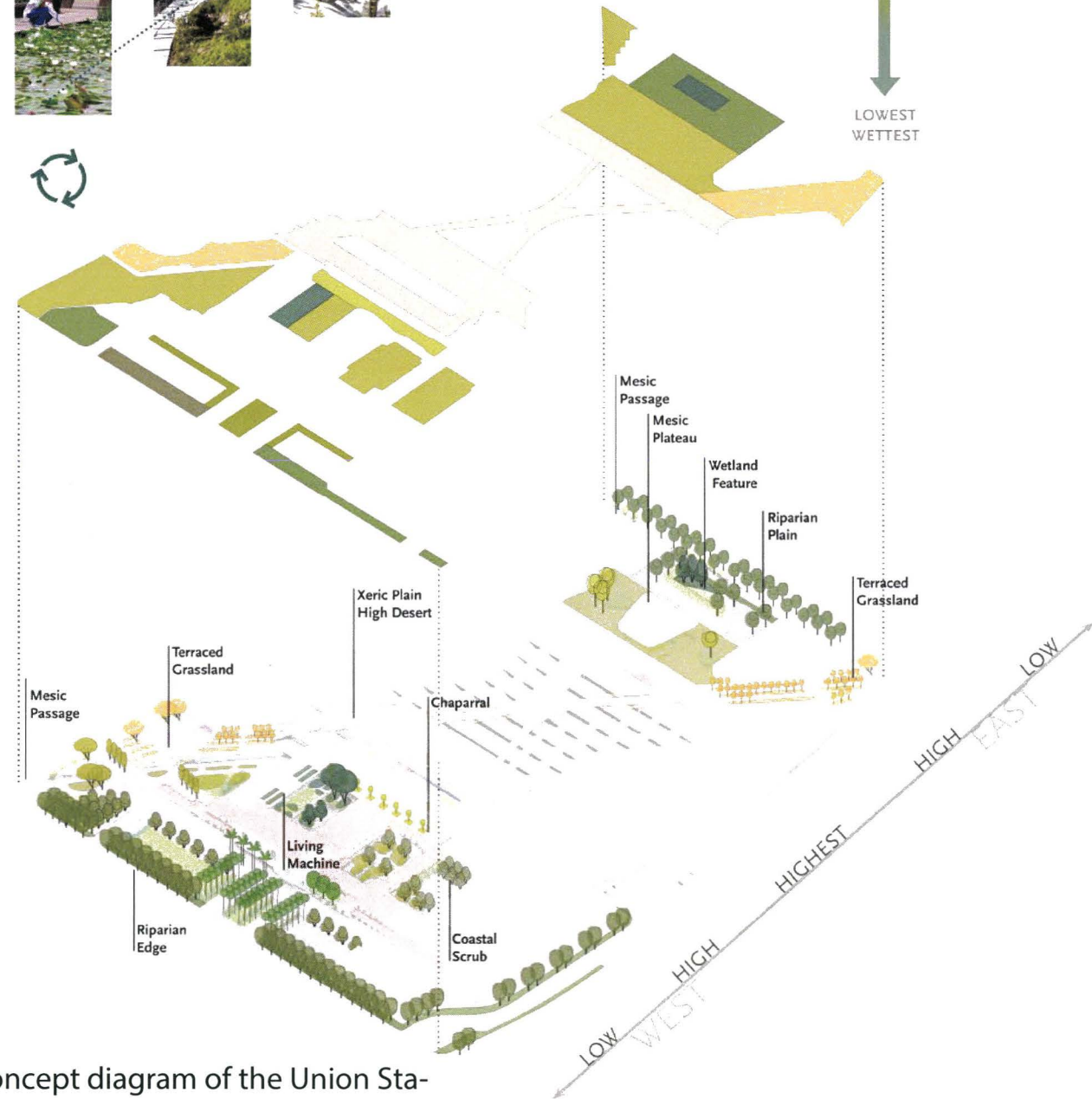


MASTER PLAN OVERVIEW

Plant Ecologies



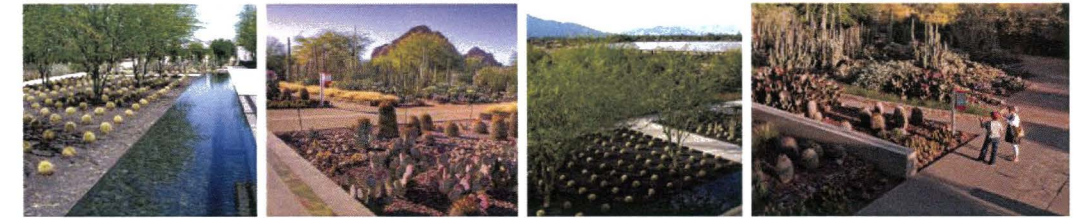
Ecological Zones



Axonometric View

Overall Landscape Concept diagram of the Union Sta-

High Desert Xeric Plain



Terraced Grassland



Chaparral



Mesic Passage



Riparian Edge



Living Machine



A-6 Alameda/Forecourt Concept Design Appendix

HISTORIC FRAMEWORK

In the 1930s, the planning objective for Los Angeles Union Station was to create a new consolidated train depot at the city's north eastern edge of downtown. The site's location, immediately adjacent to El Pueblo, regarded as the historic origin of the city, provided an ideal setting for a vital civic space.

Constructed at pivotal epoch for the City and advancements in transportation, the evolution of plans up to the time of construction reveal the initial intent of establishing a large park or plaza directly in front of the main entry. Upon completion, the majority of the Forecourt space of the station was ultimately built out for vehicular circulation and parking; reflecting the trend and influence created by the popularity of the personal automobile.

The Forecourt space and overall orientation of the station is North South, capturing the length of Alameda Street as a means to showcase the architectural facade of the building. Within the landscape, the space was further defined by linear plantings of Olive trees along Alameda street and a series of hedges organized the parking and circulation ways. Featured in both a linear alignment in front of the main hall as well as moments within the site, palm trees provided an iconic feature in the landscape that celebrated the station as "no point further west."

Alameda Street, once an active rail street shared by cars and people, played a large role in the early celebrations taking place at the station. The Forecourt's identity is itself framed by the historic Union Station and has been utilized in the past for ceremonies and announcements.



View from City Hall (1939)



Union Station Formal Dedication Ceremony (1939)



Union Station Formal Dedication Ceremony (1939)



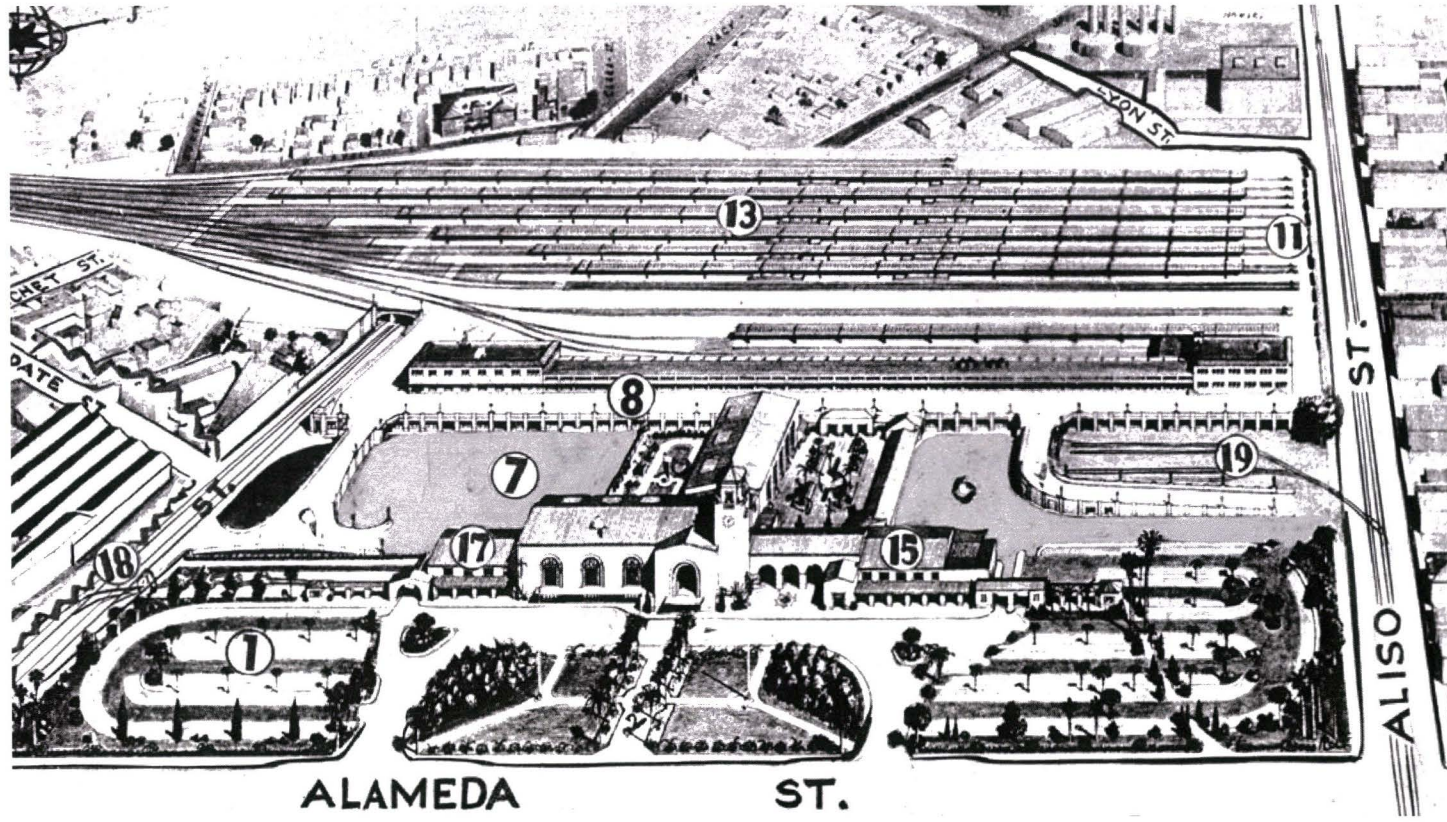
Zanja Madre Aqueduct System on Figueroa Street



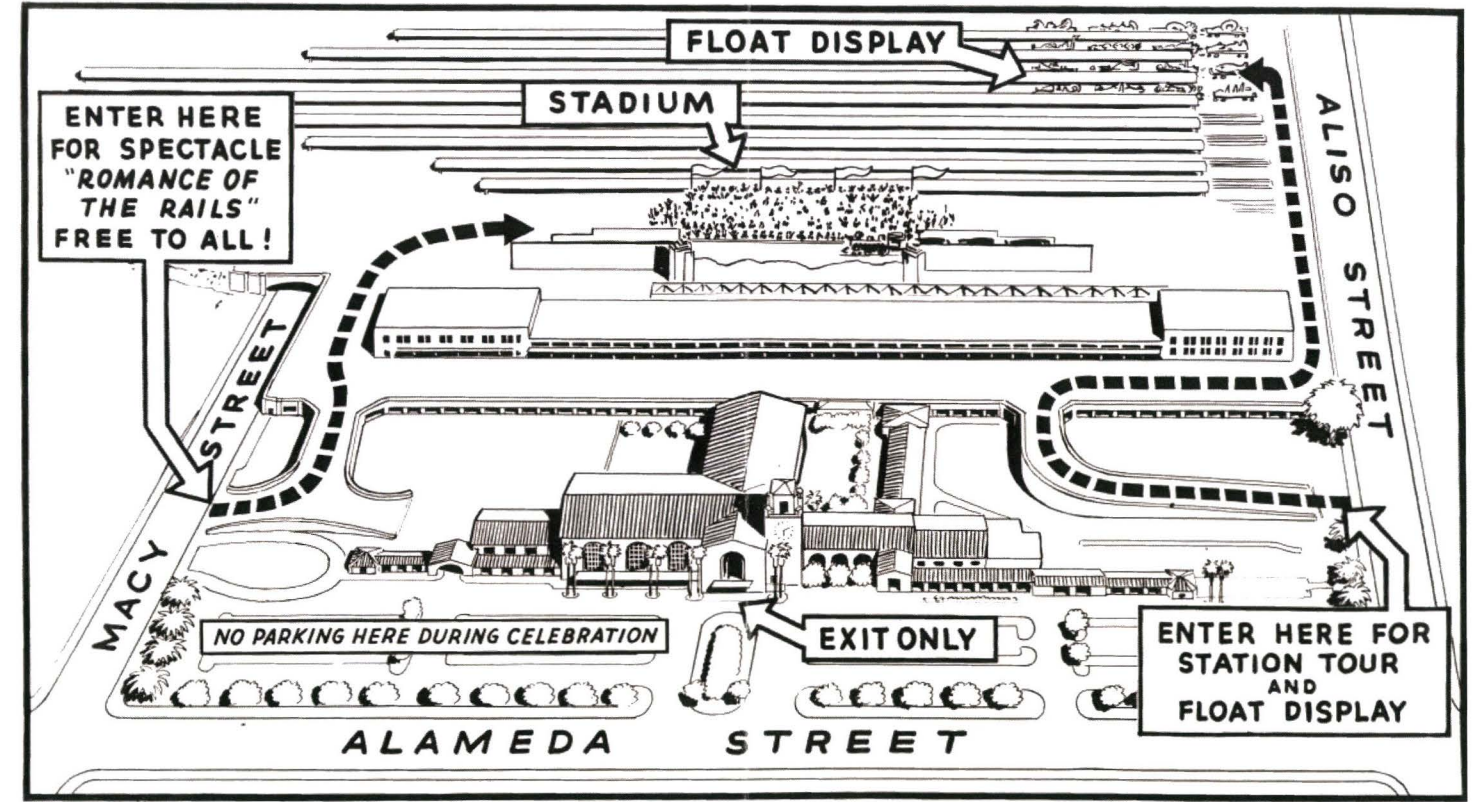
Union Station (1944)



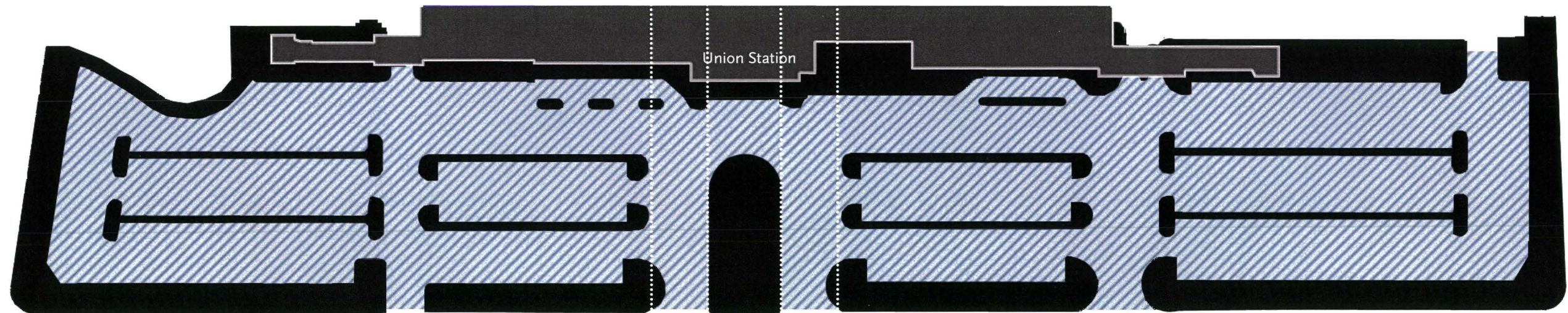
Union Station at Night



Early Union Station Axonometric Drawing (1937) Los Angeles, CA



Union Station Axonometric Drawing illustrating opening ceremony events + access (1937) Los Angeles, CA



Forecourt Figure-Ground study: Automotive use in 1937

 Roadway Area
186,300 SF



A-6 Alameda/Forecourt Concept Design Appendix

EXISTING CONDITIONS

Union Station today is revered as an iconic station, showcased through movies, celebrated as a place of marriage and photographed by tourists and residents alike. While the Union Station underwent a series of renovations in the 1990s, including site improvements that improved some aspects of pedestrian access and added a series of palms organized about the historic entry plaza framing the main entry of the station, the station remained largely disconnected from the city and the exterior space in front of the station remained largely under utilized.

Alameda Street has historically been utilized as an important industrial corridor which is reflected in the urban form and is largely defined as a wide, vehicular-oriented street. In recent years however, truck shipping patterns have changed and the attitude of the neighborhoods around the station, opening the opportunity to rethink this portion of the street.

Throughout the outreach efforts associated with the Union Station Master Plan, the collective neighborhoods and respective communities have indicated a strong desire to make for improved connections. Together with the Union Station Master Plan Linkages Plan, this document latter describes the specific design concepts to improve the existing conditions found at the station.

The focus of these improvements for the forecourt and Alameda include improved access, shaded pedestrian walks, bike amenities and safe crossings will contribute to making the forecourt an accessible and connected part of the station and city.



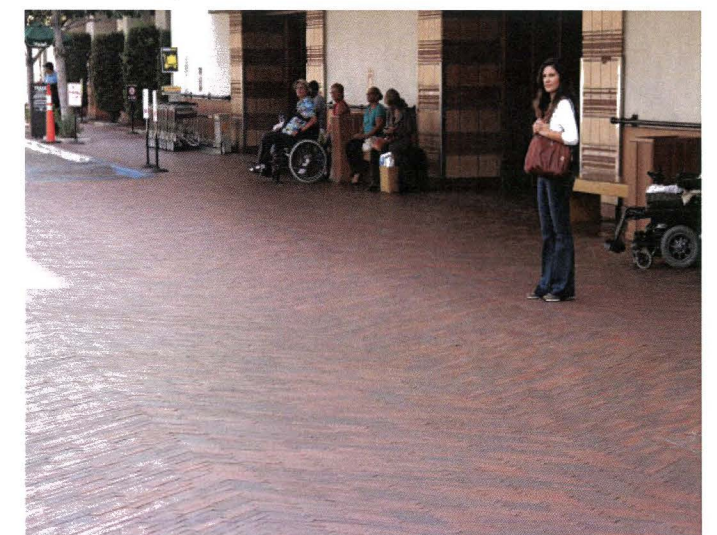
Vehicular Access at Main Entry



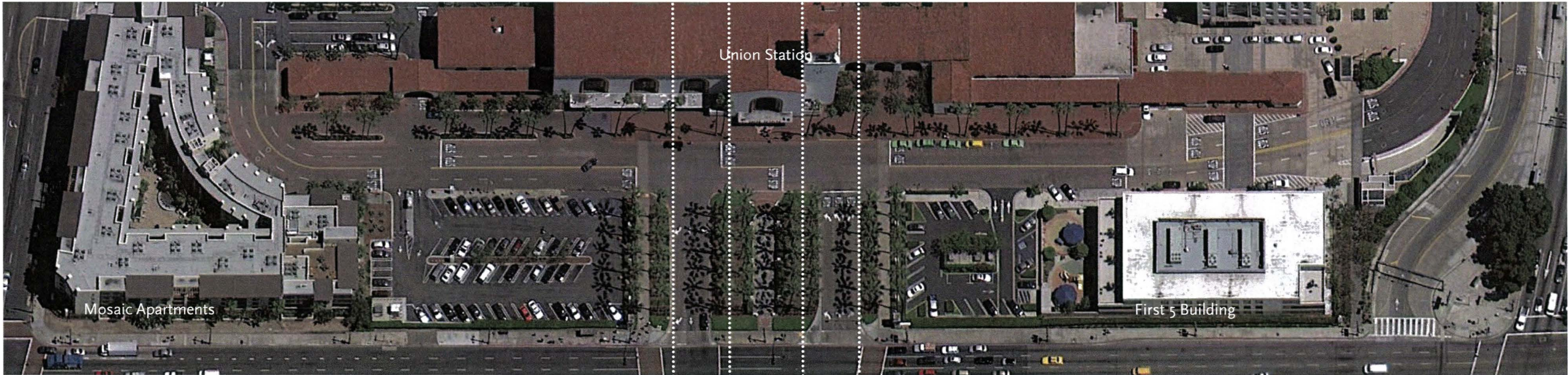
Surface Parking Area (North)



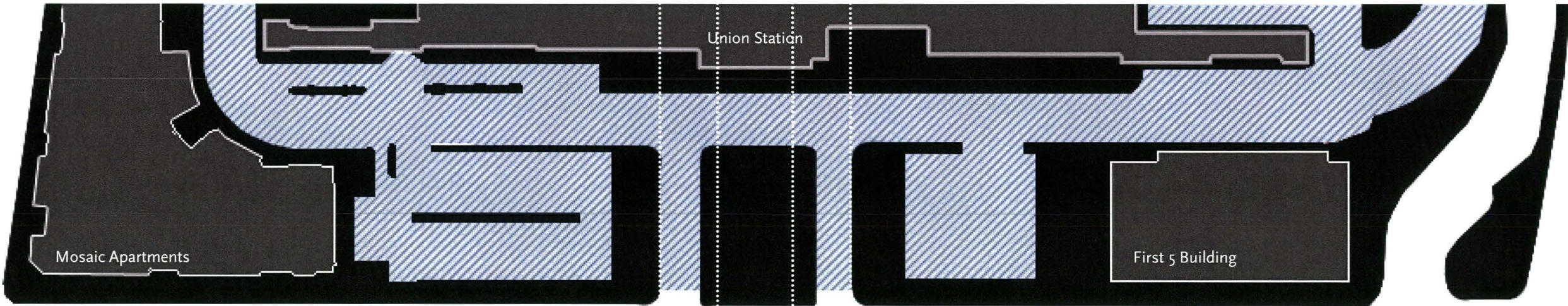
Main Entry



A-6 Alameda/Forecourt Concept Design Appendix



Forecourt Aerial, 2014



Forecourt Figure-Ground study: Automotive use as of 2014

 Roadway Area
110,000 SF



A-6 Alameda/Forecourt Concept Design Appendix

DESIGN PRINCIPLES

The design of the Forecourt is driven by three over arching principles as a means to realize the space as a great civic place at the main entry at Union Station.

SPACE

1) Space – that filters the flow of circulation (Circulation – Planning for a hierarchy of circulation ways to access the station, the forecourt and street that complements the overall way-finding strategy) but also promotes comfort (User Comfort – Provision of variety of seating, degree of shade, tree coverage,

SETTING

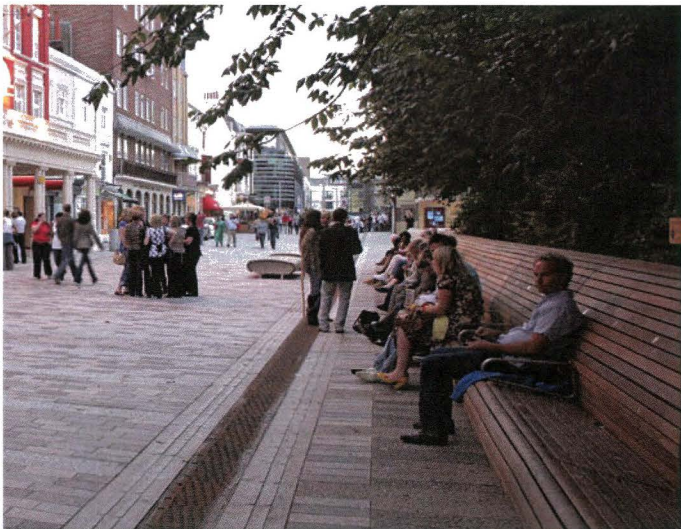
2) Setting – that enhances the historic character through tree planting (Trees – Creating a verdant frame that defines the forecourt, accent trees that create visual interest and promote a more healthy urban forest for the city) while providing a buffer from Alameda Street (Planted Buffer – A 12' wide planted buffer will define the edge of the forecourt and serve as an area for

ACTIVATION

3) Activation – to ensure a safe and desirable condition that welcomes transit riders and station visitors to enjoy / occupy the space, a pavilion (Pavilion - offers cafe type amenities, informal seating for day-to-day activity, and supports event programs) and moveable furnishings (Furnishings - Provision of moveable site furnishings (tables, chairs) associated with forecourt pavilion and spill-out dining associated with station



Pedestrian Circulation



User Comfort



Civic Quality



Tree Planting



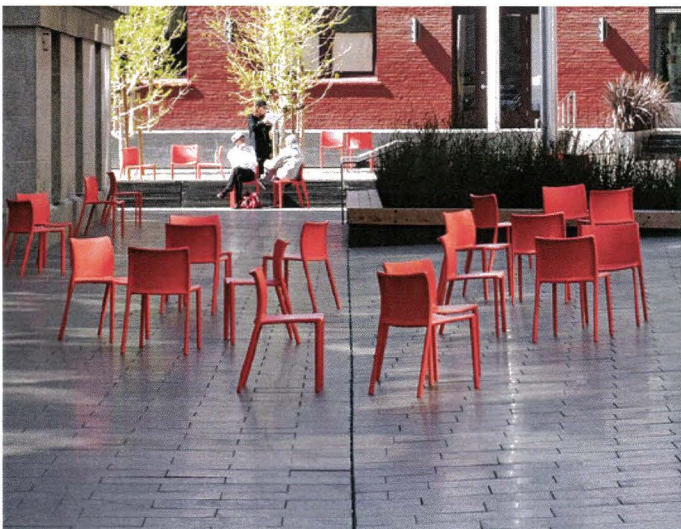
Planted Buffer



Stormwater Management



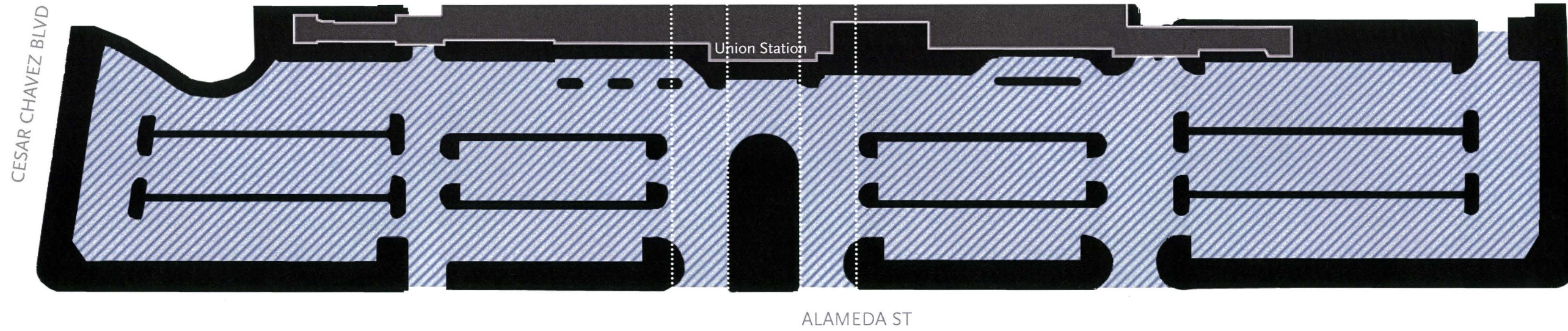
Pavilion



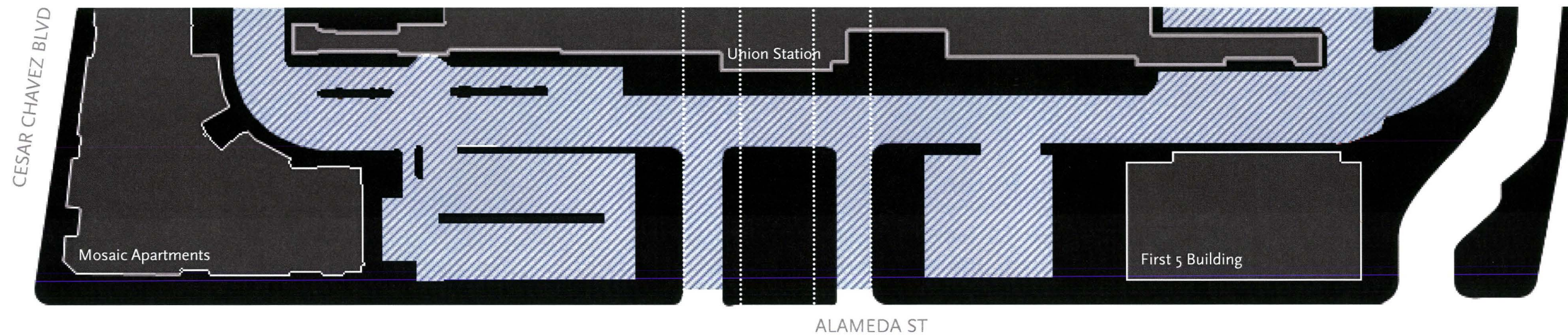
Moveable Furnishings



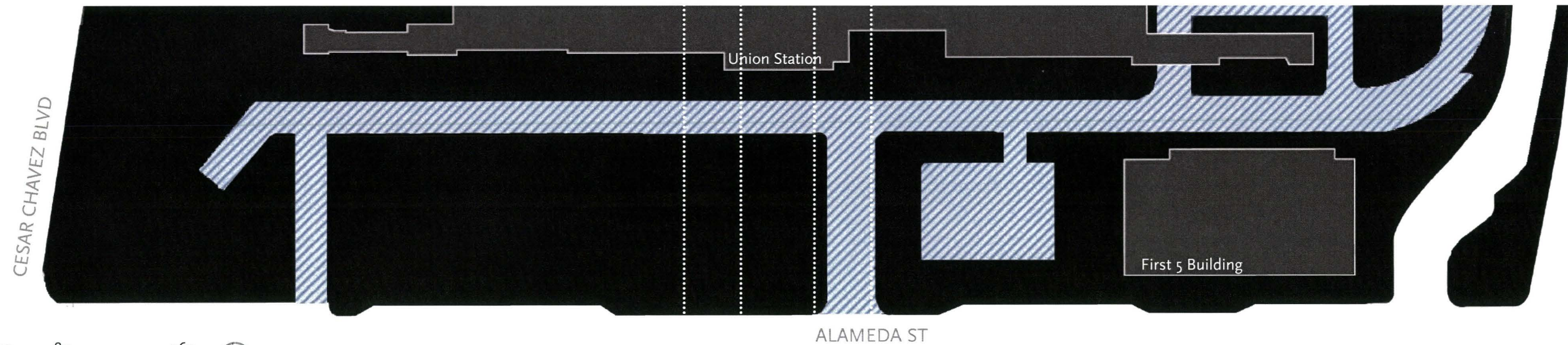
Water Feature



1939
Vehicular Area
186,300 SF



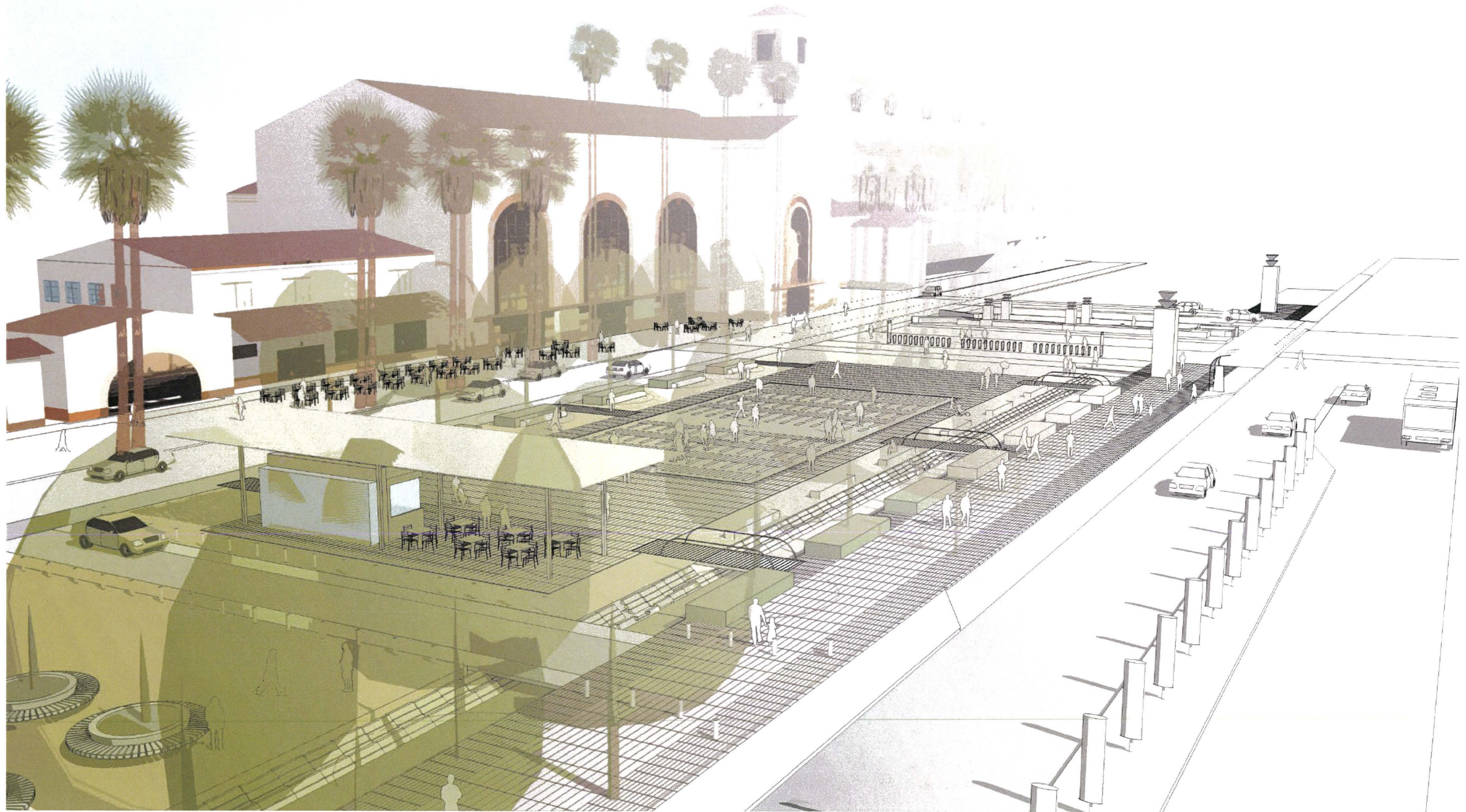
2014
Vehicular Area
110,000 SF



Proposed
Vehicular Area
59,500 SF



A-6 Alameda/Forecourt
Concept Design
Appendix

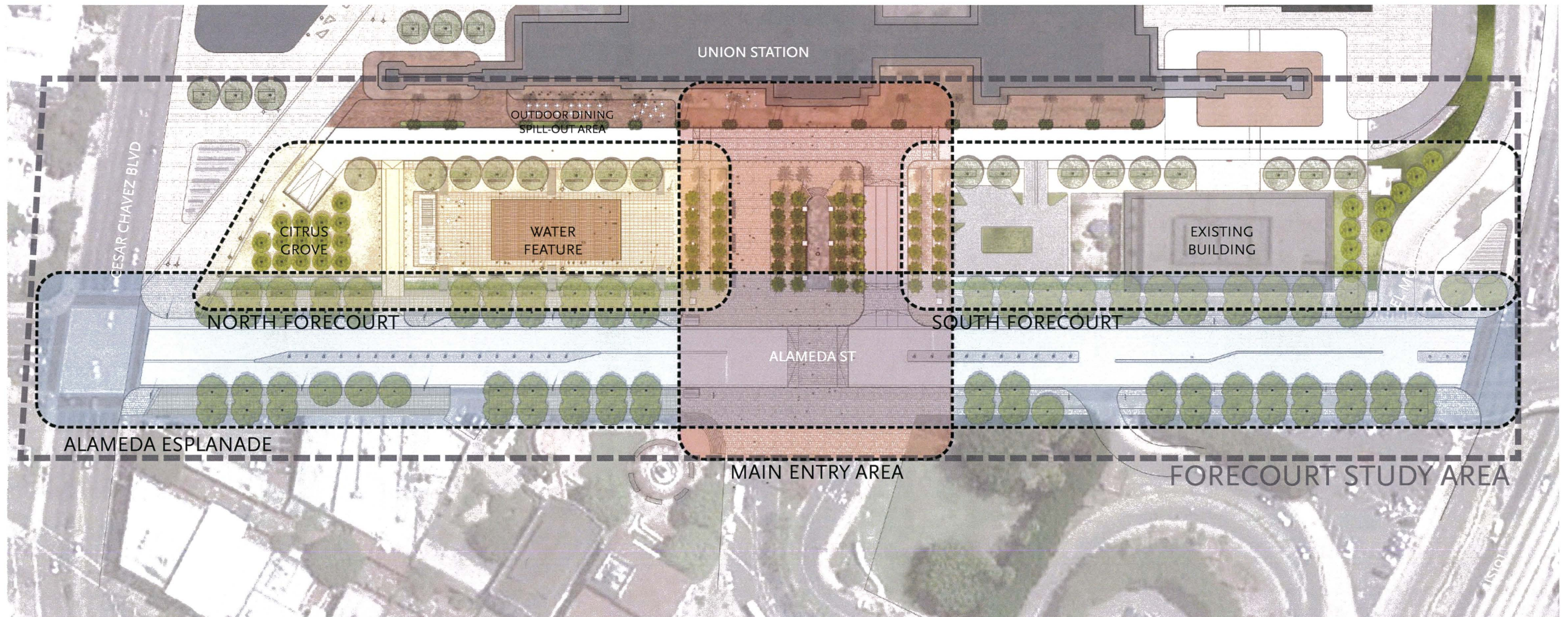


CONCEPT DESIGN



Existing Conditions





Proposed Plan

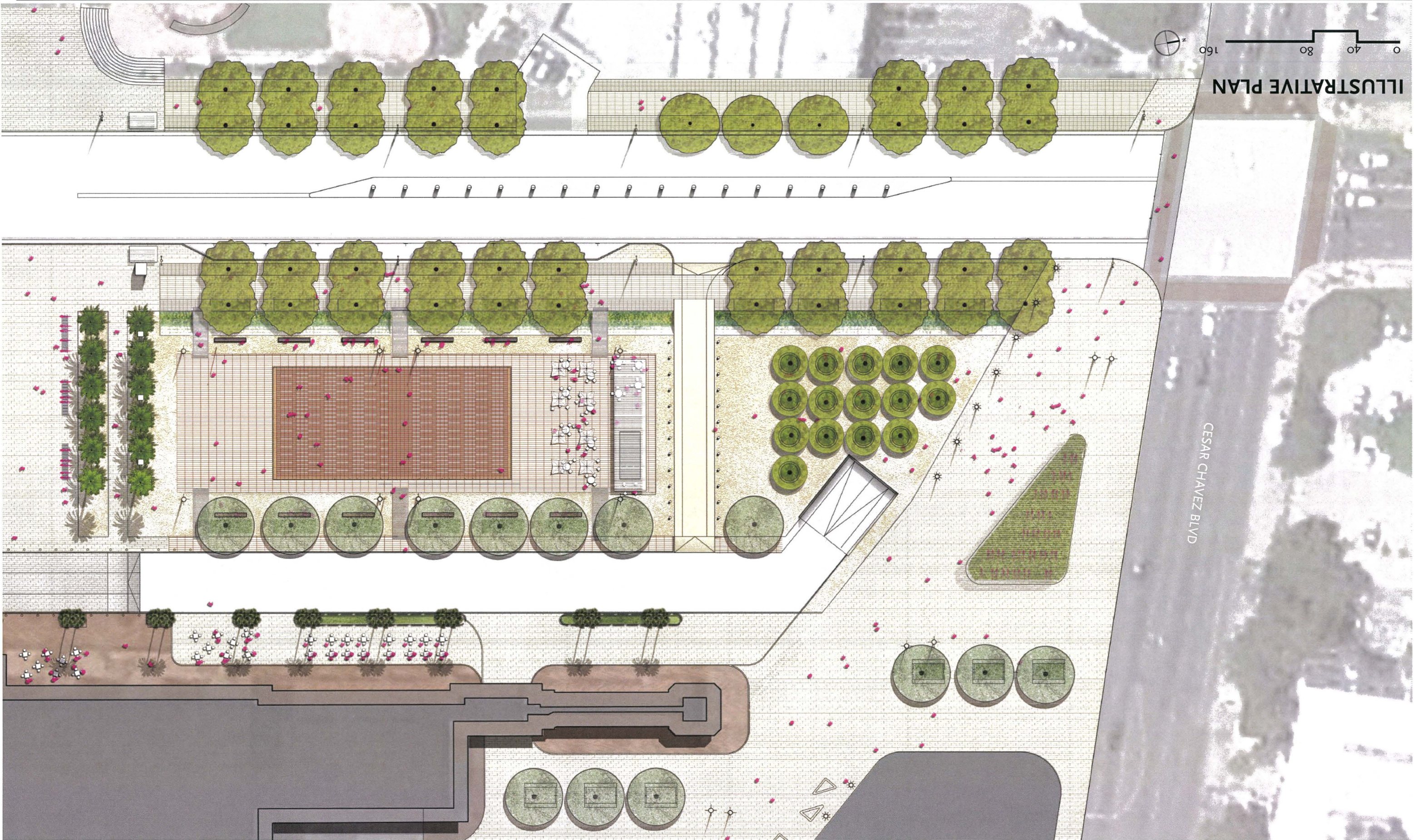
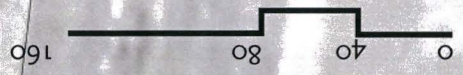
STUDY AREA

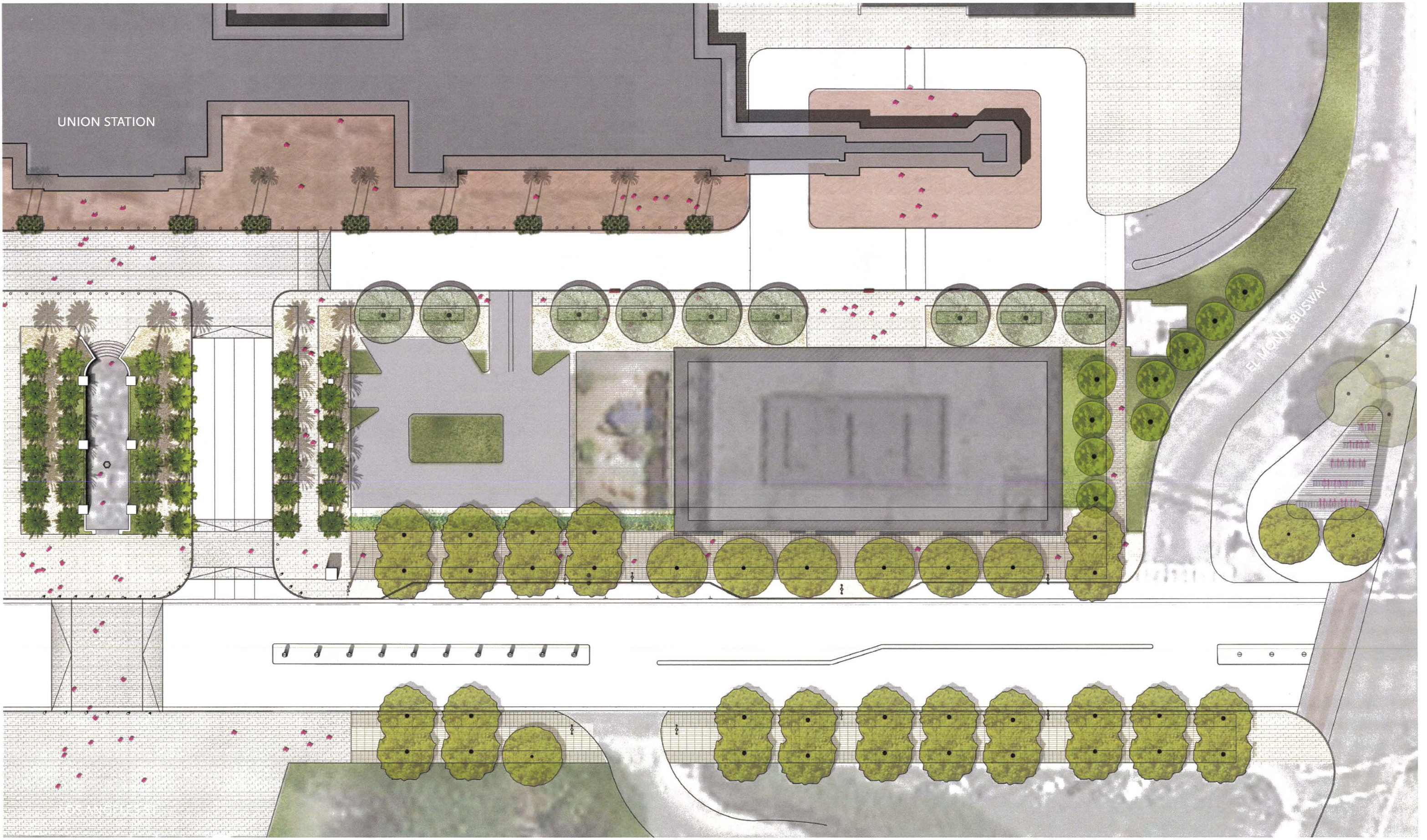
The Following Section depicts the Conceptual Design of Alameda Street and the Union Station Forecourt. The Forecourt Extents Diagram illustrates the various sub areas of the Forecourt that include the 'Main Entry' area, the 'Northern Forecourt' area and the 'Southern Forecourt' area, and the sequence for which they will be presented.

As the Southern Forecourt Area is occupied by First 5 California, the area will remain largely intact with the exception of improvements to the edge conditions associated with the renovation of Alameda Street and the reconfiguration of the internal drive.



ILLUSTRATIVE PLAN

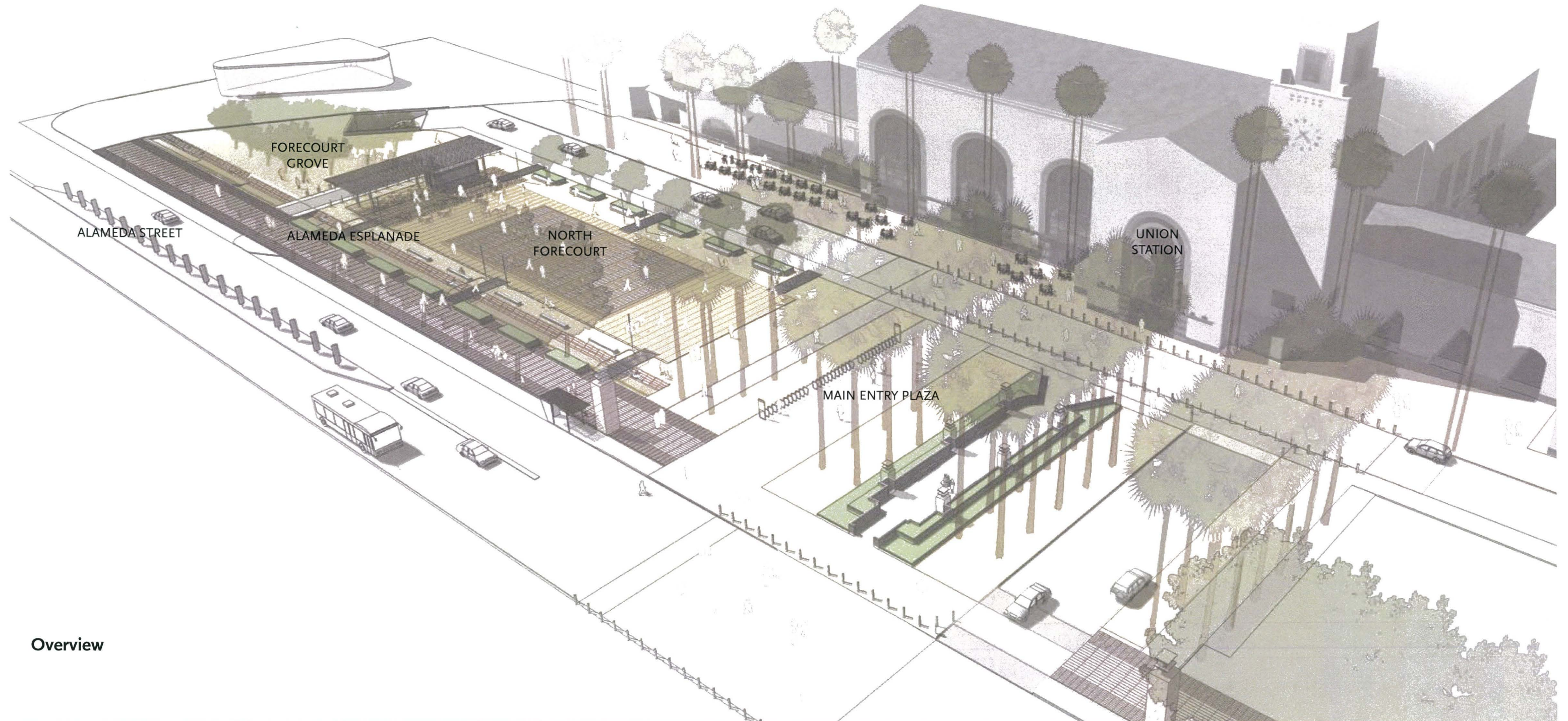




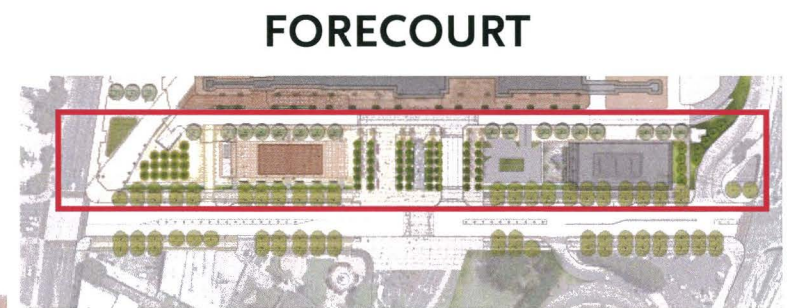
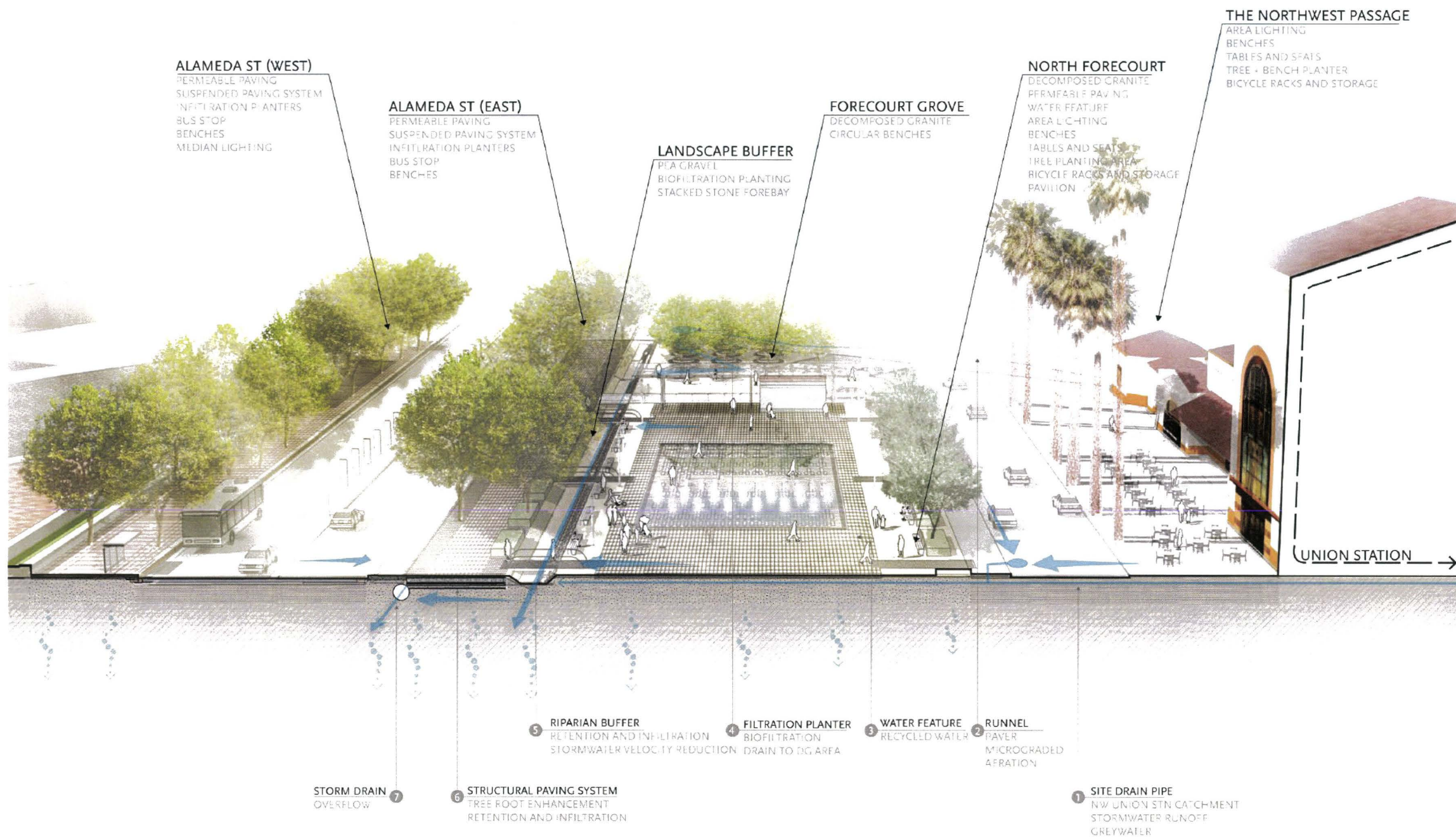
UNION STATION

EL MONTE BUSWAY

A-6 Alameda/Forecourt Concept Design Appendix



Overview



The proposed Forecourt of Union Station provides a new civic open space that is pedestrian, bike and transit oriented. The overall vehicular circulation space that includes the main arrival space, existing surface parking area and internal drives will be minimized and/or removed to create a more safe, comfortable and attractive setting for the users and visitors of the station. In later stages of development, the Mozaic Apartment buildings which currently occupy the northern end of the Forecourt will be removed as part of the overall transport reconfiguration to allow buses to circulate and access to the relocated Patsaouras Bus Plaza.

The spatial character is conceived as a refined space that provides clear sightlines to the façade of the historic Union Station and utilizes a simple and consistent formal vocabulary as a means to complement the historic nature of the station. The intent is to recapture the essence of original setting of the station, i.e. one where it was accessible, visible and open to the surrounding city, clearly integrating the building in its larger urban context.

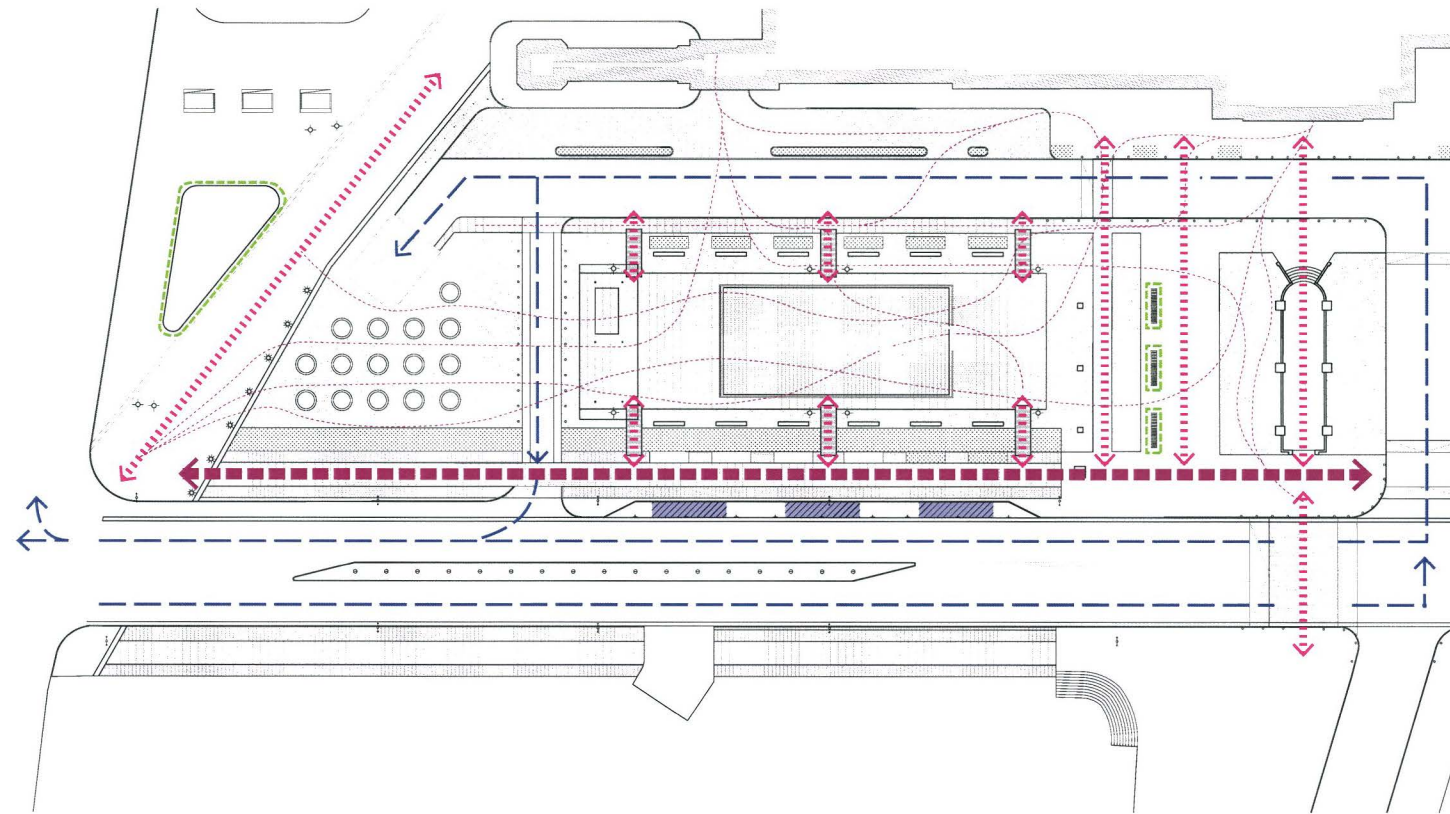
Related to the north-south alignment of the planning of the historic station, the layout of the forecourt is organized as a series of consecutive elements (a series of public spaces including smaller forecourts) oriented north-south and framed by the double row of Sycamore trees along Alameda to the west and a linear alignment of Olive trees planted along the reconfigured driveway parallel to the historic station to the east.

Illustrative Section

FORECOURT

A-6 Alameda/Forecourt Concept Design Appendix

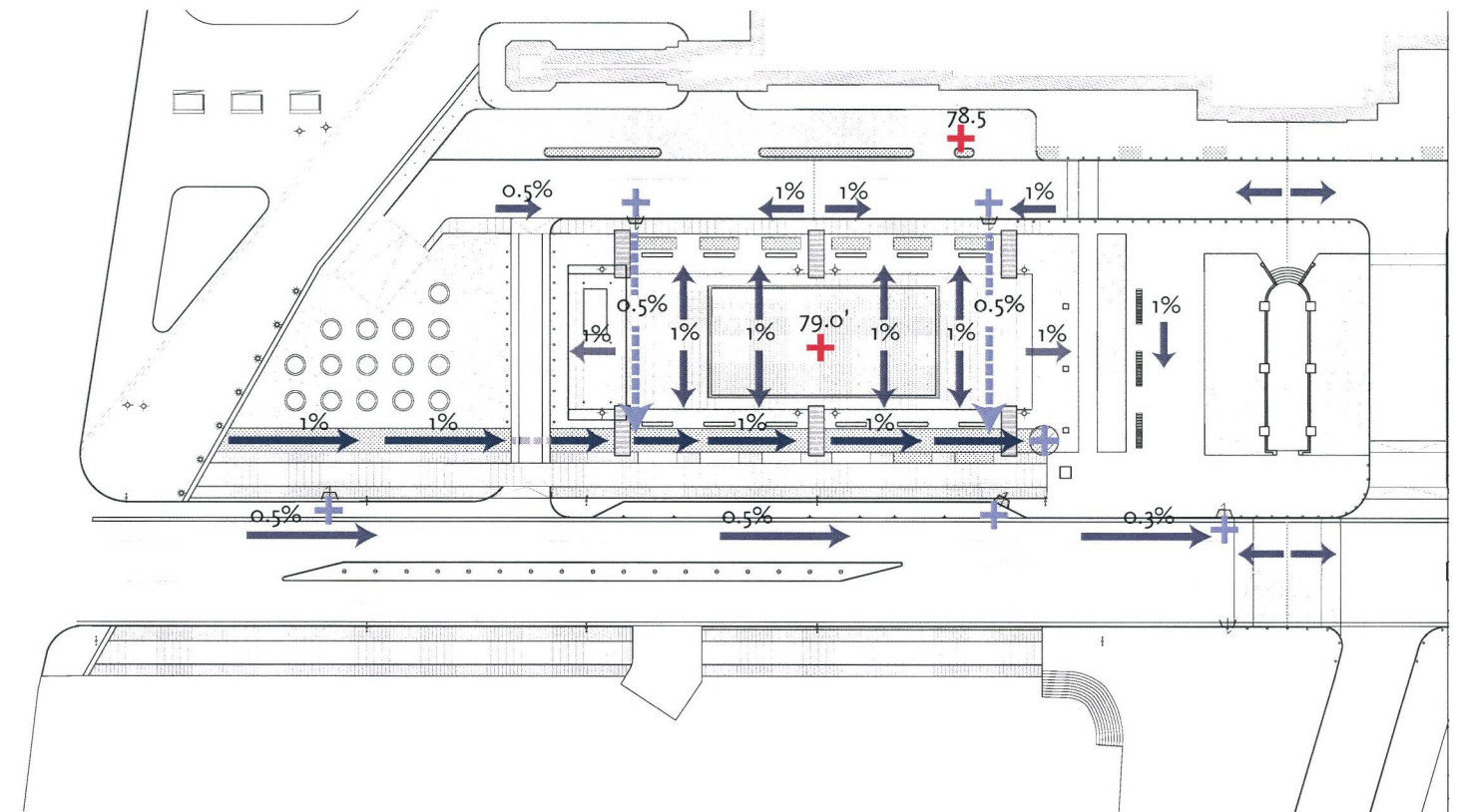
FORECOURT DIAGRAMS



- - - - - Pedestrian Crossing
- - - - - Bike Amenities
- - - - - Alameda Esplanade
- Drop-off/Pick-up
- - - - - Car

CIRCULATION

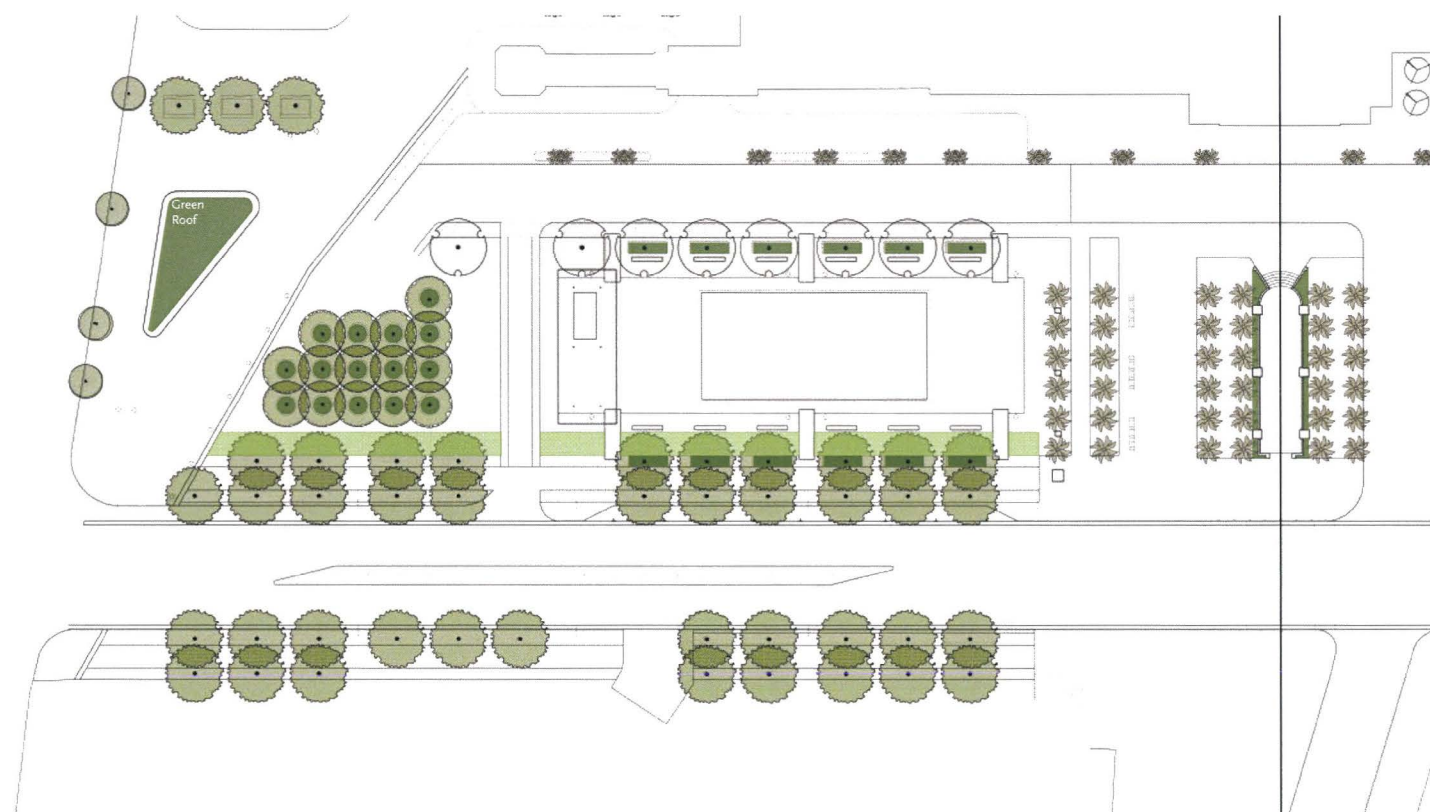
As a means to encourage transit ridership and create links to adjacent neighborhoods and the larger urban network of open spaces, the proposed Forecourt successfully improves the pedestrian, cycling, and vehicular environment. This includes improving over-arching way-finding techniques increasing site visibility and incorporating a dedicated bike path along Alameda St., Bike parking, increased pedestrian crossings, and new vehicular drop-off/pick-up along Alameda St.










- Surface Runoff
- Bioswale Basin
- - - - - Pipe
- + Site High Point
- + Site Low point
- Stormwater Drain

DRAINAGE

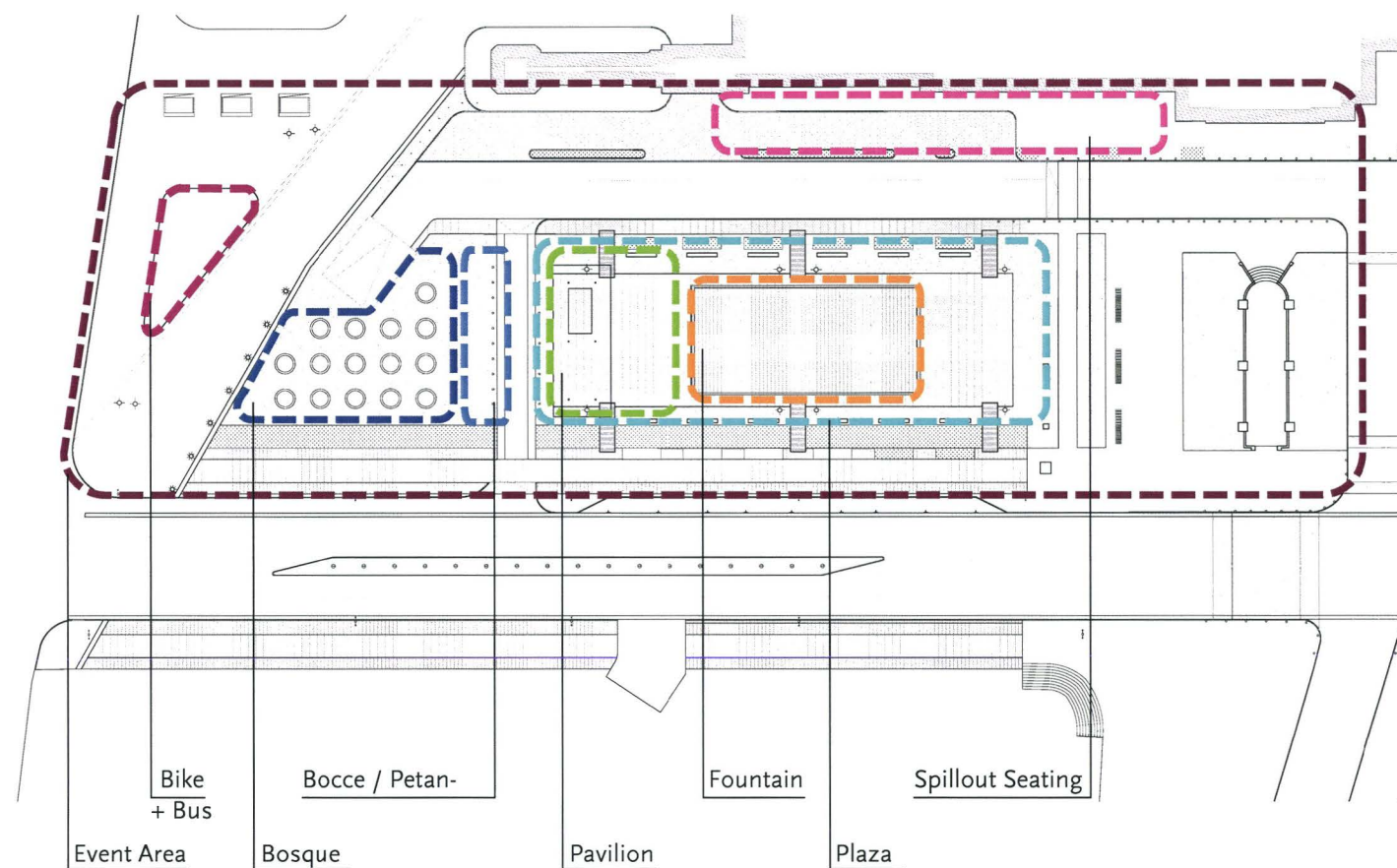
In an effort to provide sustainable site systems, the drainage of the forecourt supports stormwater capture and reuse, increasing climate comfort while supporting on site landscape and urban ecology. The majority of the ground surfaces are largely comprised of decomposed granite and other porous paving materials including concrete pavers and porous concrete to promote a porous ground plane and enhance pedestrian circulation.



-  Platanus spp
-  Olea spp
-  Washingtonia robusta (ex.)
-  Jacaranda mimosifolia (ex.)
-  Citrus spp
-  Bioswale Planting
-  Planting Area

PLANTING

Relating back to the overall Master Plan Open Space and Landscape Concept, the ecological condition along the western edge of the Forecourt, including the Alameda Esplanade, is designated as a Riparian condition. This is supported by the planting of Sycamore trees, understory planting and features a successive swale system within the landscape buffer that is designed to receive, convey, treat, detain and release/infiltrate stormwater from the Forecourt.

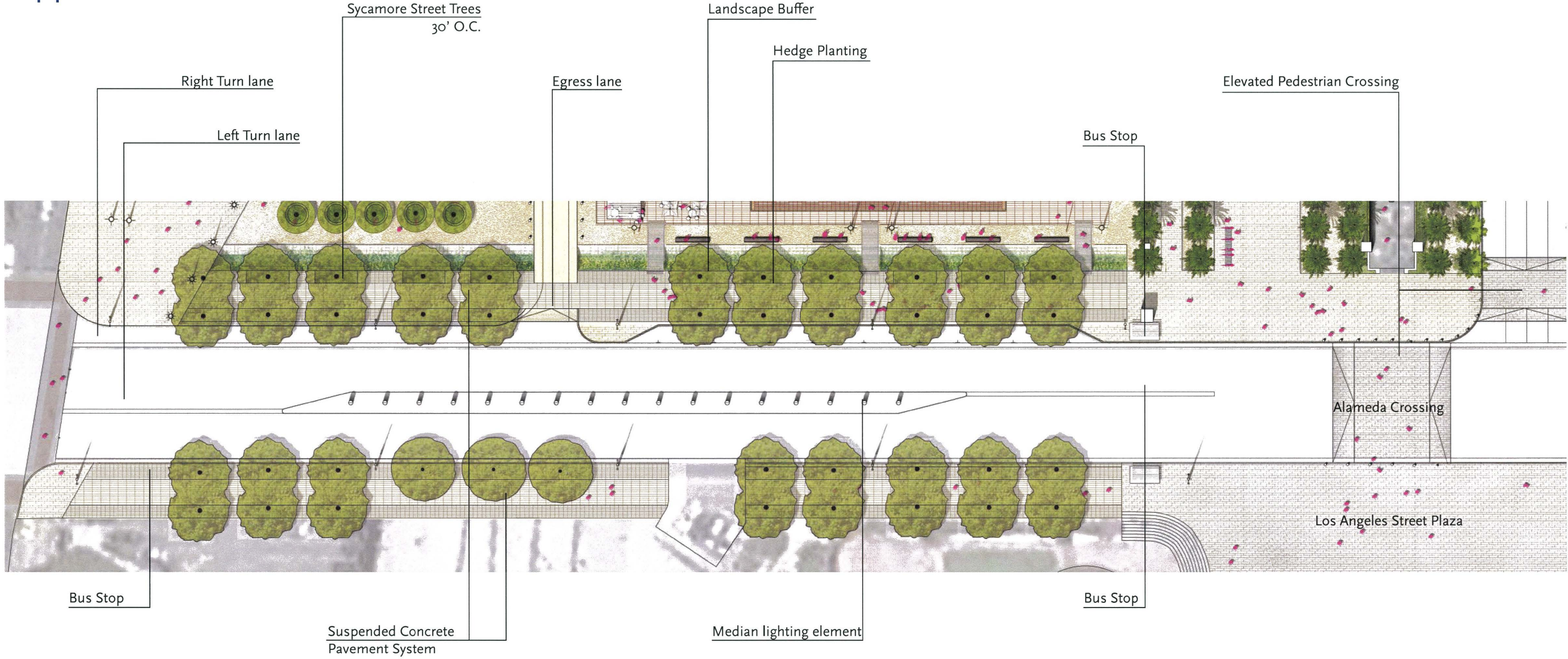


PROGRAMMING

Converting the surface parking areas in front of the Station along Alameda into dedicated open space would offer a flexible area(s) to introduce an array of passive and active programmable open spaces with the intention to host various sized events, festivals, and ability to integrate art as well as maximizing the main entry as a pedestrian space.

FORECOURT

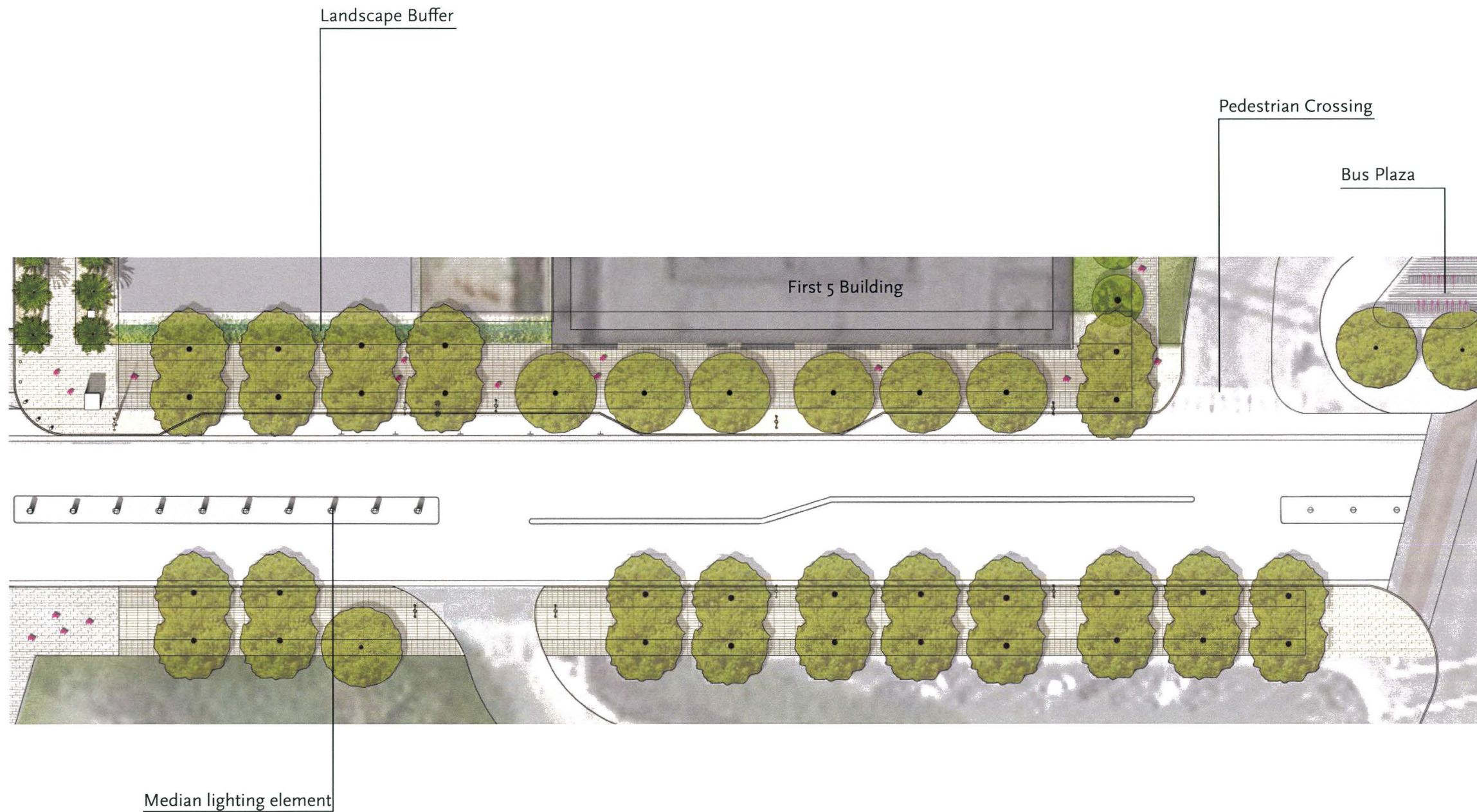
A-6 Alameda/Forecourt Concept Design Appendix



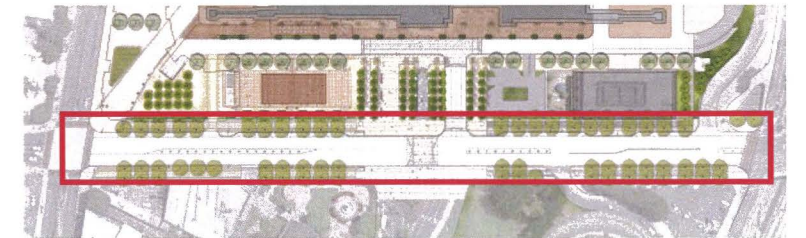
Illustrative Plan



ALAMEDA ESPLANADE



ALAMEDA ESPLANADE

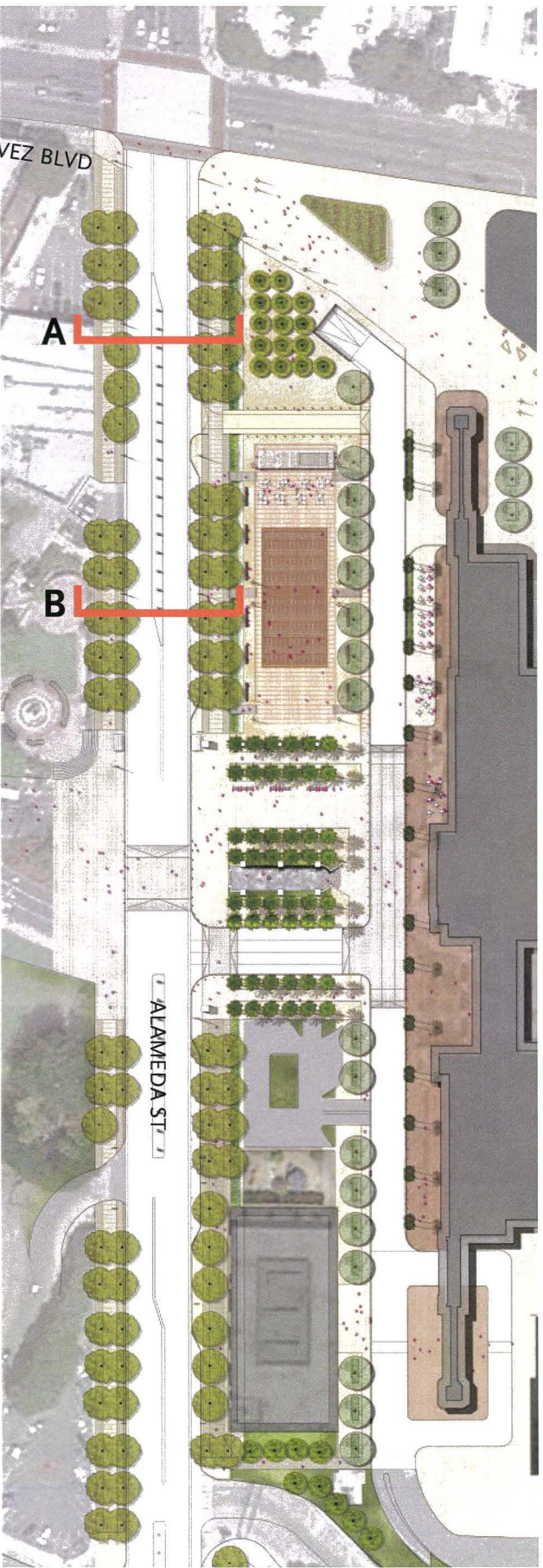
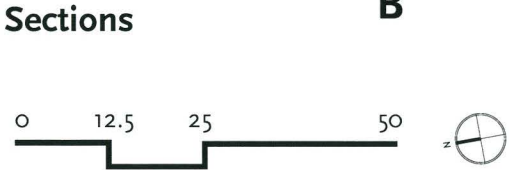
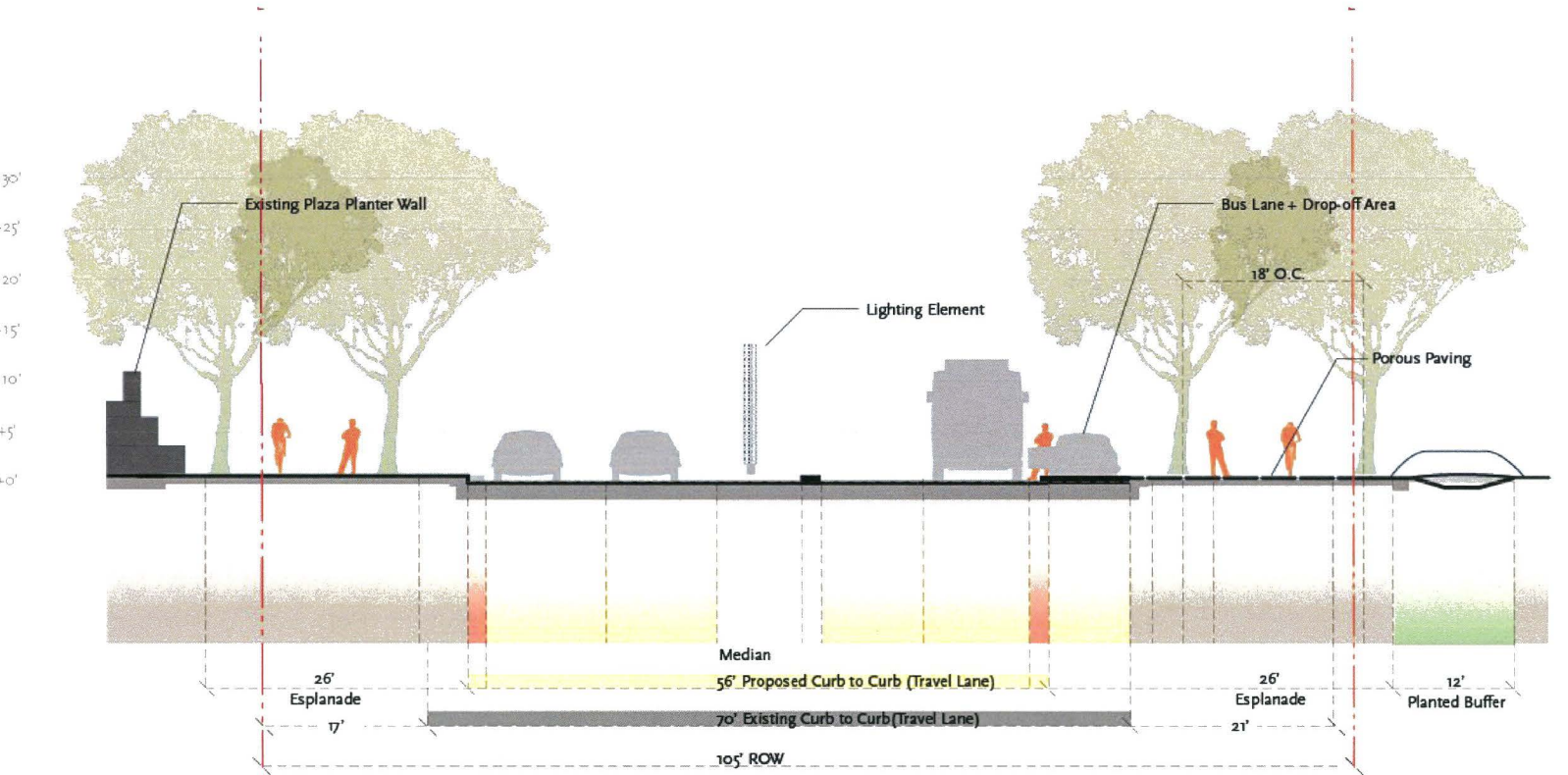
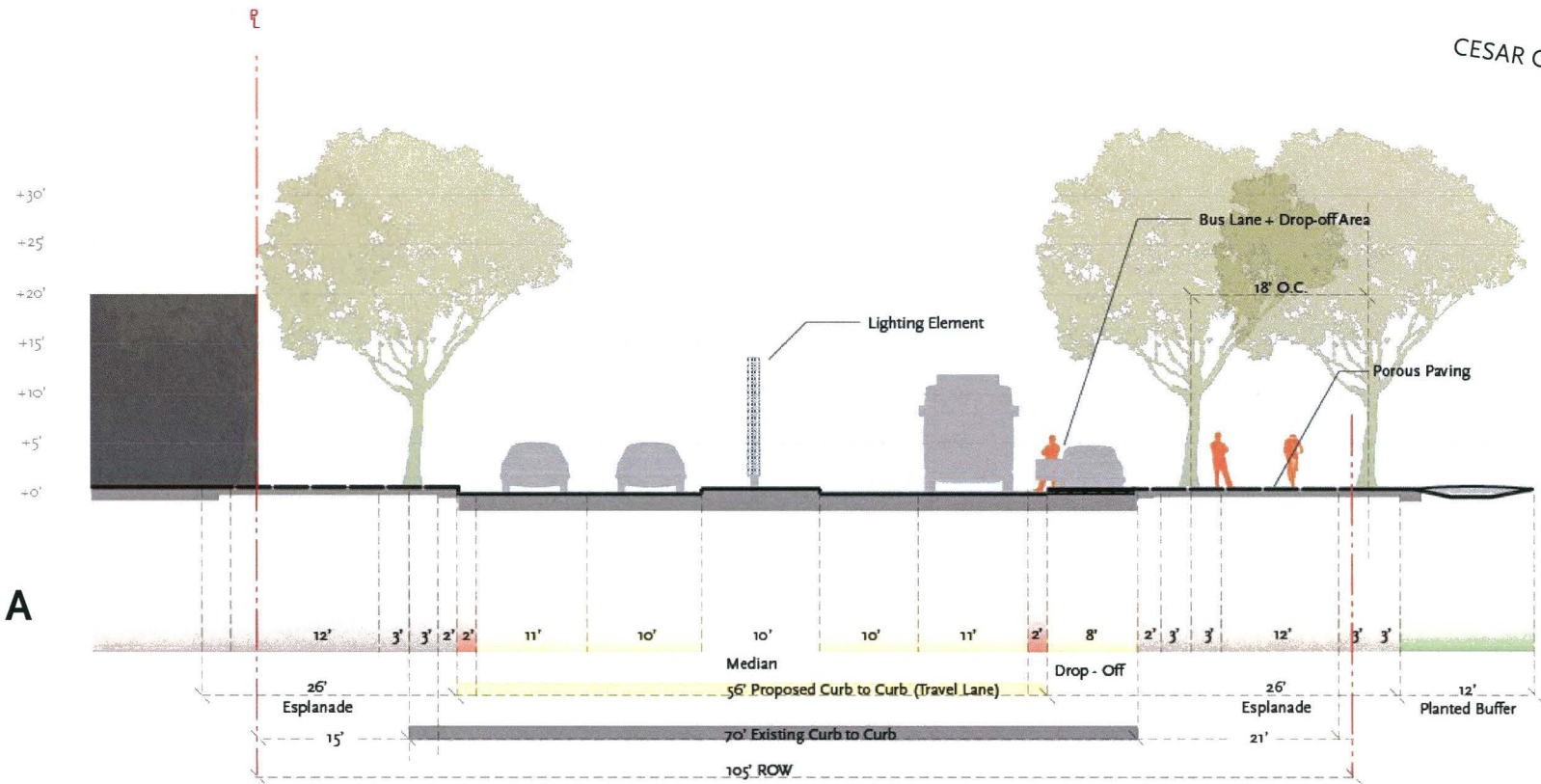


Tracing back to its opening more than 75 years ago, Alameda Street is reconceived as a verdant tree-lined esplanade with wide walkways that support pedestrian and bike circulation to the station and along its frontage. In conjunction with the Metro “Connect US” Plan (formerly known as the Linkages Plan), Alameda Street has been identified as a street that has the potential for removal of two lanes of traffic while continuing to encourage public transit serving as an important north and south corridor, connecting Union Station to Chinatown and Little Tokyo/Art District.

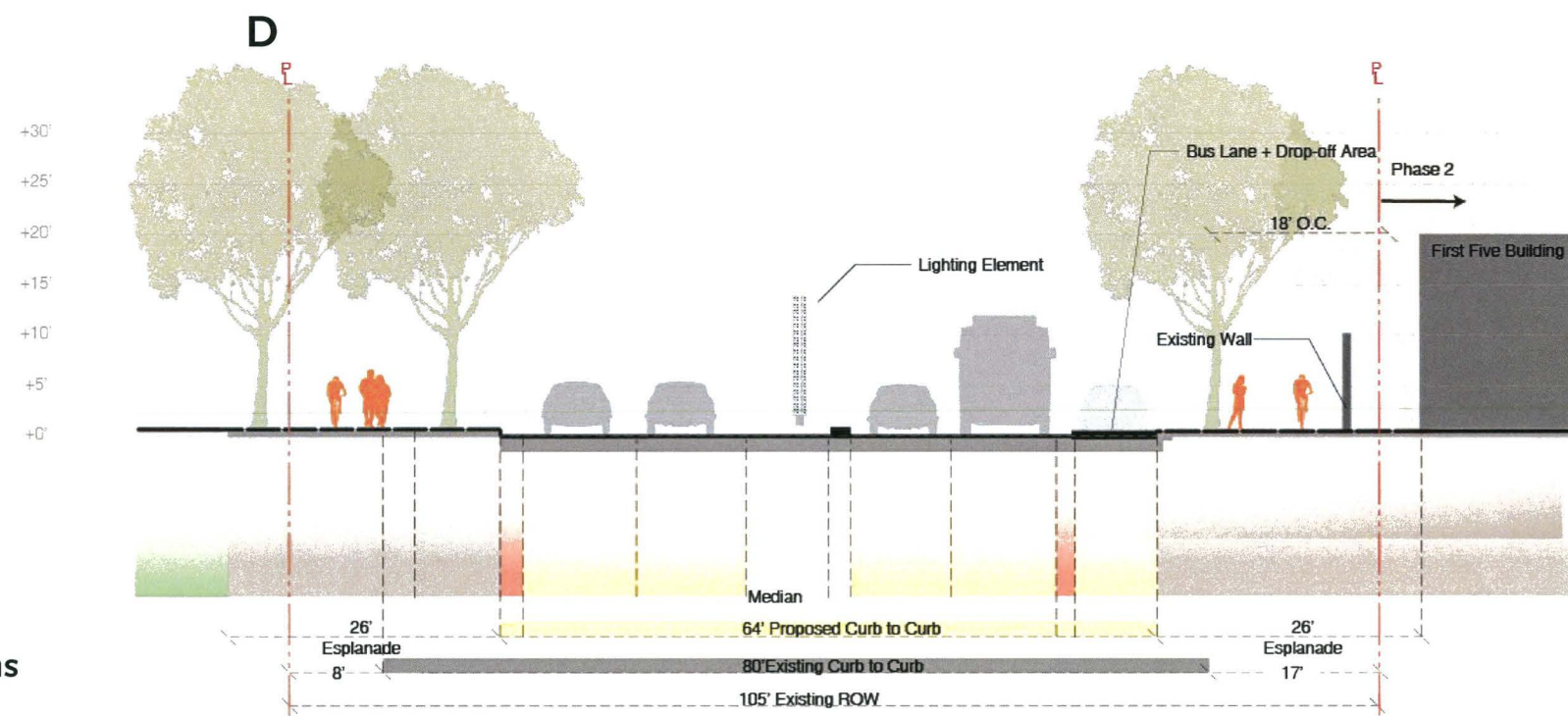
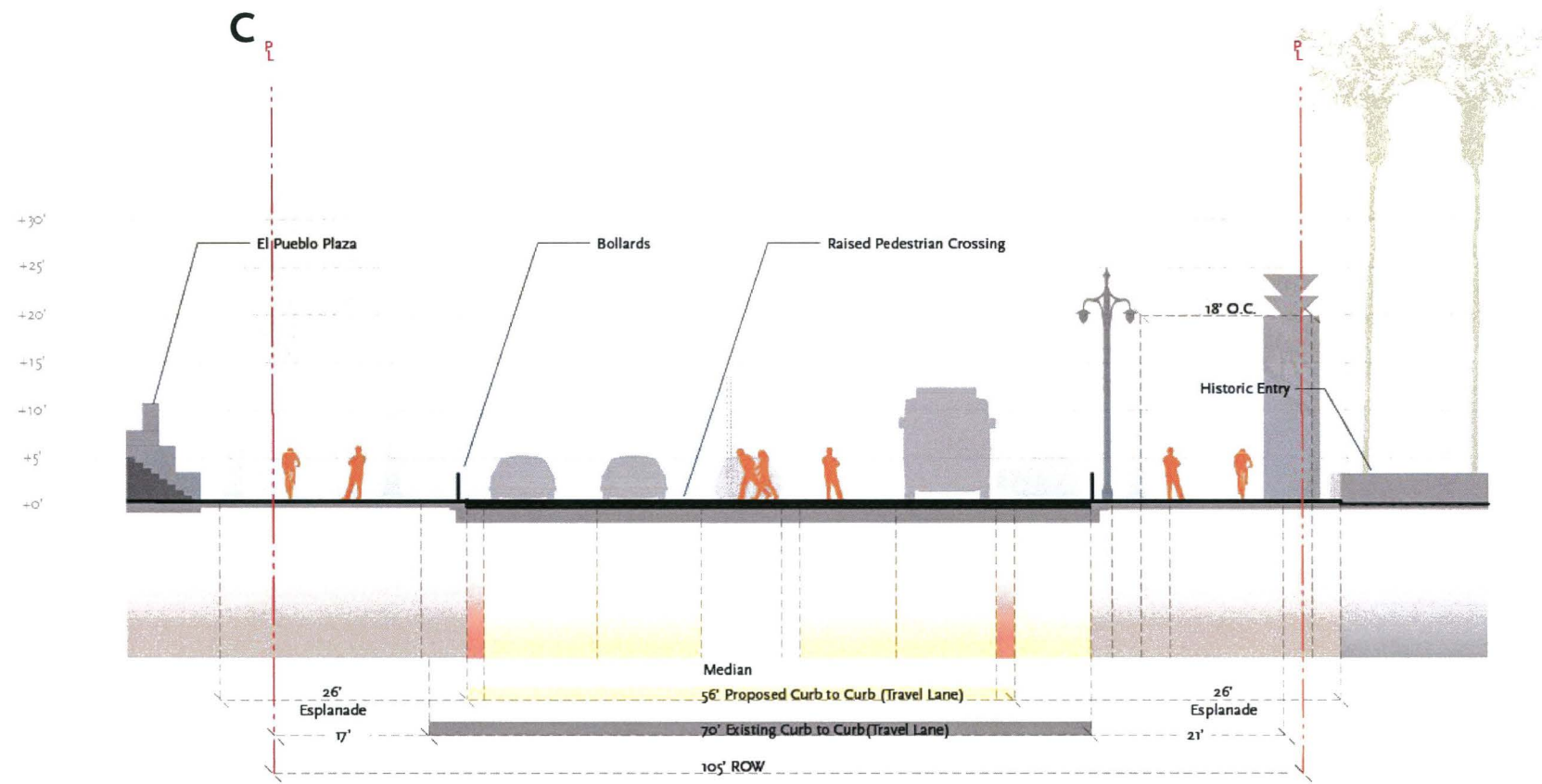
Narrowing the street and increasing the pedestrian capacity greatly enhances the connection between Union Station and Historic El Pueblo District/LA Plaza. The 24-foot wide shared pedestrian/bike walkway along the east edge of the street, adjacent to Union Station, described as the “Alameda Esplanade” is designed to provide a continuous path to support more gracious space for pedestrian and bike circulation. The Esplanade is conceived as a continuous walkway constructed with a permeable paving system. Maximizing this space as a strategic zone for stormwater detention, a suspended paving system utilizes a structural system that “suspends” or “floats” the paving above enables greater capacity for the tree roots to grow and also provides space for stormwater to collect, detain and potentially infiltrate.

ALAMEDA ESPLANADE

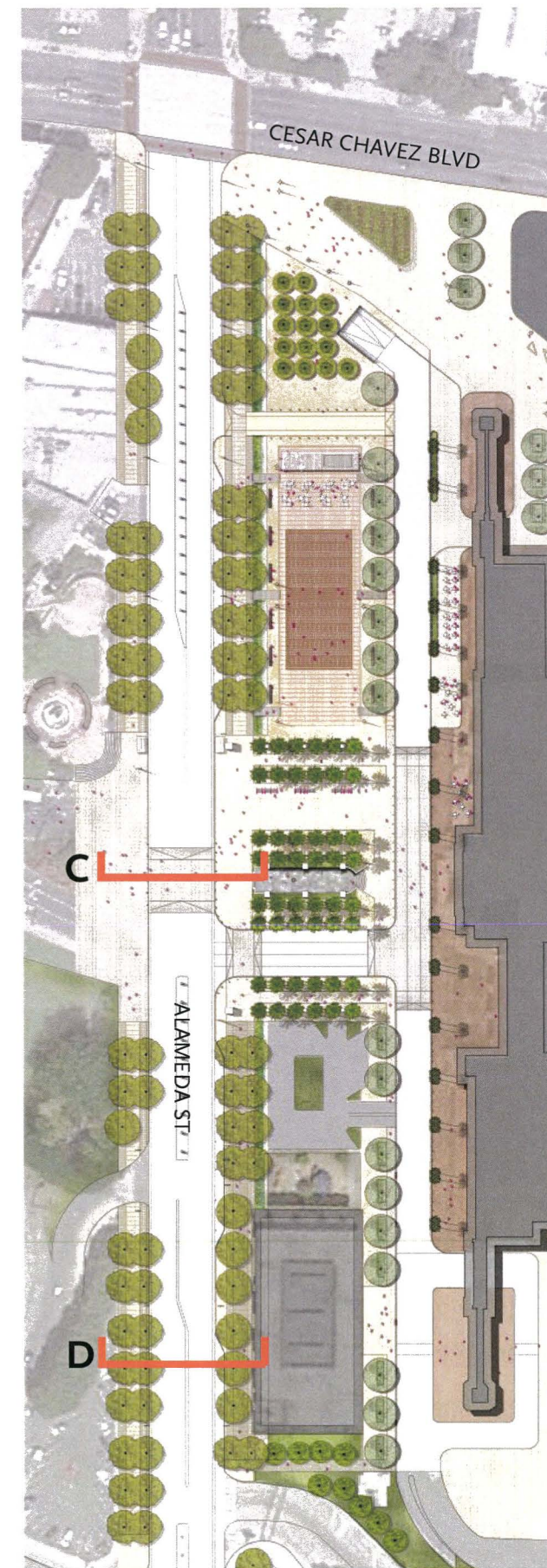
A-6 Alameda/Forecourt Concept Design Appendix



ALAMEDA ESPLANADE

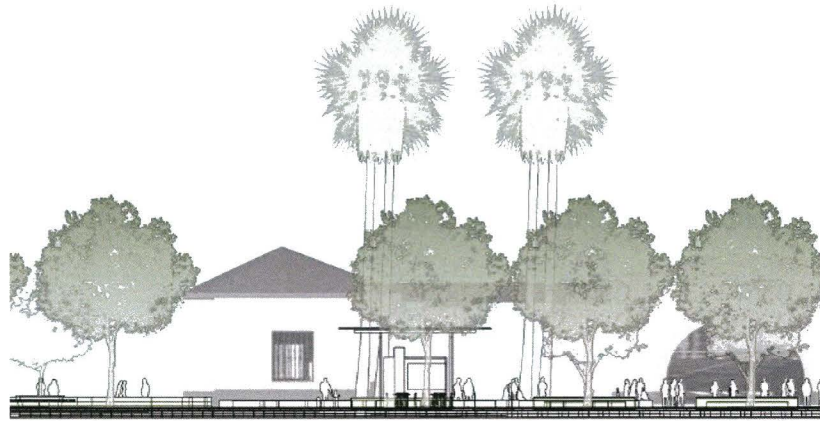


Sections



ALAMEDA ESPLANADE

A-6 Alameda/Forecourt Concept Design Appendix



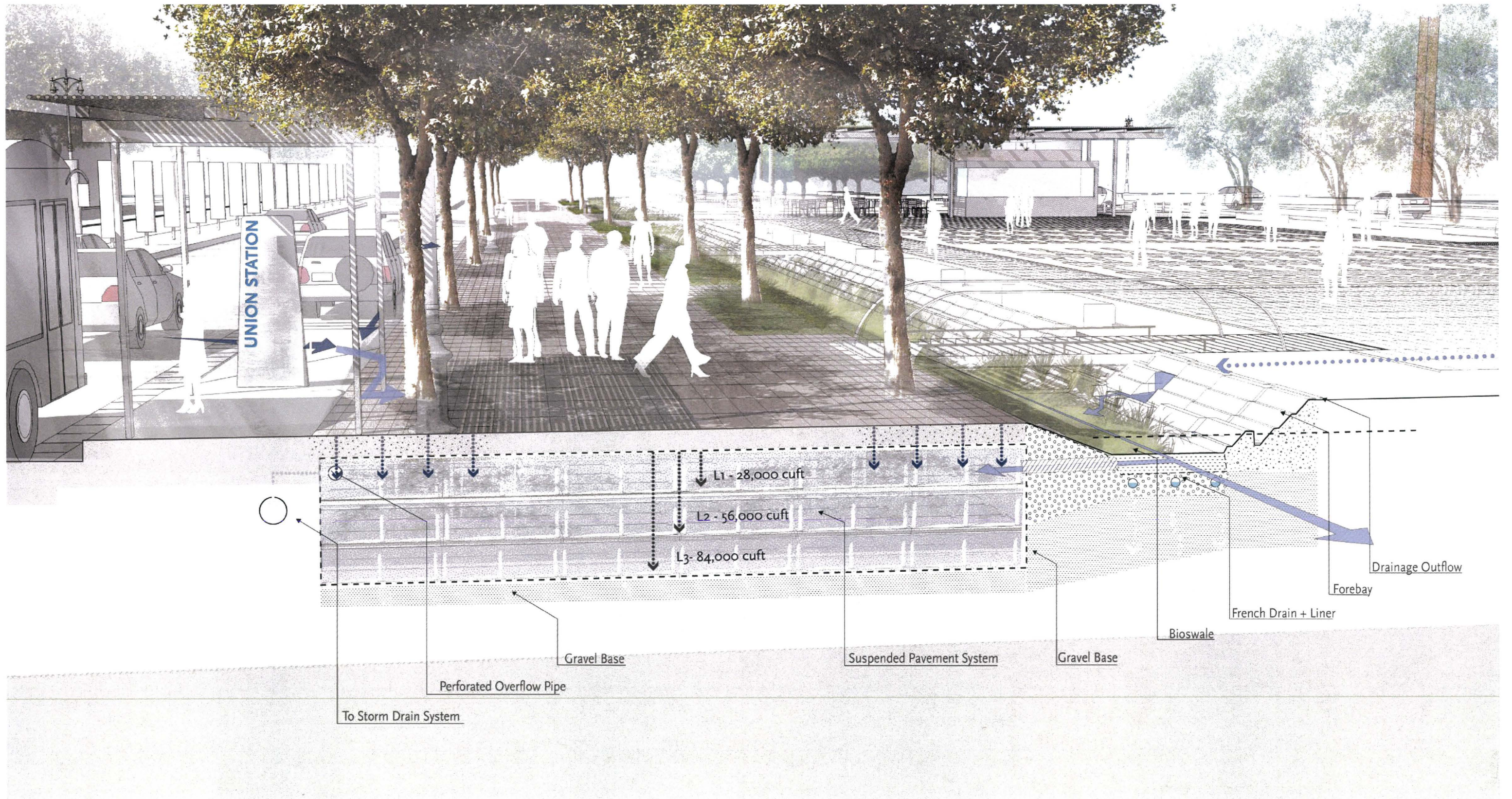
Street Elevation Detail



Street Elevation



ALAMEDA ESPLANADE



Illustrative Section

ALAMEDA ESPLANADE

A-6 Alameda/Forecourt Concept Design Appendix

MAIN ENTRY AREA



The Main Entry Area is planned to consolidate vehicular circulation to the southern entry drive allowing for the northern entry drive to be entirely dedicated to pedestrian and bicycle circulation through the creation of a pedestrian promenade. Within this space, planned in conjunction with other future downtown LA bike improvements, will be an installation of a bike share station, which is a series of "grab-and-go" bikes that offer easier means of access to and from Union Station, and will promote mobility in a highly visible means.

Existing Palm Trees

Bike Share Station

Pedestrian Promenade

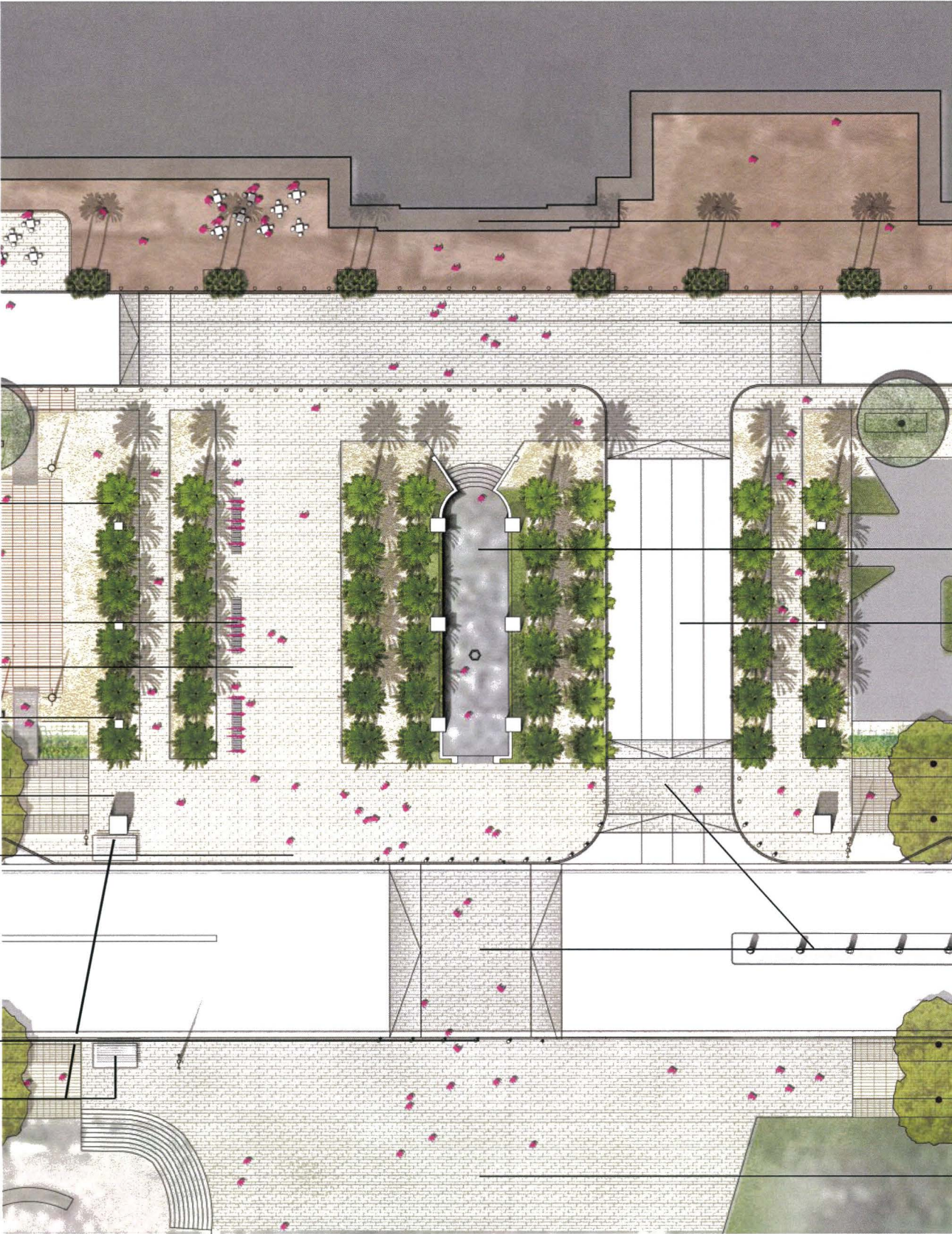
Decomposed Granite

Monument

Extended Sidewalk

Bollards

Bus Stop



Union Station
Main Entrance

Raised Pedestrian
Crossing

Historic Entry
Plaza

Vehicular
Ingress/Egress

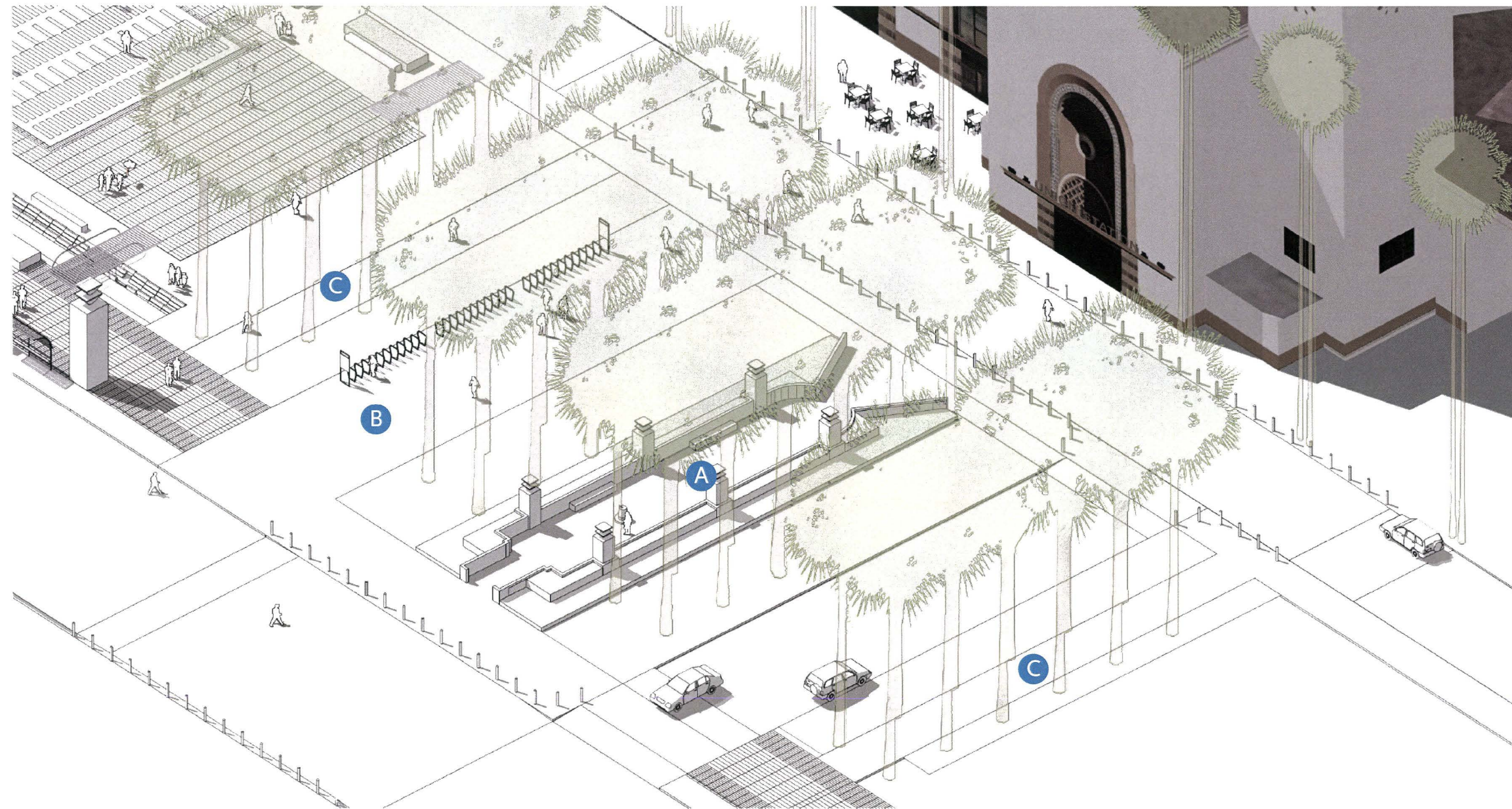
Raised Pedestrian
Crossing

Los Angeles
Street Plaza
(Proposed)

Illustrative Plan



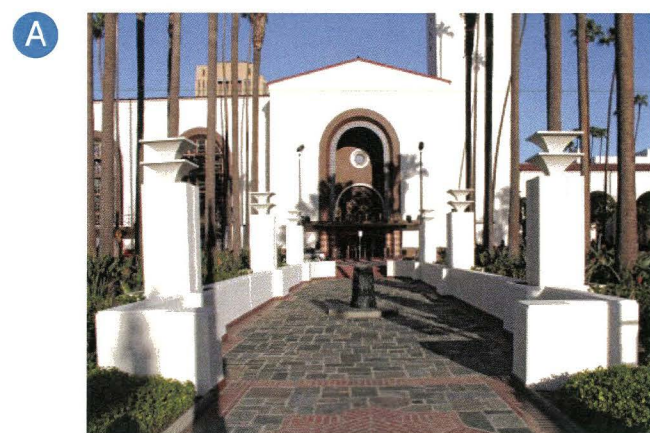
MAIN ENTRY AREA



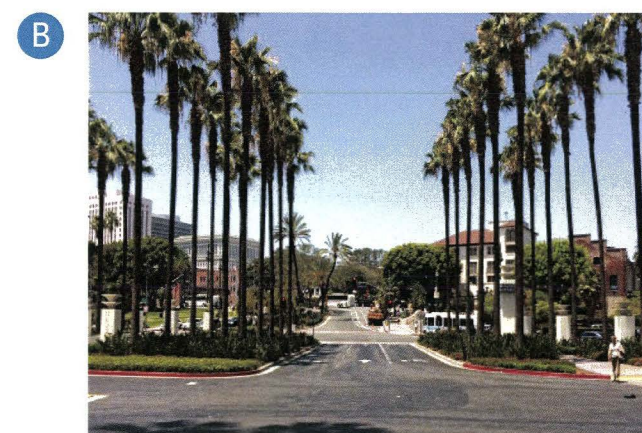
Axonometric View



Key Plan



Existing Median



Existing Roadway



Existing Walkway

MAIN ENTRY AREA

A-6 Alameda/Forecourt Concept Design Appendix

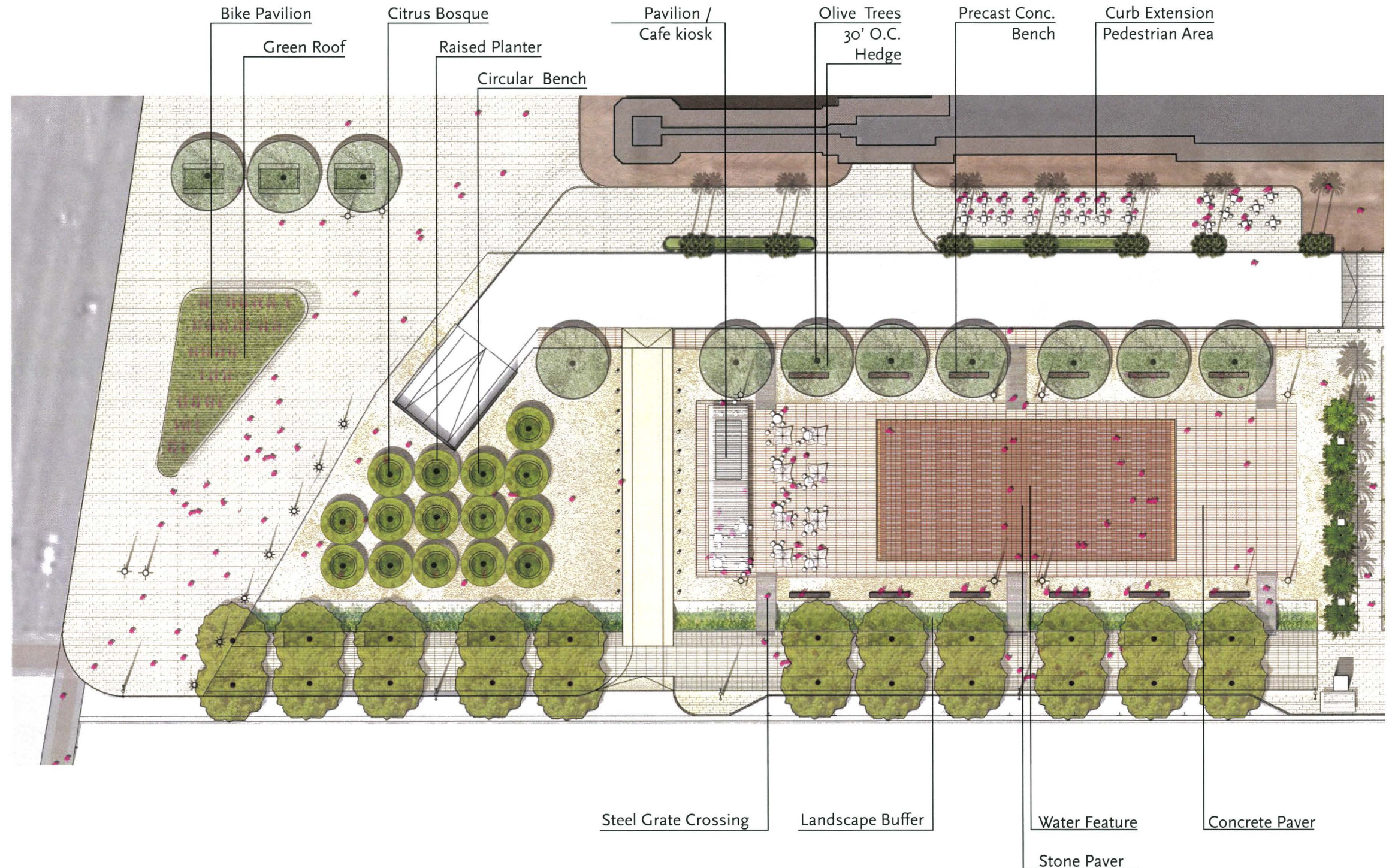
NORTH FORECOURT



The Northern Area of the forecourt space is organized as an open plan to provide for greater flexibility and pedestrian circulation, while permitting vehicular access to exit the site. Within the Northern Area, which includes the space north of the Main Entry Area to Cesar Chavez Boulevard, a large plaza occupies the space directly in front of the Historic Ticketing Hall.

With the planned improvements to reprogram the Ticketing Hall as a space offering food & beverage, the plaza is seen as a complementary space for activities including informal dining, performances, and events to spill out into the forecourt space. Additionally, a pavilion is planned to support day-to-day activity providing café amenities including moveable site furnishings and food & beverage offerings. Integrated with the surface of the plaza, a water feature is planned to provide an animated sequence of water that ranges from subtle misting to low height 'pop-jets' to the simplicity of wet reflected surface, offering a dynamic atmosphere that is customizable to annual ranges in the climate. In addition to supporting day-to-day activity, the plaza floor offers space for a range of various types of programmable events that include farmer's markets, outdoor screenings, ceremonies, fund-raising events, fashion shows and other types of events, installations, concerts and performances.

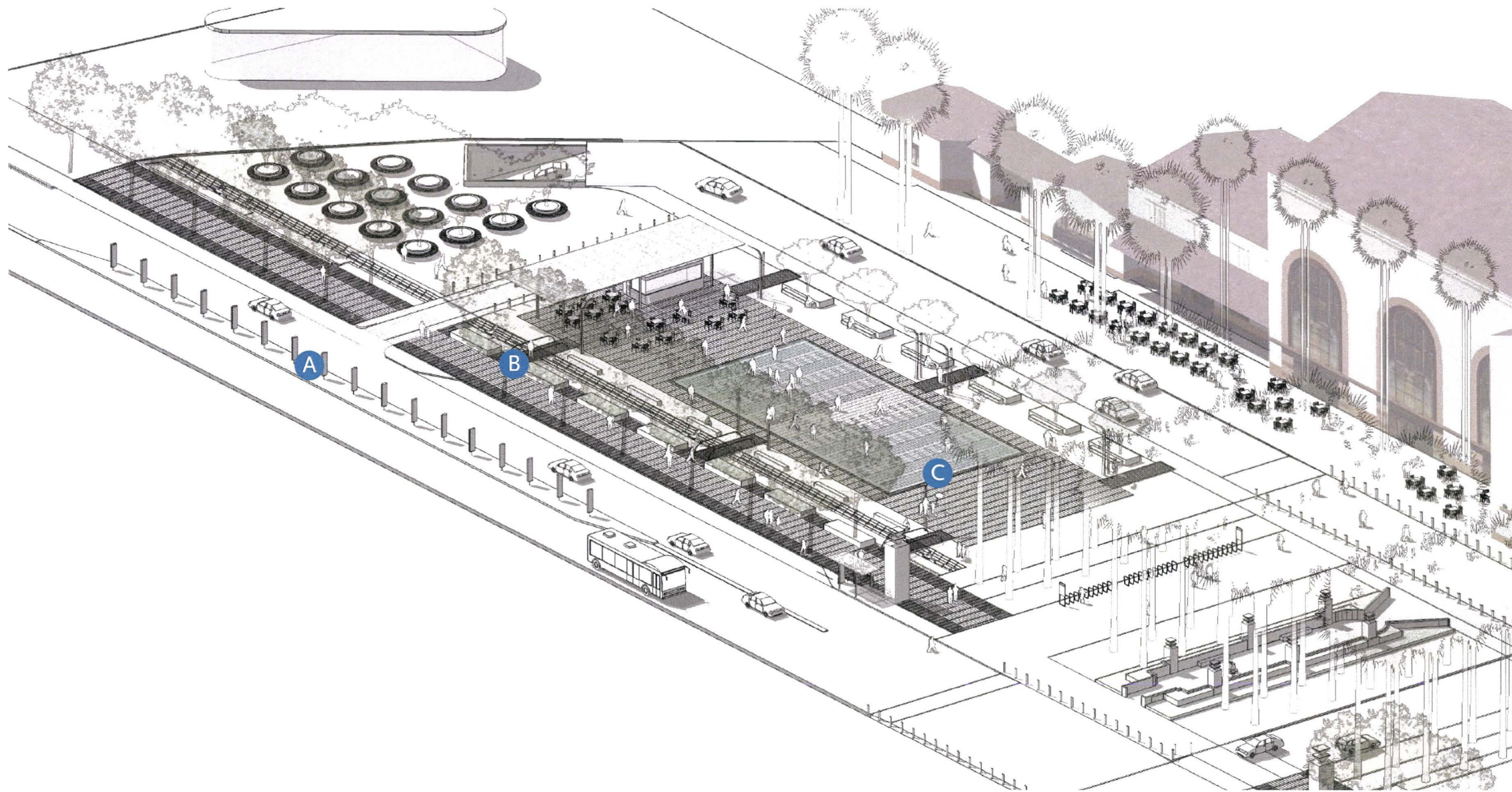
North of the egress drive, a grove of citrus trees are set into container planters wrapped with a seating element providing an intimate shaded space. As citrus trees (and olive trees) were once part of the historic station plant palette, the trees serve as a direct reminder of the origins of the site and provide an opportunity for an interpretative destination. Additionally, this grove or bosque of trees provide a green backdrop to the length of the forecourt as well as partially mask the entry to the subgrade parking area.



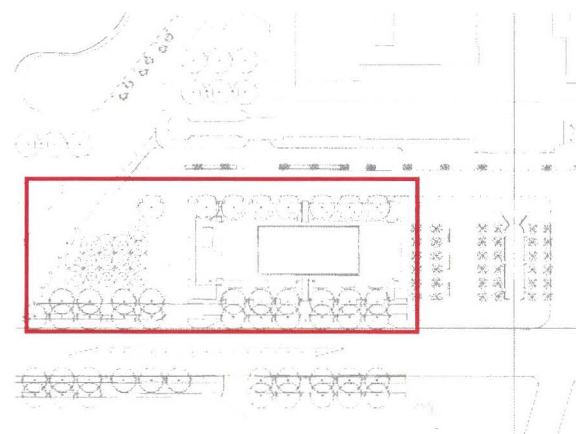
Illustrative Plan



NORTH FORECOURT PLAZA



Axonometric View



Key Plan



Passive Recreation and Seating

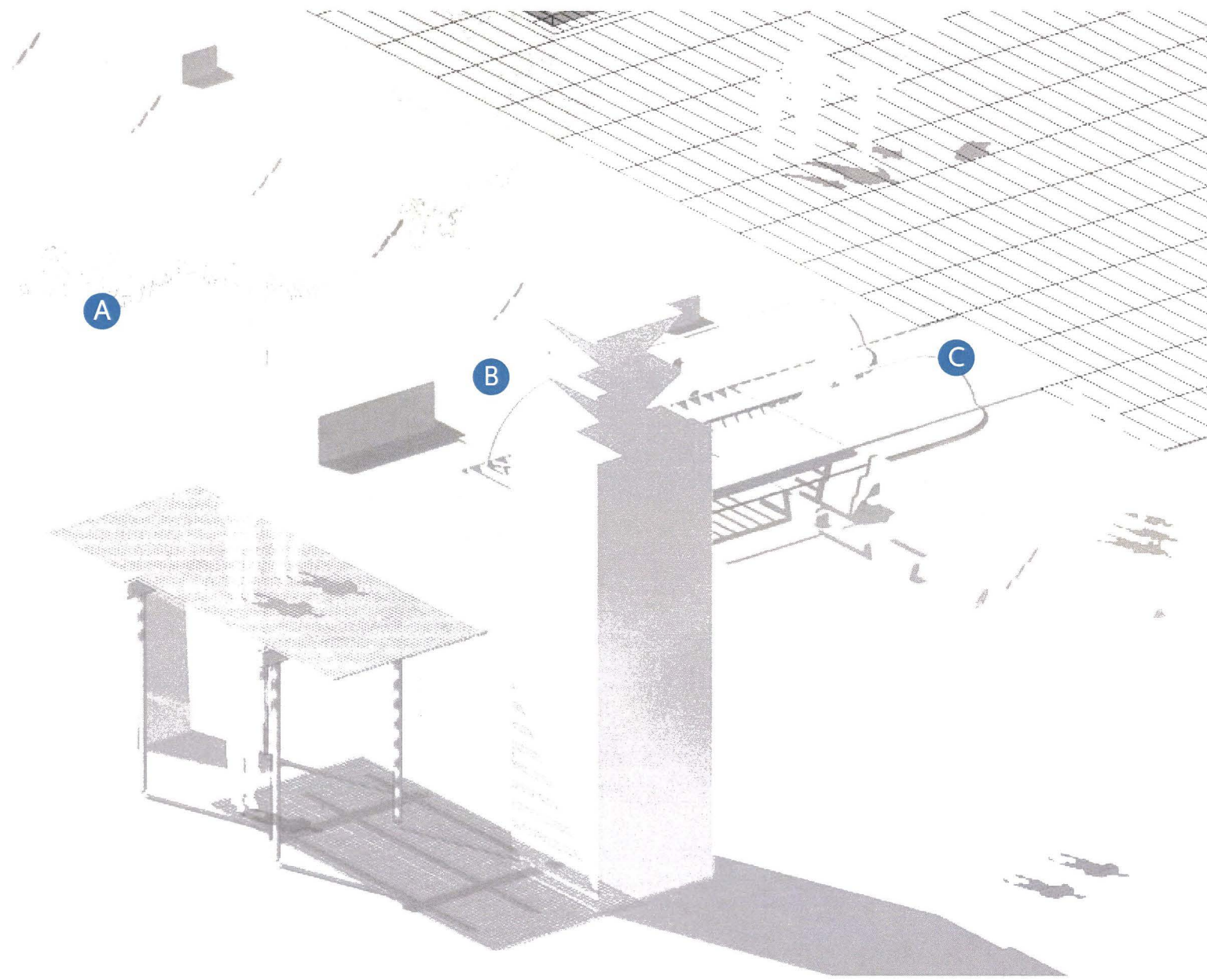


Flexible Circulation and Programming

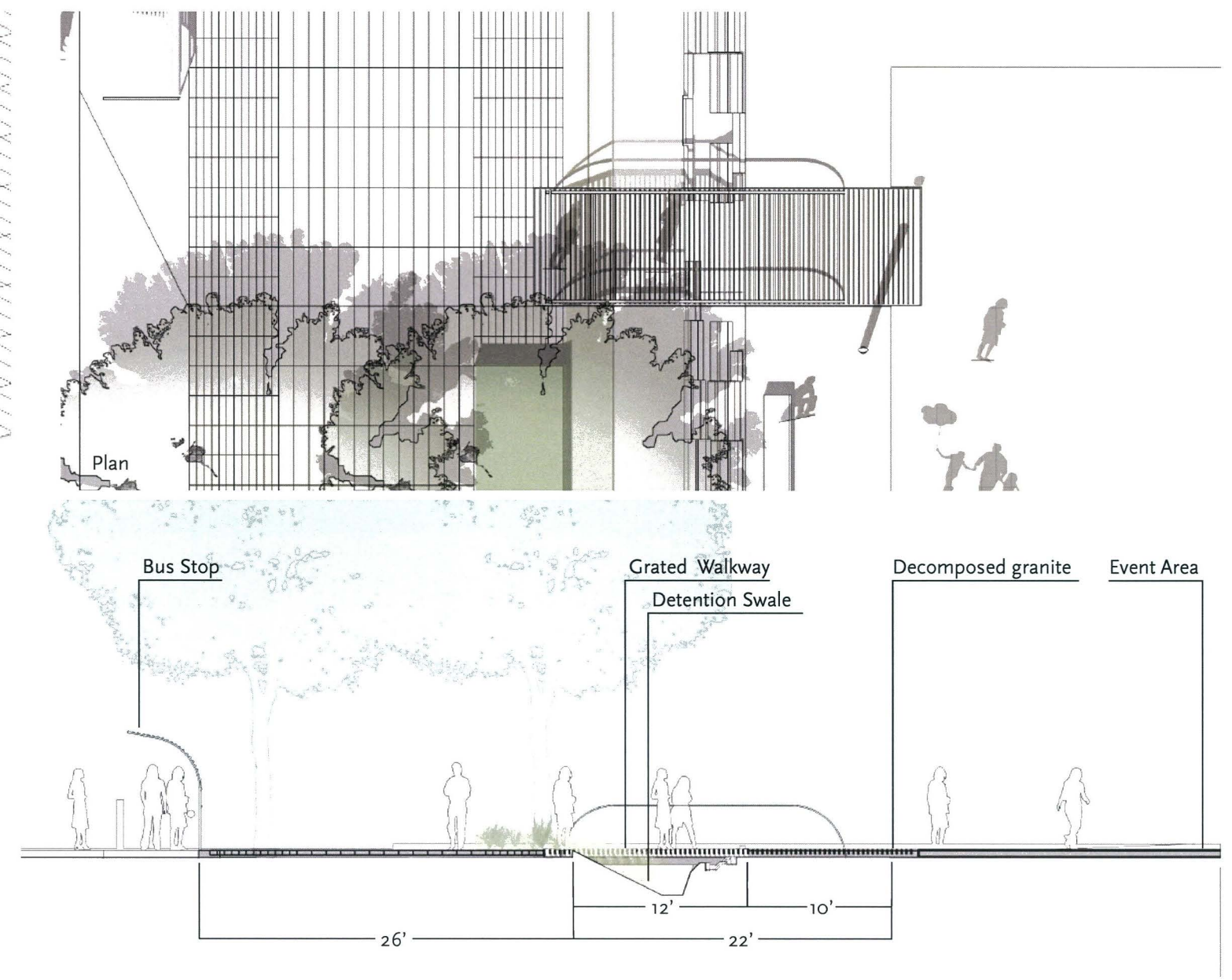


Distinctive Paving and Materiality

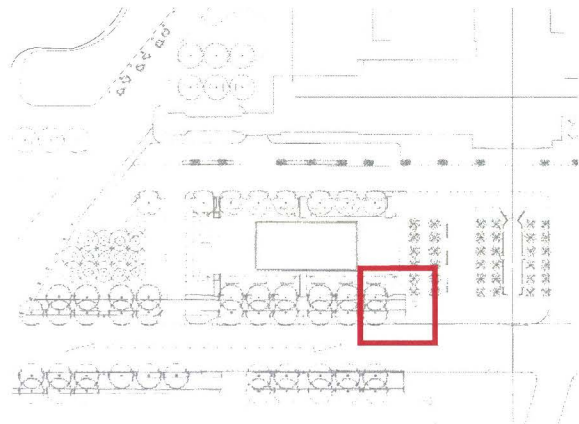
NORTH FORECOURT PLAZA



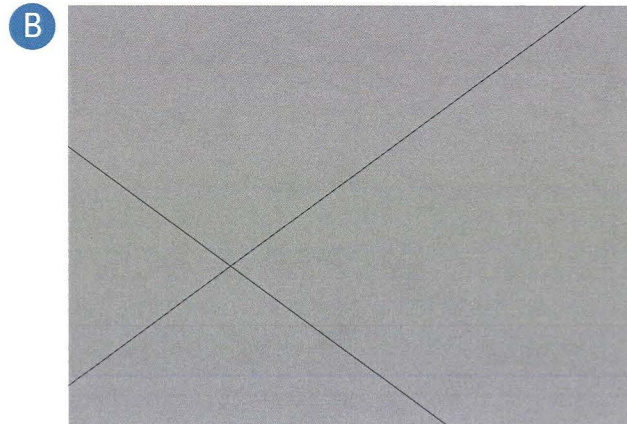
Axonometric View



Section



Tree Planting

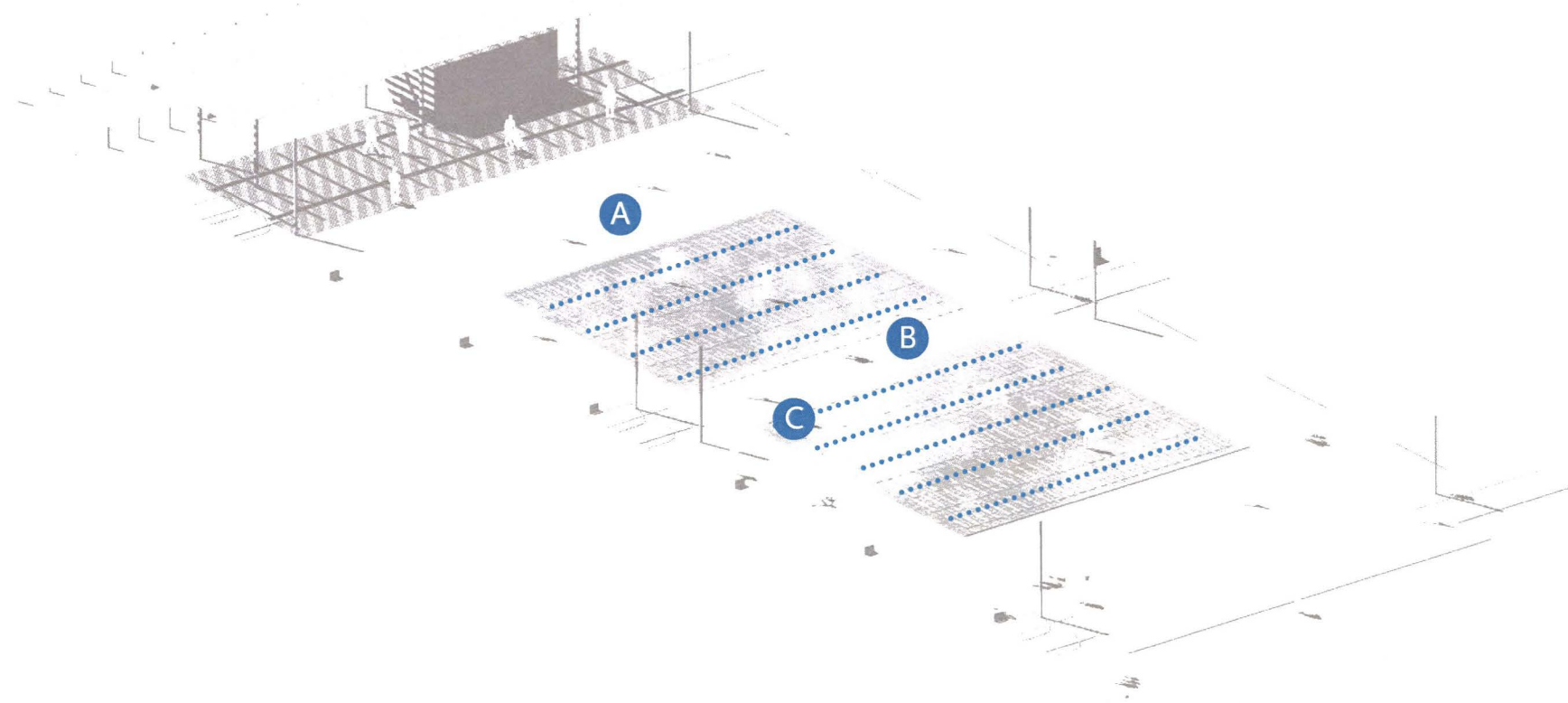


Detention Swale

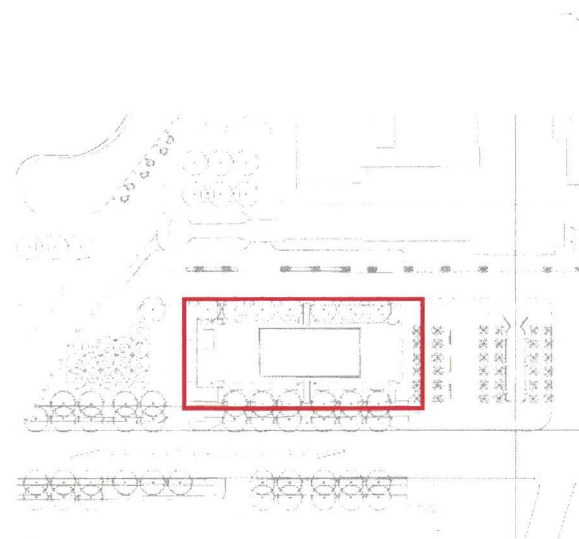


Metal Grate Walkway

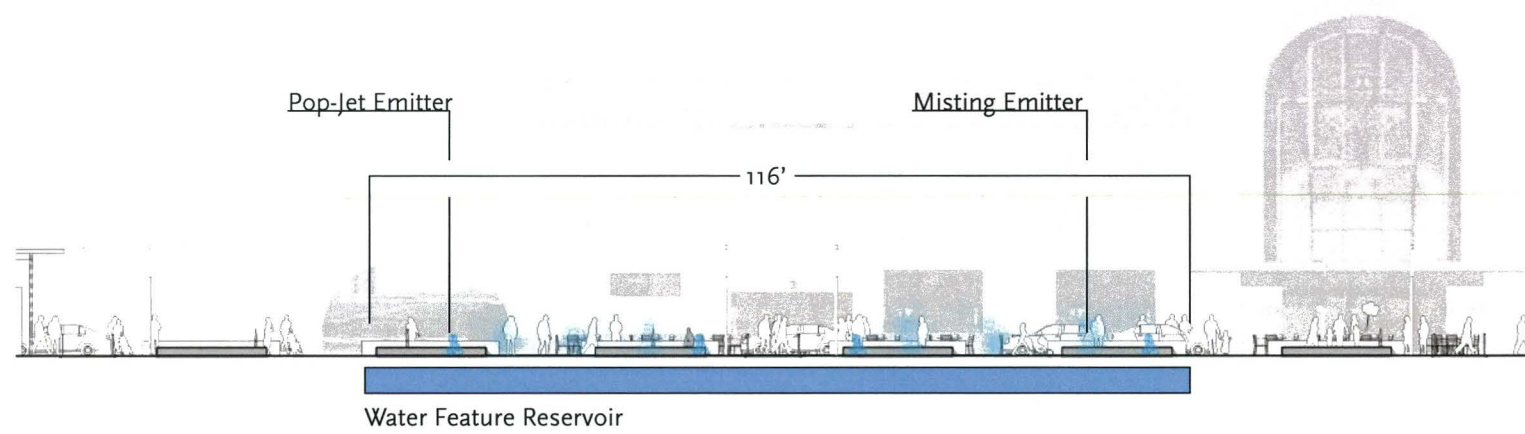
NORTH FORECOURT PLAZA - CIRCULATION DETAIL



Axonometric View



Key Plan



Section



Fog Emitter

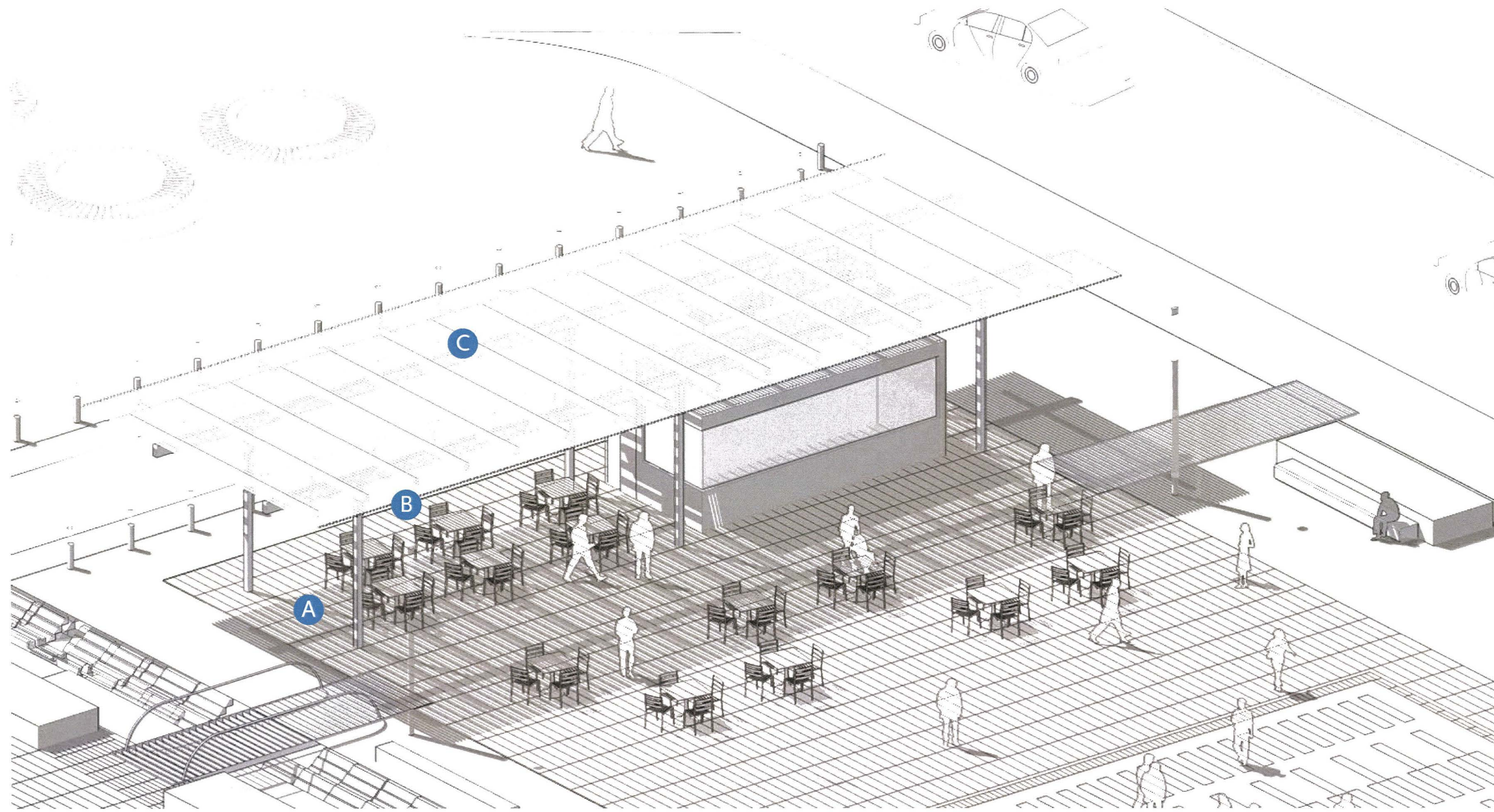


Pop-Jet Emitter

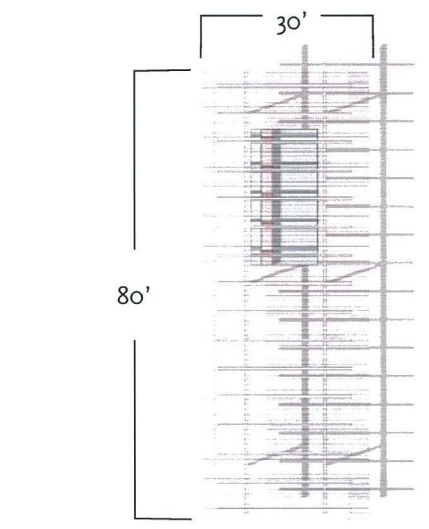


Dry Plaza Condition

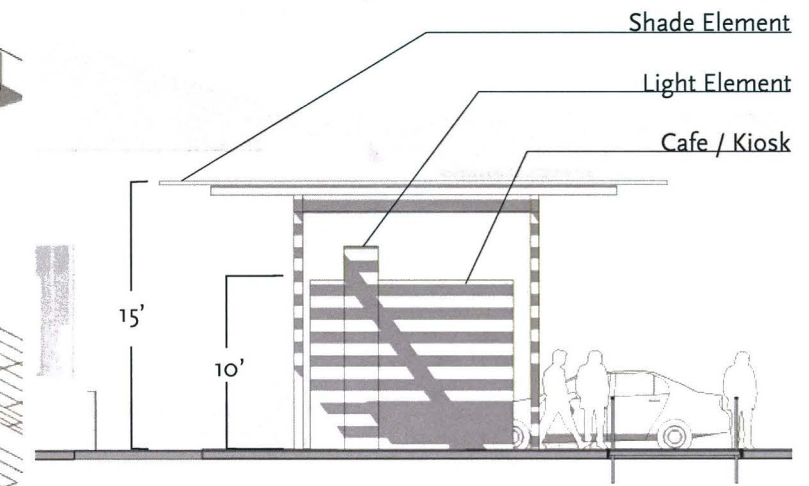
NORTH FORECOURT PLAZA - WATER FEATURE



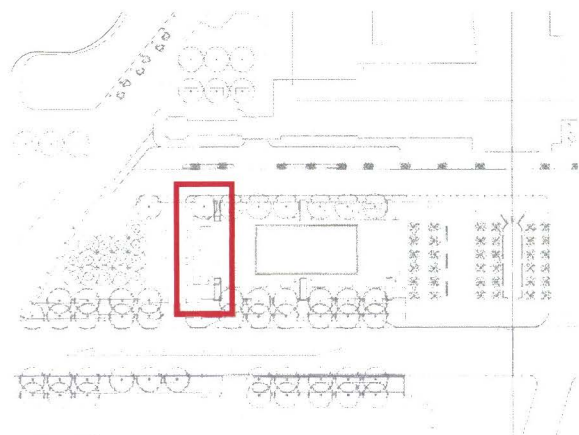
Axonometric View



Plan



Elevation



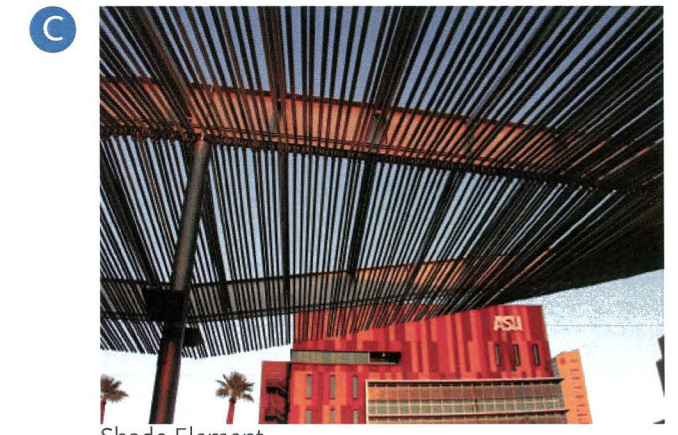
Key Plan



Shade Pavilion

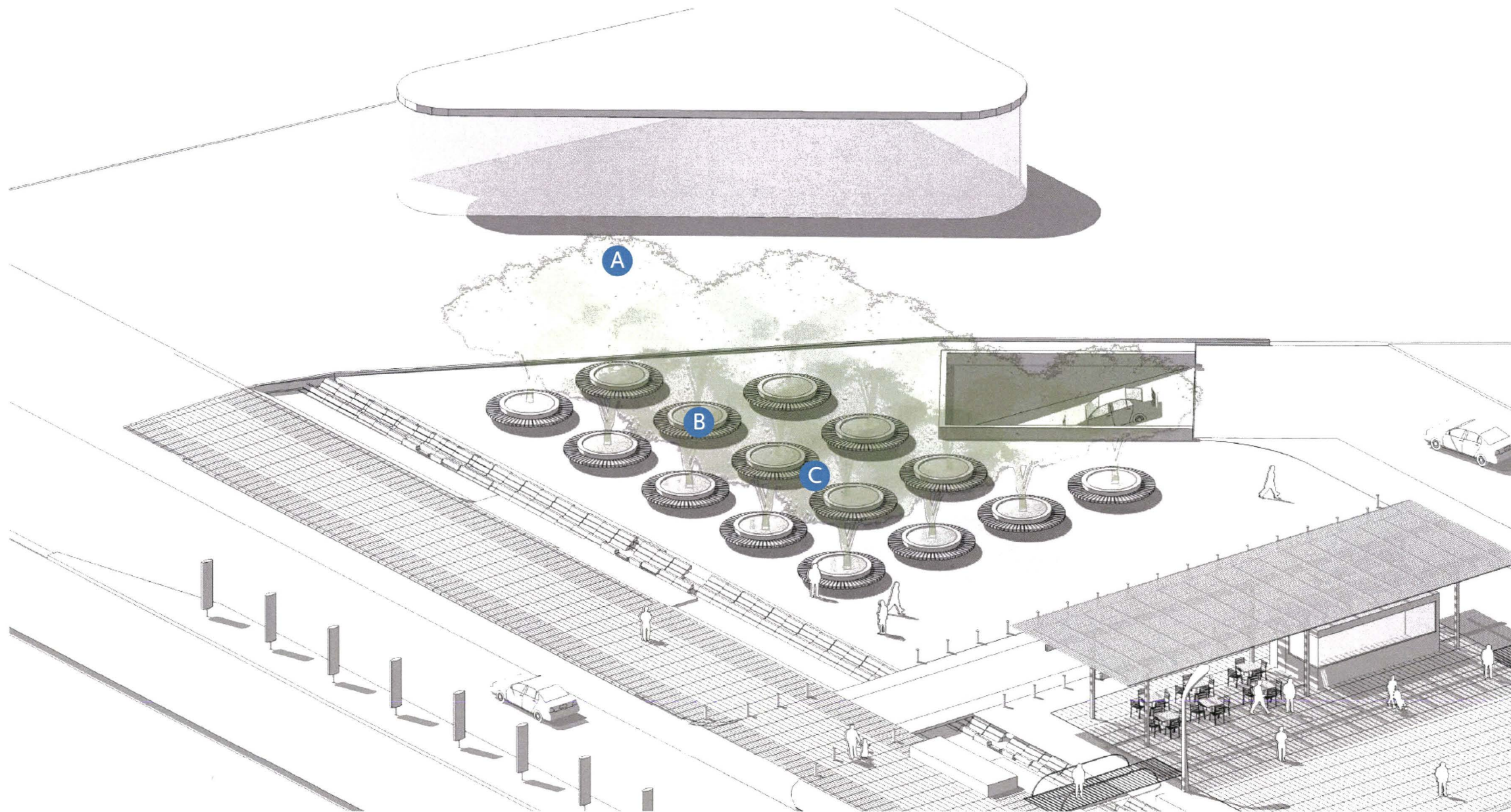


Flexible Programming and Furnishings

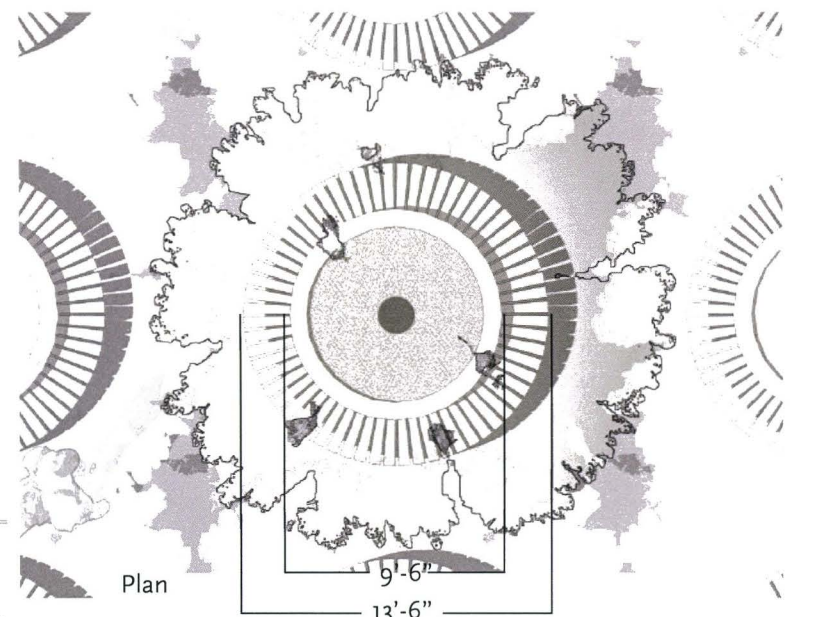


Shade Element

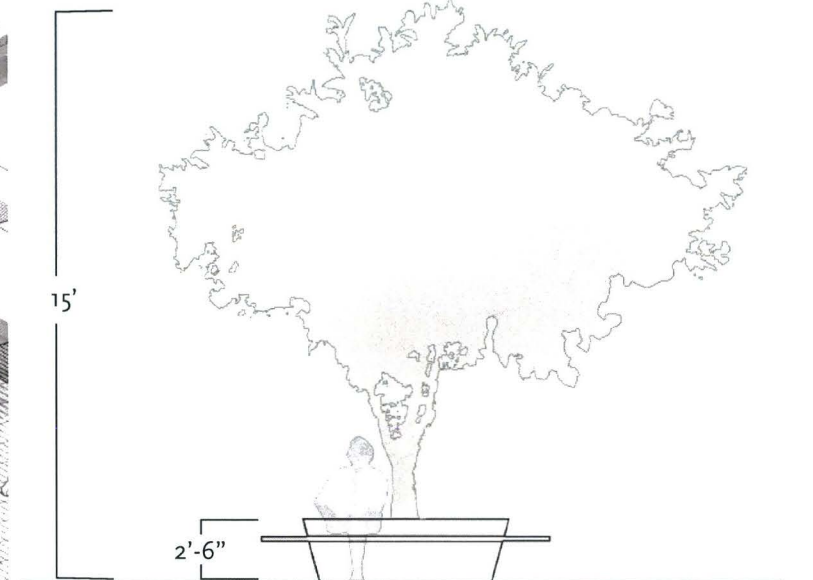
NORTH FORECOURT PLAZA - PAVILION



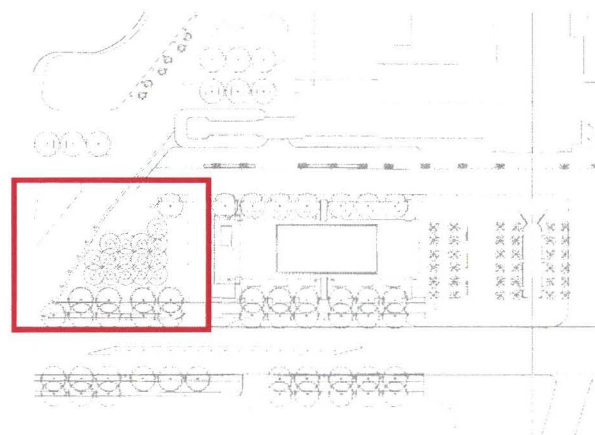
Axonometric View



Plan



Elevation



Key Plan



Bosque Space



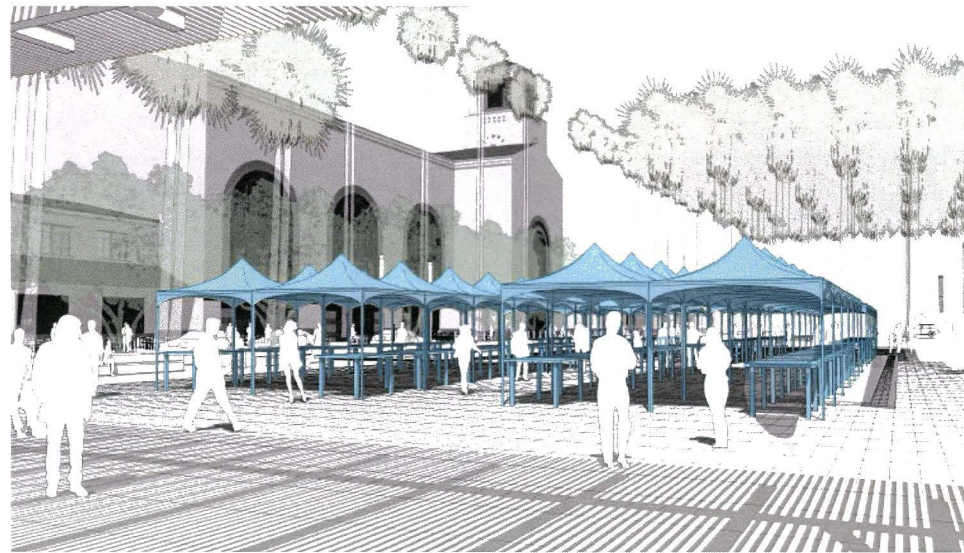
Wraparound Bench



Reference to Southern California Citrus Heritage

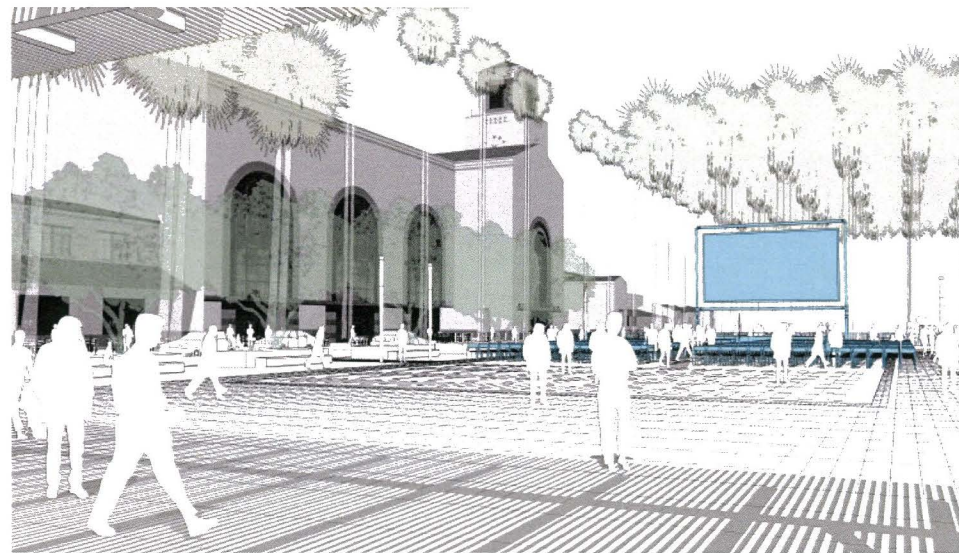
NORTH FORECOURT PLAZA - BOSQUE

FARMERS MARKET - 48 VENDORS

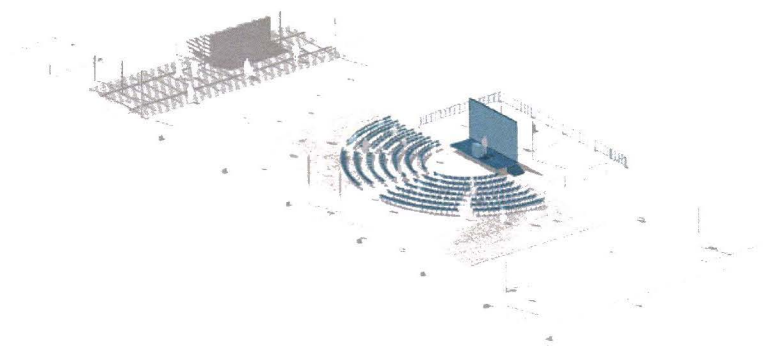
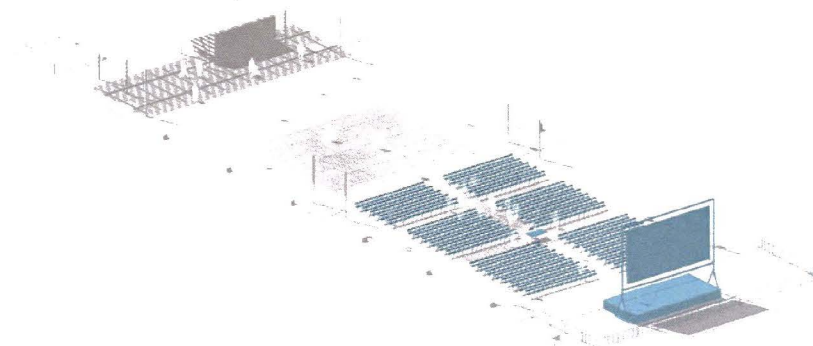
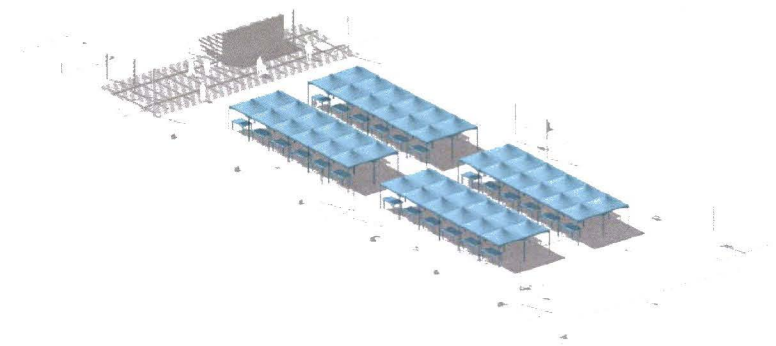
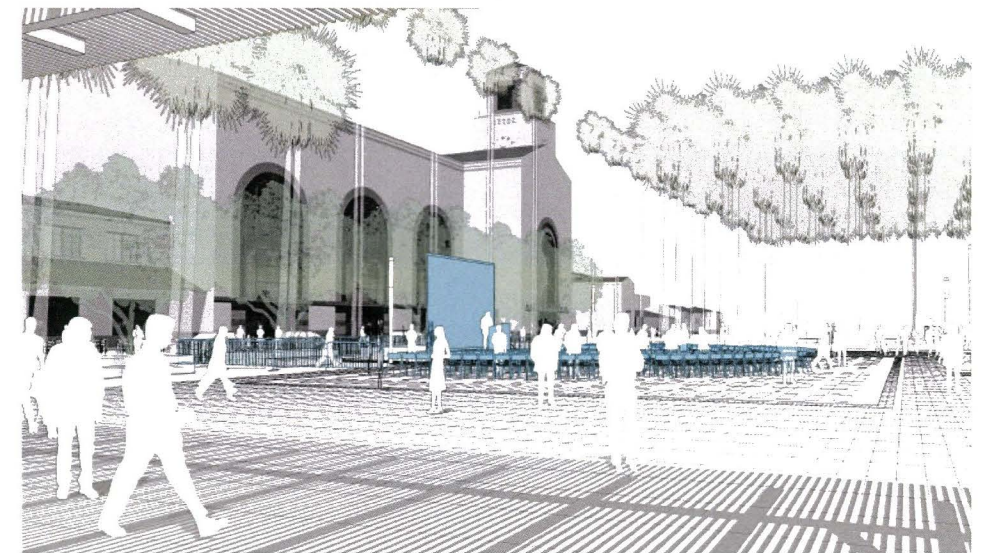


View

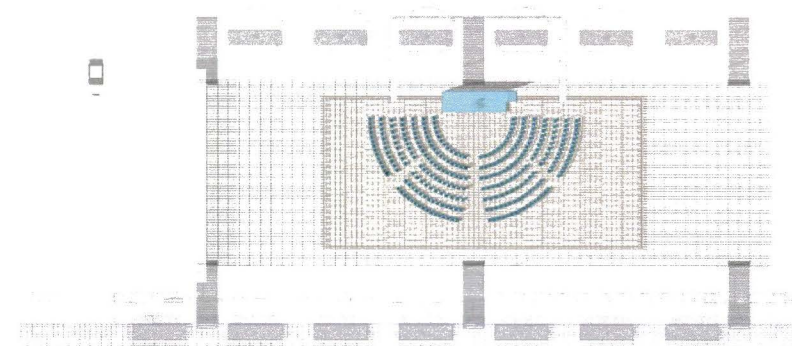
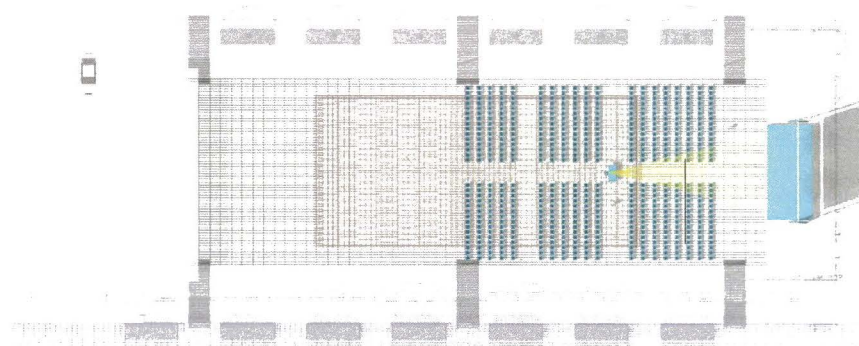
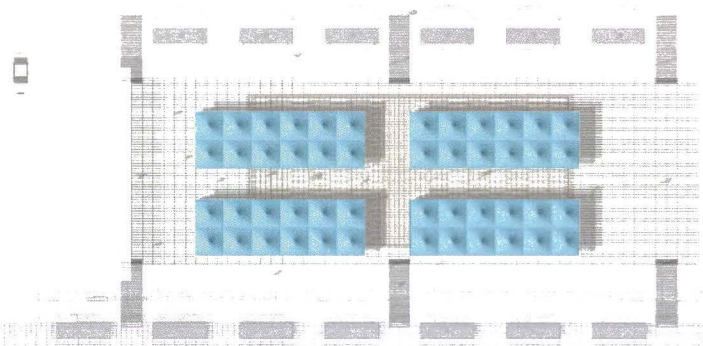
MOVIE SCREENING - 580+ Seats



PUBLIC ANNOUNCEMENTS - 300+ Seats



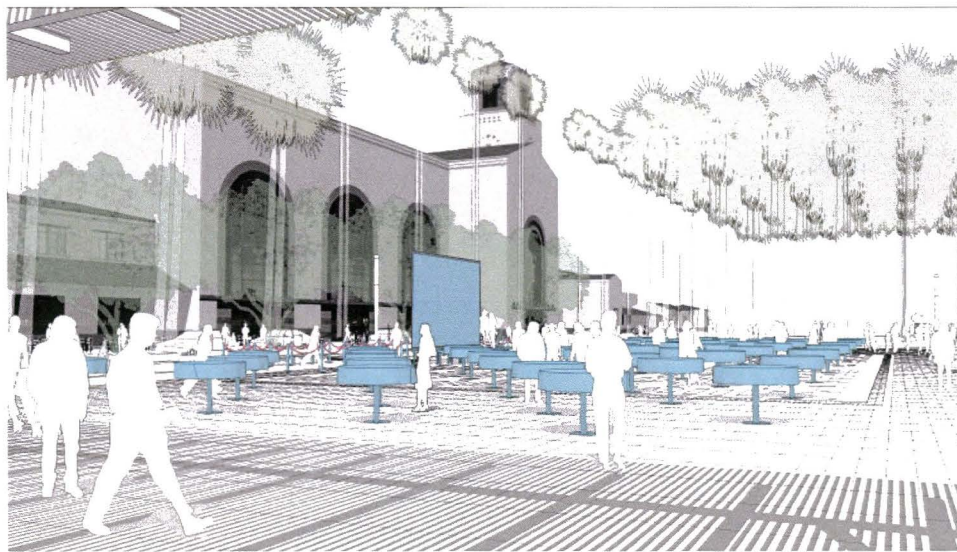
Axonometric



Plan

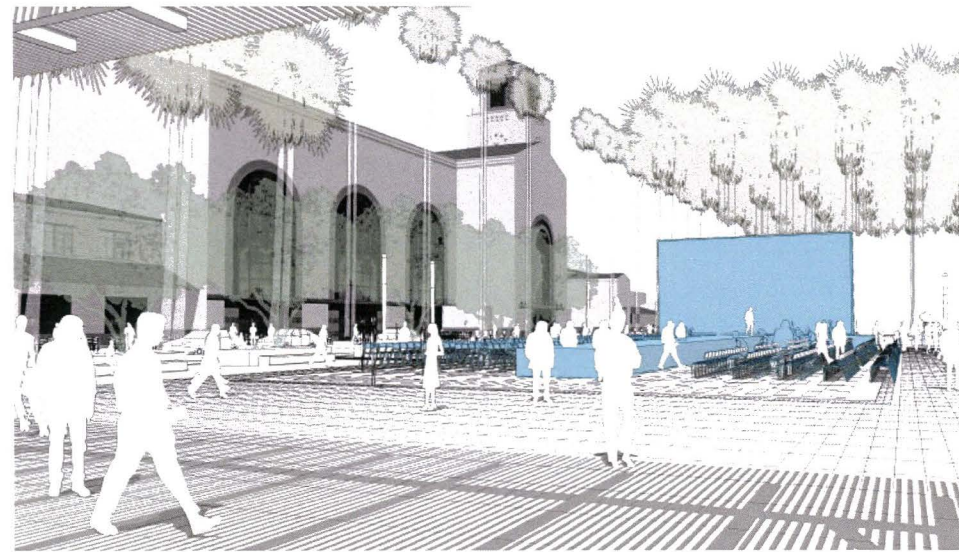
NORTH FORECOURT PLAZA - PROGRAMMING

FUNDRAISER EVENT - 55+ TABLES

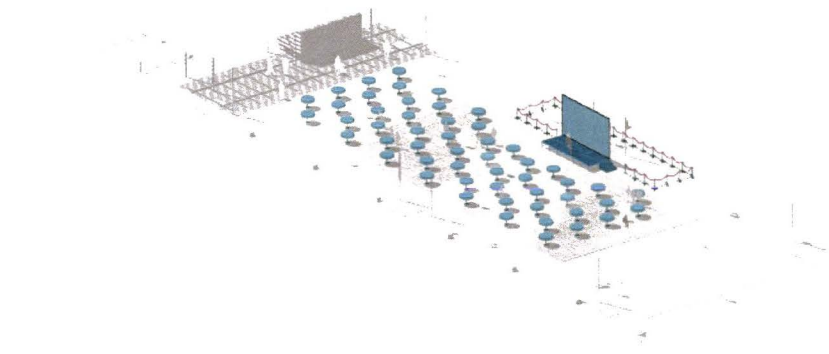
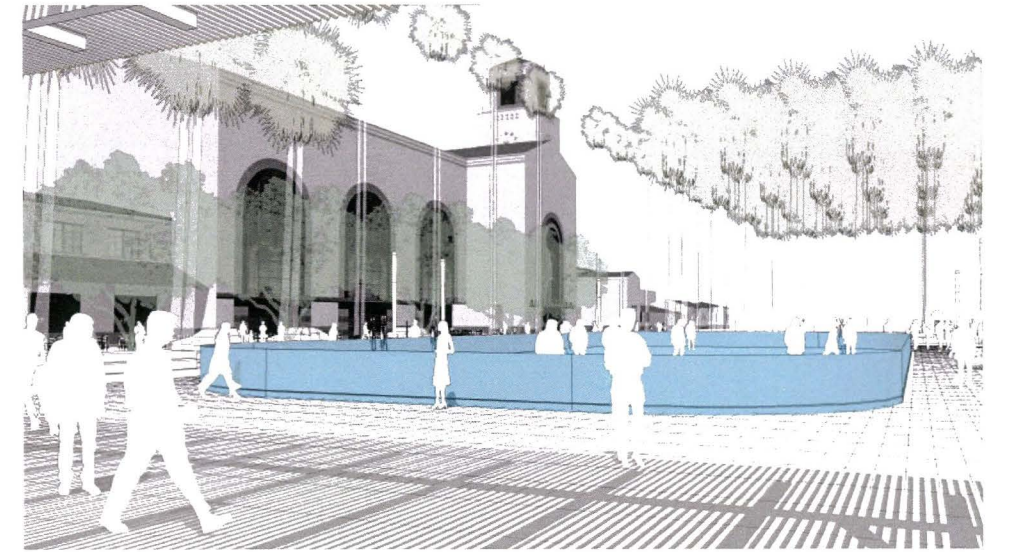


View

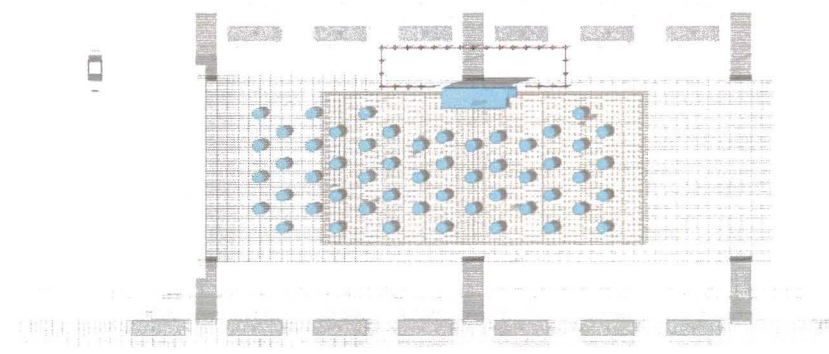
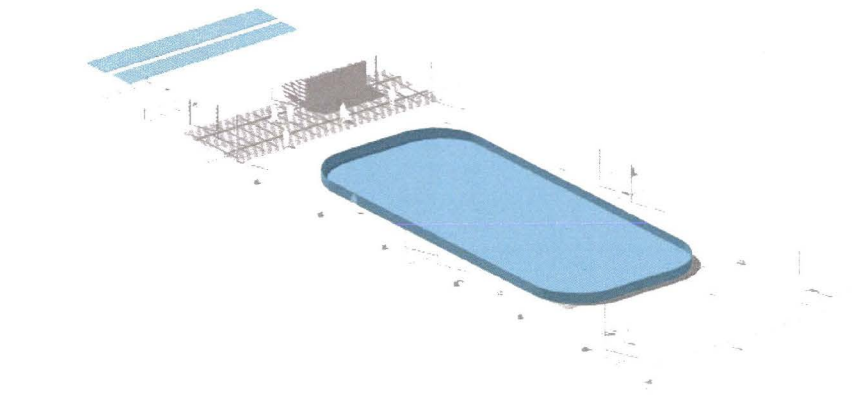
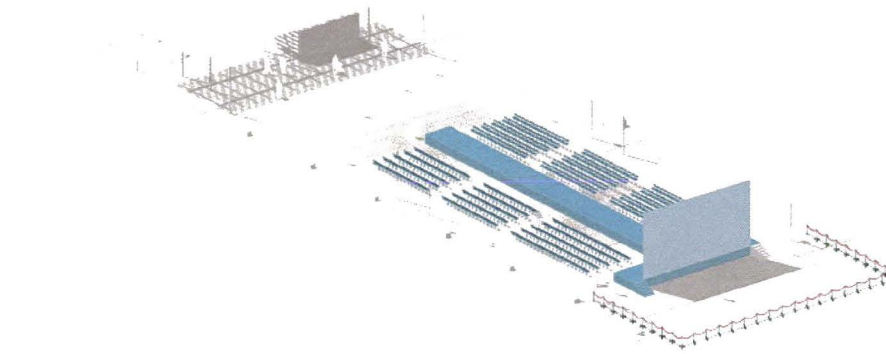
FASHION RUNWAY - 420+ SEATS



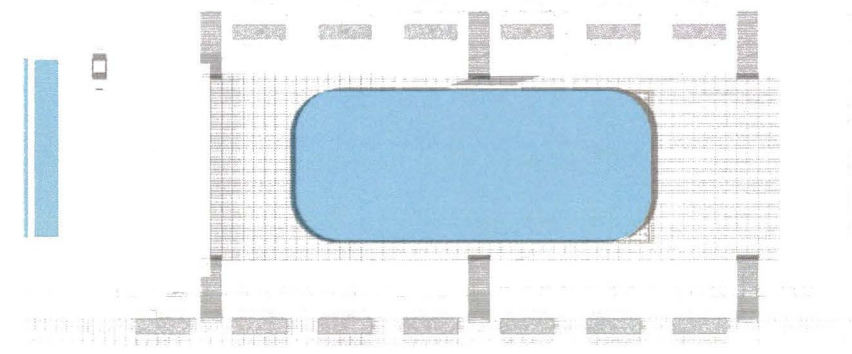
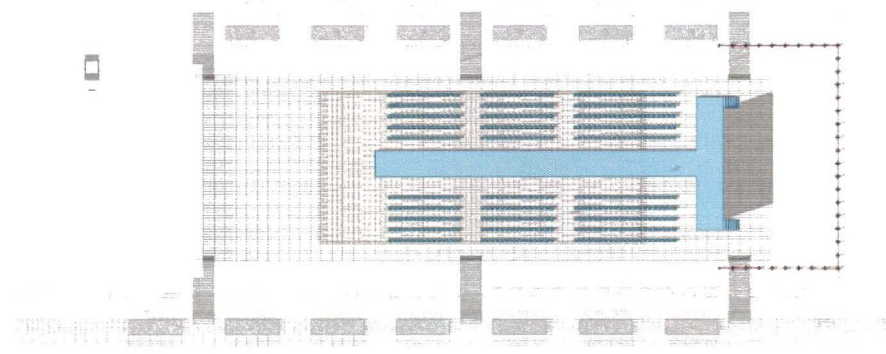
SPORTING ATTRACTION - 1 ICE RINK, 2 BOCCE BALL COURTS



Axonometric



Plan



NORTH FORECOURT PLAZA - PROGRAMMING

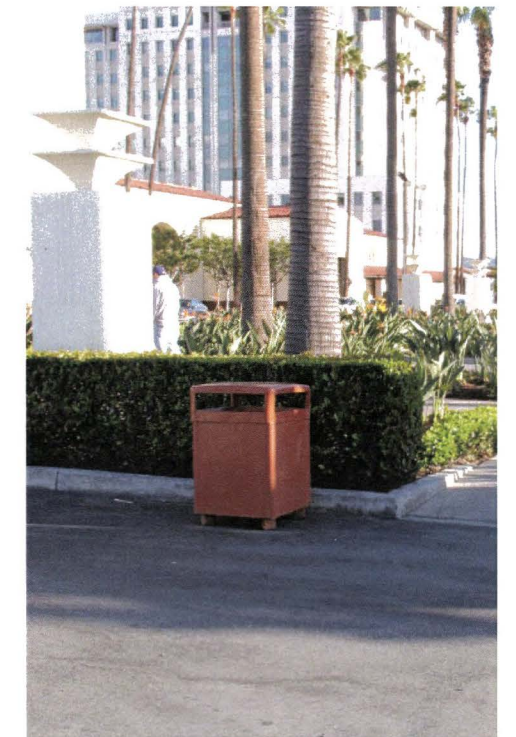
EXISTING SITE ELEMENTS



Columnar Wayfinding structures
Forecourt



Bollards
Forecourt



Trash Receptacles
Forecourt and South Patio



Area Lighting Elements
Alameda Street



Metal Bench
North Patio



Bike Racks
Forecourt

SITE FURNISHINGS, MATERIALS, AND WAY-FINDING

PROPOSED PERMEABLE SURFACES



Decomposed Granite
Natural History Museum Garden

Pea Gravel
Cantonal Park

Concrete Pavers

Brick Pavers, Historic Union Station

Street Buffer Strip, Stone Cobble
Bike Path Network

Stone Pavers
Place de la République

SITE FURNISHINGS, MATERIALS, AND WAY-FINDING

In order to augment the activation of the site and the range of daily, weekly, seasonal and annual programmed social/cultural events that will take place at the forecourt, it is important to incorporate the appropriate site amenities (cafes, restrooms), way-finding elements (kiosks, signage), lighting and site furnishings. In addition, the choice and organization of permeable surfaces, vegetated buffers, tree plantings, shade elements and general areas for green space will further support the myriad of programming and elevate the environmental design mitigating heat intensity, improving drainage and stormwater management and increasing the overall comfort level of the site.

PROPOSED VEGETATED BUFFERS



Controlled hedge height for formal effect; moderate maintenance
Norton Simon Museum, Pasadena, CA.

Native Planting Palette for informal effect; minimal maintenance
Norton Simon Museum, Pasadena, CA.

Dense Planting Areas with Selective Street Access
Belgium

Low-height, Low Profile Buffer for visual connectivity
Bellamy Park, Vlissingen, Netherlands

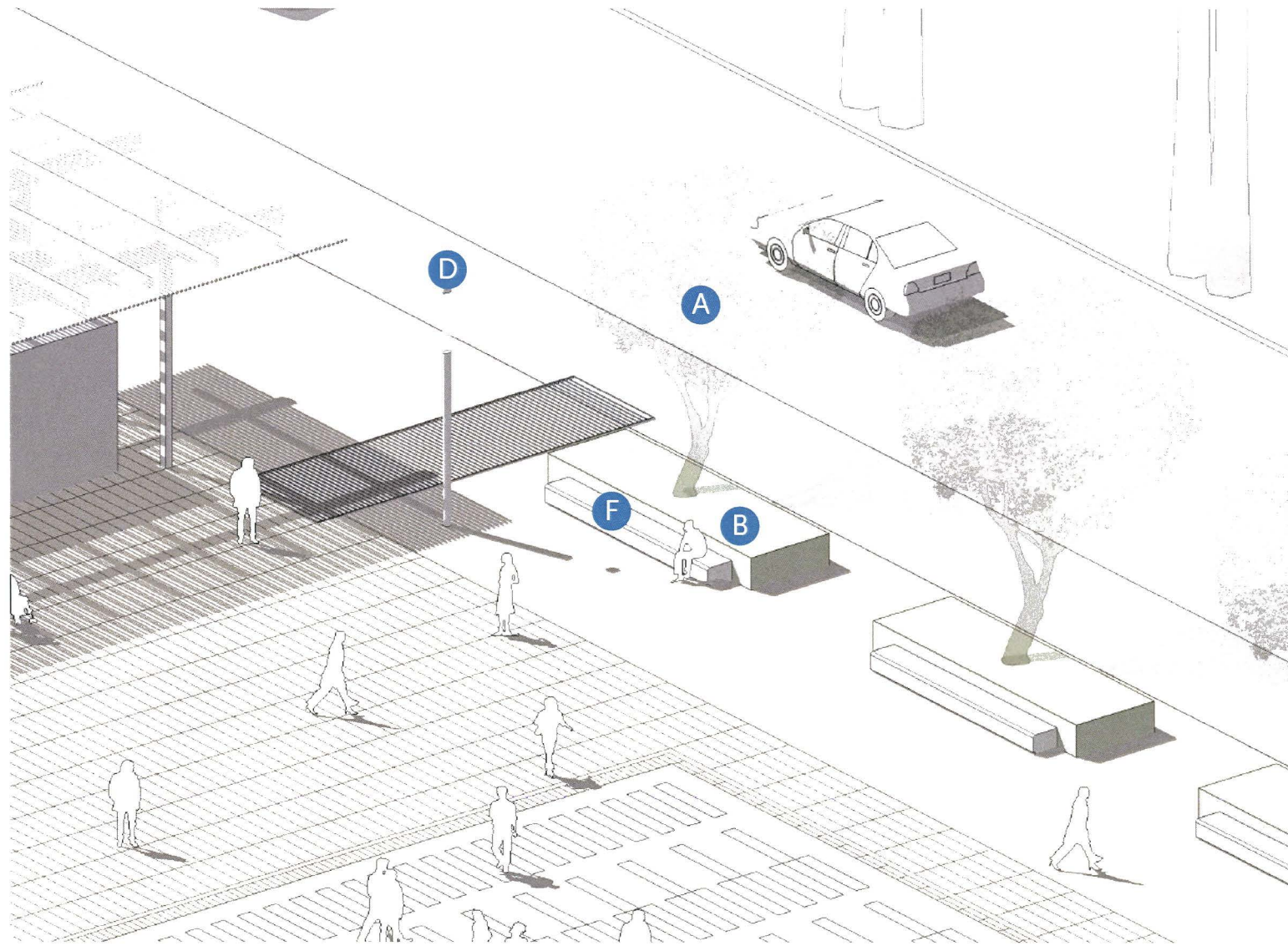
Low-height, Low Profile Buffer for visual connectivity
Columbus, OH

SITE FURNISHING, MATERIALS, AND WAY-FINDING

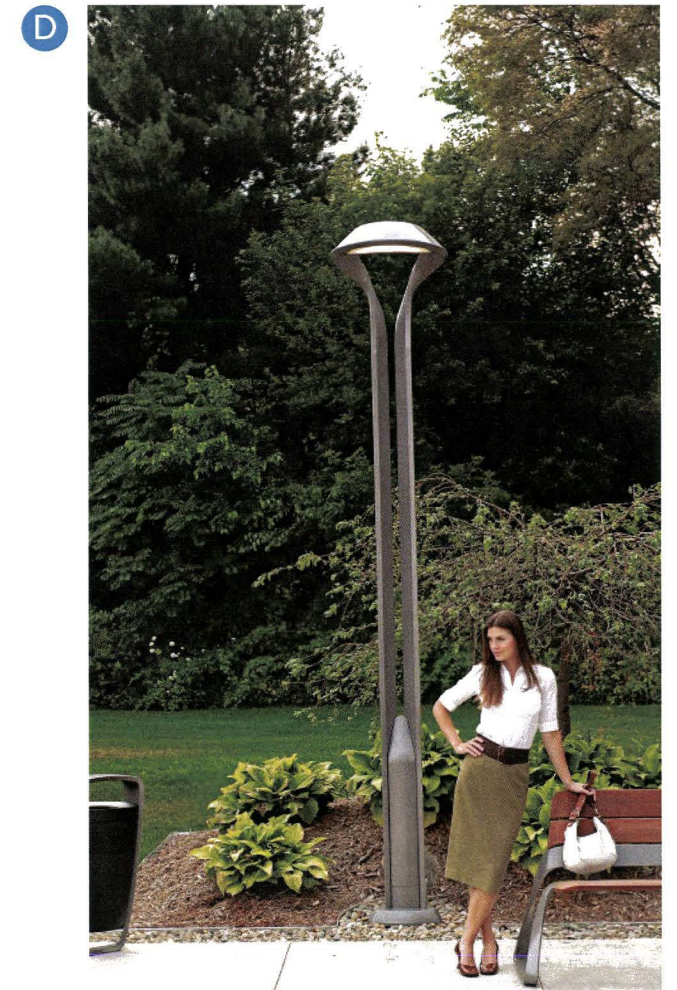


SITE FURNISHINGS. MATERIALS. AND WAYFINDING

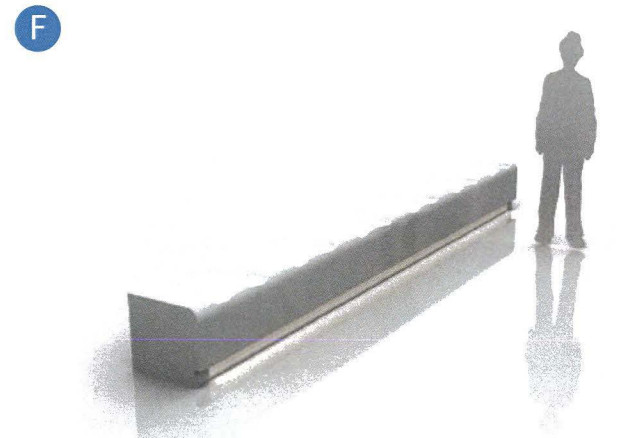
PROPOSED SITE ELEMENTS



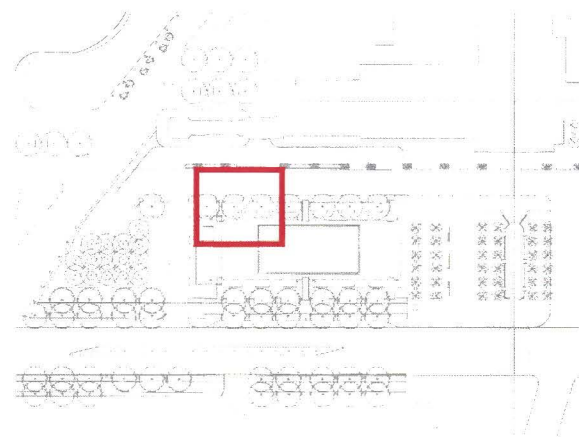
Bollard + Bike Rack - Metro 40
BMW Group DesignWorksUSA



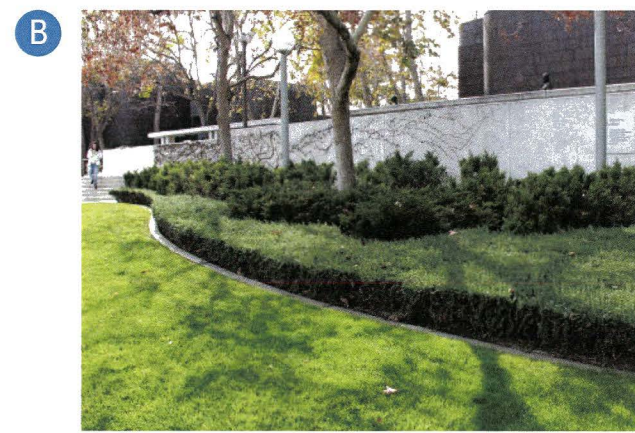
Lighting Elements



Precast Bench



Olive Trees



Planted Hedge



Bike Racks

SITE FURNISHING, MATERIALS, AND WAY-FINDING

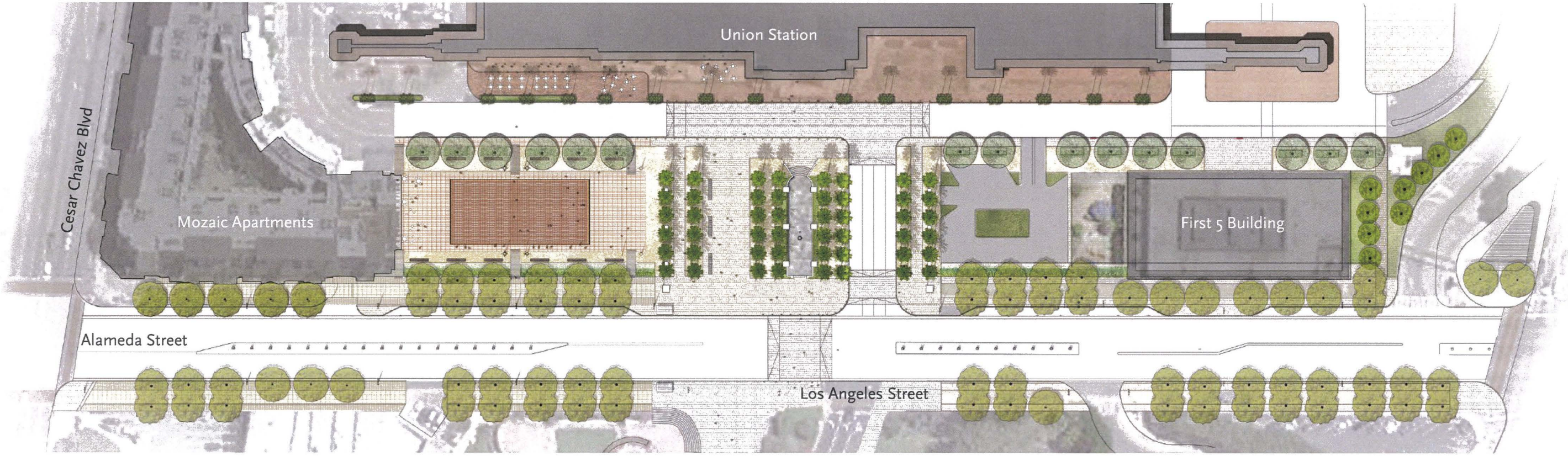
A-6 Alameda/Forecourt
Concept Design
Appendix



IMPLEMENTATION

A-6 Alameda/Forecourt Concept Design Appendix

LOS ANGELES UNION STATION FORECOURT PHASING



PHASE I

North Forecourt

- Decomposed Granite
- Precast Concrete Paving
- Steel Header
- Water Feature
- Light Elements
- Precast Concrete Benches
- Tables (3 x 3' square)
- Seats, Stackable
- Bollards
- Bicycle Racks
- Bike Share

Tree Planting Area

Olive Trees, Specimen Quality (48" box)

Landscape Buffer

- Pea Gravel
- Boulder
- Concrete Weirs
- Precast Concrete Cladding
- Bio-filtration Planting
- Access Bridges
- Retention and Infiltration
- Stormwater Velocity Reduction

Site Drainage

- New Union Station Catchment
- Stormwater BMPs
- Greywater Irrigation Supply

Roadwork

- Enhanced Raised Pavement
- Repave Road – Integral Colored Concrete
- Curb and Gutter

A-6 Alameda/Forecourt Concept Design Appendix



PHASE 2

North Forecourt

- 5 Sycamore Trees (48" box)
- 2 Olive Tree, Specimen Quality (48" box)
- 15 Citrus Trees (36" Box) in Raised Concrete Planters
- Decomposed Granite
- Swale
- Bollards (Removable)
- Circular Benches

Pavilion (30' x 90' x 16')

- Ceramic Rod System
- Stainless Steel Columns Structure
- Cafe/Kiosk Program Space

Bike Storage Canopy

Landscape Buffer

- Retention and Infiltration
- Stormwater Velocity Reduction

Roadwork

- Enhanced Integral Colored Pavement
- Install New Egress Drive
- Curb and Gutter
- Herringbone sidewalk to match existing

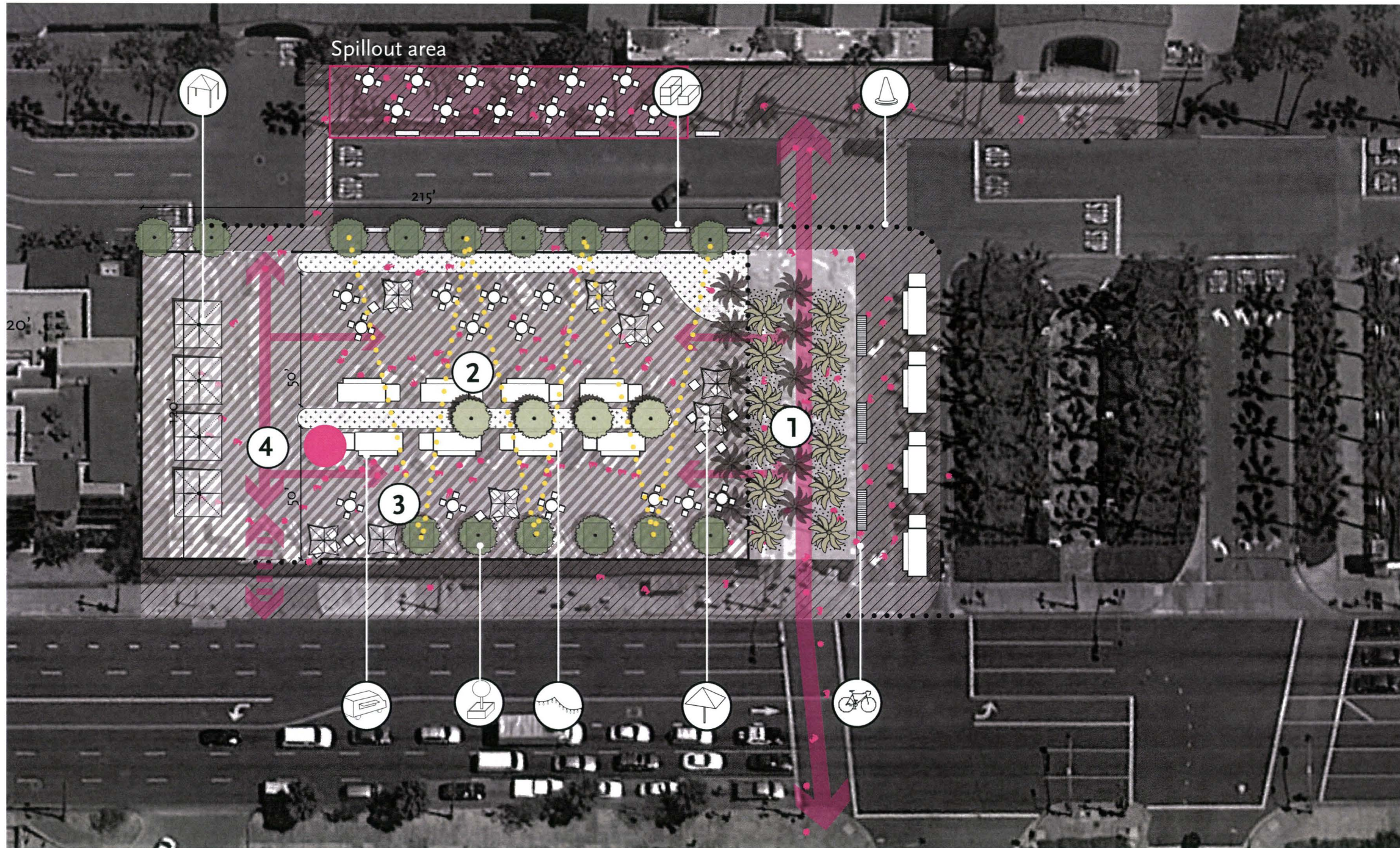
Northwest Passage

- Lighting
- Benches
- Tables and Seats
- 3 Trees + Bench Planters
- Bicycle Racks and Storage
- Runnel
- Concrete Pavers
- 12 Raised Planters

With continued development of the project, the Forecourt is a strong candidate for expedited realization, which would occur in the first of two stages. The initial PHASE I programming would focus on celebrating the spaces in front; addressing the relationship between the proposed interior renovations to Union Station and proposed public spaces including a series of spaces that make up the Forecourt arranged on the North south configuration and within the station and connection to LA Plaza across Alameda Street

The PHASE 2 expansion after transport improvements would consider more extensive connections through a sequence of spaces to ultimately extend east to the Los Angeles River. With the options of the High speed rail terminus to be realized at Vignes, the opportunity to make more direct and dedicated open space areas/linkages become more possible to the river itself. New improvements to the Forecourt will be phased to accommodate new and enhanced pedestrian use while also leveraging new development potentials, over a much larger time frame.

PHASING



FOOD TRUCK / NIGHT MARKET
 Parking Area: 25800 sf
 Spillout Area: 2900 sf

- | | | | |
|------------|----------|------------------|-----------|
| Food Truck | Lighting | Movable Planters | Tents |
| Bike Valet | Cones | Hay Bales | Umbrellas |



BASIC IMPROVEMENTS

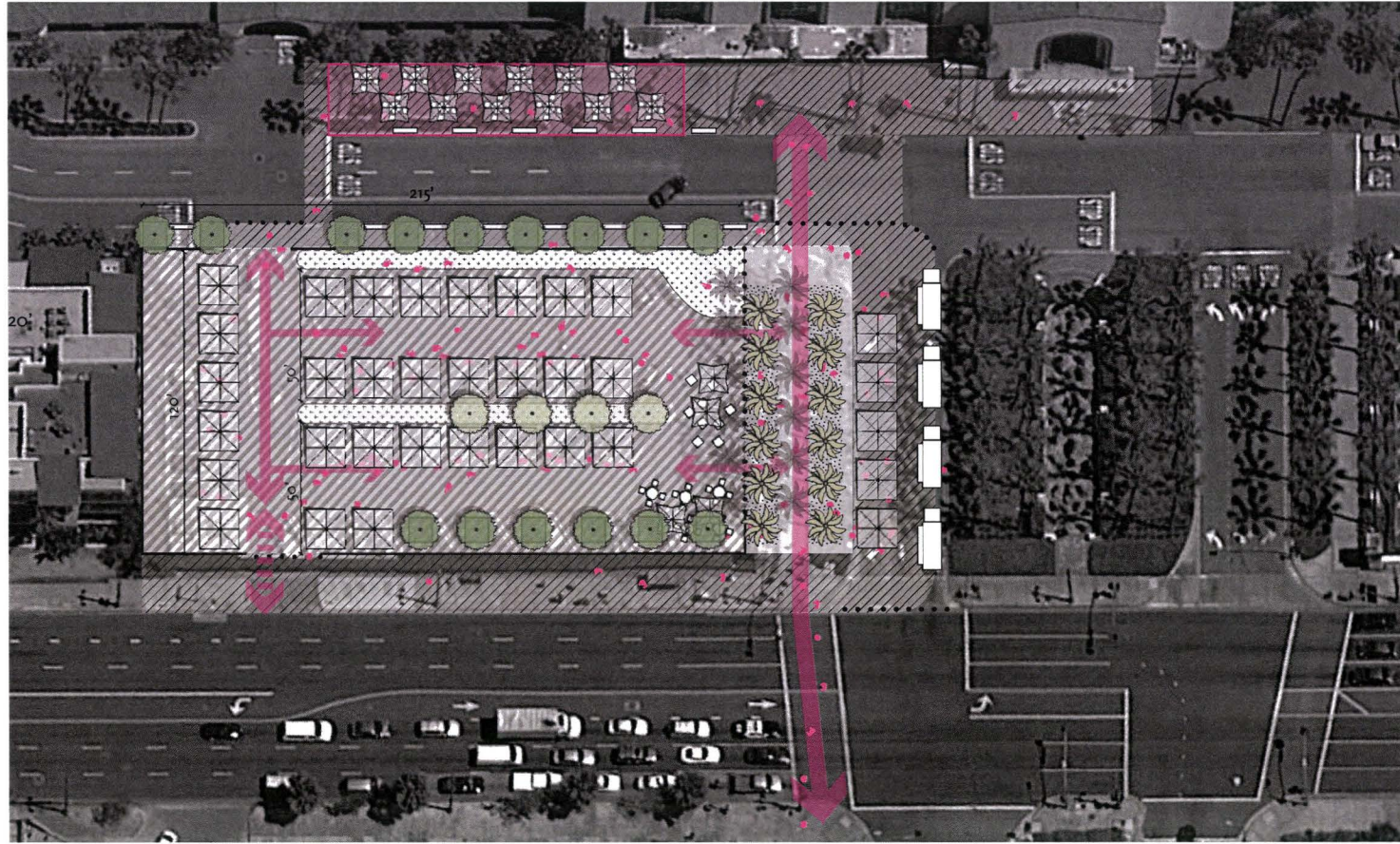
As an interim step to simultaneously raise awareness of the many upcoming changes at Union Station as well as connect to adjacent neighborhoods and communities, the existing forecourt can be adapted as a usable public space hosting a series of scales of programmed events.

Taking cues from the historic use of the parking area for large group assemblies, the visibility and context of the iconic station provides a powerful mechanism to draw new ways to inhabit and utilize the forecourt today.

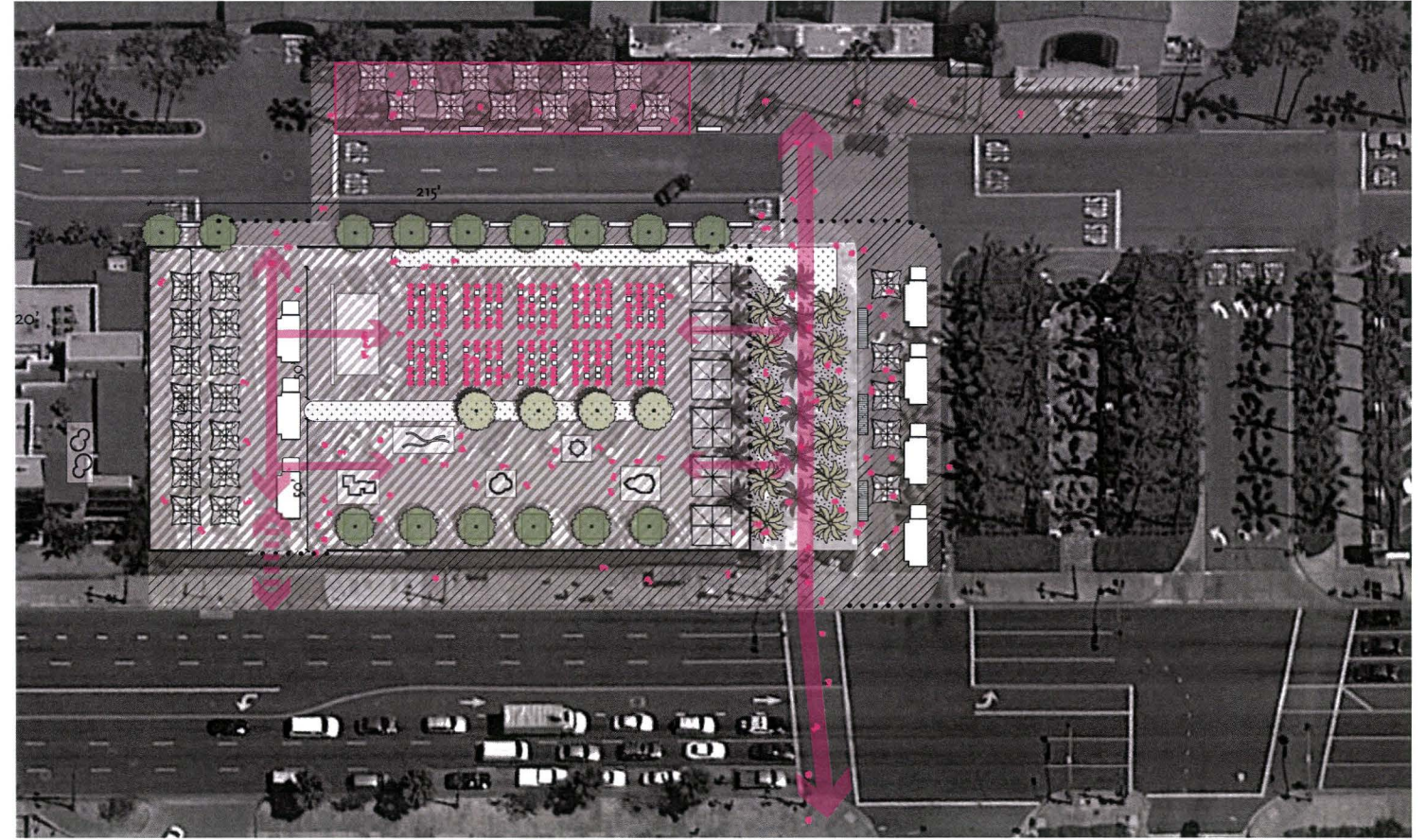
Basic improvements would include the enhancement of pedestrian and visual connectivity by removal of some of the planting and hedges in the main entry space, creating a flexible open space palette through the use of temporary site furnishings, well as temporarily instituting new reoccurring festivals and activities. These pilot programs will be catalysts for changing the way that public space can be transformed and understood as being vital to seeing Los Angeles in a new way.

- 1** Increased porosity and visibility
 - Portion of Hedge replaced by removable bollards for dedicated pedestrian use and service vehicle access
 - Replace planting in heavily trafficked areas with decomposed granite
 - Curb Extension
- 2** Flexible open space palette
 - Iconic and movable furnishings
 - Simple temporary techniques of creating a pedestrian friendly space (Paint, Planter beds, Shade and tables)
- 3** Programming
 - Regular and annual events and services
 - Promotional functions
- 4** Culture and the Arts
 - Temporary fairs, exhibitions, sculpture, and installations

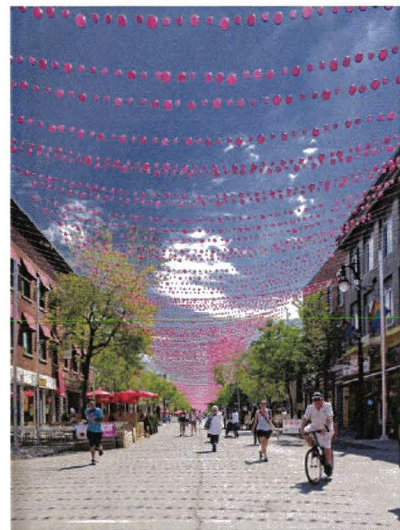
PROGRAM POTENTIALS



FARMER'S MARKET



PERFORMANCE / ART FAIR



Art Installation



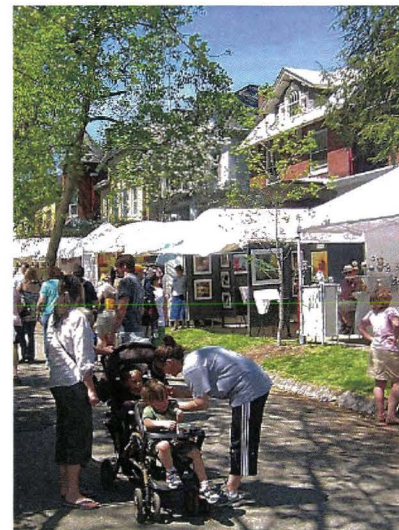
Food Trucks



Performances



Pop Up Events



Art Fairs



Night Market



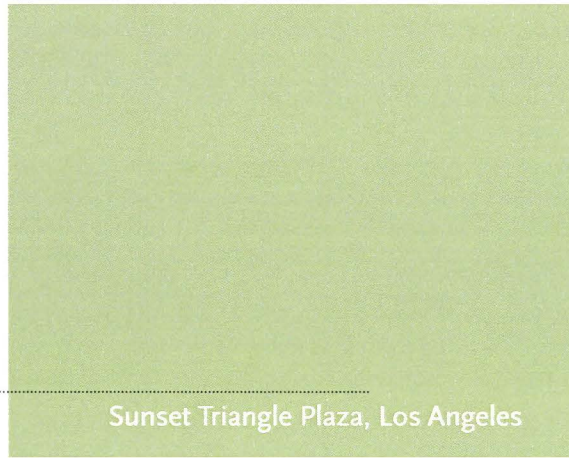
Movable Components

PROGRAM POTENTIALS

Forecourt Conceptual Design Package | 03.17.15

Flexible Open Space Palette

Informal appropriation
Simple, Elegant and Fun Furnishings
Low Cost, High impact



Sunset Triangle Plaza, Los Angeles

Regular Programming and Services

Increased amenities for Union Station travelers
Low overhead and infrastructure required



Food Trucks at LACMA, Los Angeles

Public Gatherings and Events

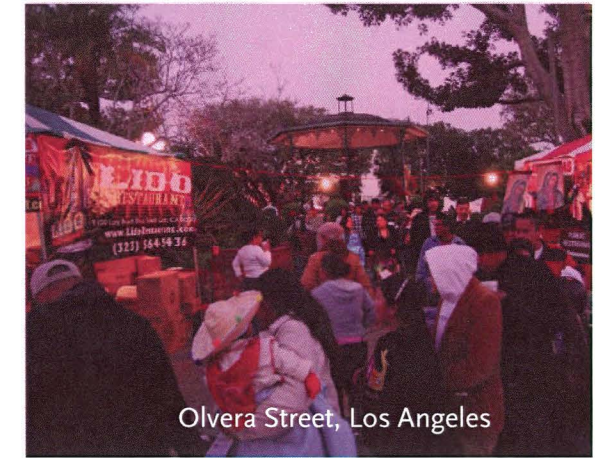
Highlighting public and individual transit
Promotes METRO Ridership
High profile, central destination



Critical Mass LA, Los Angeles

Celebrating LA Art + Culture

Annual Street Celebrations and Farmer's Market
Art Installations



Olvera Street, Los Angeles



