Union Pier

Planned Unit Development

City Project ID: PUD2023-000025
TMS 590-00-00-009

Planning Commission Submittal
May 30, 2023 (First Submission)

Property Owner: South Carolina Ports Authority

Applicant: Barbara Melvin, Contact: Randolph Lowell, rlowell@burr.com

With great public and city input, we have created a plan to transform Union Pier into a new mixed-use neighborhood with significant public assets for the city.

Designed for Charleston.

Charleston is a special place, and this plan reflects that. It is designed for Charleston - both for today and for the generations to come.

New Greenspaces, Waterfront Access.

Imagine more public access to the waterfront, expanded harbor views and more green spaces downtown. A five-acre Pier Park — roughly the size of Marion Square — will be built on piers over the water. The revised plan also calls for a grand park that will stretch from the Rice Mill to the water. This will be a large green space in the city and create connections to the waterfront, waterfront walkways, additional green spaces, historic landmarks and city museums.

Preservation of Historic Assets.

Historic assets will be preserved, honored and incorporated into the site. The Bennett Rice Mill Façade will be restored and anchor a new green space. The historic Mosquito Fleet will be honored with more fishing opportunities on the site. These sites will be connected by green space and walking paths.

More Connected, Walkable City.

Downtown Charleston will be more walkable, with a new path connecting Waterfront Park to the International African American Museum, and walkable greenspace stretching from the Bennett Rice Mill Façade to the water. Much of downtown will be ringed by waterfront walking paths. Existing streets will be extended to improve traffic flow, increase connectivity and make the waterfront more visible at different points throughout the city.

Mixed-Use Neighborhood.

A new mixed-use neighborhood with significant public assets will be created. The site will have new spaces for people to live, work and play. The site will have more commercial, hotel, retail and restaurant spaces to support our economy.

Aesthetically Charleston.

New buildings will be designed to blend seamlessly into the city's existing texture and aesthetic. The Board of Architectural Review will retain full oversight in this plan. Proposed buildings range from three stories to seven stories, with the tallest heights in the center of buildings, obscured from view.

Addressing Affordability.

Affordable and workforce housing will be built on the site and throughout the city. A fund will be created to support future affordable workforce housing development in the future.

Built in Flooding Solutions.

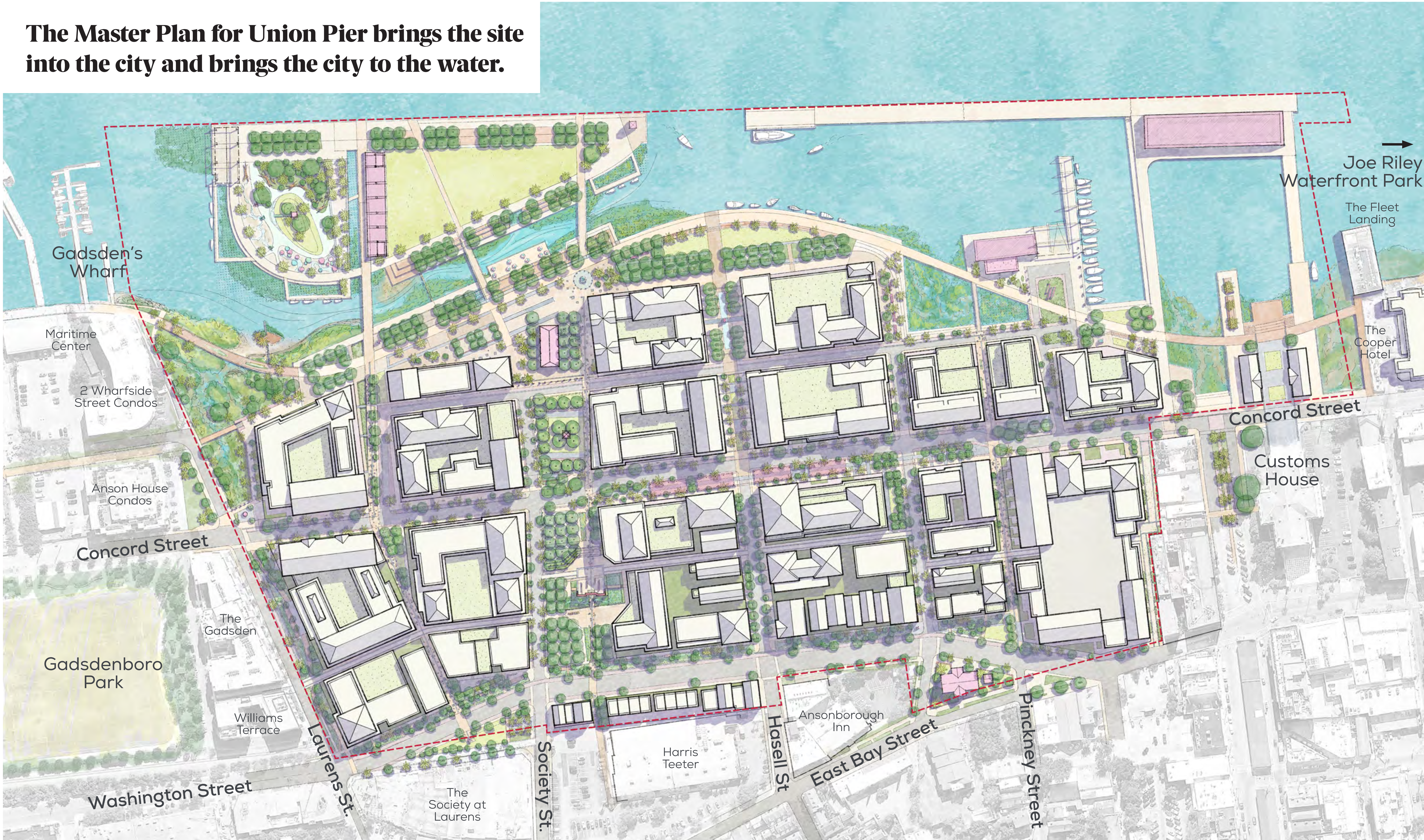
Comprehensive coastal resiliency planning and state-of-the-art flooding solutions will help address water management on the site and in the surrounding areas. The plan includes new infrastructure to keep storm surges out, drain stormwater and address sunny day flooding.

Master Plan Vision
May 30, 2023

Master Plan for
Union Pier

Perkins&Will

The Master Plan for Union Pier brings the site into the city and brings the city to the water.



Conceptual Master Plan
May 30, 2023

Master Plan for
Union Pier

Perkins&Will

Union Pier will create a new mixed-use neighborhood on the waterfront. The new district will blend seamlessly with the surrounding city, complementing the Charleston skyline.

Concord Street

Hasell Street Square

Washington Street

Union Pier will improve mobility on the peninsula. People traveling on foot, on bike, by transit, and in cars will experience improved streets, intersections, and views to the water. The redevelopment will also create new public parks that offer waterfront access, playgrounds, dog parks, and civic spaces.

Marsh Terrace

Resilience Strategy below the Marsh Terrace

Marsh Promenade

Union Pier will provide solutions to reduce flooding through a comprehensive stormwater-management system and to storm-surge flooding that integrate with existing plans for the Charleston peninsula.

Union Pier Planned Unit Development: Zoning Text

Union Pier Planned Unit Development

Charleston, South Carolina

Project ID Number: PUD2023-000025

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APPENDICES

Union Pier Planned Unit Development

Charleston, South Carolina

Project ID Number: PUD2023-000025

Section 1: Relationship to Zoning Ordinance

The Development Guidelines and Land Use Plan for the Union Pier Planned Unit Development (PUD), attached hereto and made a part hereof, are part of the Union Pier PUD Master Plan application submitted in accordance with the Zoning Ordinance of the City of Charleston, Article 2, Part 7, Sections 54-250, *et seq*. The Zoning Ordinance of the City of Charleston and Comprehensive Plan for the Union Pier Site, both in effect as of [DATE] are incorporated herein by reference, except as modified or amended herein, notwithstanding future amendments of the Zoning Ordinance. In accordance with Section 54-254, the Union Pier PUD is submitted in recognition and pursuit of the following land use conditions, objectives, and intents:

a. The proposed development is consistent with the Comprehensive Plan, as amended, for the Site. The proposed development is consistent with the Century V Comprehensive Plan, where the Site was designated as “Urban Core.” In the subsequent Charleston City Comprehensive Plan, the Site is identified as a “Future Planning Area” and reserved for consideration in a successive ordinance.

b. The proposed development is consistent with the goals of the Charleston City Plan and all adopted plans for the subject property and better achieves the goals of adopted plans than would development under other zoning district regulations, as the PUD tailors the uses and plans to better meet the community’s input and serve its needs.

c. The proposed development is consistent with the City’s adopted master road plan, as modeled and supplemented herein.

d. The proposed development protects and preserves natural and cultural resources, resulting in more open space, better urban connection to the Charleston waterfront, and more compatible uses with neighboring properties.

e. The proposed development is compatible with the density and maximum building height of adjacent developed neighborhoods, by adjusting the height from the maximum currently allowed and considering the height of other nearby uses, heights, and densities.

f. The proposed development creates connectivity with the existing public street network in adjacent neighborhoods and areas by including provisions for public and private connections.

g. The proposed development provides adequate parking for residents and users.

h. The proposed development can be accommodated by existing and planned public facilities including but not limited to roads, sewer, water, schools, civic sites, parks and open space.

i. The proposed development provides adequate public facilities, open spaces, and recreational amenities.

j. The proposed development adequately provides for the continued maintenance of common areas, open space, and other public facilities both dedicated and not dedicated to the City by making the latter, non-dedicated areas, space, and facilities an obligation of future property owners.

k. The proposed development provides for a mixture of residential, commercial, open space, recreation, civic, and other uses.

No person shall erect or alter any building, structure, or sign on any tract of land or use any tract of land within the Union Pier PUD except in conformance with these guidelines and regulations. Unless modified herein, definitions of terms used in the Union Pier PUD Development Guidelines shall follow definitions listed in the Zoning Ordinance of the City of Charleston, as of [DATE]. Administration and enforcement of the adopted Union Pier PUD Master Plan shall follow Article 9 of the Zoning Ordinance of the City of Charleston.

The Union Pier PUD Master Plan was approved by Charleston City Council on ___________, Ordinance Number_______________.

Section 2: Introduction and Background Information

2.1 Background and Ownership

The South Carolina State Ports Authority (Ports Authority), established by the State's General Assembly in 1942, owns and operates the Port of Charleston, which includes the Union Pier Terminal, where the Union Pier PUD is proposed to be located. In pursuit of its statutory mission to develop, improve, and operate the harbors and seaports within the State to increase water-borne commerce, the Ports Authority has successfully and significantly contributed to the State's economy and workforce. For instance, as an economic development engine for the State, the Ports Authority's operations facilitate 1 in 10 jobs across the State—and over $63 billion in yearly economic activity—based on recent third-party studies.

The Ports Authority has owned portions of the land comprising the Union Pier Site for decades. Collectively, the Union Pier Site includes 10 parcels totaling approximately 64.14 acres, which is comprised of approximately 36.33 acres of highland (56.64%), 7.31 acres of open water and marsh (11.40%), and 20.5 acres of docks and piers (31.96%).

As a part of the Charleston Peninsula, the Union Pier Site represents a significant portion of the City's varied and complex waterfront history that began long before it officially became Union Pier Terminal. Beginning in the late 1700s, the City of Charleston began filling the former creek beneath the current Market Street to create additional land to support dock and wharf space extending beyond East Bay Street toward the Cooper River. Pushing the Peninsula's mainland closer to the harbor created a larger footprint for local industries, large and small, to utilize wharfs and docks to move goods that included rice, indigo, tobacco, cotton, phosphate, and fresh seafood, among other items. The Bennett Rice Mill façade ruins, which is located on the Union Pier Site and is proposed to be incorporated into open space, is a testament to and reminder of the Site's historical industries and proximity to the water. That same proximity to the water also made Charleston a major port of entry for the international slave trade. Notably, a significant portion of all African-American enslaved persons that were transported to the United States were carried on ships that arrived at Gadsden's Wharf, the current site of the International African American Museum, which is adjacent to and connects with the Union Pier property along the waterfront.

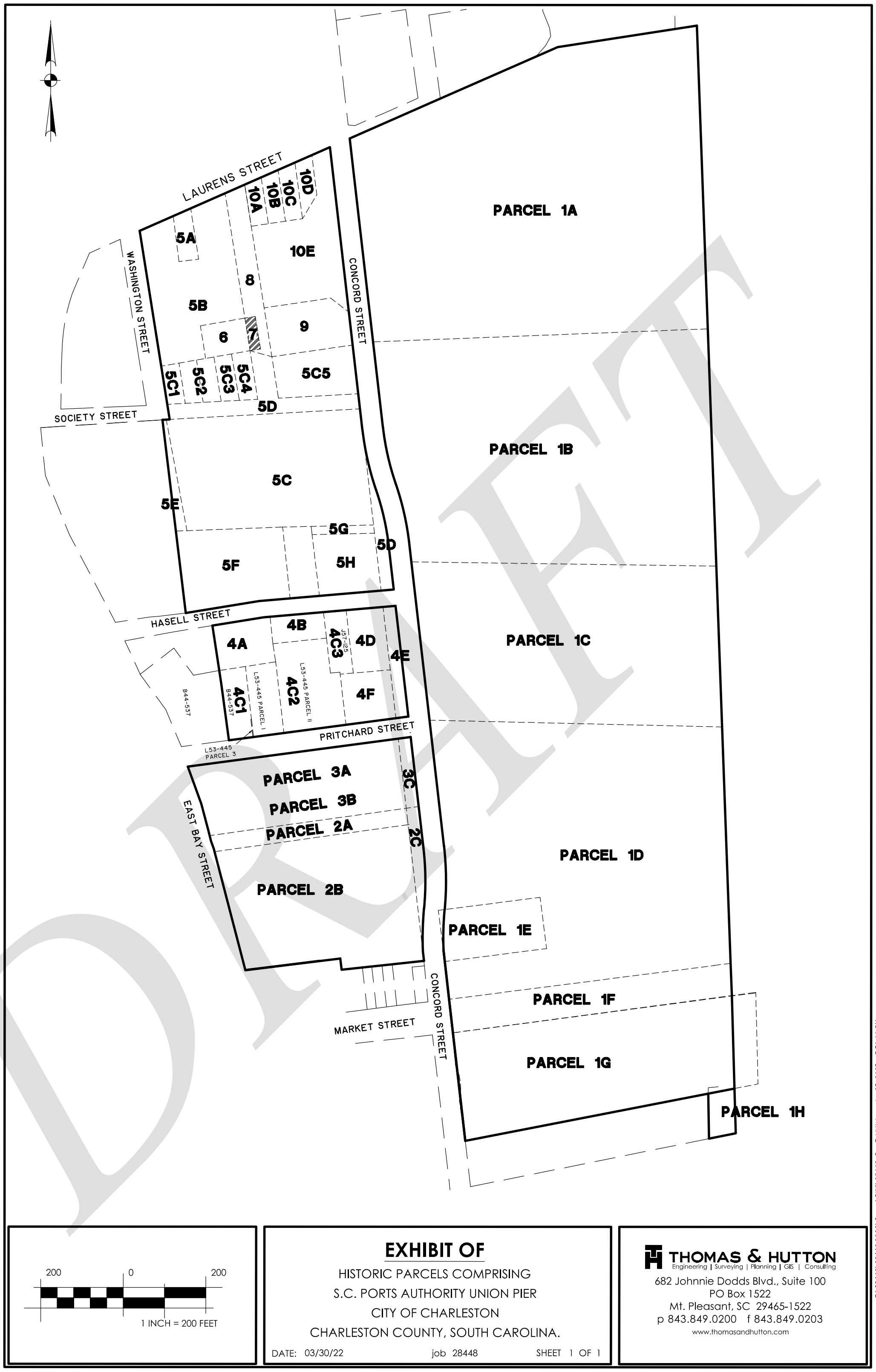
Furthermore, given the significant contemporary demand for residential and commercial uses of property on the Charleston Peninsula, coupled with cost increases and lack of availability of both housing and commercial space throughout the City, it is submitted that the highest and best use of this Site will be a mixed-use community, developed as an extension of the surrounding areas and waterfront on the Charleston Peninsula. The current Light Industrial zoning on the majority of the Site—which was appropriate based on the Site's existing use as a marine terminal— drastically restricts this use and provides for other incompatible uses, and, as such, the property is proposed to be re-zoned as a Planned Unit Development. To that end, it is contemplated that demolition will be sought for all existing structures within the Union Pier Site, with the exception of the Bennett Rice Mill façade ruins, the Union Pier Passenger Terminal (Passenger Terminal), and certain elements of the pier structures, as to be determined by the developer. New structures built to contemporary urban standards that achieve the purpose and intent of the proposed mixed-use development will be constructed.

Development of the property pursuant to the proposed Union Pier PUD is intended to reflect the varied history of Union Pier, as outlined above, and honor it by unlocking its potential value as a mixed-use development that represents Charleston's history, as well as its current and future needs.

Current ownership of the property is as follows:

Union Pier PUD Parcels			
Parcel ID	TMS#	Owner	Acreage
1A – 1H	459-00-00-009	South Carolina State Ports Authority	42.87
2A – 2C	458-05-04-015	South Carolina State Ports Authority	3.00
3A – 3C	458-05-04-016	South Carolina State Ports Authority	3.00
4A – 4F	458-01-04-014	South Carolina State Ports Authority	2.83
5A – 5H	458-01-04-005	South Carolina State Ports Authority	8.30
6	458-01-04-006	Dominion Energy South Carolina, Inc.*	0.199
7	458-01-04-025	Dominion Energy South Carolina, Inc.*	0.046
8	458-01-04-024	South Carolina State Ports Authority	0.40
9	458-01-04-009	South Carolina State Ports Authority	0.53
10A – 10E	458-01-04-007	South Carolina State Ports Authority	1.50

***** Limited Agency Authorization from Dominion Energy South Carolina, Inc., is attached hereto in Appendix D.



LAURENS STREET
10A
10B
10C
10D
5A
10E
WASHINGTON STREET
CONCORD STREET
8
5B
6
9
5C1
5C2
5C3
5C4
5C5
5D
SOCIETY STREET
5C
5E
5G
5D
5F
5H
HASELL STREET
4A
4B
4C3
4D
4E
4C1
4C2
4F
PRITCHARD STREET
PARCEL 1A
PARCEL 1B
PARCEL 1C
PARCEL 1D
PARCEL 1E
PARCEL 1F
PARCEL 1G
PARCEL 1H
PARCEL 3A
PARCEL 3B
PARCEL 2A
PARCEL 2B
3C
2C
EAST BAY STREET
MARKET STREET
CONCORD STREET
200
0
200
1 INCH = 200 FEET
EXHIBIT OF
HISTORIC PARCELS COMPRISING
S.C. PORTS AUTHORITY UNION PIER
CITY OF CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA.
DATE: 03/30/22
job 28448
SHEET 1 OF 1
THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
682 Johnnie Dodds Blvd., Suite 100
PO Box 1522
Mt. Pleasant, SC 29465-1522
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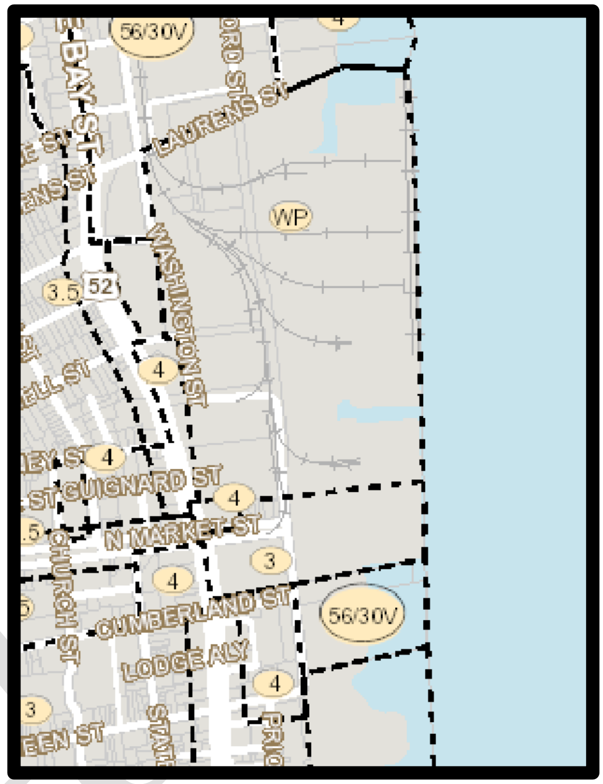
www.thomasandhutton.com
DRAFT

2.2 Current Zoning



The current zoning for the parcels is set forth below, and allows a broad range of residential, commercial, and industrial uses and activities.

Union Pier PUD Parcels			
Parcel ID	TMS#	Current Zoning	Current Height Limits
1A – 1H	459-00-00-009	Light Industrial (LI)	56/30V, 3, & WP
2A – 2C	458-05-04-015	Light Industrial (LI)	4 & WP
3A – 3C	458-05-04-016	Light Industrial (LI)	4 & WP
4A – 4F	458-01-04-014	Light Industrial (LI)	WP
5A – 5H	458-01-04-005	Light Industrial (LI)	WP
6	458-01-04-006	Light Industrial (LI)	WP
7	458-01-04-025	Light Industrial (LI)	WP
8	458-01-04-024	Light Industrial (LI)	WP
9	458-01-04-009	Light Industrial (LI)	WP
10A – 10E	458-01-04-007	Light Industrial (LI)	WP

The Union Pier Site is generally bounded by parcels of land, roadways, or railways on northern, western, and southern sides of the Site, with the eastern side being bounded by the Cooper River.

2.3 Development Goals

The Union Pier PUD is designed to establish a vibrant, mixed-use development area in a strategic, waterfront location on the Charleston Peninsula. To that end, development within the Union Pier Site shall consider these goals and objectives:

- Connections...............Improve mobility on the Charleston Peninsula, extending the existing street grid on the north, west, and south side of the Site boundaries to the east. People traveling on foot, bike, public transit, and in automobiles will experience improved streets, intersections, and views to the waterfront, access to the same, and will experience a variety of improved streets.
- Program/Uses............Create a new mixed-use neighborhood, providing a variety of neighborhood services. This new neighborhood will blend with the surrounding city due, in part, to the strict architectural principles in place, complementing the skyline of Charleston viewed from land and water.
- Open Spaces..............Create a series of parks and open space along and connecting to the waterfront, which will be highly accessible to all Charleston residents and visitors.
- Stormwater................Provide solutions to reduce flooding through a comprehensive stormwater management system.
- Coastal Resiliency......Provide solutions to storm surge flooding that integrates with existing plans for the Charleston Peninsula.
- Compatibility ....Provide excellence in architecture as outlined in the Architectural Principles herein and subject to approval by the City's Board of Architectural Review (BAR).

2.4 Affordable and Workforce Housing

a. <u>Workforce/affordable housing units</u>

The Union Pier redevelopment will create a minimum of 367 workforce/affordable housing units (Total Affordable Housing Units) in the City of Charleston through a combination of on-site housing units and near-site housing options, which exceeds 20% of the total residential units proposed for the Site.

A minimum of 290 workforce/affordable housing units will be provided on the Union Pier site (On-Site Units), subject to a substitution in the total number of the On-Site Units pursuant to the credit system outlined in this Section. In no case will the number of On-Site Units be less than 10% of the total number of residential units constructed at the Site.

b. Schedule for delivery of workforce/affordable housing units

The Total Affordable Housing Units will be delivered in accordance with the following schedule:

1) Funding for the construction of 77 workforce/affordable housing units, totaling $16,000,000 and split equally between the Ports Authority and purchaser(s) of the Site, will be delivered immediately upon the sale of the Site by the Ports Authority.

    a. At closing of the sale of the Site by the Ports Authority to the developer(s), the Ports Authority and developer(s) of the Site will make a financial contribution to the Charleston Housing Authority to fund the construction of 77 units located at the Huger Street Project. The Huger Street units will be perpetual affordable/workforce housing units.

2) A minimum of 120 On-Site Units will be constructed on the Site within 8-years following the sale of the Site by the Ports Authority and commencement of development of the Site.

3) A minimum of an additional 170 On-Site Units will be constructed on the Site within 12-years following the sale of the Site by the Ports Authority and commencement of development of the Site, for a total number of 290 On-Site Units located on the Union Pier Site.

c. Union Pier Workforce Housing Trust Fund

There will further be established the City of Charleston Housing Trust Fund (City of Charleston Housing Trust Fund" or "Fund"), which will be administered by the City of Charleston's Department of Housing and Community Development and/or 501(c)(3) entity for purposes of collecting property transfer fees on all conveyances of any parcels or units at the Site (i.e., all residential, commercial, unimproved, rental, or other property). The City of Charleston Housing Trust Fund will generally be funded and operated pursuant to the following procedure:

1) Initial Transfer Fee. A transfer fee of One Percent (1%) of the total sales price of the initial conveyance of the Property by the Ports Authority, not to exceed One Million Dollars ($1,000,000), shall be assessed and made payable by the developer to the City of Charleston Housing Trust Fund at the time of closing ("Initial Transfer Fee").

    a. To the extent there are multiple conveyances of portions of the Site by the Ports Authority, a transfer fee of One Percent (1%) shall be applicable to each transfer, not to exceed One Million Dollars ($1,000,000) per transfer, and payable to the City of Charleston Housing Trust Fund at the time of closing.

2) Subsequent Transfer Fee. All subsequent conveyances of property at the Site shall include a transfer fee of One Percent (1%) of the total purchase price of the property payable to the City of Charleston Housing Trust Fund ("Transfer Fee").

a. Exception: Where the total sales price for property subject to the Transfer Fee exceeds Two Hundred Fifty Million Dollars ($250,000,000.00) ("Reduction Threshold"), all portions of the purchase price for such property that exceed the Reduction Threshold shall be subject to a reduced transfer fee of One-Half Percent (0.5%).

3) Allocation of Transfer Fee Funds

a. The funds within the City of Charleston Housing Trust Fund will be available for the creation and preservation of workforce/affordable housing at the Union Pier Site and for workforce/affordable housing properties within the City of Charleston in the following manner:

i. Funds will be used to provide down-payment assistance for first-time homebuyers earning between 50% and 120% of the Area Median Income (AMI). Eligible persons may receive up to ten (10%) of the purchase price of the home as a subsidy from the Fund.

ii. Funds will also be used for foreclosure prevention, eviction prevention, rental deposits to prevent homelessness or displacement of families.

iii. Funds will also be used for the preservation of housing through the rehabilitation of existing owner-occupied housing for persons earning up to 120% of the Area Median Income.

d. Credit System for Substitution of On-Site Units

The Ports Authority or developer(s) of the Site may substitute the total number of On-Site units by applying credits for land donated for the construction of near-site units or funds collected pursuant to the Transfer Fund in the following manner. However, in no case shall the total number of On-Site units be reduced below 10% of the total number of residential units constructed on the Site.

1) East Bay Units

a. Within 5-years following the sale of the Site, the Ports Authority will donate adequate land at or about 540-542 East Bay for the construction of 50 workforce/affordable housing units (East Bay Units). The East Bay Units will be perpetual affordable/workforce housing units.

b. Following the donation of the land for the East Bay Units by the Ports Authority, the required total number of On-Site Units constructed at the site may be substituted by 50 units.

2) Housing Trust Fund Units

a. For every $400,000 collected by the City (or managing entity) through the utilization of the City of Charleston Housing Trust Fund within 15 years following the initial sale of the Site by the Ports Authority, the total number of On-Site units required to be constructed at the Site may be substituted by one (1) unit, not to exceed a total of 80 units.

e. <u>Miscellaneous</u>

1) Workforce rental housing units shall mean housing for those earning up to 80% of the Area Median Income. Affordable rental housing units shall mean housing for those earning eighty (80%) percent and below the Area Median Income. Workforce and Affordable for-sale housing shall mean housing for those earning up to one hundred and twenty percent (120%) of the Area Median Income.

2) For purposes of this Section 2.4, “conveyance” shall mean a sale or conveyance by deed or any event under South Carolina Code of Laws Section 12-37-3150, as it exists as of the date hereof, which would require the appraisal of the applicable real property for property tax purposes, provided, however, that in all cases in which the conveyance is by deed, the term “conveyance” shall exclude transfers of property that are exempt from recording fees for value pursuant to South Carolina Code of Laws Section 12-24-10 et seq, or any amendment thereto. The term “conveyance” shall also exclude transfers of property to the holder of a mortgage on such property pursuant to a foreclosure sale or died in lieu of foreclosure.

3) This Section 2.4 and the rights and obligations hereunder shall continue and shall remain binding from the date the Union Pier PUD is enacted until a written termination, executed by the City, is duly recorded in the Charleston County Register of Deeds Office.

4) The total number of required workforce/affordable units will be increased or decreased in accordance with the application of the Land Use Conversion Matrix outlined in Section 2.3.

5) Any restrictive covenants on workforce/affordable housing units shall be released following application of the credit system outlined above in Section 2.4.d.

6) With the exception of the Huger Steet and East Bay Units outlined above, which shall exist as workforce/affordable housing in perpetuity, the required total number of On-Site Units shall exist for 30-years following the sale of the Site by the Ports Authority.

Section 3: Land Use

3.1 Area Breakdown

Below is a breakdown of the Union Pier Site’s total project acreage, marsh/wetland/open water area, pier area, and remaining developable area:

Gross Total Project Area	67.57 ac.	
Less: Existing ROW Area	3.43 ac	
Net Project Area	64.14 ac.	100.00% of Net Area
Net Project Area is comprised of:		
Gross Critical Area		
Total Pier/Marsh/Wetland/Open Water Area	27.81 ac.	43.36% of Net Area
Gross Upland Area	39.76 ac.	
Upland Area (Excluding Existing ROW Area)	36.33 ac.	56.64% of Net Area
Net Project Area =	64.14 ac.	100.00% of Net Area

The Union Pier PUD proposes open space and usable open space in excess of the required minimums. Further detail regarding open space allocations is provided in Section 5.

3.2 Net Density and Calculations

The Union Pier Site is a mixed-use development incorporating flexibility in proposed land uses to accommodate appropriate development over time. The proposed land uses permitted by the Union Pier PUD are defined as Mixed-Use Zoning in Section 4.3. *See* Appendix A.4, Detailed Land Use Plan for the Master Plan as per Zoning Ordinance requirements.

The land use density table below establishes the anticipated net density (Anticipated Area) (Anticipated Units) permitted by the Union Pier PUD and the maximum net density (Maximum Area/Units) for each land use:

Zoning	**Land Use***	**Anticipated Area**	**Anticipated Units***	**Maximum Area/Units***
Mixed Use	Retail/Commercial**	270,000 sf	-	*
Mixed Use	Office	270,000 sf	-	*
Mixed Use	Accommodation		[###] sleeping units***	[###] sleeping units
Mixed Use	Residential		1,600 dwelling units****	*See* text below

**Land Use Equivalency Matrix—To enable reasonable flexibility over the duration of development at the Union Pier Site, the Anticipated and Maximum Area/Units of a Land Use may be converted to different Land Uses by utilizing the Land Use Equivalency Matrix, as further outlined in the Union Pier Traffic Impact Analysis (TIA), subject to the limitations outlined below. The Land Use Equivalency Matrix is based on the Institute of Transportation Engineer's (ITE) Traffic*

Engineering Handbook, 11th edition, rate equivalence (Handbook). Any application of the Land Use Equivalency Matrix shall be performed by a licensed traffic engineer and approved by the City's Traffic and Transportation Department.

As an example of the Land Use Equivalency Matrix, assume a land use change is proposed from 10,000 sf of retail space to residential dwelling units. Based on the Land Use Equivalency Matrix, 87 additional residential dwelling units (DU) could be substituted in exchange for the reduction of 10,000 sf of retail space. See Appendix G, Page 7. The calculations based on the Land Use Equivalency Matrix are shown below:

10,000 sf/1,000 sf = 10; 10 x 8.718 = 87 residential DU substitution for 10,000 sf of retail space.

The Maximum Land Use Areas/Units for the Union Pier Site shall be determined by application of the Land Use Equivalency Matrix and shall not be exceeded. The Land Use Equivalency Matrix may also be applied to permit uses not specifically identified above in this Section 3.2, and which are otherwise allowable in the Union Pier PUD based on the Handbook. However, in no case shall the Maximum Units of Accommodations sleeping units set forth above be increased through the Land Use Equivalency Matrix without a major PUD amendment.

***For purposes of this Section 3.2, the uses included in the "Retail/Commercial" designation are those uses encompassed by the "Shopping Center" and "High Turnover Restaurant" land use codes, both as defined in the Handbook, and as further outlined in the TIA.*

****The Maximum Units of Accommodations sleeping units set forth above in the Land Use Density Table (i.e., [###] sleeping units) shall not be increased through the application of the Land Use Equivalency Matrix. Any increase in the Maximum Units of Accommodations sleeping units shall require a major PUD amendment.*

*****Any increase in the residential Anticipated Units in excess of 15% (i.e., any increase in residential units over a total of 1,840 units) shall require a major PUD amendment. The proposed 1,600 residential dwelling units represents approximately forty-four (44) dwelling units per acre, on average, per Upland Area acre of the Site. The Site may have greater or fewer dwelling units per acre, subject to the application of the Land Use Equivalency Matrix (but not to exceed the 15% maximum increase).*

Affordable and workforce housing, as defined in Section 2.4, shall be exempt from overall residential dwelling unit density limitations and from the unit counts set forth in this Section 3.2. Furthermore, any increase in residential dwelling units shall require a pro rata increase in workforce/affordable housing units pursuant to Section 2.4.

At or prior to the conveyance of each subdivided parcel at the Union Pier Site, a restrictive covenant shall be recorded that grants the specific land use density assigned or restricted under each conveyance and the City shall be notified of the same. Unless permitted in such conveyance, density may not, by default, be converted using the Land Use Equivalency Matrix. Property at the Union Pier Site retained by the Ports Authority after the initial conveyance(s) of the Union Pier Site shall be exempt from the application of the Land Use Density Table, provided that such property is being utilized for port-related activities pursuant to S.C. Code § 54-3-130.

Uses such as athletic events, performances, special events, public assemblies, and any other uses similar or related thereto, including the venues providing for such uses, shall not be deemed to create and shall be excluded from any calculations of new, external trips, and shall instead be subject to a traffic management plan upon request by the City.

3.3 Adequate Public Facilities

Sufficient infrastructure to support the intended uses proposed by the Union Pier PUD is not currently present on the Union Pier Site. Coordination with public facility and utility providers is provided in Appendix D. New infrastructure shall be constructed in a timeframe such that adequate public facilities are provided for new development.

Section 4. Zoning Criteria

The development of the Union Pier Site and properties subject to the Union Pier PUD must maintain flexibility to accommodate constructability conditions, environmental concerns, physical constraints, market conditions, and design parameters. As such, the exact locations of boundary lines between development tracts, the locations and sizes of land uses in the development areas, and the preliminary planning concepts for the tracts and uses are not indicated on the Land Use Plan.

4.1 Development Standards

The development of the Union Pier Site and properties subject to the Union Pier PUD will meet all ADA guidelines, including but not limited to the ADAAS (ADA Accessibility Standards), FHA, building code, and City of Charleston codes.

Below is a breakdown of development standards in the Union Pier PUD.

Development Standards Summary	
Lot Requirements	
Lot Size	No minimum.
Accessory, Additions to, and Additional Buildings	Not differentiated from primary or principal building or structure.
Lot Occupancy	No maximum.
Minimum Setbacks	
Setbacks and Frontage	Street Side: 0 feet Side Yard: 0 feet Rear Yard: 0 feet
Maximum Building Height	

Building Height District	*See* PUD Height District Plan for building heights within PUD height districts. No building heights may exceed Height District 7, Section 54-306.H of the Zoning Ordinance, or the identified height district depicted in Appendix A.5. Reference to the following height districts depicted on Appendix A.5 shall, except as modified in this Section 4.1, generally mean the Old City Height Districts as defined by the following Height Districts of the Zoning Ordinance, including: 3 Stories ....Sec. 54-306.B. – Height District 3. 4 Stories ....Sec. 54-306.E. – Height District 4. 5 Stories ....Sec. 54-306.F. – Height District 5. 6 Stories ....Sec. 54-306.G. – Height District 6. 7 Stories ....Sec. 54-306.H. – Height District 7. The BAR may not increase or decrease the number of stories based on architectural merit and context. Notwithstanding the foregoing, the BAR shall retain its full powers and duties to require the use of architectural techniques to achieve appropriate building form pursuant to Sec. 54-240(c).

See Appendix A.5 for the PUD Height District Plan, which shall control the maximum building heights within Union Pier. Union Pier PUD height districts shall not exceed Height District 7 (Section 54-306.H.) pursuant to Section 54-256.c.1.(a). Internal height district boundaries may be adjusted to abut the final location of constructed rights-of-way as generally depicted in Appendix A.10, Street Types Plan, whether inward or outward to achieve the height district boundaries depicted in the Height District Plan as approved by the Zoning Administrator. Such district adjustments related to the final location of constructed rights-of-way and any references thereto in the Height District text of the Zoning Ordinance shall be deemed minor PUD amendments. Buildings that are five stories or more shall be abutted by sidewalks no less than ten (10) feet in width along street rights-of-way. If sidewalks are provided on alleys, sidewalks must be a minimum of four (4) feet wide. Modified street sections may be approved by the Director of Planning, Preservation & Sustainability in consultation with the Director of Traffic and Transportation at the time of Subdivision Concept Plan Review.

Height in stories shall be measured from the proposed finished elevation of the top of the curb adjacent to the proposed structure. Encroachments in the public right-of-way shall be permitted for arcades, colonnades, loggias, and similar structures, as permitted by the BAR and the Director of Public Services. Notwithstanding the foregoing, nothing herein shall prohibit the City from requiring indemnity from the owner of such encroachment, as may be permitted by law. Vision clearance triangles shall not be required, provided that adequate traffic and pedestrian safety measures are demonstrated.

Wherever reasonably possible, green resilient building practices should be employed in the development of structures at the Site, such as LEED, Charleston Rises, or similar advisory practices.

4.2 Union Pier Architectural Design

The BAR shall retain its full powers and duties as specified in Sec. 54-240. In addition, the BAR shall utilize and apply the Union Pier Architectural Principles to any and all applications when exercising its power and duties pursuant to Sec. 54-240. The Union Pier Architectural Principles are attached hereto as Appendix B Union Pier Architectural Principles and incorporated herein by reference. Furthermore, all structures constructed on the Union Pier Site shall comply with the following:

1) For any building frontage exceeding 80 feet in length on a single street, the building shall be modulated into smaller masses or forms.
2) For building frontages exceeding 80 feet in length, the BAR may further require varying architectural expressions of the resulting smaller masses.
3) Where block frontages exceed 200 feet, the block design, or building if full block, shall employ techniques at grade level to prevent long flat flush or non-undulating facades, to maintain a rhythm of solid/void per Charleston streetscapes, and to engage users of the public right-of-way by employing additive and subtractive elements (solids and voids) such as colonnades, portals, recesses and other voids such as pedestrian passageways, walled gardens, outdoor seating areas, green spaces, and fountain plazas.
4) At roof level, the building/block design shall employ varying roof heights and/or forms/types and may not simply reflect the height district map maximums.
5) Where building meets grade on sloping street frontage, the building/block shall be designed such that individual building expressions meet grade for entry and access with the exception of residential which shall be allowed stoops to individual unit entries.
6) Each block shall express forms and masses that articulate and express a variety of footplate sizes or visual appearance of the same in order to transition with the smaller scale of adjacent neighborhoods. This requires variety in width, height, and/or depth of forms.
7) Architecture at the Site will respond and reflect terminated vistas and focal points at the Site.
8) The BAR may grant waivers from the above requirements based on the context of the structure with its immediate surroundings or the overall composition and proportions of building masses.

4.3 Zoning Districts; Permitted Uses

The Union Pier Site shall be located in the Old City Zoning District, and the following Overlay Zones: School Overlay, Tour Boat Overlay, Amusement & Recreation Overlay, and Residential Short Term Rental Overlay. Permitted uses in the Union Pier PUD (hereinafter defined and referred to as Mixed-Use Zoning) shall be all permitted, conditional, special exception, and overlay zone uses provided for in the General Business base zoning district (and brewery/brewpub, winery, and distillery) and any overlay districts thereon, as set forth in the City of Charleston Zoning

Ordinance Article 2, Part 3, as amended through approval date of _____, 2023, with the exception of the excluded uses listed below in Section 4.3.1. For property within the Union Pier Site owned by the Ports Authority, permitted uses shall also include those uses reasonably required to accomplish the purposes of the Ports Authority as set forth in S.C. Code § 54-3-130, to include cruise and passenger terminal port-of-call operations for any such property, with the exception of the specific excluded uses listed in Section 4.3.1. The Ports Authority further commits to evaluate operational and equipment options that are environmentally beneficial and fiscally feasible for implementation at renovated or existing port-of-call cruise terminal facilities at the Property, including the use of shore power. Except as provided for in this Section 4.3, no other zoning districts or overlay zones or regulations promulgated thereunder shall apply to the property subject to the Union Pier PUD. However, it is contemplated that additional restrictions may be established by a Union Pier Property Association (UPPA) established by the Ports Authority or developer of the Union Pier Site. However, property retained by the Ports Authority shall be exempt from the UPPA or any other such property owners' association. To the extent this PUD and the Zoning Ordinance conflict as to uses permitted by the Union Pier PUD, the Union Pier PUD shall control. Hours of operation shall be limited to General Business hours of operation unless further limited by the UPPA or similar entity.

Establishments which allow for on-premises consumption of alcohol, beer, or wine after midnight, may be permitted where the Board of Zoning Appeals—Zoning after review, finds that requirements listed below for such uses are met:

1) Garbage, recycling, maintenance equipment and supplies are stored in a manner so as not to be visible from adjoining properties, public right-of-way or other public property;
2) Storage areas for all garbage, recycling, maintenance equipment and supplies are designed to contain odors and prevent the wafting of odors onto adjoining properties, public rights-of-way and other public property;
3) The location for garbage and recycling pick-up is safe;
4) Measures have been incorporated into the structure to address adverse impacts of noise to properties in a residential zoning district; and
5) The establishment will not result in a heavy concentration of establishments of the same kind within a block, or if so, the applicant demonstrates that, due to factors such as the geographic or physical attributes of the block or to other measures incorporated into the structure, the addition of the establishment will not harm the character of the block.

Within the Union Pier Site, eating and drinking places, which include restaurants, bars, event spaces, and similar uses, with a rooftop patron use area shall require the services of an acoustical consultant to design and implement outdoor sound mitigation measures, as may be appropriate. In addition, all rooftop eating and drinking places shall satisfy the following operational requirements:

1) No amplified live music shall be permitted on the rooftop;
2) No televisions or video monitors shall be mounted on the exterior areas of the rooftop;

3) No amplified sound louder than normal conversational tones shall be permitted on the rooftop;
4) No Outdoor food and beverage service after midnight; and
5) No strobes or flashing lights shall be permitted.

4.3.1 Prohibited Uses

Prohibited or excluded uses at the Union Pier Site shall be any and all: Cruise home-port terminal operations, container terminal operations, roll-on/roll-off terminal operations, dairy farms, mobile home dealers, recreational and utility trailer dealers, cemeteries, stables, crematories, tattooing services, mining/quarrying of nonmetallic minerals, except fuels, indoor shooting range, short term rental (commercial or residential), accessory dwelling units, firearm sales, casinos, and adult uses as defined in the City of Charleston Zoning Ordinance where applicable.

Provided, however, that per S.C. Code § 6-29-730, any land, buildings, and structures and the uses of same which are lawful by the Ports Authority (including any licensees or tenants of the same) at the Union Pier Site, whether as of right or as legal nonconformities, at the time of the enactment of the Union Pier PUD, may be continued although not in conformity with the regulations or amendments until such time as the Site has been fully disposed to third-parties, at which time the Ports Authority may continue to operate cruise operations (except for home-porting) and related and ancillary services and operations, as further outlined above in the Permitted Uses (Section 4.3).

4.4 Parking Standards

In implementing the Union Pier development goals, there shall be no minimum or maximum parking standards for the properties subject to the Union Pier PUD. The development goals place an emphasis on the use of bicycles, transit, water ferries and taxis, and other alternatives to the automobile, each of which is anticipated to reduce the need for traditional use-based minimum parking space requirements. ADA and FHA parking space size and quantity shall be determined by Building Code and federal regulations. Notwithstanding the foregoing, development in the Union Pier Site may consider the inclusion of automotive parking reasonably sufficient to accommodate market forces, including multistory parking decks and shared parking. As Union Pier is more fully developed, it is anticipated that the proposed mix of uses and other influences will further reduce the need for automobiles and associated parking. As depicted in Appendix A.11, Street Types Sections, on-street parallel parking shall be provided where not otherwise prohibited (for example, loading zones, fire hydrants, vision triangles, etc.).

4.5 Accommodations Uses

The Union Pier Site is a natural extension of the City’s existing Accommodations Overlay Zone. The Union Pier Accommodations Plan is intended to create diverse, mixed-use districts and permit accommodations uses in areas that are proximate to cultural, recreational, and civic resources, thereby reducing any potential impacts on surrounding residential districts.

The Union Pier Accommodations Plan, as depicted in Appendix A.4.1, restricts accommodations uses to designated areas within the Union Pier Site (Accommodations Areas). The Accommodations Areas are located in areas throughout Union Pier that are adjacent or within walking distance to: Union Pier Passenger Terminal; Charleston City Market; South Carolina Aquarium; International African American Museum; Liberty Square; Fort Sumter Visitor Education Center & Tour Boats; Charleston Maritime Center; Gadsdenboro Park; Charleston Gaillard Center; Joe Riley Waterfront Park; Harris Teeter grocery store; proposed Union Pier Waterfront Park; the Historic Rice Mill Mall; and Mosquito Fleet park, among other areas. The proposed pedestrian, cycling, transit, and automotive transportation network at the Site will enable efficient and integrated access between and among these areas and the Accommodations Areas.

The total number of sleeping units located within the Union Pier Site shall not exceed *[###]* sleeping units. Pursuant to the Union Pier Accommodations Plan, the total number of sleeping units shall not exceed *[###]* in areas designated "A"; *[###]* in areas designated "B"; *[###]* in areas designated "C"; and *[###]* in areas designated "D". Accommodations uses within the Union Pier Accommodations District shall be approved by the Zoning Administrator as a conditional use, and shall satisfy the following conditions:

1) the total number of sleeping units within the buildings or structures on the lot or parcel in which the accommodations use is located is equal to or exceeds 10 sleeping units;
2) if the accommodations use within a building or structure exceeds 150 sleeping units, the accommodations use shall provide an on-site restaurant open seven days a week and may provide other services such as a concierge, a spa/health club, laundry, turndown service, newspaper delivery, and security personnel;
3) proposed accommodations uses shall incorporate a minimum amount meeting and conference space at a ratio of 400 square feet per 10 sleeping units, or fraction thereof (Required Meeting Space). At least 75% of the Required Meeting Space shall be contiguous;
4) the applicant for any accommodations use shall commit to make affirmative, good faith efforts to see that construction and procurement opportunities are available to MBEs (minority business enterprises) and WBEs (women business enterprises);
5) the applicant for any accommodations use shall commit to make affirmative, good faith efforts to hire personnel representative of the population of the Charleston community at all employment levels;
6) the applicant for any accommodations use shall commit to environmental sustainability and recycling;
7) the applicant for any accommodations use shall commit to provide transit passes or other incentives to encourage employees to utilize public transportation for their commutes;
8) the total square footage of interior and exterior floor area for restaurant and bar space in the proposed accommodations use, including restaurant/bar patron use areas, bar areas, kitchen, storage, and bathroom facilities, shall not exceed 12 percent of the total interior, conditioned floor area in the accommodations use, except that each

accommodations use shall be permitted to exempt from the calculation of total restaurant floor area one interior, ground floor restaurant tenant space if the total tenant space does not exceed 2,000 square feet, the restaurant tenant does not serve alcoholic beverages, and the exempt restaurant tenant space is clearly labeled with these restrictions on the floor plans submitted;

9) the accommodations use proposed guest drop off and pick up area(s) is located outside the public right-of-way and on the property utilized for the accommodations use if the accommodations use contains more than 50 sleeping units, and if 50 sleeping units or less, the proposed guest drop off and pick up area(s) are located outside the public right-of-way if feasible, and the location and design of the guest drop-off and pick-up area(s) has been reviewed by the Department of Traffic and Transportation and determined to be safe and not be an impediment to traffic and that every effort has been made to minimize traffic impacts;

10) with the exception of parking, the proposed accommodations use will not share any of its buildings, structures, facilities, or operations with another accommodations use; and

11) to assist in providing affordable housing opportunities for its employees, the applicant for the accommodations use commits to contribute to the City of Charleston Affordable/Workforce Housing Account a fee payable upon the issuance of a Certificate of Occupancy, calculated as follows: $5.10 per square foot (or any updated value approved by Council and included in the Zoning Ordinance) of area used for sleeping units and the hallways adjacent to sleeping units, stairwells and elevators.

Section 5. Open Space and Buffers

5.1 Open Space Requirements

The Union Pier PUD envisions a significant area of public open space (Open Space) throughout the Union Pier Site. A significant portion of this Open Space will be located along the proposed Union Pier Waterfront Park, which will include an island park constructed on existing pierheads (Island Park) connected to a continuous pathway along the waterfront (Pier Walk) with connections to the interior and adjacent properties and cultural amenities through a variety of streets, pedestrian walkways, and dock space, as further described in this Section 5. The proposed Historic Rice Mill Mall, centered on the historic Bennett Rice Mill façade ruins and extending to the waterfront, will serve as one of these critical connections. Moreover, the proposed design for Union Pier Waterfront Park will result in a significant portion of the Cooper River currently covered by dock and wharf space being uncovered and reclaimed for public use and enjoyment (Open Water), adjacent to a proposed maritime use area that can be utilized for a marina or other maritime activities (Maritime Use Area).

As per the Open Space plan depicted in Appendix A.6, the Union Pier PUD will provide Open Space and Usable Open Space (as defined in Sec. 54-120) in excess of the required minimums. The development of the Open Space Area and Usable Open Space Area may occur in separate phases, as further outlined below in Section 5.3. Although located along or above the critical area, development of the Union Pier Waterfront Park and Maritime Use Area will provide many of the same or additional public benefits as Usable Open Space, although neither is being counted towards the total Usable Open Space provided at the Site. *See* Appendix A.6.2.

Open Space and Usable Open Space shall allow for access to and from Maritime Use Areas, public and private roads, and rights-of-way where reasonably necessary to access the same, as depicted in the Detailed Land Use Plan (Appendix A.4). Maritime Use Areas may overlap other use areas or be expanded to accommodate any permitted maritime use and uses ancillary thereto.

Total Open Space Area:

Union Pier PUD fully developed expected Open Space Area	**+/- 24.89 ac**	**36.84% of Total Area***
*Minimum Zoning Ordinance required Open Space Area***	*13.51 ac*	*20% of Total Area*

Total Usable Open Space Area*:**

Union Pier PUD fully developed expected Usable Open Space Area	**+/- 4.96 ac**	**36.71% of Open Space 7.34% of Total Area**
*Minimum Zoning Ordinance required Usable Open Space Area***	*3.38 ac*	*25% of Total Open Space*

**Per Appendix A.6.3, the total acreage or pier space proposed for removal over the critical area at the Union Pier Site is 6.4 acres. Of this total 6.4 acres, 3.6 acres is designated as Open Space and 2.8 acres is designated as a Maritime Use Area. References and supporting exhibits regarding pier removal acreages are provided for information only.*

***References to Minimum Zoning Ordinance requirements are for information only.*

****Exhibits showing the detailed allocation of open space types, including usable open space (high ground), open space (high ground), open space (pier), open space (restored critical area), and the acreages of each open space type designated below in Section 5.2 are provided as Appendix A.6 (Open Space Plan) and Appendix A.6.2 (Open Space Map).*

5.2 Open Space Types

The Open Space on the property within the Union Pier Site will include a public pedestrian path along the water's edge (Pier Walk) at the Union Pier Waterfront Park that connects various contemporary and historical landmarks or areas of interest within and adjacent to the property, including the proposed Mosquito Fleet historical marker, U.S. Custom House, International African American Museum, and Historic Rice Mill Mall. The proposed Open Space will also provide direct public access to the water via paths, piers, and docks. Ferry service shall be permitted.

Open Space types at the Union Pier Site shall be designated using the following definitions or as described in Section 54-284 of the Zoning Ordinance:

- Historic Rice Mill Mall—Linear park space centered around the historic Bennett Rice Mill façade ruins and extending to Union Pier Waterfront Park. The Historic Rice Mill Mall will be landscaped and may incorporate amenities, including walking paths, benches, historical markers, and lawns or gardens. The Historic Rice Mill Mall will provide further opportunities for street-level activation of commercial and civic frontages.
- Union Pier Waterfront Park—Waterfront park space constructed along the coastal edge and on existing or improved wharfs designed to provide active and passive maritime recreational facilities directly connected to bicycle and pedestrian networks. Union Pier Waterfront Park shall generally be designated as the Pier Walk, Island Park, and reclaimed Open Water section where existing wharfs are proposed for demolition. The Pier Walk and Island Park sections may also include grassy fields and landscaped areas, designated sports facilities, picnic areas, a band shell, or other public performance facilities, and accommodations for maritime uses, such as fishing, boating, ferries, and water taxis. A playground facility shall be provided at Union Pier Waterfront Park.
- Hasell Place Square—Linear park space designed to serve as a meeting place with connectivity to the waterfront. Hasell Place Square will primarily include paved surfaces with planted areas and will provide opportunities for street-level activation of commercial frontages.
- Custom House Square—Waterfront park space adjacent to the historic U.S. Custom House designed to provide a direct and welcoming connection to the City from the Passenger Terminal. Custom House Square will provide opportunities for visually pleasing and functional vehicular access to and from the Passenger Terminal with associated amenities.
- Pritchard Pocket Park—An intimate public green space designed for passive recreation and social interaction. The park will be landscaped and may incorporate amenities such as benches and landscaping.
- Residual Pocket Parks and Pedestrian Alleys—Other public greenspaces designed for passive recreation and social interaction. These parks will be landscaped and may also incorporate amenities such as benches and landscaping, in addition to providing opportunities for street-level activation of commercial and residential frontages.
- Mosquito Fleet Park— Waterfront park space will incorporate interpretive features and markers to commemorate the history of the Mosquito Fleet in Charleston. This space may also incorporate passive and active water management features.

Prior to the construction of the open space types designated above, the developer and the City shall work together to determine the exact programming of such open space.

5.3 Timing and Delivery of Open Space

For purposes of the timing and delivery of Open Space at the Site, the Site shall be divided into three separate zones of Open Space development, which are depicted on the Open Space Phasing Plan (Appendix A.6.4), and further described as follows:

1) Zone A – This area includes the northern portion of the Site, extending from Hasell Street to the northern boundary of the Site. The Rice Mall Park and Mosquito Fleet Park shall be included in Zone A, among other open space areas depicted in Appendix A.6.4. Zone A shall also include development of the adjacent Pier Walk section of the Union Pier Waterfront Park, as indicated in the Open Space Phasing Plan.
2) Zone B – This area includes the southern portion of the Site, extending from Hasell Street to the southern boundary of the Site. The entirety of Hasell Place Park and Custom House Park shall be included in Zone B, among other open space areas depicted in Appendix A.6.4. Zone B shall also include development of the adjacent Pier Walk section of the Union Pier Waterfront Park, as indicated in the Open Space Phasing Plan.
3) Zone C – This area includes the Island Park section of the Union Pier Waterfront Park and the remaining existing pier space that is proposed for demolition into the Open Water section. The entirety of the pier area indicated in Zone C shall be preserved as Open Space regardless of the nature of the improvements located thereon.

Development of the Open Space shall be developed sequentially, starting with Zone A and proceeding to Zone B, then Zone C. Within each Zone, development of the Open Space types designated above in Section 5.2 shall be completed no later than the completion of the development on the street block within which that Open Space is located. For example, the Pritchard Pocket Park shall be delivered no later than the completion of the building(s) located at the northwest corner of Pritchard Street and Concord Street, and Hasell Place shall be delivered no later than the completion of the building(s) located at the southwest and southeast corners of Hasell Street and Wharfside Street, respectively.

Priority of the development of the Open Space at the Union Pier Site shall be given by the developer to the Rice Mill Park and Pier Walk section of the Union Pier Waterfront Park. Development of the Rice Mill Park shall begin as the first phase of the development of the Open Space located at the Site. Furthermore, as referenced, Zones A and B include the adjacent Pier Walk sections of the Union Pier Waterfront Park. The Pier Walk sections of Zone A and Zone B shall be delivered no later than the vertical development to which they are adjacent.

Tax Increment Financing (TIF) is proposed to reimburse the developer for all open space types, including but not limited to design and construction costs associated therewith. However, the development of the Open Space shall not be contingent on the timing of TIF proceeds for reimbursement.

Except with regard to the Rice Mill Park and Pier Walk obligations outline above, the timing and delivery of the Open Space located at the Union Pier Site as outlined in this Section is contingent on final agency or permitting approval for any open space located in or above the critical area. Following the sale of the Union Pier Site by the Ports Authority, the developer shall provide a final open space phasing plan to the City (Final Open Space Phasing Plan). The Final Open Space Phasing Plan shall be delivered to the City prior to the City's issuance of any permits for vertical construction at the Site being issued by the City to the developer. Furthermore, prior to the development of each subdivided parcel at the Site, the developer shall provide to the City a report on the status of the development of the Open Space in relation to the Final Open Space Phasing Plan.

5.4 Ownership and Maintenance of Open Space

All Open Spaces at the Site , whether or not they are improved and/or maintained with TIF revenue or Municipal Improvement District revenue, or both, shall be owned by and dedicated to the City of Charleston (as approved by the City). Open Space dedicated to the City of Charleston and in excess of the minimum usable open space acreage requirement may be utilized by the City of Charleston for civic buildings and uses. Furthermore, the total proposed acreage of Open Space located on existing wharfs as depicted on the Open Space Map (Appendix A.6.2), shall be preserved as Open Space regardless of the nature of the improvements located thereon. The UPPA (or similar entity), Ports Authority, developer, or others may own or maintain, or both, Open Spaces not dedicated to the City of Charleston, which are permitted to be open to the public. Nothing herein shall prohibit the City from entering into agreements with or assigning maintenance or construction responsibilities to the developer, UPPA, or separate entity.

Nothing herein shall prohibit the Ports Authority, UPPA (or similar entity), or the City of Charleston from establishing regular park/open space hours of operation.

Section 6. Buffers

Buffers, landscape or otherwise, are not required whether internal to or surrounding the Union Pier Site or between land uses.

Properties within the Union Pier Site are exempt from critical line buffers pursuant to Section 54-347.1.b.3. & 4. of the Zoning Ordinance.

Except as modified above and herein, Section 54-347 of the City of Charleston Zoning ordinance shall govern the landscape buffer adjacent to the critical line. Pedestrian amenities may be located within buffers and setbacks.

Section 7. Tree Standards

There is minimal tree cover on the Union Pier Site – refer to Appendix F, Exhibit 2: Aerial. Tree planting and protection shall be determined by and in compliance with the City of Charleston Zoning Ordinance requirements.

Suspended pavement systems to prevent soil compaction around root systems shall be permitted in rights of way, parks, and open spaces to prevent sidewalk and right-of-way buckling.

Plantings shall endeavor to maximize the utilization of native species and other techniques to promote urban ecology.

Section 8. Right-of-Way Standards

The Union Pier Site will allow the reconnection of the surrounding roadway network and will utilize the street types depicted in the exhibits attached hereto (*see* Appendix A.10). Roadways constructed to City standards (including but not limited to, granite curbing) shall be dedicated public streets unless the developer elects to privately maintain them. Roadways, whether or not dedicated as a public street, shall be permitted to utilize pervious surfaces.

As stated in Section 4.1, ADA compliance shall be provided for new development by providing, at a minimum, accessible routes between rights-of-way, parking, public transportation, amenities, and entrances. Vehicles, public transportation, bicycles, and pedestrians will be accommodated by the new roadway infrastructure (*see* Pedestrian & Bicycle Circulation Plan, Appendix A.9). Transit infrastructure will be required and shall be approved as part of site plan review based on requirements set forth in the Zoning Code.

Where feasible, utility providers shall seek to utilize shared trenches for utility services within the Union Pier Site rights-of-way and properties.

Curb extensions, rectangular rapid flashing beacons (RRFBs), raised crosswalks, raised intersections, or other multimodal friendly features/pedestrian countermeasures will be installed at intersections and mid-block crossings where feasible.

Section 9. Stormwater and Floodplain Management

9.1 Flood Zone

Information from the effective FEMA flood maps can be found in Appendix F, Exhibit 8. The effective Flood Insurance Rate Maps (FIRMs) for the Union Pier Site (Panels 4509C0516K and 4509C0518K) identify the Site entirely within a 100-year (1% annual chance flood) Special Flood Hazard Zone (SFHZ). The SFHZs on the Site vary from Zone VE (EL15) at the edge of the existing piers along the Charleston Harbor, to Zone AE (EL12) inland from that point, to Zone AE (EL 11) extending inland to roughly East Bay Street. The elevations (EL) associated with each SFHZ represents the regulatory base flood elevation (BFE), in the NAVD88 datum. The effective FIRMs also depict the Site mostly within the Limit of Moderate Wave Action (LiMWA) line. The LiMWA line denotes the Coastal A Zone, where wave heights may be between 3 feet closest to the harbor, to 1.5 feet inland at the LiMWA line. The existing elevations of the Union Pier Site ranges from roughly 4 feet (NAVD88) along the Charleston Harbor and in low areas along Washington Street and Laurens Street to 7 feet (NAVD88) on the southern end of the Site near Pickney Street (*see* Appendix F, Exhibit 4).

The proposed development would remove the LiMWA from the Union Pier Site through FEMA's Map Revision process. SCPA is applying for a CLOMR (Conditional Letter of Map Revision) in coordination with the City's Office of Resiliency. If the Site is not removed from the LiMWA, the development will be consistent with existing FEMA requirements. Alternatively, the developer shall seek a major PUD amendment.

In the event FEMA issues any flood map amendment, revision, or modification, this Section 9, shall be modified and amended to include such changes pursuant to Section 54-260.b., minor amendments.

9.2 Existing Topography and Drainage

Analysis of the drainage basin that includes the Union Pier Site indicates that the basin drains approximately 85 acres on the eastern side of the Charleston Peninsula. The basin is roughly bordered to the north by George Street, to the west by King Street, to the south by Pinckney Street, and to the east by the Charleston Harbor (*see* Appendix F, Exhibit 5). The Basin outfalls through various pipe discharges to the Charleston Harbor. The Union Pier Basin is bordered by other basins to the north and south that drain to the City of Charleston's Concord Street Pump Station. The Market/Concord Street Tunnel Basin, located south of the Site, flows to the Concord Street Pump Station via a large diameter deep tunnel that crosses under the Site south to north in the Concord Street right-of-way. Drainage from the Market/Concord Street Tunnel Basin combines with drainage of the Meeting/Calhoun Street Tunnel Basin via a deep tunnel at the Concord Street Pump Station and is discharged to the Charleston Harbor (*see* Appendix F, Exhibit 5).

Within the roughly 85-acre Union Pier Basin, there are two brick-arch stormwater pipes flowing west to east under Society and Hasell Streets (*see* Appendix F, Exhibit 6). These two pipe systems provide drainage for the existing Ansonborough Neighborhood located west of the Site. These systems cross the Site west to east as large diameter pipes and also drain small portions of the existing Union Pier Site immediately adjacent the systems. These two large pipe systems discharge to the Charleston Harbor at the upland edge under existing piers that extend into the Charleston Harbor. These outfalls are subject to tidal inflow as they have no tidal control devises installed.

Six (6) smaller piped collection systems (pipes varying from 12- to 30-inches in diameter) drain the majority of the Union Pier Site east of the Ansonborough Neighborhood (*see* Appendix F, Exhibit 6). These pipes outfall to the Charleston Harbor at various location along the upland edge of the Site. Some of these outfalls are outside of existing piers and some are under existing piers extending into Charleston Harbor. These smaller outfalls are also subject to tidal inflow since they have no tidal control devises installed.

The existing piers extending from the uplands into the Charleston Harbor generally have surface elevations ranging from 8 to 9 feet (NAVD88). Several warehouses exist on some of the piers extending over Charleston Harbor. Drainage from the existing piers and warehouses extending over Charleston Harbor appears to discharge to the harbor via sheet flow or through small roof drainage systems.

A very small portion of the Site along Laurens Street drains into an off-site pipe system (*see* Appendix F, Exhibit 6). This system appears to drain areas along Lauren Street, from Anson Street to Cannon Street, then north in Concord Street.

The upland portions of the Union Pier Site are entirely paved and currently used as parking lots. Two large warehouses exist on the southern portion of the Site along Washington and Concord Streets. Four (4) railroad spurs enter the northwest corner of the Site at the intersection of Lauren and Washington Streets. These railroad spurs arc across the upland portions of the Site and extend over the Charleston Harbor on piers.

The existing elevations of the Union Pier Site range from roughly 4 feet (NAVD88) along the Charleston Harbor and in low areas along Washington Street and Laurens Street to 7 feet (NAVD88) on the southern end of the Site near Pickney Street (*see* Appendix F, Exhibit 4). The Site's pavement has very low slopes that generally direct stormwater runoff to inlets associated with the piped systems discussed above.

9.3 Wetlands Verification

The existing wetlands, critical line, and required buffers are identified on Appendix E.2. The Ocean Coastal Resource Management (ORCM) critical line and wetlands have been identified on a plat by a licensed surveyor and approved by the appropriate regulatory agencies (*see* Appendix E.2).

9.4 Stormwater Management

The proposed stormwater management system on the Union Pier Site will be developed following the guidelines and requirements of applicable agencies including the City of Charleston, South Carolina Department of Health and Environmental Control (SCDHEC) Bureau of Water (BOW), and OCRM. In general, the SCDHEC BOW and OCRM standards and regulations are encapsulated in the City's Stormwater Design Standards Manual (SWDSM). In all cases, the City's SWDSM has equivalent or more stringent standards than those of the SCDHEC BOW and OCRM. A Stormwater Management Master Plan will be developed at Concept Plan application to vest the design and construction of all public infrastructure improvements associated with the development of Union Pier.

The main components of the Site's proposed stormwater management system are shown in Appendix F, Exhibit 7. The stormwater management design for the proposed Site includes increasing the elevation of the area along the proposed Concord Street corridor to an increased elevation which will become the maximum elevation area of the Site (High Point). The grade within the Site will slope from the High Point east towards Charleston Harbor. From the High Point along the Concord Street corridor, the Site will slope west and tie into existing elevations generally along the Washington Street alignment. The proposed Site will also slope south from the High Point at the proposed Pritchard Street alignment and tie into existing elevations south of Pickney Street. Finally, the proposed Site will also slope south from the High Point at the proposed Society Street alignment and tie into existing elevations along Laurens Street.

In general, all of the existing stormwater management infrastructure on the Site is to be enlarged in place or removed and replaced in a new alignment conforming to the proposed Site's future Concept Plan. The main components of the proposed stormwater management system include enlarging the two main systems along Society Street and Hassel Street that drain the Ansonborough Neighborhood through the Site. These two systems will continue to drain off-site areas (the Ansonborough Neighborhood) and portions of the proposed Site.

In addition to enlarging these two large systems, two new pipe systems and outfalls are proposed for the northern portion of the Site adjacent to Lauren Street and southern portion of the Site along Pickney Street. Finally, various smaller pipe systems and outfalls will be utilized to drain interior portions of the Site. All retrofitted and proposed systems will outfall to the Charleston Harbor. Some of the proposed system's outfalls will be fitted with tide control devices as needed to control tidal flooding. All proposed grading and pipe system size and routing depicted herein are preliminary and subject to change as the design of the Site progresses.

Each phase or portion of the project shall be designed to meet the City of Charleston's stormwater management requirements in effect at time of submittal of a respective, complete Construction Activity Application (CAA) submittal to the Department of Stormwater Management. Nothing herein shall prohibit the development of a Stormwater Management Master Plan subsequent to the adoption of this PUD.

Section 10. Traffic Impact Analysis

See Appendix G for Union Pier Traffic Impact Analysis.

A phase-specific Traffic Impact Analysis may be required at the discretion of the Traffic and Transportation Department for any phase that independently meets the City of Charleston TRC requirements for a Traffic Impact Analysis. If, during the development of the Union Pier Site, the land uses materially change and the projected trip generation increases for a phase, the traffic study should be updated. If the proposed development at Union Pier does not occur as contemplated by the TIA, and the traffic improvements specified therein are not completed, the traffic study should be updated to review the project impacts and determine if other improvements may be needed.

Notwithstanding the foregoing, the Traffic Impact Analysis shall be updated every 5 years from the commencement of development of the Union Pier Site until the substantial completion of development within the Union Pier PUD, unless otherwise approved by the Traffic and Transportation Department.

As further outlined in the TIA and as depicted in Appendix A.13, East Bay and Washington Streets will each be converted to 3 lanes. During the development of the Site, the developer will continue to investigate the viability of a 4 lane extension of Washington Street in coordination with the City and if the rail line north of Calhoun Street is abandoned. Additional phasing and takedown thresholds for the recommended improvements are provided in the TIA and supporting materials.

Section 11. Cultural Resources Study

A cultural resources survey of the Union Pier Site has been conducted. Please refer to Appendix C for the full report.

Section 12. Letters of Coordination

See Appendix D for letters of coordination.

Section 13. Additional Information

13.1 Union Pier Conceptual Master Plan

See Appendix A.4 for Union Pier Detailed Land Use Plan.

Appendix A:
Graphic Exhibits


Hampton Park
Hampstead Square
East Bay
Cooper River
Riley Park
Harmon Field
Spring Street
Cannon Street
King Street
Meeting Street
Liberty Square
Calhoun Street
Gadsdenboro Park
Marion Square
Calhoun Street
UNION PIER
Cannon Park
Market Street
Alberta Sottile Lake
Beaufain Street
Joe Riley Waterfront Park
Shutes Folly Island
Colonial Lake Park
Washington Square
Moultrie Playground
Broad Street
King Street
Meeting Street
James Island
White Point Garden

Note: Building Footprints shown on Master Plan are conceptual and are provided for illustrative purposes only.

A.3 Land Use Plan

May 30, 2023

Master Plan for Union Pier

Perkins&Will

A.4 Detailed Land Use Plan

May 30, 2023

Master Plan for
Union Pier

Perkins&Will

A.4.1 Accommodations Plan
May 30, 2023

Master Plan for
Union Pier

Perkins&Will

Height District Area Allocation

Zone	Acres	% Total
2.5	37.27	55%
3	1.6	2%
4	5.3	8%
5	14.2	21%
6	5.5	8%
7	3.7	5%

A.5 Height District Plan

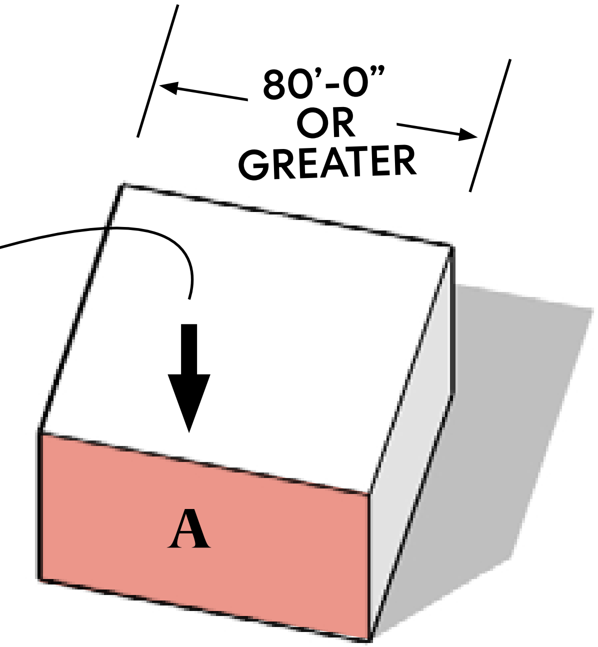
May 30, 2023

Master Plan for

Union Pier

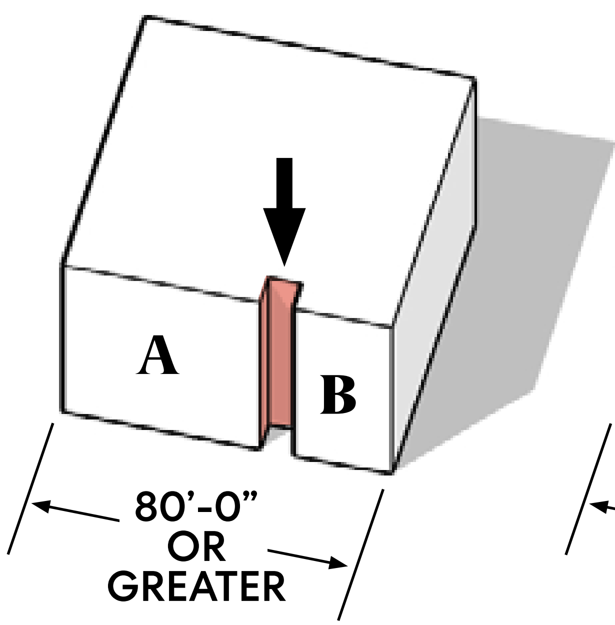
Perkins&Will

Buildings with frontages of 80'-0" or greater in horizontal length shall employee at least one method of modulating building mass to create architecture with characteristic Charleston scale

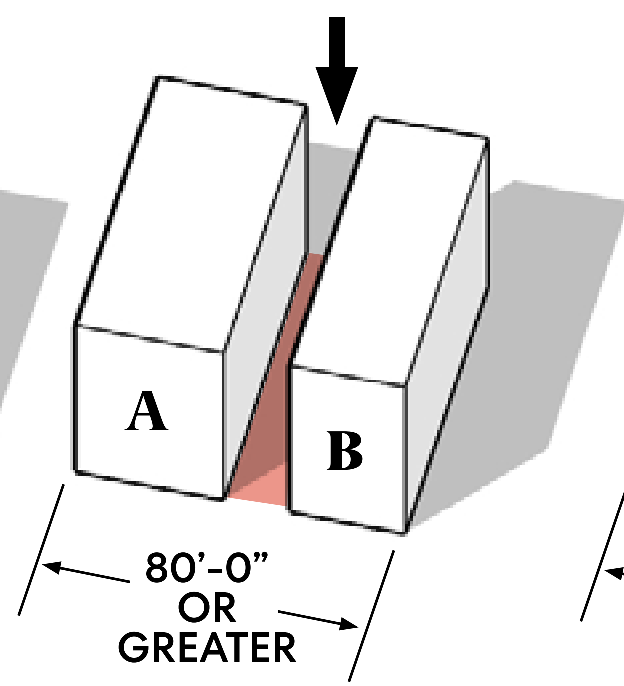


METHODS OF MODULATING BUILDING FRONTAGES

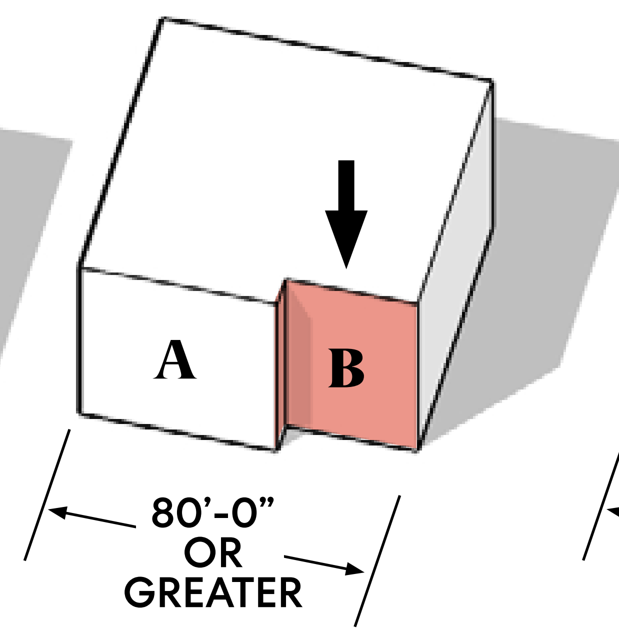
01.
"Hyphenation" to create multiple building masses



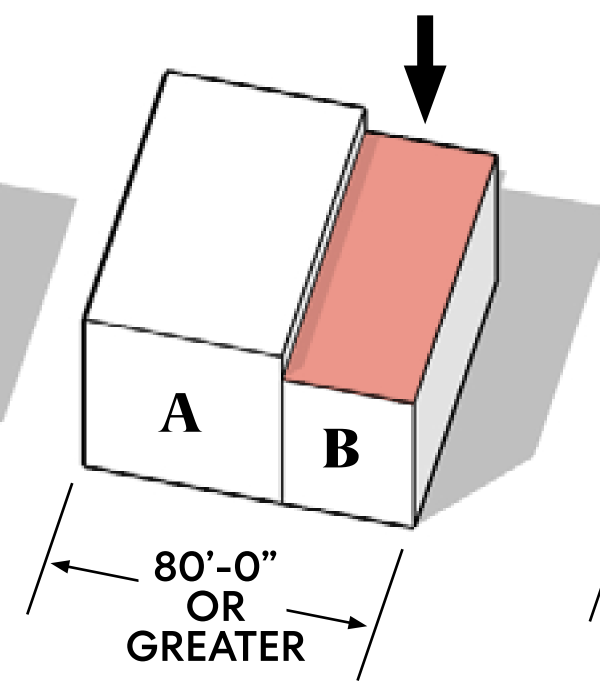
02.
"Separated masses" to create multiple buildings



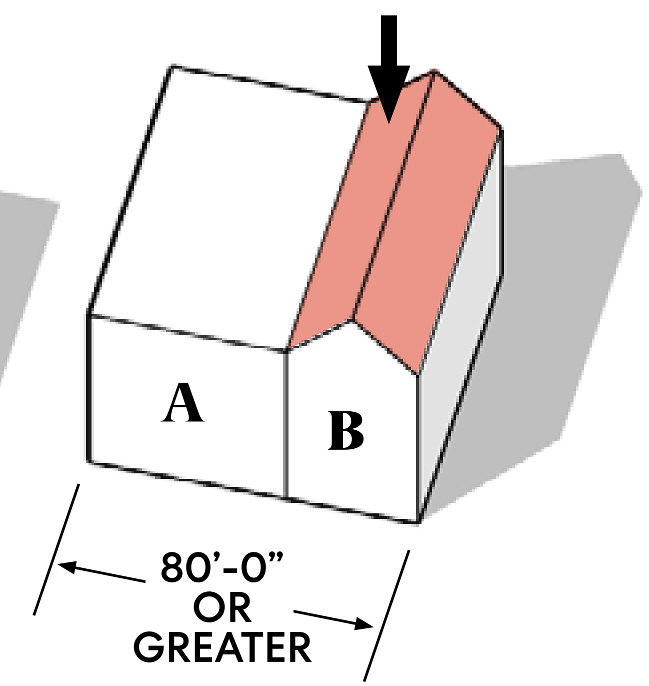
03.
"Recessed front" to create multiple planes of frontage

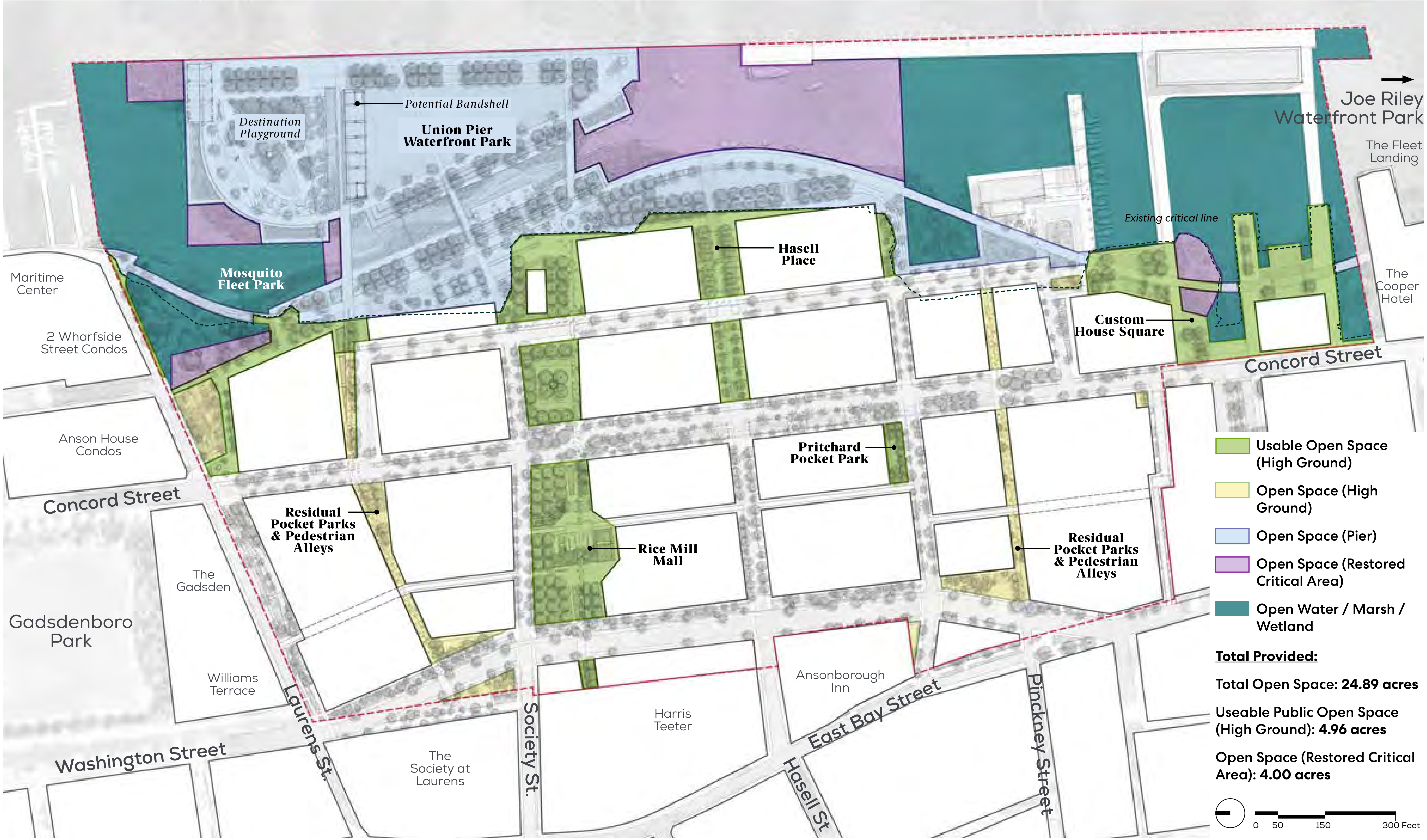


04.
"Stepped cornice" to create distinct sub-masses of one frontage



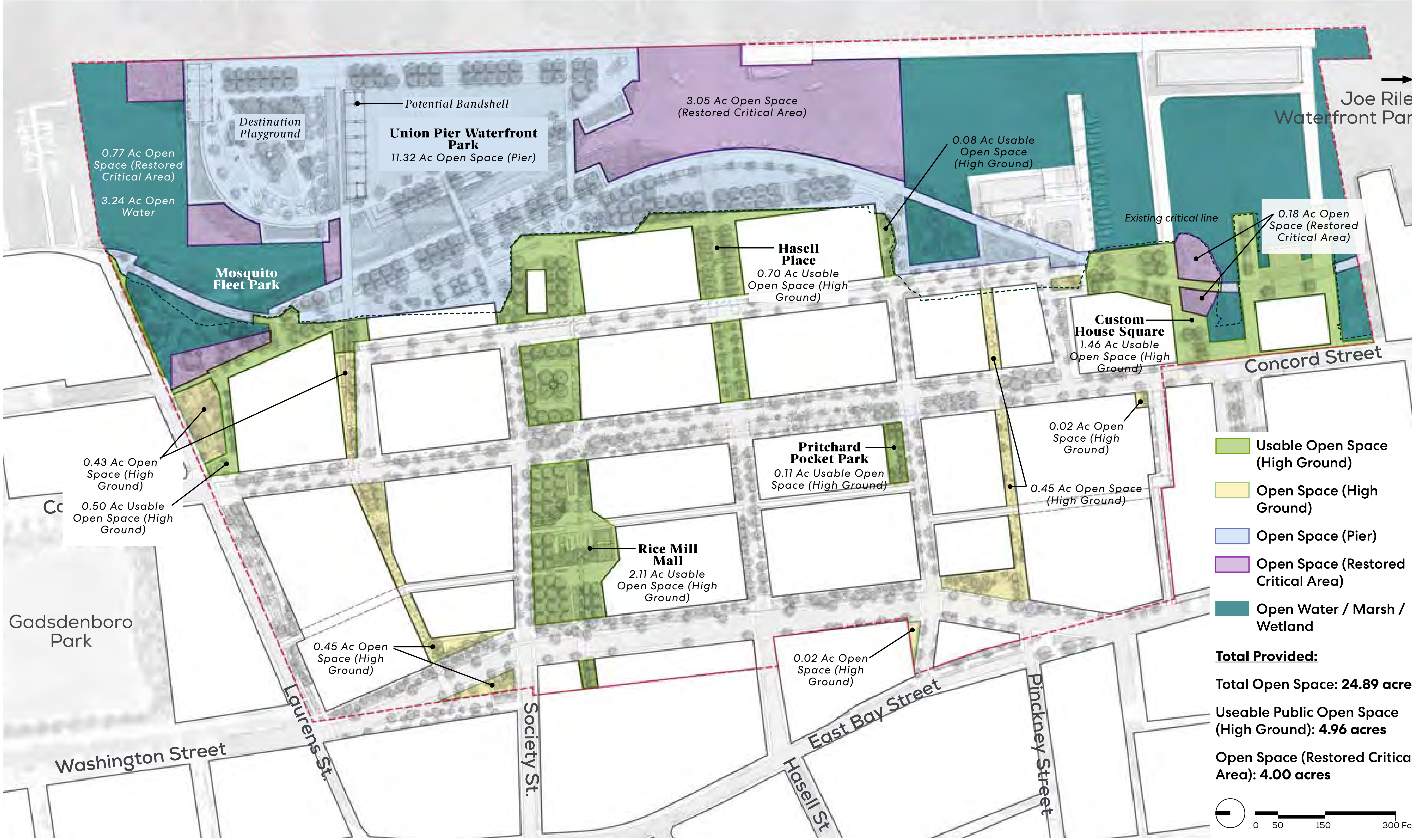
05.
"Broken skyline" to create distinct roof forms





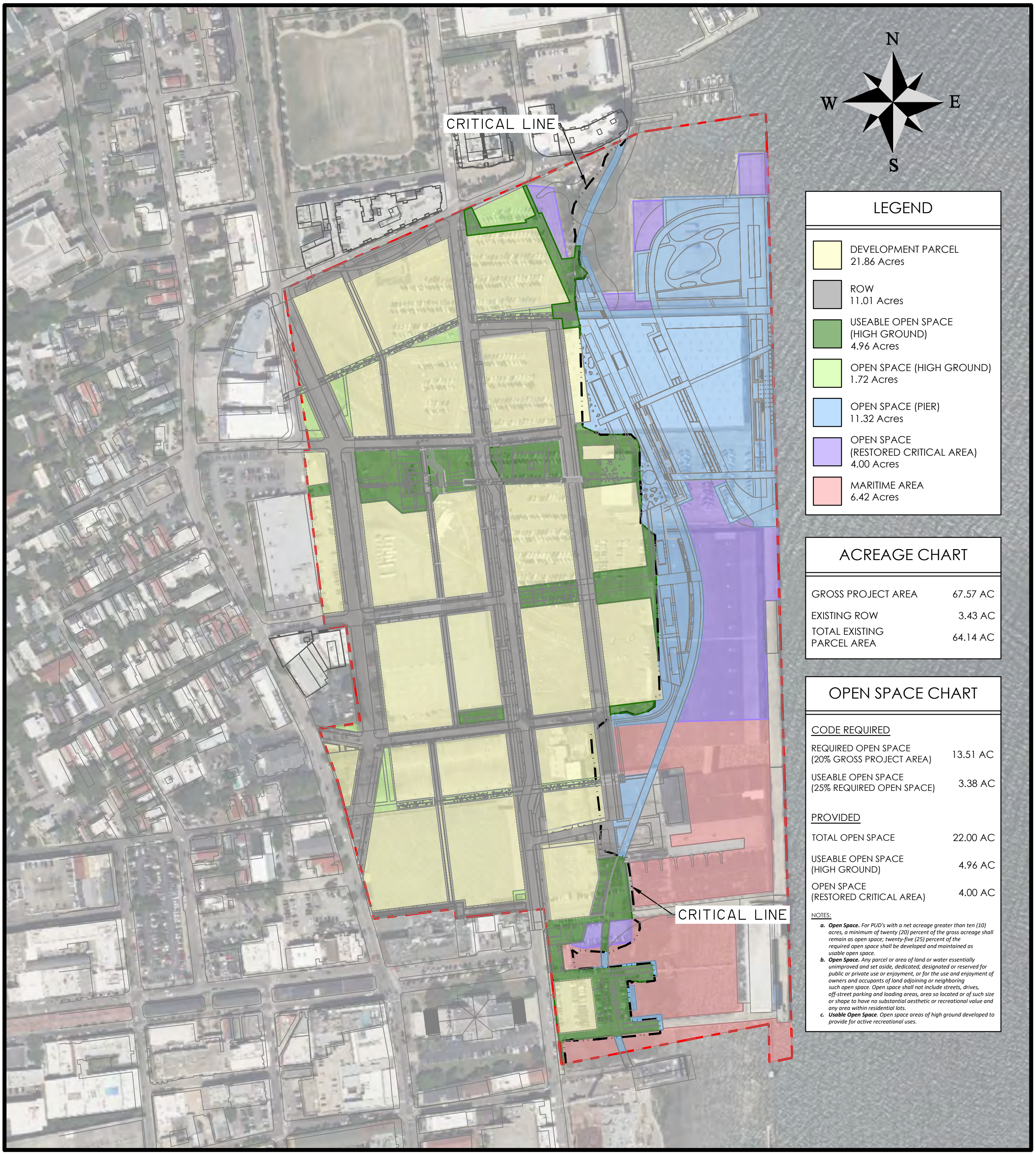
A.6 Open Space Plan

May 30, 2023



A.6.1 Open Space Acreage

May 30, 2023



ACREAGE CHART

GROSS PROJECT AREA	67.57 AC
EXISTING ROW	3.43 AC
TOTAL EXISTING PARCEL AREA	64.14 AC

OPEN SPACE CHART

CODE REQUIRED

REQUIRED OPEN SPACE (20% GROSS PROJECT AREA)	13.51 AC
USEABLE OPEN SPACE (25% REQUIRED OPEN SPACE)	3.38 AC

PROVIDED

TOTAL OPEN SPACE	22.00 AC
USEABLE OPEN SPACE (HIGH GROUND)	4.96 AC
OPEN SPACE (RESTORED CRITICAL AREA)	4.00 AC

NOTES:

a. ***Open Space.*** *For PUD's with a net acreage greater than ten (10) acres, a minimum of twenty (20) percent of the gross acreage shall remain as open space; twenty-five (25) percent of the required open space shall be developed and maintained as usable open space.*

b. ***Open Space.*** *Any parcel or area of land or water essentially unimproved and set aside, dedicated, designated or reserved for public or private use or enjoyment, or for the use and enjoyment of owners and occupants of land adjoining or neighboring such open space. Open space shall not include streets, drives, off-street parking and loading areas, area so located or of such size or shape to have no substantial aesthetic or recreational value and any area within residential lots.*

c. ***Usable Open Space****. Open space areas of high ground developed to provide for active recreational uses.*

UNION PIER

Appendix A.6.2

OPEN SPACE MAP

CLIENT:

SCPA

LOCATION: City of Charleston, SC

DATE: Mayl 2023 DRAWN BY: CFM SHEET: A-1

JOB NUMBER: J-28448.0001 REVIEWED BY: CFM SCALE: 1" = 500'

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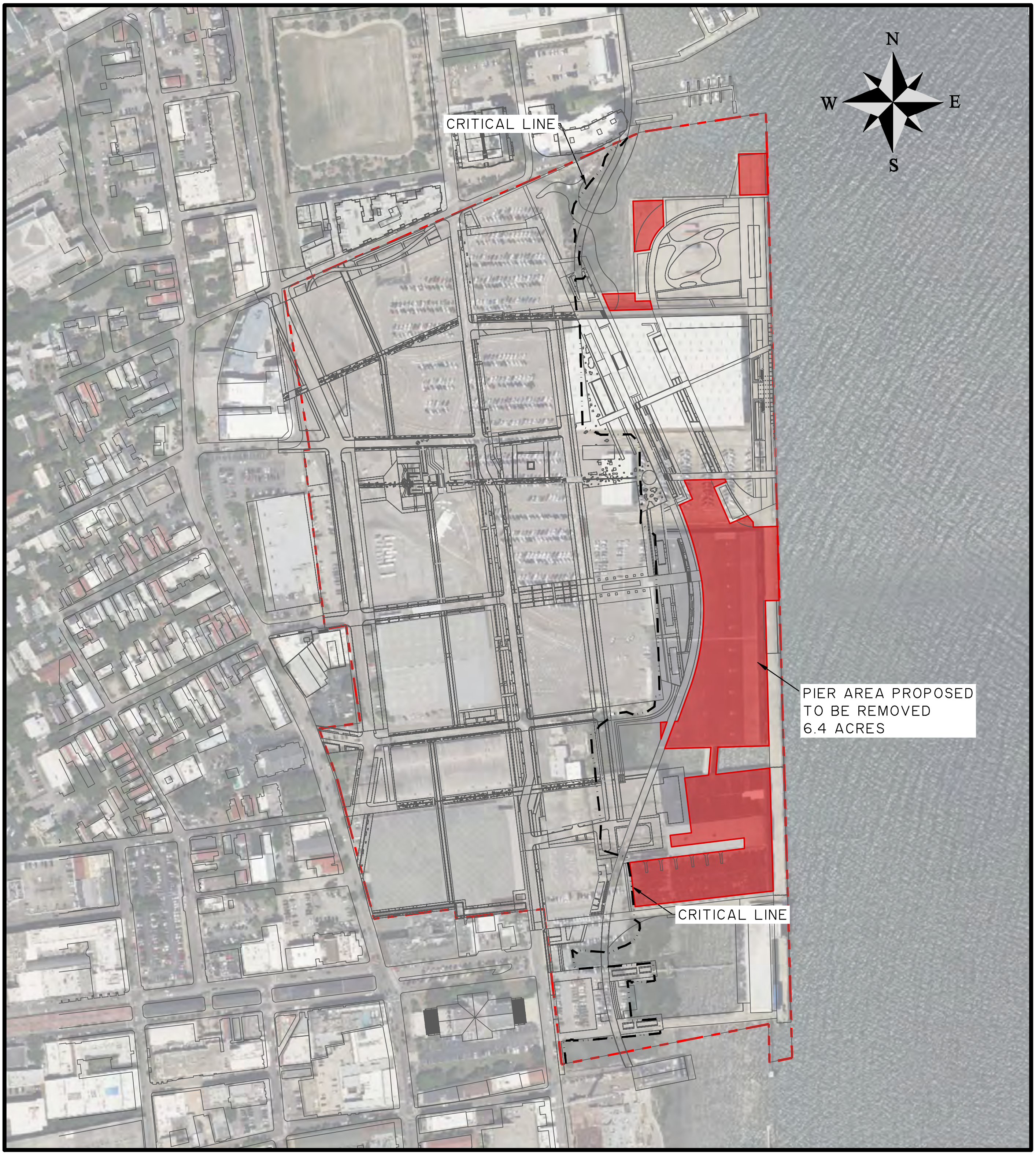
Z:\28448\28448.0001\ENGINEERING\DRAWINGS\EXHIBITS\PUD EXHIBITS\28448.0001 AREAS (PIER REMOVAL).DWG - May 30, 2023 - 8:37 AM



UNION PIER

Appendix A.6.3

CONCEPTUAL PIER REMOVAL MAP

CLIENT:

SCPA

LOCATION: City of Charleston, SC

DATE: May 2023 | DRAWN BY: CFM | SHEET: E-1

JOB NUMBER: J-28448.0001 | REVIEWED BY: CFM | SCALE: 1" = 500'

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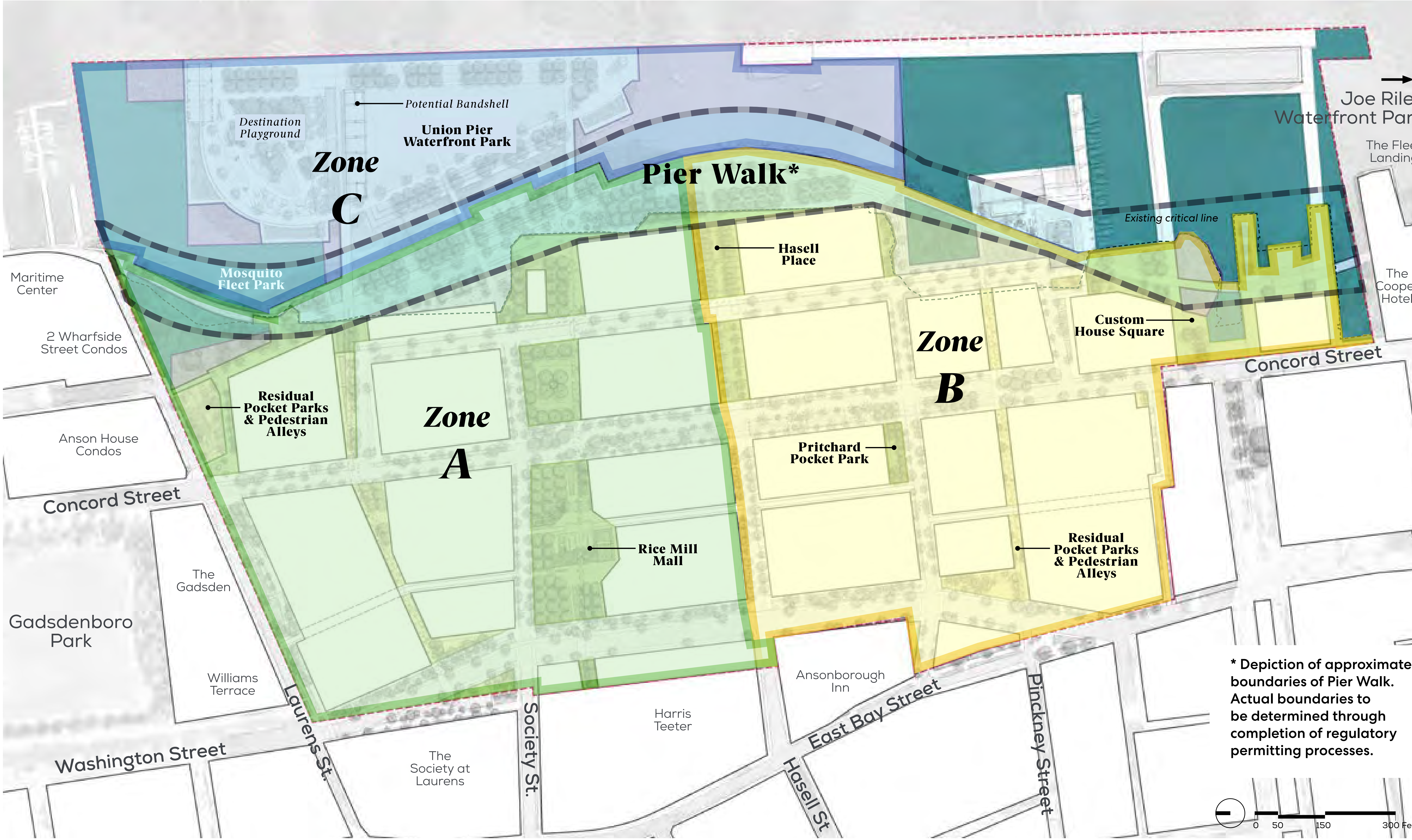
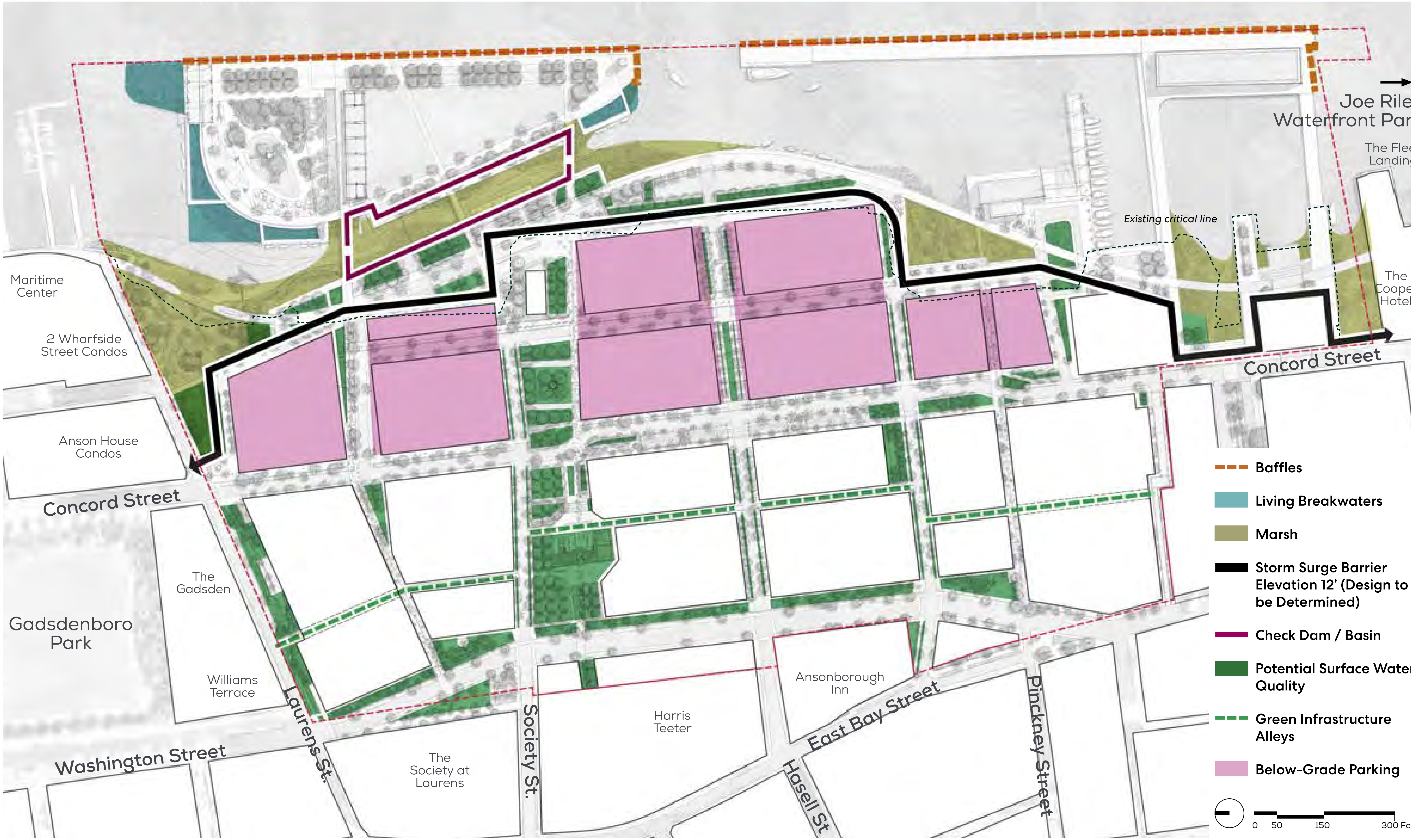


* Depiction of approximate boundaries of Pier Walk. Actual boundaries to be determined through completion of regulatory permitting processes.

A.7 Conceptual Green Infrastructure Plan
May 30, 2023

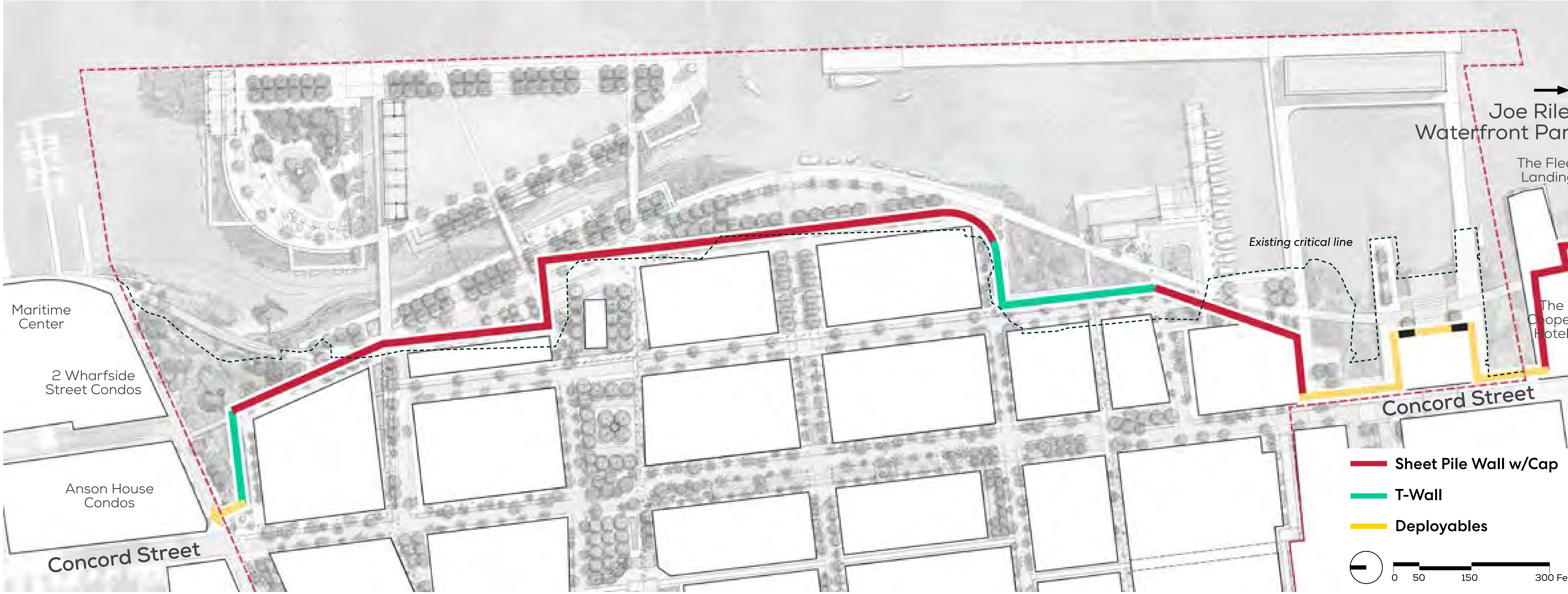
Master Plan for
Union Pier

Perkins&Will

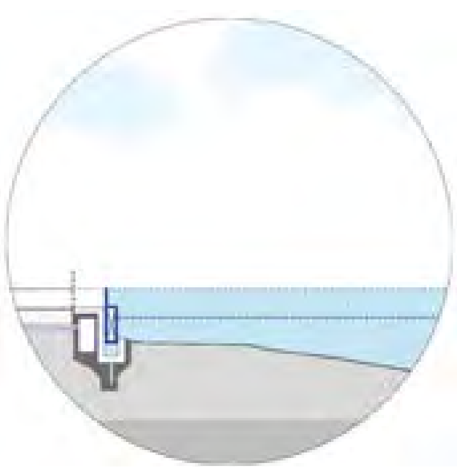


A.8 Conceptual Resilient Infrastructure Plan

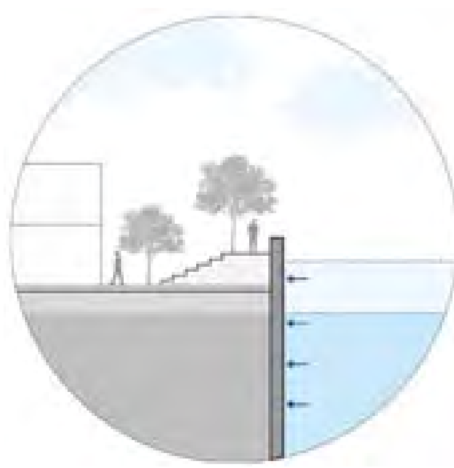
May 30, 2023



Coastal Protection Barrier to Mitigate Storm Surge

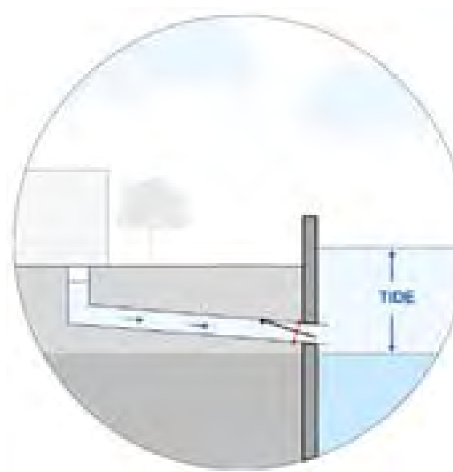


Deployable Barrier

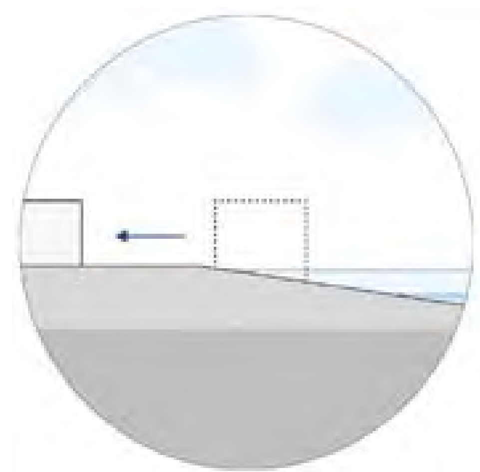


Promenade + Sea Wall

Flood Protection to Address Sunny Day Flooding



Tide Gates



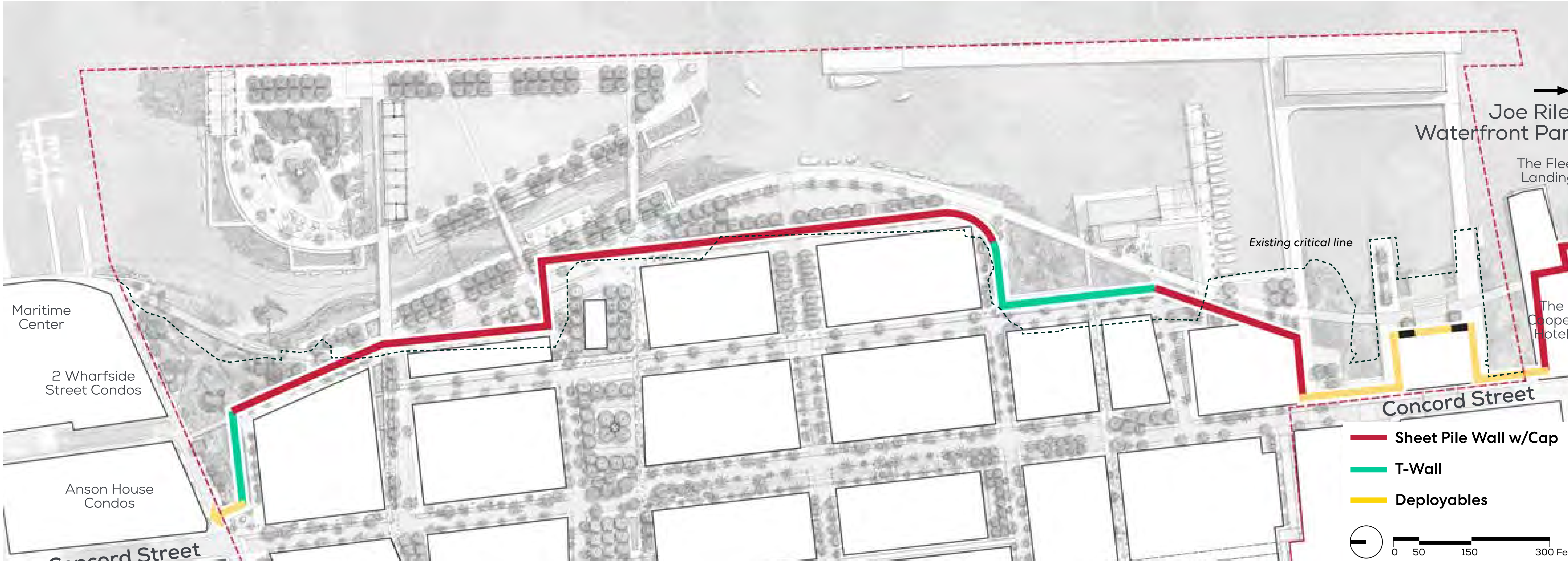
Elevate Development

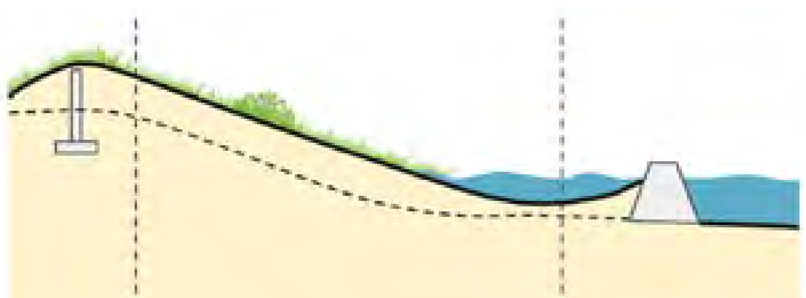
Stormwater Management

Compensatory Storage

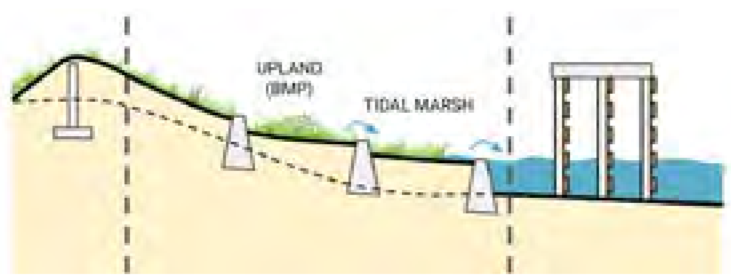
Natural Enhancements

Living Shoreline



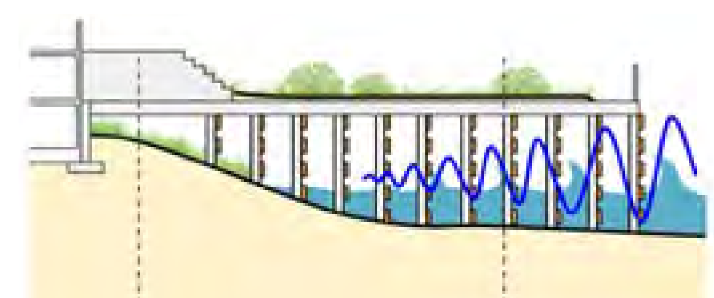


Concept 01 *Breakwater & Berm*

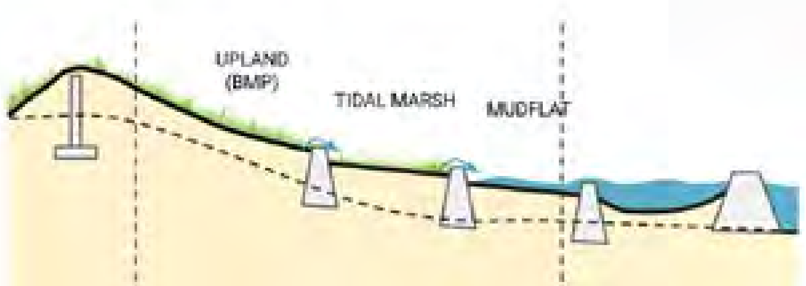


Concept 03 *Pier as Scaffold & Berm*

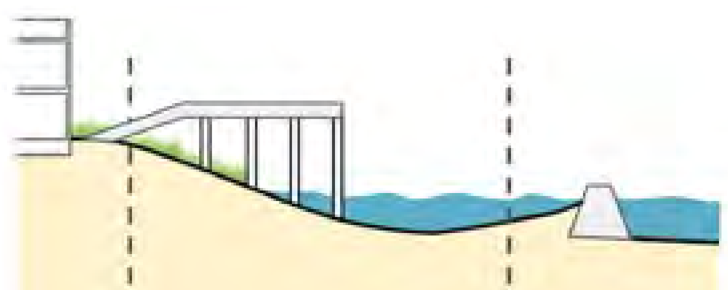
Concept 05 *Pier as Scaffold*



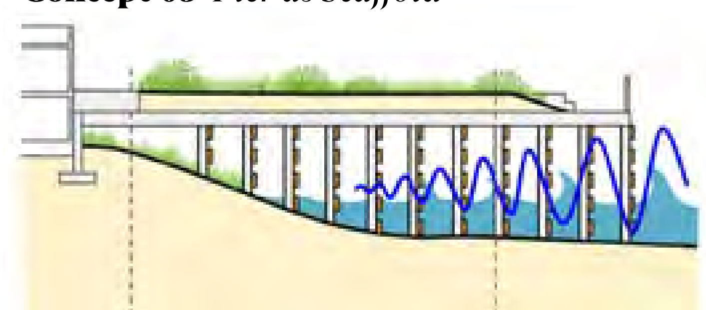
Concept 07 *Integrated Protection & Pier as Scaffold*



Concept 02 *Breakwater & Berm*

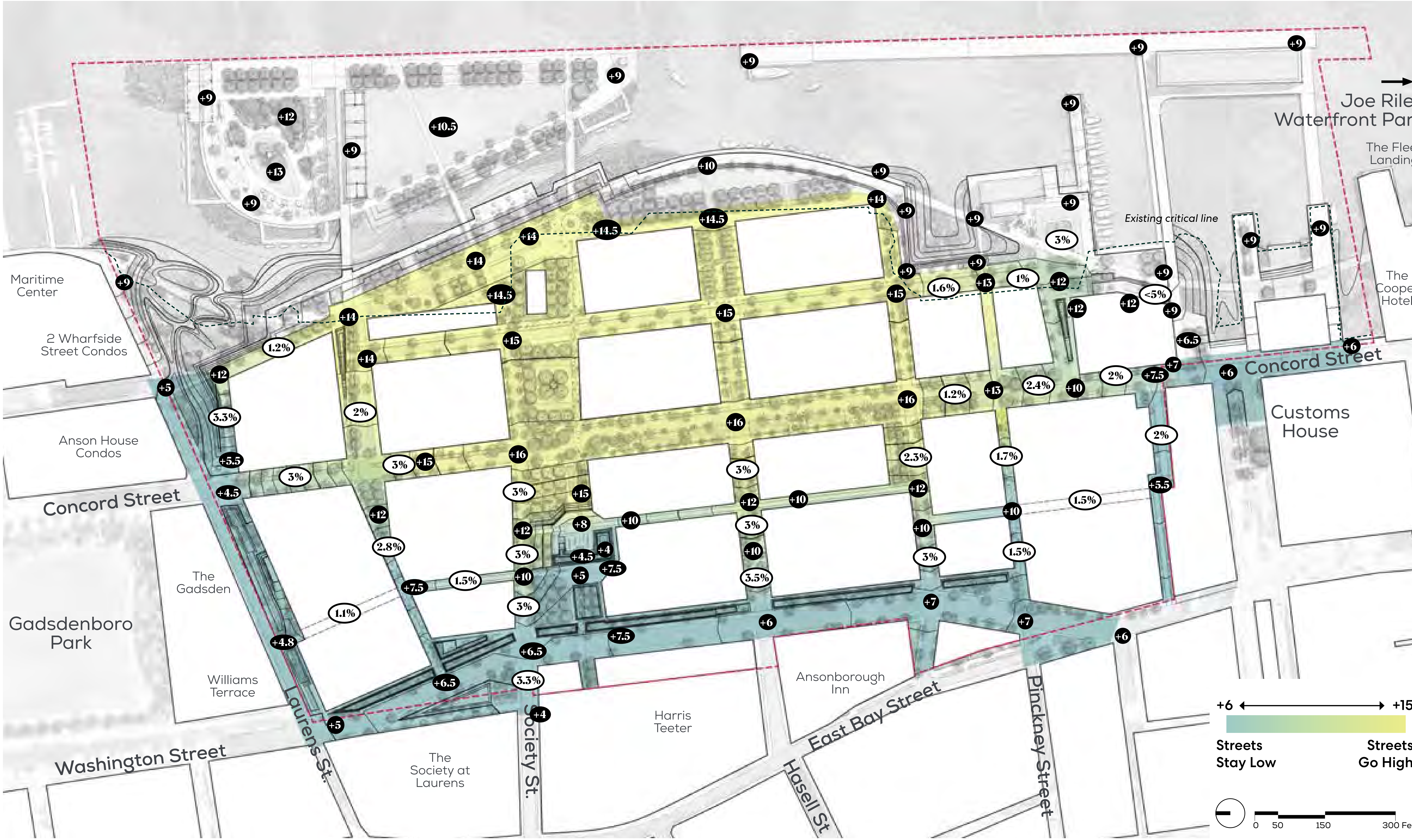


Concept 04 *Breakwater & Integrated Protection*



Concept 06 *Integrated Protection & Pier as Scaffold*

A.8.2 Conceptual Coastal Edge Design Options



A.8.3 Conceptual Grading Strategy

May 30, 2023

Master Plan for
Union Pier

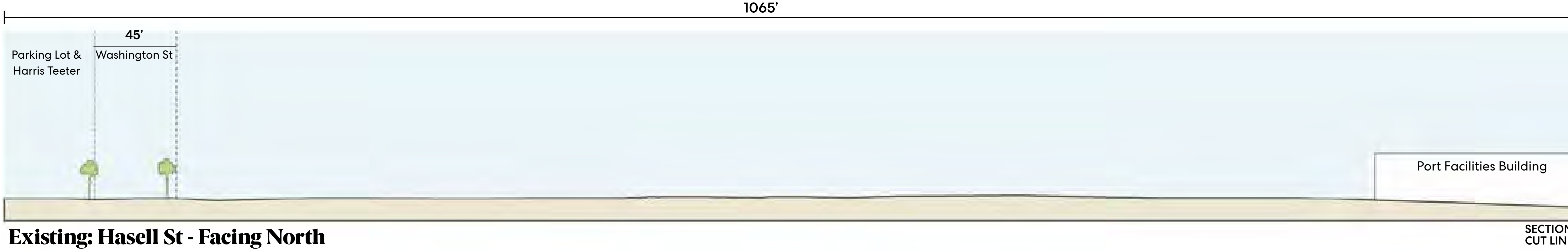
Perkins&Will

A.8.4 Conceptual Grading Strategy with Height Overlay

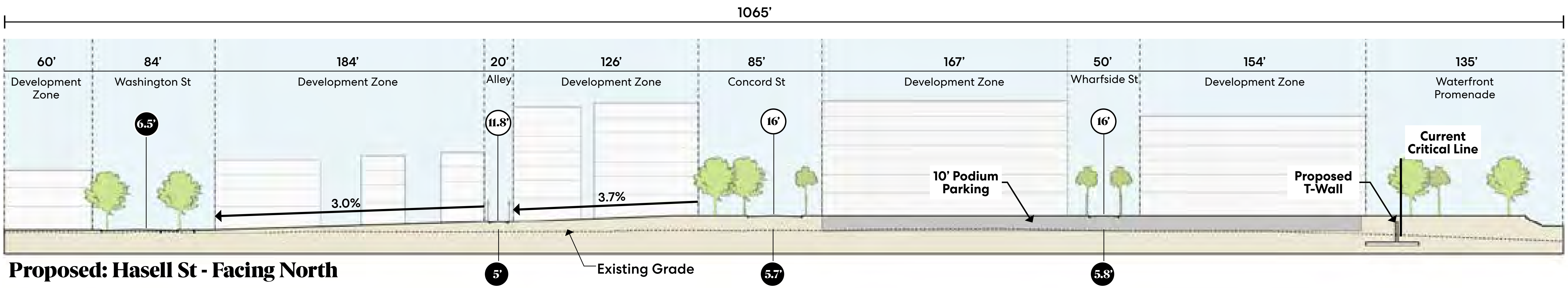
May 30, 2023

Master Plan for
Union Pier

Perkins&Will

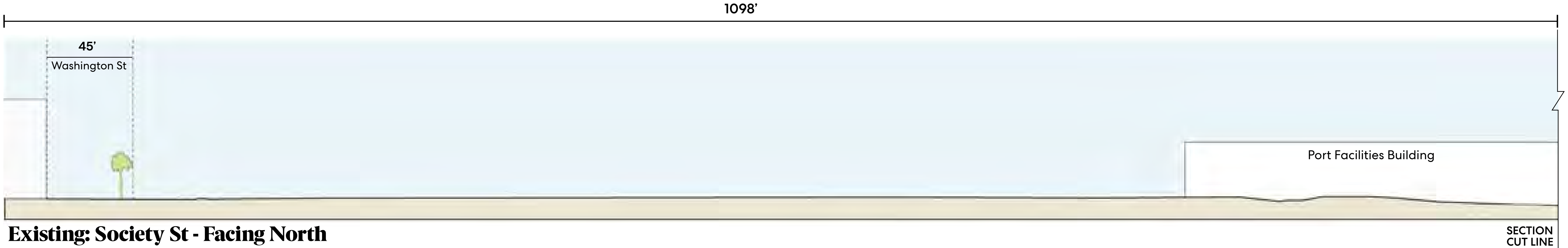


Existing: Hasell St - Facing North

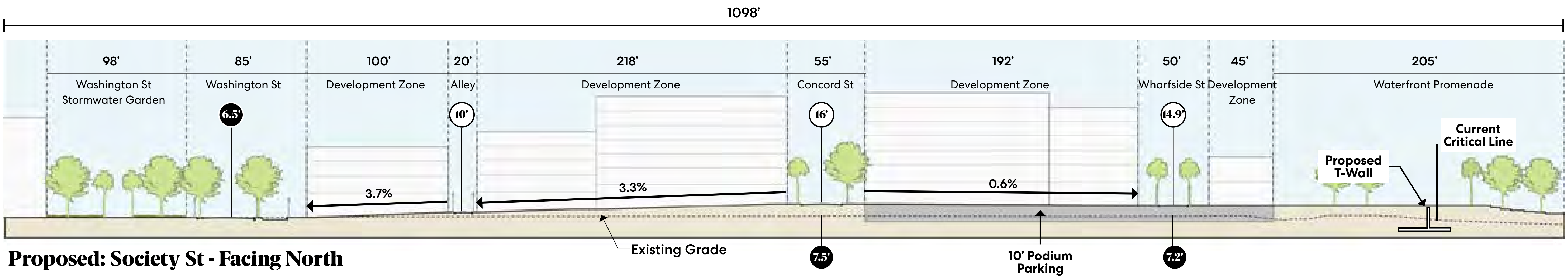


Proposed: Hasell St - Facing North

Key Plan

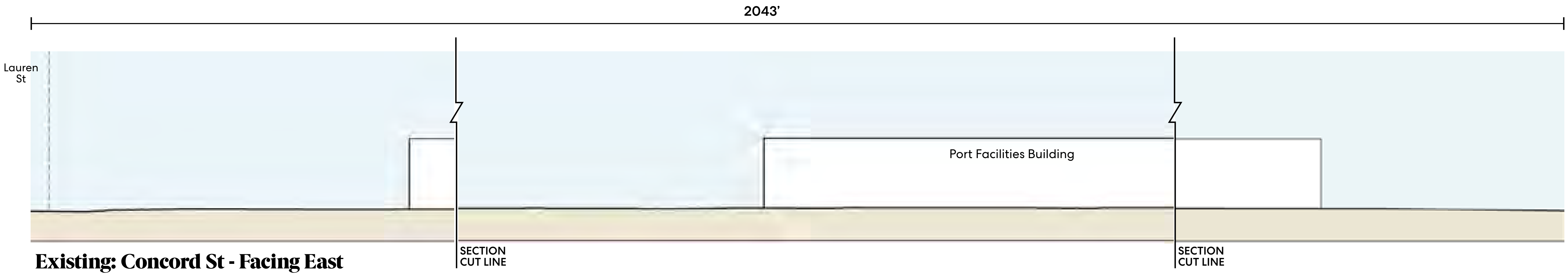


Existing: Society St - Facing North

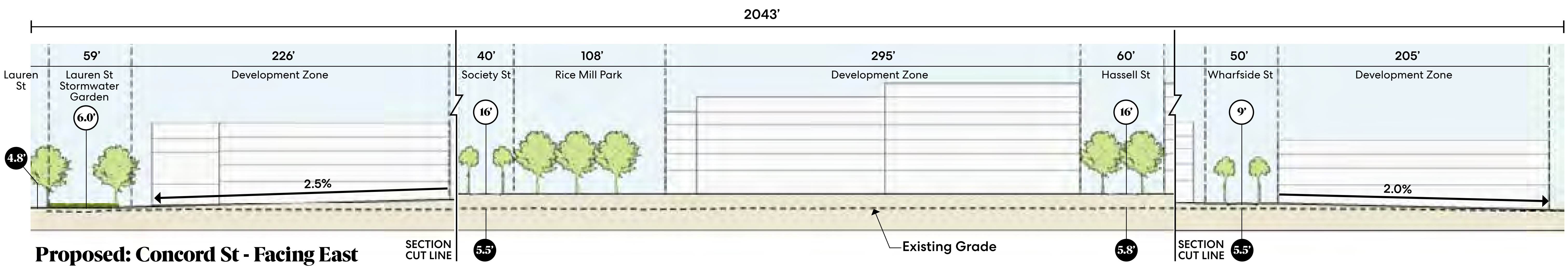


Proposed: Society St - Facing North

Key Plan

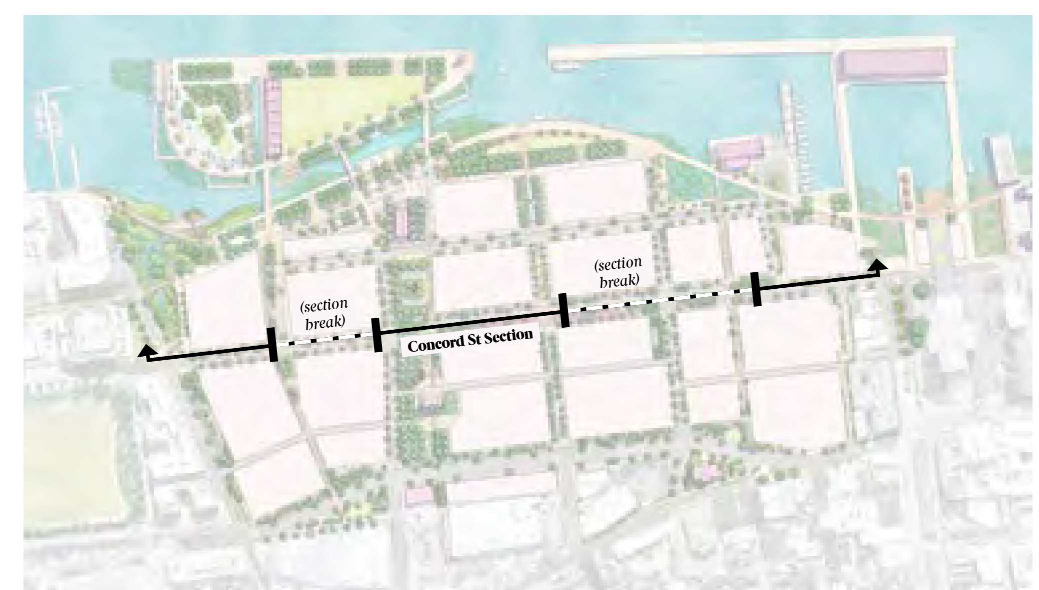


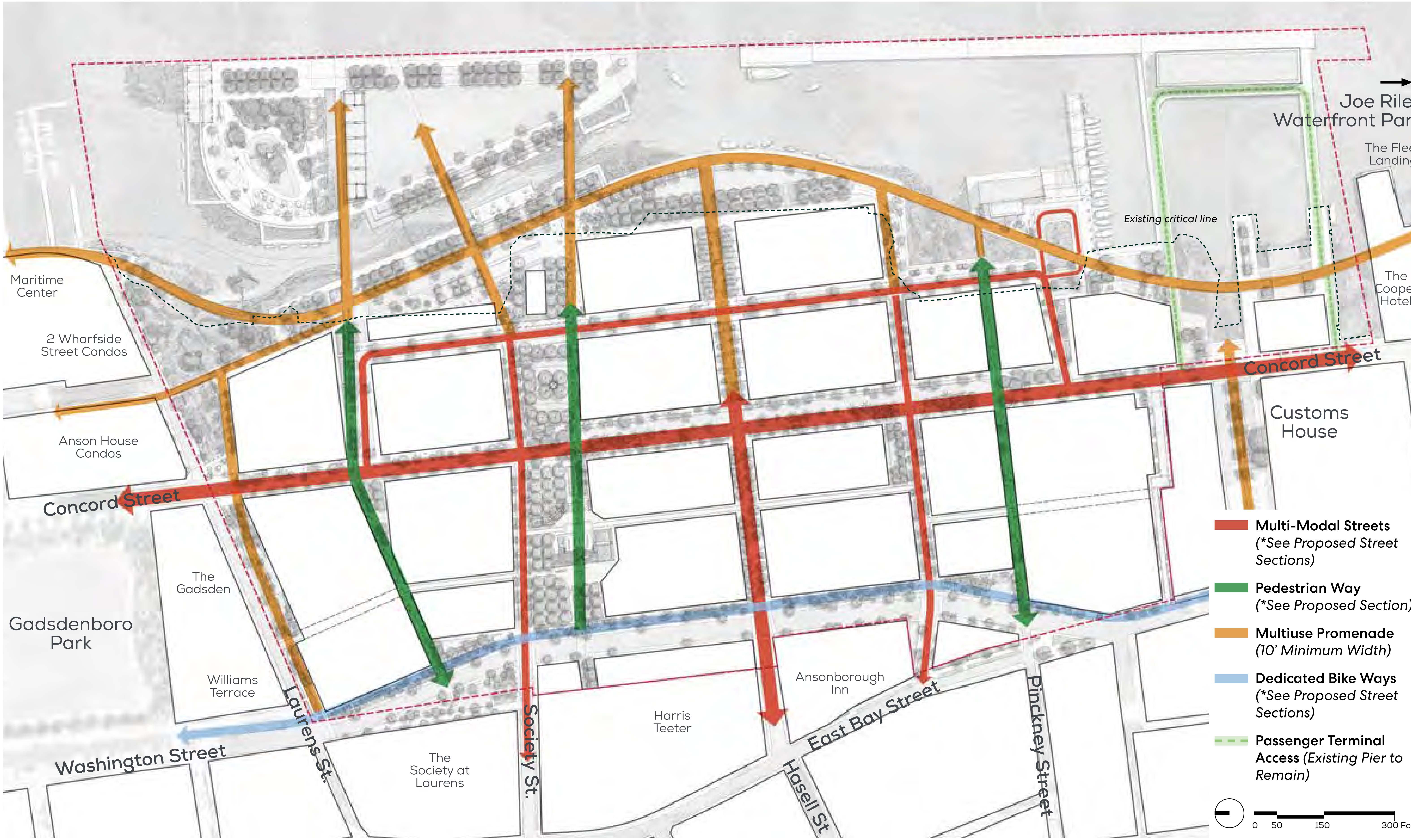
Existing: Concord St - Facing East



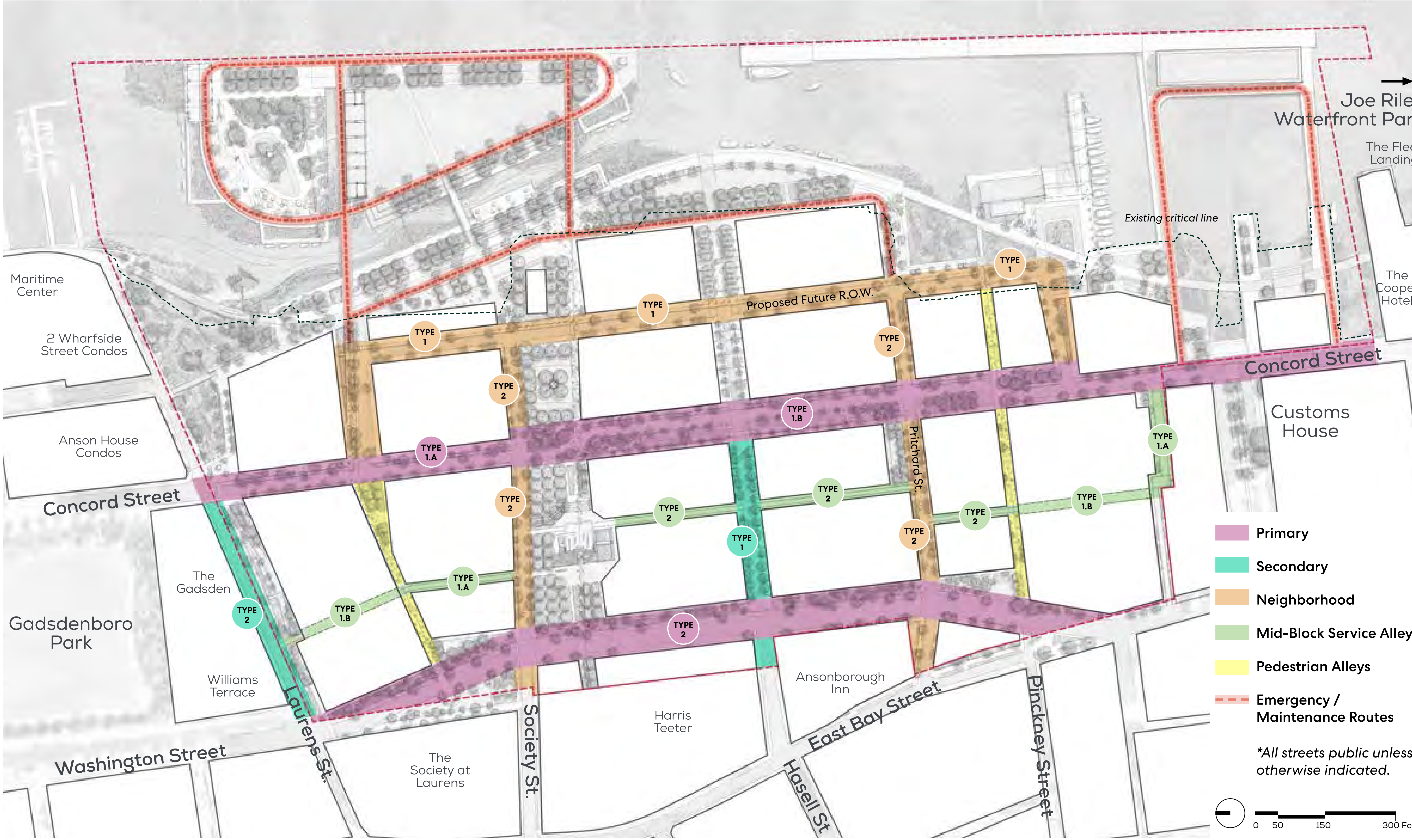
Proposed: Concord St - Facing East

Key Plan





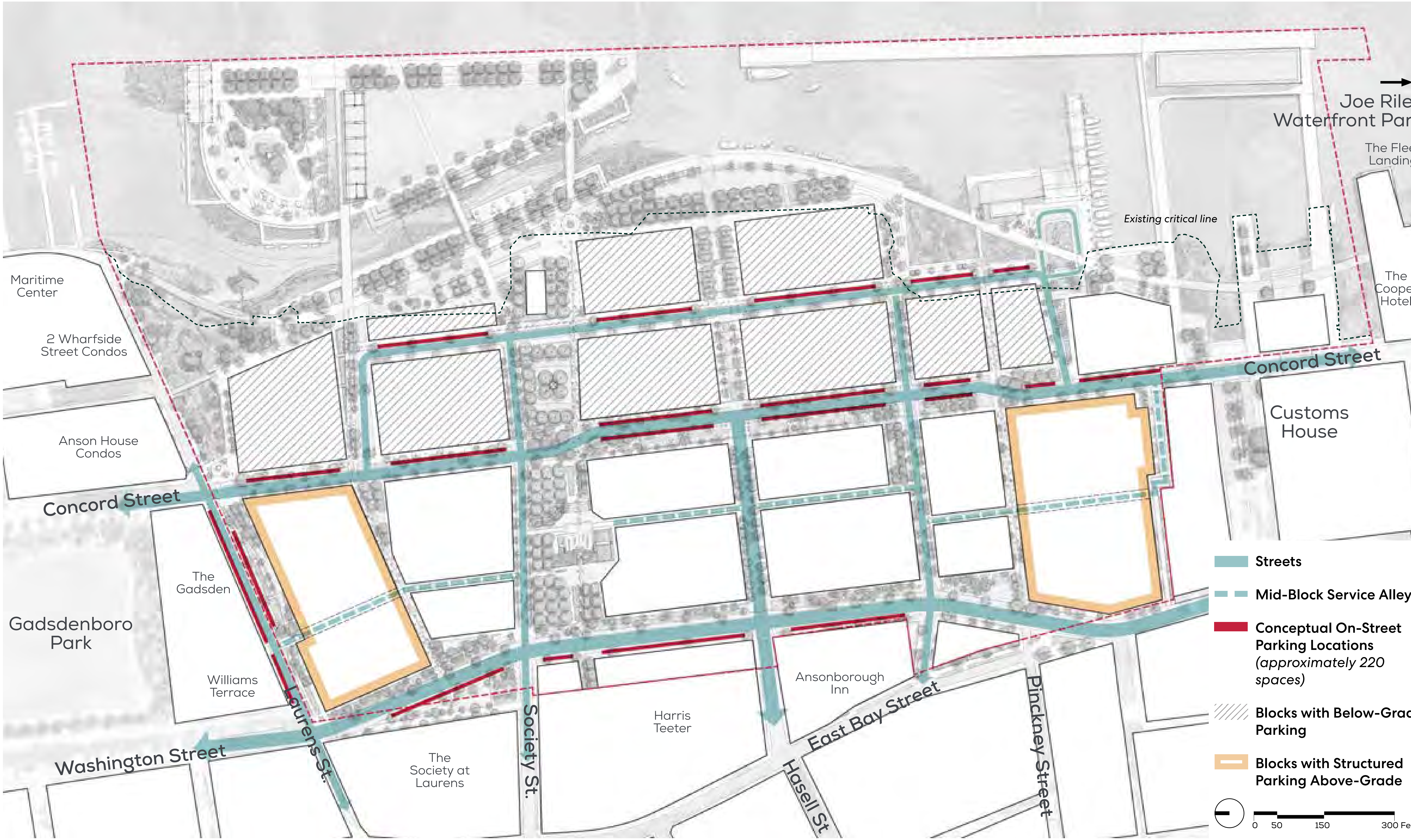
A.9 Pedestrian & Bicycle Circulation Plan
May 30, 2023

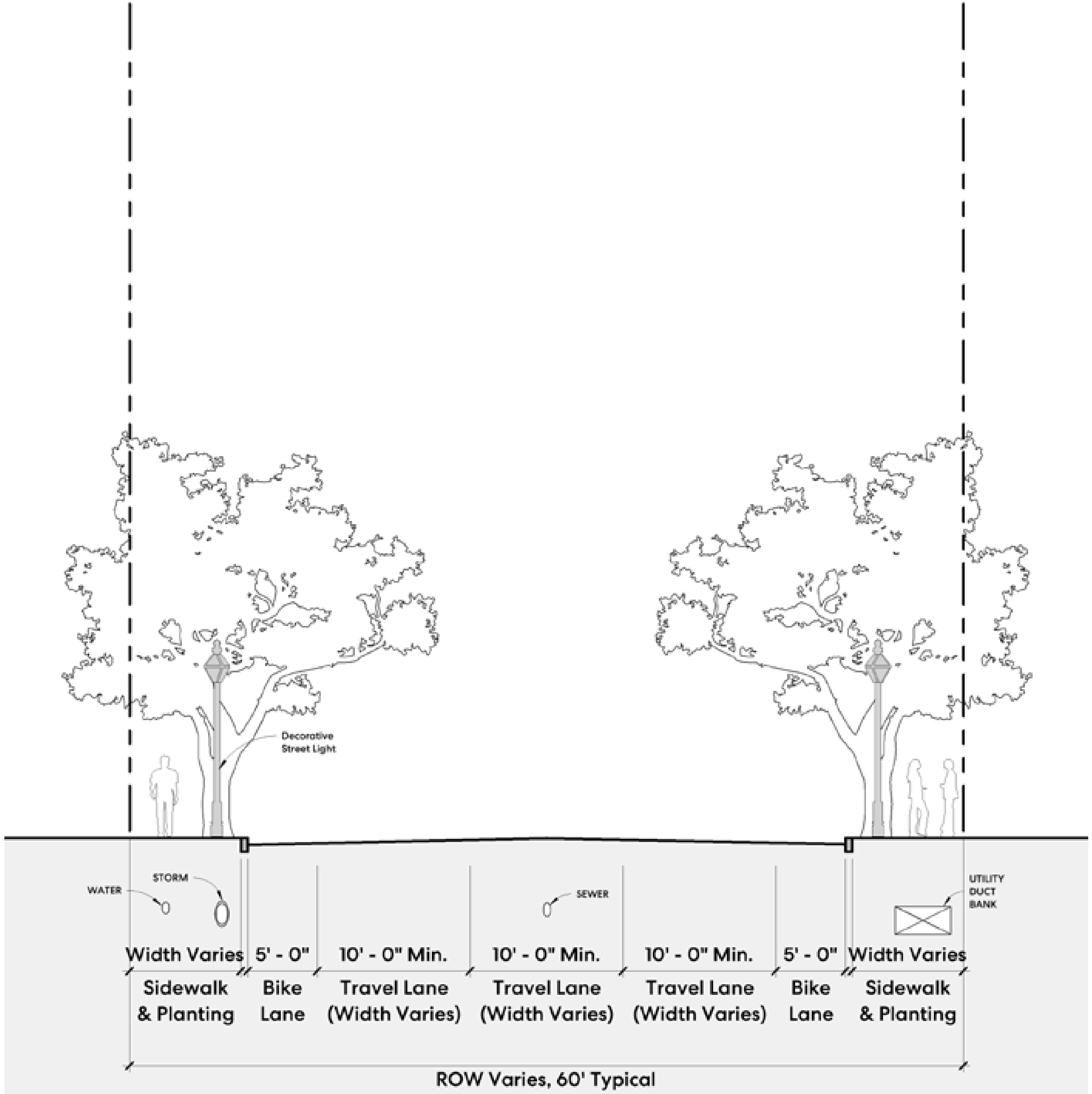


A.10 Street Types Plan
May 30, 2023

Master Plan for Union Pier

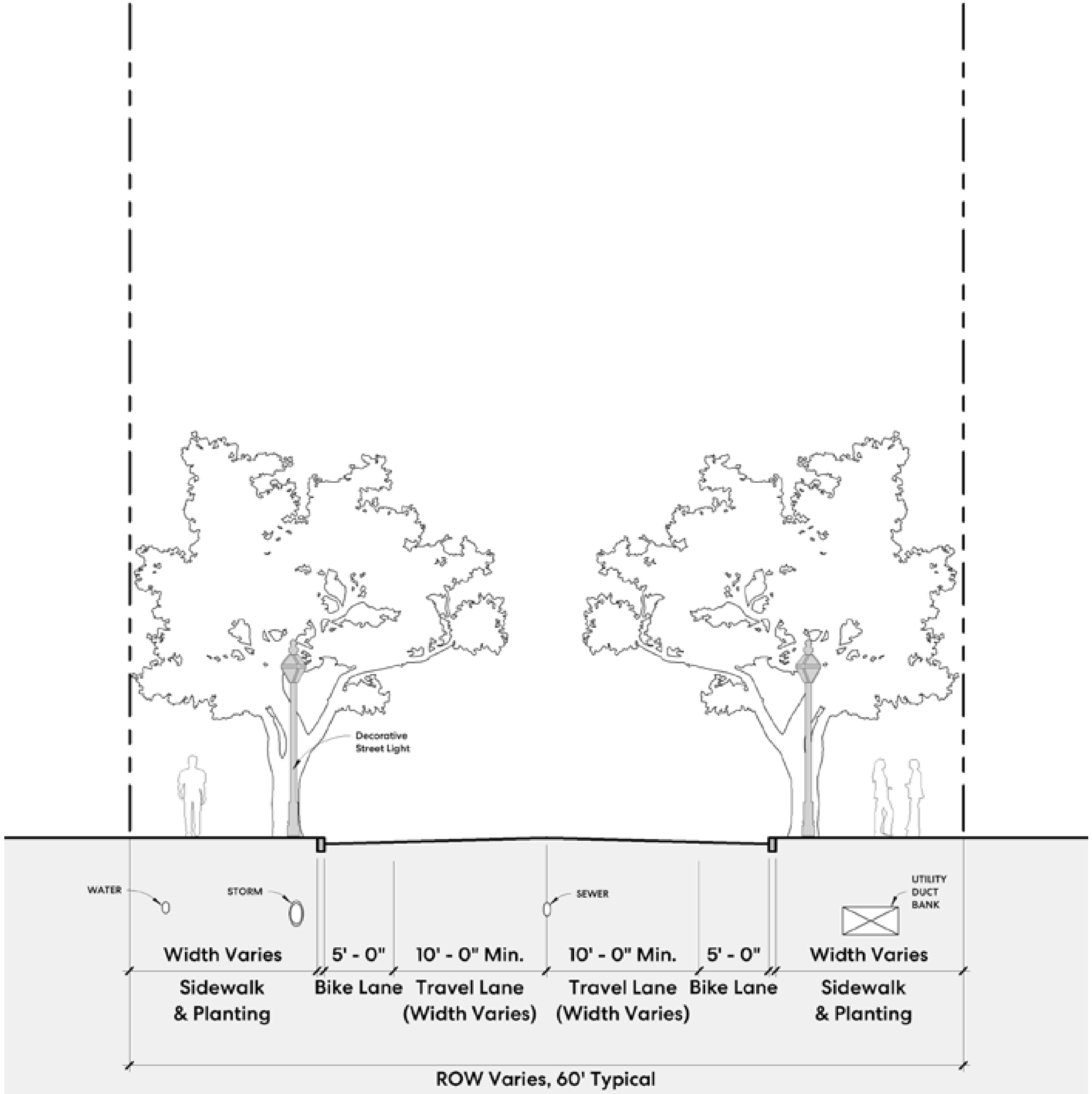
Perkins&Will


Joe Riley
Waterfront Park
The Fleet
Landing
Existing critical line
Maritime
Center
The
Cooper
Hotel
2 Wharfside
Street Condos
Concord Street
Customs
House
Anson House
Condos
Concord Street
The
Gadsden
Gadsdenboro
Park
Williams
Terrace
Laurens St.
Society St.
Harris
Teeter
Ansonborough
Inn
East Bay Street
Pinckney Street
Washington Street
The
Society at
Laurens
Hasell St
Streets
Mid-Block Service Alleys
Conceptual On-Street
Parking Locations
(approximately 220
spaces)
Blocks with Below-Grade
Parking
Blocks with Structured
Parking Above-Grade
0 50 150 300 Feet



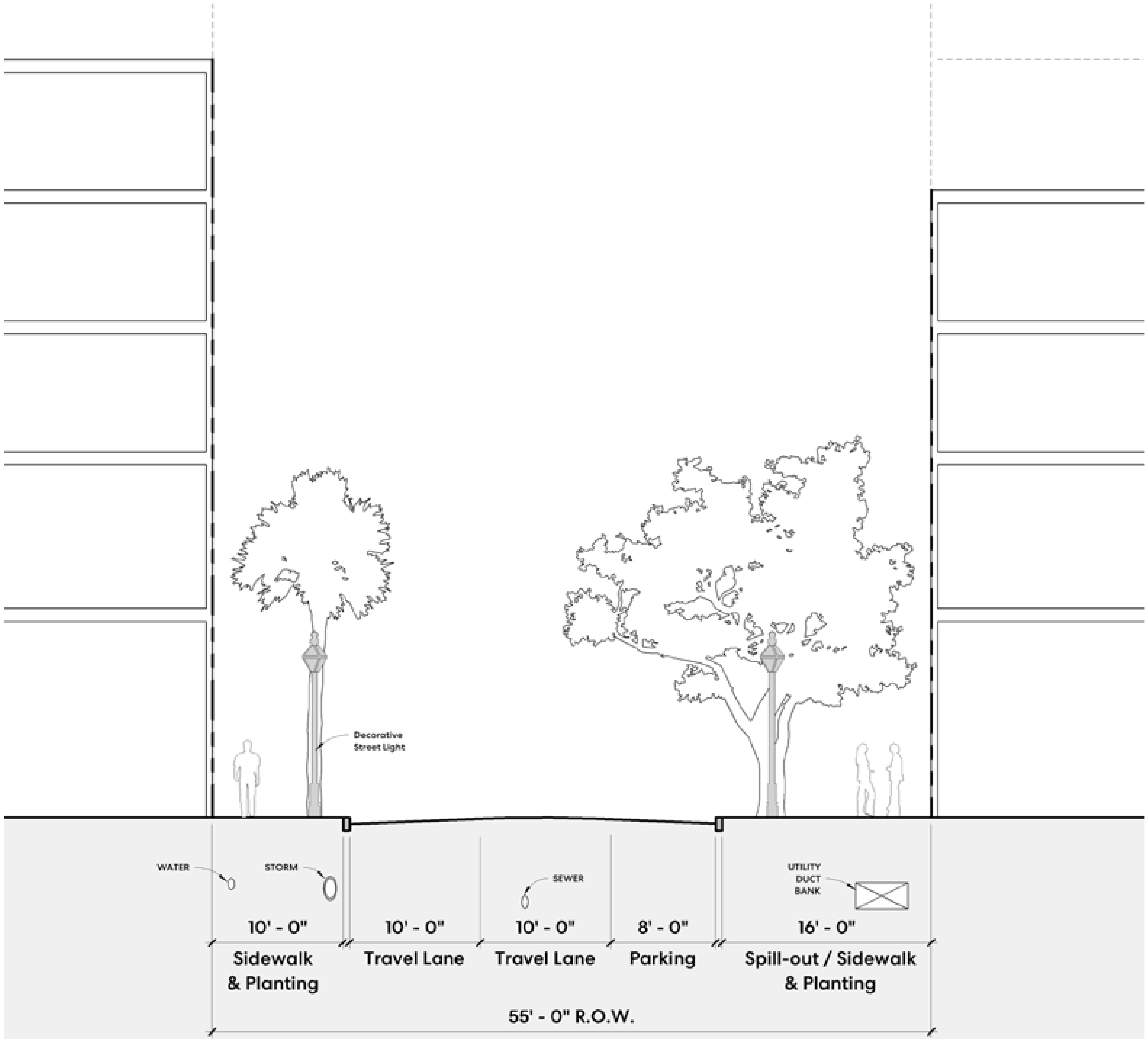
Note: Conceptual options provided will require further study and coordination among relative regulatory agencies.

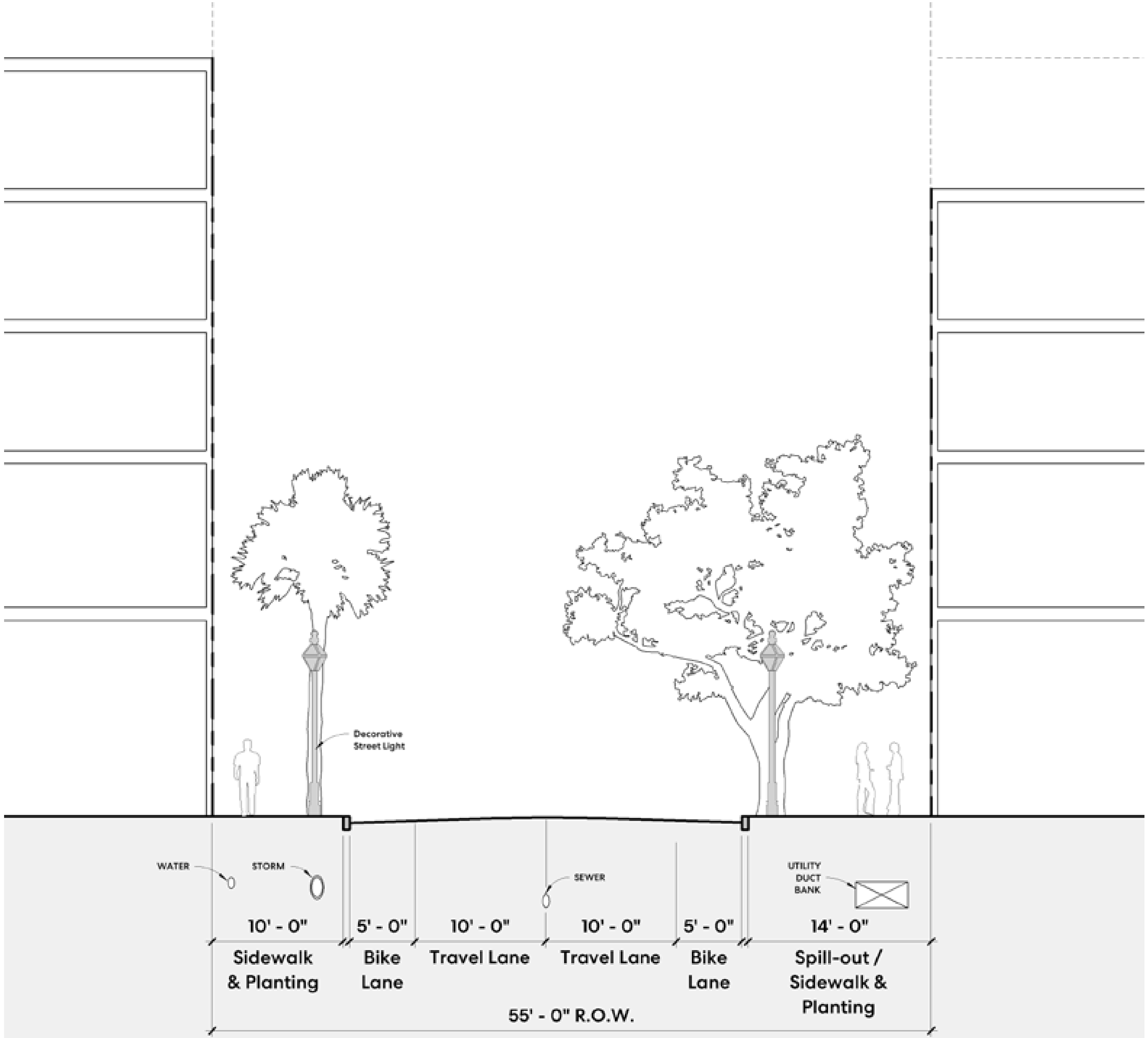
**R.O.W. widths vary along East Bay Street corridor.*



Note: Conceptual options provided will require further study and coordination among relative regulatory agencies.

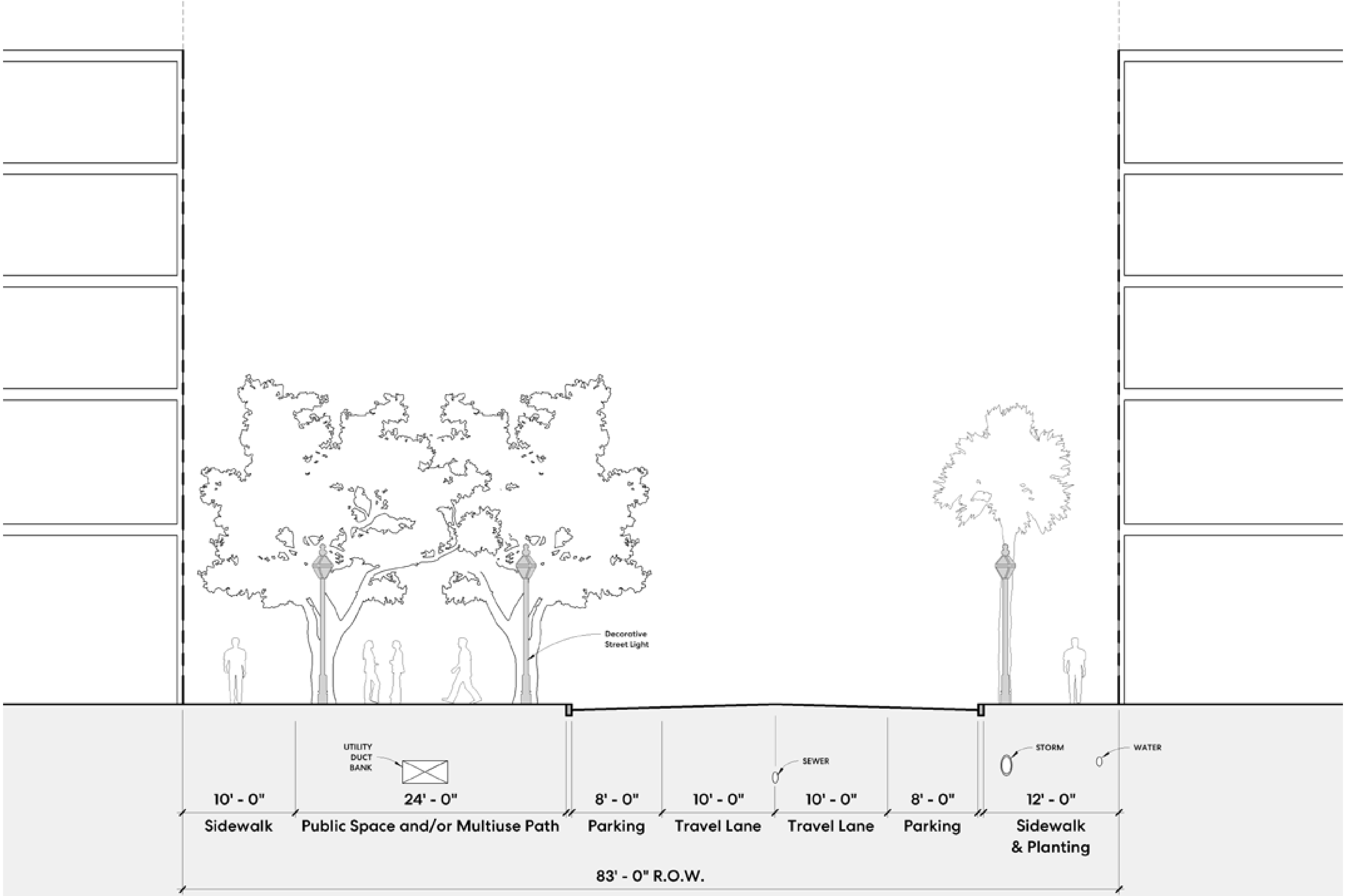
**R.O.W. widths vary along East Bay Street corridor.*


Decorative
Street Light
WATER
STORM
SEWER
UTILITY
DUCT
BANK
10' - 0"
Sidewalk
& Planting
10' - 0"
Travel Lane
10' - 0"
Travel Lane
8' - 0"
Parking
16' - 0"
Spill-out / Sidewalk
& Planting
55' - 0" R.O.W.



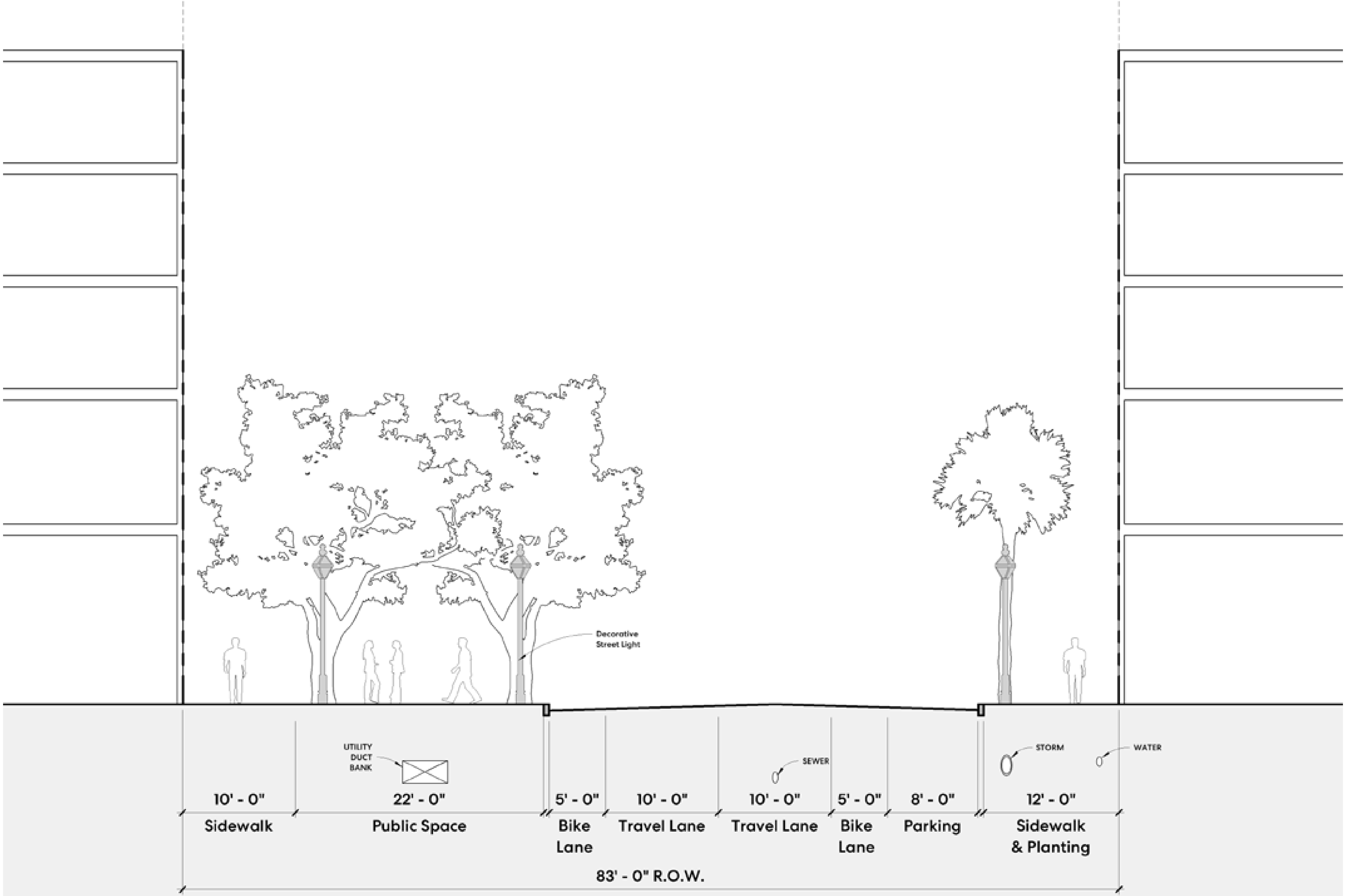
A.11 Primary Type 1.A (Concord Street) - Alternate 01

May 30, 2023



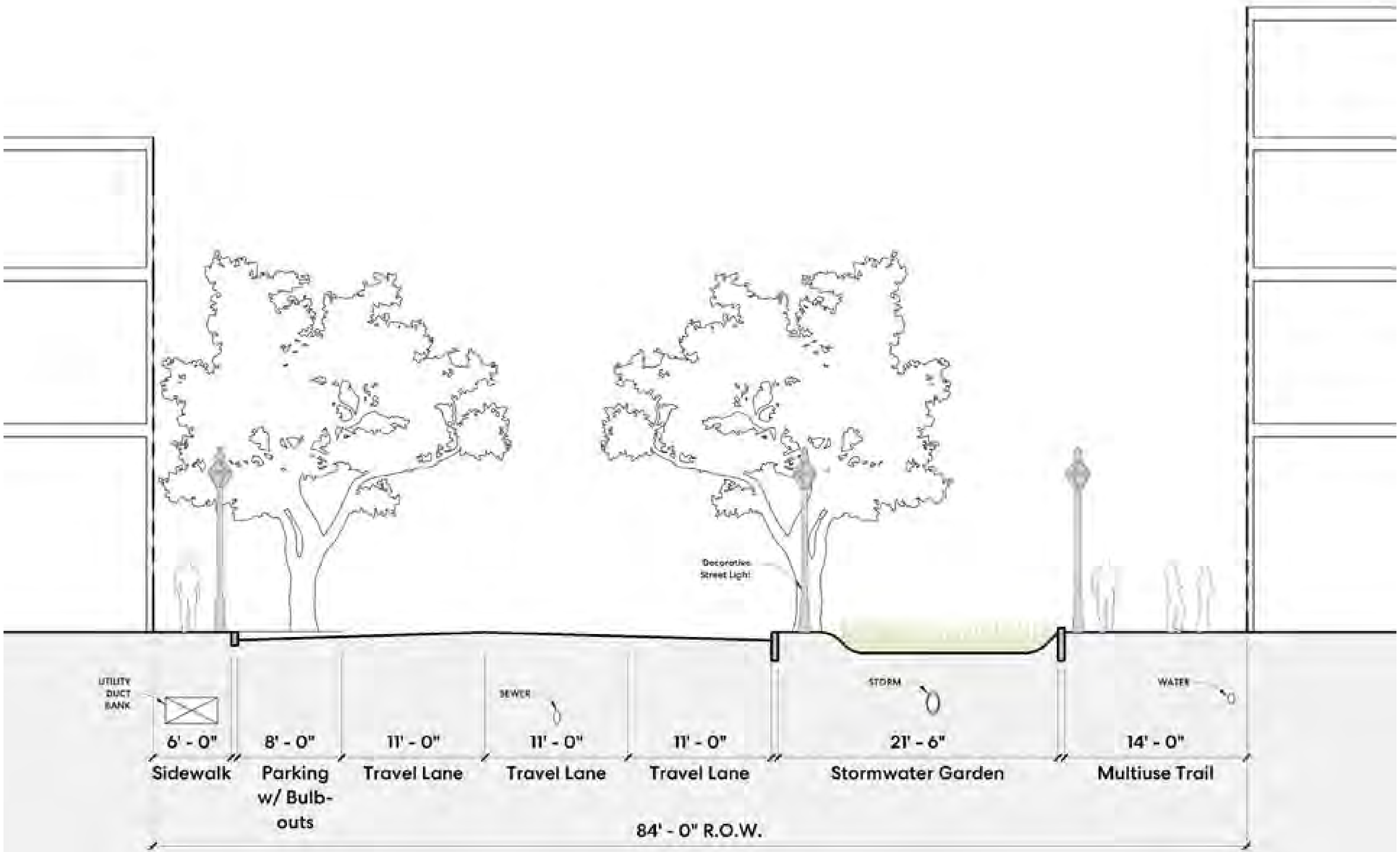
A.11 Primary Type 1.B (Concord Street)

May 30, 2023



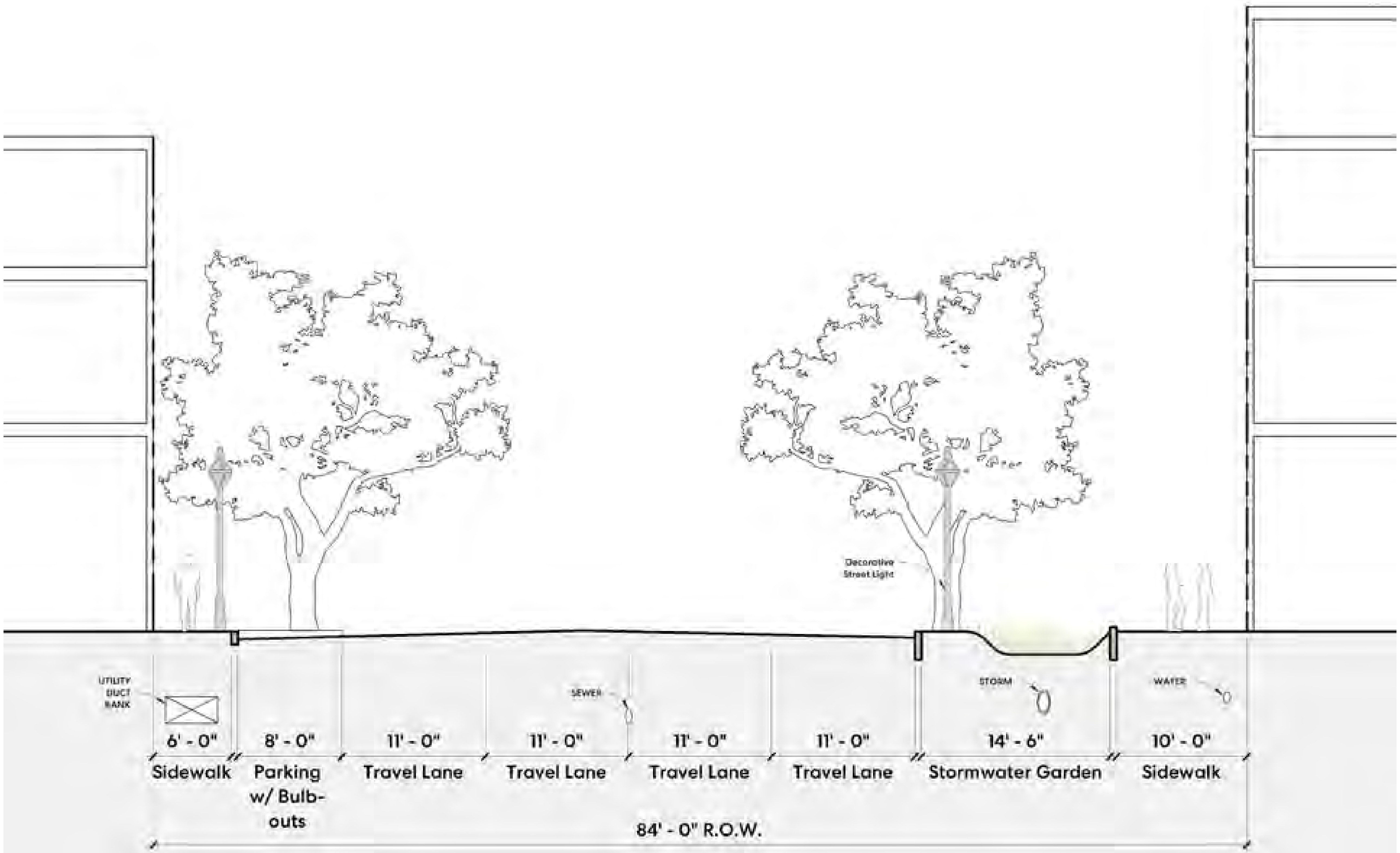
A.11 Primary Type 1.B (Concord Street) - Alternate

May 30, 2023



Note: Conceptual options provided will require further study and coordination among relative regulatory agencies.

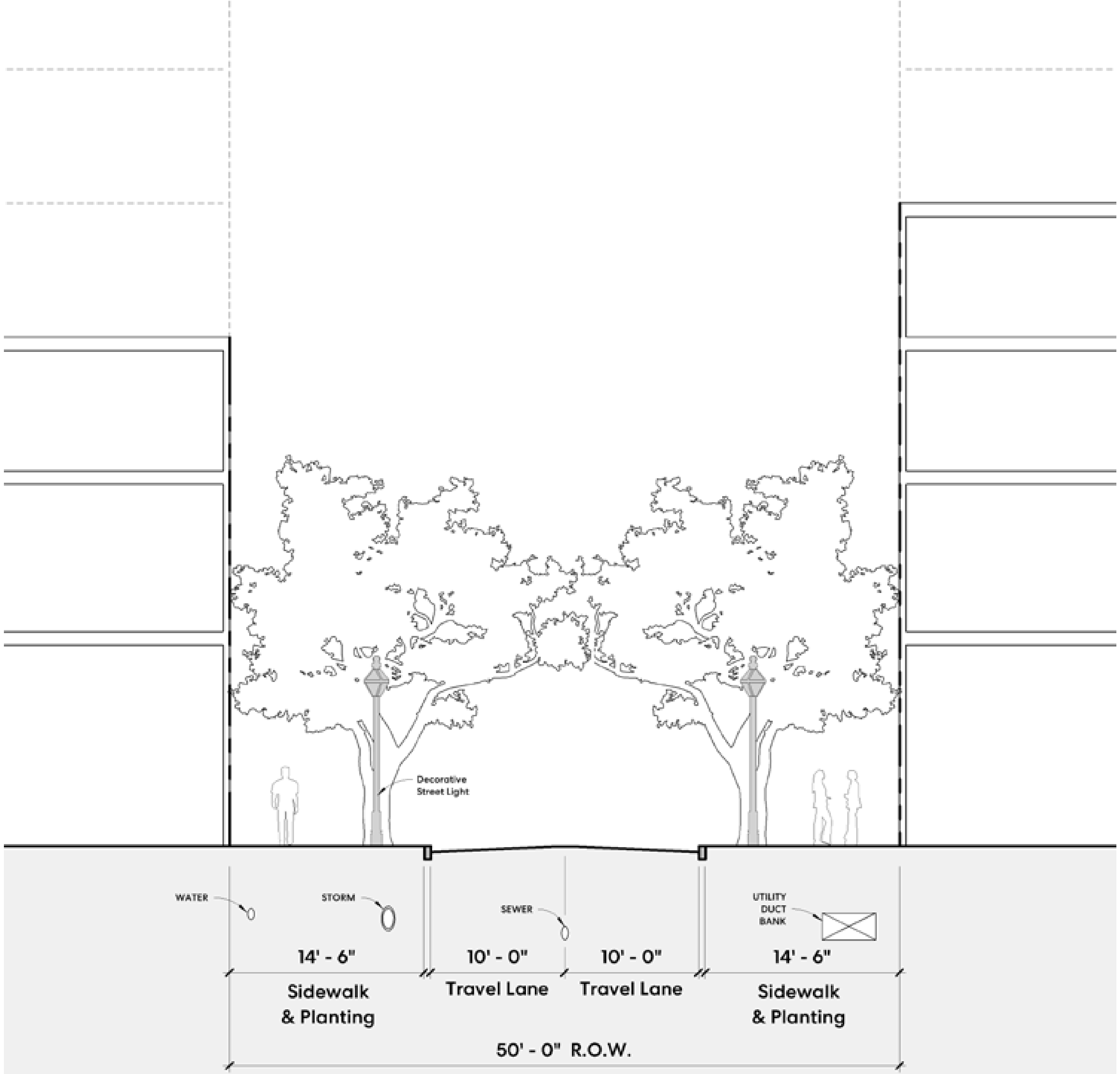
A.11 Primary Type 2 (Washington Street)



Note: Conceptual options provided will require further study and coordination among relative regulatory agencies.

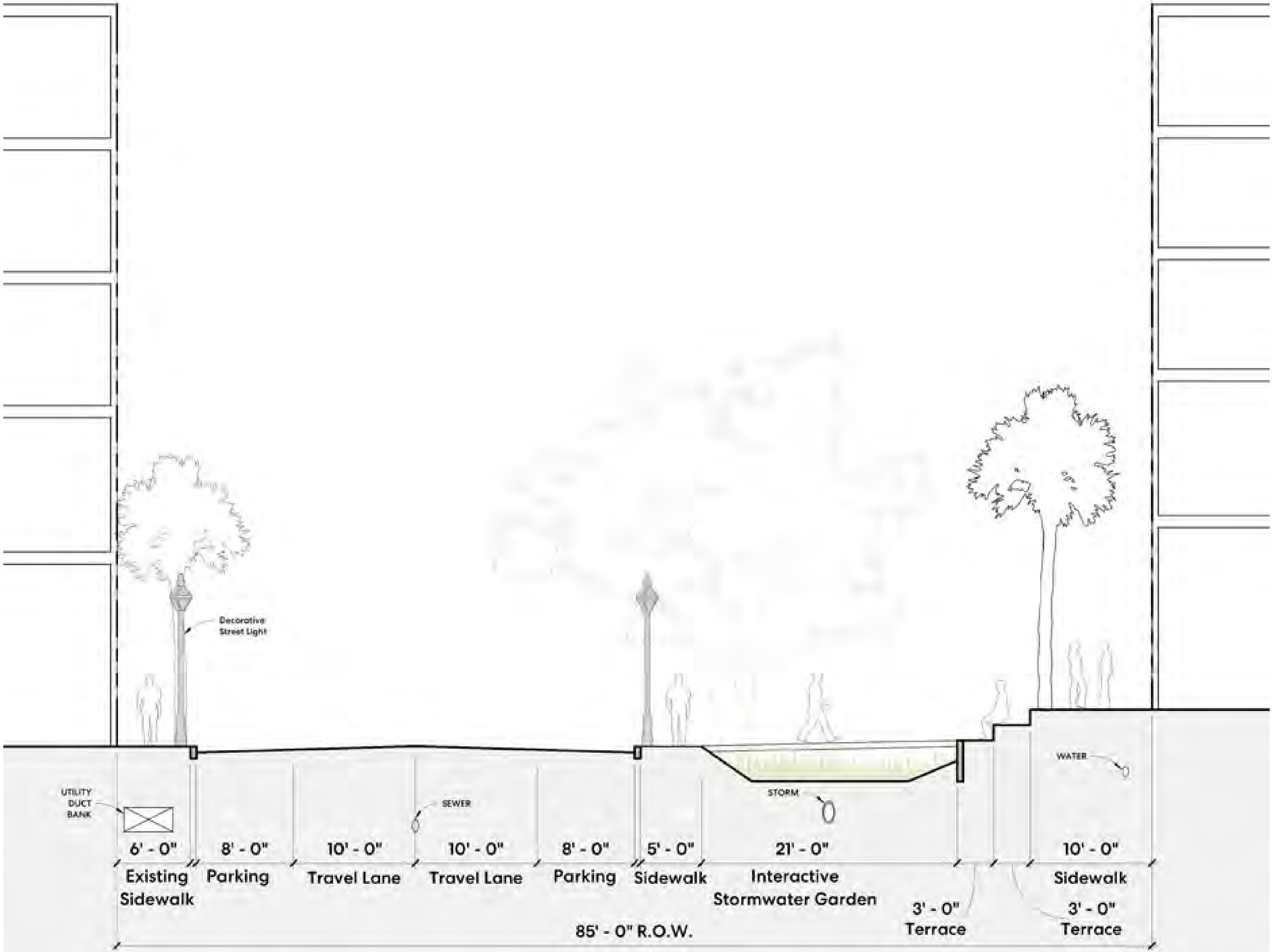
A.11 Primary Type 2 - Alternate (Washington Street)

May 30, 2023

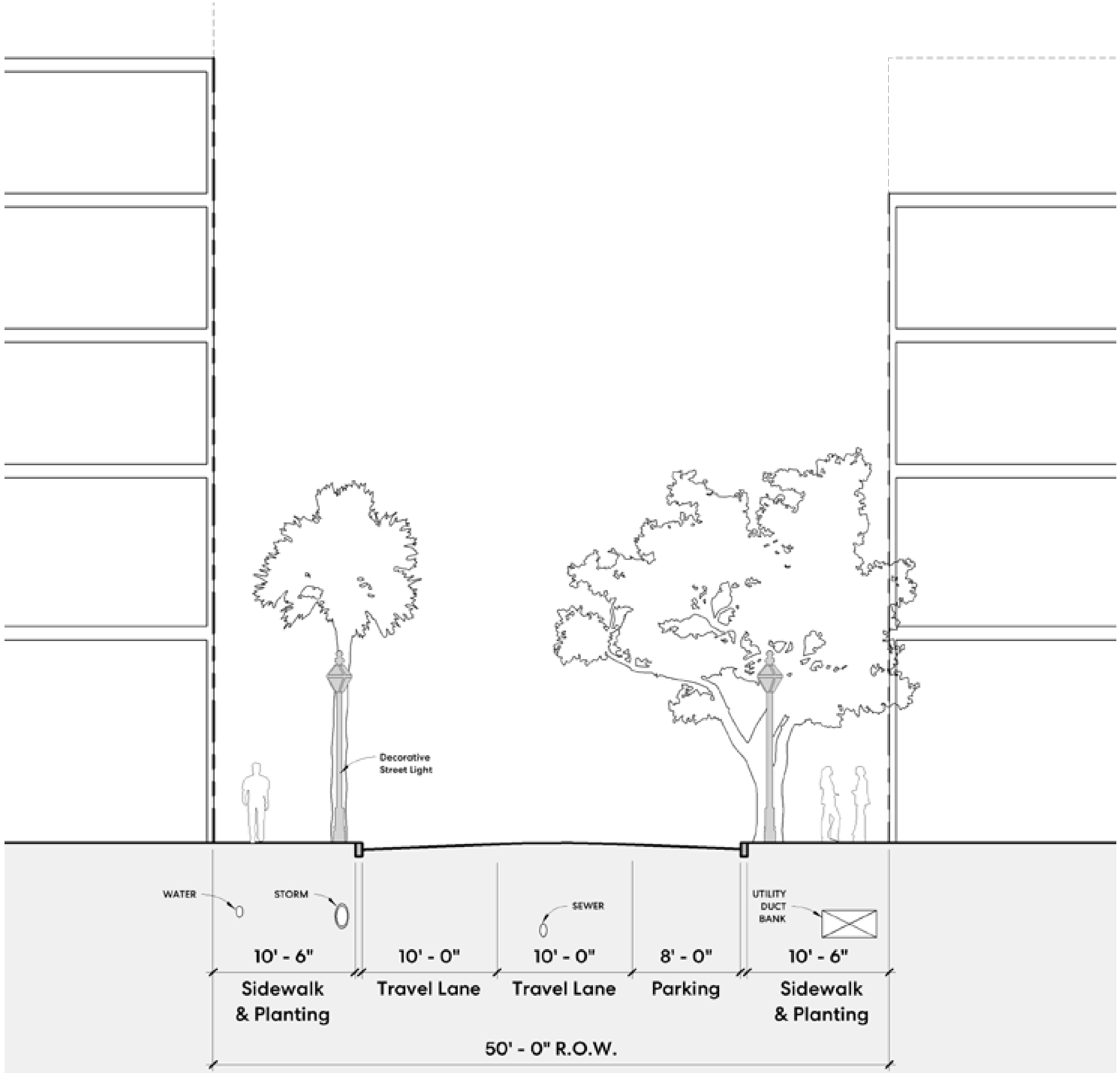


A.11 Secondary Type 1 (Hasell Street)

May 30, 2023

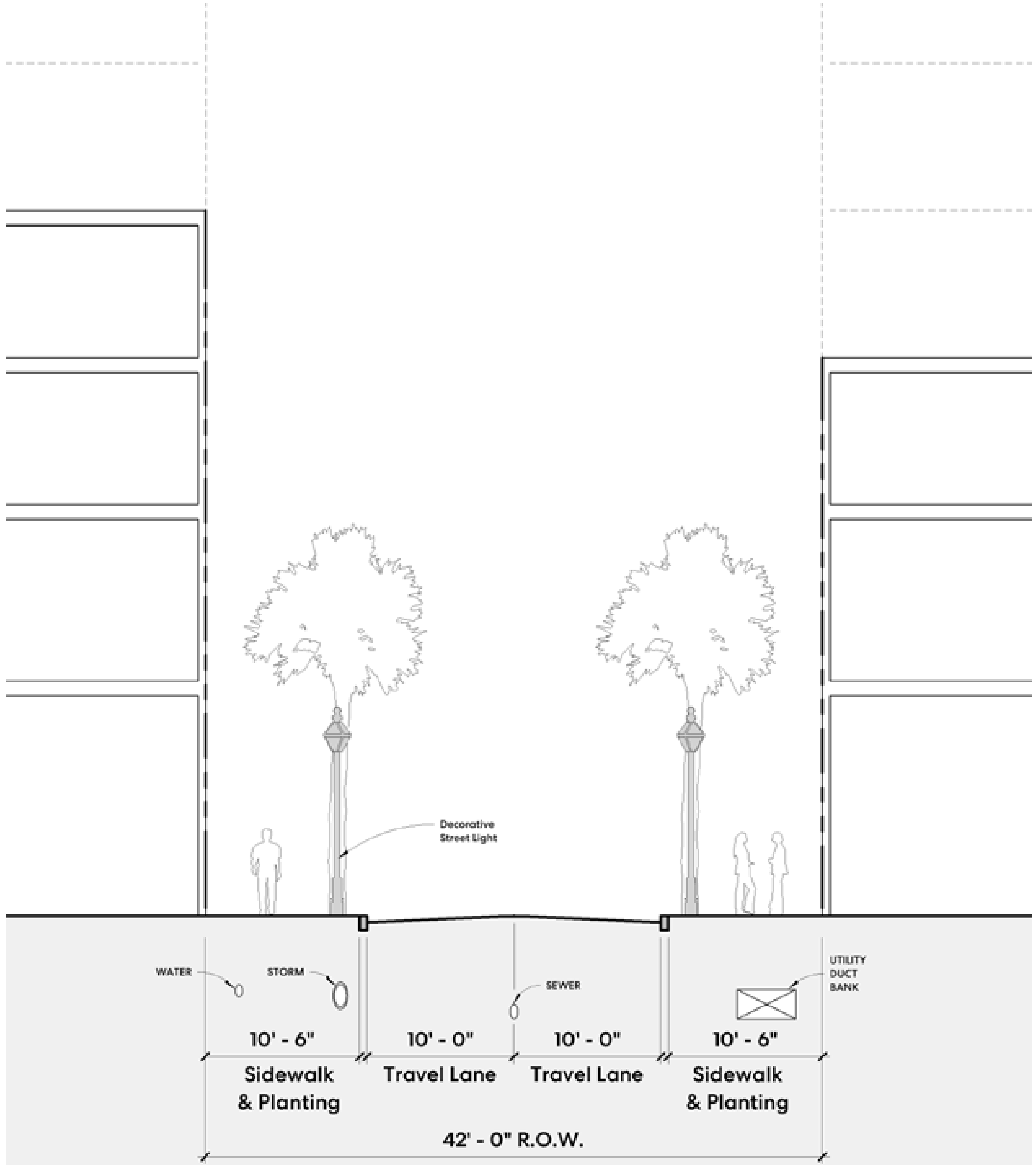


A.11 Secondary Type 2 (Laurens Street)



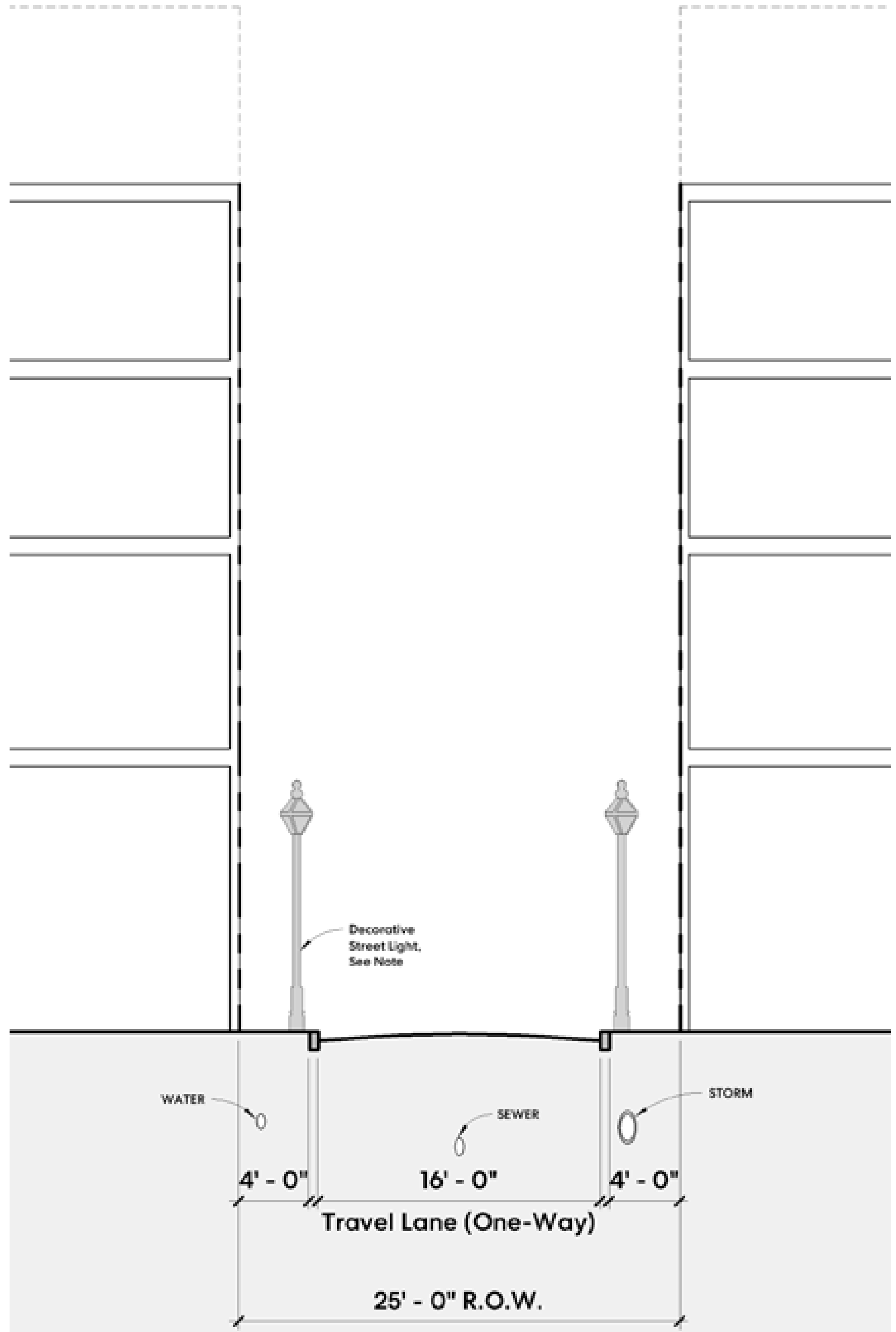
A.11 Neighborhood Type 1 (Wharfside Street)

May 30, 2023



A.11 Neighborhood Type 2 (Society & Pritchard Street)

May 30, 2023

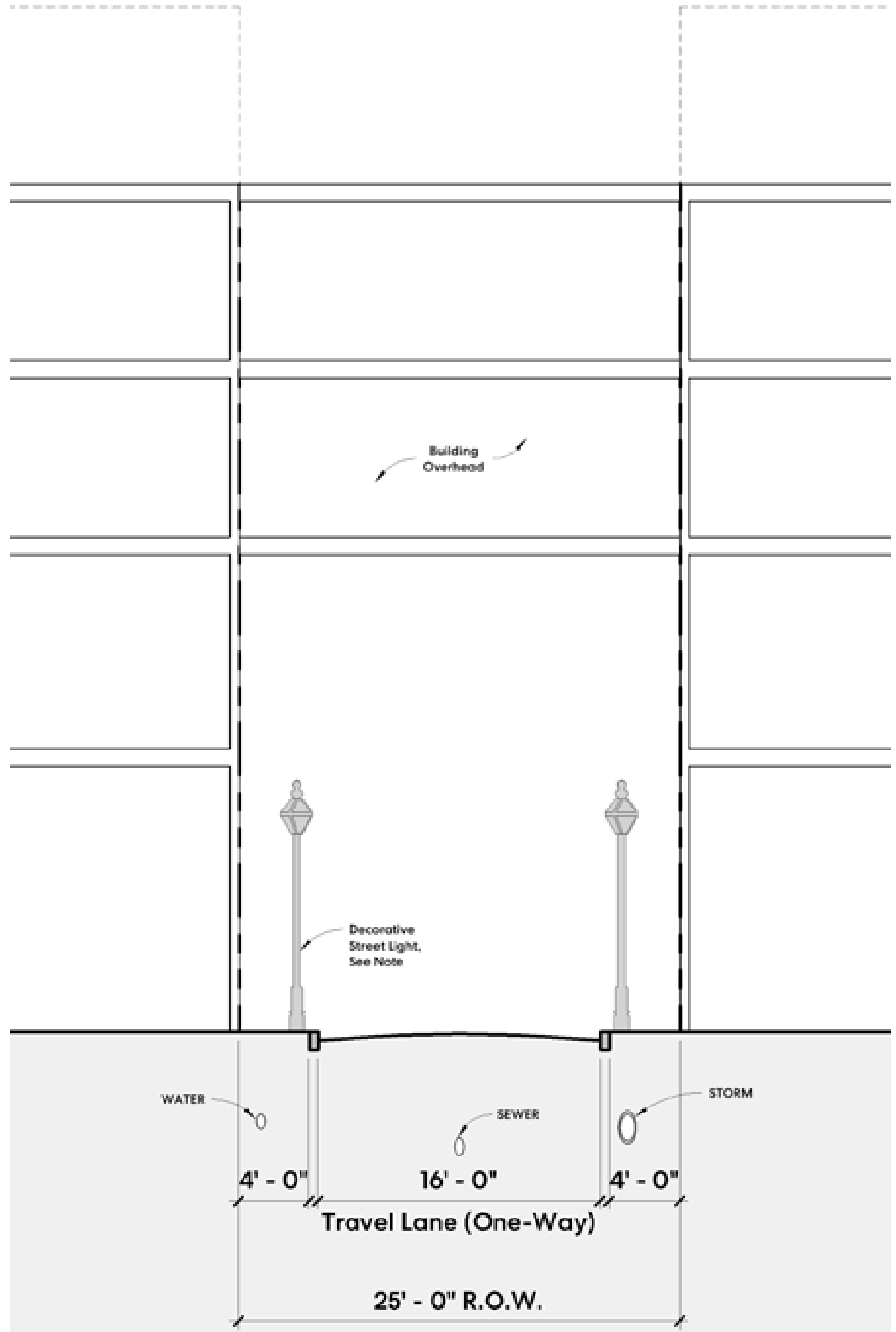


Note: Decorative Street Lights on Service Alleys to be located per future City approval.

**To be public or private.*

A.11 Mid-Block Service Alley Type 1.A (25' R.O.W.)

May 30, 2023

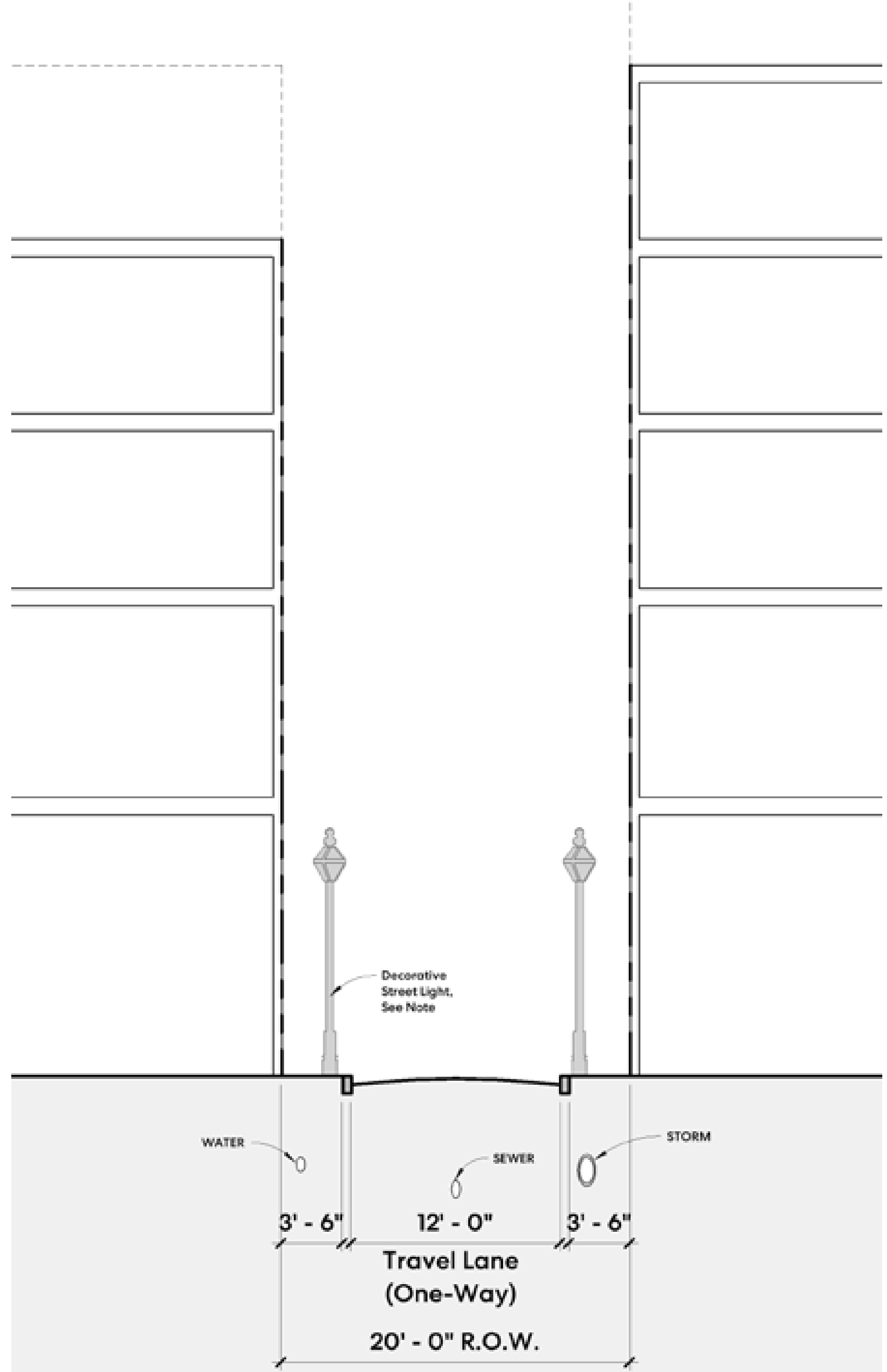


Note: Decorative Street Lights on Service Alleys to be located per future City approval.

**To be public or private.*

A.11 Mid-Block Service Alley Type 1.B - Optional (25’ R.O.W.)

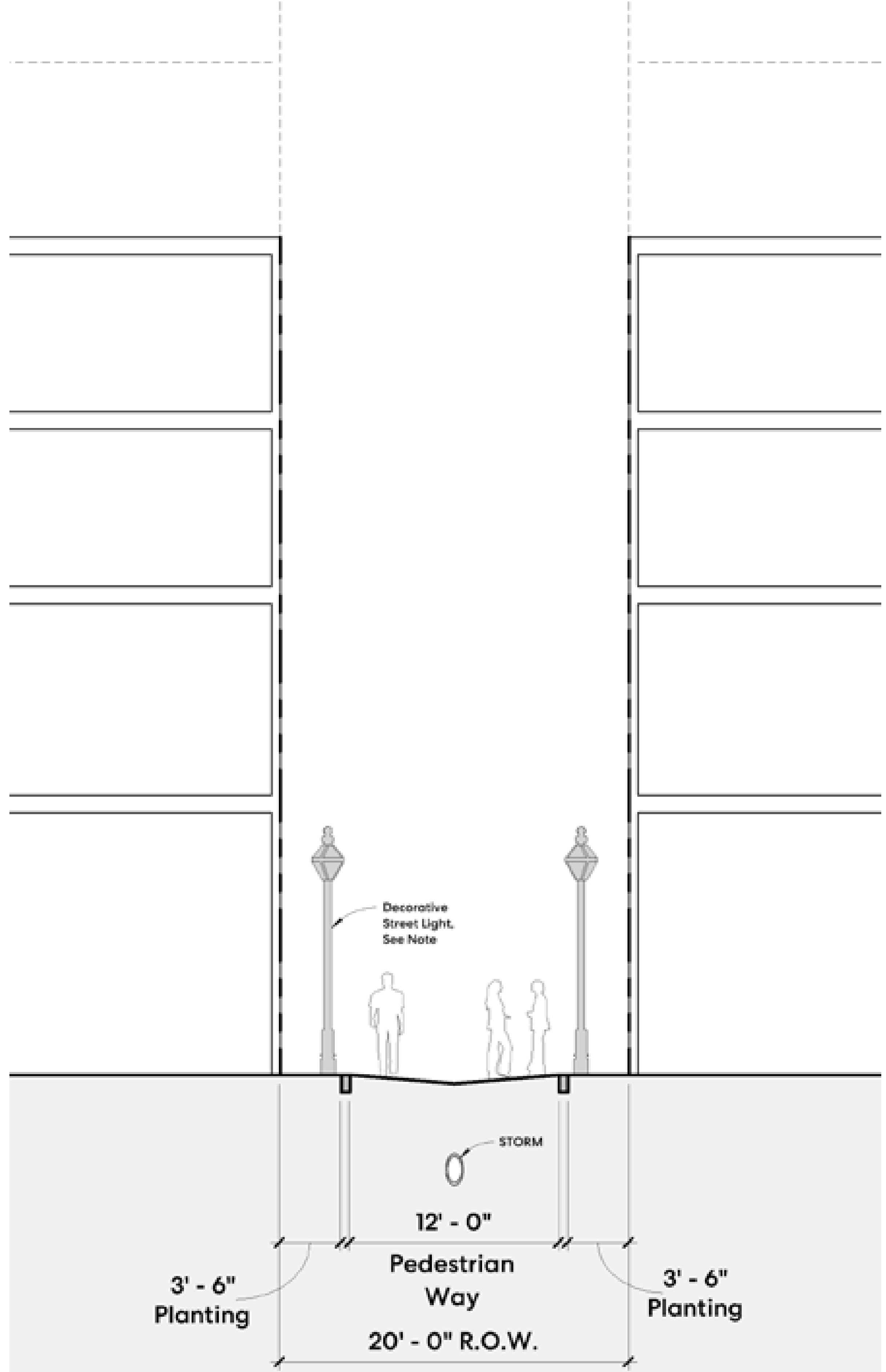
May 30, 2023



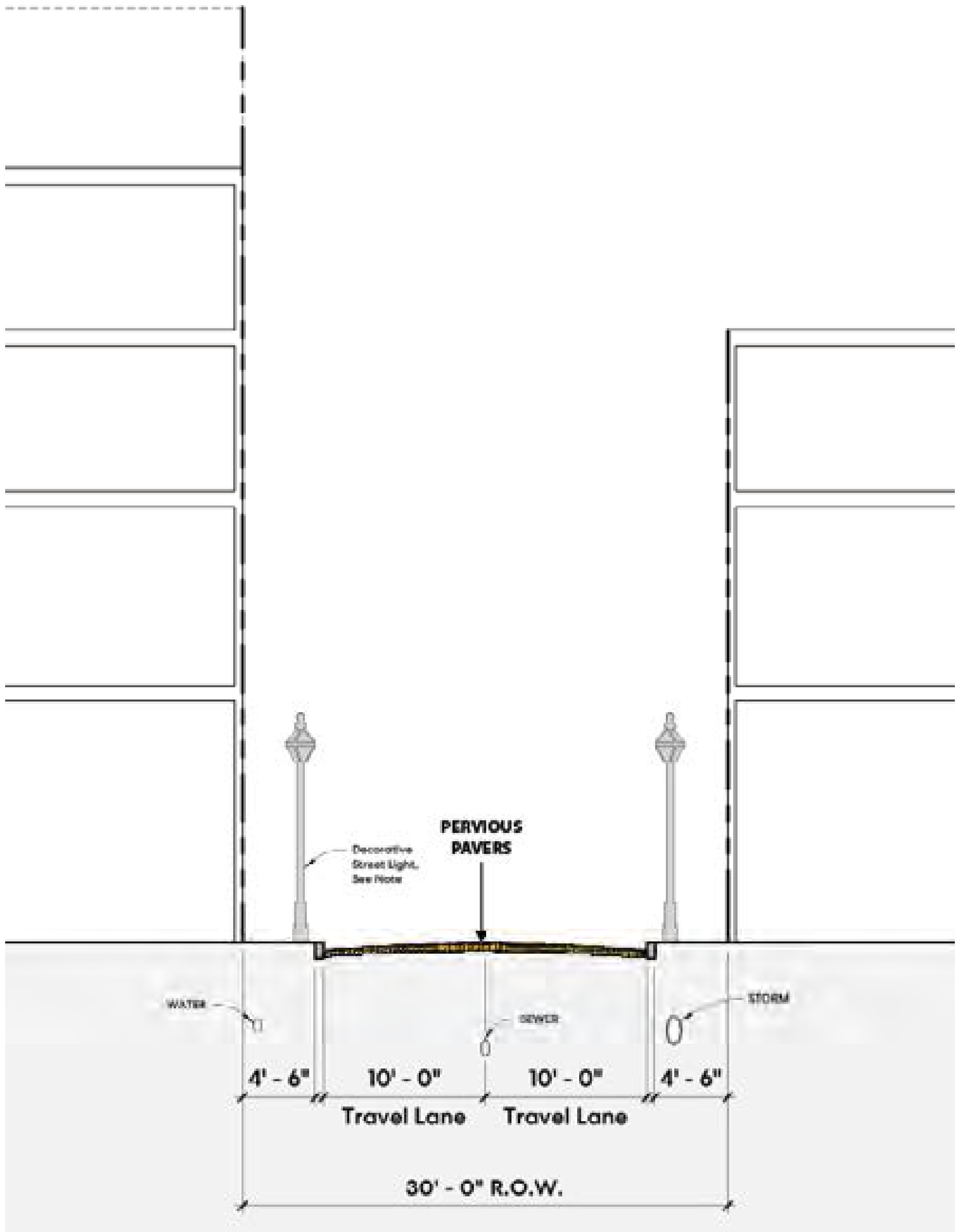
Note: Decorative Street Lights on Service Alleys to be located per future City approval.

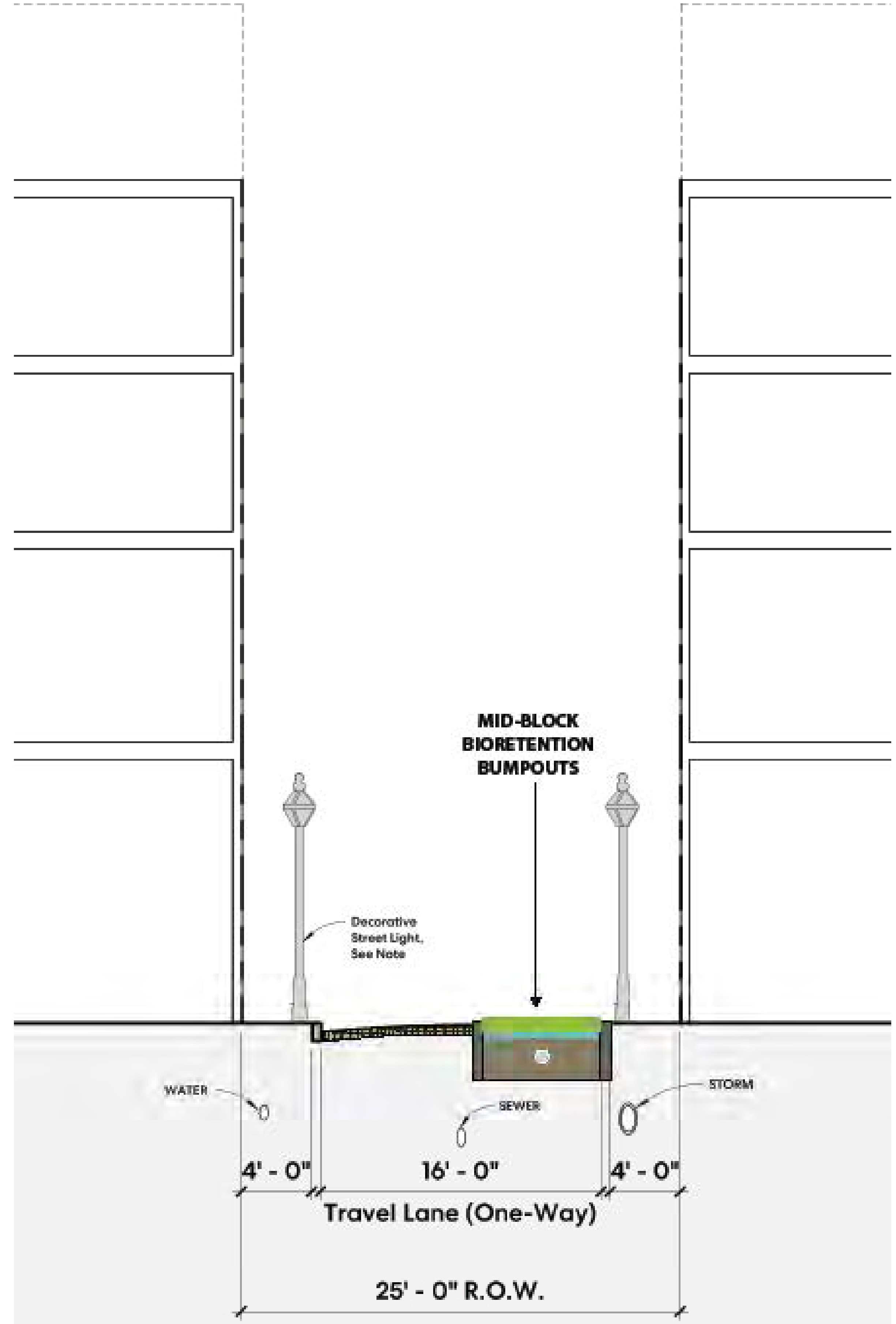
**To be public or private.*

A.11 Mid-Block Service Alley Type 2 (20' R.O.W.)

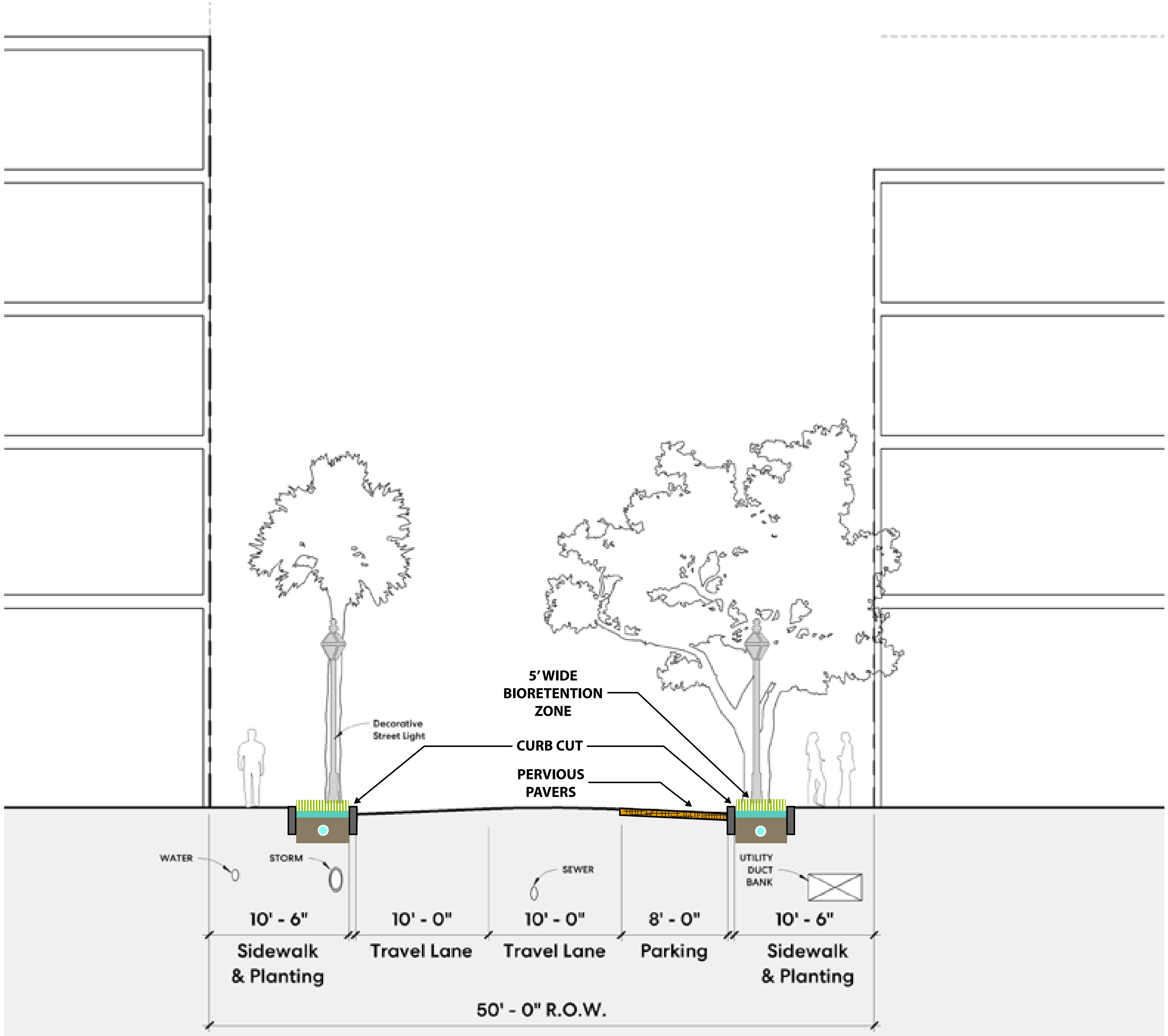


Note: Decorative Street Lights on Service Alleys to be located per future City approval.

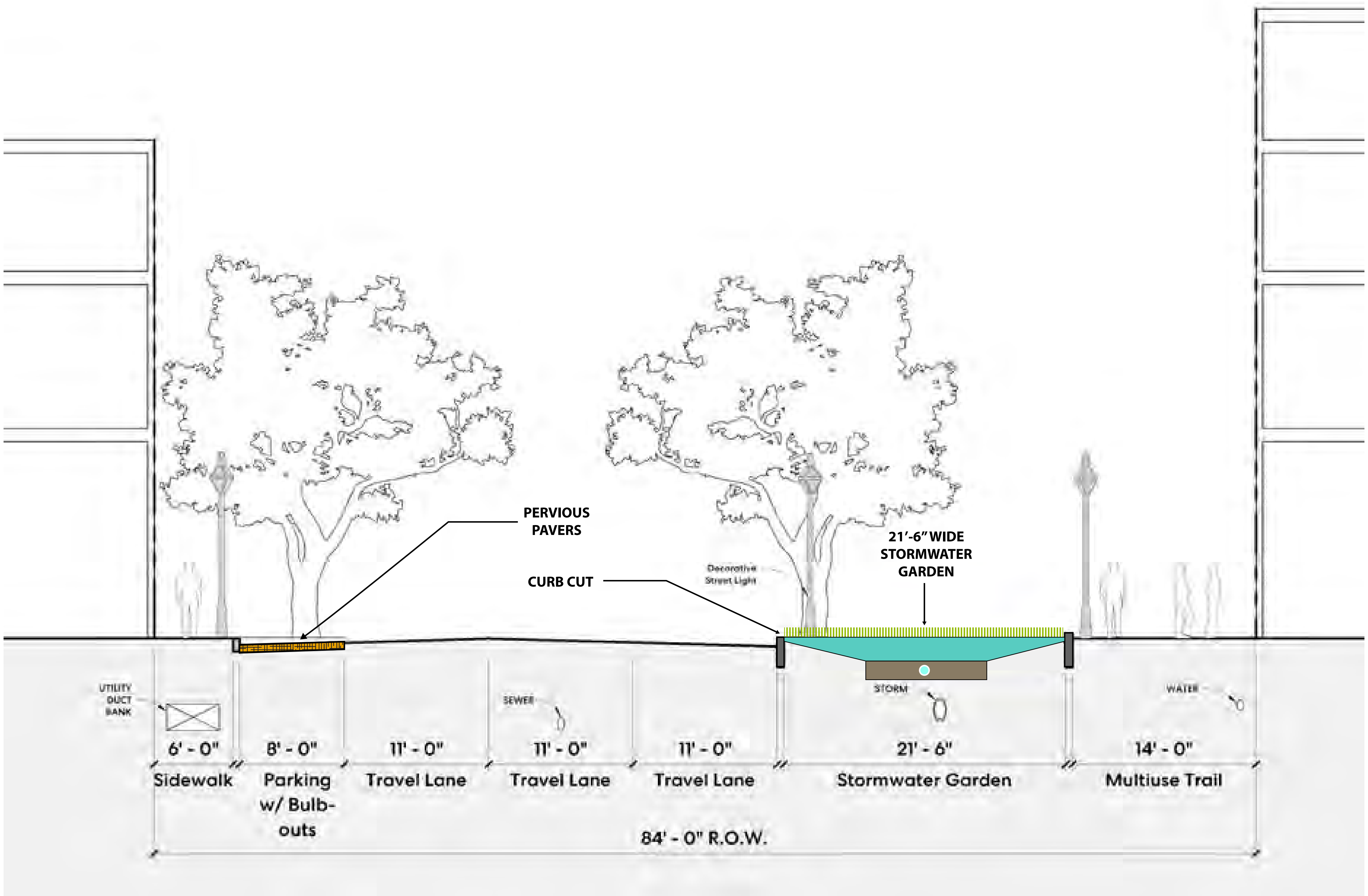




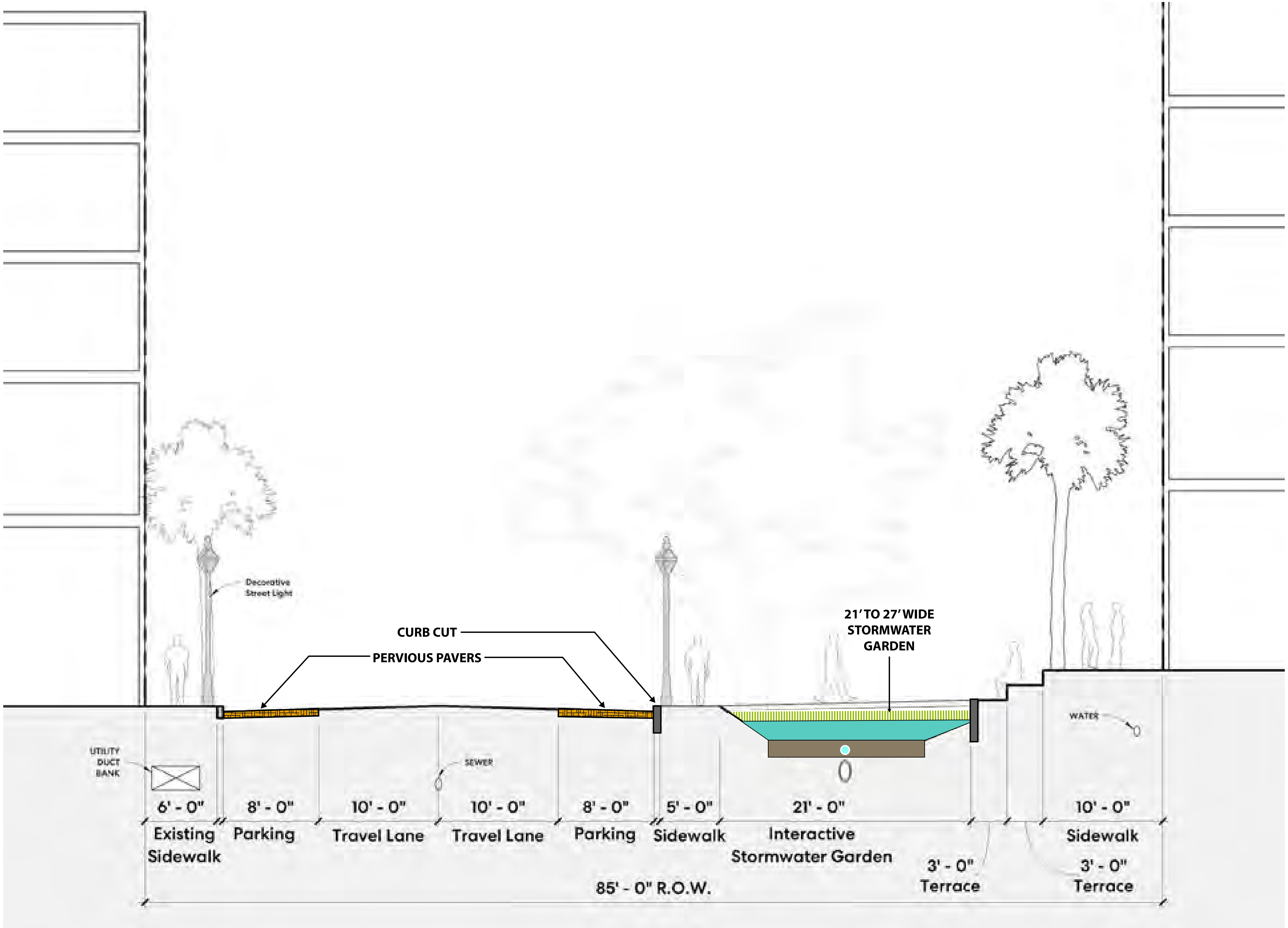
Note: Green infrastructure diagrams are conceptual in nature only.



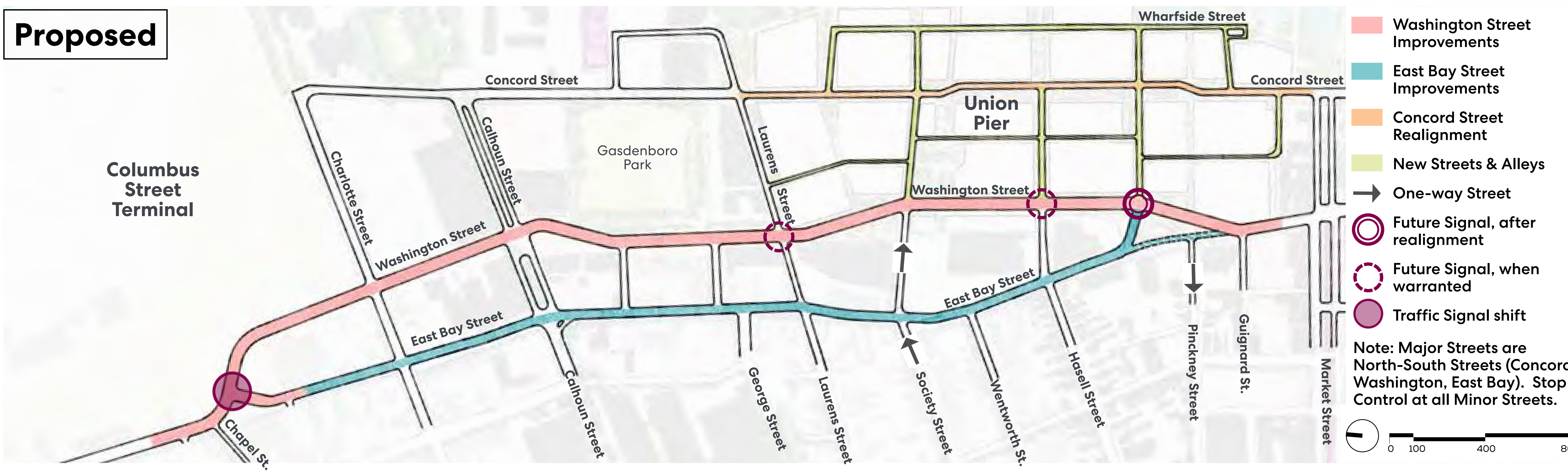
Note: Green infrastructure diagrams are conceptual in nature only.



Note: Green infrastructure diagrams are conceptual in nature only.



Note: Green infrastructure diagrams are conceptual in nature only.



A.13 Conceptual Washington & East Bay Street Realignment

May 30, 2023

Appendix B:
Union Pier Architectural Principles

Union Pier Planned Unit Development

Charleston, South Carolina

Project ID Number: PUD2023-000025

UNION PIER ARCHITECTURAL PRINCIPLES

These principles provide building and architectural techniques for new construction located in the Union Pier Site. They are not exclusive, and the Union Pier Architectural Principles shall be guided by City zoning ordinances, the Secretary of Interior Standards, and BAR Policy Statements and Guidelines

***Principle 1*: Higher ceiling heights present a more gracious façade to the street. On the interior, taller ceilings provide better light and ventilation.**

Building height shall be measured in number of stories, not in feet. The main floor shall be higher than the other floors.

***Principle 2*: A building should present a high quality tactile and visual experience to the passerby and articulated at a human scale. Better materials and workmanship are especially critical at street level as it is within eye level and reach of pedestrians.**

A means of achieving this principle may be by way of a base, wherein the bottom is of the building is articulated differently from the rest of the building, either by a change of material, or a setback above the base. Material and craftsmanship on the base should be of the highest, most durable quality. For buildings less than six stories, the base consists of the ground floor. For buildings more than six stories, the base shall be taller and proportionally appropriate to the building.

***Principle 3:* Narrow frontages permit a larger number and variety of structures to line the sidewalk, thereby enlivening the pedestrian experience. Additionally, vertical orientation reinforces Charleston's visual character, which has always tended towards the vertical.**

A means of achieving this principle are buildings that are narrow towards the frontage— even commercial buildings, which should be massed as a single bar or as a series of wings. When large buildings are massed into smaller forms, the resulting secondary masses should present a vertical orientation to the street.

***Principle 4*: To work in harmony with surrounding buildings, buildings should not pretend to be isolated objects, but rather work together with their surroundings to define and enhance the public realm.**

A means of achieving this principle is by way of building frontages, on both large and small buildings that reflect the rhythm of the adjacent or fronting buildings. This should be achieved either by breaking up the project into several buildings or articulating a single mass as a series of smaller forms.

***Principle 5*: To provide interesting rooflines and various roof heights, properly reside in the Charleston context, and to prevent monotonous flat-topped structures, buildings should have sloped roofs.**

A means of achieving this principle is to include some or all of a building's footprint underneath a sloped roof. Roof forms should continue in the Charleston tradition of applying gabled or hipped roofs to narrower building volumes of residential or civic character, and parapets or flat roofs to buildings of more commercial character. Large buildings, regardless of use or character, should place some of their overall form underneath sloped, rather than flat, roofs.

***Principle 6:* Charleston's blocks are diverse in form.**

A means of achieving this principle is variety in building scales, styles, and typologies. This requires variety in width, height, and/or depth of forms.

***Principle 7:* A Charleston tradition is the articulation of rhythm in streetscapes.**

A means of achieving this principle is through rhythmic repetition of fenestration, articulation of forms, and an authentic relationship of solids and voids at the street.

***Principle 8:* A Charleston tradition is the emphasis on terminated vistas and corners which has established the City's aesthetic identity.**

A means of achieving this principle is through careful study of viewsheds and reflecting these important vistas in the built environment.

***Principle 9:* The visual appearance of parking lots and garages should be mitigated to support pedestrian experience.**

A means of achieving this principle is shielding the frontage of Parking Garages and ground level parking in habitable buildings to a minimum depth of 30 feet of habitable space. In areas where flood elevation precludes habitable space at the street level, parking should be shielded by louvers, landscaped trellises, crafted ornamental metal screens or other comparable architectural masking features.

***Principle 10:* Street life on the sidewalk should be supported.**

A means of achieving this principle may be the inclusion of a primary entrance to all buildings that is located on street frontage and not directly on a parking lot or garage.

Principle 11: **The authenticity of Charleston should be supported by the use of materials that are authentic in their appearance and function.**

A means of achieving this principle may be through the use of exterior materials as brick, cut stone, smooth stucco and clapboard. Composite and processed materials, steel sections, cast stone, and cementitious boards, in limited quantity, may be acceptable. Vinyl, Styrofoam, GFRP and other synthetic materials should be avoided, or if not avoided, concentrated on the higher levels of the structure.

Principle 12: **The authenticity of construction should be supported and the architectural language of the building legible.**

A means of achieving this principle may be by way of tectonics. For example, heavier materials below lighter materials, wood and metal above brick, and all above stone.

Principle 13: **The harmony of building facades and the streetscape should be enhanced.**

A means of achieving this principle may be by way of a unified design among storefront glazing, doors, and building signage.

Principle 14: **Clear glass increases interest and security for pedestrians. Dark, opaque and/or reflective glass is not in the local vernacular.**

This principle may be achieved by encouraging clear glass on storefronts on the ground level.

Principle 15: **Vertical windows allow greater depth of light into a room and, by providing a frame in proportion with the human body, express the human occupation within.**

This principle may be achieved by way of wall openings, with the exception of storefronts and transoms that are vertical in proportion, generally displaying a ratio between 2/1 and 3/1.

Principle 16: **The size and frequency of windows is one of the most significant visual characteristics of a building. They should provide repetitive rhythm horizontally, but not be too repetitive vertically.**

A means of achieving this principle may be by way of facades that have more than one window size, with smaller sizes above. Three sizes should be provided for buildings taller than four stories and two sizes for buildings four stories or less.

Principle 17: **The achievement of small-scale texture, visual structure and relief to otherwise large, unsupported pieces of glazing.**

Thin mullions or muntins may be required on windows larger than two feet in any direction and cannot be located between or behind the outer glass surface. The depth of the mullion should not be less than the width.

Principle 18: **The achievement of a building with relief and the avoidance of the impression of cheap, paper-thin facades.**

This principle may be achieved with glazed openings that show a minimum wall depth of four inches clear to the frontage.

Principle 19: **The use of detail provides points of visual interest to pedestrians and enhances the articulation of the human scale of a building.**

This principle may be achieved through the use of an array of small scale detail derived from the modularity of the material (brick or clapboard), elements such as mullions, louvers, string courses, trim details, brackets, cornices, and/or column details.

Principle 20: **Wherever possible, green building practices should be incorporated into the design and construction of buildings. Green building approaches include water efficiency, building materials, material durability, and other methods that meet the needs of the present without compromising future resources.**

A means of achieving this principle is the use of local and vernacular materials that would reduce carbon footprint from transportation or the use of green roofs. Refer to advisory guidelines which may include Charleston Rises or LEED.

Recommended and Generally Easier to Approve	<................. >	Highly Discouraged and More Difficult to Approve
URBAN GUIDELINES		
TALLER CEILING HEIGHTS	< ································ ··············· >	SHORTER CEILING HEIGHT
NARROW TO THE FRONTAGE	< ································ ········· >	WIDER TO THE FRONTAGE
BASE DIFFERENTIATED	< ································ ··················· >	BASE CONTINUOUS
MANY SMALL BUILDINGS	< ································ ··············· >	FEW LARGE BUILDINGS
PARKING MASKED FROM FRONTAGE	< ···························· >	PARKING VISIBLE FROM
PARKING PROVIDED	< ································ ······················· >	EXCESS PARKING PROVIDED
ARCHITECTURAL GUIDELINES		
NATURAL & INTEGRAL MATERIALS	< ························· >	COMPOSITE & CLADDING MATERIALS
STRUCTURAL EXPRESSION	< ································ ······ >	SURFACE EXPRESSION
APPLICATION OF LOCAL CRAFT	< ······························· >	ABSENCE OF CRAFT
UNIFIED STOREFRONT DESIGN	< ································ >	STOREFRONT BY COMPONENT
CLEAR GLAZING	< ································ ······················ >	DARK OR MIRROR GLAZING
VERTICAL PROPORTIONS	< ································ ········ >	HORIZONTAL PROPORTIONS
REPETITIVE FENESTRATION	< ································ ····· >	MIXED FENESTRATION
SMALL MULLIONS	< ································ ·················· >	LARGE OR NO MULLIONS
THICKER WALL DEPTH	< ································ ············ >	THINNER WALL DEPTH
SIMPLE MASSING	< ································ ··················· >	COMPLEX MASSING
SHADING ELEMENTS PROVIDED	< ······························ >	NO SHADING ELEMENTS

Appendix C:
Cultural Resources Study

Cultural Resources Assessment of The Union Pier Redevelopment

Charleston, South Carolina

May 2020

Prepared for:
Lowe

Prepared by:
Lannie Kittrell, MHP
Architectural Historian

Charles F. Philips
Historian

and

Ralph Bailey, RPA
Principal Investigator

Brockington and Associates, Inc.
Atlanta • Charleston • Savannah

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1.0 Introduction

Brockington and Associates, Inc. (Brockington) completed a cultural resources assessment of the Union Pier Redevelopment project in May 2020. The assessment was conducted for Lowe as part of the entitlement process for the non-maritime portion of Union Pier. The project tract includes 30.5 acres of the total 69.5-acre Union Pier property currently owned by the State Ports Authority (SPA). The location of the project is shown in Figure 1.1.

The goal of the assessment was to identify known and potential historic properties that may be impacted by the proposed project. There are no recorded historic properties on the project tract; however, there have been several recent projects in the immediate project area, including the Waterfront Park expansion, Union Pier renovations, and the International African American Museum (IAAM). These projects reflect the recent shift in land use along this section of the Charleston waterfront from a decidedly industrial and commercial character with limited public access to a much more tourism and recreational character focused on the public. The implications of this on the surrounding area, particularly the Charleston Old and Historic District and the quality of life of its residents, have been the focus of considerable debate. The proposed redevelopment project will undoubtedly add to this discussion. A well-planned project can add tremendously to this area without adversely affecting the character and setting of the Old and Historic District.

The Bennett Rice Mill is likely to be an additional historic property, although interestingly, it has not been formally recorded or assessed by the State Historic Preservation Office (SHPO). The rice mill site consists of the front façade and potential subsurface archaeological remains. Even if this resource is determined Not Eligible due to poor structural integrity, it is an iconic structure and a source of contention among the City, the preservation community, and the SPA. It is likely that this resource will need to be treated like a historic property regardless of its National Register status. If it is not practical to incorporate the façade into the project in some way, we recommend that the structure be documented, possibly by laser scanning, photography, and archival research, before being dismantled. We also recommend that Lowe engage with a local preservation college or university, such as the College of the Building Arts or Clemson University, to create a learning opportunity for students.

The potential for significant archaeological remains to be present within the project tract is low. While there are likely to be subsurface foundation remnants of large nineteenth-century buildings like the Bennett Rice Mill, the historical significance and archaeological research potential of these building remnants are minimal. Bennett Rice Mill has Historic American Building Survey (HABS) drawings of its footprint as well as photographs of the building. Other than documenting the size of the foundations and similar construction techniques, there is not much to be learned. There is limited potential for intact, artifact-bearing deposits in association with the foundation remnants. Each time the wharf was converted to another use, buildings were demolished, and debris was pushed across the wharf surface to raise it or level it. Additional fill was likely placed atop the rubble and earlier fills, disrupting refuse pits and middens. There may be a privy or two that survived, but finding those will be difficult. Thus, archaeological potential below Washington Street is low. Between Washington and East Bay, there is a little more likelihood that foundation remnants and associated artifact deposits may be present, but the placement of fills to create that land will make sorting out these associations archaeologically difficult.

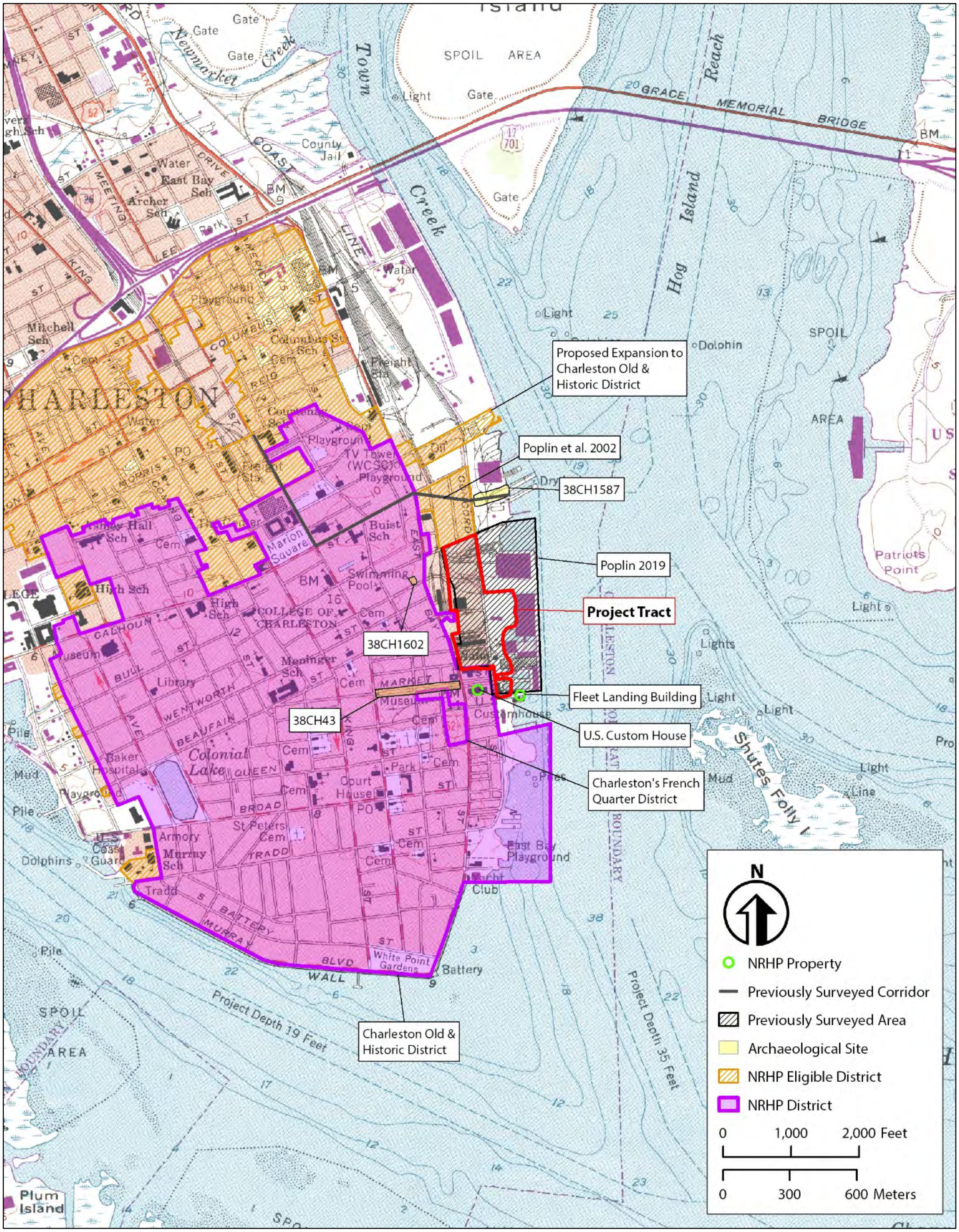

Figure 1.1 Location of Union Pier, the redevelopment parcel, and previously recorded cultural resources (USGS *Charleston* quadrangle).

We recommend a Phase 1 survey to record and assess the Bennett Rice Mill and any other undocumented resources within the project tract, including several warehouses and a small brick structure observed during the field reconnaissance. The warehouses and brick structure will likely be determined Not Eligible for the National Register of Historic Places (NRHP). The Phase I survey will include assessing these resources within the project tract and the previously recorded resources adjacent to the project tract with respect to the conceptual plans for the redevelopment project. The survey report may be submitted to United States Army Corps of Engineers (USACE), or other appropriate permitting agencies, and the SHPO for review and a formal Determination of Effect. Compliance with Section 106 of the Historic Preservation Act is typically completed with the establishment of a Memorandum of Agreement, followed by the implementation of preservation or mitigations plans, depending on the situation.

2.0 Historical Overview

2.1 A Brief History of Union Pier

With the establishment of Charles Towne on Oyster Point in 1680, the Cooper River waterfront became the eastern boundary of the new town. By the 1690s, fear of Spanish attacks on Carolina prompted the Lords Proprietors to provide for the construction of fortifications around the young town. The Cooper River waterfront witnessed the construction of three primary bastions connected by a curtain wall that also served as a seawall; the wall ran along the east side of East Bay Street. The southern Granville Bastion stood at what is currently the intersection of East Bay and Water Streets (remnants lie beneath the Misroon House at 40 East Bay Street); the Half-Moon Battery stood at the center of the town at the foot of Broad Street (currently beneath the Old Exchange Building); and the northern Craven Bastion stood at the foot of Market Street (currently beneath the U.S. Customs House).

After the Yamasee War (1715 to 1718), the threats of Spanish and Indian attacks diminished, and Charleston quickly expanded beyond the enclosing fortifications. This expansion included the extension of docks and wharves across or beyond the former curtain wall into Charleston Harbor. This allowed vessels to dock and unload directly into the city rather than having to transship cargos and move them in small vessels to the wall. At times, openings were cut through the wall to permit easier ingress and egress. Note that docks and piers are structures that stand in the water; wharves are more substantial constructions and usually consisted of timber bulwarks that were then filled with debris and soil to form causeways or segments of made-land that extend into the harbor. The project tract consists of wharves and docks.

During these early decades, Carolina colonists experimented with various agricultural pursuits and resource extractions to generate commerce and wealth for whites within the colony. Foodstuffs (especially cattle, sheep, and pigs), naval stores and timber, deerskins obtained through trade with the local Indians, and enslaved Indians also obtained from the local Indians all were produced or obtained and exported from Charleston via ships arriving from Britain and the Caribbean. Soon, rice and indigo became the principal export commodities of Carolina, moving by ship to other portions of the British colonial empire and the Atlantic World.

Once docks and wharves extended into the harbor, silt accumulated along the curtain wall, and the Cooper River shoreline began moving. This prompted Charleston landowners to fill the newly exposed lands east of the wall, and the city quickly grew to the east beyond East Bay Street, as well as to the west and north beyond the former fortifications. Throughout the first half of the eighteenth century, the center of maritime trade extended several blocks north and south of Broad Street. The original shoreside market, Exchange, and early Customs House stood at the foot of Tradd Street (within a redan of the City's seaward fortifications and under today's South Adgers Wharf). By the time of the Revolution, the new Exchange opened at the foot of Broad Street (atop the old Half-moon Battery, today's Old Exchange and Provost Dungeon). The City Market would also occupy this space (and more land immediately east of the old fortifications) by the 1760s and remain here until the early nineteenth century when the new market opened four blocks to the north.

Just before the Revolution, Christopher Gadsden built his wharf north of Laurens Street. This was the largest wharf on the East Coast at the time, extending from modern Calhoun Street to Laurens Street and from Washington Street to near the current edge of the harbor. All of this area was filled (pine timber cribs were constructed and then filled with oyster shell, sand, and other materials), moving the shoreline over 900 feet to the east. Portions of Gadsden's Wharf are today incorporated into the Charleston Old and

Historic District, with archaeological remnants existing beneath the modern surface in many areas. The project tract borders the former Gadsden's Wharf along its northern edge.

Most of the Union Pier Terminal Area of Potential Effect (APE) remained undeveloped during this period. The south-central area was partially filled by 1788 with three wharves and several buildings atop them. Figure 2.1 displays the Union Pier Terminal APE at that time. These wharves lay along the southwest corner of the project tract. Other lands of Union Pier lay vacant tidal flats and open water.

During the last two decades of the eighteenth century, the City of Charleston began filling the creek beneath today's Market Street, and in the late 1790s, built the new City Market atop this newly made land. Frequently, debris from city trash and construction sites were hauled to the east side to provide fill for the new market area and the wharves being built on the Cooper River. The specifics of this infilling are discussed in Christina Butler's book new book, *The Lowcountry at High Tide, A History of flooding, drainage, and reclamation in Charleston, South Carolina* (Butler 2020). The book will be released in the summer of 2020 and should be consulted as part of a future Phase 1 Survey or other study of the project area.

The new Market opened in 1800, with wharves and docks expanding along the Cooper River waterfront all to the east of East Bay Street. Prior to the extension of land into the harbor beyond East Bay Street, merchants were concentrated along that street due to their proximity to the source of goods and stores: the wharves in the harbor. As new land and wharves were built, some merchants moved their shops and residences onto the wharves. By the middle of the nineteenth century, numerous industries began to establish themselves on the waterfront, particularly those that relied on the movement of raw materials and finished products into and out of Charleston.

Rice mills were an important component of the rice culture and white economic prosperity in nineteenth-century Charleston. In 1822, Jonathan Lucas and John L. Norton built one of the first rice mills atop Gadsden's Wharf, just north of the project tract. In 1844, former South Carolina Governor Thomas Bennett and William Lucas partnered in the development of Bennett's Rice Mill. The partners erected a wharf and a substantial brick rice mill complex along the Cooper River (within the project tract). Remnants of the front façade of this mill are extent on the project tract. Based on Poplin 2019a, it is likely that there are intact archaeological deposits remaining around the front façade of the Bennett Rice Mill complex; however, there is limited potential that there are intact artifact-bearing deposits in association with the foundation remnants. Each time the wharf was converted to another use, buildings were demolished, and debris was pushed across the wharf surface to raise it or level it. Additional fill was likely placed atop the rubble and earlier fills, disrupting refuse pits and middens.

Other industrial companies were also located on the project tract during the mid-nineteenth century. In the 1830s, Marsh & Son had constructed a shipbuilding business on a wharf and dock in the east central portion of the APE. Charleston Iron Works erected their structures north of Pritchard Street, and the Charleston Rice Company built a smaller rice mill south of Bennett's on Hassell Street inside the project tract. Maps from the time show that there may be smaller blacksmiths and ironmongers and other trades that were often seen as nuisance industries by residents. Figure 2.2 displays the project tract in the 1850s with the industries inside the project tract. By this time, the Union Dock was present within the project tract between Pritchard and Pinckney Streets.

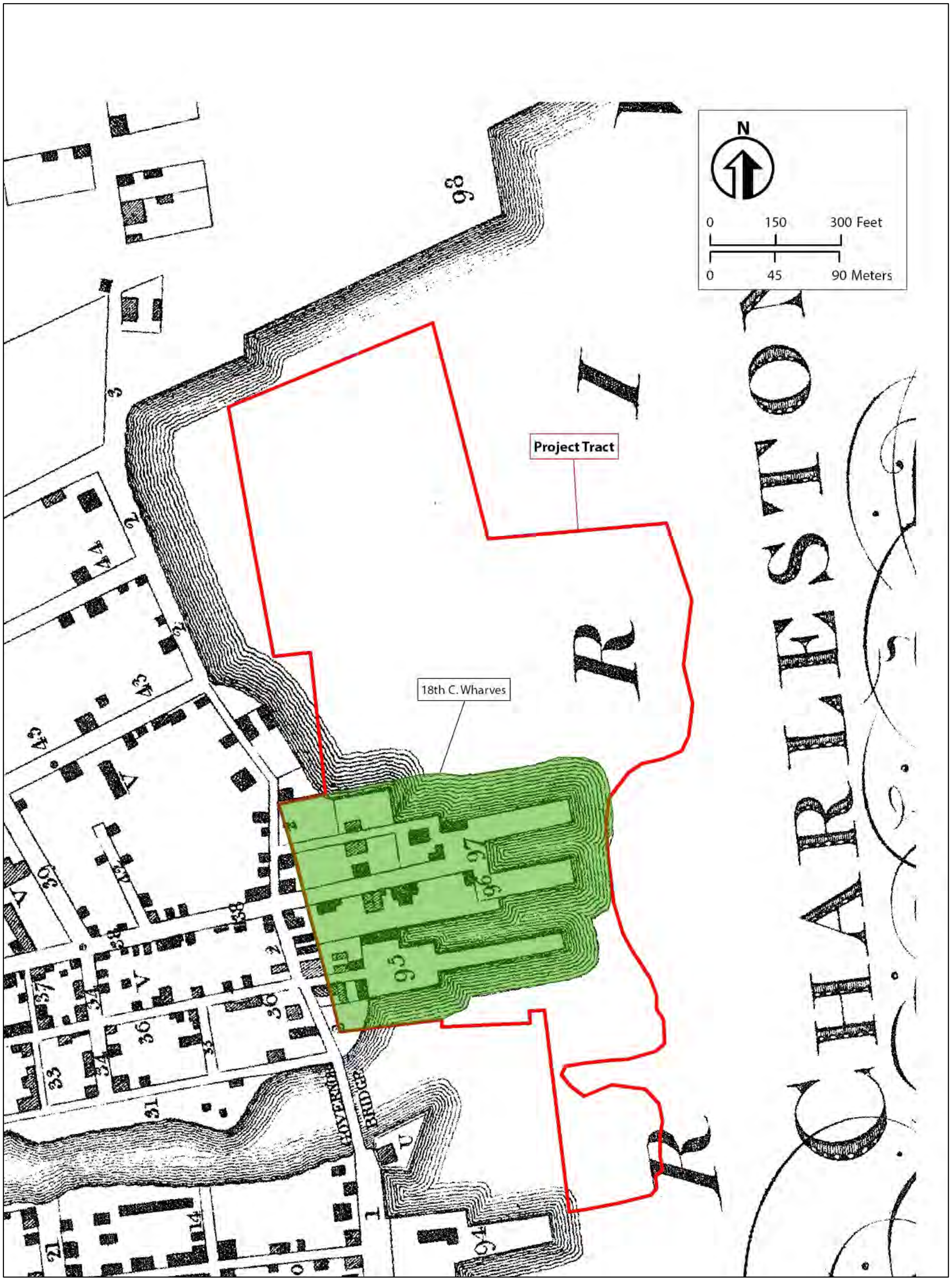

Figure 2.1 The location of the project tract on the 1788 Phoenix Fire Company Map of Charleston (Petrie 1788).

Figure 2.2 The location of the project tract on the 1852 Bridgens & Allen Map of Charleston (Bridgens and Allen 1852).

Also, during mid-nineteenth century, railroads began to carry goods and people into and out of the city. The Charleston to Hamburg Railroad was completed in the 1830s, providing ready access from the central Savannah River Valley to the port of Charleston. Cotton was the primary commodity moved in this fashion, but other goods and many people also began to travel by rail into and out of the city. However, the direct connection of rail service to the wharves would not be realized for several more decades.

Commerce was greatly reduced during the Civil War, primarily due to the Federal blockade of all Confederate ports. However, Charleston remained an active port, receiving and dispatching blockade runners, and it served as a hub of Confederate naval activities. In the decades following the Civil War, maritime commerce into and out of Charleston declined as the economy of South Carolina and other southern states began to shift from the plantation-supported agricultural exports to other commodities and agricultural products produced in other manners. By 1872, at least one new wharf (Fairchild's Wharf) and dock (Hunter's Dock) had been built within the northern portion of the Union Pier Terminal but outside the APE. At the north end of the APE on the south side of Laurens Street, a string of residences was located. Figure 2.3 displays the project tract in the 1872.

By this time, another important business was located within the project tract. The Union Cotton Press Company was present in the southwest corner along East Bay Street where they controlled three wharves. The company dominated the southern portion of the pier with their large cotton facility, storage warehouses, and a dock. Eventually, Union Pier took its name from the Union Cotton Press Company.

The Charleston Mosquito Fleet also operated along the docks in the project tract for decades. Beginning before the Civil War, this African American-led fleet of small wooden boats left each morning from the Charleston docks to catch fish in the harbor and on the open sea, and they returned in the afternoons to market their fish to residents. Most of the fresh fish sold directly to homes and at the Market Street stalls were supplied by this enterprising group of fishermen. Each day they brought in thousands of pounds of Black Bass, Porgy, Snapper, Grouper, Flounder, and many other varieties to the docks. Most of the fleet left from a dock near Laurens Street, slightly north of the project tract. In 2016, Samuel Joyner, one of the last of the Mosquito Fleet fisherman, explained that it was "guided by a ritual of sorts. A century's worth of accumulated wisdom and experience on the ocean had been passed down and distilled into a daily routine" (Bjur in *Charleston Grit*, February 19, 2016) In addition to supplying fresh fish to the city, the Mosquito Fleet became an endeared part of Charleston life and culture for more than 150 years. The last boat stopped fishing in 1989.

By the mid-1880s, a phosphate processing and storage facility, along with several other industries, were located inside the project tract. In the 1860s, phosphates were discovered near the surface in the lower portions of South Carolina, and mines and processing plants were opened throughout the Charleston Neck and the surrounding areas. This material was essential for fertilizer and was shipped out from Charleston to areas throughout the United States and beyond. The Pacific Guano Company, a guano importer and phosphate processing business, located their processing and storage facility on a wharf between Hassell and Pritchard Streets inside the project tract. Former fertilizer plants may retain environmental concerns today due to soil contamination.

Additionally, wharves and freight sheds used by the Baltimore Steam Ship Company and the Market and Customs House wharves all stood within the project tract. On the west side of the tract, Valk & Murdoch built their iron works, the second company of its kind located on the Union Pier Terminal. Figure 2.4 displays the project tract in 1884. These facilities remained in the tract following the earthquake of 1886

Figure 2.3 The location of the project tract on the 1872 *Bird's Eye View* of Charleston (Drie 1872).

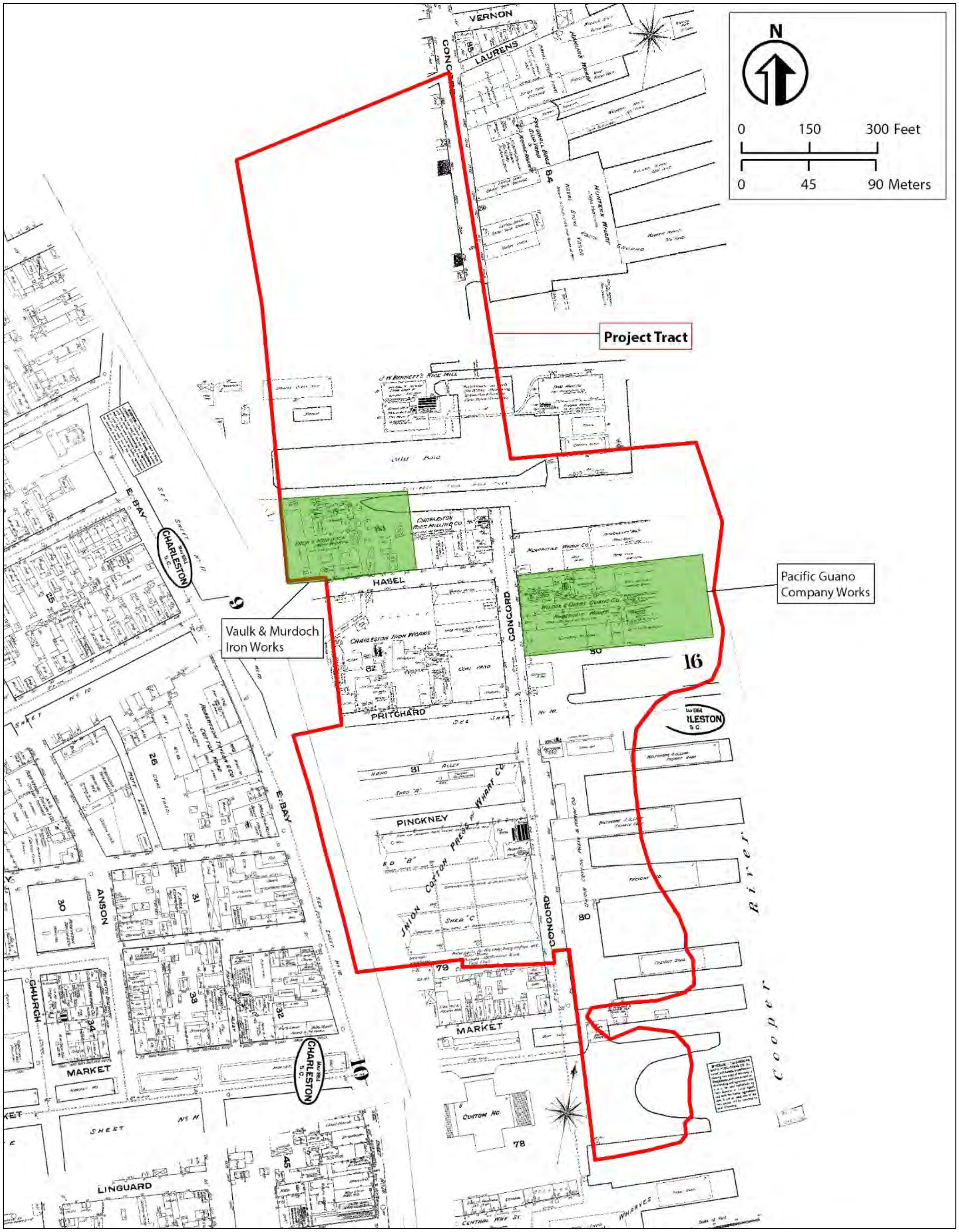

Figure 2.4 The location of the project tract on the 1884 Sanborn map of Charleston (Sanborn Fire Insurance Company of New York 1884).

that destroyed or damaged most of the buildings within the City of Charleston. As stated earlier, substantial subsurface archaeological deposits for these manufacturing facilities are likely nonextant.

The City of Charleston witnessed expansion of industrial facilities during the late nineteenth and early twentieth centuries. Phosphate factories dominated the land north of the city. The city also looked for other industries to support its economy. In the 1880s, the USACE dug a new entrance into the Charleston Harbor, permitting steam ships to bring in larger cargos to the port. As a direct consequence, in 1903, the U.S. Navy established an installation on the Cooper River north of the City of Charleston. The Navy installation soon included a shipyard (for repair and construction) and service facilities for smaller naval ships home-berthed in Charleston. The presence of the Navy base encouraged other industrial development such as the General Asbestos and Rubber Plant off Montague Avenue near the Navy Base.

Industrial facilities and the movement of freight and cargo to and from ships continued within the APE into and throughout the early twentieth century. By 1902, the Southern Railroad Company acquired the wharves at the northern end of Union Pier and connected their wharves and freight sheds to rail lines that extended down the eastern side of the Charleston peninsula. These lines continue to serve the Port of Charleston and Union Pier Terminal today. The lines of the Southern Railroad in the north and the Seaboard Air Line in the central portion of the project tract are seen in Figure 2.5.

By the early 1920s, most of the wharves along the east side of Charleston were owned by railroads, the Union Cotton Press Company, or the Port Utilities Commission. The end of rice production in South Carolina after 1911, the destruction of the cotton crop by the boll weevil after 1920, and the collapse of the South Carolina phosphate industry after World War I caused a severe decline in use and business along the docks and wharves. Docks inside the APE began to fall into disrepair with insufficient capacity to fill the many warehouses. In 1921, Charleston's Mayor John Grace created the Ports Utility Commission (PUC) to own and manage the many wharves along the city's east side that were being abandoned (Port Utilities Commission Records, 1921-1943: Summary of Port Utilities Commission). The agency began to promote the use of the waterfront facilities, and in 1942, it became part of the newly created South Carolina Ports Authority (SCSPA).

The PUC assumed control of the former Union Cotton Compress Plant and wharves in the southern part of the project tract. Meanwhile, the Seaboard Air Line purchased ownership of the former Bennett Rice Mill and wharf in the central part of the project tract. The Union Pier was expanded as the commission sought to market the port. The railroads reconfigured their docks, removing unnecessary structures and docks. Figure 2.6 displays an aerial photograph of the Union Pier area in 1939; note that the northernmost wharf has been demolished or has collapsed. Also, wharves in the central section were demolished or altered.

As the twentieth century progressed, so did the maritime traffic into and out of the City of Charleston. The U.S. Navy increased its warship production during World War II. Local businesses grew with activities associated with a growing military presence, and during and immediately after the war, the area experienced explosive growth of residential and service facilities north of Charleston, proper for the increasing number of workers at the Naval Base. Eventually, this led to the formation of the City of North Charleston, a separate municipality around Navy Base Charleston. Most of this activity resulted in growth to the north of the project tract.

Despite the SCSPA's efforts to market the Port of Charleston after World War II, the area around the Union Pier Terminal continued to decline. By the late 1950s, most of the northern wharves were no longer in use and had collapsed or been demolished. The east end of the Seaboard Air Line Wharf was also destroyed, and most of the western part of the project tract was either vacant or populated with storage facilities. Figure 2.7 displays the project tract in 1957.

In the late 1960s, recreational cruise vessels began to call at the Port of Charleston with some regularity. To meet the growing passenger traffic, the SCSPA erected Building 325 at the south end of the existing Union Pier. The building was completed as a passenger facility and has remained the center of cruise operations at the port since. The remainder of Union Pier Terminal continued to be used (and continues to be used) for cargo operations, but with various kinds of vessels using the berths to discharge and load cargos. Figure 2.8 shows the project tract in 1973 with the passenger terminal buildings.

In the waning decades of the twentieth century, the pier was reconfigured to support containerized freight. The SCSPA also opened terminals on the Wando River in Mt. Pleasant and in North Charleston. The Union Pier Terminal (as it exists today) was altered in the late 1970s by the SCSPA to support increased containerized maritime commerce. By the 1990s, Charleston was the fourth busiest container port in the United States. However, container operations moved farther up the Cooper River to the Cumberland Street Terminal and to the Wando and North Charleston facilities. The twenty-first century witnessed a growth in the cargo facilities of the Port of Charleston. The SCSPA is currently constructing another container facility on the southern end of the former U.S. Navy Base Charleston. The move of the containerized facilities further north has resulted in the SCSPA selling the western portion of their wharves for future development.

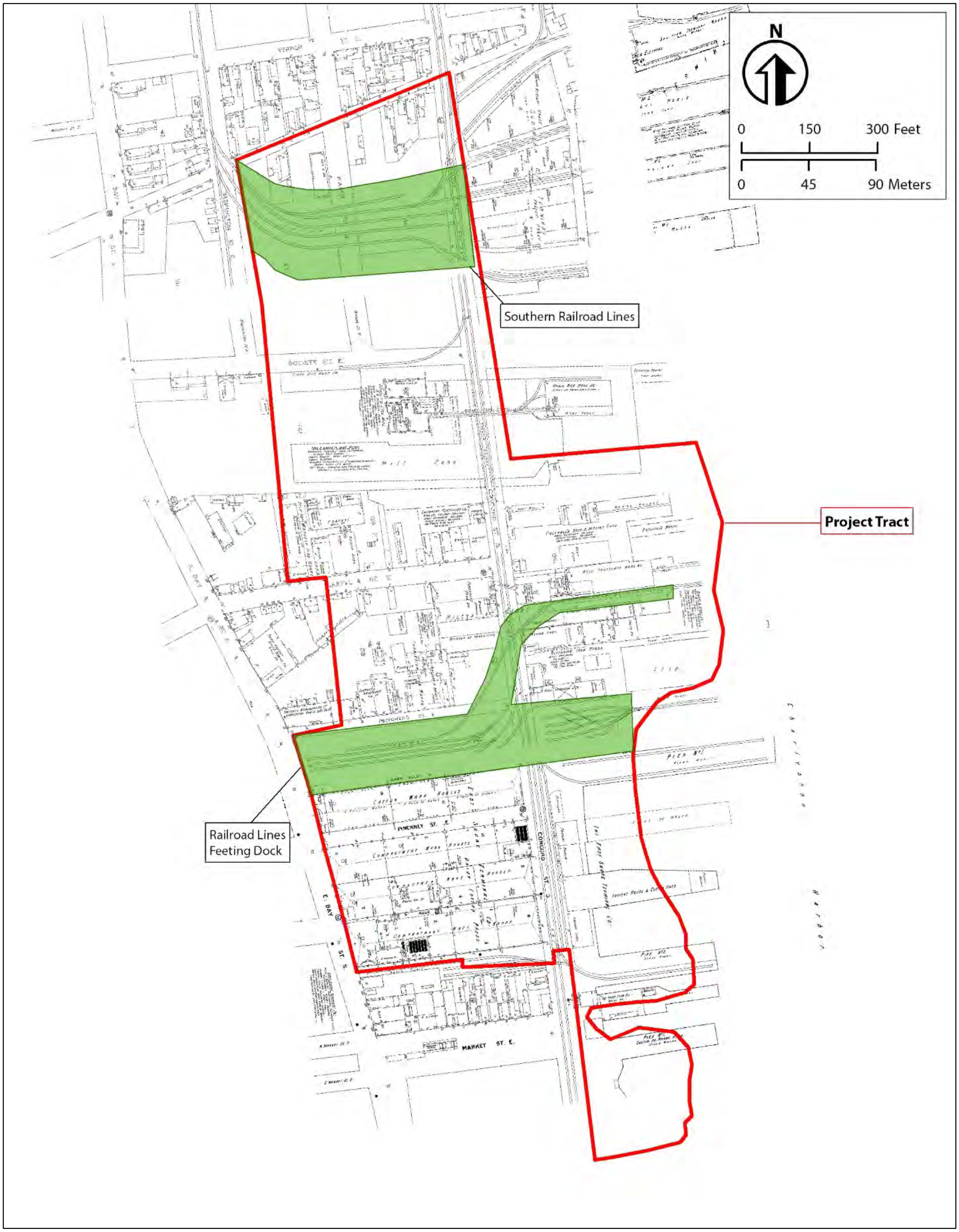

Figure 2.5 The location of the project tract on the 1902 Sanborn map of Charleston (Sanborn Fire Insurance Company of New York 1902).

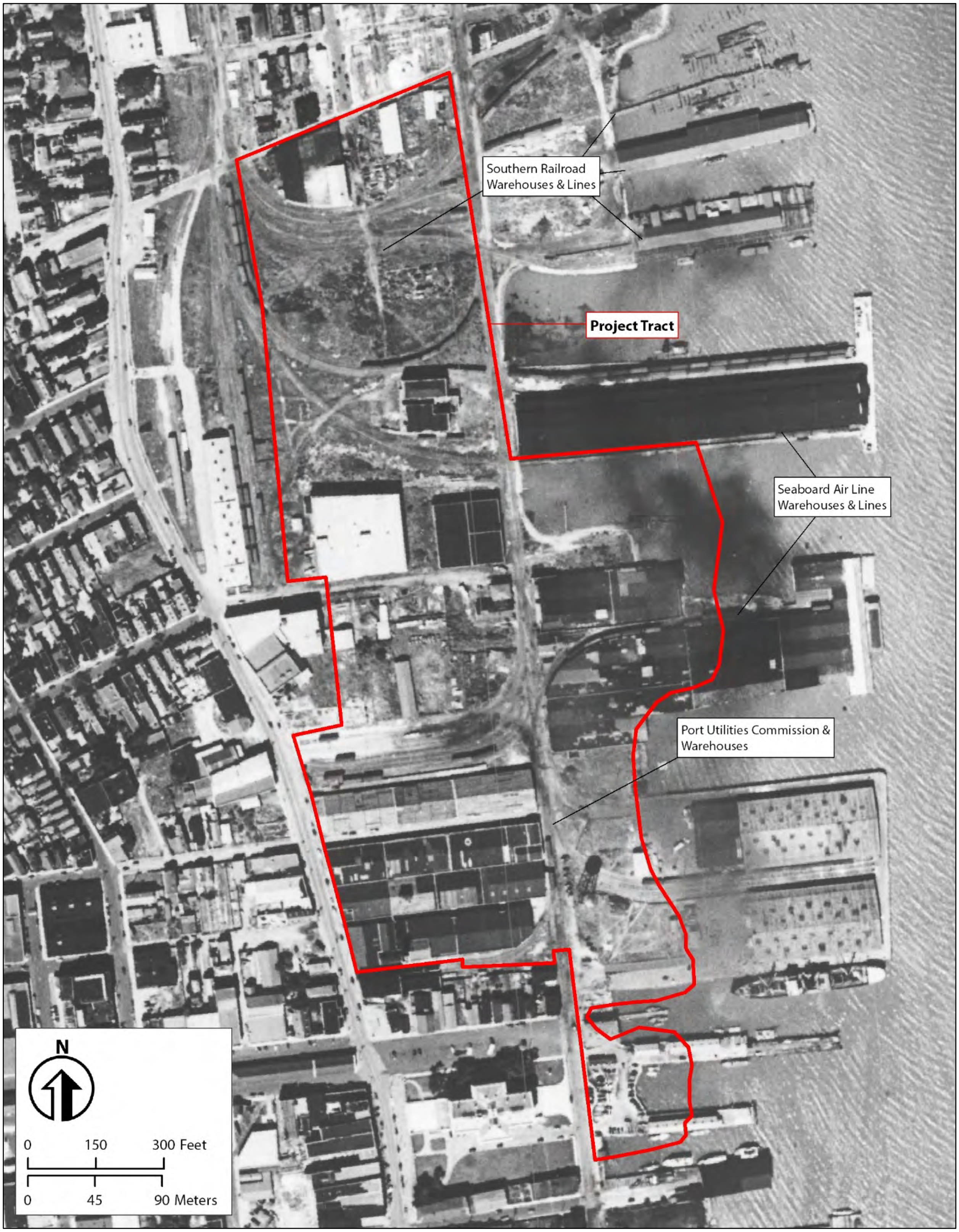

Figure 2.6 The project tract in 1939 (US Department of Agriculture 1939).

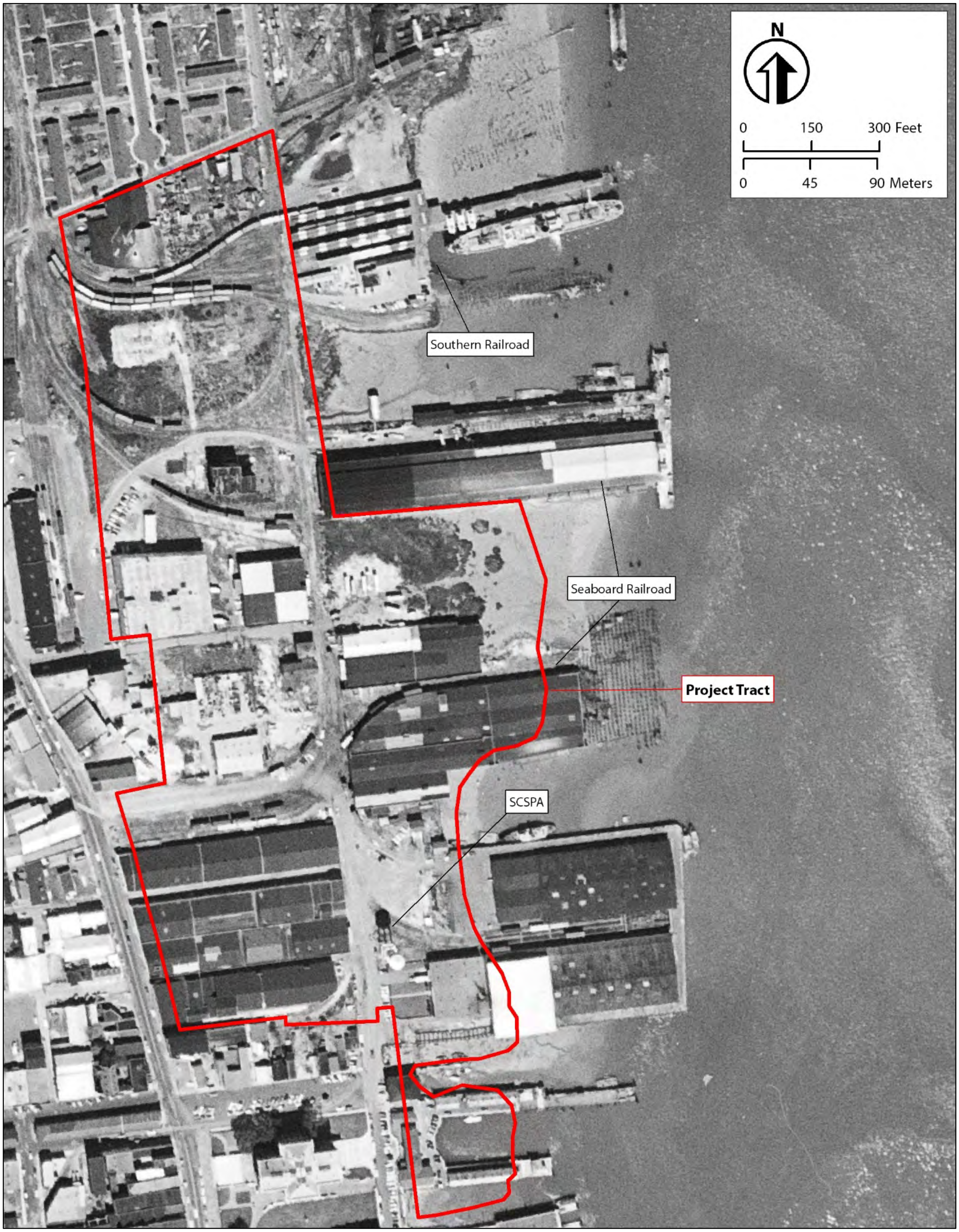

Figure 2.7 The project tract in 1957 (US Department of Agriculture 1957).

Figure 2.8 The project tract in 1973 (US Department of Agriculture 1973).

2.2 Previous Investigations

There have been three recent cultural resources investigations in the immediate project area, including the Union Pier Terminal Renovations project (Poplin 2019a), the IAAM project (Poplin 2019b), and the Waterfront Park Expansion project (Bailey 2017). These projects reflect the shift in land use along this section of the Charleston waterfront from a decidedly industrial and commercial character with limited public access to a much more tourism and recreational character focused on the public. The implications of this on the surrounding area, particularly the Charleston Old and Historic District, have been the focus of considerable debate. That debate is likely to continue for the foreseeable future. A summary of these previous studies and previously recorded historic districts and individual resources follows.

2.2.1 Union Pier Renovations

Brockington conducted a historical assessment of proposed renovations to the northern end of the Union Pier Terminal (UPT) and Building 322 along the waterfront portion of Union Pier for use as a cruise ship terminal (Poplin 2019a).

This assessment reviewed the potential effects of the undertaking on historic properties in the APE through the consideration of the defined aspects of integrity necessary for NRHP eligibility. We evaluated how the relocation of cruise operations to the northern end of UPT and the continuation of cruise operations on the southern end of UPT might alter aspects of integrity to such an extent that the NRHP eligibility of the nearby historic properties would be compromised. There are no historic properties within the USACE permit area, and we concluded that the proposed renovations will not affect any historic properties directly. With respect to potential indirect effects, we concluded that the proposed renovations and cruise operations at UPT will have no adverse effect on any historic properties in and around Charleston Harbor.

2.2.2 Gadsden's Wharf and the Future International African American Museum Site

The IAAM plans to construct an exhibit and research center at the foot of Inspection Street just north of the current project. Archaeological Site 38CH1587 covers the IAAM Site and has been determined eligible for the NRHP as an element of the Charleston Old and Historic District. This was the location of Gadsden's Wharf between 1770 and 1810. Gadsden's Wharf served as the entrepot for the majority of Africans brought to South Carolina to be sold into slavery during the last years of the Transatlantic African Slave Trade. Storehouses that stood on the wharf served as barracks for captives awaiting sale. The IAAM selected the proposed site due to its location on or near Gadsden's Wharf.

The IAAM plans to incorporate remnants of Gadsden's Wharf into the design and interpretive programs of the museum. Poplin 2019b encountered the remnants of the cribbing used to construct the eighteenth-century wharf, possible remnants of a storehouse that once stood on the wharf, and the foundations of Robb's or the East Point Rice Mill that stood on the wharf throughout much of the nineteenth century.

The archaeological deposits of these structures provide excellent connections between the past uses of Gadsden's Wharf and the modern cityscape including the IAAM. Unfortunately, most of the soils and fills in the IAAM Site are contaminated with various chemical residues related to past uses of the site and nearby industrial activities. Environmental specialists who are licensed to handle these kinds of materials need to conduct any excavations in the IAAM Site. Work at the IAAM Site is ongoing.

2.2.3 Waterfront Park Expansion

The City of Charleston and Leucadia Coast Properties LLC are expanding Waterfront Park to the south of the current project from Waterfront Park's current northern terminus at the pier north of and including the Fleet Landing Restaurant building (1942) and the former SPA headquarters building (1972). The project was outside of the Charleston Old and Historic District. Fleet Landing is eligible for the NRHP (see below). The SPA headquarters building was determined not eligible for the NRHP. Plans called for replacing the SPA building with a modern hotel and the redesign of the parking area for the restaurant to serve as a main vehicular approach to the future hotel. The SHPO and USACE determined that these changes will have No Adverse Effect on this historic property.

This tract has witnessed multiple episodes of filling, wharf construction, and modern development. The potential for significant, intact archaeological deposits to be present on the site was determined to be low, and subsequently, archaeological investigations on the tract were not required as part of the permit (Bailey and Philips 2017).

2.2.4 The Charleston Old and Historic District

The NRHP-listed and National Historic Landmark Charleston Old and Historic District occupies most of the Charleston peninsular south of U.S. Highway 17/Septima P. Clark Expressway, west of Interstate Highway (I-) 26, and south of Lee Street east of I-26. Notable exceptions along the east (Cooper River) side of the peninsula are the wharves and railroads of the Port of Charleston's Columbus Street Marine Container Terminal, the area between the South Carolina Aquarium and Laurens Street, and Union Pier Terminal. On the west side, the Medical University of South Carolina (MUSC) campus and the MUSC/Veterans' Administration/Roper St. Francis Hospitals areas, located roughly west of President Street, north of Calhoun Street, and west of Gadsden Street south of Calhoun, lie between the Charleston Old and Historic District and the Ashley River.

The historic district surrounds the Union Pier Terminal on the north, west, and south (see Figure 1.1); although it is separated by a few buildings and East Bay and Washington Streets to the west, Laurens Street to the north, and North Market and Concord to the south, the historic district is visible from much of the project tract. Current development north of Laurens Street includes several modern condominium projects and Concord Park where the Ansonborough Homes public housing stood until the mid-1990s. The historic district west of East Bay Street is largely residential between Laurens and Hassell Streets and residential and commercial between Hassell and North Market Streets. South of the Union Pier Terminal, the historic district includes commercial buildings along North and South Market Streets, the U.S. Customs House, and the Fleet Landing building as well as Waterfront Park.

The boundaries of the Charleston Old and Historic District were extended on several occasions to include most of the area north of Calhoun Street and east of East Bay Street, along with individual buildings or sites outside the original district boundaries and the many commercial buildings of the late nineteenth and early twentieth centuries that line King and Meeting Streets (Edmunds 1970; Edmonds 1988; Stockton 1977). The SHPO notes that buildings associated with commercial activities (including warehouses along the Cooper River waterfront), tourism (hotels, automobile service stations, etc.), and various other non-residential functions built during the first half of the twentieth century contribute to the NRHP eligibility of the historic district because of their role in making Charleston the city that it is today. The period of significance also was expanded from 1700 to 1899 to 1700 to 1941.

The Charleston Old and Historic District contains a collection of buildings (originally more than 650 and many more today) that reflect the eighteenth, nineteenth, and early twentieth-century development of the City of Charleston and the United States; 59 buildings within the Charleston Old and Historic District are listed on the NRHP. A 1974 inventory of the historic district identified 24 buildings with exceptional architectural merit, 82 buildings with excellent architectural merit, and 292 with significant architectural merit. Forty-six district buildings are listed in the HABS due to their historical significance or their outstanding representation of the architectural heritage of the United States. All contributing resources of the Charleston Old and Historic District have not been recorded as such; there has been no comprehensive survey of the district that identifies which buildings and structures within its boundaries actually contribute to its NRHP eligibility. The SHPO often makes individual Determinations of Effect (DOE) for structures as they come up for review for tax credit applications and/or individual NRHP eligibility. It is important to check in frequently with the SHPO about these DOEs because there can often be important information that has not yet been added to ArchSite.

The majority of the contributing buildings within the Charleston Old and Historic District are residences and public buildings from the eighteenth and nineteenth centuries. Late nineteenth and twentieth-century commercial, service, and industrial buildings were added when the historic district was expanded. The ability of visitors to see individual buildings and their relationship to neighboring buildings, as well as the relationship of these buildings to significant historic themes and events, is vital to the historical significance of the Charleston Old and Historic District and its eligibility for the NRHP.

The Charleston Old and Historic District is not a static representation of a single historical era; its elements convey associations with multiple historical periods and associated themes that reflect the history and development of the City of Charleston and the United States between 1700 and 1941 within a vibrant, living city. The historic district is an active and vital part of the City of Charleston. Its residents, workers, and visitors all conduct their daily routines within the mélange of historic settings that constitute the historic district.

Numerous intrusions, both modern and historical, exist within the district. Not every building contributes to the historic district. Some buildings were designed to mimic or reflect older architectural styles and complement the historically significant buildings as much as possible. Some of these intrusions detract from the historical feeling of past eras.

The Charleston Old and Historic District retains its integrity of location, design, setting, feeling, and association, with individual elements retaining their integrity of materials and workmanship. One of the aspects of the Charleston Historic District is the integration of contributing and non-contributing elements. There are large and small clusters of contributing elements intermingled with large and small clusters of non-contributing elements, all dating from one or more of the periods of development of the City. This diversity reflects the living nature and continued growth of the City of Charleston.

2.2.5 The U.S. Customs House

The U.S. Customs House stands at the corner of East Bay Street and South Market Street, adjacent to the project tract's southern boundary. This historic resource is visible from the southern end of the project APE (see Chapter 3.0 below).

The U.S. Government constructed this Roman-Corinthian-style building between 1853 and 1879. Since 1879, it served as the primary offices of the U.S. Customs Service (today Immigration and Customs Enforcement) in Charleston. "Both architecturally and historically, the United States Custom House in Charleston, South Carolina is an outstanding public building, even in a city which has one of the most complete historic districts in the country, and one which contains a multitude of architecturally significant structures. Its existence …. and its continual use as a custom house, completes the commercial history of one of the country's busiest early ports" (Beasley 1973). The building was restored in 1968. During its original construction, the builders encountered the remnants of the Craven Bastion, the northeast corner of the original walled City of Charles Towne.

The U.S. Customs House retains its integrity of location, design, materials, workmanship, and feeling. Its setting and association are degraded. Once the center of maritime commercial activities on the Cooper River waterfront, these activities now occur farther upriver. The abandonment and conversion of former wharves along the waterfront to the south of the U.S. Customs House also degrades its setting and its association. The U.S. Customs House is an individually listed NRHP property and a contributing resource to the Charleston Old and Historic District.

2.2.6 Fleet Landing Building

This historic property is immediately adjacent to the south of the project tract. Like the U.S. Customs House and the Charleston Historic District, the Fleet Landing building is visible from much of the southern portion of the project tract.

This building served as a clearinghouse for debarking U.S. Navy personnel in Charleston during World War II. After the war, the U.S. Navy discontinued use of the building, and in the 1960s, the Navy sold it to the SCSPA. Since 2004, the building has housed the Fleet Landing restaurant.

The building retains its exterior appearance and its original construction materials. It remains at the location where it served its historic purpose and retains its geographic relationships with the City of Charleston and Charleston Harbor. The U.S. Navy was a major contributor to the economic growth of the City of Charleston and its associated expansion during the first half of the twentieth century. The Fleet Landing building is one of the few highly visible and accessible remnants of U.S. Navy activities within the City of Charleston today. The Fleet Landing building currently retains its integrity of location, design, setting, materials, workmanship, and feeling. The building was determined eligible for the NRHP in 2004.

3.0 Field Reconnaissance

On May 5, 2020, Brockington visited the Union Pier Terminal property and met with Sean S. Johnson, OPS Team Leader/Yard Planner. The site was almost completely empty at the time of the site visit. The 69.2-acre Union Pier Terminal property currently contains multiple warehouse buildings that appear to date from at least the mid-twentieth century, a mid-century building fronting East Bay Street, the ca. 1970 cruise ship passenger terminal, large sections of paved open lots for vehicle traffic and operations that support the passenger cruise terminal at Union Pier, and the Bennett Mill façade. The 69.2-acre Union Pier Terminal property is fenced off with a high security presence, and it is inaccessible to the public.

3.1 Known Resources

3.1.1 Bennett Rice Mill Façade

The ruins of the once grand 1844 four-story, brick Bennett Rice Mill stand on the Union Pier Redevelopment project tract (on TMS Parcel 4580104005), outside of the NRHP-listed Charleston Old and Historic District boundary (see Figure 1.1). The west façade of the Bennett Rice Mill building stands between Washington Street and the former course of Concord Street. Today, it is within an open area used for the marshalling of vehicles associated with operations on the Union Pier Terminal property. The Bennett Rice Mill façade is currently visible from portions of the Charleston Old and Historic District (see Figures 3.1 through 3.3).

Governor Thomas Bennett, Jr. built the Bennett Rice Mill in 1844 on the Cooper River adjacent to his 1830 three-story, brick lumber mill. The massive, industrial rice mill building was designed with sophisticated elaborate Classical Revival design elements (see Figure 3.4). The steam-powered mill building was constructed of brick laid in common bond with four floors and a slate roof. A one-story brick boiler room building stood at the east elevation. Bennett's Rice Mill was on the wharf/pier that extended into/over the Charleston Harbor. The rice mill complex included several associated mill buildings on the west and east/river side of the mill, while a mill pond was located directly south of the building. A three-story brick rice warehouse with slate roof was located east of the mill on the Cooper River (see Figures 3.5 and 2.3).

Bennett's Mill was one of Charleston's three antebellum rice mills, in operation from 1845 through the early twentieth century. The mill operated throughout the Civil War and survived the great cyclone of 1885 and the devastating 1886 Charleston earthquake. The Bennett family closed the rice mill in the early twentieth century. By 1921, the rice mill was used as a storage warehouse, and the "clean rice warehouse" to the west of the mill and the "rough rice warehouse" east of the mill were no longer extant. Also, by 1921, a newly constructed Seaboard Air Line Railroad Warehouse building replaced the three-story brick rice warehouse building and Bennett's Wharf. Seaboard Air Line Railroad, the new owner of the mill building by the mid-1930s threatened to demolish the building due to high maintenances costs. By 1944, the rice mill building was used as a commercial warehouse.

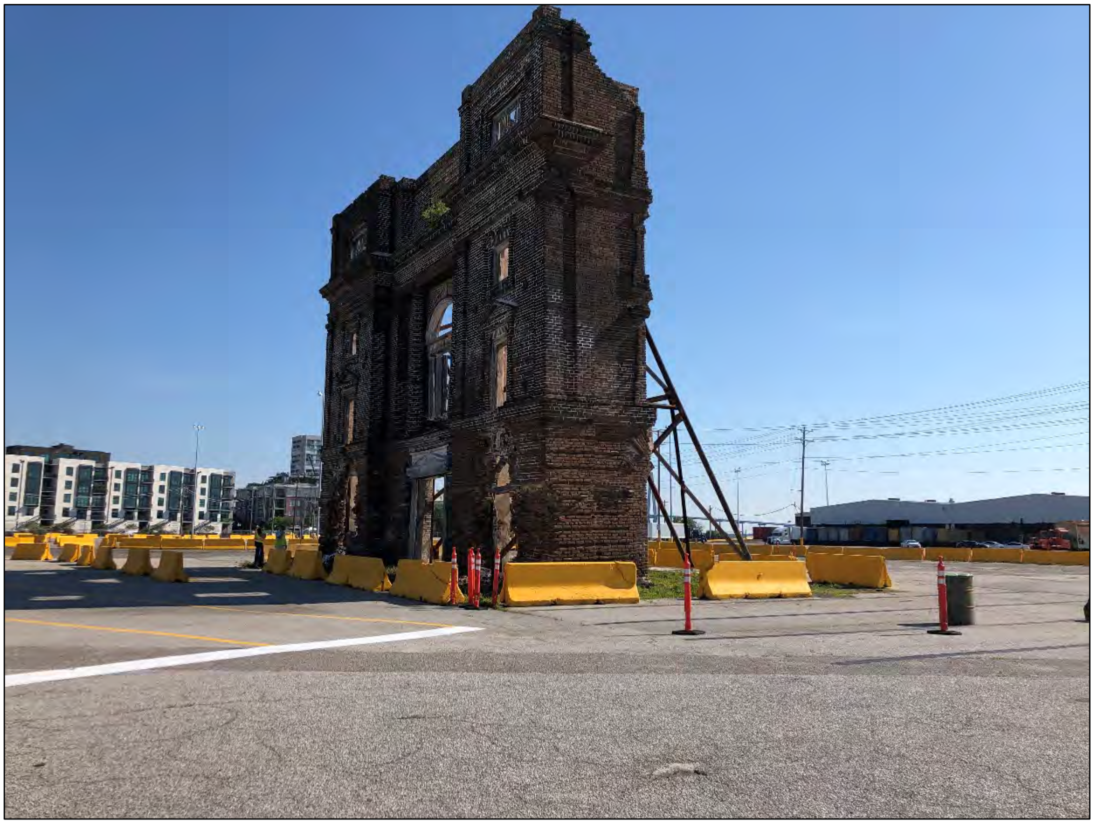

Figure 3.1 Bennett's Rice Mill facade, facing northeast.

Figure 3.2 Bennett's Rice Mill facade, facing northwest.

Figure 3.3 Bennett's Rice Mill facade, facing east from East Bay Street.

Figure 3.4 Bennett's Rice Mill, HABS photograph 1958, facing northeast.

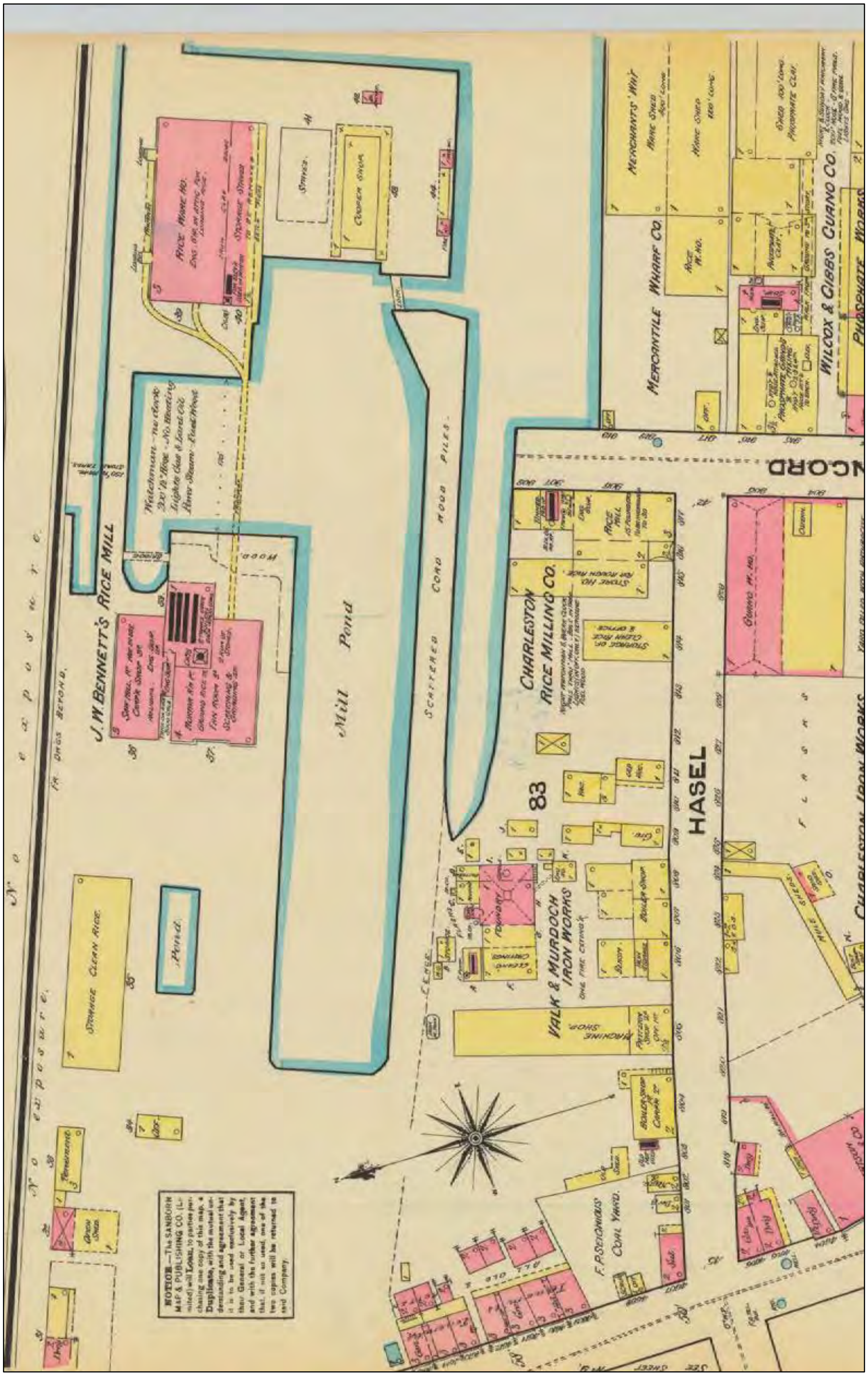

Figure 3.5 Bennett's Rice Mill complex on the 1884 Sanborn Fire Insurance Map.

In the early 1950s, the City of Charleston declared the building unsafe and required it to be torn down. The Preservation Society of Charleston (PSC), recognizing the architectural and historical significance of Bennett's Rice Mill, leased the vacant structure from Seaboard Air Line Railroad while it tried to raise funds needed to restore the building. In 1953, the three-story lumber mill building was demolished, and by 1955, the boiler room building was razed. In 1958, the PSC relinquished their five-year lease to the Seaboard Air Line Railroad. The Seaboard Air Line Railroad transferred ownership to the State Ports Authority that same year. The City requested that the vacant rice mill building be fireproofed; beams and timber from the interior were removed, while heavy steel pipes and beams were installed to brace the structure. The PSC, with the Historic Charleston Foundation, again tried to find funds for the restoration of the Bennett Rice Mill, but Hurricane Donna damaged the structure in 1960 and the City ordered all but the west façade to be demolished ("Bennett Rice Mill Façade, Saved (Again?)," Preservation Progress, PSC, Summer 2011).

The façade of the mill is all that remains of this once grand rice mill complex. The façade is only a ruin/remnant of the original 1844 building and lacks a level of integrity. Although the Bennett Mill Façade may not be eligible for listing according to National Register criteria standards, the vestige wall exemplifies the elaborate Classical Revival design, extensive workmanship, and original building materials evident in the iconic industrial mill building. Constructed by Gov. Thomas Bennett, Jr. as one of Charleston's three antebellum rice mills, this façade stands as an testament to the importance of rice cultivation for the region's growth and success leading up to and following the Civil War, as well as an emblem of the local historic preservation movement. It remains at the location where it served its historic purpose and retains its geographic relationships with the City of Charleston and the Charleston Harbor.

The Bennett Mill façade, if stabilized and accessible to the public, would be one of only two visible and accessible rice mill resources within the City of Charleston today. The Bennett Mill façade is not included within the Charleston Old and Historic District and has not been formerly assessed for the NRHP; however, the Bennett Rice Mill is a HABS-recorded resource. The Bennett Rice Mill HABS record includes a set of measured drawings from 1937, photographs from 1958, and a brief written historic narrative with building description.

During Phase I Survey of the project tract, an architectural historian will survey and record the façade on a South Carolina Statewide Survey of Historic Properties Survey Form and request a site number from the SHPO, along with their formal documentation effort. It is in our opinion that the façade should be stabilized and retained. If plans include removal of the façade, it is Brockington's recommendation that the resource be treated as an NRHP-eligible historic resource, and the owner should, in consultation with the SHPO, mitigate any adverse effects to the rice mill façade.

3.1.2 Charleston Old and Historic District

As previously discussed, the NRHP-listed Charleston Old and Historic District surrounds the SPA Union Pier property on the north, west, and south (see Figure 1.1). The 69.2-acre Union Pier property is separated from the historic district on the north by Laurens Street and modern infill condominium developments (see Figures 3.6 and 3.7); on the west by Washington and East Bay Streets and SPA-owned warehouse buildings, the Harris Teeter and Ansonborough Inn; and on the south by North Market Street, the U.S. Customs House, and the Fleet Landing building. Although it is separated by a few buildings and major streets, the historic district is visible from much of the project tract. Current development north of Laurens Street includes several modern condominium projects and Concord Park where the Ansonborough Homes public housing stood until the mid-1990s. The historic district west of East Bay Street is largely residential between Laurens and Hassell Streets and residential and commercial between Hassell and North Market Streets. South of the Union Pier Terminal, the historic district includes commercial buildings along North and South Market Streets, the U.S. Customs House, and Fleet Landing building along with Waterfront Park.

There is a concentration of historic resources and contributing resources to the Charleston Old and Historic District to the west and south of the project tract. The Harris Teeter (outside of the historic district) and Ansonborough Inn (inside the historic district) are at the intersection of East Bay and Hassell Streets (see Figure 3.8). These buildings are historic buildings (Harris Teeter is a sensitive adaptive reuse project that includes a portion of a historic railroad building) that help define the edge of the historic district. Figures 3.8 through 3.11 and 3.14 exhibit portions of the western boundary of the project tract.

The Charleston Old and Historic District is mostly residential west of East Bay Street. See Figures 3.11 through 3.13 for current views of the historic district along East Bay Street. Washington and East Bay Streets separate the project tract from the historic district. This mostly residential area of the historic district has a mixture of historic and modern residential and commercial buildings along East Bay Street.

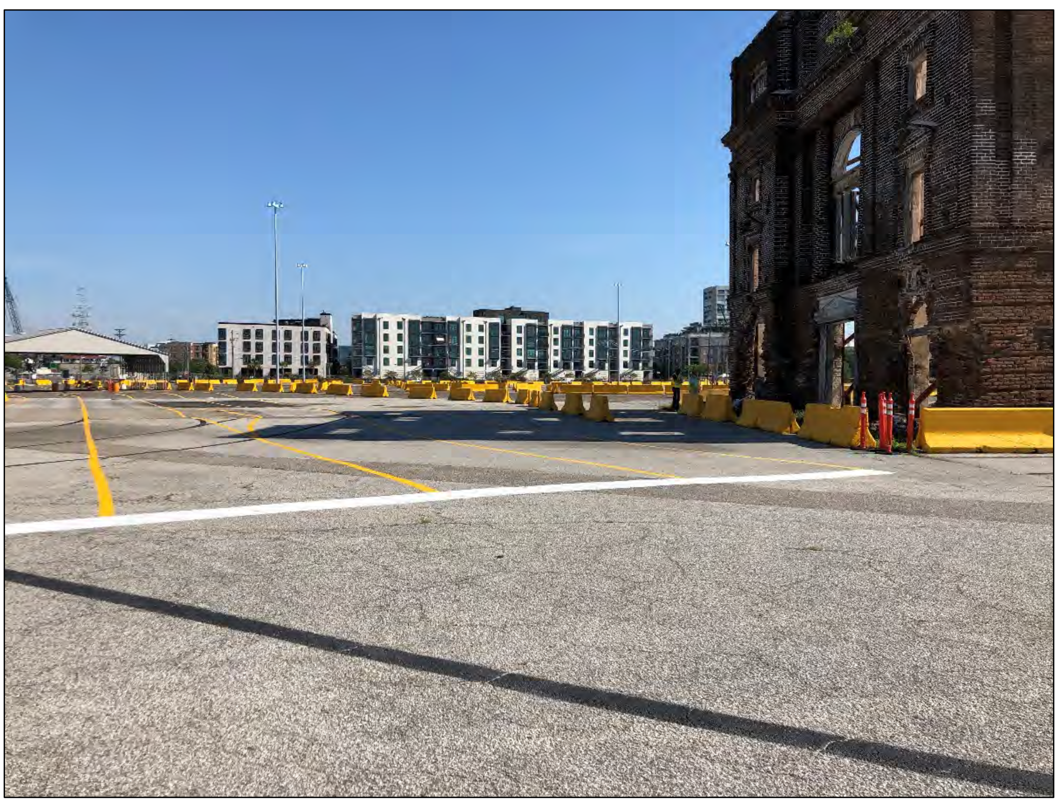

Figure 3.6 Modern residential development to the north of Union Pier property, facing north.

Figure 3.7 Modern residential development to the north of Union Pier property, facing northeast from Bennett Mill facade.

Figure 3.8 Ansonborough Inn and Harris Teeter at East Bay and Hassell Streets, facing northeast towards the project tract.

Figure 3.9 Ansonborough Inn, facing east towards the project tract at Washington Street

Figure 3.10 Ansonborough Inn parking lot/rear of Harris Teeter, facing northeast towards the project tract at Washington Street.

Figure 3.11 East Bay Street, facing southwest at Society Street.

Figure 3.12 East Bay Street, facing south between Laurens and Hassell Streets.

Figure 3.13 East Bay Street, facing south between Hassell and North Market Streets.

The U.S. Customs House (individually NRHP-listed as well as a contributing resource to the historic district) and the NRHP-eligible Fleet Landing building are within the viewshed from the southern portion of the project tract. These resources have been featured in several recent reports pertaining to projects in the vicinity of the Union Pier Terminal, including Waterfront Park Expansion (Bailey and Philips 2017) and Union Pier Renovations (Poplin 2019a). Currently the SPA Headquarters building is being demolished and replaced with a hotel. The southern half of the project tract may be more visible with its proximity to the historic district than the northern half.

3.2 Potential Resources

The proposed redevelopment project tract contains several warehouses that are likely 50 years of age or older, but it is unlikely that any of these are eligible for listing on the NRHP. Figure 3.14 presents examples of these potential resources.

The warehouses do not appear to be architecturally significant or have significant historical associations. Their use has also changed with the shift from cargo focused operations to cruise ship terminal operations. In our brief reconnaissance, we discovered that the brick building at 246 East Bay Street was leased to a company that made chemicals in the mid-twentieth century (see Figure 3.15).

Figure 3.14 Warehouses on the Union Pier project tract, facing southeast on East Bay Street, north of Pinckney Street.

Figure 3.15 246 East Bay Street, facing east towards project tract.

4.0 Summary and Recommendations

The Union Pier redevelopment project is located in a dynamic part of the city. This area has witnessed seemingly countless development and redevelopment projects over the past three hundred years as the connection of the city to the waterfront changes. Proposed redevelopment of this part of Union Pier fits well into this story and is in-keeping with a larger ongoing redevelopment of the area as we can see with projects like Waterfront Park and the IAAM project. While any large project in this area will certainly be highly scrutinized, as it should be, we recommend that a thoughtful, well-planned project can be done with No Adverse Effect to surrounding historic properties, including the Old and Historic District.

There are several structures on the property that have not been recorded. The Bennett Rice Mill façade should be recorded, and a Determination of Eligibility should be made by the SHPO. It is likely that this resource will be determined eligible, simply because it is so well known and visible. Regardless of its eligibility, the structure is iconic, and any future project will likely need to treat it accordingly. If the façade cannot be safely and practically incorporated into a new structure, we recommend that a plan be devised and implemented for it to be documented, removed, studied, and commemorated. Other structures on the property include several warehouses and a small brick building that appear to be at least 50 years old. These structures should be recorded and assessed, although they are likely to be determined not eligible for the NRHP.

We recommend a Phase 1 Survey to record the aboveground resources mentioned above. Research should be conducted about the function and history of the structures, not simply their architectural merit. The potential for significant archaeological deposits to be present is low; however, additional research should be conducted during the Phase 1 survey to gather more information about specific filling and previous redevelopment episodes within the project tract.

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1884-1902 Fire Insurance Maps of Charleston County, City of Charleston, South Carolina. A copy of the originals at the Charleston County Public Library, South Carolina Room. A copy was obtained online through the Charleston County Public Library webpage: www.ccpl.org [accessed April 2020].

Stockton, Robert P.

1977 NRHP nomination form for the extension of the Charleston Old and Historic District. On file at South Carolina Department of Archives and History, Columbia (http://www.nationalregister.sc.gov/charleston/S10817710004/S10817710004BI2.pdf)

United States Department of Agriculture

1939-1973 Aerial photographs of Charleston County, City of Charleston, South Carolina. Originals in the National Archives and Records Administration, Atlanta Office. Copies are available in the Thomas Cooper Library, University of South Carolina.

Appendix D: Letters of Coordination

CARTA

www.ridecarta.com
@ridecarta

Charleston Area Regional Transportation Authority

April 21, 2023

Ms. Barbara Melvin
President & CEO
South Carolina State Ports Authority
200 Ports Authority Drive
Mt. Pleasant, SC 29464

RE: Union Pier Coordination

Dear Ms. Melvin:

We are writing to express our coordination in regard to the planned unit development (PUD) application for the creation of a new neighborhood at Union Pier in downtown Charleston, and to commit to coordinating with the current owners of the property, the City of Charleston, and any future owners, to provide transit service to the site in the future.

As a local transit agency, we recognize the importance of providing access to public transportation for residents and visitors alike. We believe that the proposed mixed-use community will be a significant asset to downtown Charleston, offering new mobility options and an expanded street grid, and we are committed to working with the owners and future developers to ensure that the development is well-served by transit.

We believe that this development has the potential to be a model for resilient and livable communities in our region and we are excited about the potential benefits that it will bring. A reconnected Concord Street can offer better transit routes which serve our existing users. The redevelopment plan also offers potential space for robust transit stops that will serve future port-of-call cruise passengers and visitors to the cultural assets just north of Union Pier, such as the South Carolina Aquarium and the International African American Museum. By planning for future transit service at Union Pier, we can continue serving multiple communities and reducing dependence on automotive transportation. We look forward to continuing to work with the owners and future developers, as well as with the city officials, to ensure that the development is well-served by public transportation.

Thank you for your time and consideration. Please do not hesitate to contact us if you have any questions or require any additional information.

Sincerely,

Ronald E. Mitchum
Executive Director

Charleston Water System

PO Box B
Charleston, SC 29402
103 St. Philip Street (29403)

(843) 727-6800
www.charlestonwater.com

April 19, 2023

Barbara L. Melvin
President and CEO
South Carolina Ports Authority

Re: Union Pier Terminal Development

Dear Ms. Melvin:

Charleston Water System (CWS) is aware of the South Carolina Ports Authority's (SCPA) proposed redevelopment of the Union Pier Terminal into a mixed-use development located in the City of Charleston (City). We understand this is a large project that will require collaboration among the parties to address water and sewer service to the property. CWS is prepared to work with the SCPA, the City, or future developers (Parties) to identify and evaluate water and sewer utility improvements necessary to support development at the site, in accordance with established CWS policy.

CWS looks forward to collaborating with the Parties on this important project as additional information becomes available. If you have any questions of if I may be of further assistance, please do not hesitate to contact me at 843-727-6879.

Sincerely,

Russell Huggins

Russell L. Huggins, Jr., PE
Capital Projects Officers

cc: Mark Cline, PE – CWS CEO
Don Benjamin, PE – CWS Director of Engineering & Construction
Lydia Owens – CWS New Development Program Manager

Daniel O. Duggan, MBA
Senior Account Manager
2390 W. Aviation Ave
Charleston, SC 29406 Mail Code CH 61
Phone: (843) 834-1016

Dominion Energy

CHRIS MAGALDI, PE | Principal/ Regional Director
THOMAS & HUTTON
a 682 Johnnie Dodds Blvd.; Suite 100 | Mt. Pleasant, SC 29464

Re: Union Pier

December 13, 2022

Dear Chris:

I am pleased to inform you that Dominion Energy will be able to provide natural gas service to the above referenced parcel, however a short gas main extension will be required and there may be a cost. Gas service will be provided in accordance with Dominion Energy General Terms and Conditions, other documents on file with the South Carolina Public Service Commission, and the company's standard operating policies and procedures. In order to begin engineering work for the project, the following information will need to be provided:

1.) Detailed utility site plan (AutoCAD format preferred) showing water, sewer, and storm drainage as well as requested service point/transformer location.
2.) Additional drawings that indicate wetlands boundaries, tree survey with barricade plan and buffer zones (if required), as well as any existing or additional easements will also be needed.
3.) Gas load breakdown by type with riser diagrams and desired metering specifications.
4.) Signed copy of this letter acknowledging its receipt and responsibility for its contents and authorization to begin engineering work with the understanding that Dominion Energy intends to serve the referenced project.

Dominion Energy construction standards and specifications are available upon request. Please note that for multi-occupancy residential developments per SC Public Service Commission Regulation 103-327(A): *All service delivered to new multi-occupancy residential premises at which units of such premises are separately rented, leased or owned shall be delivered by an electric utility on the basis of individual meter measurement for each dwelling*. For more information or quesrtions, contact me by phone at (843-576-8931) or at Daniel.Duggn@DominionEnergy.com.

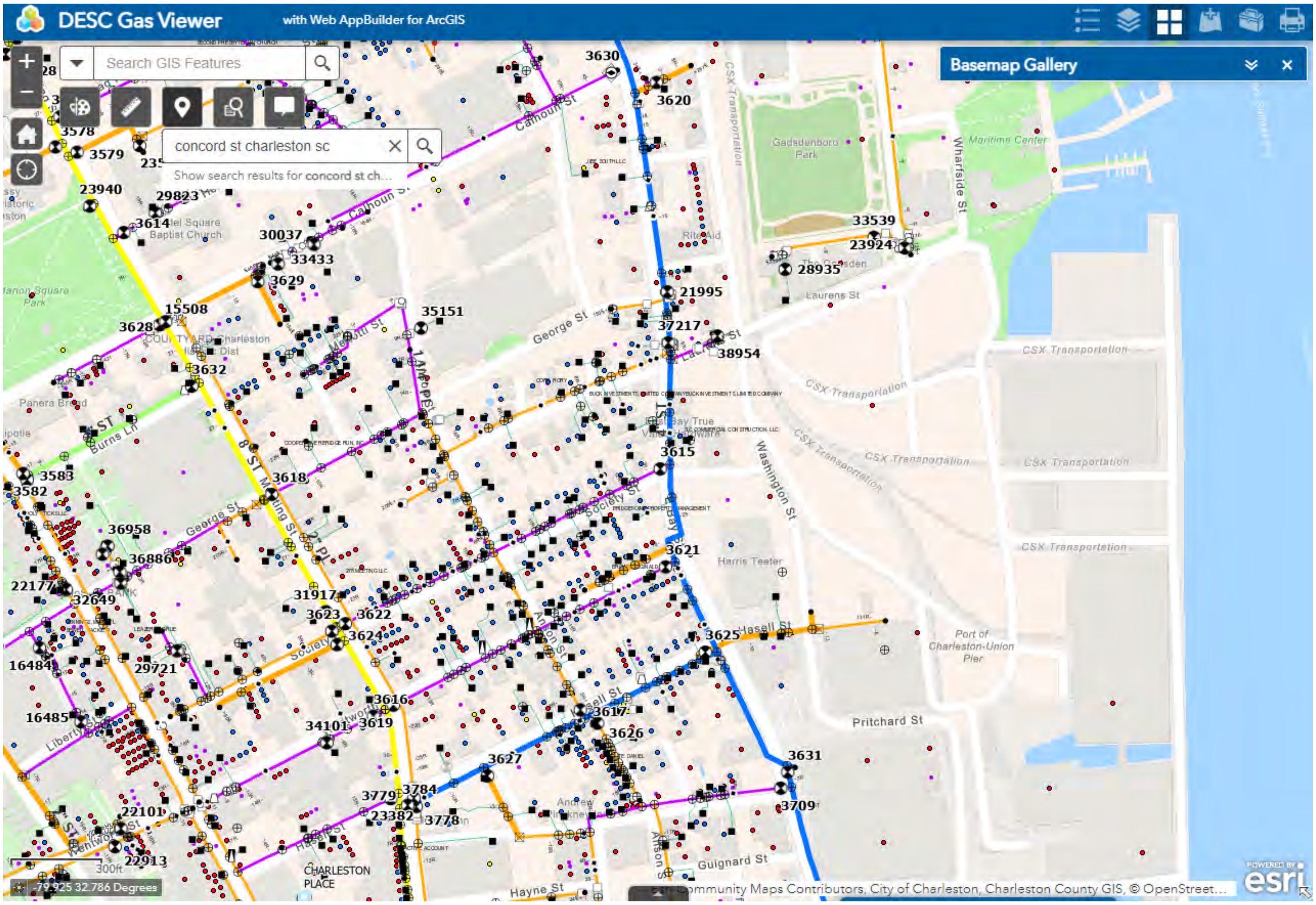
Sincerely,

DODuggan

Daniel O. Duggan
Senior Account Manager

AUTHORIZED SIGNATURE: Daniel O. Duggan DATE:12/13/2022

TITLE: Senior Account Manager PHONE: 843-834-1016



DESC Gas Viewer
with Web AppBuilder for ArcGIS
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Basemap Gallery
Calhoun St
George St
Meeting St
King St
Society St
Hasell St
Washington St
Wharfside St
Laurens St
Pritchard St
Guignard St
Hayne St
Burns Ln
Liberty St
Wentworth St
Anson St
Gadsdenboro Park
Maritime Center
CSX Transportation
Port of Charleston-Union Pier
Harris Teeter
Rite Aid
CHARLESTON PLACE
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22913
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Community Maps Contributors, City of Charleston, Charleston County GIS, © OpenStreet...
esri

SCDOT
South Carolina
Department of Transportation

Christy A. Hall, P.E.
Secretary of Transportation
803-737-0874 | 803-737-2038 Fax

April 21, 2023

Ms. Barbara Melvin
President & CEO, SC Ports Authority
200 Ports Authority Drive
Mount Pleasant, SC 29464

Dear President Melvin:

The South Carolina Department of Transportation (SCDOT) is aware of the South Carolina State Ports Authority's proposed redevelopment of the Union Pier Terminal into a mixed-used development located in the City of Charleston. As requested, we have reviewed the current Traffic Impact Analysis that has been prepared for the proposed development. Based upon an initial review of the current TIS, several improvements and upgrades may be needed, including along the East Bay and Washington Street corridors, as well as to other streets and intersections in the general vicinity of Union Pier.

SCDOT is prepared to work cooperatively with the South Carolina Ports Authority, the City of Charleston and future developers to review any and all Traffic Impact Analysis that are performed as well as evaluate transportation improvement design alternatives and associated infrastructure improvements that may be necessary to support the redevelopment of the site. Furthermore, SCDOT is willing to lend its support in seeking funding at the regional, state and federal levels to aid in implementing the necessary changes to the transportation network in a collaborative manner with the City and South Carolina Ports Authority.

I look forward to continuing to work with you and our other partners on this transformational project for the Charleston community.

Sincerely,

Christy A. Hall, P.E.
Secretary of Transportation

Post Office Box 191
955 Park Street, Room 309
Columbia, SC 29202-0191

www.scdot.org
An Equal Opportunity
Affirmative Action Employer

April 24, 2023

South Carolina State Ports Authority
Attn: Barbara Melvin
200 Ports Authority Dr
Mt. Pleasant, SC 29464

Subject: Union Pier Project; 64 Approx Acres
Various TMS #'s

Operations Division

Donald R. Kennedy, Sr.
Superintendent of Schools

Jeffrey Borowy, P.E.
Chief Operating Officer

Dear Ms. Melvin:

Please accept this letter as "Proof of Coordination" for the proposed Union Pier Project in the downtown Charleston area consisting of approximately sixteen hundred multi-family units.

To determine an estimate of student yield that any development may create, a statistical formula is applied at the elementary, middle, and high school levels based on the type and number of units to be built.

On the basis of the information supplied to us, the three main schools that fall within the attendance zone where the development will take place are listed below and are subject to zoning modification.

- Memminger Elementary
- Simmons Pinckney Middle
- Burke High

From a capacity standpoint, we anticipate little impact to enrollment for Simmons Pinckney Middle and Burke High. However, Memminger Elementary will be significantly impacted.

Please contact me at (843) 566-1995 if you have any questions and/or concerns.

Sincerely,

Angela Barnette, M.Ed.
Director of Planning & Real Estate

COMCAST
BUSINESS

Comcast Business
2925 Courtyards Drive Norcross GA 30071

J. Michael Mansanger
Lowe
8 North Market Street
Charleston, SC 29401

RE: Will Serve request for availability of Comcast communication services
Property Address: East Bay St & Concord St,
Date of Issue: 12/16/20

Attention J Michael Mansanger,

In response to your request for service, we have determined that based on our initial investigation, Comcast Cable Communication Management LLC has the ability to construct and install certain wires, cables and other equipment over, under, across and along the property located at
TMS #: 4590000009, 4580101007, 4580104024, 4580104005, 4580104014, 015 & 016

A preliminary plan, if available, may be provided with this "Will Serve," letter. Notwithstanding the determination that Comcast may provide services at the Property, this letter does not represent any binding agreement for service. Additionally, this letter is non-transferrable and expires one hundred and eighty (180) days from issue date.

If you have any questions or need more information, feel free to contact us.

By: DocuSigned by: Paula Bielicki
A00577F067DD460...

Name: Paula Bielicki

Title: Market Development Manager

CITY OF CHARLESTON	)))))	UNION PIER PLANNED UNIT DEVELOPMENT (PUD) APPLICATION LIMITED AGENT AUTHORIZATION FORM

I/we, Dominion Energy South Carolina, Inc., f/k/a South Carolina Electric & Gas Company, Inc., as the property owner(s) of the real property described as follows, Charleston County TMS Nos. 458-01-04-006 and 458-01-04-025, located within the City of Charleston, South Carolina, does hereby authorize THE SOUTH CAROLINA STATE PORTS AUTHORITY ("PORT AUTHORITY"), to act as its limited agent, to execute any petitions or other documents necessary to affect the application approval requested and more specifically described as follows, THE UNION PIER PLANNED UNIT DEVELOPMENT APPLICATION AND REZONING PROCESS ("APPLICATION'), submitted in accordance with the Zoning Ordinance of the City of Charleston, Article 2, Part 7 Sections 54-250, et seq., and to appear on itsbehalf before any administrative or legislative body in the City considering this Application, and to act in all respects as its agent in matters pertaining to the Application.

This LIMITED AGENCY is revocable at any time, and is further being provided based on the representation from the PORT AUTHORITY that the Application, and ultimate approval of THE UNION PIER PLANNED UNIT DEVELOPMENT shall not impact the use of the real property by Dominion Energy South Carolina, Inc.

[SIGNATURE BLOCK FOLLOWS]

PROPERTY OWNER:

DOMINION ENERGY SOUTH CAROLINA, INC., F/K/A SOUTH CAROLINA ELECTRIC & GAS COMPANY, INC

By: s/ ______________________

Name: M. Shaun Randall

Title: Authorized Representative

SWORN TO AND SUBSCRIBED BEFORE ME,
THIS 9th DAY OF FEBRUARY, 2023.

Kelly S. Elkins
Notary Public for South Carolina

My Commission Expires: May 5, 2031

KELLY S. ELKINS
MY COMM. EXPIRES
NOTARY
PUBLIC
05/05/2031
STATE OF SOUTH CAROLINA

Daniel F. Kassis, P.E.
General Manager
New Business & Customer Solutions
Dominion Energy South Carolina
2392 W Aviation Avenue, North Charleston,
SC 29406

Dominion Energy
Actions Speak Louder

April 24, 2023

South Carolina Ports Authority
200 Ports Authority Drive
Mount Pleasant, SC 29464
Ms. Barbara Melvin
President and Chief Executive Officer

Re: Union Pier Terminal Redevelopment - Letter of Availability

Dear Ms. Melvin:

Dominion Energy South Carolina will be able to provide electric and gas service to the above referenced project subject to the conditions noted below. Electric and gas service will be provided in accordance with DESC's General Terms and Conditions, other documents on file with the South Carolina Public Service Commission, and the company's standard operating policies and procedures. Any associated customer contribution will be determined when equipment loads and projected revenues are analyzed. In order to begin detailed engineering work for the project, the following information will need to be provided:

- A final detailed utility site plan (AutoCAD format preferred) showing water, sewer, and storm drainage as well as requested service point/transformer location
- Additional drawings that indicate wetlands boundaries, tree survey with barricade plan and buffer zones (if required), as well as any existing or additional easements will also be needed
- Electric load breakdown by type with riser diagrams
- Gas load and delivery pressure
- All available information related to site conditions, including any environmental reports, so that DESC can determine what additional expenses are required to work on the site based on the condition of the soil
- Signed copy of this letter acknowledging its receipt and responsibility for its contents and authorization to begin engineering work with the understanding that DESC intends to serve the referenced project

DESC's construction standards and specifications are available at:
https://www.dominionenergy.com/south-carolina/start-stop-service/new-construction

For more information or questions, please contact me by phone at (843) 576-8940 or at daniel.kassis@dominionenergy.com.

It should be noted that there are a couple of important circumstances that will require further resolution in conjunction with a final detailed site plan. The location of this redevelopment is in an area where the expansion of transmission, substation and distribution electric utility infrastructure will be needed to serve the high-density load that has been presented in the current public plans. Without land or parcels acquired in advance of construction to expand substation capacity south of Laurens Street, electric utility load growth will outpace system capacity to meet the demand of the project. The current conceptual plan with the maximum vertical construction should be planned in a way that closely involves our electrical designers.

Sincerely,

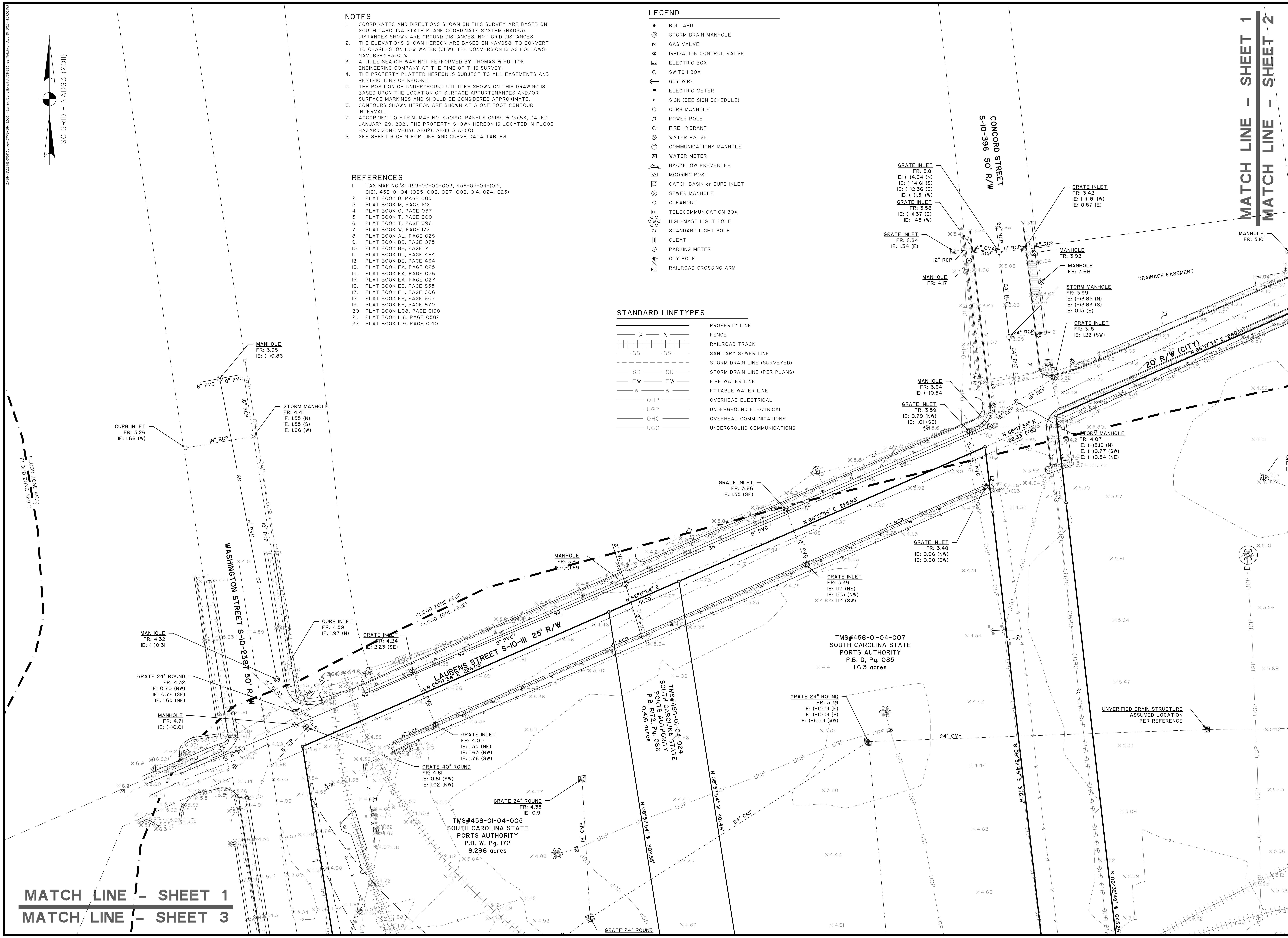
Daniel F Kassis

Daniel F. Kassis, P.E
General Manager – New Business & Customer Solutions
Dominion Energy South Carolina

AUTHORIZED SIGNATURE: ______________________ DATE: __________

TITLE: ____________________________________ PHONE: __________

Appendix E:
Survey Drawings



NOTES

1. COORDINATES AND DIRECTIONS SHOWN ON THIS SURVEY ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD83). DISTANCES SHOWN ARE GROUND DISTANCES, NOT GRID DISTANCES.
2. THE ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88. TO CONVERT TO CHARLESTON LOW WATER (CLW). THE CONVERSION IS AS FOLLOWS: NAVD88+3.63=CLW
3. A TITLE SEARCH WAS NOT PERFORMED BY THOMAS & HUTTON ENGINEERING COMPANY AT THE TIME OF THIS SURVEY.
4. THE PROPERTY PLATTED HEREON IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
5. THE POSITION OF UNDERGROUND UTILITIES SHOWN ON THIS DRAWING IS BASED UPON THE LOCATION OF SURFACE APPURTENANCES AND/OR SURFACE MARKINGS AND SHOULD BE CONSIDERED APPROXIMATE.
6. CONTOURS SHOWN HEREON ARE SHOWN AT A ONE FOOT CONTOUR INTERVAL.
7. ACCORDING TO F.I.R.M. MAP NO. 45019C, PANELS 0516K & 0518K, DATED JANUARY 29, 2021, THE PROPERTY SHOWN HEREON IS LOCATED IN FLOOD HAZARD ZONE VE(15), AE(12), AE(11) & AE(10)
8. SEE SHEET 9 OF 9 FOR LINE AND CURVE DATA TABLES.

REFERENCES

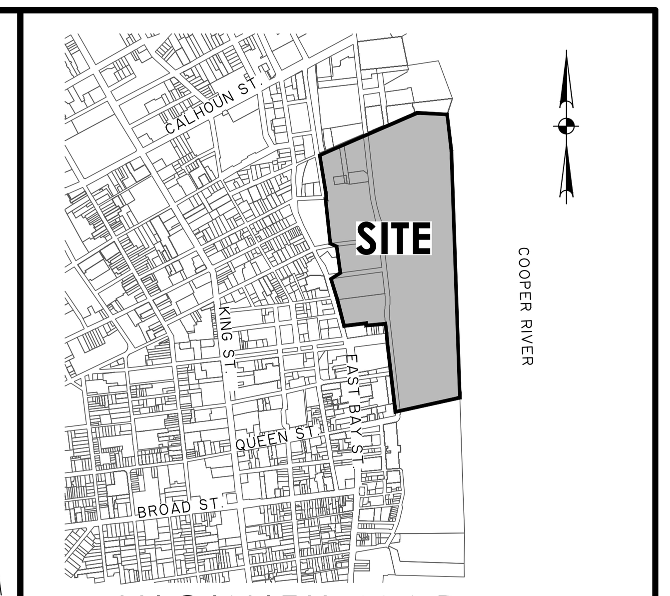
1. TAX MAP NO.'S: 459-00-00-009, 458-05-04-(015, 016), 458-01-04-(005, 006, 007, 009, 014, 024, 025)
2. PLAT BOOK D, PAGE 085
3. PLAT BOOK M, PAGE 102
4. PLAT BOOK O, PAGE 037
5. PLAT BOOK T, PAGE 009
6. PLAT BOOK T, PAGE 096
7. PLAT BOOK W, PAGE 172
8. PLAT BOOK AL, PAGE 025
9. PLAT BOOK BB, PAGE 075
10. PLAT BOOK BH, PAGE 141
11. PLAT BOOK DC, PAGE 464
12. PLAT BOOK DE, PAGE 464
13. PLAT BOOK EA, PAGE 025
14. PLAT BOOK EA, PAGE 026
15. PLAT BOOK EA, PAGE 027
16. PLAT BOOK ED, PAGE 855
17. PLAT BOOK EH, PAGE 806
18. PLAT BOOK EH, PAGE 807
19. PLAT BOOK EH, PAGE 870
20. PLAT BOOK L08, PAGE 0198
21. PLAT BOOK L16, PAGE 0582
22. PLAT BOOK L19, PAGE 0140

LEGEND

- BOLLARD
- STORM DRAIN MANHOLE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC BOX
- SWITCH BOX
- GUY WIRE
- ELECTRIC METER
- SIGN (SEE SIGN SCHEDULE)
- CURB MANHOLE
- POWER POLE
- FIRE HYDRANT
- WATER VALVE
- COMMUNICATIONS MANHOLE
- WATER METER
- BACKFLOW PREVENTER
- MOORING POST
- CATCH BASIN or CURB INLET
- SEWER MANHOLE
- CLEANOUT
- TELECOMMUNICATION BOX
- HIGH-MAST LIGHT POLE
- STANDARD LIGHT POLE
- CLEAT
- PARKING METER
- GUY POLE
- RAILROAD CROSSING ARM

STANDARD LINETYPES

	PROPERTY LINE
X X	FENCE
	RAILROAD TRACK
SS SS	SANITARY SEWER LINE
	STORM DRAIN LINE (SURVEYED)
SD SD	STORM DRAIN LINE (PER PLANS)
FW FW	FIRE WATER LINE
W W	POTABLE WATER LINE
OHP	OVERHEAD ELECTRICAL
UGP	UNDERGROUND ELECTRICAL
OHC	OVERHEAD COMMUNICATIONS
UGC	UNDERGROUND COMMUNICATIONS



VICINITY MAP not to scale

SOUTH CAROLINA
THOMAS & HUTTON ENGINEERING CO.
No. C00285
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
PROFESSIONAL LAND SURVEYOR
No. 10292
F. ELLIOTTE QUINN III

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

F. ELLIOTTE QUINN III
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 10292

EXISTING CONDITIONS SURVEY OF
VARIOUS PARCELS OWNED BY SOUTH CAROLINA STATE PORTS AUTHORITY

CITY OF CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA

prepared for
LOWE ENTERPRISES

No.	Revision	By	Date
1	Converted to NAD83 & NAVD88	cww	8/22/22

THOMAS & HUTTON
682 Johnnie Dodds Boulevard • Suite 100
Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

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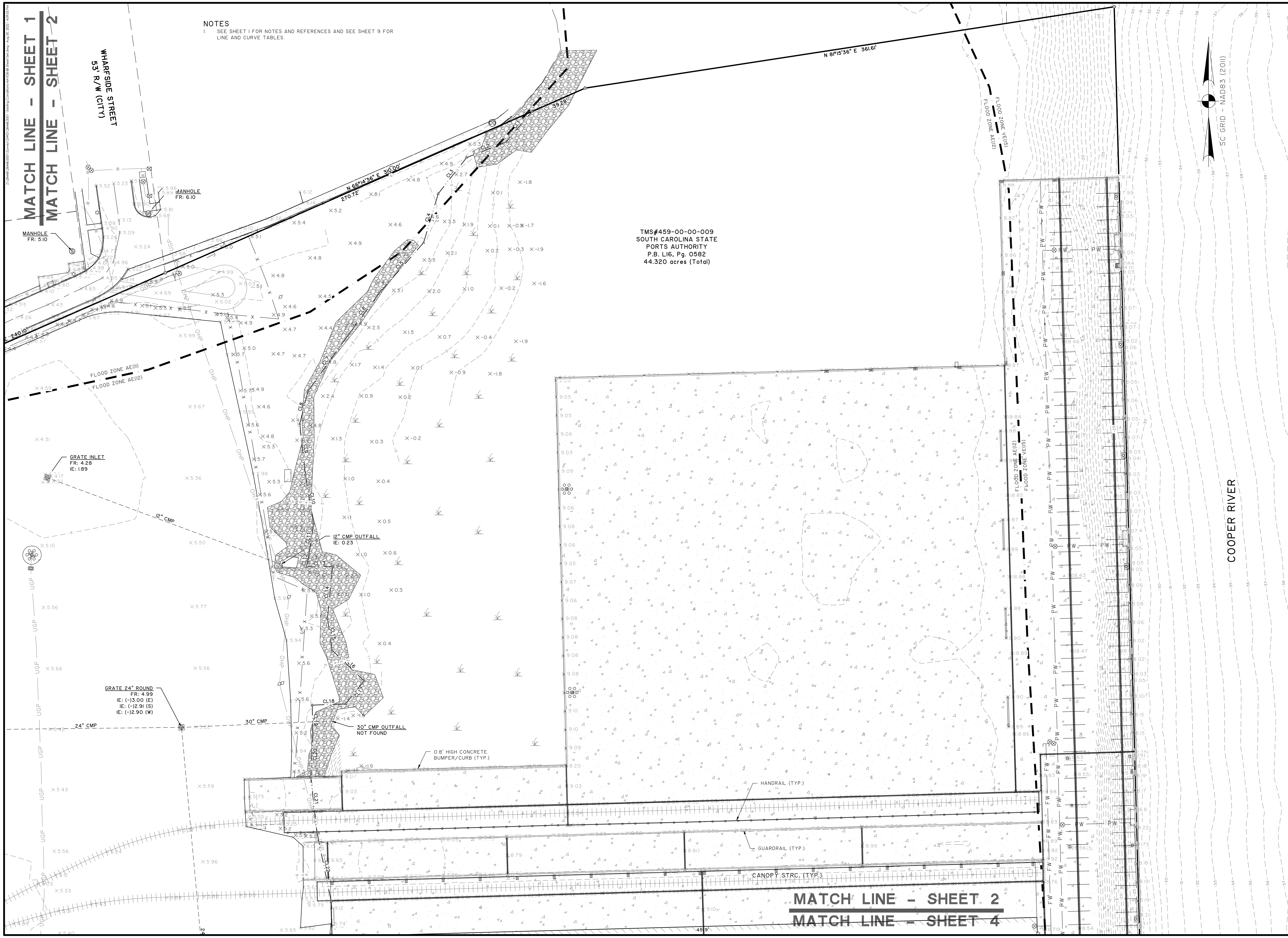
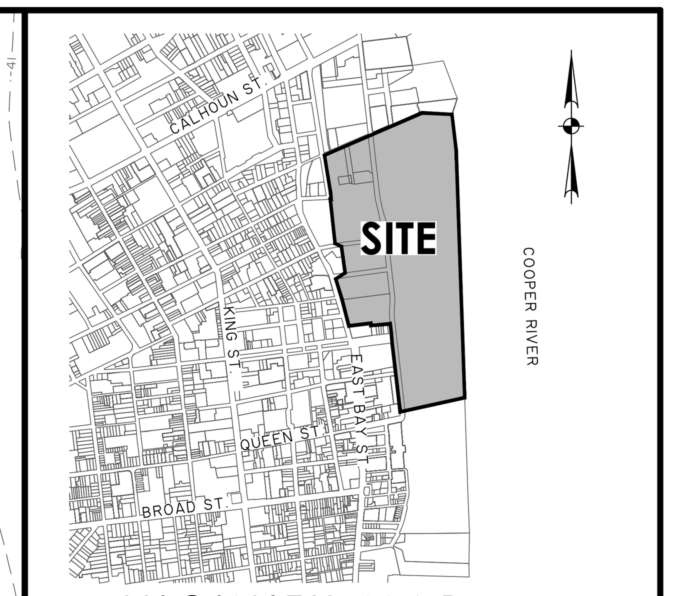
1 INCH = 30 FEET

plat	drawn	reviewed	field	crew
05/28/2020	ppg/cww	feq	05/2020	mb/tb/jg

job 28448.0000





VICINITY MAP not to scale

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EXISTING CONDITIONS
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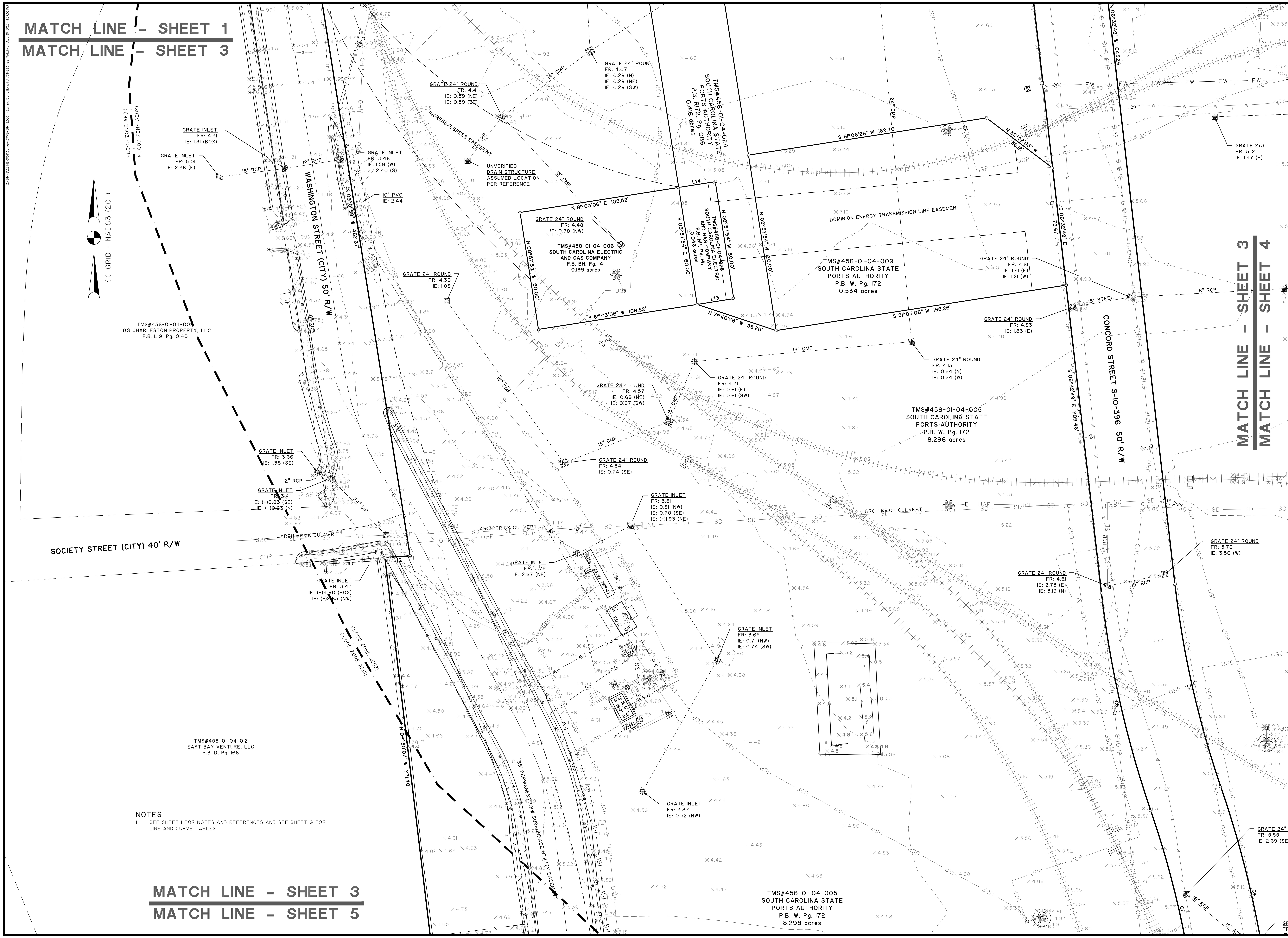
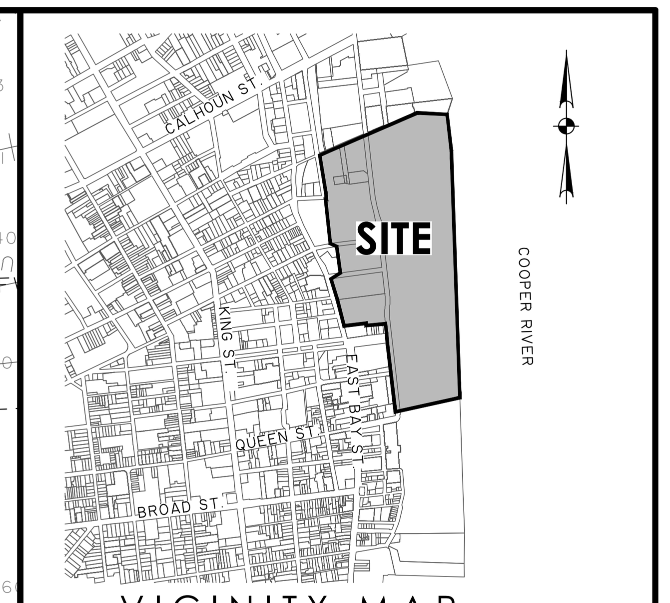


NOTES

1. SEE SHEET 1 FOR NOTES AND REFERENCES AND SEE SHEET 9 FOR LINE AND CURVE TABLES.



VICINITY MAP not to scale

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F. ELLIOTTE QUINN III
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 10292

EXISTING CONDITIONS SURVEY OF

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CHARLESTON COUNTY, SOUTH CAROLINA

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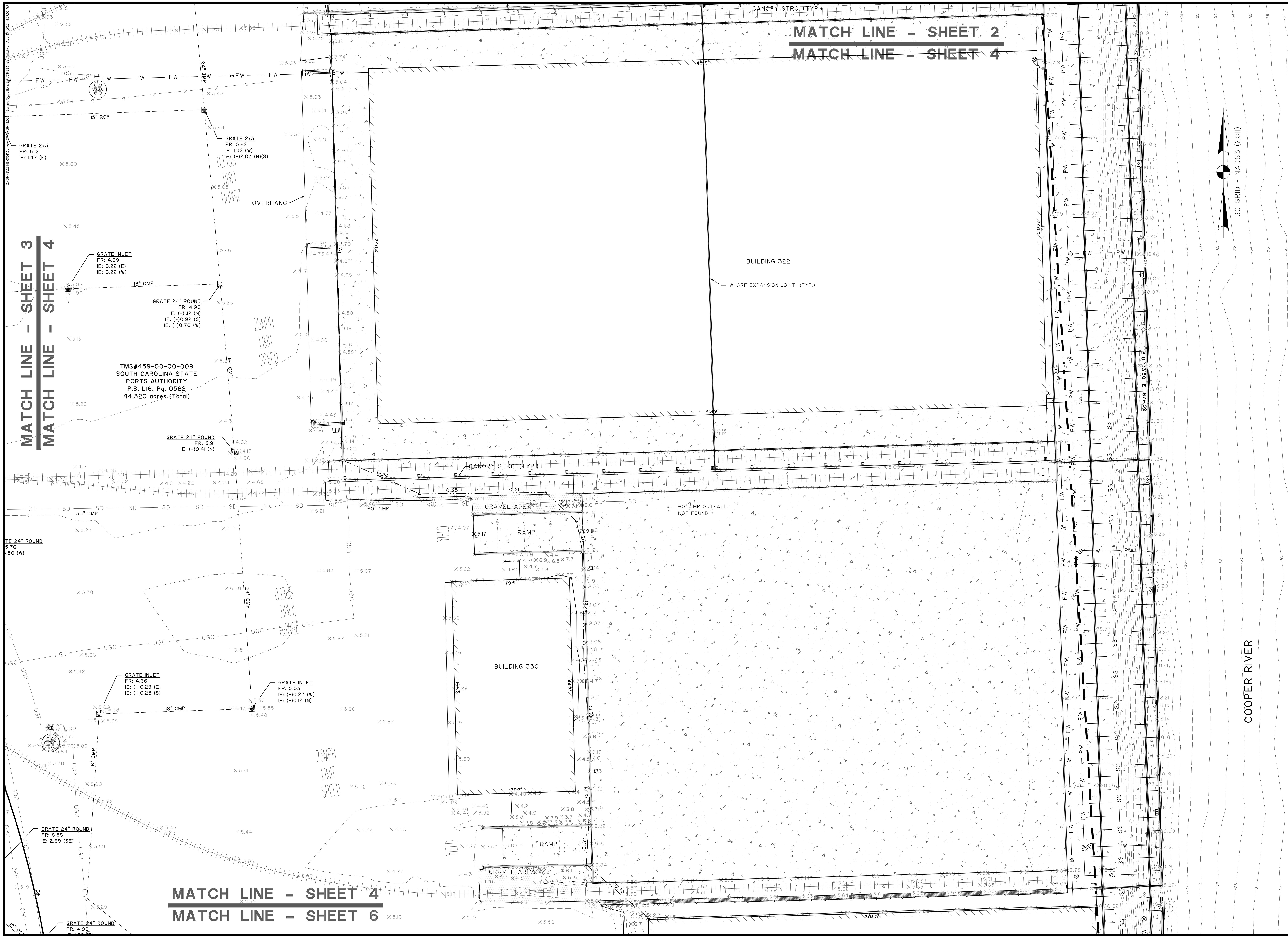

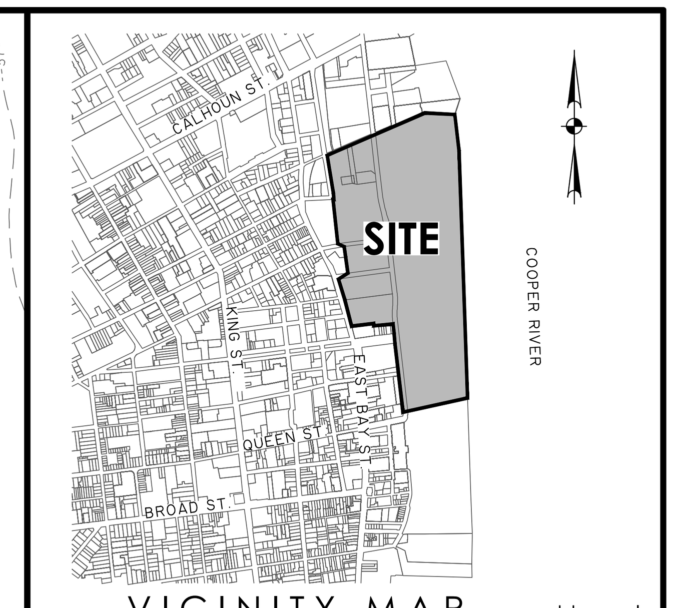

VICINITY MAP not to scale

NOTES

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SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 10292 F. ELLIOTTE QUINN III

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F. ELLIOTTE QUINN III
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 10292

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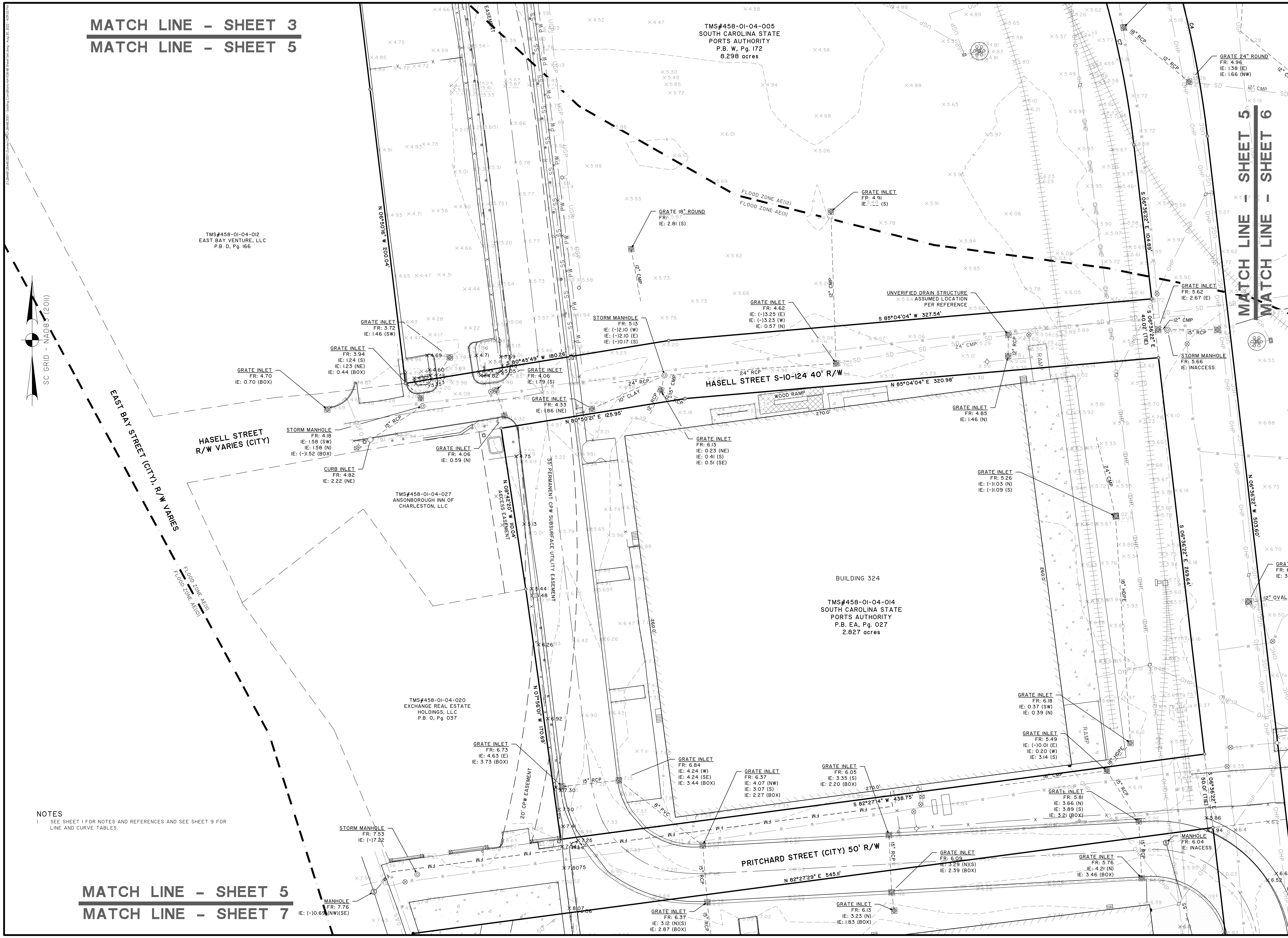

NOTES
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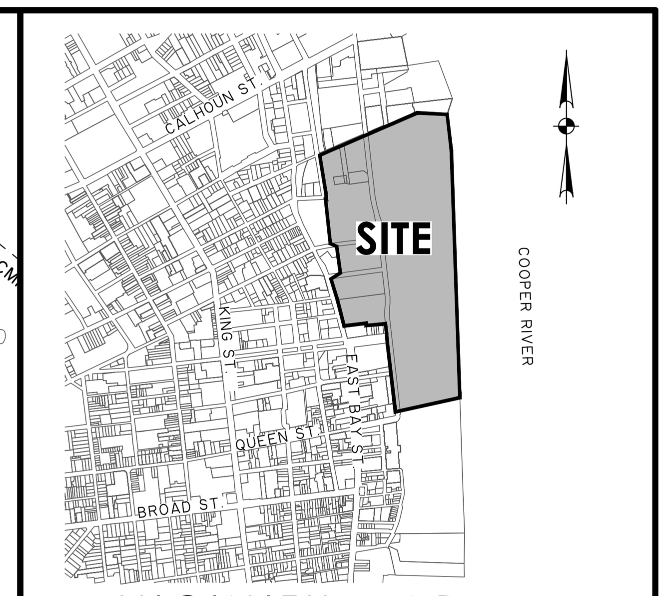


VICINITY MAP not to scale

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 10292 F. ELLIOTTE QUINN III

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

F. ELLIOTTE QUINN III
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 10292

EXISTING CONDITIONS SURVEY OF VARIOUS PARCELS OWNED BY SOUTH CAROLINA STATE PORTS AUTHORITY

CITY OF CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA

prepared for
LOWE ENTERPRISES

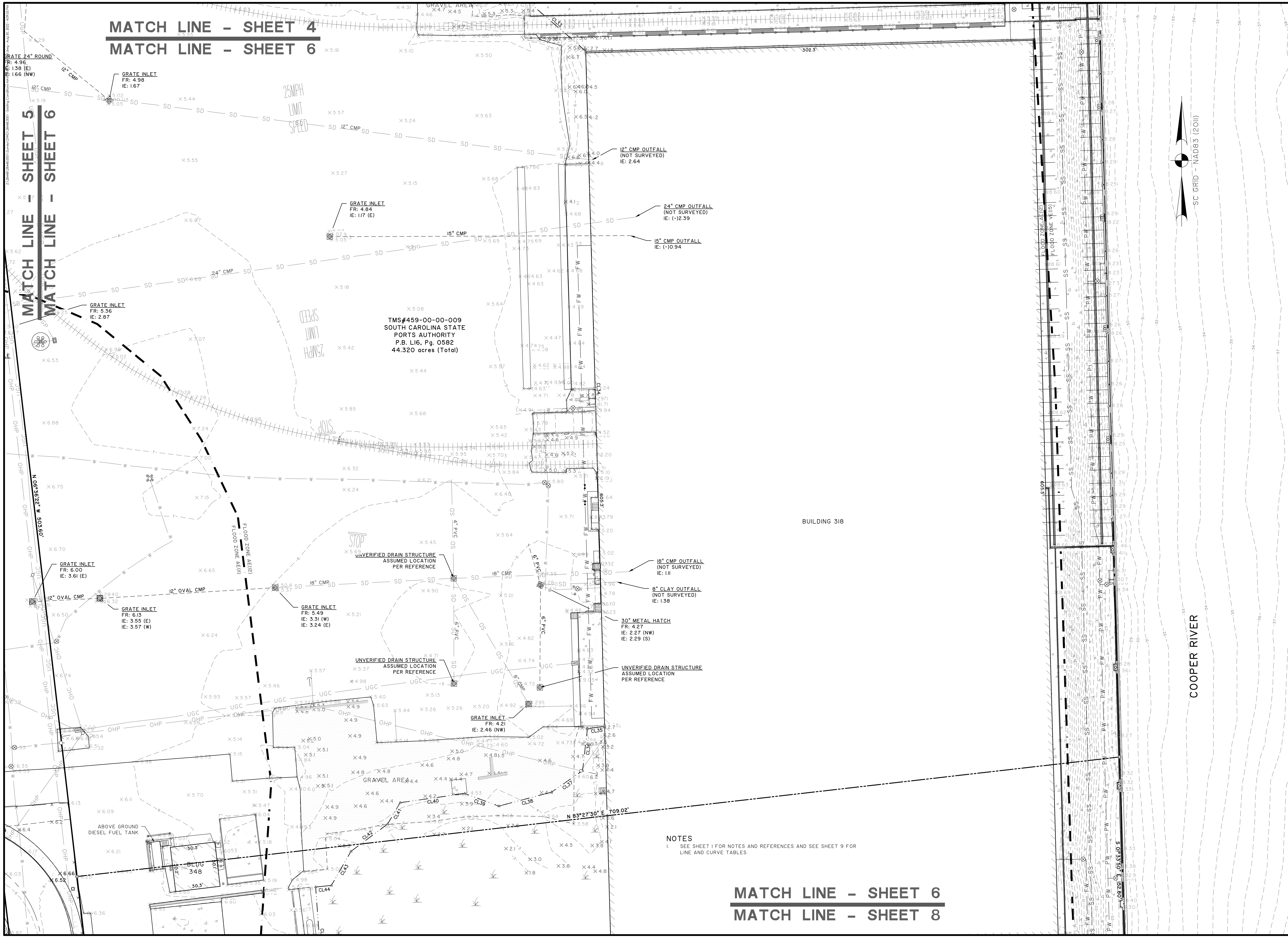
No.	Revision	By	Date
1	Converted to NAD83 & NAVD88	cww	8/22/22

THOMAS & HUTTON
682 Johnnie Dodds Boulevard • Suite 100
Mt. Pleasant, SC 29464 • 843.849.0200
www.thomasandhutton.com

30 0 30 60
1 INCH = 30 FEET

plat	drawn	reviewed	field	crew
05/28/2020	ppg/cww	feq	05/2020	mb/tb/jg

job 28448.0000



NOTES

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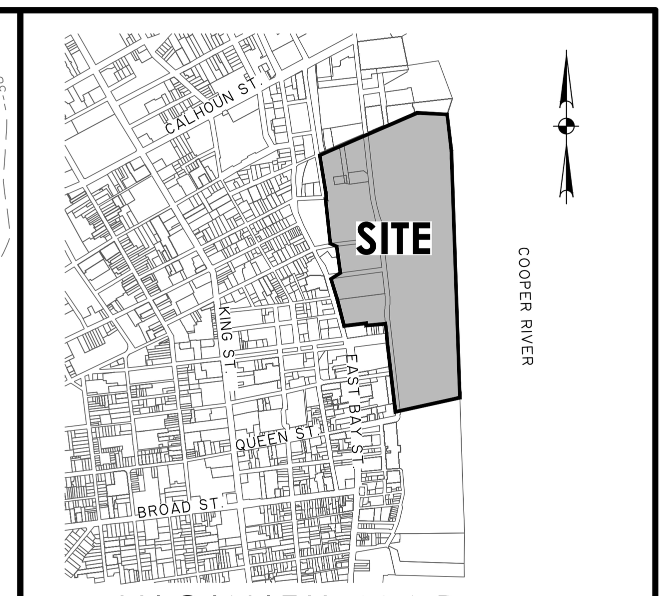
MATCH LINE - SHEET 6

MATCH LINE - SHEET 8



VICINITY MAP not to scale

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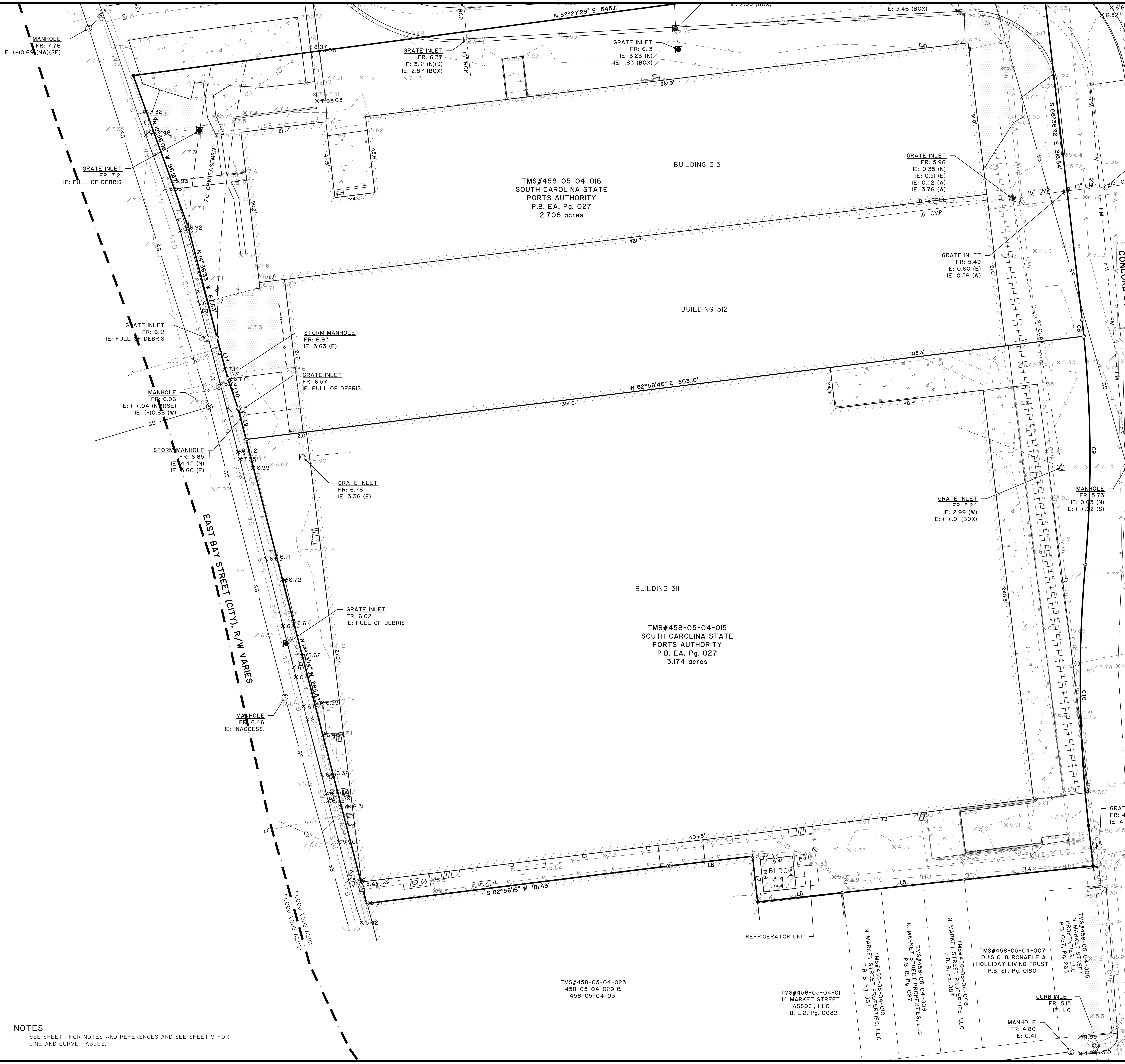
MATCH LINE - SHEET 5
MATCH LINE - SHEET 7

SC GRID - NAD83 (2011)



LEGEND

- BOLLARD
- STORM DRAIN MANHOLE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC BOX
- SWITCH BOX
- GUY WIRE
- ELECTRIC METER
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- CLEANOUT
- TELECOMMUNICATION BOX
- HIGH-MAST LIGHT POLE
- STANDARD LIGHT POLE
- CLEAT
- PARKING METER
- GUY POLE
- RAILROAD CROSSING ARM

STANDARD LINETYPES

	PROPERTY LINE
X — X	FENCE
	RAILROAD TRACK
SS — SS	SANITARY SEWER LINE
	STORM DRAIN LINE (SURVEYED)
SD — SD	STORM DRAIN LINE (PER PLANS)
FW — FW	FIRE WATER LINE
W — W	POTABLE WATER LINE
OHP	OVERHEAD ELECTRICAL
UGP	UNDERGROUND ELECTRICAL
OHC	OVERHEAD COMMUNICATIONS
UGC	UNDERGROUND COMMUNICATIONS

NOTES

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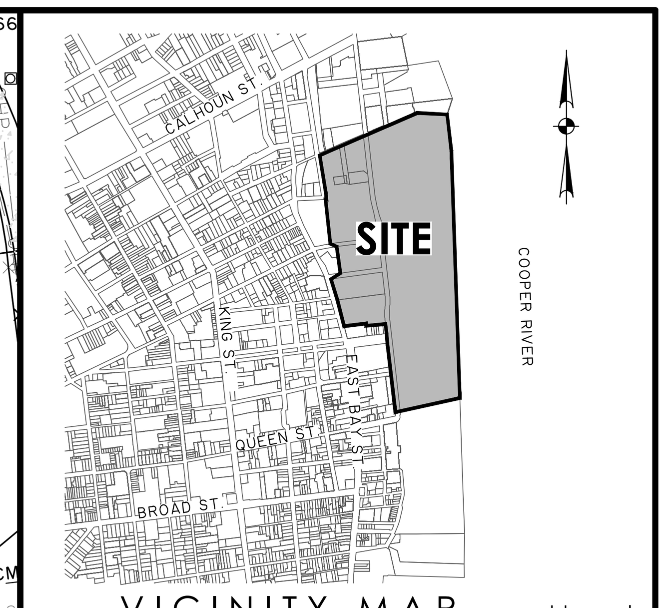

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F. ELLIOTTE QUINN III
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 10292

EXISTING CONDITIONS SURVEY OF

VARIOUS PARCELS

OWNED BY

SOUTH CAROLINA STATE PORTS AUTHORITY

CITY OF CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA

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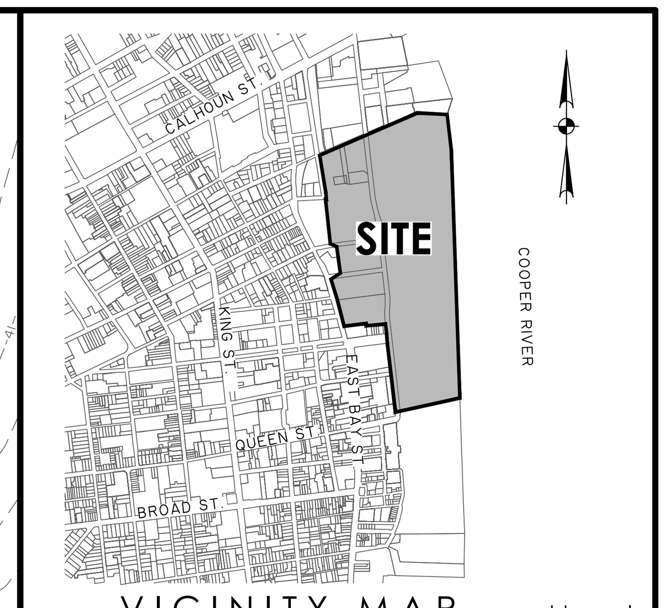

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SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

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EXISTING CONDITIONS SURVEY OF

VARIOUS PARCELS OWNED BY SOUTH CAROLINA STATE PORTS AUTHORITY

CITY OF CHARLESTON
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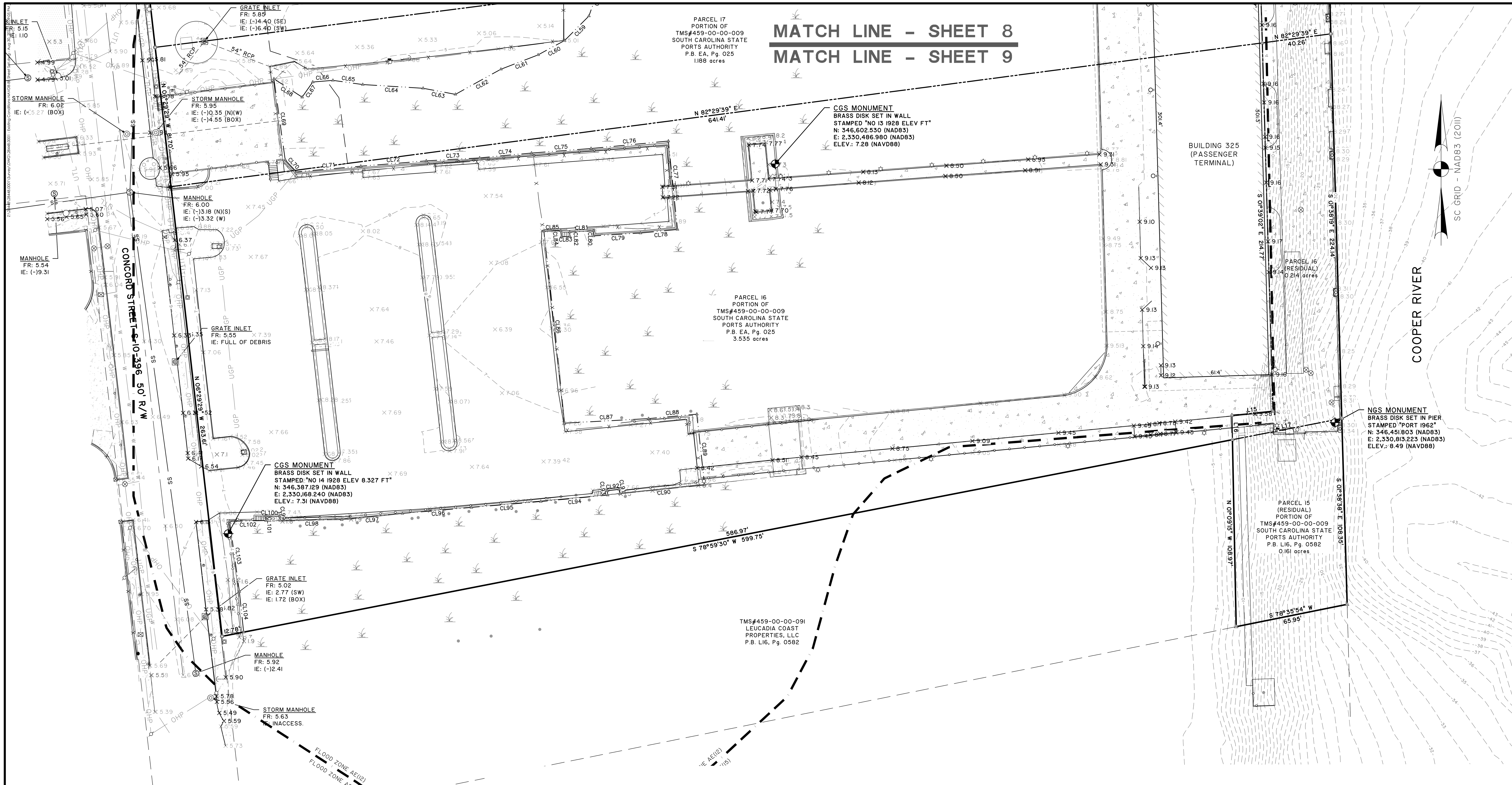

CURVE TABLE					
CURVE	RADIUS	LENGTH	CH BEARING	CH LENGTH	DELTA
C1	722.98'	80.29'	N 03°19'01" W	80.25'	6°21'48"
C2	722.98'	65.65'	N 02°27'57" E	65.63'	5°12'09"
C3	764.39'	156.18'	N 00°45'10" W	155.91'	11°42'24"
C4	695.80'	150.38'	N 12°47'51" W	150.09'	12°22'59"
C5	645.15'	140.10'	N 12°46'05" W	139.82'	12°26'32"
C6	695.15'	150.96'	S 12°46'05" E	150.66'	12°26'32"
C7	645.80'	139.57'	S 12°47'51" E	139.30'	12°22'59"
C8	714.53'	9.78'	S 06°12'46" E	9.78'	0°47'02"
C9	714.53'	136.22'	S 00°21'34" E	136.01'	10°55'22"
C10	772.95'	156.03'	S 00°42'56" E	155.76'	11°33'57"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 06°32'49" W	59.23'
L2	S 06°32'49" E	43.79'
L3	S 06°29'29" E	24.01'
L4	S 83°59'15" W	77.20'
L5	S 83°54'22" W	72.81'
L6	S 83°47'09" W	51.12'
L7	N 06°19'21" W	27.33'
L8	S 83°23'25" W	50.36'
L9	N 14°33'14" W	18.81'
L10	N 19°01'53" W	18.95'
L11	N 14°42'52" W	25.63'
L12	N 86°20'03" E	17.09'
L13	N 81°03'06" E	25.00'
L14	S 81°03'06" W	25.00'
L15	S 84°31'00" W	24.00'
L16	S 01°10'48" E	14.21'
L17	N 78°59'30" E	64.93'

"CRITICAL LINE" LINE TABLE		
LINE	BEARING	LENGTH
CL1	S 40°18'57" W	27.09'
CL2	S 68°31'48" W	28.56'
CL3	S 38°10'52" W	31.12'
CL4	S 16°36'50" W	34.58'
CL5	S 41°26'57" W	44.00'
CL6	S 36°32'45" W	35.62'
CL7	S 35°41'45" W	47.71'
CL8	S 14°00'46" W	22.57'
CL9	S 06°17'37" E	34.48'
CL10	S 09°25'53" E	33.74'
CL11	S 08°21'41" W	20.60'
CL12	S 10°55'27" W	9.00'
CL13	N 89°18'05" E	17.55'
CL14	S 05°38'18" W	35.15'
CL15	S 08°20'12" E	21.81'
CL16	S 46°09'37" E	29.99'
CL17	S 39°10'12" W	20.02'
CL18	S 87°55'50" W	22.50'
CL19	S 01°15'12" E	19.96'
CL20	S 02°46'32" W	28.87'
CL21	S 06°23'59" E	37.67'
CL22	S 11°46'09" E	47.33'
CL23	S 01°33'24" E	287.84'
CL24	S 66°20'26" E	56.58'
CL25	N 89°27'12" E	43.76'
CL26	N 89°16'39" E	41.36'
CL27	S 47°06'09" E	28.58'
CL28	S 11°08'20" E	21.27'
CL29	S 00°39'52" E	73.76'
CL30	S 03°53'42" E	68.23'
CL31	S 01°47'03" W	41.46'
CL32	S 03°29'15" W	28.05'
CL33	S 49°22'09" E	55.14'
CL34	S 01°36'09" E	456.54'
CL35	S 82°41'34" W	11.72'

"CRITICAL LINE" LINE TABLE		
LINE	BEARING	LENGTH
CL36	S 06°40'09" W	28.63'
CL37	S 55°22'06" W	25.53'
CL38	S 75°10'17" W	36.77'
CL39	N 69°47'46" W	24.62'
CL40	S 81°55'34" W	44.01'
CL41	S 30°19'44" W	16.69'
CL42	S 53°16'00" W	30.99'
CL43	S 29°49'04" W	26.50'
CL44	S 84°21'56" W	10.71'
CL45	S 04°15'14" E	64.35'
CL46	S 16°23'57" E	20.49'
CL47	S 04°02'50" E	37.13'
CL48	S 06°21'19" E	137.53'
CL49	S 02°35'04" W	35.34'
CL50	S 01°15'44" W	34.73'
CL51	S 72°08'39" E	49.26'
CL52	S 78°43'44" E	29.51'
CL53	S 10°49'28" E	54.76'
CL54	S 06°01'37" E	96.07'
CL55	S 02°05'03" E	28.75'
CL56	S 54°20'40" E	17.99'
CL57	S 04°14'49" E	15.02'
CL58	S 19°57'58" W	26.52'
CL59	S 44°43'03" W	20.10'
CL60	S 61°36'10" W	17.58'
CL61	S 68°55'45" W	23.21'
CL62	S 61°05'47" W	30.31'
CL63	N 79°20'37" W	19.16'
CL64	N 86°27'30" W	35.25'
CL65	N 82°01'28" W	17.57'
CL66	S 85°11'18" W	11.79'
CL67	S 34°48'44" W	10.74'
CL68	N 56°59'12" W	19.64'
CL69	S 07°55'45" E	47.70'
CL70	S 43°17'06" E	9.59'

"CRITICAL LINE" LINE TABLE		
LINE	BEARING	LENGTH
CL71	N 84°57'16" E	37.61'
CL72	N 85°20'01" E	38.27'
CL73	N 86°49'02" E	31.17'
CL74	N 84°39'03" E	30.32'
CL75	N 85°41'46" E	34.83'
CL76	N 84°27'43" E	45.27'
CL77	S 05°52'47" E	51.78'
CL78	S 84°30'15" W	21.71'
CL79	S 86°28'19" W	27.44'
CL80	N 00°56'57" W	2.97'
CL81	S 87°02'08" W	13.81'
CL82	S 02°57'52" E	2.59'
CL83	S 89°00'27" W	4.97'
CL84	N 06°01'44" W	3.42'
CL85	S 89°05'03" W	9.82'
CL86	S 06°03'43" E	112.55'
CL87	N 86°53'34" E	49.16'
CL88	N 84°47'12" E	28.27'
CL89	S 06°16'53" E	41.49'
CL90	S 84°08'30" W	49.57'
CL91	N 12°57'14" W	2.57'
CL92	S 83°41'04" W	6.94'
CL93	S 05°51'18" E	2.59'
CL94	S 84°31'56" W	39.16'
CL95	S 85°08'51" W	40.56'
CL96	S 84°57'47" W	40.34'
CL97	S 84°16'09" W	35.55'
CL98	S 89°15'06" W	35.81'
CL99	N 08°04'20" W	2.35'
CL100	N 88°16'32" W	7.97'
CL101	S 00°00'02" E	2.67'
CL102	S 88°52'53" W	21.22'
CL103	S 07°52'40" E	41.32'
CL104	S 06°03'34" E	23.77'
CL105	S 06°03'34" E	10.00'

NOTES

1. SEE SHEET 1 FOR NOTES AND REFERENCES.

STANDARD LINETYPES

- PROPERTY LINE
- FENCE
- RAILROAD TRACK
- SANITARY SEWER LINE
- STORM DRAIN LINE (SURVEYED)
- STORM DRAIN LINE (PER PLANS)
- FIRE WATER LINE
- POTABLE WATER LINE
- OVERHEAD ELECTRICAL
- UNDERGROUND ELECTRICAL
- OVERHEAD COMMUNICATIONS
- UNDERGROUND COMMUNICATIONS

LEGEND

- BOLLARD
- STORM DRAIN MANHOLE
- GAS VALVE
- IRRIGATION CONTROL VALVE
- ELECTRIC BOX
- SWITCH BOX
- GUY WIRE
- ELECTRIC METER
- SIGN (SEE SIGN SCHEDULE)
- CURB MANHOLE
- POWER POLE
- FIRE HYDRANT
- WATER VALVE
- COMMUNICATIONS MANHOLE
- WATER METER
- BACKFLOW PREVENTER
- MOORING POST
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- CLEANOUT
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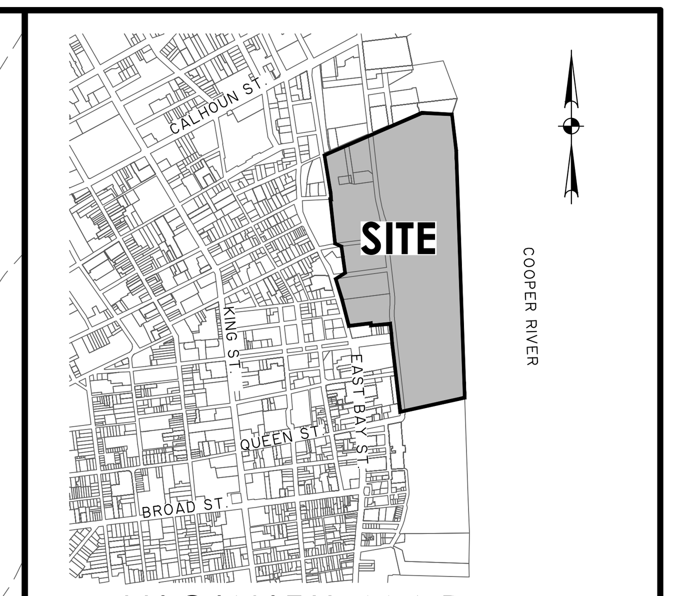
- HIGH-MAST LIGHT POLE
- STANDARD LIGHT POLE
- CLEAT
- PARKING METER
- GUY POLE
- RAILROAD CROSSING ARM



VICINITY MAP not to scale

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LICENSE NO. 10292

EXISTING CONDITIONS SURVEY OF

VARIOUS PARCELS

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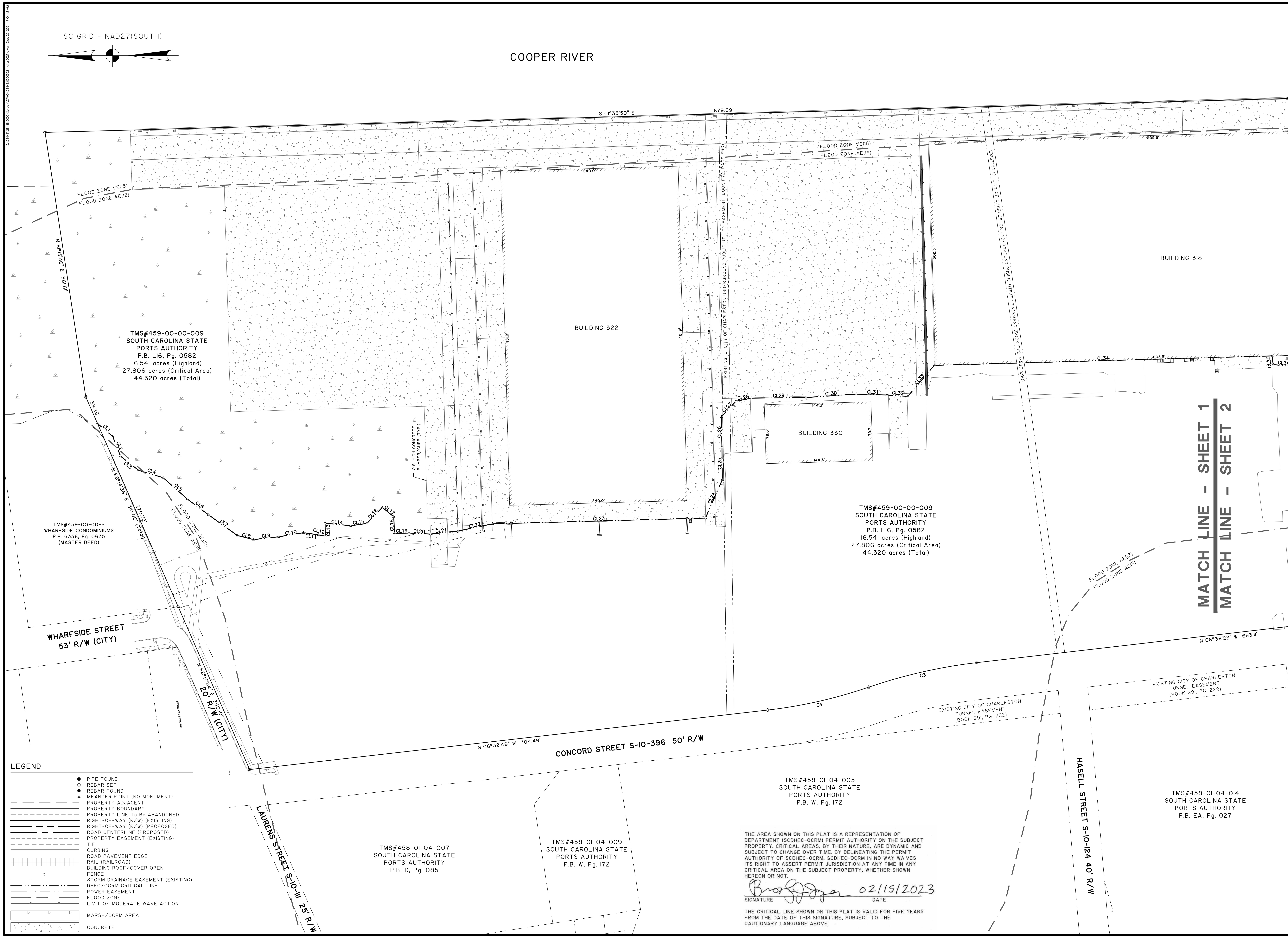


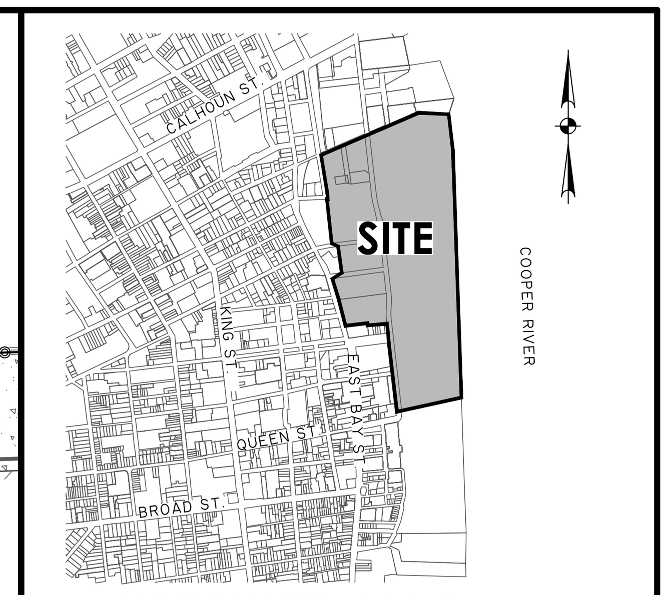
LEGEND

- PIPE FOUND
- REBAR SET
- REBAR FOUND
- MEANDER POINT (NO MONUMENT)
- PROPERTY ADJACENT
- PROPERTY BOUNDARY
- PROPERTY LINE To Be ABANDONED
- RIGHT-OF-WAY (R/W) (EXISTING)
- RIGHT-OF-WAY (R/W) (PROPOSED)
- ROAD CENTERLINE (PROPOSED)
- PROPERTY EASEMENT (EXISTING)
- TIE
- CURBING
- ROAD PAVEMENT EDGE
- RAIL (RAILROAD)
- BUILDING ROOF/COVER OPEN
- FENCE
- STORM DRAINAGE EASEMENT (EXISTING)
- DHEC/OCRM CRITICAL LINE
- POWER EASEMENT
- FLOOD ZONE
- LIMIT OF MODERATE WAVE ACTION
- MARSH/OCRM AREA
- CONCRETE

THE AREA SHOWN ON THIS PLAT IS A REPRESENTATION OF DEPARTMENT (SCDHEC-OCRM) PERMIT AUTHORITY ON THE SUBJECT PROPERTY. CRITICAL AREAS, BY THEIR NATURE, ARE DYNAMIC AND SUBJECT TO CHANGE OVER TIME. BY DELINEATING THE PERMIT AUTHORITY OF SCDHEC-OCRM, SCDHEC-OCRM IN NO WAY WAIVES ITS RIGHT TO ASSERT PERMIT JURISDICTION AT ANY TIME IN ANY CRITICAL AREA ON THE SUBJECT PROPERTY, WHETHER SHOWN HEREON OR NOT.

SIGNATURE 02/15/2023 DATE

THE CRITICAL LINE SHOWN ON THIS PLAT IS VALID FOR FIVE YEARS FROM THE DATE OF THIS SIGNATURE, SUBJECT TO THE CAUTIONARY LANGUAGE ABOVE.



VICINITY MAP not to scale

NOTE:
SEE SHEET 2 OF 2 FOR NOTES AND REFERENCES AND LINE & CURVE TABLES.

SOUTH CAROLINA THOMAS & HUTTON ENGINEERING CO. No. C00285 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR No. 26596 PHILLIP P. GERARD

02/15/23

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

PHILLIP P. GERARD
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 26596

PLAT OF THE DHEC/OCRM CRITICAL LINE FOR A 44.320 ACRE PARCEL OWNED BY SOUTH CAROLINA STATE PORTS AUTHORITY

CITY OF CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA

prepared for
LOWE ENTERPRISES

No.	Revision	By	Date

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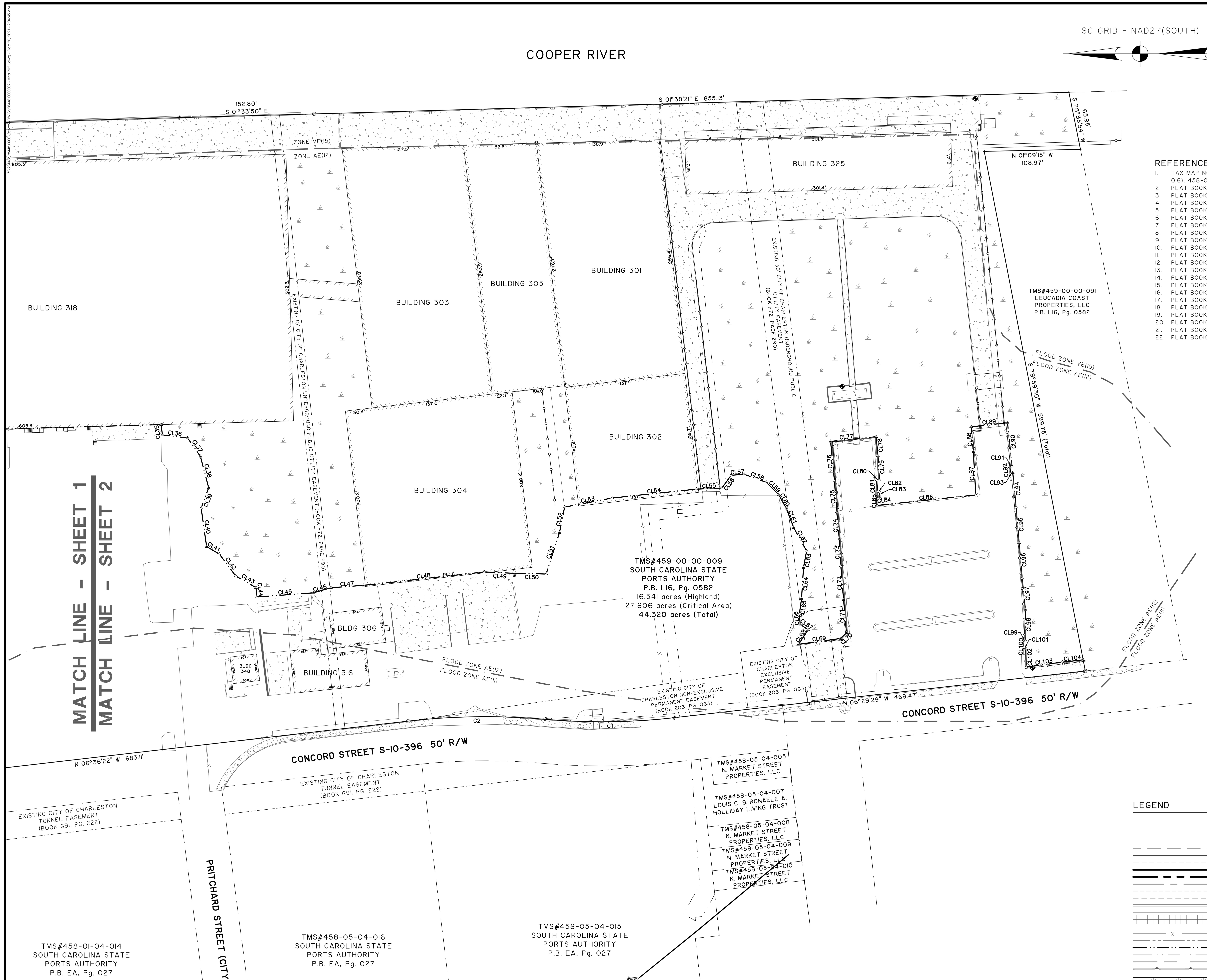


NOTES

1. ACCORDING TO F.I.R.M. MAP NO. 45019C, PANELS 0516K & 0518K, DATED JANUARY 29, 2021, THE PROPERTY SHOWN HEREON IS LOCATED IN FLOOD HAZARD ZONE VE(15), AE(12) & AE(11).
2. COORDINATES AND DIRECTIONS SHOWN ON THIS SURVEY ARE BASED ON SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD27/SOUTH ZONE). DISTANCES SHOWN ARE GROUND DISTANCES, NOT GRID DISTANCES.
3. A TITLE SEARCH WAS NOT PERFORMED BY THOMAS & HUTTON ENGINEERING CO. AT THE TIME OF THIS SURVEY. THE PROPERTY PLATTED HEREON IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.

REFERENCES

1. TAX MAP NO.'S: 459-00-00-009, 458-05-04-(015, 016), 458-01-04-(005, 006, 007, 009, 014, 024, 025)
2. PLAT BOOK D, PAGE 085
3. PLAT BOOK M, PAGE 102
4. PLAT BOOK O, PAGE 037
5. PLAT BOOK T, PAGE 009
6. PLAT BOOK T, PAGE 096
7. PLAT BOOK W, PAGE 172
8. PLAT BOOK AL, PAGE 025
9. PLAT BOOK BB, PAGE 075
10. PLAT BOOK BH, PAGE 141
11. PLAT BOOK DC, PAGE 464
12. PLAT BOOK DE, PAGE 464
13. PLAT BOOK EA, PAGE 025
14. PLAT BOOK EA, PAGE 026
15. PLAT BOOK EA, PAGE 027
16. PLAT BOOK ED, PAGE 855
17. PLAT BOOK EH, PAGE 806
18. PLAT BOOK EH, PAGE 807
19. PLAT BOOK EH, PAGE 870
20. PLAT BOOK L08, PAGE 0198
21. PLAT BOOK L16, PAGE 0582
22. PLAT BOOK L19, PAGE 0140

"CRITICAL LINE" LINE TABLE

LINE	BEARING	LENGTH
CL1	S 40°18'57" W	27.09'
CL2	S 68°31'48" W	28.56'
CL3	S 38°10'52" W	31.12'
CL4	S 16°36'50" W	34.58'
CL5	S 41°26'57" W	44.00'
CL6	S 36°32'45" W	35.62'
CL7	S 35°41'45" W	47.71'
CL8	S 14°00'46" W	22.57'
CL9	S 06°17'37" E	34.48'
CL10	S 09°25'53" E	33.74'
CL11	S 08°21'41" W	20.60'
CL12	S 10°55'27" W	9.00'
CL13	N 89°18'05" E	17.55'
CL14	S 05°38'18" W	35.15'
CL15	S 08°20'12" E	21.81'
CL16	S 46°09'37" E	29.99'
CL17	S 39°10'12" W	20.02'
CL18	S 87°55'50" W	22.50'
CL19	S 01°15'12" E	19.96'
CL20	S 02°46'32" W	28.87'
CL21	S 06°23'59" E	37.67'
CL22	S 11°46'09" E	47.33'
CL23	S 01°33'24" E	287.84'
CL24	S 66°20'26" E	56.58'
CL25	N 89°27'12" E	43.76'
CL26	N 89°16'39" E	41.36'
CL27	S 47°06'09" E	28.58'
CL28	S 11°08'20" E	21.27'
CL29	S 00°39'52" E	73.76'
CL30	S 03°53'42" E	68.23'
CL31	S 01°47'03" W	41.46'
CL32	S 03°29'15" W	28.05'
CL33	S 49°22'09" E	55.14'
CL34	S 01°36'09" E	456.54'
CL35	S 82°41'34" W	11.72'
CL36	S 06°40'09" W	28.63'
CL37	S 55°22'06" W	25.53'
CL38	S 75°10'17" W	36.77'
CL39	N 69°47'46" W	24.62'
CL40	S 81°55'34" W	44.01'
CL41	S 30°19'44" W	16.69'
CL42	S 53°16'00" W	30.99'
CL43	S 29°49'04" W	26.50'
CL44	S 84°21'56" W	10.71'
CL45	S 04°15'14" E	64.35'
CL46	S 16°23'57" E	20.49'
CL47	S 04°02'50" E	37.13'
CL48	S 06°21'19" E	137.53'
CL49	S 02°35'04" W	35.34'
CL50	S 01°15'44" W	34.73'
CL51	S 72°08'39" E	49.26'
CL52	S 78°43'44" E	29.51'
CL53	S 10°49'28" E	54.76'
CL54	S 06°01'37" E	96.07'
CL55	S 02°05'03" E	28.75'
CL56	S 54°20'40" E	17.99'
CL57	S 04°14'49" E	15.02'
CL58	S 19°57'58" W	26.52'
CL59	S 44°43'03" W	20.10'
CL60	S 61°36'10" W	17.58'
CL61	S 68°55'45" W	23.21'
CL62	S 61°05'47" W	30.31'
CL63	N 79°20'37" W	19.16'
CL64	N 86°27'30" W	35.25'
CL65	N 82°01'28" W	17.57'
CL66	S 85°11'18" W	11.79'
CL67	S 34°48'44" W	10.74'
CL68	N 56°59'12" W	19.64'
CL69	S 07°55'45" E	47.70'
CL70	S 43°17'06" E	9.59'
CL71	N 84°57'16" E	37.61'
CL72	N 85°20'01" E	38.27'
CL73	N 86°49'02" E	31.17'
CL74	N 84°39'03" E	30.32'
CL75	N 85°41'46" E	34.83'
CL76	N 84°27'43" E	45.27'
CL77	S 05°52'47" E	51.78'
CL78	S 84°30'15" W	21.71'
CL79	S 86°28'19" W	27.44'
CL80	N 00°56'57" W	2.97'
CL81	S 87°02'08" W	13.81'
CL82	S 02°57'52" E	2.59'
CL83	S 89°00'27" W	4.97'
CL84	N 06°01'44" W	3.42'
CL85	S 89°05'03" W	9.82'
CL86	S 06°03'43" E	112.55'
CL87	N 86°53'34" E	49.16'
CL88	N 84°47'12" E	28.27'
CL89	S 06°16'53" E	41.49'
CL90	S 84°08'30" W	49.57'
CL91	N 12°57'14" W	2.57'
CL92	S 83°41'04" W	6.94'
CL93	S 05°51'18" E	2.59'
CL94	S 84°31'56" W	39.16'
CL95	S 85°08'51" W	40.56'
CL96	S 84°57'47" W	40.34'
CL97	S 84°16'09" W	35.55'
CL98	S 89°15'06" W	35.81'
CL99	N 08°04'20" W	2.35'
CL100	N 88°16'32" W	7.97'
CL101	S 00°00'02" E	2.67'
CL102	S 88°52'53" W	21.22'
CL103	S 07°52'40" E	41.32'
CL104	S 06°03'34" E	23.77'
CL105	S 06°03'34" E	10.00'

LEGEND

PIPE FOUND
REBAR SET
REBAR FOUND
MEANDER POINT (NO MONUMENT)
PROPERTY ADJACENT
PROPERTY BOUNDARY
PROPERTY LINE To Be ABANDONED
RIGHT-OF-WAY (R/W) (EXISTING)
RIGHT-OF-WAY (R/W) (PROPOSED)
ROAD CENTERLINE (PROPOSED)
PROPERTY EASEMENT (EXISTING)
TIE
CURBING
ROAD PAVEMENT EDGE
RAIL (RAILROAD)
BUILDING ROOF/COVER OPEN
FENCE
STORM DRAINAGE EASEMENT (EXISTING)
DHEC/OCRM CRITICAL LINE
POWER EASEMENT
FLOOD ZONE
LIMIT OF MODERATE WAVE ACTION
MARSH/OCRM AREA
CONCRETE

THE AREA SHOWN ON THIS PLAT IS A REPRESENTATION OF DEPARTMENT (SCDHEC-OCRM) PERMIT AUTHORITY ON THE SUBJECT PROPERTY. CRITICAL AREAS, BY THEIR NATURE, ARE DYNAMIC AND SUBJECT TO CHANGE OVER TIME. BY DELINEATING THE PERMIT AUTHORITY OF SCDHEC-OCRM, SCDHEC-OCRM IN NO WAY WAIVES ITS RIGHT TO ASSERT PERMIT JURISDICTION AT ANY TIME IN ANY CRITICAL AREA ON THE SUBJECT PROPERTY, WHETHER SHOWN HEREON OR NOT.

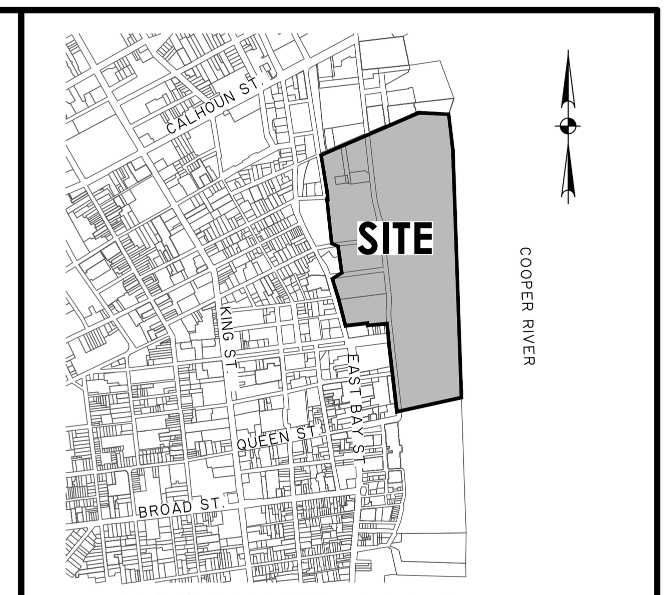
02/15/2023

SIGNATURE DATE

THE CRITICAL LINE SHOWN ON THIS PLAT IS VALID FOR FIVE YEARS FROM THE DATE OF THIS SIGNATURE, SUBJECT TO THE CAUTIONARY LANGUAGE ABOVE.

CURVE TABLE

CURVE	RADIUS	LENGTH	CH BEARING	CH LENGTH	DELTA
C1	722.98'	145.94'	N 00°42'56" W	145.69'	11°33'57"
C2	764.39'	156.18'	N 00°45'10" W	155.91'	11°42'24"
C3	695.80'	150.38'	N 12°47'51" W	150.09'	12°22'59"
C4	645.15'	140.10'	N 12°46'05" W	139.82'	12°26'32"



VICINITY MAP not to scale

SOUTH CAROLINA
THOMAS & HUTTON ENGINEERING CO.
No. C00285
CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA
PROFESSIONAL LAND SURVEYOR
No. 26596
PHILLIP P. GERARD
02/15/23

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

PHILLIP P. GERARD
SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LICENSE NO. 26596

PLAT OF THE DHEC/OCRM CRITICAL LINE FOR A 44.320 ACRE PARCEL OWNED BY SOUTH CAROLINA STATE PORTS AUTHORITY

CITY OF CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA

prepared for
LOWE ENTERPRISES

No.	Revision	By	Date

THOMAS & HUTTON
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Mt. Pleasant, SC 29464 • 843.849.0200
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60 0 60 120
1 INCH = 60 FEET

plat	drawn	reviewed	field	crew
02/01/2023	ppg/cww	feq	05/2020	mb/tb/jg

job 28448.0000

SHEET 2 OF 2

Appendix F:
Additional Drawings:

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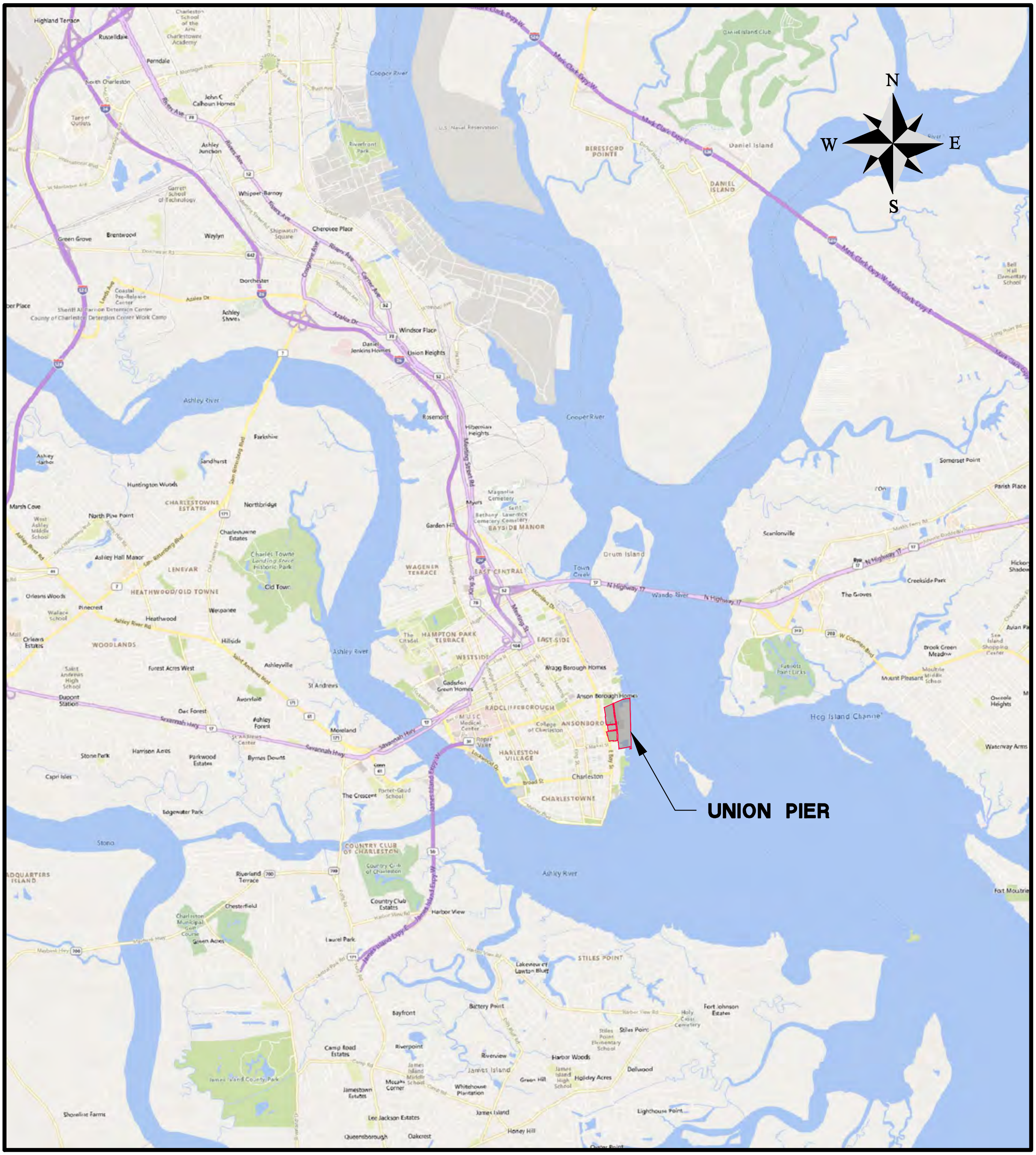

UNION PIER

EXHIBIT 1

LOCATION MAP

CLIENT:

SCPA

LOCATION: City of Charleston, SC

DATE: January 2023 DRAWN BY: CFM SHEET: EX-1

JOB NUMBER: J-28448.0001 REVIEWED BY: CFM SCALE: 1" = 7,500'

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EXHIBIT 2 - AERIAL MAP

UNION PIER

City of Charleston, SC

PREPARED FOR:

SCPA

PREPARED BY:

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JOB NO:	J-28448.0001	DATE:	December 17, 2021
DRAWN:	CFM	SCALE:	1" = 100'
REVIEWED:	CFM	SHEET:	EX-1

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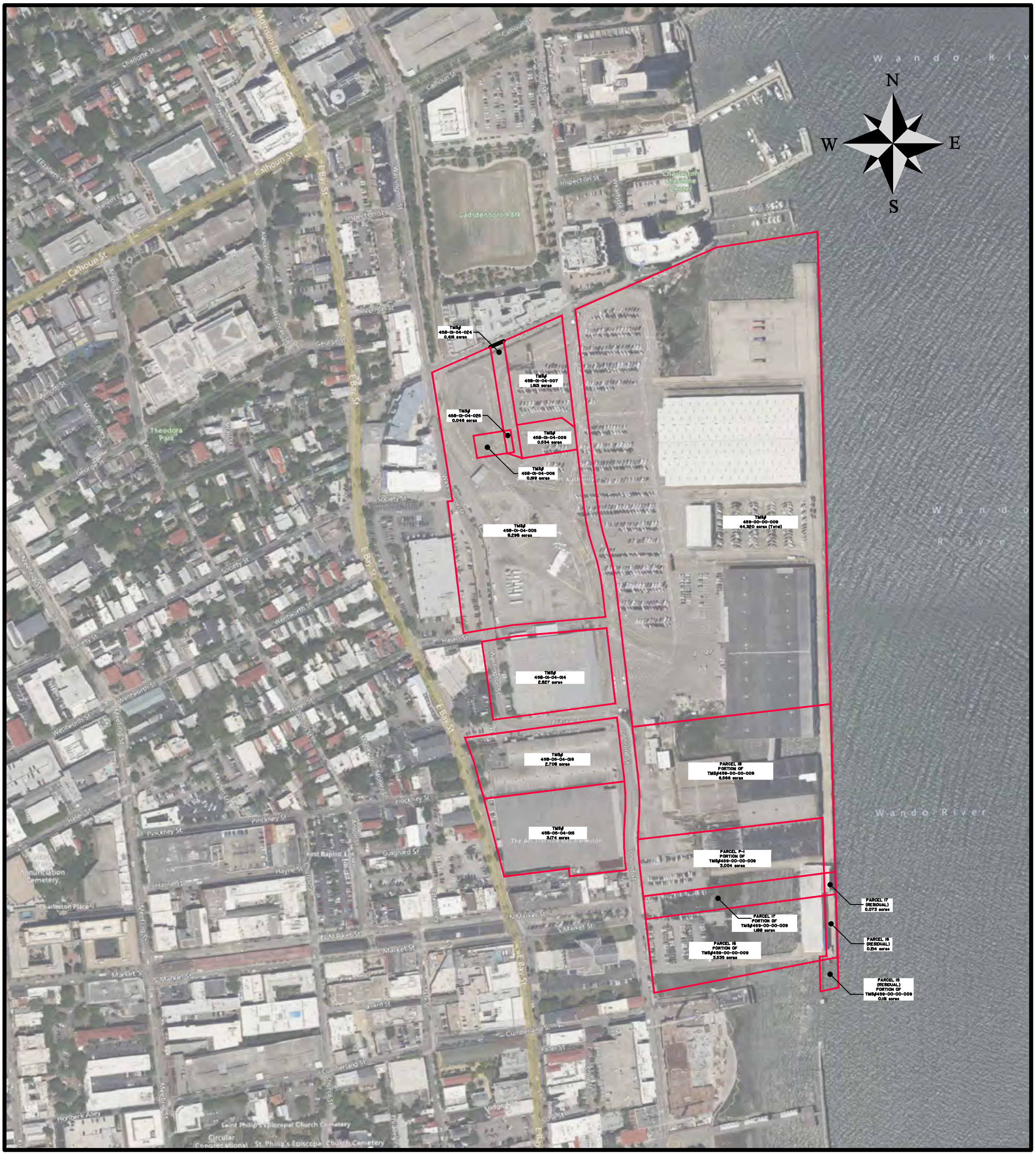

UNION PIER

EXHIBIT 3

PARCEL MAP

CLIENT:

SCPA

LOCATION: City of Charleston, SC

DATE: January 2023 | DRAWN BY: CFM | SHEET: EX-3

JOB NUMBER: J-28448.0001 | REVIEWED BY: CFM | SCALE: 1" = 500'

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Union Pier : Existing Conditions Drainage Exhibit

Job Number: 28448.0001	Produced: 01/04/2023	Produced By: WTH	Modified: 1/25/2023	Modified By:
File: Z:\28448\28448.0001\GIS\Mxd\Exhibits\Union Pier - Existing Conditions Exhibit.mxd				Vertical Datum:

Thomas & Hutton compiled the map information from the following sources:

Data	Source	Date
Topography	Charleston County	
Basin	T&H	
Pipes	City of CHS/T&H	
Nodes	City of CHS/T&H	
Parcels	Charleston County	

DISCLAIMER

Where Thomas & Hutton is cited as the data source, the firm has created or verified the data. For all other sources cited, Thomas & Hutton used the data "as is," has made no independent investigation of the data, and makes no representation as to the accuracy or completeness of the data. Please see each source for available documentation of its respective datasets.

Union Pier

City of Charleston, SC

Existing Conditions Drainage Exhibit

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GEOGRAPHIC INFORMATION SYSTEMS

Job Number: 28448.0001	Produced: 12/16/2021	Produced By: ACS	Modified: 1/25/2023	Modified By:
File: Z:\28448\28448.0001\GIS\Mxd\28448.0001_Union Peir(zoom_out).mxd				Vertical Datum: NAVD88

Thomas & Hutton compiled the map information from the following sources:

Data	Source	Date
Subbasins	Charleston County and T&H	2021
Storm Pipes/Open Channels	Charleston County and T&H	2021
Parcels	Charleston County	2018
DEM	Charleston County	2017
Imagery	Charleston County	2021

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Union Pier
City of Charleston, SC
Regional Drainage Map

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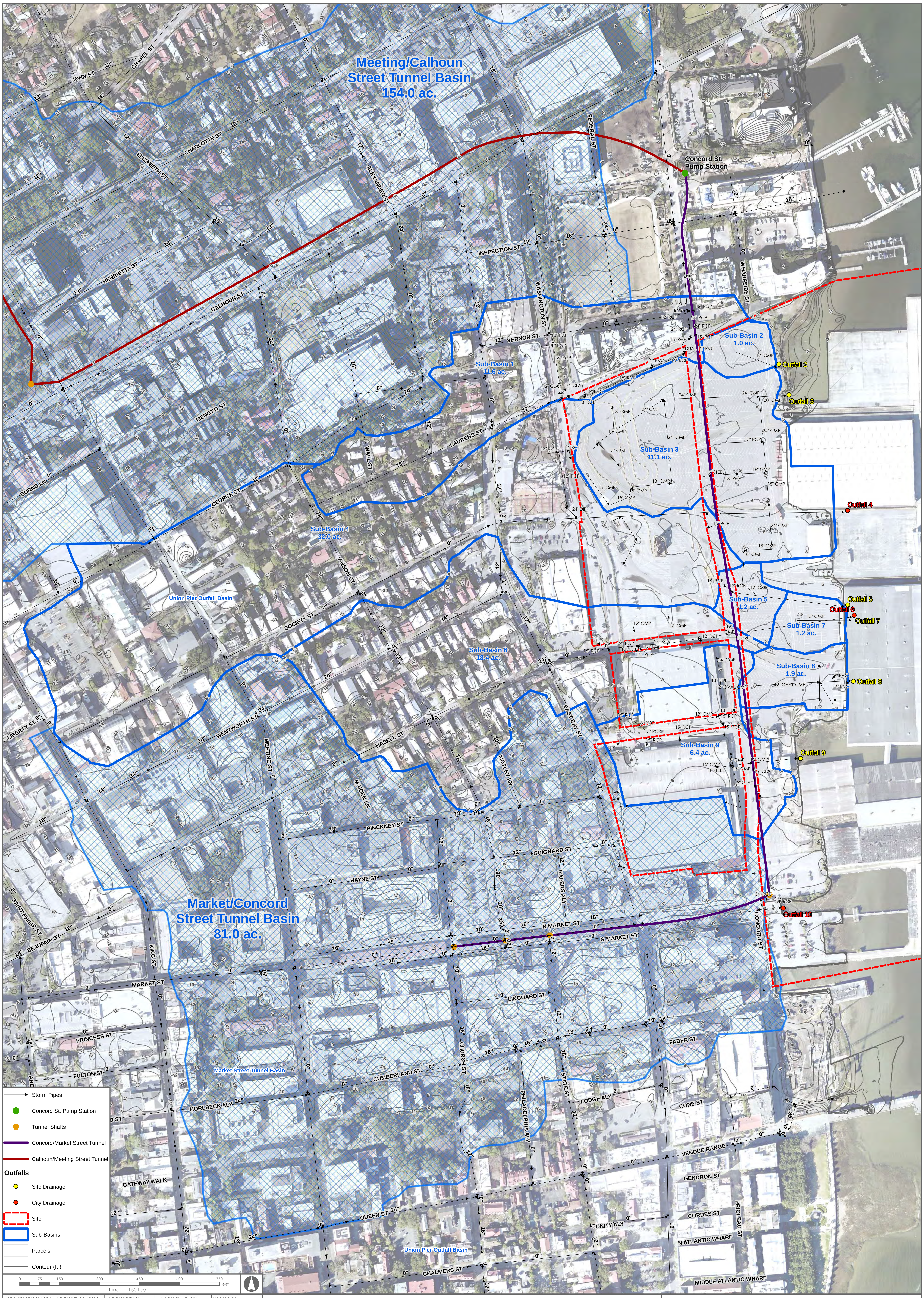

Job Number: 28448.0001 | Produced: 12/16/2021 | Produced By: ACS | Modified: 1/25/2023 | Modified By:

File: Z:\28448\28448.0001\GIS\Mxd\28448.0001_Union Peir(zoom_in).mxd | Vertical Datum: NAVD88

Thomas & Hutton compiled the map information from the following sources:

Data	Source	Date
Subbasins	Charleston County and T&H	2021
Storm Pipes/Open Channels	Charleston County and T&H	2021
Parcels	Charleston County	2018
DEM	Charleston County	2017
Imagery	Charleston County	2021

DISCLAIMER

Where Thomas & Hutton is cited as the data source, the firm has created or verified the data. For all other sources cited, Thomas & Hutton used the data "as is," has made no independent investigation of the data, and makes no representation as to the accuracy or completeness of the data. Please see each source for available documentation of its respective datasets.

Union Pier

City of Charleston, SC

Site Drainage Map

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Job Number: 28448.0001	Produced: 01/04/2023	Produced By: WTH	Modified: 1/25/2023	Modified By:
File: Z:\28448\28448.0001\GIS\Mxd\Exhibits\Union Pier - Proposed Conditions Exhibit.mxd				Vertical Datum:

Thomas & Hutton compiled the map information from the following sources:

Data	Source	Date
Topgraphy	Charleston County	
Nodes	City of Charleston/T&H	
Pipes	City of Charleston/T&H	
Site Basins	T&H	
Union Pier Basin	T&H	
Parcels	Charleston County	

DISCLAIMER

Where Thomas & Hutton is cited as the data source, the firm has created or verified the data. For all other sources cited, Thomas & Hutton used the data "as is," has made no independent investigation of the data, and makes no representation as to the accuracy or completeness of the data. Please see each source for available documentation of its respective datasets.

Union Pier

City of Charleston, SC

Proposed Conditions Drainage Exhibit

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GEOGRAPHIC INFORMATION SYSTEMS

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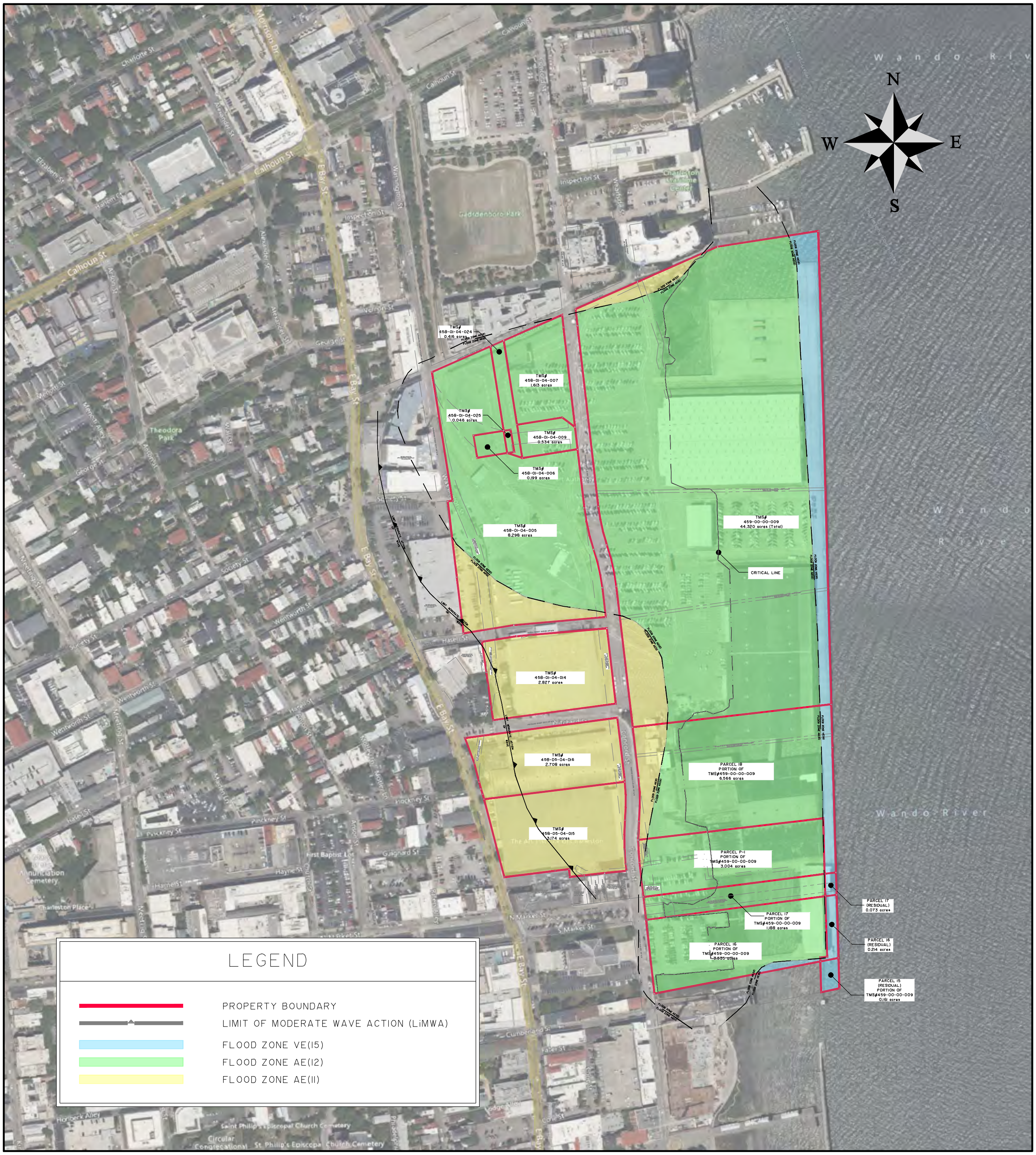

UNION PIER

EXHIBIT 8

FLOODPLAIN MAP

CLIENT:

SCPA

LOCATION: City of Charleston, SC

DATE: January 2023 DRAWN BY: CFM SHEET: EX-5

JOB NUMBER: J-28448.0001 REVIEWED BY: CFM SCALE: 1" = 500'

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Appendix G:
Traffic Impact Analysis

Traffic Impact Analysis

Union Pier PUD
Charleston, SC

Prepared for:
South Carolina State Ports Authority

BIHL
ENGINEERING

Traffic Impact Analysis
Union Pier Planned Unit Development
Charleston, South Carolina

Prepared for:
South Carolina State Ports Authority

Prepared by:
Bihl Engineering, LLC
306 Meeting Street, Suite 300
Charleston, SC 29401
Mail:
P.O. Box 31318
Charleston, SC 29417
(843) 637-9187

April 2023
Updated May 2023

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1.0 Executive Summary

The Union Pier planned unit development (PUD) site is generally bounded by Laurens Street to the north, Washington Street to the west, Market Street to the south, and the Cooper River to the east. The site is currently utilized by the South Carolina State Ports Authority (Ports Authority) for home-port cruise ship embarkation/debarkation, cruise ship port-of-call service, and break bulk cargo. **Figure 1** shows an overview of the project site and the surrounding area.

The proposed PUD includes the following land uses: 1,650 multi-family units (for the purposes of the study, 1,600 units were assumed to be market rate and 50 units were assumed to be affordable housing units), 600 hotel rooms, 270,000 square feet (sf) of office space and 270,000 sf of commercial space (220,000 sf of shopping center space and 50,000 sf of high-turnover sit-down restaurant space were assumed in the traffic study). **Figure 2** shows the conceptual masterplan for the site. The project was assumed to be completed in 2030 for the purposes of the study.

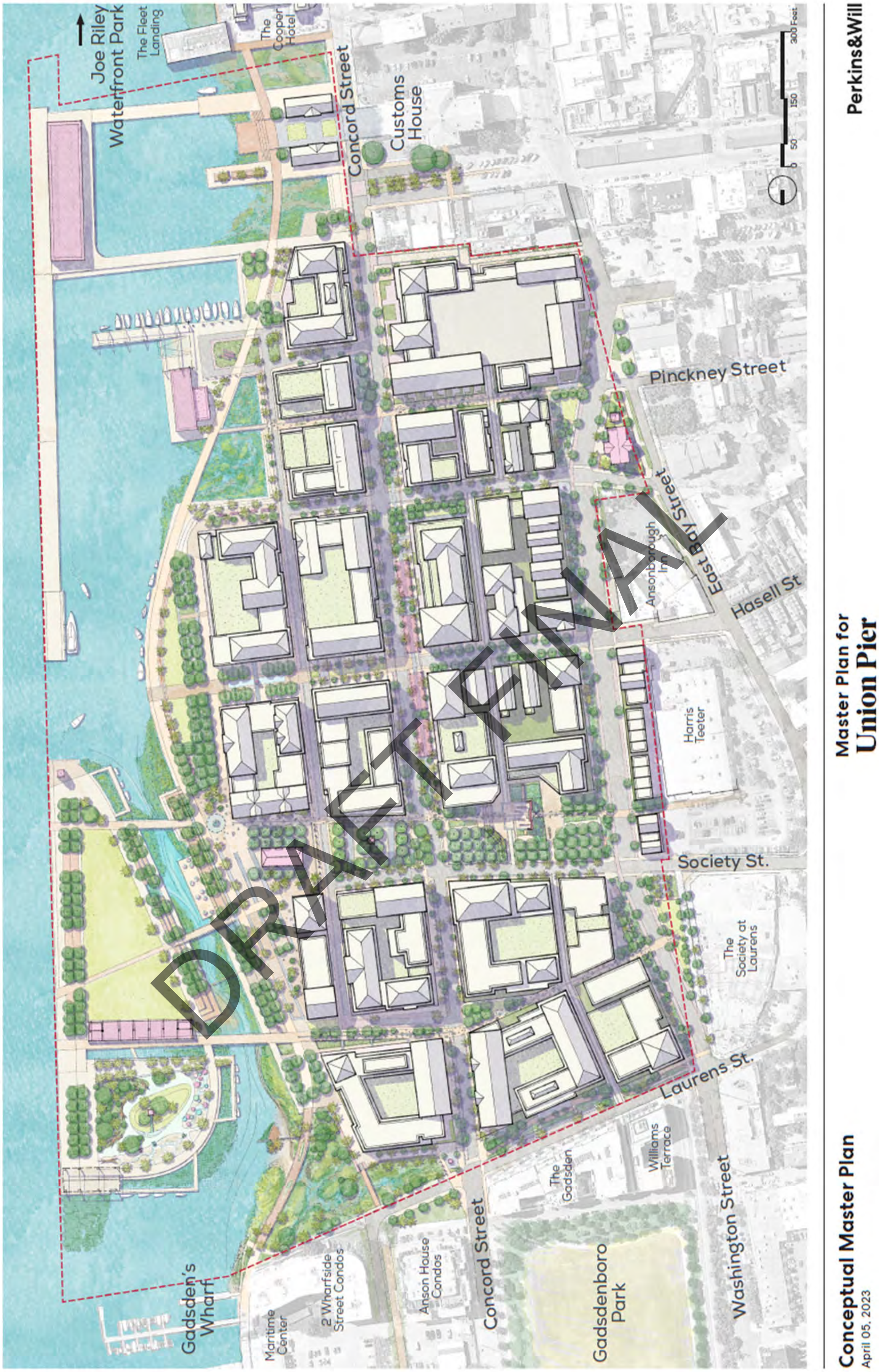
This report summarizes the existing and future transportation conditions for all transportation modes for the project study area and includes AM and PM peak hour intersection capacity analysis for selected intersections in the surrounding area. The projected future conditions were reviewed for the 2030 AM and PM peak hour conditions.

AM and PM peak period turning movement counts were performed at the following study area intersections. The current traffic control type at the intersections are noted in parentheses.

- East Bay Street at Chapel Street (signalized)
- East Bay Street at Calhoun Street (signalized)
- Washington Street at Calhoun Street (signalized)
- Washington Street at Laurens Street (unsignalized)
- East Bay Street at Hasell Street (signalized)
- Hasell Street at Washington Street (unsignalized)
- East Bay Street at Market Street (signalized)
- Market Street at Concord Street (unsignalized)
- Concord Street at Cumberland Street (unsignalized)

AM and PM peak hour Existing Conditions intersection capacity analyses were performed at the study area intersections. Based on the results of the intersection capacity analysis, it was found that all the study area intersections currently operate at LOS C or better during the AM and PM peak hour conditions. Study area observations note that there is existing congestion at the intersection of East Bay Street and Calhoun Street during peak times.

BIHL ENGINEERING	**Union Pier Traffic Impact Analysis**	**Study Area**	**Figure 1**



Source: Perkins & Will	**Union Pier Traffic Impact Analysis**	**Union Pier Conceptual Masterplan**	**Figure 2**

The following improvements are planned as part of the Union Pier PUD future conditions transportation analysis. These improvements may be done as part of the project or by others and will be completed in coordination with the South Carolina Department of Transportation (SCDOT) and the City of Charleston. It is expected that a more detailed design will be completed for these improvements as the project moves forward.

- East Bay Street/Washington Street traffic flow realignment from Chapel Street to Pritchard Street. Additional details are provided in the bullets below.
  - Reconfigure Washington Street to three lanes (2 northbound lanes, 1 southbound lane).
  - Reconfigure East Bay Street laneage to three lanes (1 northbound lanes, 2 southbound lanes).
  - East Bay Street at Chapel Street (west approach)
    - Existing Chapel Street (west approach) would become an unsignalized intersection at East Bay Street with Chapel Street converted to one-way westbound operation between East Bay Street and Drake Street. Chapel Street operation is subject to change based on more detailed coordination with SCDOT, City, and neighborhood representatives.
    - Installation of southbound slip lane for East Bay Street to the new 3-lane section.
  - East Bay Street at Chapel Street/Washington Street
    - Relocation of signalized intersection southwest of the existing location and convert to a three-leg intersection with East Bay Street and Washington Street. As currently envisioned by the project team, the south approach of East Bay Street would "T" into East Bay Street/Washington Street intersection.
  - East Bay Street at Calhoun Street
    - Reconfigure East Bay Street at Calhoun Street to allow the removal of the split phase operation including the potential realignment of through travel lanes on Calhoun Street.
    - Prohibit eastbound left turns from Calhoun Street to East Bay Street. Eastbound Calhoun Street left turns would occur at the Washington Street intersection in a new eastbound left-turn lane at the intersection of Washington Street and Calhoun Street.
    - Removal of the short eastbound right-turn lane on Calhoun Street (planned by others).
  - Washington Street at Calhoun Street
    - Installation of northbound left-turn lane on Washington Street.
    - Installation of an additional eastbound left-turn lane on Calhoun Street and conversion of inner lane to a left turn lane to create a dual eastbound left-turn lane condition.
    - Reconfiguration and realignment of Washington Street through lanes.

  - Washington Street at Laurens Street
    - Signalization of the intersection, when warranted, and in coordination with SCDOT and the City of Charleston. Traffic signalization is subject to SCDOT and/or City approval.
  - East Bay Street at Hasell Street
    - Update traffic signal timings at intersection.
  - Washington Street at Hasell Street
    - Signalization of the intersection, when warranted, and in coordination with SCDOT and the City of Charleston. Traffic signalization is subject to SCDOT and/or City approval.
  - East Bay Street at Washington Street/Pritchard Street
    - Connection of East Bay Street to/from Washington Street in the vicinity of Pritchard Street through existing parking area.
    - Creation of new signalized intersection of East Bay Street/Pritchard Street at Washington Street. Traffic signalization is subject to SCDOT and/or City approval. As currently envisioned by the project team, East Bay Street would connect to Pritchard Street.
    - Installation of southbound slip lane from the 3-lane section East Bay Street to the existing 4-lane section.
- Optimization of traffic signal timings at study area intersections and other connected intersections. Where proposed traffic signals are in close proximity, prior to future signalization of these intersections, these intersections will be analyzed using microsimulation or other applicable means to determine timing parameters
- Improvements to the intersection of Concord Street at Charlotte Street to accommodate increased traffic flow. Specific improvements will be determined at a later date.
- Integrate bicycle and pedestrian facilities in project study area. As the Union Pier site is developed, new sidewalks shall meet ADA accessibility requirements.
- Expand City bike share locations within the Union Pier site.
- Continue coordination with CARTA regarding new transit routes and/or stops through Union Pier site. Coordinate with the City and CARTA on the project's requirements related to the transit accommodations ordinance.
- Coordinate with City staff on opportunities for water ferry/taxi service in or around the Union Pier site.
- As the plan for the site is further refined during the design process and locations of the buildings and parking garages are finalized, additional traffic studies are expected to be required by phase or by project.
- Furthermore, due to the masterplan nature of the project, intersections internal to the development were not studied in detail at this time. Detailed design components such as entry points to garages and other land uses will be further refined as the project moves forward. As noted above, it is expected that a more detailed analysis will be performed as the project develops.

If during the project process the masterplan land uses change and the projected trip generation increases, the traffic study should be updated. If the improvements noted are not completed, the traffic study should be updated to review the project impacts and determine if other improvements may be needed.

All roadway improvements will need to be permitted with the City and/or SCDOT. Items such as traffic signal spacing and intersection operations should be coordinated with regulatory agencies as the design moves forward.

A land use equivalency matrix has been developed for the project as a mechanism to facilitate desired land use changes as the Union Pier PUD develops, as long as the desired land use is allowable in the Union Pier PUD. It is our understanding that it is stated in the Union Pier PUD that no additional hotel rooms will be requested. The details of this process are outlined in the PUD document.

In the 2030 No Build Conditions, no improvements were assumed to the transportation network. Based on the analysis, the study area intersections were shown to operate at LOS D or better. LOS D or better is typically considered acceptable for signalized intersections. It is expected the existing congestion at East Bay Street at Calhoun Street will continue to occur and likely worsen with no infrastructure improvements.

Based on the results of the 2030 Build Conditions analysis, with the addition of the improvements noted above, the study area intersections are projected to operate at LOS C or better in the 2030 Build Conditions, which is generally an improvement over the 2030 No Build Conditions.

Results in this report are based solely on traffic studies and are considered input into final design consideration. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

2.0 Introduction

The Union Pier PUD site is generally bounded by Laurens Street to the north, Washington Street to the west, Market Street to the south, and the Cooper River to the east. The site is currently utilized by the Ports Authority for home-port cruise ship embarkation/debarkation, cruise ship port-of-call service, and break bulk cargo. **Figure 1** shows an overview of the project site and the surrounding area.

The proposed PUD includes the following land uses: 1,650 multi-family units (for the purposes of the study, 1,600 units were assumed to be market rate and 50 units were assumed to be affordable housing units), 600 hotel rooms, 270,000 sf of office space and 270,000 sf of commercial space (220,000 sf of shopping center space and 50,000 sf of high-turnover sit-down restaurant space were assumed in the traffic study). **Figure 2** shows the conceptual masterplan for the site. The project was assumed to be completed in 2030 for the purposes of the study.

This report summarizes the existing and future transportation conditions for all transportation modes for the project study area and includes AM and PM peak hour intersection capacity analysis for selected intersections in the surrounding area. The projected future conditions were reviewed for the 2030 AM and PM peak hour conditions.

3.0 Land Use Equivalency Matrix

Because the Union Pier development is a multi-use PUD, a land use equivalency matrix has been created as a mechanism to facilitate desired land use changes as the Union Pier PUD develops, as long as the desired land use is allowable in the Union Pier PUD. The details of this process are noted in the PUD document. This Land Use Equivalency Matrix allows for flexibility in land uses while maintaining the overall approved number of trips in the PUD. The Land Use Equivalency Matrix, shown in **Table 1**, is based on the Institute of Transportation Engineers' (ITE) *Trip Generation, 11th Edition*, PM peak hour average trip generation rate information. If land use trades are used, these should be documented and submitted to the City's Traffic and Transportation Director, or designee as noted in the PUD document. Land uses not shown in this matrix are allowable as long as they are approved uses in the PUD. It is our understanding that there is a commitment in the PUD documentation that no additional hotel rooms will be requested beyond the 600 included in the traffic study.

Table 1 shows the land equivalency matrix using PM peak hour trip generation data from ITE's *Trip Generation, 11th Edition*. This matrix may be updated with subsequent versions of ITE's *Trip Generation.*

Table 1:
Land Use Equivalency Matrix [1,2]

Land Use:		**Multifamily (Mid-Rise)**	**Shopping Center (<150k)**	**High-Turnover (Sit-Down) Restaurant**	**Office Building**	**Hotel**
	Unit	**Dwelling Unit (D.U.)**	**KSF**	**KSF**	**KSF**	**Room**
Multifamily (Mid-Rise)	**1 D.U. is equivalent to**	1.000	0.115	0.043	0.271	0.661
Shopping Center (<150k)	**1 KSF is equivalent to**	8.718	1.000	0.376	2.361	5.763
High-Turnover (Sit-Down) Restaurant	**1 KSF is equivalent to**	23.205	2.662	1.000	6.285	15.339
Office Building	**1 KSF is equivalent to**	3.692	0.424	0.159	1.000	2.441
Hotel	**1 Room is equivalent to**	1.513	0.174	0.065	0.410	1.000

1. Conversion rates based on PM peak hour trip average rates from ITE's *Trip Generation, 11th Edition*
2. Rates may be updated based on PM peak hour average rate information from subsequent versions of ITE's *Trip Generation*

4.0 Area Planning Documents

The following section summarizes relevant transportation related site information from the *Citywide Transportation Plan*, the *Charleston City Plan*, the *People Pedal Plan*, the *Special Area Plan – Calhoun Street-East/Cooper River Waterfront*, the SCDOT *Bicycle and Pedestrian Plan*, and the previously planning exercises for the Union Pier site.

4.1 Citywide Transportation Plan

The *Charleston Citywide Transportation Plan* (Stantec, 2018) presents an overview of existing transportation conditions within the City, while also presenting plans for improving mobility, mitigating traffic congestion, improving pedestrian, cyclist and vehicular safety, and the enhancement of transportation corridors. The plan outlines equitable transportation goals, while also taking into account budgetary and timeline considerations. Other plans incorporated into the *Charleston Citywide Transportation Plan* include the *Plan West Ashley*, *People Pedal Plan*, *People 2 Parks*, *ReThink Folly Road*, and *Walk + Bike BCD*.

Potential projects and proposed timelines for implementation were identified. Projects were broken into three timeframes – short-term (2018 – 2025), middle-term (2026 – 2035), or long-term (2036 – 2045). In addition, 13 safety hot spots and corridor improvements projects were identified. The Union Pier study area includes one identified hot spot and 3 identified corridor projects, as described below.

The Calhoun Street & East Bay Street area was identified as a hot spot. The plan recommends the following improvements within that area:

- Installation of high visibility crosswalk with dedicated, painted bike lane crossings.
- Realignment of Washington Street to fix offset, increase visibility, and create a new plaza.
- Installation of a two-lane cycle track on Calhoun Street.

The project cost was identified as $600,000. **Figure 3** shows the concept for this area.

In addition, the following three projects were identified in the plan. The estimated project costs and projected timeline for the projects are noted below:

- Calhoun Street Access Management project from King Street to Concord Street (project ID 4) – estimated $920,000, short-term project.
- East Bay Street Access Management project from Water Street to Washington Street (project ID 14) – estimated $720,000, long-term project.
- East Bay Street at Washington Street intersection Access Management project (project ID 15) – estimated $2,133,000, middle-term project.

Source: Citywide Transportation Plan, 2018

Figure 3: Calhoun Street & East Bay Street Hot Spot Concept Plan

4.2 Charleston City Plan

The *Charleston City Plan* (2021) is the recently adopted comprehensive plan for the City, which presents a vision through the year 2030. It will serve as the roadmap to the city, replacing the *Century V Plan*. This plan makes recommendations within the Urban Growth Boundary, including peninsular Charleston, West Ashley, James Island, Johns Island, Wando, and Daniel Island. The *Charleston City Plan* focuses on four basic guiding principles: water first, data smart, strength in diversity, and community empowered. The Union Pier site is located in the Central Business District area of the plan.

Three capital improvement projects were identified in the study area:

- Market Street Division III – Surface Collection & Conveyance (project ID 19) – $17,545,684
- Market Street Streetscape – $9,352,500
- City Market Shed Overhead Gas Line – $711,515

4.3 People Pedal Plan

The *People Pedal Plan* (City of Charleston, 2018) identifies recommended bicycle routes through the City. The plan recommends a combination of signage and sharrow applications, traffic calming, greenways and side paths, bike boulevards, bike lanes, and cycle tracks. In the project study area, Calhoun Street is identified for a cycle track. Washington Street and Concord Street are identified for signage and sharrow applications with bike lanes extending through the Union Pier site along Concord Street. Bike lanes are also recommended on Market Street.

4.4 Special Area Plan – Calhoun Street-East/Cooper River Waterfront

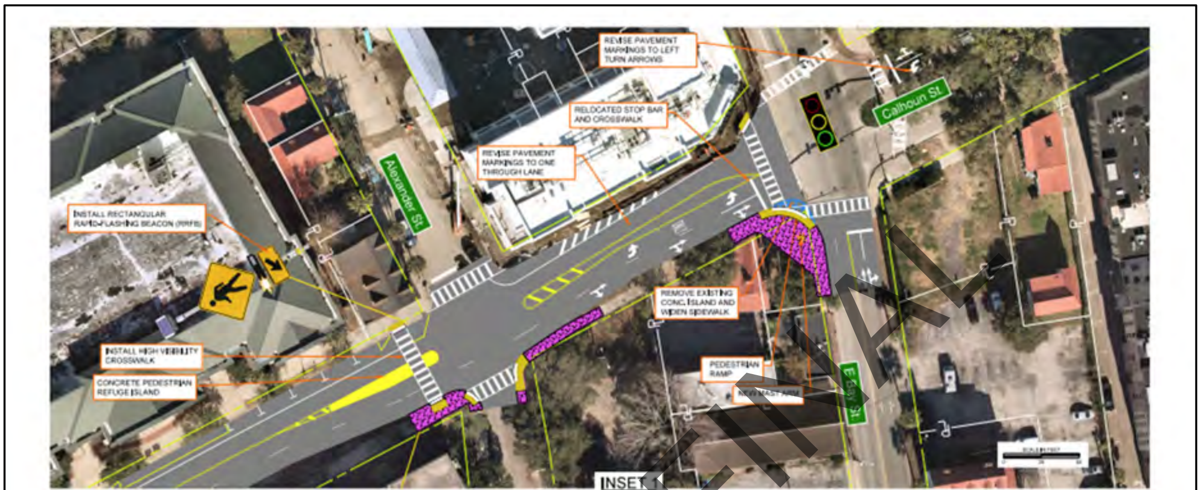
The Washington Street/East Bay Street realignment was studied in 2010 as part of the CKS *Special Area Plan – Calhoun Street-East/Cooper River Waterfront*. **Figure 4** shows the concept for the Washington Street/East Bay Street realignment envisioned as part of this plan.

Source: *Special Area Plan – Calhoun Street - East/Cooper River Waterfront plan*, CKS, 2010.

Figure 4: Proposed East Bay Street/Washington Street Plan

4.5 SCDOT Bicycle and Pedestrian Improvement Plan

SCDOT has developed a bicycle and pedestrian improvement plan for many of the major roadways on the Peninsula. **Figure 5** shows the improvements planned at the intersection of East Bay Street at Calhoun Street. Based on the latest information from SCDOT, construction of the improvements is planned to commence Winter 2023 with a 10-month duration.



Source: http://info2.scdot.org/projects/ViewerFiles/CHS_safety_concept%20planset_PIM_08042022.pdf

Figure 5: SCDOT Bicycle and Pedestrian Improvement Plan - East Bay Street at Calhoun Street

4.6 Previous Union Pier Plans

The East Bay Street/Washington Street shift has also been noted in the previous 1994 and 2010 Union Pier redevelopment plans that were coordinated with City of Charleston staff.

5.0 Inventory

The following section discusses the existing transportation characteristics conditions of the study area intersections and roadway segments as well as summarizes the adjacent transit, bicycle, pedestrian, and water taxi facilities.

5.1 Existing Union Pier Site Access and Existing Cruise Day Traffic

There are two primary access points to the Union Pier site located on Washington Street and Laurens Street, both of which are gate controlled. The Washington Street access point is located just south of Laurens Street and is a manned gate. The Laurens Street access is a secured gate. There are additional minor access points to parking areas on the south side of the site.

Traffic counts were collected at the Union Pier access points during a cruise ship home port day in March 2022. During cruise ship times, there are four primary access points – Laurens Street, Washington Street, Pritchard Street and Concord Street.

Figure 6 shows the entering and exiting vehicles to the Union Pier site during a typical cruise ship home port day. On the study day, the debarkation occurred from 7 AM to 10 AM with approximately 400 – 500 vehicles per hour with a maximum of 528 vehicles from 8 AM to 9 AM. On the study day, the embarkation occurred between 10 AM to 2 PM with approximately 400 – 650 vehicles per hour with a maximum of 655 vehicles from 12 PM – 1 PM.

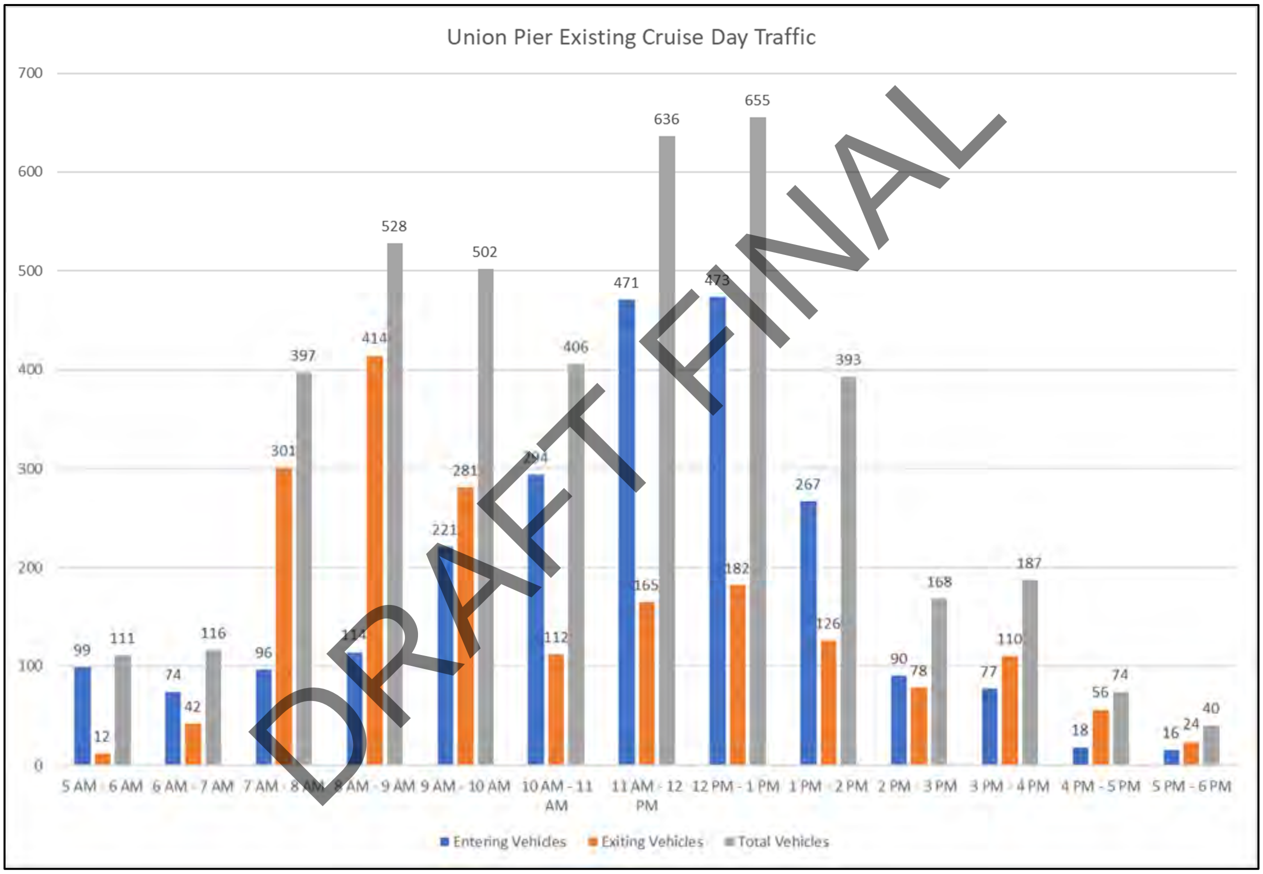


Figure 6: Existing Cruise Day Traffic – March 2022

5.2 Study Area Intersections

The following study area intersections were reviewed as a part of this study. The intersection laneage for the study area intersections is shown in **Figure 7**. The intersection control of each intersection is noted in parentheses below.

- East Bay Street at Chapel Street (signalized)
- East Bay Street at Calhoun Street (signalized)
- Washington Street at Calhoun Street (signalized)
- Washington Street at Laurens Street (unsignalized)
- East Bay Street at Hasell Street (signalized)
- Hasell Street at Washington Street (unsignalized)
- East Bay Street at Market Street (signalized)
- Market Street at Concord Street (unsignalized)
- Concord Street at Cumberland Street (unsignalized)

Turning movement traffic count data was collected at the study area intersections in October 2021 from 7:00 AM to 9:00 AM and 4:00 to 6:00 PM on an average weekday. Turning movement count data can be found in the **Appendix** and the AM and PM peak hour existing traffic volumes are shown in **Figure 8.**

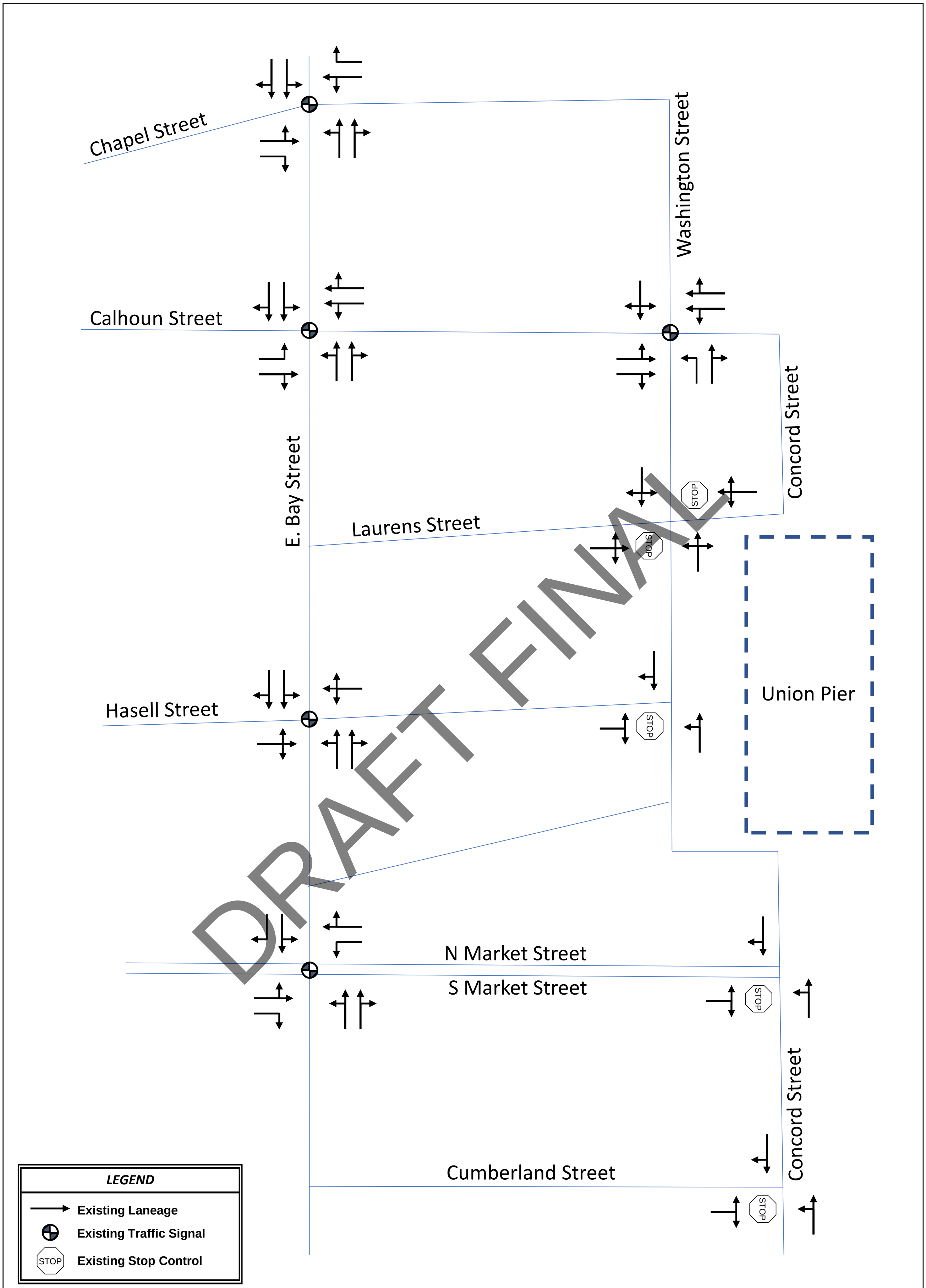
The AM peak hour for all intersections was from 8:00 AM to 9:00 AM and the PM peak hour varied between 4:00 PM to 6:00 PM.

5.3 Existing Roadway Conditions

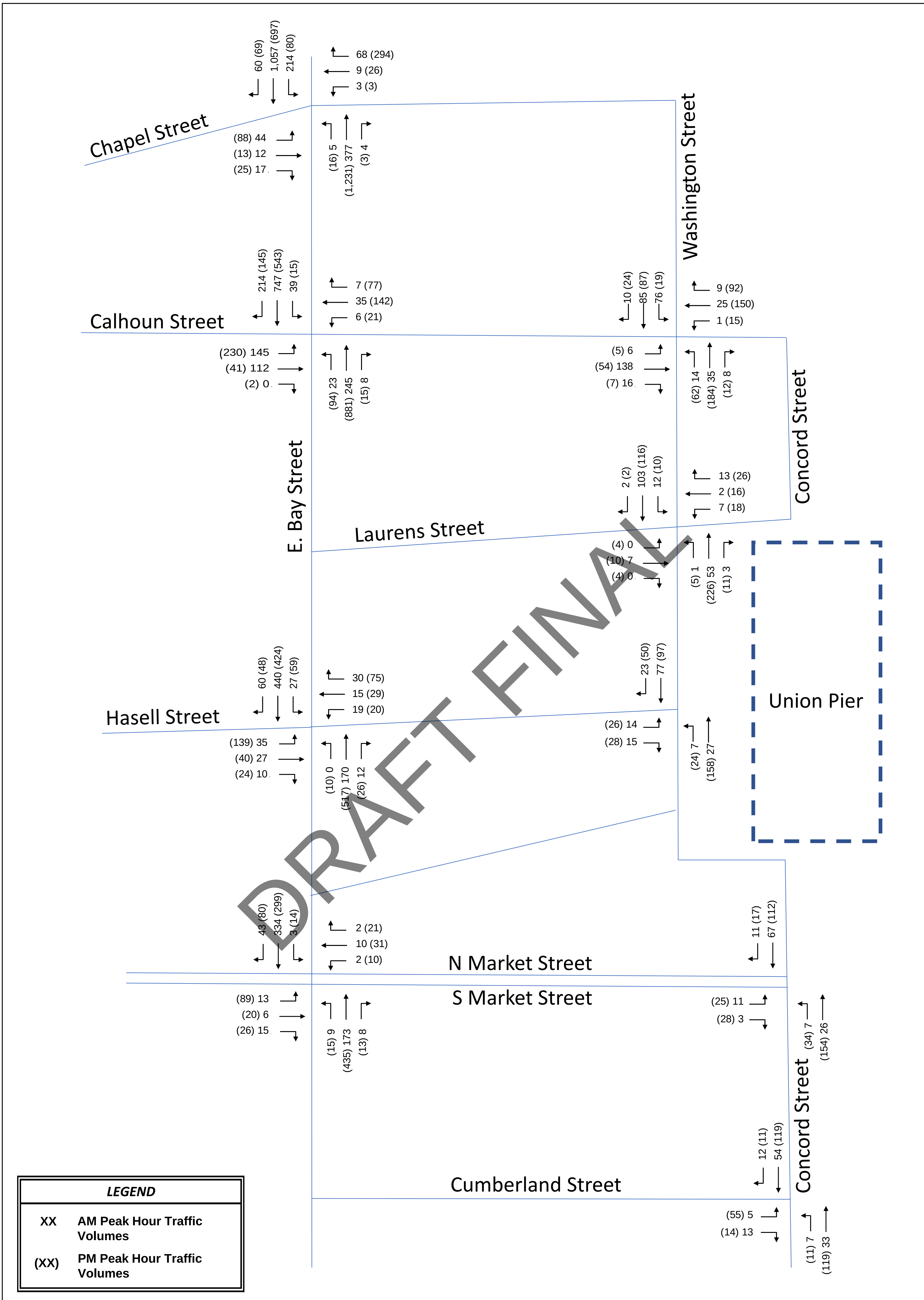
The following study area roadway segments were reviewed as a part of this project.

East Bay Street (US 52) is a four-lane, north-south roadway with a posted speed limit of 30 miles per hour (mph) and varying on-street parking facilities. East Bay Street is a state roadway and is classified as a minor arterial north of Calhoun Street and as a principal arterial south of Calhoun Street. Per SCDOT AADT counts, East Bay Street carried approximately 22,200 vehicles per day (vpd) from Broad Street to US 17 in 2021. East Bay Street experiences some congestion during the peak times, primarily southbound at Calhoun Street during the morning peak hour and northbound at Calhoun Street during the evening peak hour.

Calhoun Street (S-404) west of East Bay Street is a four-lane, east-west principal arterial roadway with varying on-street parking facilities. This section of Calhoun Street is a state roadway. Calhoun Street has a posted speed limit of 25 mph. East of East Bay Street, Calhoun Street is a City street, and is a four-lane divided roadway with no on-street parking. Per SCDOT AADT counts, Calhoun Street carried approximately 13,600 vpd west of East Bay Street and approximately 3,200 vpd east of East Bay Street in 2021. Calhoun Street experiences some congestion during the peak times in the study area, primarily eastbound at East Bay Street during the evening peak hour.



BIHL ENGINEERING	**Union Pier Traffic Impact Analysis**	**Existing Roadway Laneage**	**Figure 7**



BIHL ENGINEERING	**Union Pier Traffic Impact Analysis**	**Existing AM and PM Peak Hour Traffic Volumes**	**Figure 8**

Chapel Street (S-115) is a two-lane, east-west roadway. Chapel Street is a City street west of East Bay Street and a state roadway east of East Bay Street.

Charlotte Street (S-662) is a two-lane, east-west roadway with a posted speed limit of 20 mph. Charlotte Street is a City street west of East Bay Street and a state roadway east of East Bay Street.

Washington Street (S-1022, S-2387) is a two-lane roadway with on-street parking on both sides of the street south of Calhoun Street and southbound only on-street parking north of Calhoun Street. Washington Street is a state roadway from Chapel Street to approximately Society Street. The remaining portions of Washington Street are City owned. Some portions of Washington Street are designated as a local road and other portions are designated as a major collector. Per SCDOT data, North of Laurens Street, Washington Street has a 2021 AADT of 3,000 vpd. Between Laurens Street and Hasell Street, Washington Street has a 2021 AADT of 4,500 vpd.

Hasell Street (S-124) is a two-lane roadway with a posted speed limit of 20 miles per hour. West of East Bay Street, Hasell Street is a City street with on-street parking and east of East Bay Street, Hasell Street is a state roadway with no on-street parking. Hasell Street has a 2021 AADT of 2,300 vpd between Meeting Street and East Bay Street.

North and South Market Streets are one-way, two-lane roadways with on-street parking. North Market Street carries westbound traffic while South Market Street carries eastbound traffic. South Market Street has a 2021 AADT of 1,400 vpd between State Street and East Bay Street. The Charleston City Market is a pedestrian market located between North and South Market Streets with significant pedestrian travel across North and South Market Streets between Meeting Street and East Bay Street. North and South Market Streets are both City streets.

Concord Street (S-396) is a two-lane roadway with a posted speed limit of 25 mph. Concord Street is a state roadway from Cumberland Street to Charlotte Street with a right-of-way corridor traversing through the Union Pier site. The portion of Concord Street through the Union Pier site is currently inaccessible to the public. Concord Street from Cumberland Street to Vendue Range is a City street. On-street parking facilities vary on the public portions of Concord Street.

Cumberland Street is a two-lane roadway with a posted speed limit of 25 mph and on-street parking in the eastbound direction from Meeting Street to East Bay Street. Cumberland Street is a City street.

5.4 Transit Facilities

Transit service in the vicinity of the study area is run by CARTA. The transit routes near the study area are shown in **Figure 9**.

The Downtown Area Shuttle (DASH) is a free shuttle service with three downtown routes (Routes 210, 211, and 213). Routes 210 and 211 travel adjacent to or within a block of the site. Route 210 (Orange Line) runs primarily on Calhoun Street with loops around the College of Charleston and Marion Square area along Warren Street/John Street. There are multiple stops on Calhoun Street in the vicinity of the site including Calhoun Street/East Bay Street and Aquarium (Concord Street). Route 211 (Green Line) is a north/south loop primarily traveling south on King Street and north on Meeting Street with a loop on Broad Street that travels north on East Bay Street and Concord Street by the south side of the project before returning to Meeting Street. Route 211 has stops at Waterfront Park, Concord Street/Cumberland Street, and Market Street/East Bay Street passing directly by the site.

Route 20 is a CARTA route that travels on Meeting Street between downtown Charleston and Mount Pleasant Street with multiple stops in the study area. There are stops at Calhoun Street, George Street, Hasell Street, Market Street, and Cumberland Street in the vicinity of the site.

The Hospitality on Peninsula (HOP) shuttle is a park-and-ride service geared toward employees who work on the peninsula. The shuttle route begins at a park-and-ride lot on Morrison Street, traveling down Meeting Street to Broad Street returning along East Bay Street. Due to "limited ridership in light of the COVID-19 pandemic," the HOP is currently suspended.

5.5 Bicycle and Pedestrian Facilities

In the vicinity of the study area, there are LIME bike share stations located at Gadsdenboro Park and at the US Custom House, as shown in **Figure 10**. The project site is approximately one block away from both bike share locations.

Each roadway in the study area has a sidewalk for pedestrians on at least one side of the street, although sidewalk width and condition varies.

5.6 Water Transportation

The peninsula is served by water taxi services from Mount Pleasant and Daniel Island, as shown in **Figure 10.**

Charleston Water Taxi provides hourly service between Charleston and Mount Pleasant, with stops at Waterfront Park, Charleston Maritime Center, Patriots Point, and Charleston Harbor Marina.

The Daniel Island Ferry provides service between Waterfront Park and The Kingstide Restaurant on Daniel Island. The ferry operates Thursday through Saturday evenings and on Saturday afternoon.

Source: CARTA

Map Source: ArcGIS

BIHL ENGINEERING

Union Pier Traffic Impact Analysis

Existing Transit Routes and Stops

Figure 9

BIHL ENGINEERING	Union Pier Traffic Impact Analysis	Existing Bike, Pedestrian, and Water Taxi Facilities	Figure 10

6.0 Existing Daily Traffic Volumes

Table 2 shows the SCDOT Average Annual Daily Traffic (AADT) volumes on the study area roadways between 2016 and 2021.

Table 2:
SCDOT AADT Volumes[1]

Roadway Name	Road Section		Year						Exponential Annual Growth Rate
	From	To	2021	2020	2019	2018	2017[2]	2016[2]	
East Bay St.	Broad St.	US 17	22,200	22,300	24,100	25,200	24,300	22,300	-0.09%
Calhoun St.	Rutledge Ave.	East Bay St.	13,600	14,600	15,800	16,300	15,700	16,500	-3.79%
Calhoun St.	East Bay St.	Concord St.	3,200	3,300	3,400	5,200	4,900	4,600	-7.0%
Charlotte St.	East Bay St.	Washington St.	650	500	550	800	750	850	-5.22%
Washington St.	Charlotte St.	Society St.	3,000	4,000	4,200	5,300	4,900	4,600	-8.19%
Washington St.	Society St.	Hasell St.	4,500	5,600	4,800	5,600	5,200	5,400	-3.58%
Washington St.	Hasell St.	Concord St.	2,700	3,200	3,400	3,200	N/A	N/A	-
Hasell St.	Meeting St.	East Bay St.	2,300	2,600	2,700	2,900	2,700	2,600	-2.42%
Market St.	State St.	East Bay St.	1,400	2,900	2,900	2,100	2,000	2,000	-6.89%

1. Source: SCDOT Traffic Analysis and Data Application
2. 2017-2016 AADT data was not available for some roadway segments

In general, the annual growth rate from the past five years (2016 to 2021) was negative in the study area. Therefore, to be conservative, a 2% per year growth rate was assumed in the future year analysis for non-specific growth.

7.0 Existing Intersection Conditions Operations

Intersection capacity analyses were performed for the AM and PM peak hour traffic conditions using Synchro, Version 11, software to determine the operating characteristics of the roadway network. The analyses were conducted with methodologies contained in *HCM 6*.

Capacity of an intersection is defined as the maximum number of vehicles that can pass through an intersection during a specified time, typically an hour. Capacity is described by level of service (LOS) for the operating characteristics of an intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. *HCM 6* defines six levels of service, LOS A through LOS F, with A being the best and F being the worst.

LOS for signalized intersections is determined by the overall intersection operations and is reflected in average delay per vehicle. LOS D or better is typically considered acceptable for signalized intersections. **Table 3** shows the level of service control delay criteria for a signalized intersection.

Table 3:
Signalized Intersection Level of Service Criteria[1]

Level of Service	Average Overall Control Delay (seconds/vehicle)
LOS A	≤10
LOS B	>10 and ≤20
LOS C	>20 and ≤35
LOS D	>35 and ≤55
LOS E	>55 and ≤80
LOS F	>80

1. Source: *HCM 6th Edition*, Transportation Research Board

LOS for a two-way stop controlled (TWSC) intersection is determined by the delay of the poorest performing minor approach, as LOS is not defined for TWSC intersections as a whole. LOS for an all-way stop controlled (AWSC) intersection is determined by overall intersection operations, similar to a signalized intersection. **Table 4** shows the LOS control-delay criteria for unsignalized intersections (both TWSC and AWSC).

Table 4:
Unsignalized Intersection Level of Service Criteria[1]

Level of Service	Average Minor Street Control Delay (seconds/vehicle)
LOS A	≤10
LOS B	>10 and ≤15
LOS C	>15 and ≤25
LOS D	>25 and ≤35
LOS E	>35 and ≤50
LOS F	>50

1. Source: *HCM 6th Edition*, Transportation Research Board

It is not unusual for minor stop-controlled side streets and driveways on major streets to experience longer delays at LOS E and LOS F during peak hours while the majority of the traffic moving through the corridor typically experiences little or no delay.

Capacity analyses were performed for the AM and PM peak hour traffic Existing Conditions at the following intersections:

- East Bay Street at Chapel Street (signalized)
- East Bay Street at Calhoun Street (signalized)
- Washington Street at Calhoun Street (signalized)
- Washington Street at Laurens Street (unsignalized)
- East Bay Street at Hasell Street (signalized)
- Hasell Street at Washington Street (unsignalized)
- East Bay Street at Market Street (signalized)
- Market Street at Concord Street (unsignalized)
- Concord Street at Cumberland Street (unsignalized)

Existing traffic signal timing plans were obtained from the City of Charleston and applied to the signalized intersections.

Table 5 summarizes LOS and control delay (average seconds of delay per vehicle) for the existing AM and PM peak hour conditions at the study area intersections. The detailed Synchro output reports are shown in the **Appendix.**

Table 5:
Existing Peak Hour Level of Service and Delay (average seconds per vehicle)

Intersection	Traffic Control[1]	AM Peak Hour	PM Peak Hour
East Bay St. at Chapel St.	S	B (16.3)	B (11.9)
East Bay St. at Calhoun St.	S	C (28.8)	C (32.6)
Washington St. at Calhoun St.	S	B (14.0)	B (18.0)
Washington St. at Laurens St.	U - TWSC	B (10.8) - EB	B (13.7) - EB
East Bay St. at Hasell St.	S	A (7.0)	B (10.0)
Hasell St. at Washington St.	U - TWSC	A (9.5) - EB	B (10.6) - EB
East Bay St at N. Market St.	S	C (20.0)	B (17.9)
Market St. at Concord St.	U - TWSC	A (9.3) - EB	B (11.1) - EB
Concord St. at Cumberland St.	U - TWSC	A (9.5) - EB	B (14.2) - EB

1. S = Signalized, U = Unsignalized
2. TWSC – Two-way Stop Control

In the Existing Conditions, all study area intersections operate acceptably at LOS C or better during the AM and PM peak hours. There is existing congestion on East Bay Street and Calhoun Street in the peak directions during peak times.

8.0 Planned Roadway Improvements

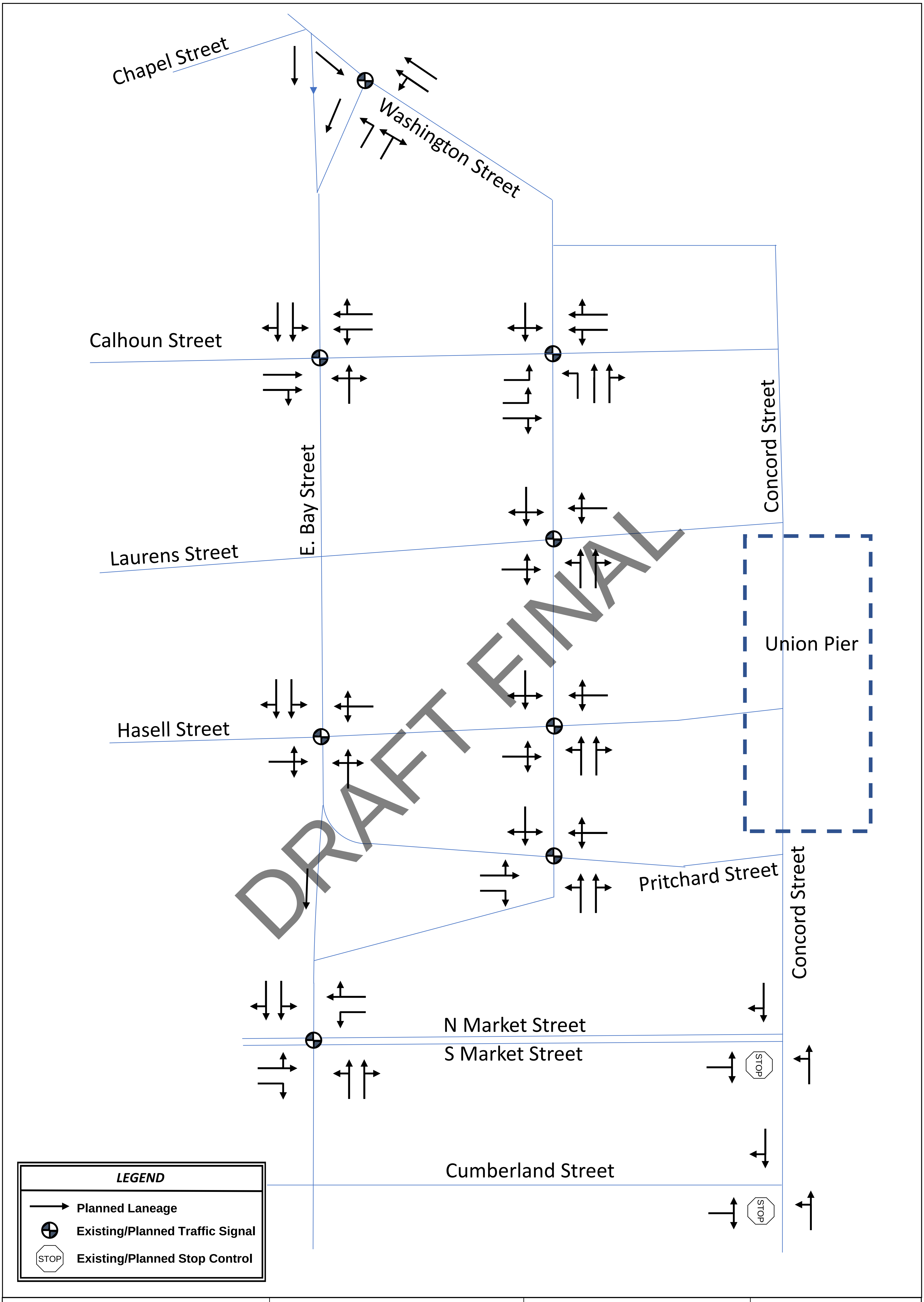
The following improvements are included in the future analysis and are assumed to be completed as part of this project or by others. These projects will need to be further coordinated with SCDOT and City staff as the project moves forward. Specific design details will be determined in the next phase of the project. If the improvements noted as part of the project are not completed, the traffic study should be updated to review the project impacts and determine if other improvements may be needed. **Figure 11** shows the future laneage conditions studied at the study area intersections.

8.1 Conversion of East Bay Street/Washington Street

As part of this project, Washington Street is planned to be widened to a three-lane section (two northbound travel lanes and one southbound lane) for its entirety from Chapel Street to the Pinckney Street/Pritchard Street area. East Bay Street will be converted to two southbound travel lanes and one northbound travel lane from Chapel Street to the Pinckney Street/Pritchard Street area. New or relocated intersections will be created at each end of the conversion. **Figure 12** shows a representation of the roadway configuration used in the Future Build analysis compared to the existing roadway configuration. Specific design details will be determined in the next phase of the project.

8.1.1 Relocation and Reconfiguration of East Bay Street at Chapel Street/Washington Street Intersection

The existing intersection of East Bay Street at Chapel Street is planned to be converted to an unsignalized condition with the west approach of Chapel Street converted to one-way westbound traffic flow between East Bay Street and Drake Street. Chapel Street operation is subject to change based on more detailed coordination with SCDOT, City, and neighborhood representatives. A southbound slip lane will be created for one of the East Bay Street travel lanes. The signalized intersection will be relocated south for East Bay Street and Washington Street. Washington Street will be upgraded to a three-lane facility with turn lanes (one southbound lane, two northbound lanes). East Bay Street south of the intersection will also be converted into a three-lane facility (two southbound lanes, one northbound lane). Specific details of the intersection design will be determined in the next phase of the project.

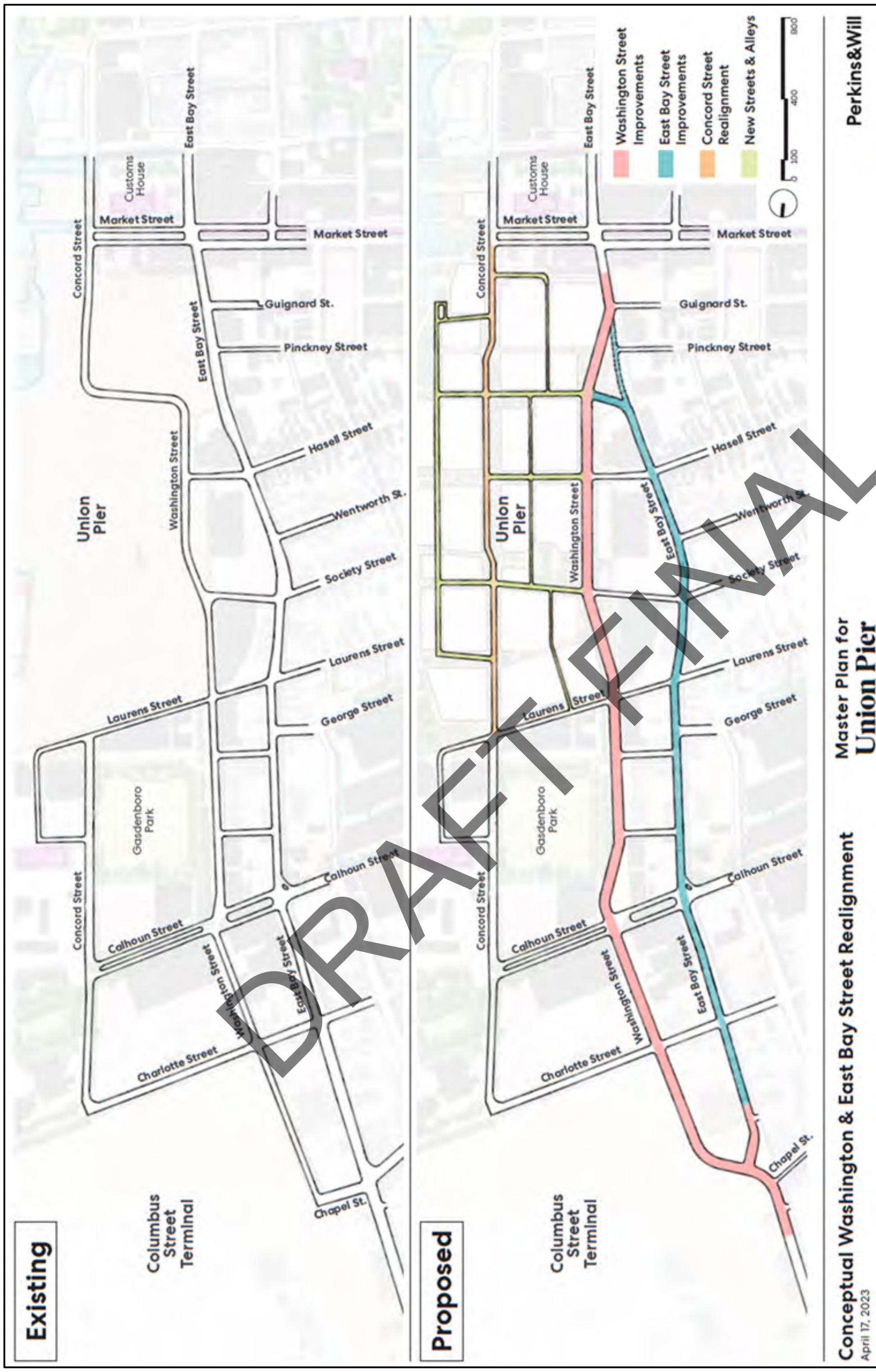


BIHL ENGINEERING

Union Pier Traffic Impact Analysis

Future Roadway Laneage

Figure 11



Source: Perkins and Will

Figure 12: Washington Street Improvements Concept Plan Compared to Existing Configuration

8.1.2 New Intersection of East Bay Street at Washington Street (near Pinckney Street/Pritchard Street)

A travel lane shift is planned to be located just south of Pinckney Street, connecting East Bay Street to Washington Street through an existing parking lot and warehouse building. A new signalized intersection will be created at East Bay Street at Washington Street in the area of Pritchard Street. A southbound slip lane will be created for one of the East Bay Street travel lanes. Specific details of the intersection design will be determined in the next phase of the project.

A conceptual representation of the intersection configuration of the area of East Bay Street, Washington Street and Pritchard Street is shown in **Figure 13**.

Source: Thomas and Hutton

Figure 13: Conceptual Representation of East Bay Street/Washington Street/Pritchard Street

8.1.3 Prohibition of Eastbound Left Turns at East Bay Street at Calhoun Street

As part of the project, eastbound left turns at East Bay Street at Calhoun Street will be prohibited. These turns will be rerouted to turn left at Washington Street. The intersection of East Bay Street at Calhoun Street will also be reconfigured to better align the eastbound approach with the receiving lanes. Bicycle and pedestrian improvements are planned to be completed by 2024 as part of the SCDOT bicycle and pedestrian project. These improvements were incorporated into the 2030 No Build and Build Conditions analysis. If these improvements are not complete by 2030, they should be designed and incorporated as part of this project.

8.1.4 Reconfiguration of Calhoun Street at Washington Street

Washington Street will be reconfigured and realigned at its intersection with Calhoun Street to improve efficiency. A northbound left-turn lane and eastbound left-turn lane would be installed as part of the intersection improvements. As noted previously, eastbound left turns from the intersection of East Bay Street at Calhoun Street will be rerouted to the intersection of Washington Street at Calhoun Street. Specific details of the intersection design will be determined in the next phase of the project.

8.1.5 New Traffic Signals

Based on the proposed traffic flow changes and projected intersection volumes at the study area intersections on East Bay Street and Washington Street, new traffic signals are planned at Washington Street at Hasell Street and Washington Street at Laurens Street subject to traffic signal warrants. These locations will need to be coordinated with SCDOT and City staff (dependent on location) as the urban intersection spacing is less than typical signalized spacing.

8.2 Retiming of Study Area Intersections

To maximize the efficiency of the traffic flow in this area, the traffic signal timings should be optimized. Currently a majority of the Charleston peninsula is zone coordinated, with longer cycle lengths along the East Bay Street corridor. The coordination for the Charleston peninsula should be updated to accommodate the new traffic flow characteristics along East Bay Street and Washington Street. For the purposes of the analysis, cycle lengths and future phase splits were optimized. These timings are subject to change with the retiming effort.

8.3 Application in Analysis

The improvements described in this section were applied to the future year analysis under the assumption that they will be implemented as part of the Union Pier project. If the improvements noted as part of the project are not completed, the traffic study should be updated to review the project impacts and determine if other improvements may be needed.

9.0 Future CARTA Stops and Infrastructure

The project team has been coordinating with CARTA regarding future transit plans for the area. CARTA has begun the process of updating the transit plan for the Peninsula. It is expected that routes and stops will be incorporated into the Union Pier PUD development design. Detailed coordination between CARTA and the project team is recommended.

The Lowcountry Rapid Transit (LCRT) route is not planned to travel through the site. The current route travels on Meeting Street and Calhoun Street. It is expected that in the new CARTA plan for the Peninsula, there will be a connection between the transit routes serving LCRT and the Union Pier site.

10.0 Projected Traffic Generation

The potential trip generation of the proposed development was determined using trip generation information from the Institute of Transportation Engineers' (ITE) *Trip Generation, 11th Edition* (2021).

Internal capture trips are those trips that stay internal to the proposed development and do not use the external roadway network outside of the Union Pier PUD. Internal capture trips were limited to 20% of the gross AM peak hour exiting trips and the gross PM peak hour entering trips in the analysis. Internal capture was determined using NCHRP *Report 684* information.

A 15% modal credit was applied to represent the bicycle, pedestrian, and transit trips expected to occur due to the downtown nature of the project. This percentage was determined in coordination with and agreed upon by City staff.

Pass-by trips are those trips currently on the roadway network that will pass by the proposed development during their original trip, enter the development, and then return to their original trip. PM peak hour pass-by trips were assigned using ITE standards.

Table 6 summarizes the AM and PM peak hour trips associated with the proposed development.

As shown in **Table 6**, the proposed development is projected to generate 1,466 new vehicular trips (758 entering, 708 exiting) during the AM peak hour and 1,811 new vehicular trips (881 entering, 930 exiting) during the PM peak hour. In addition to the new trips, there are 159 PM peak hour pass-by trips (87 entering, 72 exiting) expected.

Gross daily trips are projected to exceed 500 trips per day. Therefore, coordination with City staff during the TRC process regarding the project's requirements related to the transit accommodations ordinance is recommended.

Table 6:
Projected Trip Generation

Land Use and Intensity	ITE Land Use Code	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
220,000 sf Shopping Center (no supermarket)	820	263	163	100	996	478	518
50,000 sf High-Turnover Sit-Down Restaurant	932	478	263	215	452	276	176
270,000 sf Office	710	393	346	47	378	64	314
Multifamily Housing (Mid Rise) (Not Close to Rail Transit) – 1,650 Dwelling Units	221	714	164	550	644	393	251
600 Hotel Rooms	310	293	164	129	416	212	204
Gross Trips		**2,141**	**1,100**	**1,041**	**2,886**	**1,423**	**1,463**
Internal Capture		**-416**	**-208**	**-208**	**-568**	**-284**	**-284**
Subtotal All Trips		**1,725**	**892**	**833**	**2,318**	**1,139**	**1,179**
15% Modal Trips		**-259**	**-134**	**-125**	**-348**	**-171**	**-177**
Driveway Trips		**1,466**	**758**	**708**	**1,970**	**968**	**1,002**
Pass-by Trips		**0**	**0**	**0**	**-159**	**-87**	**-72**
External New Trips		**1,466**	**758**	**708**	**1,811**	**881**	**930**

Source: *ITE Trip Generation, 11th Edition*

11.0 Site Traffic Distribution

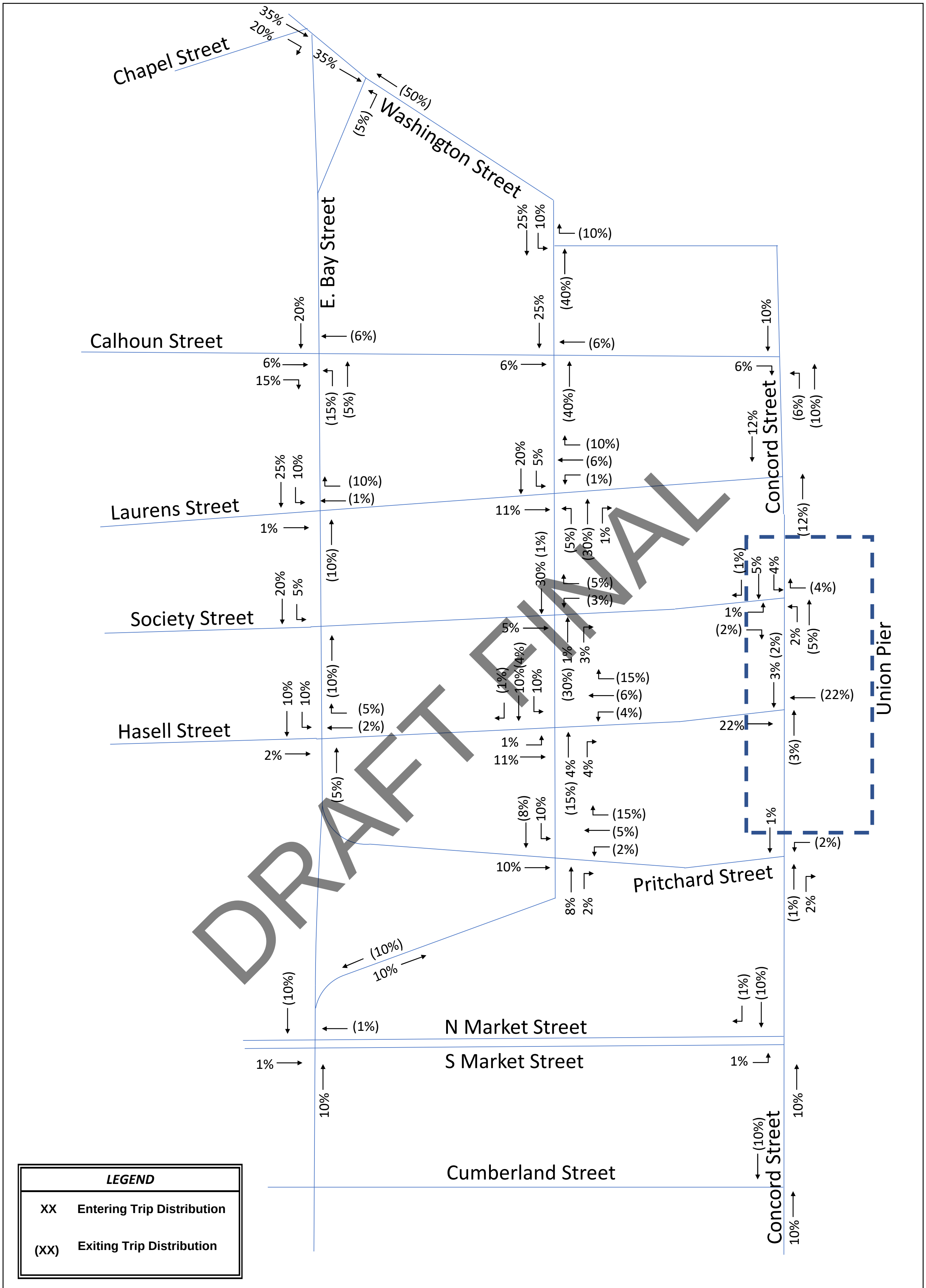
The proposed development traffic was assigned to the surrounding roadway network. The directional distribution and assignment were based on qualitative knowledge of the project area, quantitative application of existing traffic patterns, and expected trip length.

The following general trip distribution was applied to the project trips associated with the proposed development.

- 55% to/from the north of the site
- 20% to/from the south of the site
- 25% to/from the west of the site

Figure 14 shows the proposed development traffic distribution.

As noted previously, due to the conceptual nature of the masterplan, the distribution of traffic within the site is subject to change based on the final locations of the land uses and parking areas.



BIHL ENGINEERING	**Union Pier Traffic Impact Analysis**	**Projected Trip Distribution**	**Figure 14**

12.0 Future Traffic Volumes

12.1 2030 No Build Traffic

Historic growth is the increase in existing traffic volumes due to usage increases and non-specific growth throughout the area. As stated previously, an overall growth rate of 2.0% per year was applied to the study area in the analysis. The projected trips from the apartments currently under construction at Laurens Street and Society Street were also assigned to the study area intersections and are included in the volume development worksheets in the **Appendix**.

The 2030 No Build traffic volumes include existing traffic grown to the buildout year. The planned improvements noted in **Section 8** of the report were not assumed to be installed in the 2030 No Build Conditions.

Figure 15 shows the 2030 No Build AM and PM peak hour traffic volumes.

12.2 2030 Background Traffic Volumes with Traffic Flow Shifts

The improvements noted in **Section 8** are expected to shift approximately 75% of the northbound East Bay Street traffic to the Washington Street corridor and 25% of the southbound East Bay Street traffic. Traffic segment volumes were developed along East Bay Street to determine the reassignment traffic volumes. These traffic volumes were then reassigned to travel along Washington Street. Trips using the Concord Street/Washington Street corridor were reassigned along those corridors. These adjustments are also shown in the volume development worksheets in the **Appendix.**

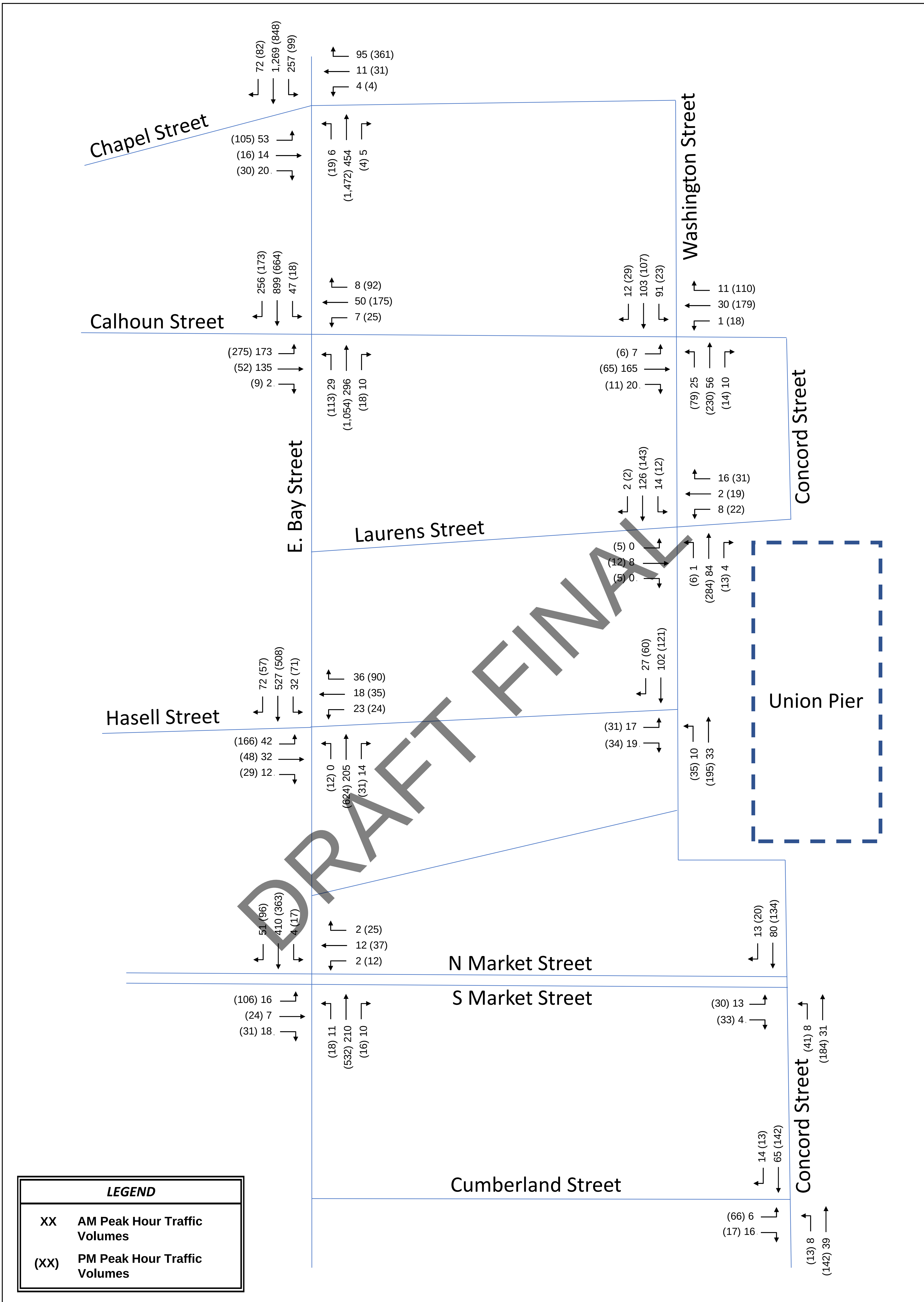
12.3 Project Traffic

The AM peak hour and PM peak hour projected proposed development trips were assigned based on the trip distribution discussed in **Section 11.**

12.4 2030 Build Traffic

The 2030 total traffic volumes include the 2030 background traffic and the proposed development traffic at buildout. The 2030 AM and PM peak hour total traffic volumes are shown in **Figure 16** and **Figure 17**, respectively.

Intersection volume development worksheets are included in the **Appendix**.

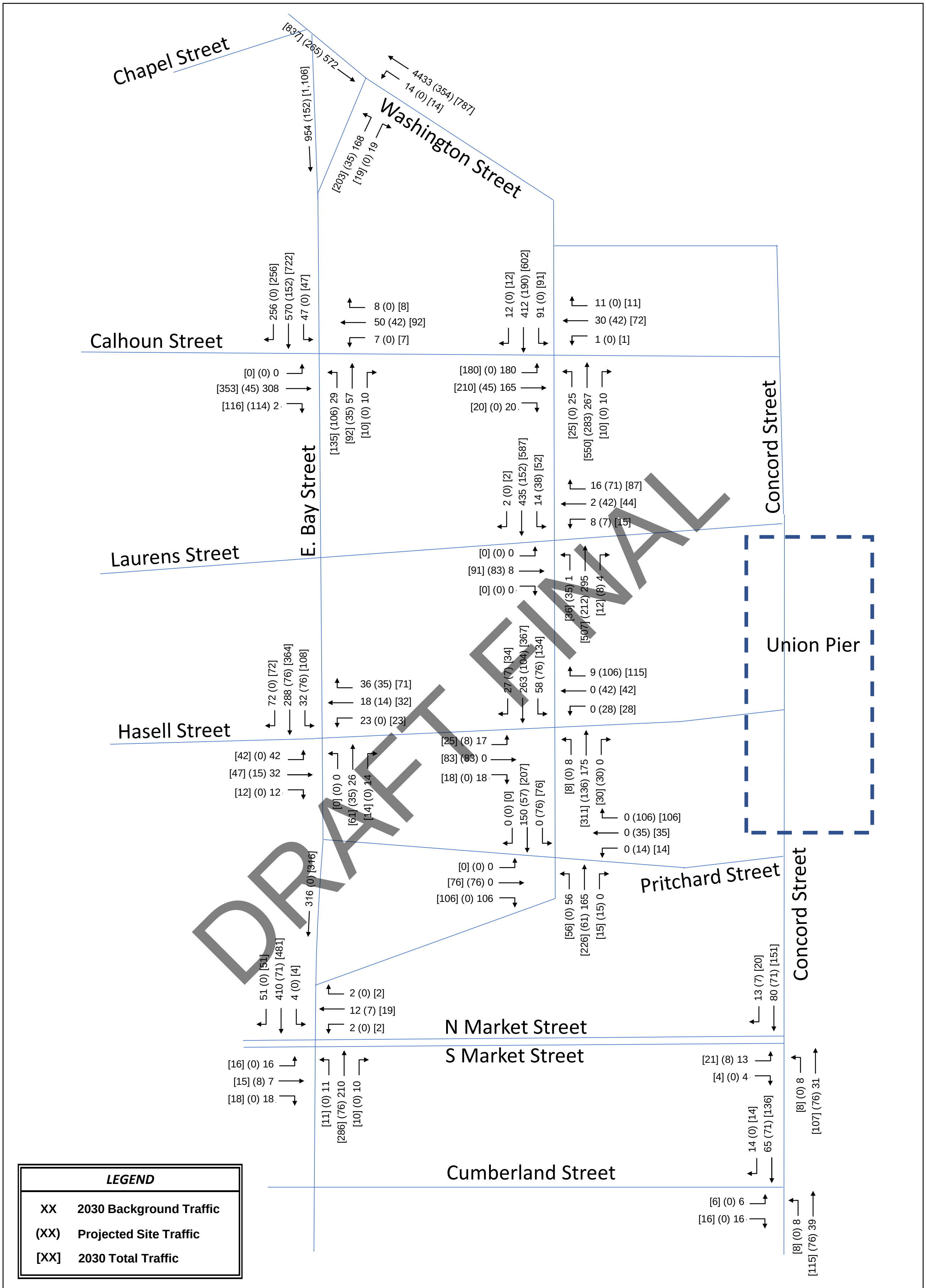


BIHL ENGINEERING

Union Pier Traffic Impact Analysis

No Build AM and PM Peak Hour Traffic Volumes

Figure 15



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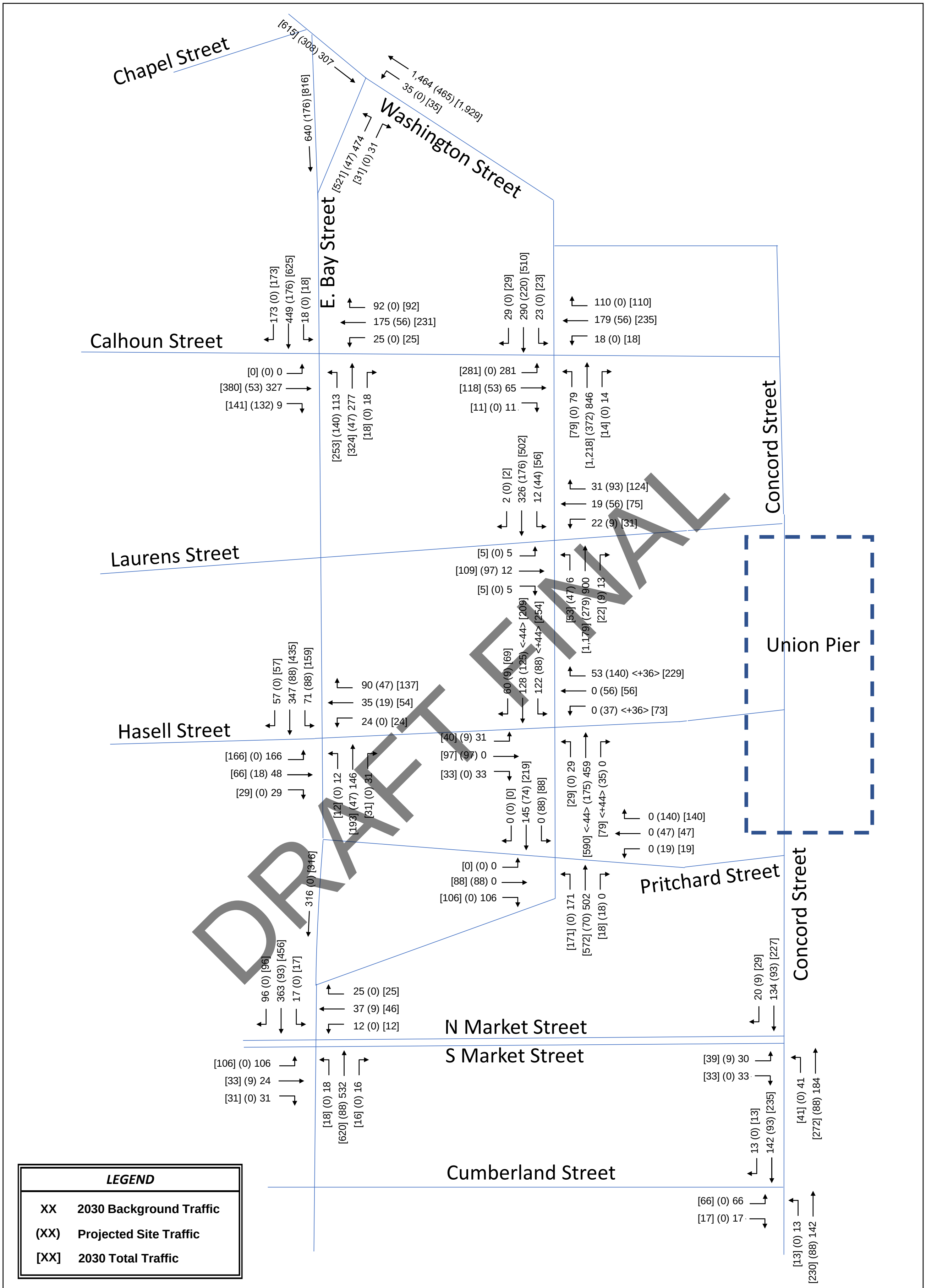
Union Pier Traffic Impact Analysis

2030 AM Peak Hour Projected Volumes

Figure 16



Union Pier Traffic Impact Analysis	2030 PM Peak Hour Projected Volumes	Figure 17

12.5 Projected Daily Traffic Volumes

Table 7 shows the projected year 2030 peak hour and daily traffic segment volumes on the study area roadways based on the trip generation and trip distribution discussed in **Sections 10** and **11**, respectively.

Table 7:
2030 Projected Peak Hour and Daily Traffic Volumes

Road	Segment	Scenario	AM Peak Hour	PM Peak Hour	Daily
Calhoun Street	from E Bay Street to Washington Street	No Build	300	400	4,600
		Build	500	800	9,300
East Bay Street	from Calhoun Street to Hasell Street	No Build	1,100	1,700	19,900
		Build	900	1,300	15,800
East Bay Street	from Hasell Street to Market Street	No Build	700	1,200	13,700
		Build	500	700	8,600
Washington Street	from Laurens Street to Hasell Street	No Build	200	400	4,400
		Build	1,100	1,600	19,300
Washington Street	from Hasell Street to Concord Street	No Build	200	400	3,500
		Build	800	1,000	13,100
Hasell Street	West of E Bay Street	No Build	200	300	3,600
		Build	200	400	4,100
Hasell Street	from E Bay Street to Washington Street	No Build	100	200	2,400
		Build	300	400	4,700
Wharfside Street	from E Bay Street to Washington Street	No Build	n/a	n/a	n/a
		Build	50	50	600

1. Projected Traffic Volumes Rounded to the nearest 100 vehicles

13.0 Future Intersection Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours in the 2030 No Build and 2030 Build Conditions using Synchro, Version 11, software to determine the operating characteristics of the adjacent roadway network and the impacts of the proposed development. The analyses were conducted with methodologies contained in HCM *6*. The Synchro output sheets are included in the **Appendix**.

Capacity analyses were performed at the following intersections:

- East Bay Street at Chapel Street (signalized in the 2030 No Build Conditions – only studied in No Build Conditions)
- East Bay Street at Washington Street (north) (signalized in the 2030 Build Conditions – only studied in Build Conditions)
- East Bay Street at Calhoun Street (signalized in the 2030 No Build and 2030 Build Conditions)
- Washington Street at Calhoun Street (signalized in the 2030 No Build and 2030 Build Conditions)
- Washington Street at Laurens Street (unsignalized in the 2030 No Build Conditions, signalized in the 2030 Build Conditions)
- East Bay Street at Hasell Street (signalized in the 2030 No Build Conditions, reviewed as both unsignalized and signalized conditions in 2030 Build Conditions)
- Hasell Street at Washington Street (unsignalized in the 2030 No Build Conditions, signalized in 2030 Build Conditions)
- East Bay Street at Market Street (signalized in the 2030 No Build and 2030 Build Conditions)
- Market Street at Concord Street (unsignalized in the 2030 No Build and 2030 Build Conditions)
- Concord Street at Cumberland Street (unsignalized in the 2030 No Build and 2030 Build Conditions)

For the future conditions analysis, all peak hour factors (PHF) were assumed to be 0.90. Any heavy vehicle percentages (HV%) below 2.0% were adjusted to 2.0% in all conditions for the purposes of analysis.

Existing signal timings were used for the Existing Conditions analysis. In the No Build Conditions analysis, existing cycle lengths were maintained but phase splits were optimized. In the Build Conditions analysis, cycle length and phase splits were optimized.

Table 8 summarizes LOS and control delay (average seconds of delay per vehicle) for the projected Existing, 2030 No Build, and 2030 Build AM and PM peak hour conditions at the study area locations.

Table 8:
Level of Service and Delay (average seconds per vehicle)

Intersection	Traffic Control 1	Existing Conditions		2030 No Build Conditions		2030 Build Conditions with Improvements	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
East Bay St. at Chapel St.	S	B (16.3)	B (11.9)	C (28.8)	D (50.8)	-	-
East Bay St. at Washington St. (new northern intersection)	S	-	-	-	-	A (8.4)	B (14.9)
East Bay St. at Calhoun St.	S	C (28.8)	C (32.6)	C (26.7)	D (54.9)	C (23.2)	C (32.3)
Washington St. at Calhoun St.	S	B (14.0)	B (18.0)	B (17.2)	B (19.9)	C (22.7)	C (25.4)
Washington St. at Laurens St.	U - TWSC/ S	B (10.8) - EB	B (13.7) - EB	B (11.0) - EB	B (14.4) - EB	A (6.7)	B (19.6)
East Bay St. at Hasell St.	S	A (7.0)	B (10.0)	A (9.4)	B (15.1)	B (10.3)	B (18.0)
Hasell St. at Washington St.	U - TWSC/ S	A (9.5) - EB	B (10.6) - EB	A (9.6) - EB	B (11.2) - EB	B (10.9)	C (27.7)
East Bay St. at Market St.	S	C (20.0)	B (17.9)	A (4.3)	B (10.1)	B (11.9)	B (18.0)
Washington St. at East Bay St./Pritchard St.	S	-	-	-	-	B (15.8)	B (14.1)
Market St. at Concord St.	U – TWSC	A (9.3) - EB	B (11.1) - EB	A (9.4) - EB	B (11.5) - EB	B (10.5) - EB	B (13.4) - EB
Concord St. at Cumberland St.	U - TWSC	A (9.5) - EB	B (14.2) - EB	A (9.6) - EB	B (14.6) - EB	B (10.2) - EB	B (14.5) - EB

\- = Not Applicable
1. S = Signalized, U = Unsignalized
2. TWSC = Two-way Stop Control

13.1 East Bay Street at Chapel Street

For the purposes of the study and due to the limitations of the analysis program, the southbound left-turn movement at the intersection of East Bay Street at Chapel Street was analyzed as a permitted movement due to the shared through-left turn lane on East Bay Street. As shown in **Table 8**, the signalized intersection of East Bay Street at Chapel Street currently operates acceptably at LOS B during the AM and PM peak hours. The intersection is projected to operate acceptably at LOS D or better during the AM peak hour and PM peak hour in the 2030 No Build Conditions.

In the future Build Conditions, the west approach of Chapel Street is converted to an unsignalized condition and Chapel Street is currently contemplated as westbound operation only between East Bay Street and Drake Street. Northbound left turns from East Bay Street to Chapel Street would be prohibited. The details of the unsignalized intersection should be coordinated with the neighborhood, City and SCDOT staff as the project moves forward.

13.2 East Bay Street at Washington Street (relocated signalized intersection)

As described in **Section 8**, in the 2030 Build Conditions a new signalized intersection of East Bay Street at Washington Street is planned just south of Chapel Street.

As shown in **Table 8**, the new signalized intersection is projected to operate at LOS B or better during the AM peak hour and PM peak hour 2030 Build Conditions. As currently envisioned by the project team, the south approach of East Bay Street would “T” into East Bay Street/Washington Street intersection.

13.3 East Bay Street at Calhoun Street

As shown in **Table 8**, the signalized intersection of East Bay Street at Calhoun Street currently operates at LOS C during the AM and PM peak hours. As noted previously, peak hour congestion was observed on East Bay Street and Calhoun Street.

The intersection is projected to operate acceptably at LOS C during the AM peak hour and at LOS D during the PM peak hour in the 2030 No Build Conditions. It is expected that the peak hour congestion would continue in the No Build Conditions.

With prohibition of the eastbound left-turn, redesign of the intersection and the removal of split-phase operation, the intersection is projected to operate at LOS C during the AM and PM peak hour 2030 Build Conditions. The removal of the split phase operation and removal of the eastbound left-turn phase would improve the efficiency of the intersection.

13.4 Washington Street at Calhoun Street

As shown in **Table 8**, the signalized intersection of Washington Street at Calhoun Street currently operates acceptably at LOS B during the AM and PM peak hours. The intersection is projected to operate acceptably at LOS B during the AM and PM peak hours in the 2030 No Build Conditions.

It is expected that this intersection will be redesigned with the overall improvements to Washington Street including the realignment of the Washington Street travel lanes to create a more efficient intersection, and installation of northbound and eastbound left-turn lanes. With these improvements the intersection is projected to operate at LOS C or better during the AM and PM peak hours in the 2030 Build Conditions.

13.5 Washington Street at Laurens Street

As shown in **Table 8**, the unsignalized intersection of Washington Street at Laurens Street currently operates acceptably at LOS B during the AM and PM peak hours. The intersection is projected to continue to operate acceptably at LOS B or better during the AM and PM peak hours in the 2030 No Build Conditions. With the planned signalization of the intersection in the Build Conditions, the intersection is projected to operate at LOS A in both the AM and PM peak hour 2030 Build Conditions. Signalization of the intersection is subject to traffic signal warrants and coordination with SCDOT and City staff.

13.6 East Bay Street at Hasell Street

As shown in **Table 8**, the signalized intersection of East Bay Street at Hasell Street currently operates acceptably at LOS B or better during the AM and PM peak hours. The intersection is projected to operate acceptably at LOS B or better during the AM and PM peak hours in the 2030 No Build and Build Conditions with traffic signal timing optimization.

13.7 Hasell Street at Washington Street

As shown in **Table 8**, the eastbound approach of the unsignalized intersection of Hasell Street at Washington Street currently operates acceptably at LOS B or better during the AM and PM peak hours. The eastbound approach of the intersection is projected to operate acceptably at LOS B or better during the AM and PM peak hours in the 2030 No Build Conditions.

In the 2030 Build Conditions, this intersection is recommended to be signalized to accommodate the additional planned traffic flow on Washington Street. With signalization, the intersection of Hasell Street at Washington Street is projected to operate acceptably at LOS C or better in the AM and PM peak hours in the 2030 Build Conditions. Signalization of the intersection is subject to traffic signal warrants and coordination with SCDOT and City staff.

13.8 East Bay Street at Market Street

As shown in **Table 8**, the signalized intersection of East Bay Street at Market Street currently operates acceptably at LOS C or better during the AM and PM peak hours. The intersection is projected to operate acceptably at LOS B or better during the AM and PM peak hours in the 2030 No Build and 2030 Build Conditions with traffic signal timing optimization.

13.9 Washington Street at East Bay Street/Pritchard Street

As described in **Section 8**, in the 2030 Build Conditions a new intersection is planned to facilitate traffic flow between East Bay Street and Washington Street. A southbound slip lane is planned from the 3-lane section of East Bay Street to the existing 4-lane section. This signalized intersection is projected to operate acceptably at LOS B in the 2030 Build AM and PM peak hour conditions.

13.10 Concord Street at Market Street

As shown in **Table 8**, the eastbound approach of the unsignalized intersection of Concord Street at Market Street currently operates acceptably at LOS B or better during the AM and PM peak hours. The eastbound approach of the intersection is projected to operate acceptably at LOS B or better during the AM and PM peak hours in the 2030 No Build and 2030 Build Conditions.

13.11 Concord Street at Cumberland Street

As shown in **Table 8**, the eastbound approach of the unsignalized intersection of Concord Street at Cumberland Street currently operates acceptably at LOS B or better during the AM and PM peak hours. The eastbound approach of the intersection is projected to operate acceptably at LOS B or better during the AM and PM peak hours in the 2030 No Build and 2030 Build Conditions.

14.0 Recommended Future Mobility Improvements

The following mobility improvements are also recommended as a part of this project.

- Integrate bicycle and pedestrian facilities in project study area.
- Expand City bike share locations within the Union Pier site
- Continue coordination with CARTA regarding new transit routes and/or stops through Union Pier site. Coordinate with CARTA on the project's requirements related to the transit accommodations ordinance
- Coordinate with City staff on opportunities for water ferry/taxi service in or around the Union Pier site

15.0 Summary

The Union Pier PUD site is generally bounded by Laurens Street to the north, Washington Street to the west, Market Street to the south, and the Cooper River to the east. As referenced, the site is currently utilized by the Ports Authority for home-port cruise ship embarkation/debarkation, cruise ship port-of-call service, and break bulk cargo. **Figure 1** shows an overview of the project site and the surrounding area.

The proposed PUD includes the following land uses: 1,650 multi-family units (for the purposes of the study, 1,600 units were assumed to be market rate and 50 units were assumed to be affordable housing units), 600 hotel rooms, 270,000 sf of office space and 270,000 sf of commercial space (220,000 sf of shopping center space and 50,000 sf of high-turnover sit-down restaurant space were assumed in the traffic study). **Figure 2** shows the conceptual masterplan for the site. The project was assumed to be completed in 2030 for the purposes of the study.

As further outlined herein, the following improvements are planned as part of the Union Pier PUD future conditions transportation analysis. These improvements may be done as part of the project or by others and will be completed in coordination with the South Carolina Department of Transportation (SCDOT) and the City of Charleston. It is expected that a more detailed design will be completed for these improvements as the project moves forward.

- East Bay Street/Washington Street traffic flow realignment from Chapel Street to Pritchard Street. Additional details are provided in the bullets below.
  - Reconfigure Washington Street to three lanes (2 northbound lanes, 1 southbound lane).
  - Reconfigure East Bay Street laneage to three lanes (1 northbound lanes, 2 southbound lanes).
  - East Bay Street at Chapel Street (west approach)
    - Existing Chapel Street (west approach) would become an unsignalized intersection at East Bay Street with Chapel Street converted to one-way westbound operation between East Bay Street and Drake Street. Chapel Street operation is subject to change based on more detailed coordination with SCDOT, City, and neighborhood representatives.
    - Installation of southbound slip lane for East Bay Street to the new 3-lane section.
  - East Bay Street at Chapel Street/Washington Street
    - Relocation of signalized intersection southwest of the existing location and convert to a three-leg intersection with East Bay Street and Washington Street. As currently envisioned by the project team, the south approach of East Bay Street would "T" into East Bay Street/Washington Street intersection.
  - East Bay Street at Calhoun Street
    - Reconfigure East Bay Street at Calhoun Street to allow the removal of the split phase operation including the potential realignment of through travel lanes on Calhoun Street.

    - Prohibit eastbound left turns from Calhoun Street to East Bay Street. Eastbound Calhoun Street left turns would occur at the Washington Street intersection in a new eastbound left-turn lane at the intersection of Washington Street and Calhoun Street.
    - Removal of the short eastbound right-turn lane on Calhoun Street (planned by others).
  - Washington Street at Calhoun Street
    - Installation of northbound left-turn lane on Washington Street.
    - Installation of an additional eastbound left-turn lane on Calhoun Street and conversion of inner lane to a left turn lane to create a dual eastbound left-turn lane condition.
    - Reconfiguration and realignment of Washington Street through lanes.
  - Washington Street at Laurens Street
    - Signalization of the intersection, when warranted, and in coordination with SCDOT and the City of Charleston. Traffic signalization is subject to SCDOT and/or City approval.
  - East Bay Street at Hasell Street
    - Update traffic signal timings at intersection.
  - Washington Street at Hasell Street
    - Signalization of the intersection, when warranted, and in coordination with SCDOT and the City of Charleston. Traffic signalization is subject to SCDOT and/or City approval.
  - East Bay Street at Washington Street/Pritchard Street
    - Connection of East Bay Street to/from Washington Street in the vicinity of Pritchard Street through existing parking area.
    - Creation of new signalized intersection of East Bay Street/Pritchard Street at Washington Street. Traffic signalization is subject to SCDOT and/or City approval. As currently envisioned by the project team, East Bay Street would connect to Pritchard Street.
    - Installation of southbound slip lane from the 3-lane section East Bay Street to the existing 4-lane section.
- Optimization of traffic signal timings at study area intersections and other connected intersections. Where proposed traffic signals are in close proximity, prior to future signalization of these intersections, these intersections will be analyzed using microsimulation or other applicable means to determine timing parameters
- Improvements to the intersection of Concord Street at Charlotte Street to accommodate increased traffic flow. Specific improvements will be determined at a later date.
- Integrate bicycle and pedestrian facilities in project study area. As the Union Pier site is developed, new sidewalks shall meet ADA accessibility requirements.
- Expand City bike share locations within the Union Pier site.

- Continue coordination with CARTA regarding new transit routes and/or stops through Union Pier site. Coordinate with the City and CARTA on the project's requirements related to the transit accommodations ordinance.
- Coordinate with City staff on opportunities for water ferry/taxi service in or around the Union Pier site.
- As the plan for the site is further refined during the design process and locations of the buildings and parking garages are finalized, additional traffic studies are expected to be required by phase or by project.
- Furthermore, due to the masterplan nature of the project, intersections internal to the development were not studied in detail at this time. Detailed design components such as entry points to garages and other land uses will be further refined as the project moves forward. As noted above, it is expected that a more detailed analysis will be performed as the project develops.

If during the project process the masterplan land uses change and the projected trip generation increases, the traffic study should be updated. If the improvements noted are not completed, the traffic study should be updated to review the project impacts and determine if other improvements may be needed.

All roadway improvements will need to be permitted with the City and/or SCDOT. Items such as traffic signal spacing and intersection operations should be coordinated with regulatory agencies as the design moves forward.

A land use equivalency matrix has been developed for the project as a mechanism to facilitate desired land use changes as the Union Pier PUD develops, as long as the desired land use is allowable in the Union Pier PUD. It is our understanding that it is stated in the Union Pier PUD that no additional hotel rooms will be requested. The details of this process are outlined in the PUD document.

Results in this report are based solely on traffic studies and are considered input into final design consideration. The final design will be determined by the project engineer after other design elements (such as, but not limited to, utilities, stormwater, etc.) are taken into consideration.

Appendix

Short Counts

File Name : E Bay St @ Calhoun St
Site Code :
Start Date : 10/20/2021
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	E Bay St From North				Calhoun St From East				E Bay St From South				Calhoun St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	7	63	10	0	0	5	1	3	4	30	0	12	20	16	0	3	174
07:15 AM	7	114	34	0	0	6	2	3	4	27	1	8	7	21	0	6	240
07:30 AM	5	135	46	0	0	8	1	0	4	36	2	9	46	13	0	0	305
07:45 AM	6	168	49	2	1	11	2	1	11	64	2	7	52	21	0	0	397
Total	25	480	139	2	1	30	6	7	23	157	5	36	125	71	0	9	1116
08:00 AM	5	138	36	0	0	12	2	0	8	78	1	7	48	25	0	1	361
08:15 AM	11	186	59	0	1	5	2	2	4	41	2	4	32	27	0	1	377
08:30 AM	14	182	56	0	2	8	2	1	5	52	2	3	38	34	0	3	402
08:45 AM	9	241	63	0	3	10	1	3	6	74	3	20	27	26	0	4	490
Total	39	747	214	0	6	35	7	6	23	245	8	34	145	112	0	9	1630
04:00 PM	3	103	23	0	3	26	13	2	26	195	5	13	42	15	0	6	475
04:15 PM	4	116	20	0	3	25	13	0	21	168	2	10	53	11	1	9	456
04:30 PM	1	131	40	0	6	31	18	4	28	199	4	17	43	8	0	1	531
04:45 PM	5	120	22	0	8	38	21	8	24	192	5	22	54	13	0	17	549
Total	13	470	105	0	20	120	65	14	99	754	16	62	192	47	1	33	2011
05:00 PM	5	146	43	0	5	48	22	7	22	221	4	23	71	10	1	22	650
05:15 PM	4	146	40	0	2	25	16	2	20	269	2	9	62	10	1	13	621
05:30 PM	0	137	28	0	2	29	10	2	20	207	0	7	48	6	0	7	503
05:45 PM	4	159	34	0	0	18	11	2	17	185	1	6	48	11	0	3	499
Total	13	588	145	0	9	120	59	13	79	882	7	45	229	37	2	45	2273
Grand Total	90	2285	603	2	36	305	137	40	224	2038	36	177	691	267	3	96	7030
Apprch %	3	76.7	20.2	0.1	6.9	58.9	26.4	7.7	9.1	82.3	1.5	7.2	65.4	25.3	0.3	9.1	
Total %	1.3	32.5	8.6	0	0.5	4.3	1.9	0.6	3.2	29	0.5	2.5	9.8	3.8	0	1.4	
Passenger Vehicles	90	2266	599	2	35	286	136	40	224	2025	36	177	682	249	3	96	6946
% Passenger Vehicles	100	99.2	99.3	100	97.2	93.8	99.3	100	100	99.4	100	100	98.7	93.3	100	100	98.8
Heavy Vehicles	0	18	2	0	0	4	1	0	0	12	0	0	6	1	0	0	44
% Heavy Vehicles	0	0.8	0.3	0	0	1.3	0.7	0	0	0.6	0	0	0.9	0.4	0	0	0.6
Buses	0	1	2	0	1	15	0	0	0	1	0	0	3	17	0	0	40
% Buses	0	0	0.3	0	2.8	4.9	0	0	0	0	0	0	0.4	6.4	0	0	0.6

Short Counts

File Name : E Bay St @ Calhoun St
Site Code :
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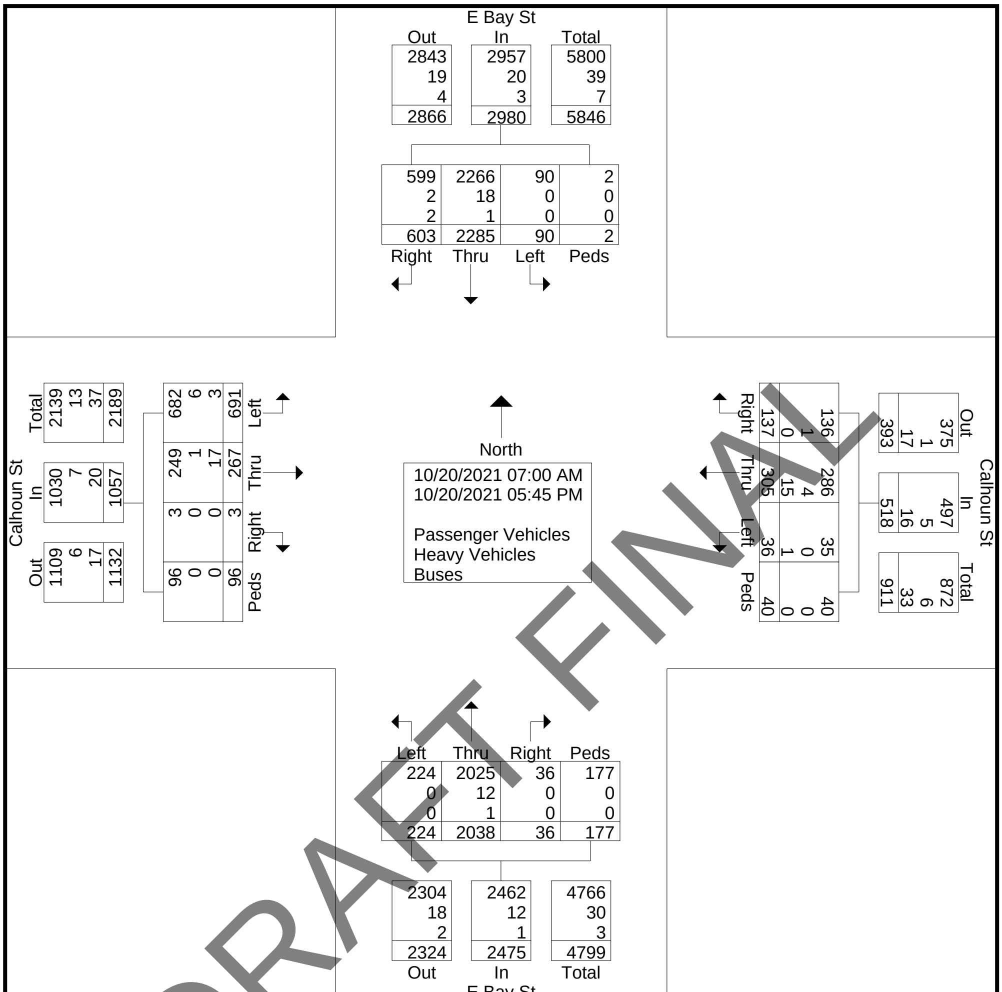
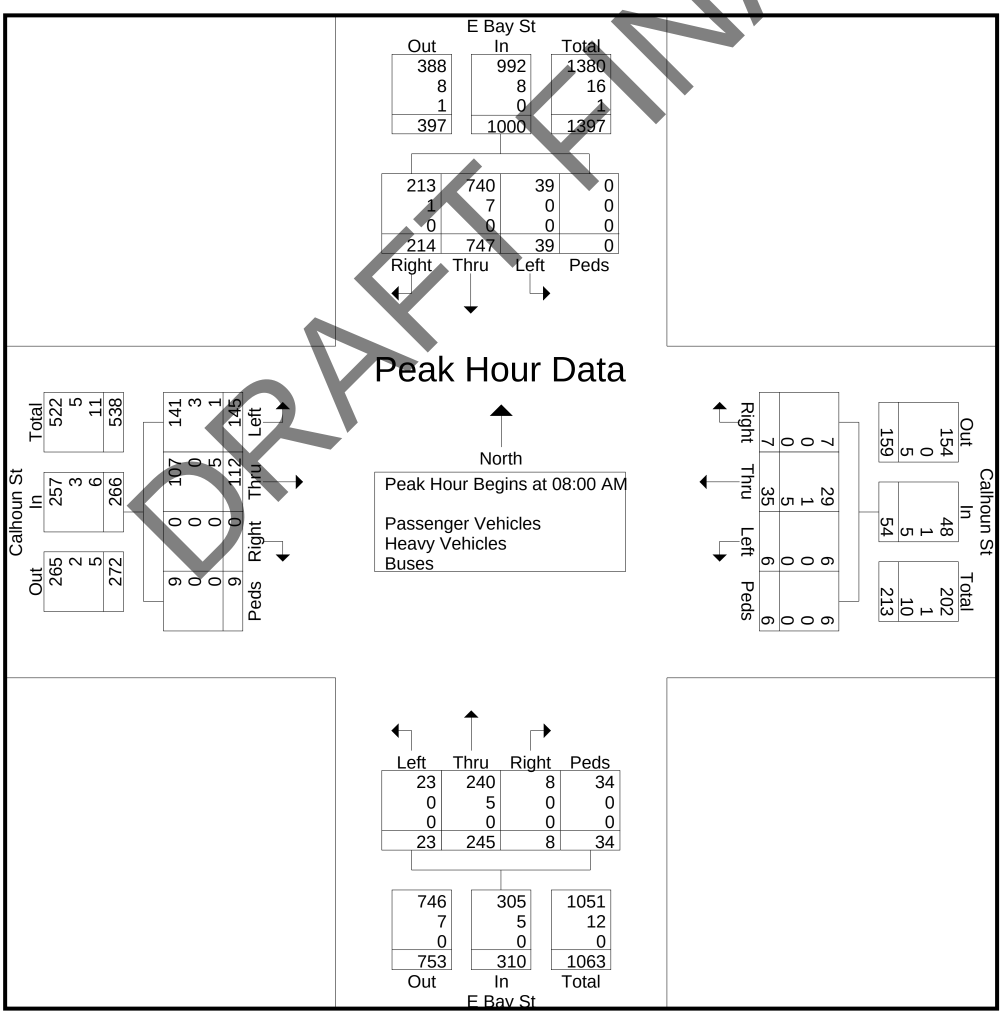


Short Counts

File Name : E Bay St @ Calhoun St
Site Code :
Start Date : 10/20/2021
Page No : 3

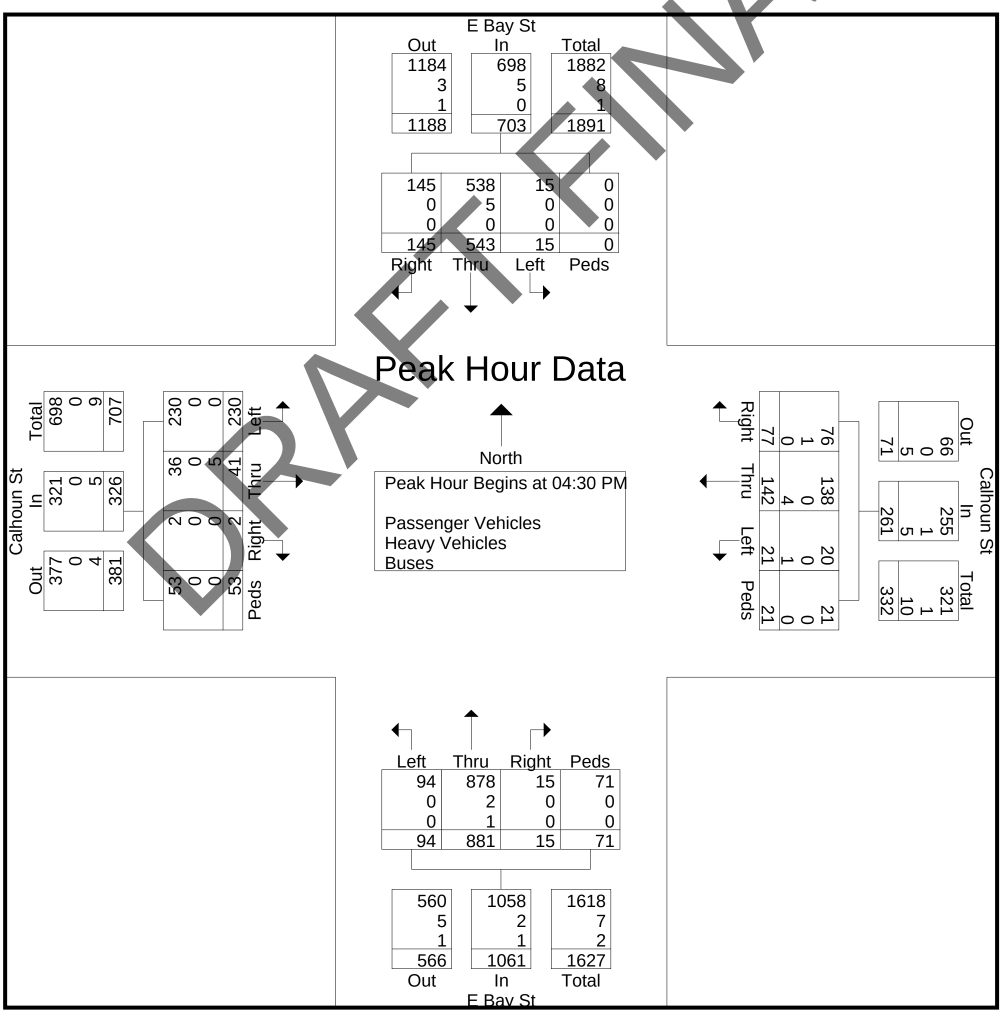
	E Bay St From North					Calhoun St From East					E Bay St From South					Calhoun St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	5	138	36	0	179	0	**12**	2			**8**	**78**				**48**					
08:15 AM	**11**	**186**	**59**	**0**	**256**	**1**	**5**	**2**	**2**	**10**	**4**	**41**	**2**	**4**	**51**	**32**	**27**	**0**	**1**	**60**	**377**
08:30 AM	**14**	**182**	**56**	**0**	**252**	**2**	**8**	**2**	**1**	**13**	**5**	**52**	**2**	**3**	**62**	**38**	**34**	0	3	**75**	402
08:45 AM	9	**241**	**63**		**313**	**3**	10	1	**3**	**17**	6	74	**3**	**20**	**103**	27	26	0	**4**		**490**
Total Volume	39	747	214	0	1000	6	35	7	6	54	23	245	8	34	310	145	112	0	9	266	1630
% App. Total	3.9	74.7	21.4	0		11.1	64.8	13	11.1		7.4	79	2.6	11		54.5	42.1	0	3.4		
PHF	.696	.775	.849	.000	.799	.500	.729	.875	.500	.794	.719	.785	.667	.425	.752	.755	.824	.000	.563	.887	.832
Passenger Vehicles	39	740	213	0	992	6	29	7	6	48	23	240	8	34	305	141	107	0	9	257	1602
% Passenger Vehicles	100	99.1	99.5	0	99.2	100	82.9	100	100	88.9	100	98.0	100	100	98.4	97.2	95.5	0	100	96.6	98.3
Heavy Vehicles	0	7	1	0	8	0	1	0	0	1	0	5	0	0	5	3	0	0	0	3	17
% Heavy Vehicles	0	0.9	0.5	0	0.8	0	2.9	0	0	1.9	0	2.0	0	0	1.6	2.1	0	0	0	1.1	1.0
Buses	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	5	0	0	6	11
% Buses	0	0	0	0	0	0	14.3	0	0	9.3	0	0	0	0	0	0.7	4.5	0	0	2.3	0.7



Short Counts

File Name : E Bay St @ Calhoun St
Site Code :
Start Date : 10/20/2021
Page No : 4

	E Bay St From North					Calhoun St From East					E Bay St From South					Calhoun St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	131	40	0	172	6	31	18	4	59	**28**										
04:45 PM	**5**	**120**	**22**	**0**	**147**	**8**	38	21	**8**	75	24	192	**5**	22	243	54	**13**	0	17	84	549
05:00 PM	5	**146**	**43**		**194**	5	**48**	**22**		**82**	22	221	4	**23**		**71**		**1**	**22**	**104**	**650**
05:15 PM	4	146	40	0	190	2	25	16	2	45	20	**269**			**300**	62	10	1	13	86	621
Total Volume	15	543	145	0	703	21	142	77	21	261	94	881	15	71	1061	230	41	2	53	326	2351
% App. Total	2.1	77.2	20.6	0		8	54.4	29.5	8		8.9	83	1.4	6.7		70.6	12.6	0.6	16.3		
PHF	.750	.930	.843	.000	.906	.656	.740	.875	.656	.796	.839	.819	.750	.772	.884	.810	.788	.500	.602	.784	.904
Passenger Vehicles	15	538	145	0	698	20	138	76	21	255	94	878	15	71	1058	230	36	2	53	321	2332
% Passenger Vehicles	100	99.1	100	0	99.3	95.2	97.2	98.7	100	97.7	100	99.7	100	100	99.7	100	87.8	100	100	98.5	99.2
Heavy Vehicles	0	5	0	0	5	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	8
% Heavy Vehicles	0	0.9	0	0	0.7	0	0	1.3	0	0.4	0	0.2	0	0	0.2	0	0	0	0	0	0.3
Buses	0	0	0	0	0	1	4	0	0	5	0	1	0	0	1	0	5	0	0	5	11
% Buses	0	0	0	0	0	4.8	2.8	0	0	1.9	0	0.1	0	0	0.1	0	12.2	0	0	1.5	0.5



Short Counts

File Name : E Bay St @ Chapel St
Site Code :
Start Date : 10/20/2021
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	E Bay St From North				Chapel St From East				E Bay St From South				Chapel St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	23	99	5	0	0	1	7	1	0	45	2	0	2	0	2	1	188
07:15 AM	29	161	6	1	0	0	16	0	0	37	0	0	6	4	1	1	262
07:30 AM	39	230	11	0	0	0	12	0	0	90	0	0	16	1	2	1	402
07:45 AM	45	203	10	0	2	2	8	0	0	116	1	0	9	0	6	0	402
Total	136	693	32	1	2	3	43	1	0	288	3	0	33	5	11	3	1254
08:00 AM	33	197	13	0	0	0	15	1	1	112	0	0	9	4	3	0	388
08:15 AM	61	261	19	0	1	3	15	1	3	76	2	0	11	3	4	1	461
08:30 AM	60	292	15	0	1	2	21	0	1	90	2	0	8	2	4	1	499
08:45 AM	60	307	13	3	1	4	17	1	0	99	0	1	16	3	6	2	533
Total	214	1057	60	3	3	9	68	3	5	377	4	1	44	12	17	4	1881
04:00 PM	27	120	15	0	0	3	77	0	2	260	3	0	18	5	2	3	535
04:15 PM	25	150	16	0	2	11	54	0	0	245	0	0	18	2	3	0	526
04:30 PM	15	169	8	0	0	2	61	0	3	263	3	0	21	5	4	5	559
04:45 PM	24	154	14	0	0	8	88	2	2	282	2	0	24	5	7	4	616
Total	91	593	53	0	2	24	280	2	7	1050	8	0	81	17	16	12	2236
05:00 PM	24	187	15	0	2	11	75	3	6	336	0	1	18	2	4	3	687
05:15 PM	14	185	15	2	1	4	65	1	4	334	1	1	24	4	7	7	669
05:30 PM	18	171	25	0	0	3	66	3	4	279	0	1	22	2	7	2	603
05:45 PM	16	164	23	1	0	5	50	0	5	242	1	1	14	2	5	2	531
Total	72	707	78	3	3	23	256	7	19	1191	2	4	78	10	23	14	2490
Grand Total	513	3050	223	7	10	59	647	13	31	2906	17	5	236	44	67	33	7861
Apprch %	13.5	80.4	5.9	0.2	1.4	8.1	88.8	1.8	1	98.2	0.6	0.2	62.1	11.6	17.6	8.7	
Total %	6.5	38.8	2.8	0.1	0.1	0.8	8.2	0.2	0.4	37	0.2	0.1	3	0.6	0.9	0.4	
Passenger Vehicles	505	3034	221	7	10	58	639	13	31	2884	17	5	235	44	67	33	7803
% Passenger Vehicles	98.4	99.5	99.1	100	100	98.3	98.8	100	100	99.2	100	100	99.6	100	100	100	99.3
Heavy Vehicles	8	16	0	0	0	1	8	0	0	17	0	0	0	0	0	0	50
% Heavy Vehicles	1.6	0.5	0	0	0	1.7	1.2	0	0	0.6	0	0	0	0	0	0	0.6
Buses	0	0	2	0	0	0	0	0	0	5	0	0	1	0	0	0	8
% Buses	0	0	0.9	0	0	0	0	0	0	0.2	0	0	0.4	0	0	0	0.1

Short Counts

File Name : E Bay St @ Chapel St
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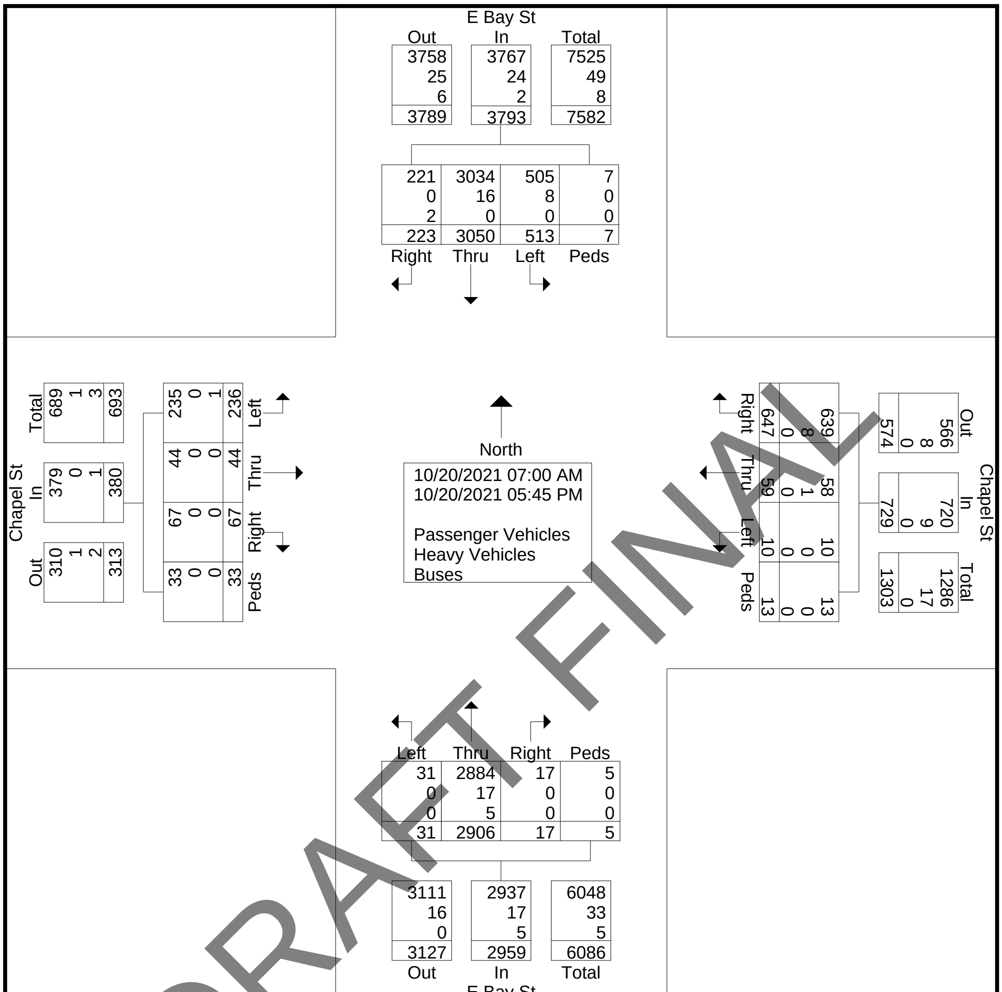

Short Counts

File Name : E Bay St @ Chapel St
Site Code :
Start Date : 10/20/2021
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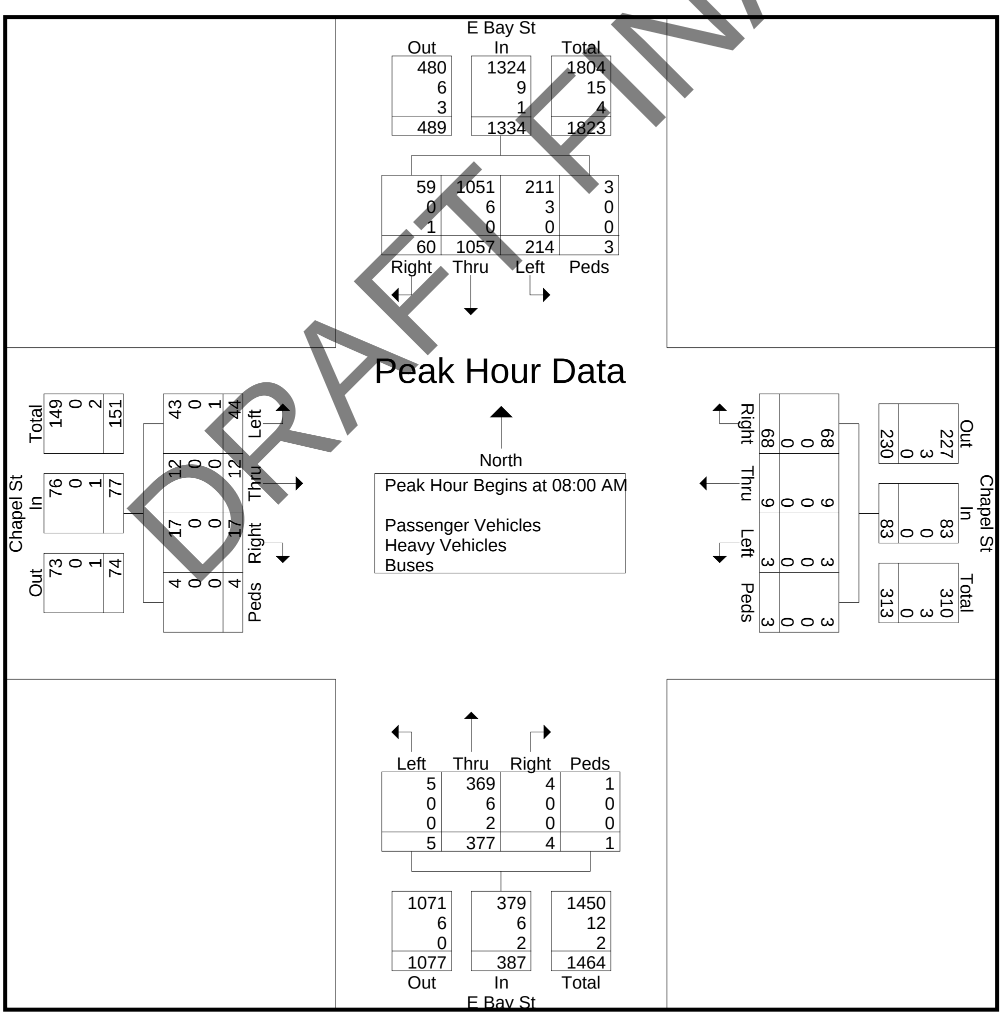
	E Bay St From North					Chapel St From East					E Bay St From South					Chapel St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	33	197	13	0	243	0	0	15	**1**	16	1	**112**			**113**	9	**4**	3	0	16	388
08:15 AM	**61**		**19**			**1**	3	15	1	20	**3**		**2**	0	81	11	3	4	1	19	461
08:30 AM	60	292	15	0	367	1	2	**21**		**24**	1	90	2	0	93	8	2	4	1	15	499
08:45 AM	60	**307**	13	**3**	**383**	1	**4**							**1**		**16**		**6**	**2**	**27**	**533**
Total Volume	214	1057	60	3	1334	3	9	68	3	83	5	377	4	1	387	44	12	17	4	77	1881
% App. Total	16	79.2	4.5	0.2		3.6	10.8	81.9	3.6		1.3	97.4	1	0.3		57.1	15.6	22.1	5.2		
PHF	.877	.861	.789	.250	.871	.750	.563	.810	.750	.865	.417	.842	.500	.250	.856	.688	.750	.708	.500	.713	.882
Passenger Vehicles	211	1051	59	3	1324	3	9	68	3	83	5	369	4	1	379	43	12	17	4	76	1862
% Passenger Vehicles	98.6	99.4	98.3	100	99.3	100	100	100	100	100	100	97.9	100	100	97.9	97.7	100	100	100	98.7	99.0
Heavy Vehicles	3	6	0	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15
% Heavy Vehicles	1.4	0.6	0	0	0.7	0	0	0	0	0	0	1.6	0	0	1.6	0	0	0	0	0	0.8
Buses	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	4
% Buses	0	0	1.7	0	0.1	0	0	0	0	0	0	0.5	0	0	0.5	2.3	0	0	0	1.3	0.2



Short Counts

File Name : E Bay St @ Chapel St
Site Code :
Start Date : 10/20/2021
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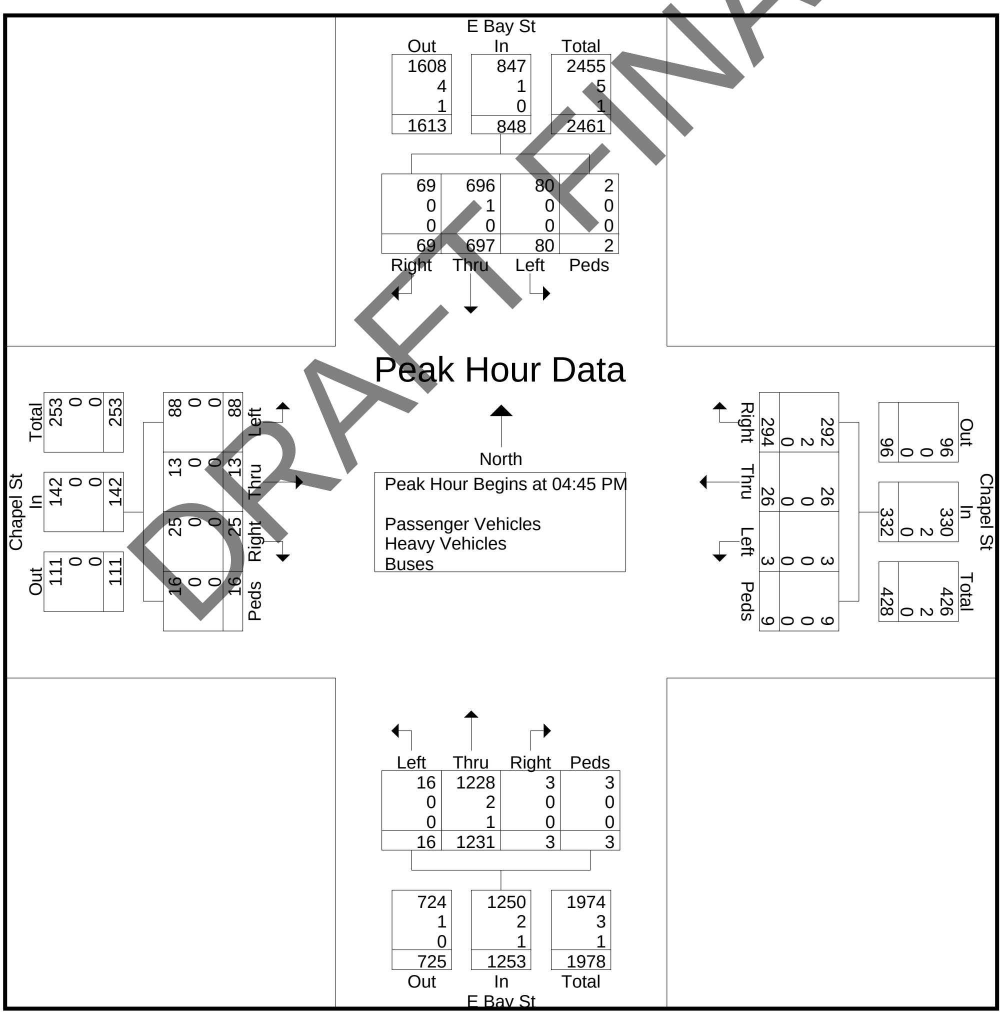
	E Bay St From North					Chapel St From East					E Bay St From South					Chapel St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**24**							**88**		**98**	2	282	**2**	0	286	**24**	**5**	**7**			
05:00 PM	**24**	**187**	15	0	**226**	**2**	**11**	75	**3**	91	**6**	**336**	0	**1**	**343**	18	2	4	3	27	**687**
05:15 PM	14	185	15	**2**															**7**	**42**	669
05:30 PM	18	171	**25**																		
Total Volume	80	697	69	2	848	3	26	294	9	332	16	1231	3	3	1253	88	13	25	16	142	2575
% App. Total																					
PHF	.833	.932	.690	.250	.938	.375	.591	.835	.750	.847	.667	.916	.375	.750	.913	.917	.650	.893	.571	.845	.937
Passenger Vehicles	80	696	69	2	847	3	26	292	9	330	16	1228	3	3	1250	88	13	25	16	142	2569
% Passenger Vehicles																					
Heavy Vehicles	0	1	0	0	1	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	5
% Heavy Vehicles	0	0.1	0	0	0.1	0	0	0.7	0	0.6	0	0.2	0	0	0.2	0	0	0	0	0	0.2
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0.0



Short Counts

File Name : E Bay St @ Hasell St
Site Code :
Start Date : 10/20/2021
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	E Bay St From North				Hasell St From East				E Bay St From South				Hasell St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	6	42	4	0	2	1	3	3	0	17	0	0	4	4	0	0	86
07:15 AM	4	54	7	0	0	2	6	3	2	17	1	0	0	1	0	0	97
07:30 AM	7	59	11	0	4	1	2	1	0	25	1	0	8	4	0	0	123
07:45 AM	12	80	6	0	5	2	8	0	1	38	3	1	6	5	2	2	171
Total	29	235	28	0	11	6	19	7	3	97	5	1	18	14	2	2	477
08:00 AM	9	94	6	0	4	5	5	2	0	54	3	0	12	6	3	2	205
08:15 AM	9	94	10	0	4	3	8	2	0	25	3	0	5	3	2	2	170
08:30 AM	5	117	27	3	6	4	6	5	0	42	4	3	6	9	0	5	242
08:45 AM	4	135	17	3	5	3	11	7	0	49	2	17	12	9	5	6	285
Total	27	440	60	6	19	15	30	16	0	170	12	20	35	27	10	15	902
04:00 PM	12	87	8	3	6	5	15	15	0	113	11	14	33	12	8	5	347
04:15 PM	18	87	9	0	7	8	18	11	1	104	10	5	29	8	4	22	341
04:30 PM	11	84	8	7	6	7	16	3	3	119	6	2	27	10	6	20	335
04:45 PM	16	92	15	18	8	6	11	9	1	99	6	12	30	14	4	31	372
Total	57	350	40	28	27	26	60	38	5	435	33	33	119	44	22	78	1395
05:00 PM	18	106	10	8	4	5	23	11	6	143	10	4	30	8	7	9	402
05:15 PM	13	114	8	18	4	7	20	17	2	147	9	4	45	7	5	11	431
05:30 PM	12	112	15	11	4	11	21	26	1	128	1	9	34	11	8	16	420
05:45 PM	15	108	11	4	6	12	18	6	3	112	11	3	42	9	3	9	372
Total	58	440	44	41	18	35	82	60	12	530	31	20	151	35	23	45	1625
Grand Total	171	1465	172	75	75	82	191	121	20	1232	81	74	323	120	57	140	4399
Apprch %	9.1	77.8	9.1	4	16	17.5	40.7	25.8	1.4	87.6	5.8	5.3	50.5	18.8	8.9	21.9	
Total %	3.9	33.3	3.9	1.7	1.7	1.9	4.3	2.8	0.5	28	1.8	1.7	7.3	2.7	1.3	3.2	
Passenger Vehicles	168	1453	170	75	75	81	190	121	18	1218	80	74	322	120	57	140	4362
% Passenger Vehicles	98.2	99.2	98.8	100	100	98.8	99.5	100	90	98.9	98.8	100	99.7	100	100	100	99.2
Heavy Vehicles	3	11	2	0	0	1	1	0	2	13	1	0	1	0	0	0	35
% Heavy Vehicles	1.8	0.8	1.2	0	0	1.2	0.5	0	10	1.1	1.2	0	0.3	0	0	0	0.8
Buses	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
% Buses	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0

Short Counts

File Name : E Bay St @ Hasell St
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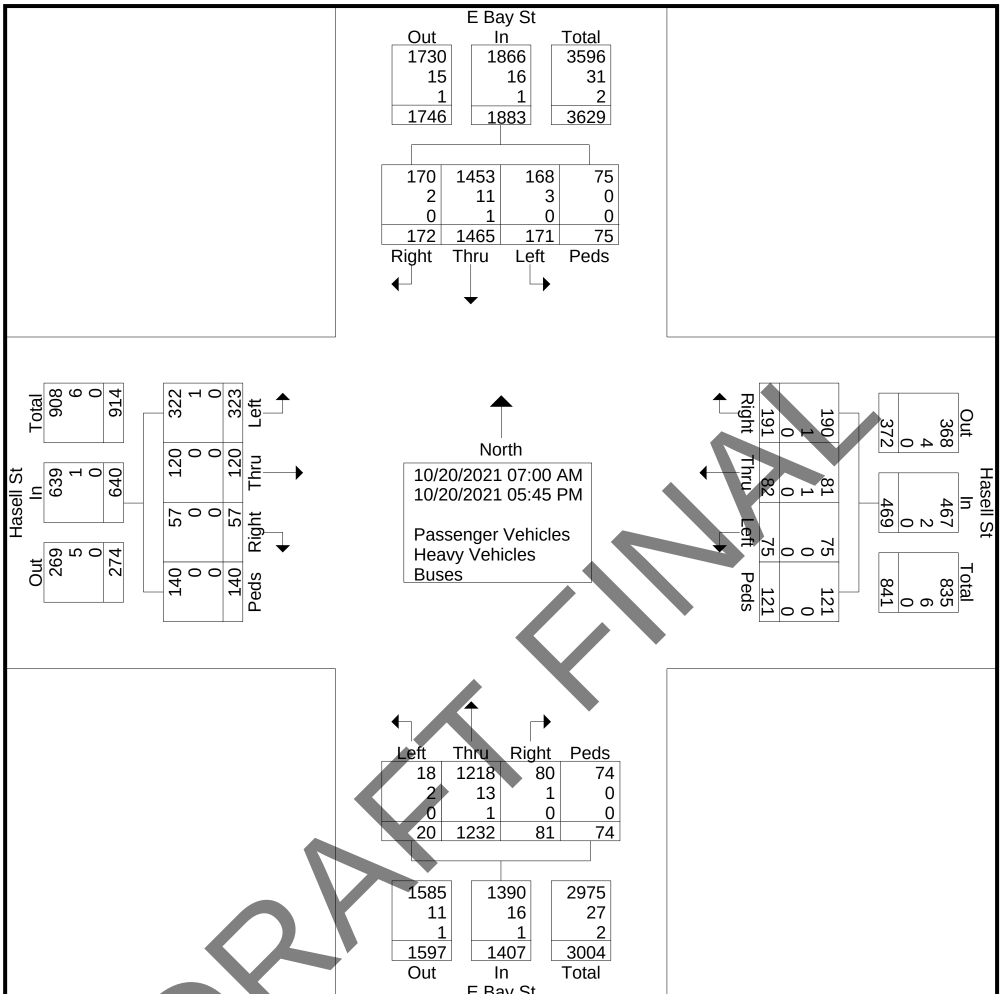

Short Counts

File Name : E Bay St @ Hasell St
Site Code :
Start Date : 10/20/2021
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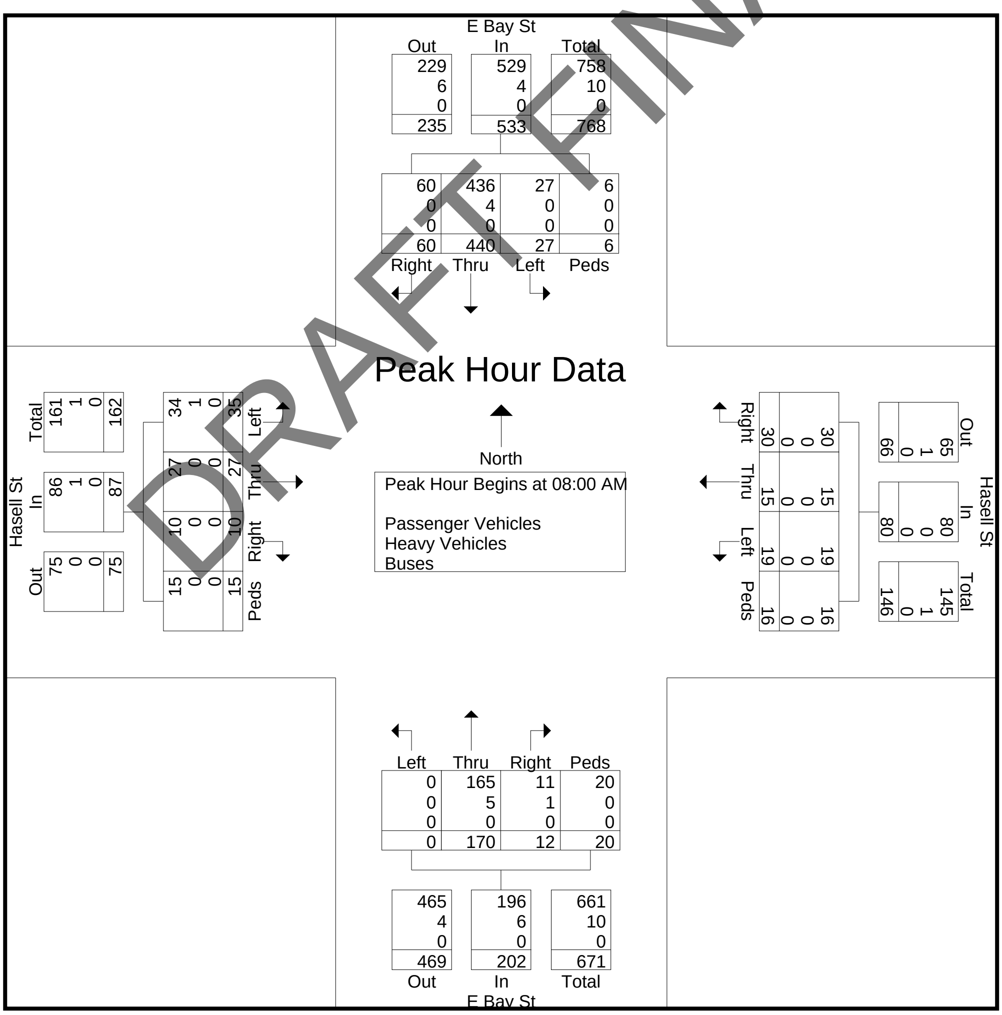
	E Bay St From North					Hasell St From East					E Bay St From South					Hasell St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	**9**						**5**					**54**				**12**					
08:15 AM	**9**	**94**	**10**	**0**	**113**	**4**	**3**	**8**	**2**	**17**	**0**	**25**	**3**	**0**	**28**	**5**	**3**	**2**	**2**	**12**	**170**
08:30 AM	**5**	**117**	**27**	**3**	**152**	**6**	4	6	5	21	0	42	**4**	3	49	6	**9**	0	5	20	242
08:45 AM	4	**135**	17	3	**159**	5	3	**11**	**7**	**26**	0	49	2	**17**	**68**	12	9	**5**	**6**	**32**	**285**
Total Volume	27	440	60	6	533	19	15	30	16	80	0	170	12	20	202	35	27	10	15	87	902
% App. Total	5.1	82.6	11.3	1.1		23.8	18.8	37.5	20		0	84.2	5.9	9.9		40.2	31	11.5	17.2		
PHF	.750	.815	.556	.500	.838	.792	.750	.682	.571	.769	.000	.787	.750	.294	.743	.729	.750	.500	.625	.680	.791
Passenger Vehicles	27	436	60	6	529	19	15	30	16	80	0	165	11	20	196	34	27	10	15	86	891
% Passenger Vehicles	100	99.1	100	100	99.2	100	100	100	100	100	0	97.1	91.7	100	97.0	97.1	100	100	100	98.9	98.8
Heavy Vehicles	0	4	0	0	4	0	0	0	0	0	0	5	1	0	6	1	0	0	0	1	11
% Heavy Vehicles	0	0.9	0	0	0.8	0	0	0	0	0	0	2.9	8.3	0	3.0	2.9	0	0	0	1.1	1.2
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Short Counts

File Name : E Bay St @ Hasell St
Site Code :
Start Date : 10/20/2021
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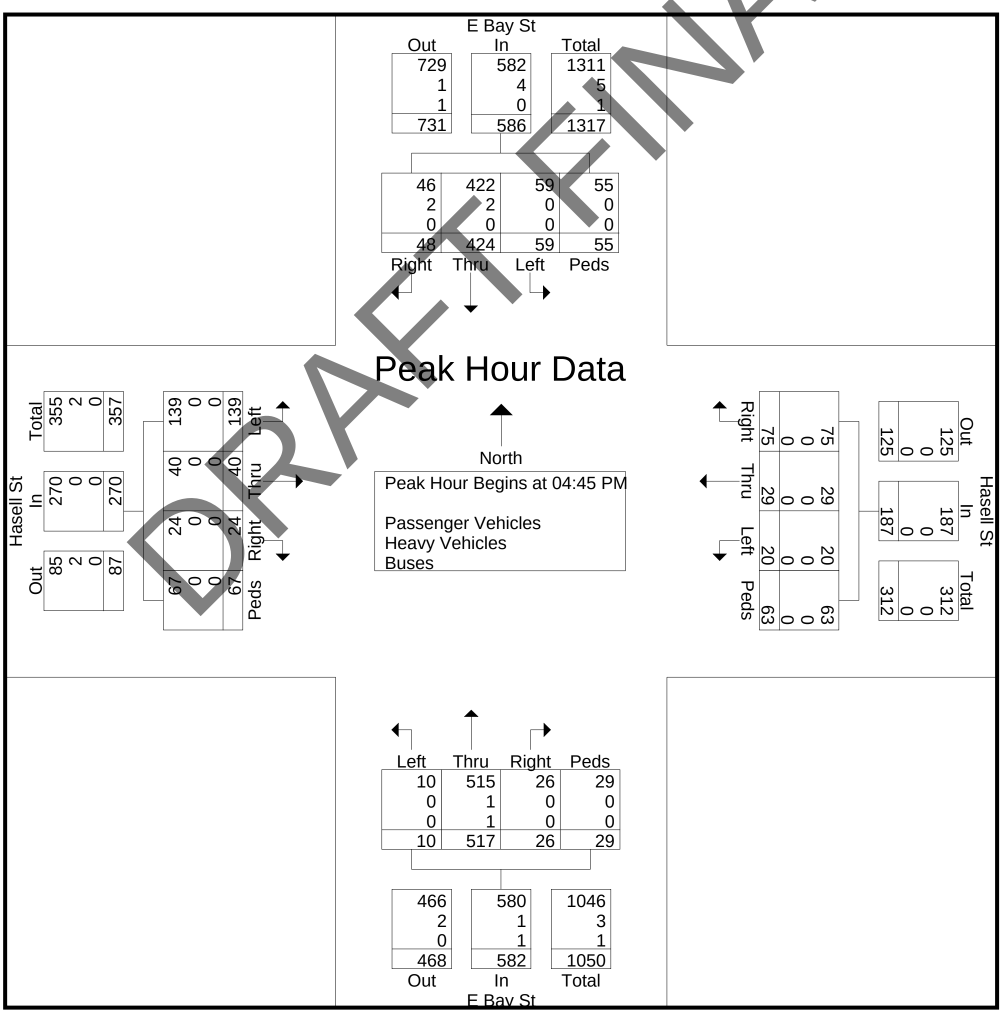
	E Bay St From North					Hasell St From East					E Bay St From South					Hasell St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	16	92	**15**	**18**		**8**	6	11	9	34	1	99	6	**12**			**14**	4	**31**	**79**	372
05:00 PM	**18**							**23**			**6**		**10**	4	**163**	30	8	7	9	54	402
05:15 PM	13	**114**	8	18	**153**	4	7	20	17	48	2	**147**				**45**					**431**
05:30 PM	12	112	15	11	150	4	**11**		**26**	**62**	1	128	1	9	139	34	11	**8**			
Total Volume	59	424	48	55	586	20	29	75	63	187	10	517	26	29	582	139	40	24	67	270	1625
% App. Total	10.1	72.4	8.2	9.4		10.7	15.5	40.1	33.7		1.7	88.8	4.5	5		51.5	14.8	8.9	24.8		
PHF	.819	.930	.800	.764	.958	.625	.659	.815	.606	.754	.417	.879	.650	.604	.893	.772	.714	.750	.540	.854	.943
Passenger Vehicles	59	422	46	55	582	20	29	75	63	187	10	515	26	29	580	139	40	24	67	270	1619
% Passenger Vehicles	100	99.5	95.8	100	99.3	100	100	100	100	100	100	99.6	100	100	99.7	100	100	100	100	100	99.6
Heavy Vehicles	0	2	2	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
% Heavy Vehicles	0	0.5	4.2	0	0.7	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.3
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.1



Short Counts

File Name : E Bay St @ N Market St
Site Code :
Start Date : 10/20/2021
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	E Bay St From North				N Market St From East				E Bay St From South				S Market St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	1	35	5	6	0	1	0	6	1	19	1	0	3	0	0	0	78
07:15 AM	0	43	2	4	0	0	1	8	0	18	0	0	2	1	1	2	82
07:30 AM	1	56	5	8	0	3	0	2	5	29	0	2	2	0	3	1	117
07:45 AM	1	58	15	5	0	1	0	6	2	33	3	1	6	1	0	2	134
Total	3	192	27	23	0	5	1	22	8	99	4	3	13	2	4	5	411
08:00 AM	0	78	5	4	0	1	1	3	3	51	1	1	3	0	6	2	159
08:15 AM	0	71	10	4	1	1	1	5	3	29	2	5	2	2	3	1	140
08:30 AM	1	94	7	3	1	5	0	36	1	41	3	8	4	3	3	16	226
08:45 AM	2	91	21	9	0	3	0	3	2	52	2	4	4	1	3	10	207
Total	3	334	43	20	2	10	2	47	9	173	8	18	13	6	15	29	732
04:00 PM	4	71	14	31	3	8	4	25	4	106	10	53	13	13	7	82	448
04:15 PM	5	72	11	36	4	11	3	18	7	114	3	47	9	5	7	67	419
04:30 PM	4	66	21	36	3	7	4	32	2	98	4	52	13	6	8	79	435
04:45 PM	5	59	19	44	0	9	6	39	4	94	5	30	18	5	4	67	408
Total	18	268	65	147	10	35	17	114	17	412	22	182	53	29	26	295	1710
05:00 PM	4	82	21	26	3	7	10	31	3	122	4	48	25	4	7	56	453
05:15 PM	1	92	19	23	4	8	1	30	6	121	0	36	33	5	7	67	453
05:30 PM	4	83	19	43	4	3	5	45	8	104	5	19	20	5	7	40	414
05:45 PM	1	85	15	42	2	6	6	47	8	108	5	32	7	4	13	28	409
Total	10	342	74	134	13	24	22	153	25	455	14	135	85	18	34	191	1729
Grand Total	34	1136	209	324	25	74	42	336	59	1139	48	338	164	55	79	520	4582
Apprch %	2	66.7	12.3	19	5.2	15.5	8.8	70.4	3.7	71.9	3	21.3	20	6.7	9.7	63.6	
Total %	0.7	24.8	4.6	7.1	0.5	1.6	0.9	7.3	1.3	24.9	1	7.4	3.6	1.2	1.7	11.3	
Passenger Vehicles	33	1122	206	324	25	58	39	336	54	1120	46	338	163	54	73	520	4511
% Passenger Vehicles	97.1	98.8	98.6	100	100	78.4	92.9	100	91.5	98.3	95.8	100	99.4	98.2	92.4	100	98.5
Heavy Vehicles	1	13	3	0	0	4	3	0	5	18	1	0	1	1	6	0	56
% Heavy Vehicles	2.9	1.1	1.4	0	0	5.4	7.1	0	8.5	1.6	2.1	0	0.6	1.8	7.6	0	1.2
Buses	0	1	0	0	0	12	0	0	0	1	1	0	0	0	0	0	15
% Buses	0	0.1	0	0	0	16.2	0	0	0	0.1	2.1	0	0	0	0	0	0.3

Short Counts

File Name : E Bay St @ N Market St
Site Code :
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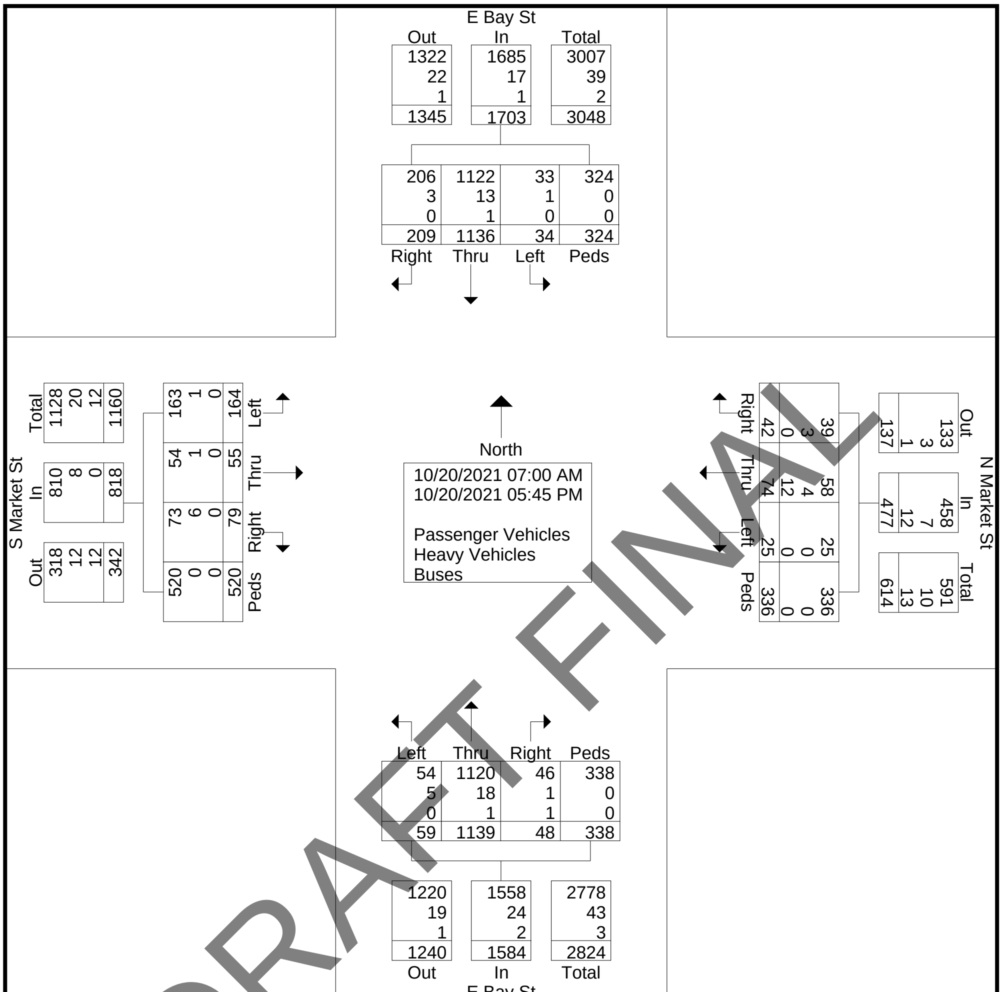
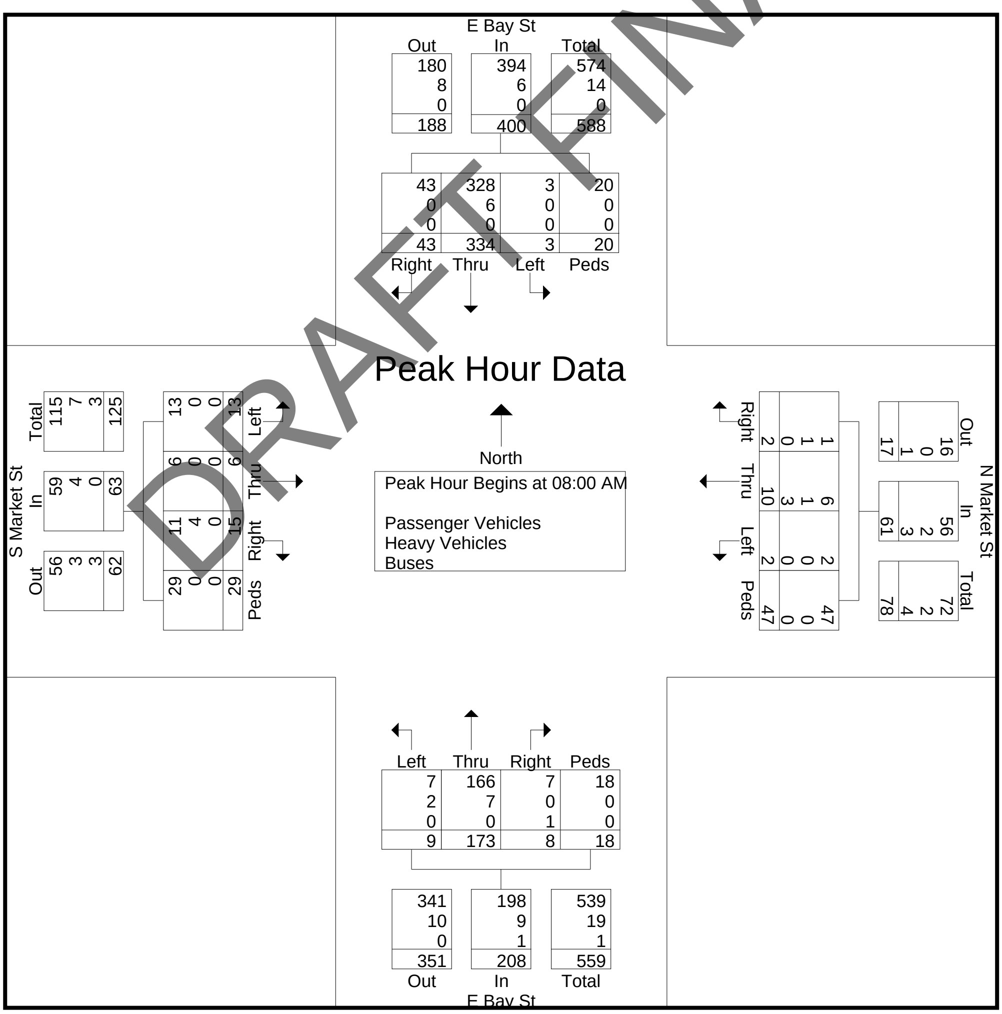


Short Counts

File Name : E Bay St @ N Market St
Site Code :
Start Date : 10/20/2021
Page No : 3

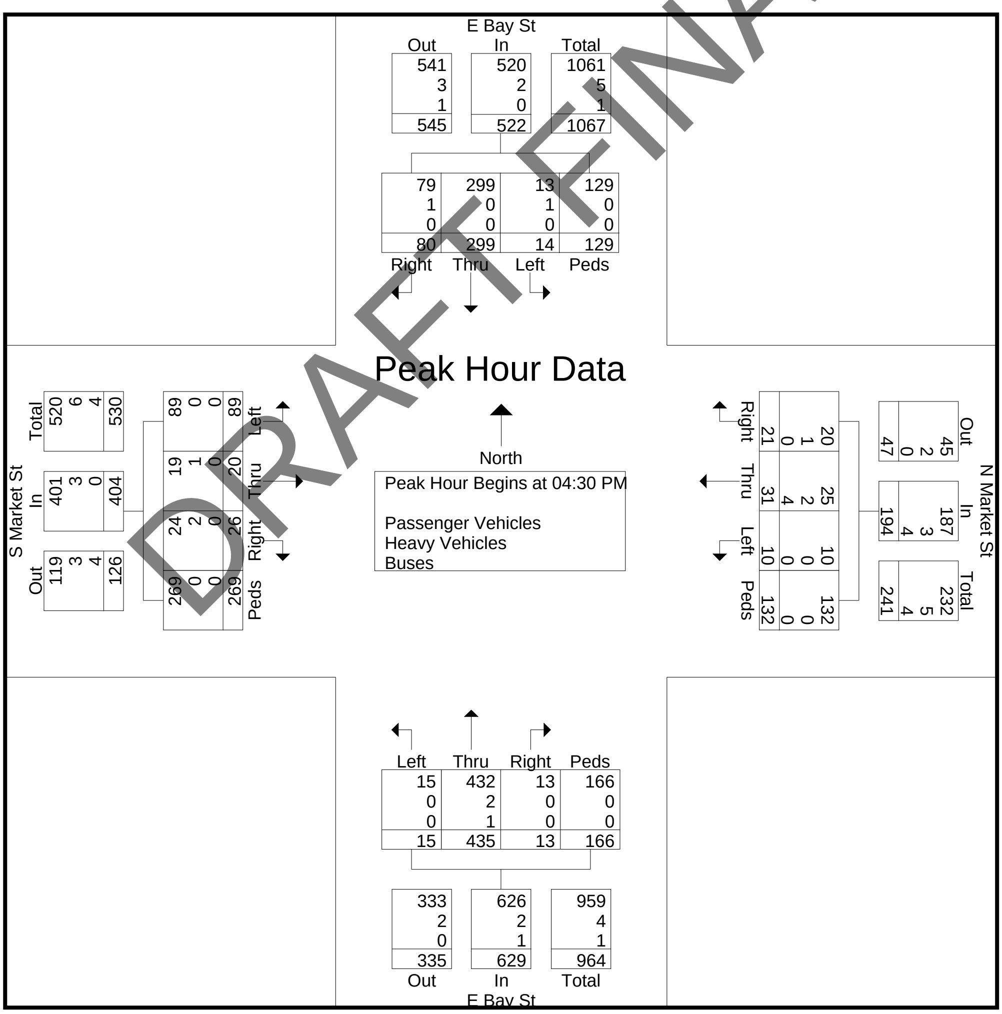
	E Bay St From North					N Market St From East					E Bay St From South					S Market St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	78	5	4	87	0	1	**1**			**3**							**6**			
08:15 AM	**0**	**71**	**10**	**4**	**85**	**1**	1	1	5	8	3	29	2	5	39	2	2	3	1	8	140
08:30 AM	1	**94**	7	3	105	1	**5**		**36**	**42**	1	41	**3**	**8**		**4**	**3**	3	**16**	**26**	**226**
08:45 AM	**2**		**21**	**9**	**123**	0	3	0	3	6	2	**52**			**60**	4	1	3	10	18	207
Total Volume	3	334	43	20	400	2	10	2	47	61	9	173	8	18	208	13	6	15	29	63	732
% App. Total	0.8	83.5	10.8	5		3.3	16.4	3.3	77		4.3	83.2	3.8	8.7		20.6	9.5	23.8	46		
PHF	.375	.888	.512	.556	.813	.500	.500	.500	.326	.363	.750	.832	.667	.563	.867	.813	.500	.625	.453	.606	.810
Passenger Vehicles	3	328	43	20	394	2	6	1	47	56	7	166	7	18	198	13	6	11	29	59	707
% Passenger Vehicles	100	98.2	100	100	98.5	100	60.0	50.0	100	91.8	77.8	96.0	87.5	100	95.2	100	100	73.3	100	93.7	96.6
Heavy Vehicles	0	6	0	0	6	0	1	1	0	2	2	7	0	0	9	0	0	4	0	4	21
% Heavy Vehicles	0	1.8	0	0	1.5	0	10.0	50.0	0	3.3	22.2	4.0	0	0	4.3	0	0	26.7	0	6.3	2.9
Buses	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	4
% Buses	0	0	0	0	0	0	30.0	0	0	4.9	0	0	12.5	0	0.5	0	0	0	0	0	0.5



Short Counts

File Name : E Bay St @ N Market St
Site Code :
Start Date : 10/20/2021
Page No : 4

	E Bay St From North					N Market St From East					E Bay St From South					S Market St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	4	66	**21**											**52**			**6**	**8**	**79**		
04:45 PM	**5**	**59**	**19**	**44**	**127**	**0**	**9**	**6**	**39**	**54**	4	94	**5**	30	133	18	5	4	67	94	408
05:00 PM	4	82	21	26	133	3	7	**10**				**122**			**177**	25	4	7	56	92	**453**
05:15 PM	1	**92**	19	23	**135**	**4**	8	1	30	43	**6**					**33**				**112**	453
Total Volume	14	299	80	129	522	10	31	21	132	194	15	435	13	166	629	89	20	26	269	404	1749
% App. Total	2.7	57.3	15.3	24.7		5.2	16	10.8	68		2.4	69.2	2.1	26.4		22	5	6.4	66.6		
PHF	.700	.813	.952	.733	.967	.625	.861	.525	.846	.898	.625	.891	.650	.798	.888	.674	.833	.813	.851	.902	.965
Passenger Vehicles	13	299	79	129	520	10	25	20	132	187	15	432	13	166	626	89	19	24	269	401	1734
% Passenger Vehicles	92.9	100	98.8	100	99.6	100	80.6	95.2	100	96.4	100	99.3	100	100	99.5	100	95.0	92.3	100	99.3	99.1
Heavy Vehicles	1	0	1	0	2	0	2	1	0	3	0	2	0	0	2	0	1	2	0	3	10
% Heavy Vehicles	7.1	0	1.3	0	0.4	0	6.5	4.8	0	1.5	0	0.5	0	0	0.3	0	5.0	7.7	0	0.7	0.6
Buses	0	0	0	0	0	0	4	0	0	4	0	1	0	0	1	0	0	0	0	0	5
% Buses	0	0	0	0	0	0	12.9	0	0	2.1	0	0.2	0	0	0.2	0	0	0	0	0	0.3



Short Counts

File Name : Hasell St @ Washington St
Site Code :
Start Date : 10/20/2021
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Washington St From North				From East				Washington St From South				Hasell St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	10	0	0	0	0	0	0	2	2	0	0	2	0	1	0	17
07:15 AM	0	10	8	0	0	0	0	0	1	3	0	0	0	0	4	5	31
07:30 AM	0	13	5	0	0	0	0	0	1	5	0	0	2	0	4	2	32
07:45 AM	0	13	1	0	0	0	0	0	4	6	0	0	5	0	7	0	36
Total	0	46	14	0	0	0	0	0	8	16	0	0	9	0	16	7	116
08:00 AM	0	10	3	0	0	0	0	0	1	7	0	0	0	0	3	4	28
08:15 AM	0	21	7	0	0	0	0	0	2	7	0	0	5	0	6	6	54
08:30 AM	0	22	3	0	0	0	0	0	1	5	0	0	4	0	2	7	44
08:45 AM	0	24	10	0	0	0	0	0	3	8	0	0	5	0	4	5	59
Total	0	77	23	0	0	0	0	0	7	27	0	0	14	0	15	22	185
04:00 PM	0	25	11	0	0	0	0	0	7	47	0	3	8	0	8	5	114
04:15 PM	0	23	12	0	0	0	0	0	6	24	0	0	5	0	5	4	79
04:30 PM	0	22	13	0	0	0	0	0	4	46	0	0	5	0	9	6	105
04:45 PM	0	27	14	0	0	0	0	0	7	41	0	0	8	0	6	11	114
Total	0	97	50	0	0	0	0	0	24	158	0	3	26	0	28	26	412
05:00 PM	0	17	9	0	0	0	0	0	3	28	0	0	8	0	5	10	80
05:15 PM	0	17	10	0	0	0	0	0	5	27	0	0	4	0	5	4	72
05:30 PM	0	20	12	0	0	0	0	0	7	40	0	0	8	0	6	1	94
05:45 PM	0	14	13	0	0	0	0	0	3	29	0	3	7	0	9	2	80
Total	0	68	44	0	0	0	0	0	18	124	0	3	27	0	25	17	326
Grand Total	0	288	131	0	0	0	0	0	57	325	0	6	76	0	84	72	1039
Apprch %	0	68.7	31.3	0	0	0	0	0	14.7	83.8	0	1.5	32.8	0	36.2	31	
Total %	0	27.7	12.6	0	0	0	0	0	5.5	31.3	0	0.6	7.3	0	8.1	6.9	
Passenger Vehicles	0	285	130	0	0	0	0	0	56	314	0	6	74	0	82	72	1019
% Passenger Vehicles	0	99	99.2	0	0	0	0	0	98.2	96.6	0	100	97.4	0	97.6	100	98.1
Heavy Vehicles	0	2	1	0	0	0	0	0	1	10	0	0	2	0	2	0	18
% Heavy Vehicles	0	0.7	0.8	0	0	0	0	0	1.8	3.1	0	0	2.6	0	2.4	0	1.7
Buses	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
% Buses	0	0.3	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0.2

Short Counts

File Name : Hasell St @ Washington St
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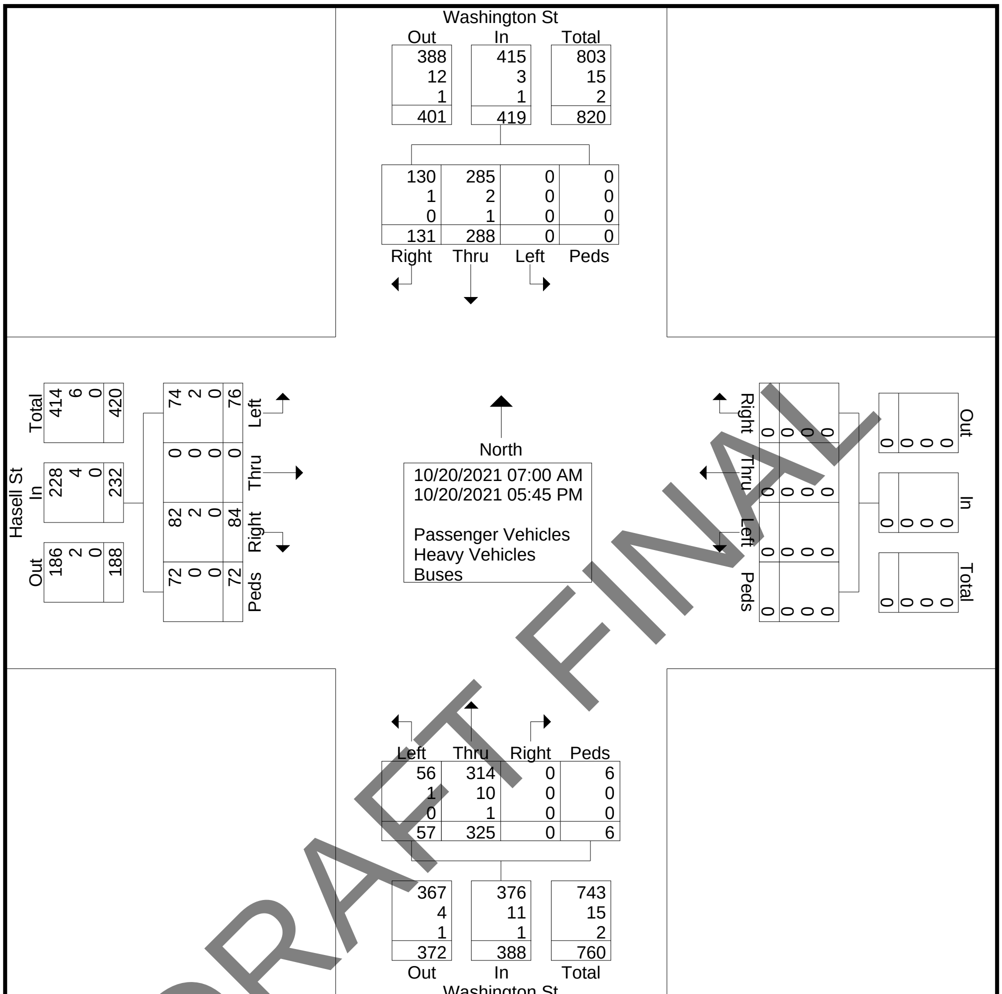

Short Counts

File Name : Hasell St @ Washington St
Site Code :
Start Date : 10/20/2021
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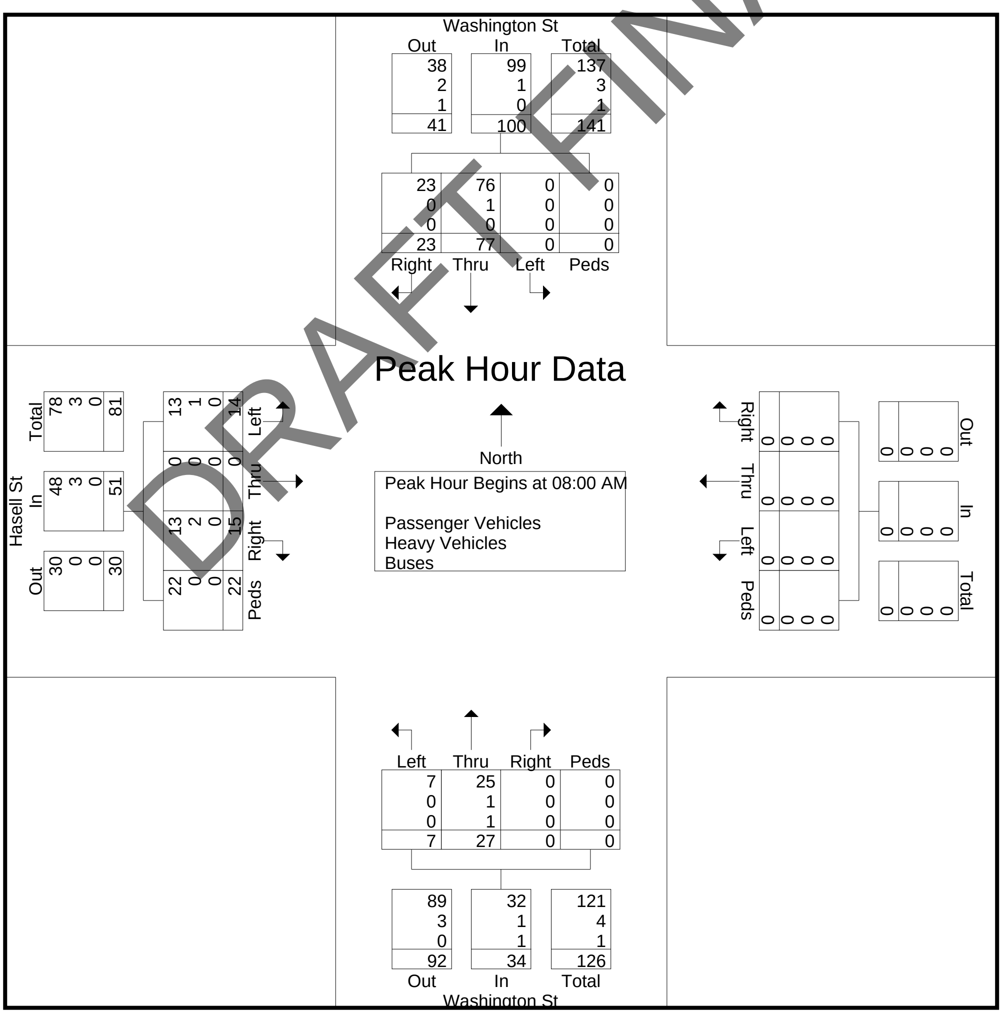
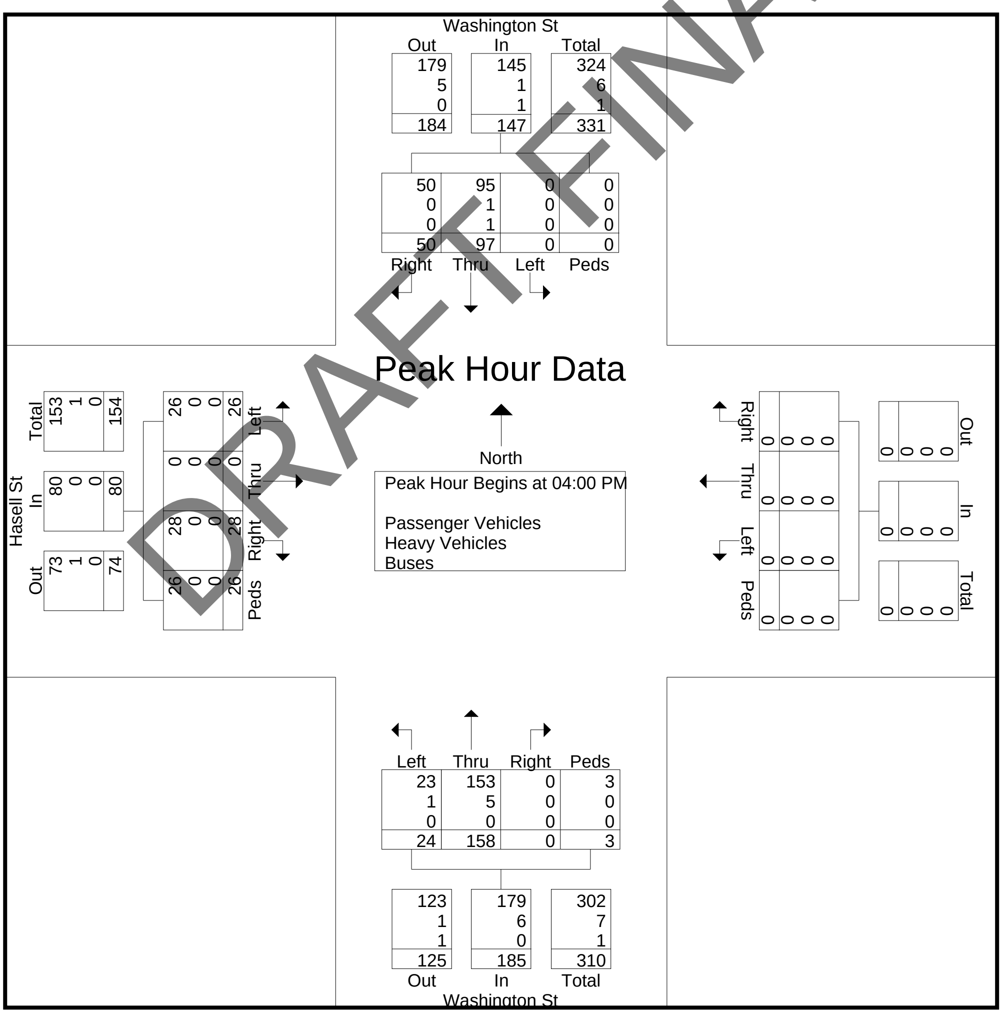
	Washington St From North					From East					Washington St From South					Hasell St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	10	3	0	13	0	0	0	0	0	1	7	0	0	8	0	0	3	4	7	28
08:15 AM	0	21	7	0	28	0	0	0	0	0	2	7	0	0	9	**5**		**6**		**17**	54
08:30 AM	0	22	3	0	25	0	0	0	0	0	1	5	0	0	6	4	0	2	**7**		
08:45 AM	**0**	**24**	**10**	**0**	**34**	0	0	0	0	0	**3**	**8**	**0**	**0**	**11**	5	0	4	5	14	**59**
Total Volume	0	77	23	0	100	0	0	0	0	0	7	27	0	0	34	14	0	15	22	51	185
% App. Total	0	77	23	0		0	0	0	0		20.6	79.4	0	0		27.5	0	29.4	43.1		
PHF	.000	.802	.575	.000	.735	.000	.000	.000	.000	.000	.583	.844	.000	.000	.773	.700	.000	.625	.786	.750	.784
Passenger Vehicles	0	76	23	0	99	0	0	0	0	0	7	25	0	0	32	13	0	13	22	48	179
% Passenger Vehicles	0	98.7	100	0	99.0	0	0	0	0	0	100	92.6	0	0	94.1	92.9	0	86.7	100	94.1	96.8
Heavy Vehicles	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	5
% Heavy Vehicles	0	1.3	0	0	1.0	0	0	0	0	0	0	3.7	0	0	2.9	7.1	0	13.3	0	5.9	2.7
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	3.7	0	0	2.9	0	0	0	0	0	0.5



Short Counts

File Name : Hasell St @ Washington St
Site Code :
Start Date : 10/20/2021
Page No : 4

	Washington St From North					From East					Washington St From South					Hasell St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	25	11	0	36	0	0	0	0	0	**7**	**47**		**3**	**57**	**8**					**114**
04:15 PM	0	23	12	0	35	0	0	0	0	0	6	24	0	0	30	5	0	5	4	14	79
04:30 PM	0	22	13	0	35	0	0	0	0	0	4	46	0	0	50	5	0	**9**			
04:45 PM	**0**	**27**	**14**	**0**	**41**	0	0	0	0	0	7	41	0	0	48	8	0	6	**11**	**25**	114
Total Volume	0	97	50	0	147	0	0	0	0	0	24	158	0	3	185	26	0	28	26	80	412
% App. Total	0	66	34	0		0	0	0	0		13	85.4	0	1.6		32.5	0	35	32.5		
PHF	.000	.898	.893	.000	.896	.000	.000	.000	.000	.000	.857	.840	.000	.250	.811	.813	.000	.778	.591	.800	.904
Passenger Vehicles	0	95	50	0	145	0	0	0	0	0	23	153	0	3	179	26	0	28	26	80	404
% Passenger Vehicles	0	97.9	100	0	98.6	0	0	0	0	0	95.8	96.8	0	100	96.8	100	0	100	100	100	98.1
Heavy Vehicles	0	1	0	0	1	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	7
% Heavy Vehicles	0	1.0	0	0	0.7	0	0	0	0	0	4.2	3.2	0	0	3.2	0	0	0	0	0	1.7
Buses	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	1.0	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2



Short Counts

File Name : Washington St @ Calhoun St
Site Code :
Start Date : 10/20/2021
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Washington St From North				Calhoun St From East				Washington St From South				Calhoun St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	11	5	0	10	0	6	0	0	1	3	2	3	0	19	4	6	70
07:15 AM	10	9	2	8	1	7	6	0	1	6	2	4	5	17	7	4	89
07:30 AM	11	19	0	4	1	8	1	0	2	9	2	4	0	19	1	0	81
07:45 AM	14	20	4	14	0	6	3	0	2	7	4	9	1	27	3	1	115
Total	46	53	6	36	2	27	10	0	6	25	10	20	6	82	15	11	355
08:00 AM	15	14	1	10	1	8	0	0	3	10	0	4	3	27	2	3	101
08:15 AM	17	23	3	14	0	4	0	0	2	4	1	3	0	30	9	1	111
08:30 AM	22	25	1	14	0	6	2	0	3	10	1	1	0	50	2	0	137
08:45 AM	22	23	5	23	0	7	7	0	6	11	6	16	3	31	3	2	165
Total	76	85	10	61	1	25	9	0	14	35	8	24	6	138	16	6	514
04:00 PM	1	28	11	12	5	21	35	0	7	42	3	9	2	12	7	0	195
04:15 PM	1	24	3	14	3	26	13	0	12	41	6	14	0	12	3	1	173
04:30 PM	8	19	4	22	4	36	26	0	17	46	1	14	2	9	1	1	210
04:45 PM	7	22	8	28	7	43	23	0	15	47	1	22	1	18	2	4	248
Total	17	93	26	76	19	126	97	0	51	176	11	59	5	51	13	6	826
05:00 PM	3	22	9	28	1	45	30	0	18	50	4	11	2	15	1	6	245
05:15 PM	1	16	2	15	2	27	22	0	17	39	0	3	1	14	0	5	164
05:30 PM	0	17	2	6	1	20	20	1	17	44	1	6	0	5	2	1	143
05:45 PM	3	20	3	4	1	13	7	0	16	42	0	10	0	7	6	2	134
Total	7	75	16	53	5	105	79	1	68	175	5	30	3	41	9	14	686
Grand Total	146	306	58	226	27	283	195	1	139	411	34	133	20	312	53	37	2381
Apprch %	19.8	41.6	7.9	30.7	5.3	55.9	38.5	0.2	19.4	57.3	4.7	18.5	4.7	73.9	12.6	8.8	
Total %	6.1	12.9	2.4	9.5	1.1	11.9	8.2	0	5.8	17.3	1.4	5.6	0.8	13.1	2.2	1.6	
Passenger Vehicles	142	300	43	226	26	282	195	1	136	401	34	133	20	296	53	37	2325
% Passenger Vehicles	97.3	98	74.1	100	96.3	99.6	100	100	97.8	97.6	100	100	100	94.9	100	100	97.6
Heavy Vehicles	1	6	0	0	1	1	0	0	3	10	0	0	0	0	0	0	22
% Heavy Vehicles	0.7	2	0	0	3.7	0.4	0	0	2.2	2.4	0	0	0	0	0	0	0.9
Buses	3	0	15	0	0	0	0	0	0	0	0	0	0	16	0	0	34
% Buses	2.1	0	25.9	0	0	0	0	0	0	0	0	0	0	5.1	0	0	1.4

Short Counts

File Name : Washington St @ Calhoun St
Site Code :
Start Date : 10/20/2021
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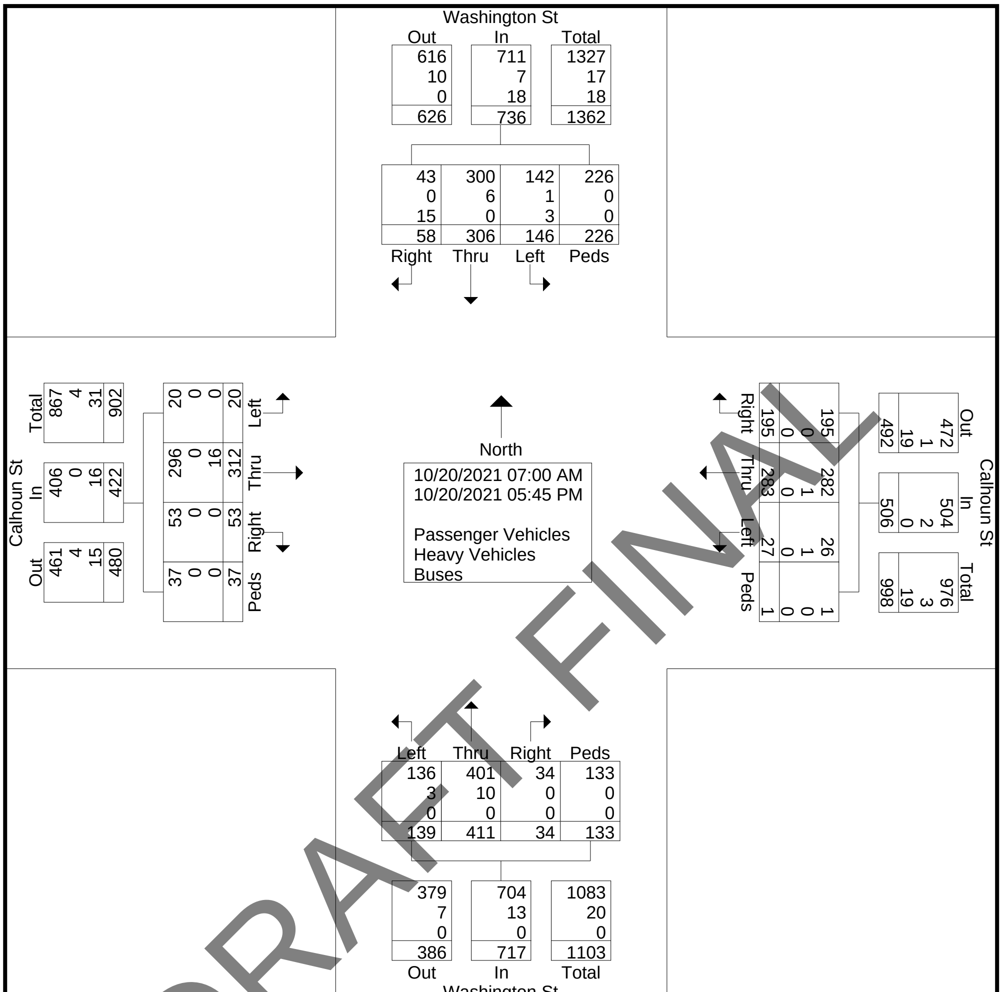
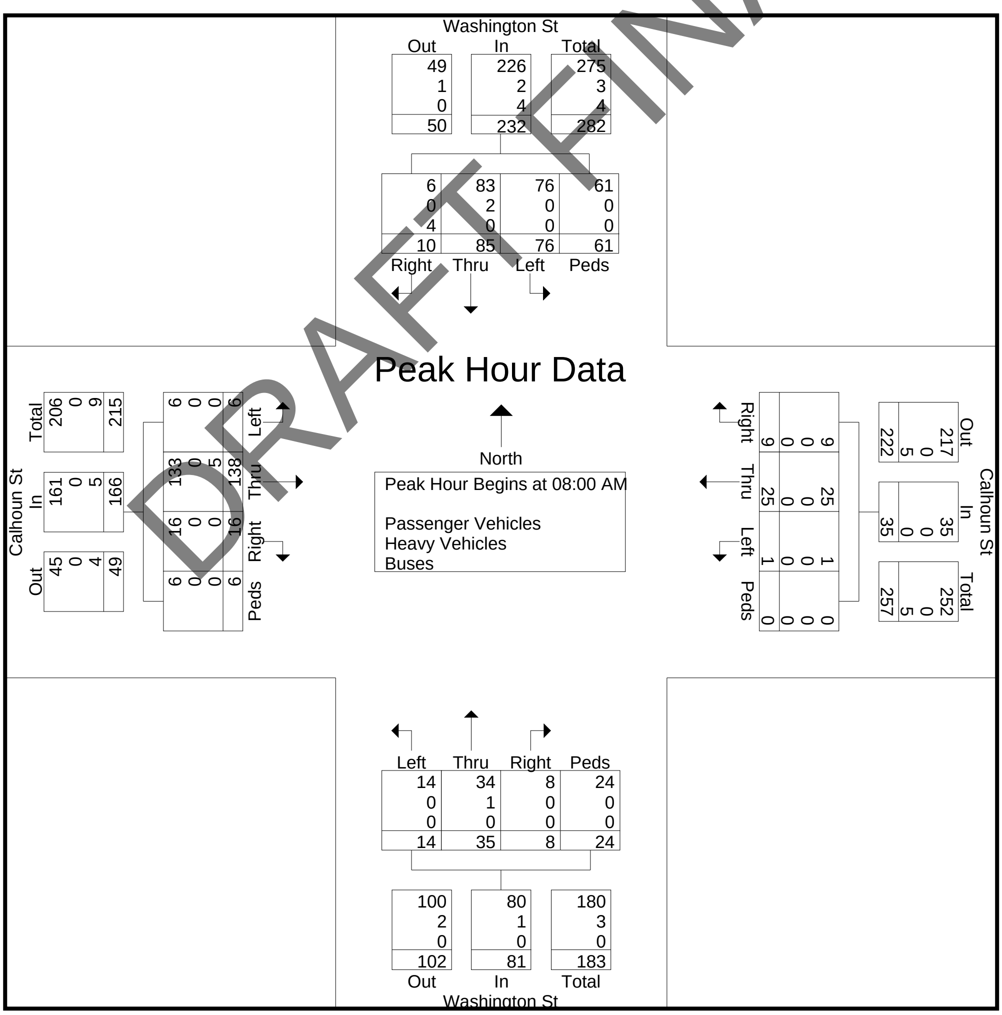


Short Counts

File Name : Washington St @ Calhoun St
Site Code :
Start Date : 10/20/2021
Page No : 3

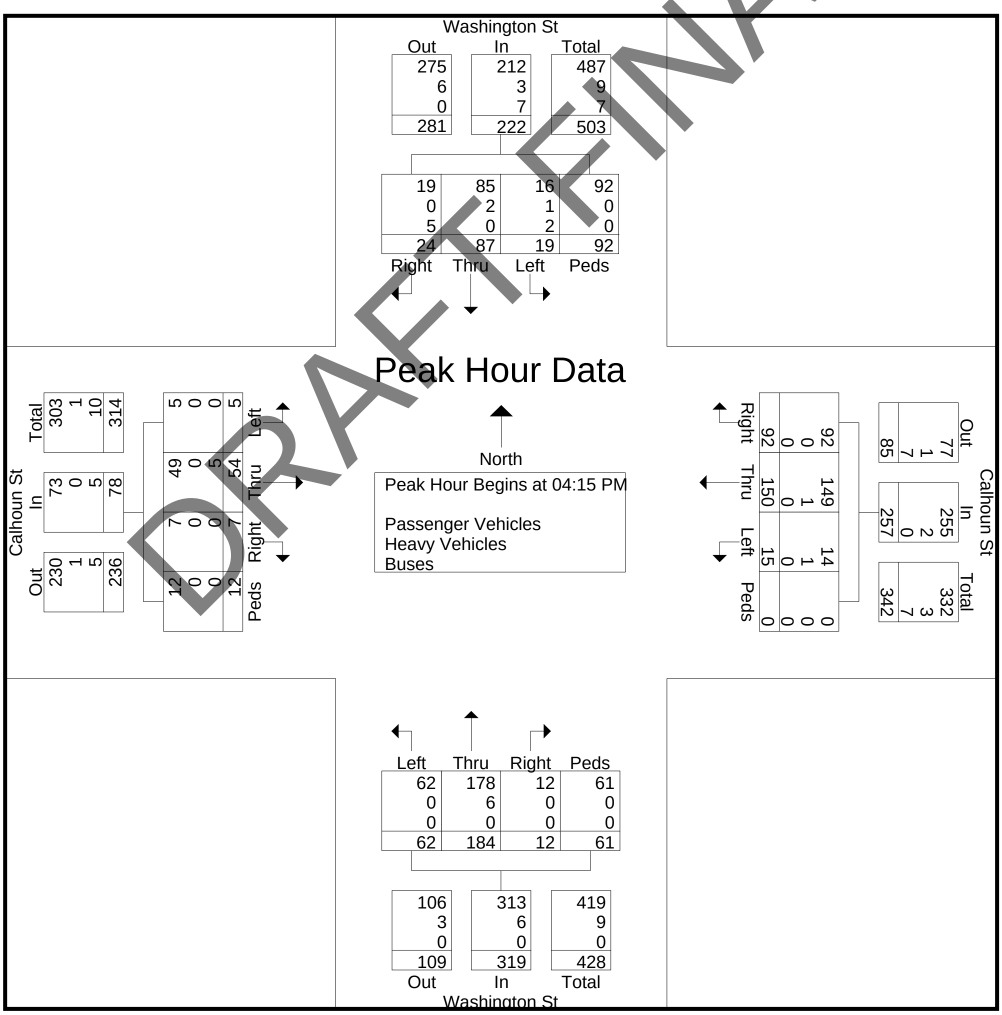
	Washington St From North					Calhoun St From East					Washington St From South					Calhoun St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	15	14	1	10	40	**1**	**8**									**3**			**3**		
08:15 AM	**17**	**23**	**3**	**14**	**57**	**0**	**4**	**0**	**0**	**4**	**2**	**4**	**1**	**3**	**10**	**0**	**30**	**9**	**1**	**40**	**111**
08:30 AM	**22**	**25**	1	14	62	0	6	2	0	8	3	10	1	1	15	0	**50**	2	0	**52**	137
08:45 AM	22	23	**5**	**23**	**73**	0	7	**7**		**14**	**6**	**11**	**6**	**16**	**39**	3	31	3	2	39	**165**
Total Volume	76	85	10	61	232	1	25	9	0	35	14	35	8	24	81	6	138	16	6	166	514
% App. Total	32.8	36.6	4.3	26.3		2.9	71.4	25.7	0		17.3	43.2	9.9	29.6		3.6	83.1	9.6	3.6		
PHF	.864	.850	.500	.663	.795	.250	.781	.321	.000	.625	.583	.795	.333	.375	.519	.500	.690	.444	.500	.798	.779
Passenger Vehicles	76	83	6	61	226	1	25	9	0	35	14	34	8	24	80	6	133	16	6	161	502
% Passenger Vehicles	100	97.6	60.0	100	97.4	100	100	100	0	100	100	97.1	100	100	98.8	100	96.4	100	100	97.0	97.7
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% Heavy Vehicles	0	2.4	0	0	0.9	0	0	0	0	0	0	2.9	0	0	1.2	0	0	0	0	0	0.6
Buses	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	9
% Buses	0	0	40.0	0	1.7	0	0	0	0	0	0	0	0	0	0	0	3.6	0	0	3.0	1.8



Short Counts

File Name : Washington St @ Calhoun St
Site Code :
Start Date : 10/20/2021

	Washington St From North					Calhoun St From East					Washington St From South					Calhoun St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	1	**24**	3	14	42	3	26	13	0	42	12	41	**6**	14	73	0	12	**3**			
04:30 PM	**8**	**19**	**4**	**22**	**53**	**4**	**36**	**26**	**0**	**66**	**17**	**46**	**1**	**14**	**78**	**2**	**9**	**1**	**1**	**13**	**210**
04:45 PM	**7**	**22**	**8**	**28**	**65**	**7**	43	23	0	73	15	47	1	**22**	**85**	1	**18**	2	4	**25**	**248**
05:00 PM	3	22	**9**				**45**	**30**		**76**	**18**	**50**							**6**		
Total Volume	19	87	24	92	222	15	150	92	0	257	62	184	12	61	319	5	54	7	12	78	876
% App. Total	8.6	39.2	10.8	41.4		5.8	58.4	35.8	0		19.4	57.7	3.8	19.1		6.4	69.2	9	15.4		
PHF	.594	.906	.667	.821	.854	.536	.833	.767	.000	.845	.861	.920	.500	.693	.938	.625	.750	.583	.500	.780	.883
Passenger Vehicles	16	85	19	92	212	14	149	92	0	255	62	178	12	61	313	5	49	7	12	73	853
% Passenger Vehicles	84.2	97.7	79.2	100	95.5	93.3	99.3	100	0	99.2	100	96.7	100	100	98.1	100	90.7	100	100	93.6	97.4
Heavy Vehicles	1	2	0	0	3	1	1	0	0	2	0	6	0	0	6	0	0	0	0	0	11
% Heavy Vehicles	5.3	2.3	0	0	1.4	6.7	0.7	0	0	0.8	0	3.3	0	0	1.9	0	0	0	0	0	1.3
Buses	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	12
% Buses	10.5	0	20.8	0	3.2	0	0	0	0	0	0	0	0	0	0	0	9.3	0	0	6.4	1.4



Short Counts

File Name : Washington St @ Laurens St
Site Code :
Start Date : 10/20/2021
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Washington St From North				Laurens St From East				Washington St From South				Laurens St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	2	8	0	1	2	5	3	0	0	5	3	5	0	2	1	4	41
07:15 AM	4	18	0	7	0	1	4	0	0	7	0	8	0	0	0	11	60
07:30 AM	0	22	1	2	1	1	3	1	0	12	0	3	0	0	0	4	50
07:45 AM	1	17	0	0	0	0	0	1	0	15	1	2	0	1	0	18	56
Total	7	65	1	10	3	7	10	2	0	39	4	18	0	3	1	37	207
08:00 AM	1	19	0	2	0	1	3	0	0	10	0	2	0	3	0	14	55
08:15 AM	3	30	2	1	3	1	3	0	1	10	2	1	0	1	0	13	71
08:30 AM	3	27	0	0	1	0	5	0	0	12	1	4	0	2	0	1	56
08:45 AM	5	27	0	0	3	0	2	0	0	21	0	4	0	1	0	4	67
Total	12	103	2	3	7	2	13	0	1	53	3	11	0	7	0	32	249
04:00 PM	5	28	1	2	3	3	6	0	0	60	1	7	0	1	1	4	122
04:15 PM	2	35	0	1	2	5	4	0	2	45	5	5	3	2	1	3	115
04:30 PM	3	27	0	7	7	5	6	2	1	61	1	3	0	3	1	3	130
04:45 PM	3	32	0	13	6	2	6	0	2	60	2	8	0	2	1	12	149
Total	13	122	1	23	18	15	22	2	5	226	9	23	3	8	4	22	516
05:00 PM	2	22	2	32	3	4	10	1	0	60	3	17	1	3	1	2	163
05:15 PM	3	18	2	5	4	2	7	0	1	47	4	2	0	3	1	2	101
05:30 PM	4	21	1	1	5	3	2	2	1	58	2	5	0	2	2	0	109
05:45 PM	6	22	0	7	2	0	4	2	0	54	7	5	1	1	1	3	115
Total	15	83	5	45	14	9	23	5	2	219	16	29	2	9	5	7	488
Grand Total	47	373	9	81	42	33	68	9	8	537	32	81	5	27	10	98	1460
Apprch %	9.2	73.1	1.8	15.9	27.6	21.7	44.7	5.9	1.2	81.6	4.9	12.3	3.6	19.3	7.1	70	
Total %	3.2	25.5	0.6	5.5	2.9	2.3	4.7	0.6	0.5	36.8	2.2	5.5	0.3	1.8	0.7	6.7	
Passenger Vehicles	44	366	9	81	41	33	67	9	8	523	32	81	5	27	10	98	1434
% Passenger Vehicles	93.6	98.1	100	100	97.6	100	98.5	100	100	97.4	100	100	100	100	100	100	98.2
Heavy Vehicles	2	6	0	0	1	0	1	0	0	13	0	0	0	0	0	0	23
% Heavy Vehicles	4.3	1.6	0	0	2.4	0	1.5	0	0	2.4	0	0	0	0	0	0	1.6
Buses	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
% Buses	2.1	0.3	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0.2

Short Counts

File Name : Washington St @ Laurens St
Site Code :
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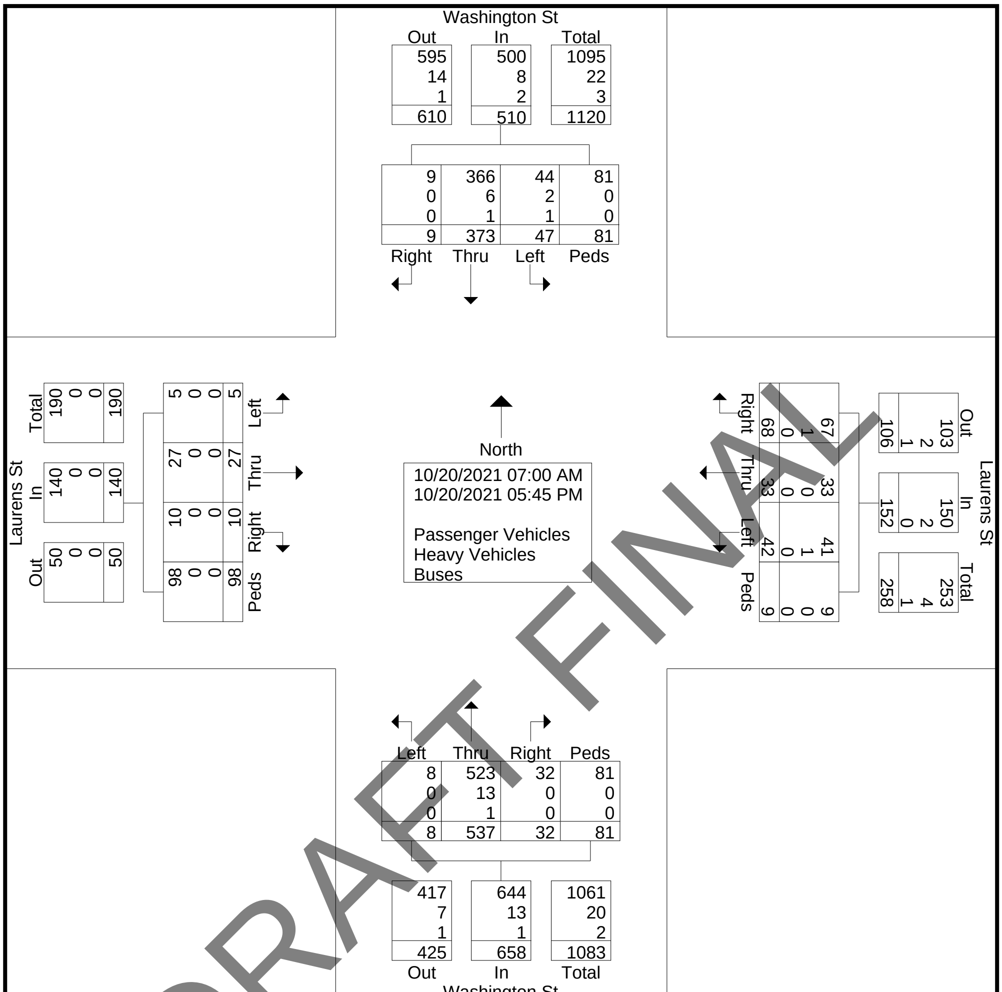
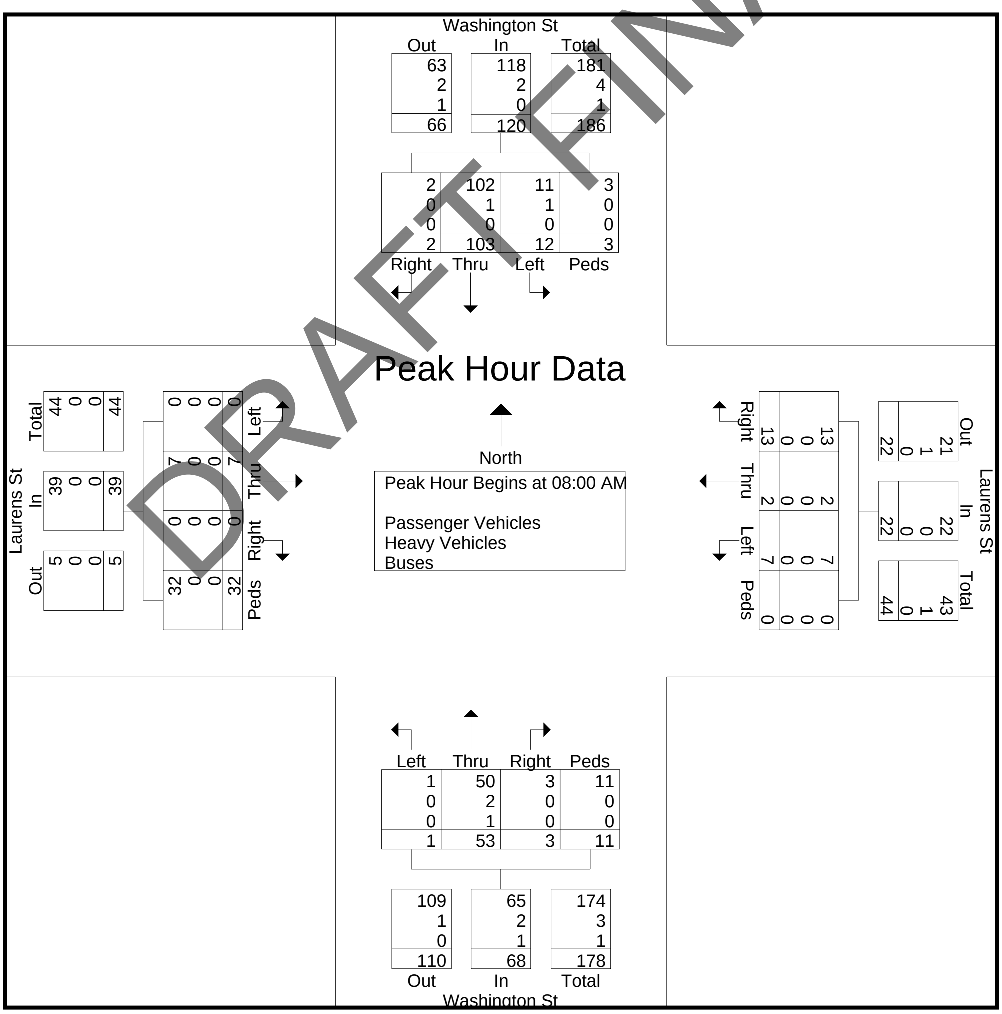


Short Counts

File Name : Washington St @ Laurens St
Site Code :
Start Date : 10/20/2021
Page No : 3

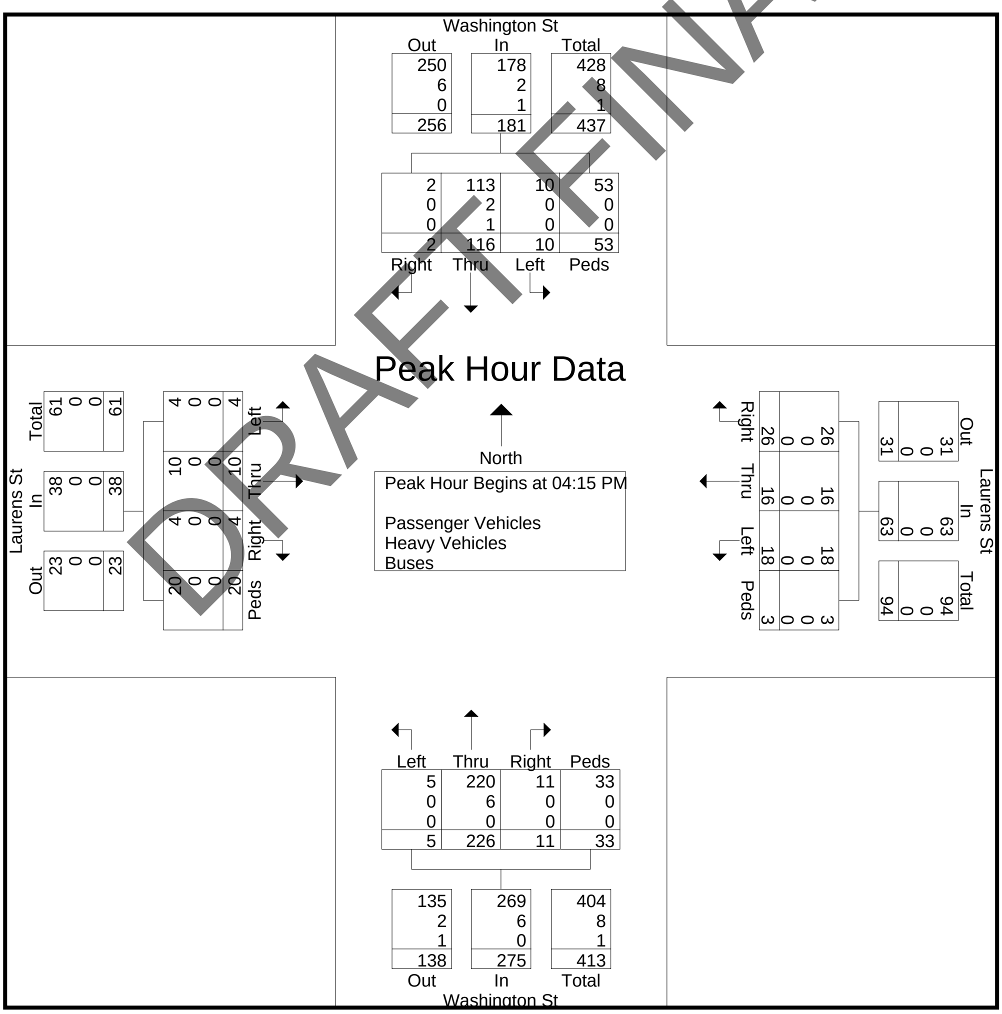
	Washington St From North					Laurens St From East					Washington St From South					Laurens St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	19	0	**2**			**1**										**3**	0	**14**	**17**	55
08:15 AM	3	**30**	**2**		**36**	**3**	1	3	0	**7**	**1**		**2**	1	14	0	1	0	13	14	**71**
08:30 AM	3	27	0	0	30	1	0	**5**						**4**							
08:45 AM	**5**	**27**	**0**	**0**	**32**	**3**	**0**	**2**	**0**	**5**	**0**	**21**	**0**	**4**	**25**	0	1	0	4	5	67
Total Volume	12	103	2	3	120	7	2	13	0	22	1	53	3	11	68	0	7	0	32	39	249
% App. Total	10	85.8	1.7	2.5		31.8	9.1	59.1	0		1.5	77.9	4.4	16.2		0	17.9	0	82.1		
PHF	.600	.858	.250	.375	.833	.583	.500	.650	.000	.786	.250	.631	.375	.688	.680	.000	.583	.000	.571	.574	.877
Passenger Vehicles	11	102	2	3	118	7	2	13	0	22	1	50	3	11	65	0	7	0	32	39	244
% Passenger Vehicles	91.7	99.0	100	100	98.3	100	100	100	0	100	100	94.3	100	100	95.6	0	100	0	100	100	98.0
Heavy Vehicles	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
% Heavy Vehicles	8.3	1.0	0	0	1.7	0	0	0	0	0	0	3.8	0	0	2.9	0	0	0	0	0	1.6
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	1.9	0	0	1.5	0	0	0	0	0	0.4



Short Counts

File Name : Washington St @ Laurens St
Site Code :
Start Date : 10/20/2021
Page No : 4

	Washington St From North					Laurens St From East					Washington St From South					Laurens St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	2	**35**	0	1	38	2	**5**				**2**		**5**	5	57	**3**		**1**			
04:30 PM	**3**	27	**0**	**7**	**37**	**7**	5	6	**2**	**20**	1	**61**	**1**	**3**	**66**	**0**	**3**	1	3	7	130
04:45 PM	3	32	0	13	48	6	2	6	0	14	2	60	2	8	72	0	2	1	**12**	**15**	149
05:00 PM	2	22	**2**	**32**	**58**	3	4	**10**						**17**	**80**	1	3	1	2	7	**163**
Total Volume	10	116	2	53	181	18	16	26	3	63	5	226	11	33	275	4	10	4	20	38	557
% App. Total	5.5	64.1	1.1	29.3		28.6	25.4	41.3	4.8		1.8	82.2	4	12		10.5	26.3	10.5	52.6		
PHF	.833	.829	.250	.414	.780	.643	.800	.650	.375	.788	.625	.926	.550	.485	.859	.333	.833	1.00	.417	.633	.854
Passenger Vehicles	10	113	2	53	178	18	16	26	3	63	5	220	11	33	269	4	10	4	20	38	548
% Passenger Vehicles	100	97.4	100	100	98.3	100	100	100	100	100	100	97.3	100	100	97.8	100	100	100	100	100	98.4
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	8
% Heavy Vehicles	0	1.7	0	0	1.1	0	0	0	0	0	0	2.7	0	0	2.2	0	0	0	0	0	1.4
Buses	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0.9	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2



Short Counts

File Name : N Market St @ Concord St
Site Code :
Start Date : 10/20/2021
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Concord St From North				N Market St From East				Concord St From South				S Market St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	12	1	1	0	0	0	0	0	4	0	1	0	0	2	0	21
07:15 AM	0	7	0	0	0	0	0	0	1	3	0	0	0	0	0	1	12
07:30 AM	0	10	1	1	0	0	0	0	0	7	0	0	0	0	0	3	22
07:45 AM	0	9	0	1	0	0	0	0	1	9	0	0	2	0	3	1	26
Total	0	38	2	3	0	0	0	0	2	23	0	1	2	0	5	5	81
08:00 AM	0	12	0	0	0	0	0	0	2	7	0	0	0	0	1	2	24
08:15 AM	0	15	4	1	0	0	0	0	1	3	0	3	4	0	0	3	34
08:30 AM	0	20	5	0	0	0	0	0	2	7	0	0	5	0	1	6	46
08:45 AM	0	20	2	2	0	0	0	0	2	9	0	0	2	0	1	7	45
Total	0	67	11	3	0	0	0	0	7	26	0	3	11	0	3	18	149
04:00 PM	0	29	4	6	0	0	0	0	9	44	0	5	13	0	9	14	133
04:15 PM	0	31	3	3	0	0	0	0	12	27	0	1	4	0	7	13	101
04:30 PM	0	28	5	0	0	0	0	0	8	46	0	1	4	0	5	7	104
04:45 PM	0	24	5	6	0	0	0	0	5	37	0	5	4	0	7	10	103
Total	0	112	17	15	0	0	0	0	34	154	0	12	25	0	28	44	441
05:00 PM	0	22	9	3	0	0	0	0	7	32	0	3	2	0	3	10	91
05:15 PM	0	19	5	1	0	0	0	0	4	28	0	2	6	0	4	15	84
05:30 PM	0	17	1	8	0	0	0	0	4	35	0	1	2	0	5	19	92
05:45 PM	0	19	5	5	0	0	0	0	5	27	0	2	3	0	3	15	84
Total	0	77	20	17	0	0	0	0	20	122	0	8	13	0	15	59	351
Grand Total	0	294	50	38	0	0	0	0	63	325	0	24	51	0	51	126	1022
Apprch %	0	77	13.1	9.9	0	0	0	0	15.3	78.9	0	5.8	22.4	0	22.4	55.3	
Total %	0	28.8	4.9	3.7	0	0	0	0	6.2	31.8	0	2.3	5	0	5	12.3	
Passenger Vehicles	0	288	49	38	0	0	0	0	47	315	0	24	49	0	50	126	986
% Passenger Vehicles	0	98	98	100	0	0	0	0	74.6	96.9	0	100	96.1	0	98	100	96.5
Heavy Vehicles	0	5	1	0	0	0	0	0	3	10	0	0	1	0	1	0	21
% Heavy Vehicles	0	1.7	2	0	0	0	0	0	4.8	3.1	0	0	2	0	2	0	2.1
Buses	0	1	0	0	0	0	0	0	13	0	0	0	1	0	0	0	15
% Buses	0	0.3	0	0	0	0	0	0	20.6	0	0	0	2	0	0	0	1.5

Short Counts

File Name : N Market St @ Concord St
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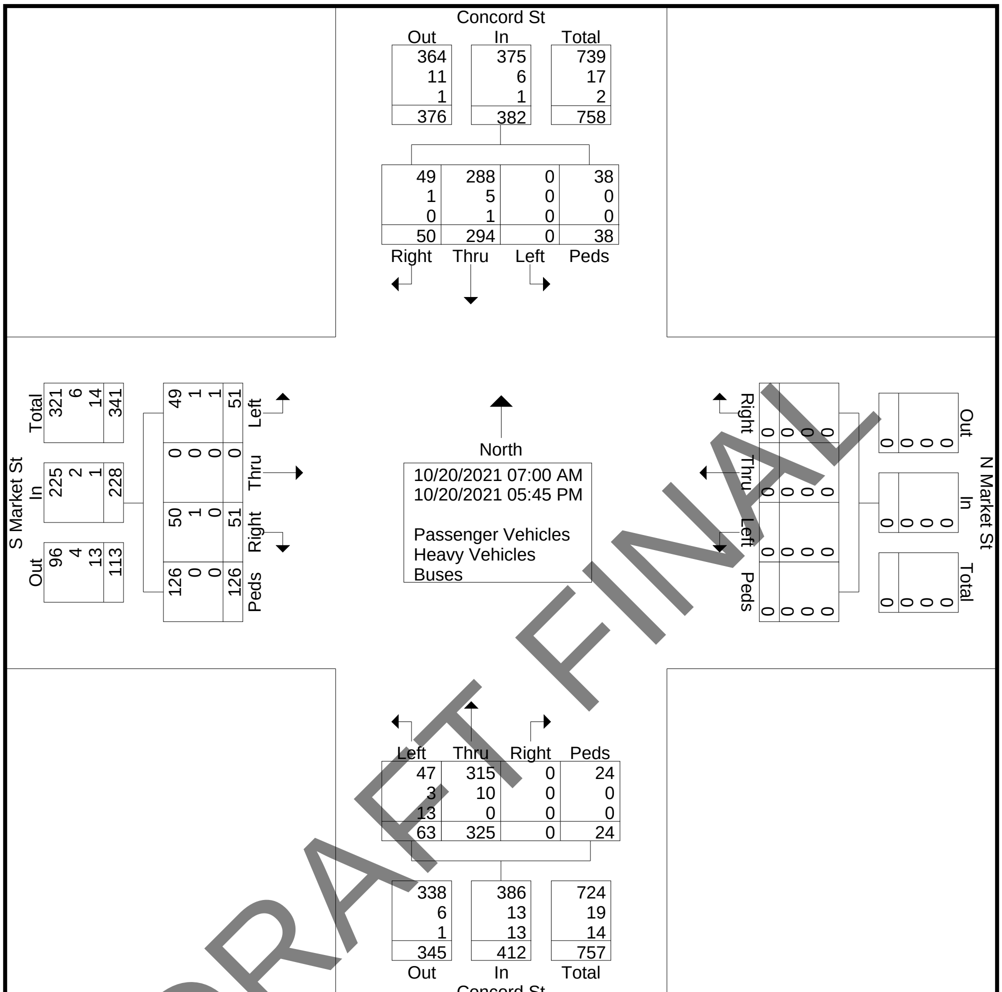

Short Counts

File Name : N Market St @ Concord St
Site Code :
Start Date : 10/20/2021
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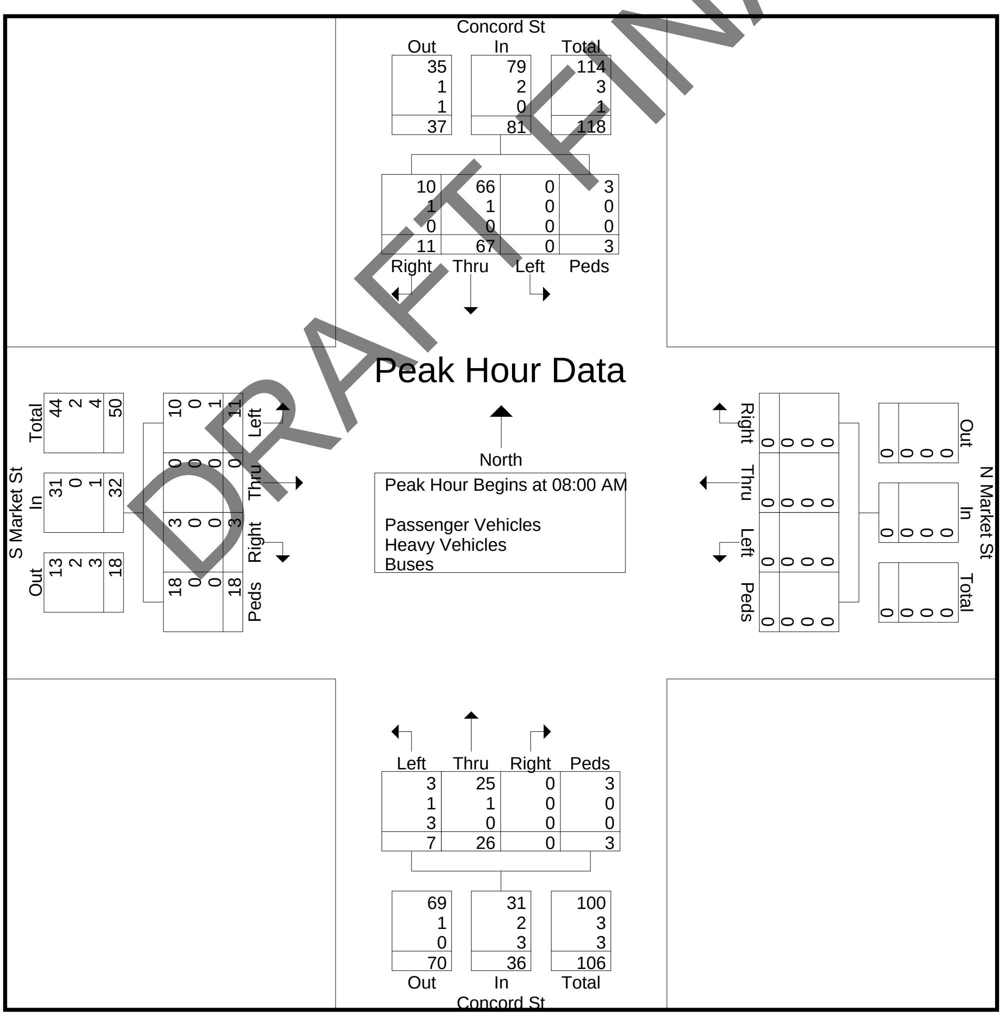
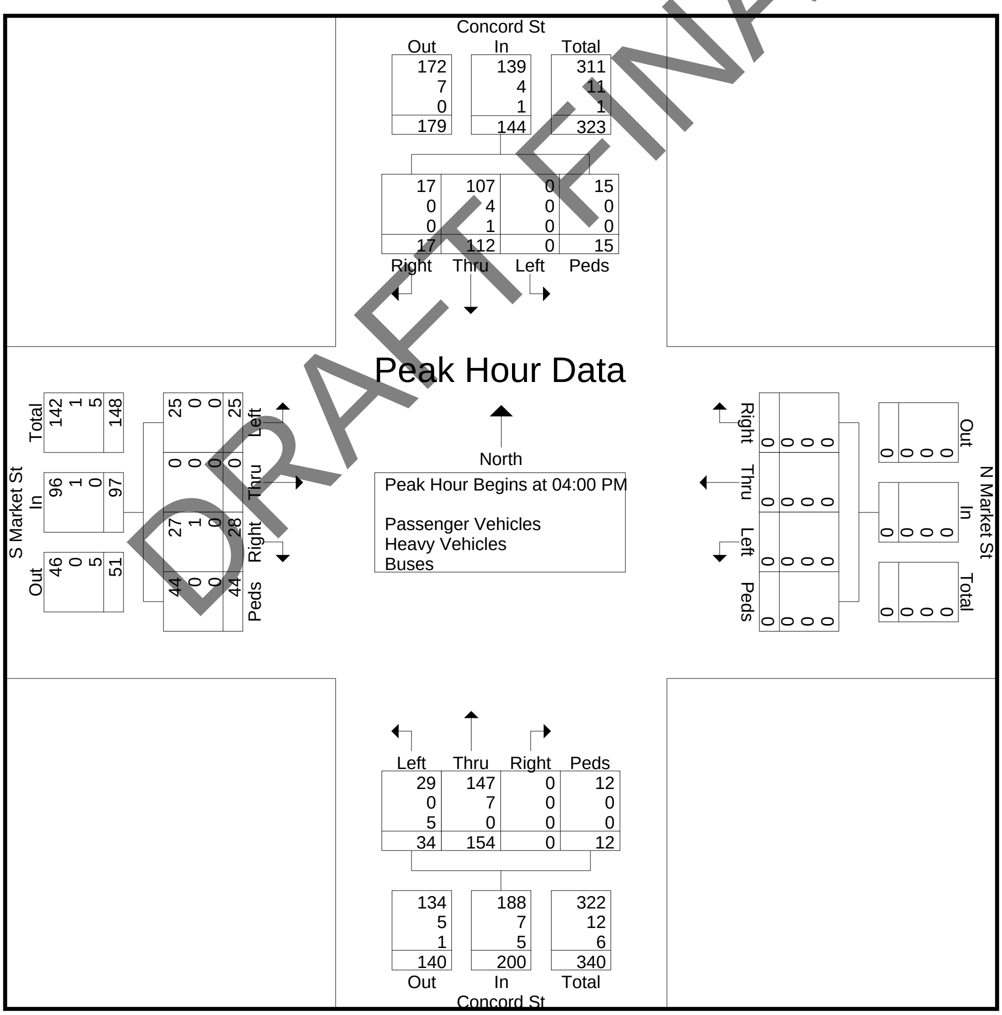
	Concord St From North					N Market St From East					Concord St From South					S Market St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	12	0	0	12	0	0	0	0	0	**2**							**1**			
08:15 AM	**0**	**15**	**4**	**1**	**20**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**3**	**7**	**4**	**0**	**0**	**3**	**7**	**34**
08:30 AM	**0**	**20**	**5**	**0**	**25**	0	0	0	0	0	2	7	0	0	9	**5**	**0**	**1**	**6**	**12**	**46**
08:45 AM	0	20	2	**2**								**9**			**11**	2	0	1	**7**		
Total Volume	0	67	11	3	81	0	0	0	0	0	7	26	0	3	36	11	0	3	18	32	149
% App. Total	0	82.7	13.6	3.7		0	0	0	0		19.4	72.2	0	8.3		34.4	0	9.4	56.2		
PHF	.000	.838	.550	.375	.810	.000	.000	.000	.000	.000	.875	.722	.000	.250	.818	.550	.000	.750	.643	.667	.810
Passenger Vehicles	0	66	10	3	79	0	0	0	0	0	3	25	0	3	31	10	0	3	18	31	141
% Passenger Vehicles	0	98.5	90.9	100	97.5	0	0	0	0	0	42.9	96.2	0	100	86.1	90.9	0	100	100	96.9	94.6
Heavy Vehicles	0	1	1	0	2	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	4
% Heavy Vehicles	0	1.5	9.1	0	2.5	0	0	0	0	0	14.3	3.8	0	0	5.6	0	0	0	0	0	2.7
Buses	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	1	0	0	0	1	4
% Buses	0	0	0	0	0	0	0	0	0	0	42.9	0	0	0	8.3	9.1	0	0	0	3.1	2.7



Short Counts

File Name : N Market St @ Concord St
Site Code :
Start Date : 10/20/2021
Page No : 4

	Concord St From North					N Market St From East					Concord St From South					S Market St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	29	4	**6**	**39**	0	0	0	0	0	9	44	0	**5**	**58**	**13**		**9**	**14**	**36**	**133**
04:15 PM	0	**31**	3	3	37	0	0	0	0	0	**12**										
04:30 PM	**0**	**28**	**5**	**0**	**33**	**0**	**0**	**0**	**0**	**0**	**8**	**46**	**0**	**1**	**55**	**4**	**0**	**5**	**7**	**16**	**104**
04:45 PM	**0**	**24**	**5**	**6**	**35**	**0**	**0**	**0**	**0**	**0**	**5**	**37**	**0**	**5**	**47**	**4**	**0**	**7**	**10**	**21**	**103**
Total Volume	0	112	17	15	144	0	0	0	0	0	34	154	0	12	200	25	0	28	44	97	441
% App. Total	0	77.8	11.8	10.4		0	0	0	0		17	77	0	6		25.8	0	28.9	45.4		
PHF	.000	.903	.850	.625	.923	.000	.000	.000	.000	.000	.708	.837	.000	.600	.862	.481	.000	.778	.786	.674	.829
Passenger Vehicles	0	107	17	15	139	0	0	0	0	0	29	147	0	12	188	25	0	27	44	96	423
% Passenger Vehicles	0	95.5	100	100	96.5	0	0	0	0	0	85.3	95.5	0	100	94.0	100	0	96.4	100	99.0	95.9
Heavy Vehicles	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	0	0	1	0	1	12
% Heavy Vehicles	0	3.6	0	0	2.8	0	0	0	0	0	0	4.5	0	0	3.5	0	0	3.6	0	1.0	2.7
Buses	0	1	0	0	1	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	6
% Buses	0	0.9	0	0	0.7	0	0	0	0	0	14.7	0	0	0	2.5	0	0	0	0	0	1.4



Short Counts

File Name : Concord St @ Cumberland St
Site Code :
Start Date : 10/20/2021
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Concord St From North				From East				Concord St From South				Cumberland St From West				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	10	3	0	0	0	0	0	0	6	0	0	0	0	0	4	23
07:15 AM	0	7	0	0	0	0	0	0	0	6	0	0	0	0	2	0	15
07:30 AM	0	8	1	1	0	0	0	0	0	7	0	0	2	0	1	10	30
07:45 AM	0	14	6	0	0	0	0	0	2	9	0	0	0	0	2	5	38
Total	0	39	10	1	0	0	0	0	2	28	0	0	2	0	5	19	106
08:00 AM	0	7	5	2	0	0	0	0	1	9	0	0	2	0	7	5	38
08:15 AM	0	13	2	1	0	0	0	0	2	4	0	0	1	0	1	6	30
08:30 AM	0	18	3	0	0	0	0	0	2	7	0	0	2	0	1	12	45
08:45 AM	0	16	2	0	0	0	0	0	2	13	0	0	0	0	4	10	47
Total	0	54	12	3	0	0	0	0	7	33	0	0	5	0	13	33	160
04:00 PM	0	28	2	32	0	0	0	0	2	32	0	0	17	0	3	41	157
04:15 PM	0	38	0	24	0	0	0	0	1	17	0	2	11	0	5	22	120
04:30 PM	0	32	2	32	0	0	0	0	6	38	0	0	14	0	5	20	149
04:45 PM	0	21	7	15	0	0	0	0	2	32	0	0	13	0	1	37	128
Total	0	119	11	103	0	0	0	0	11	119	0	2	55	0	14	120	554
05:00 PM	0	14	7	40	0	0	0	0	1	21	0	0	13	0	6	33	135
05:15 PM	0	18	4	15	0	0	0	0	3	19	0	0	9	0	4	43	115
05:30 PM	0	22	1	3	0	0	0	0	3	32	0	0	11	0	7	17	96
05:45 PM	0	13	5	19	0	0	0	0	4	21	0	0	5	0	8	25	100
Total	0	67	17	77	0	0	0	0	11	93	0	0	38	0	25	118	446
Grand Total	0	279	50	184	0	0	0	0	31	273	0	2	100	0	57	290	1266
Apprch %	0	54.4	9.7	35.9	0	0	0	0	10.1	89.2	0	0.7	22.4	0	12.8	64.9	
Total %	0	22	3.9	14.5	0	0	0	0	2.4	21.6	0	0.2	7.9	0	4.5	22.9	
Passenger Vehicles	0	274	49	184	0	0	0	0	31	248	0	2	98	0	57	290	1233
% Passenger Vehicles	0	98.2	98	100	0	0	0	0	100	90.8	0	100	98	0	100	100	97.4
Heavy Vehicles	0	4	1	0	0	0	0	0	0	12	0	0	2	0	0	0	19
% Heavy Vehicles	0	1.4	2	0	0	0	0	0	0	4.4	0	0	2	0	0	0	1.5
Buses	0	1	0	0	0	0	0	0	0	13	0	0	0	0	0	0	14
% Buses	0	0.4	0	0	0	0	0	0	0	4.8	0	0	0	0	0	0	1.1

Short Counts

File Name : Concord St @ Cumberland St
Site Code :
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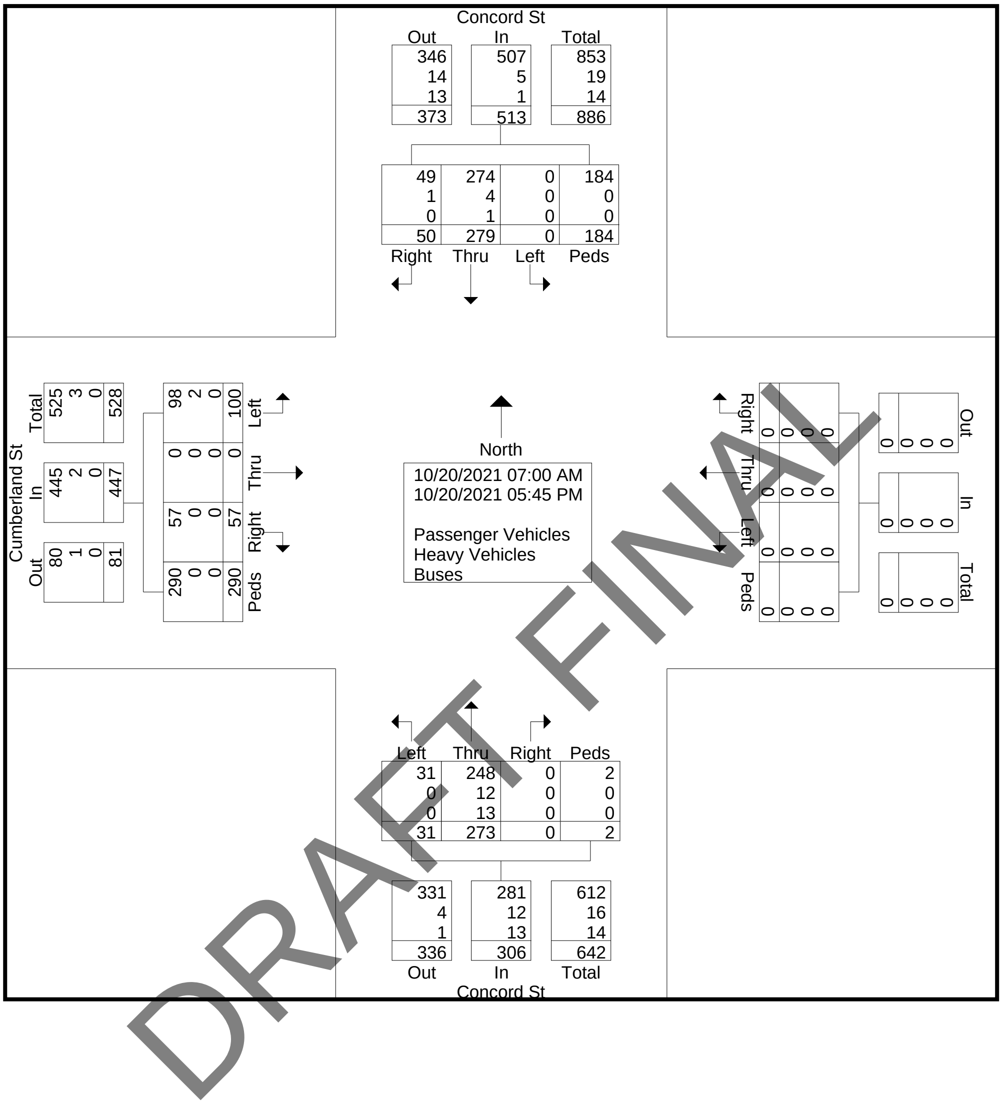
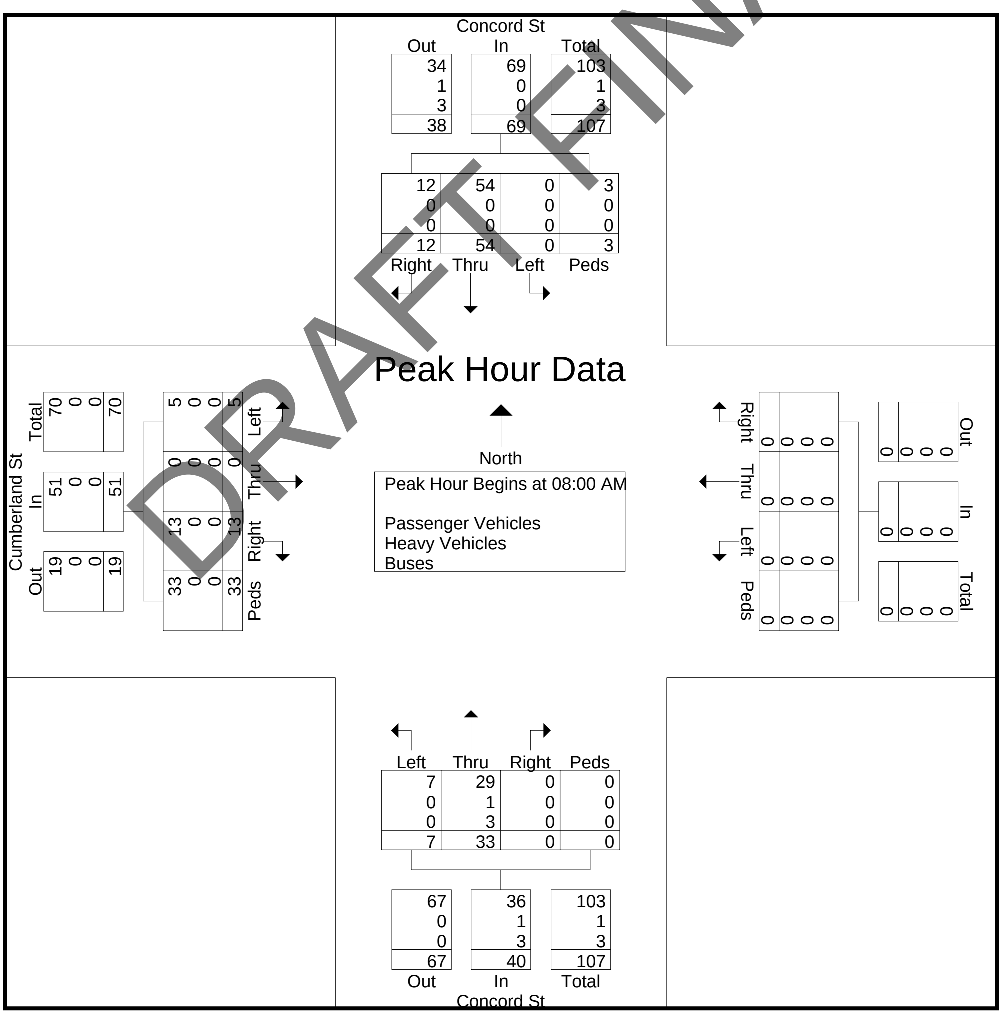


Short Counts

File Name : Concord St @ Cumberland St
Site Code :
Start Date : 10/20/2021
Page No : 3

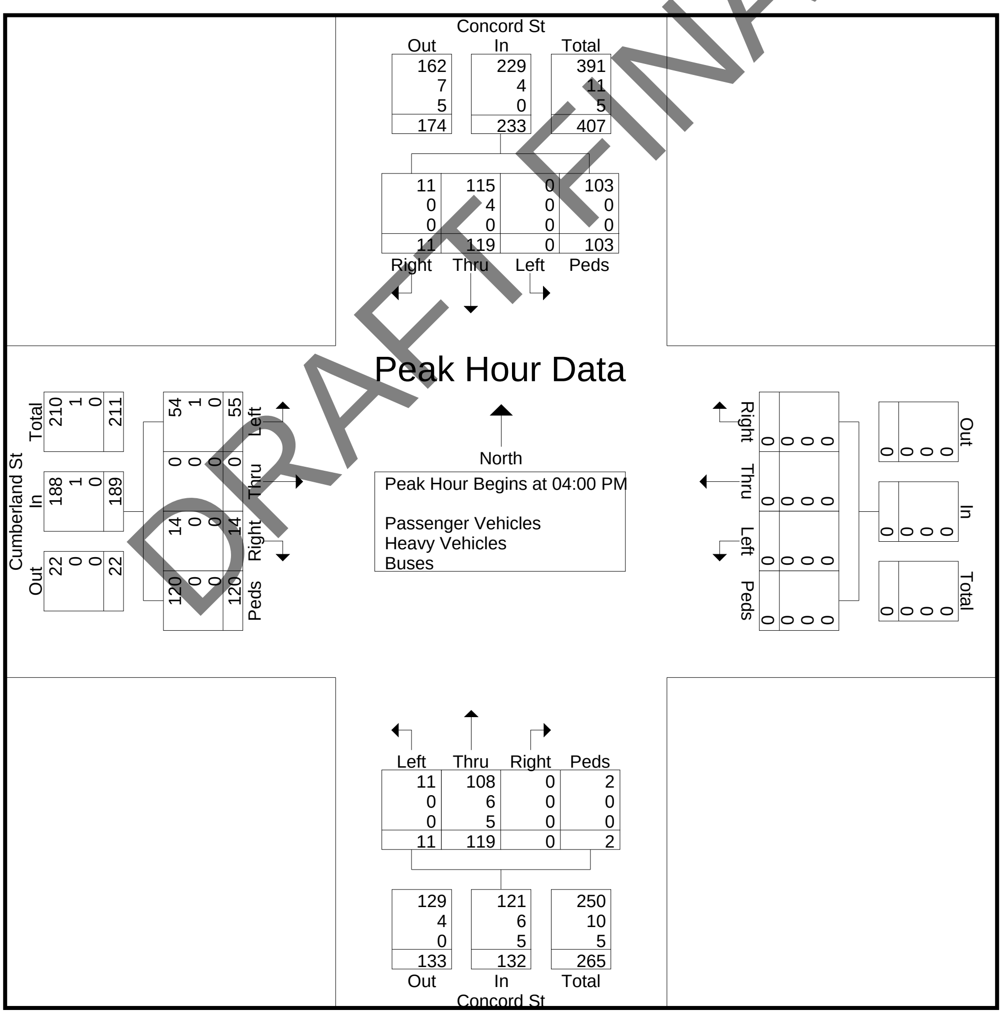
	Concord St From North					From East					Concord St From South					Cumberland St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	7	**5**	**2**												**2**		**7**			
08:15 AM	**0**	**13**	**2**	**1**	**16**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**6**	**1**	**0**	**1**	**6**	**8**	**30**
08:30 AM	**0**	**18**	3	0	**21**	0	0	0	0	0	2	7	0	0	9	2	0	1	**12**	**15**	45
08:45 AM	0	16	2	0	18	0	0	0	0	0	2	**13**			**15**	0	0	4	10	14	**47**
Total Volume	0	54	12	3	69	0	0	0	0	0	7	33	0	0	40	5	0	13	33	51	160
% App. Total	0	78.3	17.4	4.3		0	0	0	0		17.5	82.5	0	0		9.8	0	25.5	64.7		
PHF	.000	.750	.600	.375	.821	.000	.000	.000	.000	.000	.875	.635	.000	.000	.667	.625	.000	.464	.688	.850	.851
Passenger Vehicles	0	54	12	3	69	0	0	0	0	0	7	29	0	0	36	5	0	13	33	51	156
% Passenger Vehicles	0	100	100	100	100	0	0	0	0	0	100	87.9	0	0	90.0	100	0	100	100	100	97.5
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	3.0	0	0	2.5	0	0	0	0	0	0.6
Buses	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
% Buses	0	0	0	0	0	0	0	0	0	0	0	9.1	0	0	7.5	0	0	0	0	0	1.9



Short Counts

File Name : Concord St @ Cumberland St
Site Code :
Start Date : 10/20/2021
Page No : 4

	Concord St From North					From East					Concord St From South					Cumberland St From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	28	2	**32**												**17**			**41**	**61**	**157**
04:15 PM	0	**38**	0	24	62	0	0	0	0	0	1	17	0	**2**				**5**			
04:30 PM	**0**	**32**	**2**	**32**	**66**	0	0	0	0	0	**6**	**38**	**0**	**0**	**44**	14	0	5	20	39	149
04:45 PM	0	21	**7**																		
Total Volume	0	119	11	103	233	0	0	0	0	0	11	119	0	2	132	55	0	14	120	189	554
% App. Total	0	51.1	4.7	44.2		0	0	0	0		8.3	90.2	0	1.5		29.1	0	7.4	63.5		
PHF	.000	.783	.393	.805	.883	.000	.000	.000	.000	.000	.458	.783	.000	.250	.750	.809	.000	.700	.732	.775	.882
Passenger Vehicles	0	115	11	103	229	0	0	0	0	0	11	108	0	2	121	54	0	14	120	188	538
% Passenger Vehicles	0	96.6	100	100	98.3	0	0	0	0	0	100	90.8	0	100	91.7	98.2	0	100	100	99.5	97.1
Heavy Vehicles	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	11
% Heavy Vehicles	0	3.4	0	0	1.7	0	0	0	0	0	0	5.0	0	0	4.5	1.8	0	0	0	0.5	2.0
Buses	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	5
% Buses	0	0	0	0	0	0	0	0	0	0	0	4.2	0	0	3.8	0	0	0	0	0	0.9



INTERSECTION VOLUME DEVELOPMENT
Union Pier
Washington Street at Calhoun Street
AM PEAK HOUR

Description	Washington Street Northbound			Washington Street Southbound			Calhoun Street Eastbound			Calhoun Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	14	35	8	76	85	10	6	138	16	1	25	9
Pedestrians		24			61			6			0	
Heavy Vehicle %		1.2%			2.6%			3.0%			0.0%	
Peak Hour Factor		0.52			0.80			0.80			0.63	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	8	14	0	0	1	0	0	0	1	0	0	0
2030 Background Traffic	25	56	10	91	103	12	7	165	20	1	30	11
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**25**	**56**	**10**	**91**	**103**	**12**	**7**	**165**	**20**	**1**	**30**	**11**

PM PEAK HOUR

Description	Washington Street Northbound			Washington Street Southbound			Calhoun Street Eastbound			Calhoun Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	62	184	12	19	87	24	5	54	7	15	150	92
Pedestrians		67			92			12			0	
Heavy Vehicle %		1.9%			4.6%			6.4%			0.8%	
Peak Hour Factor		0.94			0.85			0.78			0.85	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	5	10	0	0	3	0	0	0	3	0	0	0
2030 Background Traffic	79	230	14	23	107	29	6	65	11	18	179	110
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**79**	**230**	**14**	**23**	**107**	**29**	**6**	**65**	**11**	**18**	**179**	**110**

INTERSECTION VOLUME DEVELOPMENT

Union Pier

E Bay Street at Calhoun Street

AM PEAK HOUR

Description	E Bay Street Northbound Left	E Bay Street Northbound Through	E Bay Street Northbound Right	E Bay Street Southbound Left	E Bay Street Southbound Through	E Bay Street Southbound Right	Calhoun Steet Eastbound Left	Calhoun Steet Eastbound Through	Calhoun Steet Eastbound Right	Calhoun Steet Westbound Left	Calhoun Steet Westbound Through	Calhoun Steet Westbound Right
Existing 2021 AM Volumes	23	245	8	39	747	214	145	112	0	6	35	7
Pedestrians		34			0			9			6	
Heavy Vehicle %		1.6%			0.8%			3.4%			11.2%	
Peak Hour Factor		0.75			0.80			0.89			0.79	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	2	3	0	0	6	0	0	1	2	0	8	0
2030 Background Traffic	29	296	10	47	899	256	173	135	2	7	50	8
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**29**	**296**	**10**	**47**	**899**	**256**	**173**	**135**	**2**	**7**	**50**	**8**

PM PEAK HOUR

Description	E Bay Street Northbound Left	E Bay Street Northbound Through	E Bay Street Northbound Right	E Bay Street Southbound Left	E Bay Street Southbound Through	E Bay Street Southbound Right	Calhoun Steet Eastbound Left	Calhoun Steet Eastbound Through	Calhoun Steet Eastbound Right	Calhoun Steet Westbound Left	Calhoun Steet Westbound Through	Calhoun Steet Westbound Right
Existing 2021 PM Volumes	94	881	15	15	543	145	230	41	2	21	142	77
Pedestrians		71			0			53			21	
Heavy Vehicle %		0.3%			0.7%			1.5%			2.3%	
Peak Hour Factor		0.88			0.91			0.78			0.80	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	1	1	0	0	15	0	0	3	7	0	5	0
2030 Background Traffic	113	1,054	18	18	664	173	275	52	9	25	175	92
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**113**	**1,054**	**18**	**18**	**664**	**173**	**275**	**52**	**9**	**25**	**175**	**92**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E Bay Street at Hasell Street
AM PEAK HOUR

	E Bay Street Northbound			**E Bay Street Southbound**			**Hasell Street Eastbound**			**Hasell Street Westbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	0	170	12	27	440	60	35	27	10	19	15	30
Pedestrians		20			6			15			16	
Heavy Vehicle %		3.0%			0.8%			1.1%			0.0%	
Peak Hour Factor		0.74			0.84			0.68			0.77	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	2	0	0	1	0	0	0	0	0	0	0
2030 Background Traffic	0	205	14	32	527	72	42	32	12	23	18	36
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**0**	**205**	**14**	**32**	**527**	**72**	**42**	**32**	**12**	**23**	**18**	**36**

PM PEAK HOUR

	E Bay Street Northbound			**E Bay Street Southbound**			**Hasell Street Eastbound**			**Hasell Street Westbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	10	517	26	59	424	48	139	40	24	20	29	75
Pedestrians		29			55			67			63	
Heavy Vehicle %		3.0%			0.7%			0.0%			0.0%	
Peak Hour Factor		0.89			0.96			0.85			0.75	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	6	0	0	1	0	0	0	0	0	0	0
2030 Background Traffic	12	624	31	71	508	57	166	48	29	24	35	90
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**12**	**624**	**31**	**71**	**508**	**57**	**166**	**48**	**29**	**24**	**35**	**90**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
N Market Street at Concord Street
AM PEAK HOUR

Description	Concord Street Northbound			Concord Street Southbound			N Market Street Eastbound			S Market Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	7	26	0	0	67	11	11	0	3	0	0	0
Pedestrians		3			3			18			0	
Heavy Vehicle %		13.9%			2.5%			3.1%			0.0%	
Peak Hour Factor		0.82			0.81			0.67			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	8	31	0	0	80	13	13	0	4	0	0	0
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**8**	**31**	**0**	**0**	**80**	**13**	**13**	**0**	**4**	**0**	**0**	**0**

PM PEAK HOUR

Description	Concord Street Northbound			Concord Street Southbound			N Market Street Eastbound			S Market Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	34	154	0	0	112	17	25	0	28	0	0	0
Pedestrians		12			15			44			0	
Heavy Vehicle %		6.0%			3.5%			1.0%			0.0%	
Peak Hour Factor		0.86			0.92			0.67			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	41	184	0	0	134	20	30	0	33	0	0	0
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**41**	**184**	**0**	**0**	**134**	**20**	**30**	**0**	**33**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Hasell Street at Washington Street
AM PEAK HOUR

Description	Washington Street Northbound Left	Washington Street Northbound Through	Washington Street Northbound Right	Washington Street Southbound Left	Washington Street Southbound Through	Washington Street Southbound Right	Hasell Street Eastbound Left	Hasell Street Eastbound Through	Hasell Street Eastbound Right	Hasell Street Westbound Left	Hasell Street Westbound Through	Hasell Street Westbound Right
Existing 2021 AM Volumes	7	27	0	0	77	23	14	0	15	0	0	0
Pedestrians		0			0			22			0	
Heavy Vehicle %		5.8%			1.0%			5.9%			0.0%	
Peak Hour Factor		0.77			0.74			0.75			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	2	1	0	0	10	0	0	0	1	0	0	0
2030 Background Traffic	10	33	0	0	102	27	17	0	19	0	0	0
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**10**	**33**	**0**	**0**	**102**	**27**	**17**	**0**	**19**	**0**	**0**	**0**

PM PEAK HOUR

Description	Washington Street Northbound Left	Washington Street Northbound Through	Washington Street Northbound Right	Washington Street Southbound Left	Washington Street Southbound Through	Washington Street Southbound Right	Hasell Street Eastbound Left	Hasell Street Eastbound Through	Hasell Street Eastbound Right	Hasell Street Westbound Left	Hasell Street Westbound Through	Hasell Street Westbound Right
Existing 2021 PM Volumes	24	158	0	0	97	50	26	0	28	0	0	0
Pedestrians		3			0			26			0	
Heavy Vehicle %		3.2%			1.4%			0.0%			0.0%	
Peak Hour Factor		0.81			0.90			0.80			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	6	6	0	0	5	0	0	0	1	0	0	0
2030 Background Traffic	35	195	0	0	121	60	31	0	34	0	0	0
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**35**	**195**	**0**	**0**	**121**	**60**	**31**	**0**	**34**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E Bay Street at N Market Street
AM PEAK HOUR

	E Bay Street Northbound			E Bay Street Southbound			S Market Street Eastbound			N Market Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	9	173	8	3	334	43	13	6	15	2	10	2
Pedestrians	18			20			29			47		
Heavy Vehicle %	4.8%			1.5%			6.3%			8.2%		
Peak Hour Factor	0.87			0.81			0.61			0.36		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	3	0	0	11	0	0	0	0	0	0	0
2030 Background Traffic	11	210	10	4	410	51	16	7	18	2	12	2
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**11**	**210**	**10**	**4**	**410**	**51**	**16**	**7**	**18**	**2**	**12**	**2**

PM PEAK HOUR

	E Bay Street Northbound			E Bay Street Southbound			S Market Street Eastbound			N Market Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	15	435	13	14	299	80	89	20	26	10	31	21
Pedestrians	166			129			269			132		
Heavy Vehicle %	0.5%			0.4%			0.7%			3.6%		
Peak Hour Factor	0.89			0.97			0.90			0.90		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	12	0	0	6	0	0	0	0	0	0	0
2030 Background Traffic	18	532	16	17	363	96	106	24	31	12	37	25
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**18**	**532**	**16**	**17**	**363**	**96**	**106**	**24**	**31**	**12**	**37**	**25**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E Bay Street at Chapel Street
AM PEAK HOUR

Description	E Bay Street Northbound Left	Through	Right	E Bay Street Southbound Left	Through	Right	Chapel Street Eastbound Left	Through	Right	Chapel Street Westbound Left	Through	Right
Existing 2021 AM Volumes	5	377	4	214	1,057	60	44	12	17	3	9	68
Pedestrians		1			3			4			3	
Heavy Vehicle %		2.1%			0.8%			1.3%			0.0%	
Peak Hour Factor		0.86			0.87			0.71			0.87	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	3	0	1	6	0	0	0	0	0	0	14
2030 Background Traffic	6	454	5	257	1,269	72	53	14	20	4	11	95
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**6**	**454**	**5**	**257**	**1,269**	**72**	**53**	**14**	**20**	**4**	**11**	**95**

DRAFT FINAL

PM PEAK HOUR

Description	E Bay Street Northbound Left	Through	Right	E Bay Street Southbound Left	Through	Right	Chapel Street Eastbound Left	Through	Right	Chapel Street Westbound Left	Through	Right
Existing 2021 PM Volumes	16	1,231	3	80	697	69	88	13	25	3	26	294
Pedestrians		3			2			16			9	
Heavy Vehicle %		0.3%			0.1%			0.0%			0.6%	
Peak Hour Factor		0.91			0.94			0.85			0.85	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	1	0	3	15	0	0	0	0	0	0	10
2030 Background Traffic	19	1,472	4	99	848	82	105	16	30	4	31	361
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**19**	**1,472**	**4**	**99**	**848**	**82**	**105**	**16**	**30**	**4**	**31**	**361**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Washington Street at Laurens Street
AM PEAK HOUR

Description	Washington Street Northbound			Washington Street Southbound			Laurens Street Eastbound			Laurens Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	1	53	3	12	103	2	0	7	0	7	2	13
Pedestrians	11			3			32			0		
Heavy Vehicle %	4.4%			1.7%			0.0%			0.0%		
Peak Hour Factor	0.68			0.83			0.57			0.79		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	21	0	0	3	0	0	0	0	0	0	0
2030 Background Traffic	1	84	4	14	126	2	0	8	0	8	2	16
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**1**	**84**	**4**	**14**	**126**	**2**	**0**	**8**	**0**	**8**	**2**	**16**

PM PEAK HOUR

Description	Washington Street Northbound			Washington Street Southbound			Laurens Street Eastbound			Laurens Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	5	226	11	10	116	2	4	10	4	18	16	26
Pedestrians	33			53			20			3		
Heavy Vehicle %	2.2%			1.7%			0.0%			0.0%		
Peak Hour Factor	0..86			0.78			0.63			0.79		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	14	0	0	4	0	0	0	0	0	0	0
2030 Background Traffic	6	284	13	12	143	2	5	12	5	22	19	31
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**6**	**284**	**13**	**12**	**143**	**2**	**5**	**12**	**5**	**22**	**19**	**31**

INTERSECTION VOLUME DEVELOPMENT

Union Pier

Concord Street at Cumberland Street

AM PEAK HOUR

Description	Concord Street Northbound Left	Concord Street Northbound Through	Concord Street Northbound Right	Concord Street Southbound Left	Concord Street Southbound Through	Concord Street Southbound Right	Cumberland Street Eastbound Left	Cumberland Street Eastbound Through	Cumberland Street Eastbound Right	Cumberland Street Westbound Left	Cumberland Street Westbound Through	Cumberland Street Westbound Right
Existing 2021 AM Volumes	7	33	0	0	54	12	5	0	13	0	0	0
Pedestrians		0			3			33			0	
Heavy Vehicle %		10.0%			0.0%			0.0%			0.0%	
Peak Hour Factor		0.67			0.82			0.85			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	8	39	0	0	65	14	6	0	16	0	0	0
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**8**	**39**	**0**	**0**	**65**	**14**	**6**	**0**	**16**	**0**	**0**	**0**

PM PEAK HOUR

Description	Concord Street Northbound Left	Concord Street Northbound Through	Concord Street Northbound Right	Concord Street Southbound Left	Concord Street Southbound Through	Concord Street Southbound Right	Cumberland Street Eastbound Left	Cumberland Street Eastbound Through	Cumberland Street Eastbound Right	Cumberland Street Westbound Left	Cumberland Street Westbound Through	Cumberland Street Westbound Right
Existing 2021 PM Volumes	11	119	0	0	119	11	55	0	14	0	0	0
Pedestrians		2			103			120			0	
Heavy Vehicle %		8.3%			0.0%			0.0%			0.0%	
Peak Hour Factor		0.75			0.88			0.78			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	13	142	0	0	142	13	66	0	17	0	0	0
Trip Distribution												
New Trips IN												
New Trips OUT												
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	0	0	0	0	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	0	0	0	0	0	0	0	0	0	0	0
2030 Buildout Total	**13**	**142**	**0**	**0**	**142**	**13**	**66**	**0**	**17**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Washington Street at E. Bay Street (south)
AM PEAK HOUR

Description	E. Bay Street			Washington Street			E. Bay Street			Pritchard Street		
	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	45	137			117				88			
Pedestrians												
Heavy Vehicle %												
Peak Hour Factor												
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	2	1	0	0	10	0	0	0	1	0	0	0
2030 Background Traffic	56	165	0	0	150	0	0	0	106	0	0	0
Trip Distribution												
New Trips IN		8%	2%	10%				10%				
New Trips OUT					8%					2%	5%	15%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	61	15	76	57	0	0	76	0	14	35	106
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	61	15	76	57	0	0	76	0	14	35	106
2030 Buildout Total	**56**	**226**	**15**	**76**	**207**	**0**	**0**	**76**	**106**	**14**	**35**	**106**

PM PEAK HOUR

Description	E. Bay Street			Washington Street			E. Bay Street			Pritchard Street		
	Northbound			Southbound			Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	138	415			117				88			
Pedestrians												
Heavy Vehicle %												
Peak Hour Factor												
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	6	6	0	0	5	0	0	0	1	0	0	0
2030 Background Traffic	171	502	0	0	145	0	0	0	106	0	0	0
Trip Distribution												
New Trips IN		8%	2%	10%				10%				
New Trips OUT					8%					2%	5%	15%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	70	18	88	74	0	0	88	0	19	47	140
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	70	18	88	74	0	0	88	0	19	47	140
2030 Buildout Total	**171**	**572**	**18**	**88**	**219**	**0**	**0**	**88**	**106**	**19**	**47**	**140**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E. Bay Street at Calhoun Street
AM PEAK HOUR

	E. Bay Street Northbound			E. Bay Street Southbound			Calhoun Street Eastbound			Calhoun Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	23	245	8	39	747	214	145	112	0	6	35	7
Pedestrians	34			0			9			6		
Heavy Vehicle %	1.6%			0.8%			3.4%			11.2%		
Peak Hour Factor	0.75			0.80			0.89			0.79		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	2	-236	0	0	-323	0	-173	174	2	0	8	0
2030 Background Traffic	29	57	10	47	570	256	0	308	2	7	50	8
Trip Distribution												
New Trips IN					20%			6%	15%			
New Trips OUT	15%	5%									6%	
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	106	35	0	0	152	0	0	45	114	0	42	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	106	35	0	0	152	0	0	45	114	0	42	0
2030 Buildout Total	**135**	**92**	**10**	**47**	**722**	**256**	**0**	**353**	**116**	**7**	**92**	**8**

PM PEAK HOUR

	E. Bay Street Northbound			E. Bay Street Southbound			Calhoun Street Eastbound			Calhoun Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	94	881	15	15	543	145	230	41	2	21	142	77
Pedestrians	71			0			53			21		
Heavy Vehicle %	0.3%			0.7%			1.5%			2.3%		
Peak Hour Factor	0.88			0.91			0.78			0.80		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	1	-776	0	0	-200	0	-275	278	7	0	5	0
2030 Background Traffic	113	277	18	18	449	173	0	327	9	25	175	92
Trip Distribution												
New Trips IN					20%			6%	15%			
New Trips OUT	15%	5%									6%	
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	140	47	0	0	176	0	0	53	132	0	56	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	140	47	0	0	176	0	0	53	132	0	56	0
2030 Buildout Total	**253**	**324**	**18**	**18**	**625**	**173**	**0**	**380**	**141**	**25**	**231**	**92**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E. Bay Street at Hasell Street
AM PEAK HOUR

Description	E. Bay Street Northbound			E. Bay Street Southbound			Hasell Street Eastbound			Hasell Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	0	170	12	27	440	60	35	27	10	19	15	30
Pedestrians		20			6			15			16	
Heavy Vehicle %		3.0%			0.8%			1.1%			0.0%	
Peak Hour Factor		0.74			0.84			0.68			0.77	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	-177	0	0	-238	0	0	0	0	0	0	0
2030 Background Traffic	0	26	14	32	288	72	42	32	12	23	18	36
Trip Distribution												
New Trips IN				10%	10%			2%				
New Trips OUT		5%									2%	5%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	35	0	76	76	0	0	15	0	0	14	35
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	35	0	76	76	0	0	15	0	0	14	35
2030 Buildout Total	**0**	**61**	**14**	**108**	**364**	**72**	**42**	**47**	**12**	**23**	**32**	**71**

PM PEAK HOUR

Description	E. Bay Street Northbound			E. Bay Street Southbound			Hasell Street Eastbound			Hasell Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	10	517	26	59	424	48	139	40	24	20	29	75
Pedestrians		29			55			67			63	
Heavy Vehicle %		3.0%			0.7%			0.0%			0.0%	
Peak Hour Factor		0.89			0.96			0.85			0.75	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	-472	0	0	-160	0	0	0	0	0	0	0
2030 Background Traffic	12	146	31	71	347	57	166	48	29	24	35	90
Trip Distribution												
New Trips IN				10%	10%			2%				
New Trips OUT		5%									2%	5%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	47	0	88	88	0	0	18	0	0	19	47
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	47	0	88	88	0	0	18	0	0	19	47
2030 Buildout Total	**12**	**193**	**31**	**159**	**435**	**57**	**166**	**66**	**29**	**24**	**54**	**137**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
N. Market Street at Concord Street
AM PEAK HOUR

Description	Concord Street Northbound			Concord Street Southbound			N. Market Street Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	7	26	0	0	67	11	11	0	3	0	0	0
Pedestrians		3			3			18			0	
Heavy Vehicle %		13.9%			2.5%			3.1%			0.0%	
Peak Hour Factor		0.82			0.81			0.67			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	8	31	0	0	80	13	13	0	4	0	0	0
Trip Distribution												
New Trips IN		10%					1%					
New Trips OUT					10%	1%						
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	76	0	0	71	7	8	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	76	0	0	71	7	8	0	0	0	0	0
2030 Buildout Total	**8**	**107**	**0**	**0**	**151**	**20**	**21**	**0**	**4**	**0**	**0**	**0**

PM PEAK HOUR

Description	Concord Street Northbound			Concord Street Southbound			N. Market Street Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	34	154	0	0	112	17	25	0	28	0	0	0
Pedestrians		12			15			44			0	
Heavy Vehicle %		6.0%			3.5%			1.0%			0.0%	
Peak Hour Factor		0.86			0.92			0.67			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	41	184	0	0	134	20	30	0	33	0	0	0
Trip Distribution												
New Trips IN		10%					1%					
New Trips OUT					10%	1%						
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	88	0	0	93	9	9	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	88	0	0	93	9	9	0	0	0	0	0
2030 Buildout Total	**41**	**272**	**0**	**0**	**227**	**29**	**39**	**0**	**33**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Hasell Street at Washington Street
AM PEAK HOUR

Description	Washington Street Northbound			Washington Street Southbound			Hasell Street Eastbound			Hasell Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	7	27	0	0	77	23	14	0	15	0	0	0
Pedestrians		0			0			22			0	
Heavy Vehicle %		5.8%			1.0%			5.9%			0.0%	
Peak Hour Factor		0.77			0.74			0.75			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	143	0	58	171	0	0	0	0	0	0	9
2030 Background Traffic	8	175	0	58	263	27	17	0	18	0	0	9
Trip Distribution												
New Trips IN		4%	4%	10%	10%		1%	11%				
New Trips OUT		15%			4%	1%				4%	6%	15%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	136	30	76	104	7	8	83	0	28	42	106
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	136	30	76	104	7	8	83	0	28	42	106
2030 Buildout Total	**8**	**311**	**30**	**134**	**367**	**34**	**25**	**83**	**18**	**28**	**42**	**115**

PM PEAK HOUR

Description	Washington Street Northbound			Washington Street Southbound			Hasell Street Eastbound			Hasell Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	24	158	0	0	97	50	26	0	28	0	0	0
Pedestrians		3			0			26			0	
Heavy Vehicle %		3.2%			1.4%			0.0%			0.0%	
Peak Hour Factor		0.81			0.90			0.80			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	270	0	122	12	0	0	0	0	0	0	53
2030 Background Traffic	29	459	0	122	128	60	31	0	33	0	0	53
Trip Distribution												
New Trips IN		4%	4%	10%	10%		1%	11%				
New Trips OUT		15%			4%	1%				4%	6%	15%
Pass By Distribution												
Pass By IN		-50%	50%	50%	-50%							
Pass By OUT										50%		50%
New Trips	0	175	35	88	125	9	9	97	0	37	56	140
Pass By Trips	0	-44	44	44	-44	0	0	0	0	36	0	36
Total Project Trips	0	131	79	132	81	9	9	97	0	73	56	176
2030 Buildout Total	**29**	**590**	**79**	**254**	**209**	**69**	**40**	**97**	**33**	**73**	**56**	**229**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E. Bay Street at N. Market Street/S. Market Street
AM PEAK HOUR

	E. Bay Street			E. Bay Street			S. Market Street			N. Market Street		
	Northbound			Southbound			Eastbound			Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	9	173	8	3	334	43	13	6	15	2	10	2
Pedestrians		18			20			29			47	
Heavy Vehicle %		4.8%			1.5%			6.3%			8.2%	
Peak Hour Factor		0.87			0.81			0.61			0.36	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	3	0	0	11	0	0	0	0	0	0	0
2030 Background Traffic	11	210	10	4	410	51	16	7	18	2	12	2
Trip Distribution												
New Trips IN		10%						1%				
New Trips OUT					10%						1%	
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	76	0	0	71	0	0	8	0	0	7	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	76	0	0	71	0	0	8	0	0	7	0
2030 Buildout Total	**11**	**286**	**10**	**4**	**481**	**51**	**16**	**15**	**18**	**2**	**19**	**2**

PM PEAK HOUR

	E. Bay Street			E. Bay Street			S. Market Street			N. Market Street		
	Northbound			Southbound			Eastbound			Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	15	435	13	14	299	80	89	20	26	10	31	21
Pedestrians		166			129			269			132	
Heavy Vehicle %		0.5%			0.4%			0.7%			3.6%	
Peak Hour Factor		0.89			0.97			0.90			0.90	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	12	0	0	6	0	0	0	0	0	0	0
2030 Background Traffic	18	532	16	17	363	96	106	24	31	12	37	25
Trip Distribution												
New Trips IN		10%						1%				
New Trips OUT					10%						1%	
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	88	0	0	93	0	0	9	0	0	9	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	88	0	0	93	0	0	9	0	0	9	0
2030 Buildout Total	**18**	**620**	**16**	**17**	**456**	**96**	**106**	**33**	**31**	**12**	**46**	**25**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
E. Bay Street at Washington Street (north)
AM PEAK HOUR

Description	Washington Street Northbound Left	Washington Street Northbound Through	Washington Street Northbound Right	E. Bay Street Southbound Left	E. Bay Street Southbound Through	E. Bay Street Southbound Right				E. Bay Street Westbound Left	E. Bay Street Westbound Through	E. Bay Street Westbound Right
Existing 2021 AM Volumes	12	351			478	793				138		16
Pedestrians												
Heavy Vehicle %												
Peak Hour Factor												
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%				2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195				1.195	1.195	1.195
Adjacent Site Development Traffic	0	14	0	0	1	6				3	0	0
2030 Background Traffic	14	433	0	0	572	954				168	0	19
Trip Distribution												
New Trips IN					35%	20%						
New Trips OUT		50%								5%		
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	354	0	0	265	152				35	0	0
Pass By Trips	0	0	0	0	0	0				0	0	0
Total Project Trips	0	354	0	0	265	152				35	0	0
2030 Buildout Total	**14**	**787**	**0**	**0**	**837**	**1,106**				**203**	**0**	**19**

PM PEAK HOUR

Description	Washington Street Northbound Left	Washington Street Northbound Through	Washington Street Northbound Right	E. Bay Street Southbound Left	E. Bay Street Southbound Through	E. Bay Street Southbound Right				E. Bay Street Westbound Left	E. Bay Street Westbound Through	E. Bay Street Westbound Right
Existing 2021 PM Volumes	29	1,217			254	523				396		26
Pedestrians												
Heavy Vehicle %												
Peak Hour Factor												
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%				2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195				1.195	1.195	1.195
Adjacent Site Development Traffic	0	10	0	0	3	15				1	0	0
2030 Background Traffic	35	1,464	0	0	307	640				474	0	31
Trip Distribution												
New Trips IN					35%	20%						
New Trips OUT		50%								5%		
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	465	0	0	308	176				47	0	0
Pass By Trips	0	0	0	0	0	0				0	0	0
Total Project Trips	0	465	0	0	308	176				47	0	0
2030 Buildout Total	**35**	**1,929**	**0**	**0**	**615**	**816**				**521**	**0**	**31**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Washington Street at Laurens Street
AM PEAK HOUR

Description	Washington Street Northbound Left	Through	Right	Washington Street Southbound Left	Through	Right	Laurens Street Eastbound Left	Through	Right	Laurens Street Westbound Left	Through	Right
Existing 2021 AM Volumes	1	53	3	12	103	2	0	7	0	7	2	13
Pedestrians		11			3			32			0	
Heavy Vehicle %		4.4%			1.7%			0.0%			0.0%	
Peak Hour Factor		0.68			0.83			0.57			0.79	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	232	0	0	312	0	0	0	0	0	0	0
2030 Background Traffic	1	295	4	14	435	2	0	8	0	8	2	16
Trip Distribution												
New Trips IN			1%	5%	20%			11%				
New Trips OUT	5%	30%								1%	6%	10%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	35	212	8	38	152	0	0	83	0	7	42	71
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	35	212	8	38	152	0	0	83	0	7	42	71
2030 Buildout Total	**36**	**507**	**12**	**52**	**587**	**2**	**0**	**91**	**0**	**15**	**44**	**87**

PM PEAK HOUR

Description	Washington Street Northbound Left	Through	Right	Washington Street Southbound Left	Through	Right	Laurens Street Eastbound Left	Through	Right	Laurens Street Westbound Left	Through	Right
Existing 2021 PM Volumes	5	226	11	10	116	2	4	10	4	18	16	26
Pedestrians		33			53			20			3	
Heavy Vehicle %		2.2%			1.7%			0.0%			0.0%	
Peak Hour Factor		0..86			0.78			0.63			0.79	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	630	0	0	187	0	0	0	0	0	0	0
2030 Background Traffic	6	900	13	12	326	2	5	12	5	22	19	31
Trip Distribution												
New Trips IN			1%	5%	20%			11%				
New Trips OUT	5%	30%								1%	6%	10%
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	47	279	9	44	176	0	0	97	0	9	56	93
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	47	279	9	44	176	0	0	97	0	9	56	93
2030 Buildout Total	**53**	**1,179**	**22**	**56**	**502**	**2**	**5**	**109**	**5**	**31**	**75**	**124**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Concord Street at Cumberland Street
AM PEAK HOUR

Description	Concord Street Northbound			Concord Street Southbound			Cumberland Street Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	7	33	0	0	54	12	5	0	13	0	0	0
Pedestrians		0			3			33			0	
Heavy Vehicle %		10.0%			0.0%			0.0%			0.0%	
Peak Hour Factor		0.67			0.82			0.85			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	8	39	0	0	65	14	6	0	16	0	0	0
Trip Distribution												
New Trips IN		10%										
New Trips OUT					10%							
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	76	0	0	71	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	76	0	0	71	0	0	0	0	0	0	0
2030 Buildout Total	**8**	**115**	**0**	**0**	**136**	**14**	**6**	**0**	**16**	**0**	**0**	**0**

PM PEAK HOUR

Description	Concord Street Northbound			Concord Street Southbound			Cumberland Street Eastbound			Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	11	119	0	0	119	11	55	0	14	0	0	0
Pedestrians		2			103			120			0	
Heavy Vehicle %		8.3%			0.0%			0.0%			0.0%	
Peak Hour Factor		0.75			0.88			0.78			0.00	
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2030 Background Traffic	13	142	0	0	142	13	66	0	17	0	0	0
Trip Distribution												
New Trips IN		10%										
New Trips OUT					10%							
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	88	0	0	93	0	0	0	0	0	0	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	88	0	0	93	0	0	0	0	0	0	0
2030 Buildout Total	**13**	**230**	**0**	**0**	**235**	**13**	**66**	**0**	**17**	**0**	**0**	**0**

INTERSECTION VOLUME DEVELOPMENT
Union Pier
Washington Street at Calhoun Street
AM PEAK HOUR

	Washington Street Northbound			Washington Street Southbound			Calhoun Street Eastbound			Calhoun Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 AM Volumes	14	35	8	76	85	10	6	138	16	1	25	9
Pedestrians	24			61			6			0		
Heavy Vehicle %	1.2%			2.6%			3.0%			0.0%		
Peak Hour Factor	0.52			0.80			0.80			0.63		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	8	225	0	0	310	0	173	0	1	0	0	0
2030 Background Traffic	25	267	10	91	412	12	180	165	20	1	30	11
Trip Distribution												
New Trips IN					25%			6%				
New Trips OUT		40%									6%	
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	283	0	0	190	0	0	45	0	0	42	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	283	0	0	190	0	0	45	0	0	42	0
2030 Buildout Total	**25**	**550**	**10**	**91**	**602**	**12**	**180**	**210**	**20**	**1**	**72**	**11**

PM PEAK HOUR

	Washington Street Northbound			Washington Street Southbound			Calhoun Street Eastbound			Calhoun Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing 2021 PM Volumes	62	184	12	19	87	24	5	54	7	15	150	92
Pedestrians	67			92			12			0		
Heavy Vehicle %	1.9%			4.6%			6.4%			0.8%		
Peak Hour Factor	0.94			0.85			0.78			0.85		
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth Factor	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195	1.195
Adjacent Site Development Traffic	5	626	0	0	186	0	275	0	3	0	0	0
2030 Background Traffic	79	846	14	23	290	29	281	65	11	18	179	110
Trip Distribution												
New Trips IN					25%			6%				
New Trips OUT		40%									6%	
Pass By Distribution												
Pass By IN												
Pass By OUT												
New Trips	0	372	0	0	220	0	0	53	0	0	56	0
Pass By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	372	0	0	220	0	0	53	0	0	56	0
2030 Buildout Total	**79**	**1,218**	**14**	**23**	**510**	**29**	**281**	**118**	**11**	**18**	**235**	**110**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	12	17	3	9	68	5	377	4	214	1057	60
Future Volume (veh/h)	44	12	17	3	9	68	5	377	4	214	1057	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	17	24	3	10	78	6	438	5	246	1215	69
Peak Hour Factor	0.71	0.71	0.71	0.87	0.87	0.87	0.86	0.86	0.86	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	11	315	49	125	315	50	2310	26	366	1649	97
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	1.00	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	0	57	1576	0	627	1576	14	3465	39	468	2474	146
Grp Volume(v), veh/h	79	0	24	13	0	78	233	0	216	736	0	794
Grp Sat Flow(s),veh/h/ln	57	0	1576	627	0	1576	1824	0	1695	1412	0	1675
Q Serve(g_s), s	0.0	0.0	1.1	0.0	0.0	3.8	0.0	0.0	0.0	32.2	0.0	27.0
Cycle Q Clear(g_c), s	18.0	0.0	1.1	18.0	0.0	3.8	0.0	0.0	0.0	32.6	0.0	27.0
Prop In Lane	0.78		1.00	0.23		1.00	0.03		0.02	0.33		0.09
Lane Grp Cap(c), veh/h	83	0	315	175	0	315	1257	0	1130	995	0	1117
V/C Ratio(X)	0.95	0.00	0.08	0.07	0.00	0.25	0.19	0.00	0.19	0.74	0.00	0.71
Avail Cap(c_a), veh/h	83	0	315	175	0	315	1257	0	1130	995	0	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.95	0.00	0.95	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	0.0	29.2	29.8	0.0	30.3	0.0	0.0	0.0	10.4	0.0	9.5
Incr Delay (d2), s/veh	83.4	0.0	0.1	0.2	0.0	0.4	0.3	0.0	0.4	4.9	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.4	0.2	0.0	1.4	0.1	0.0	0.1	9.7	0.0	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.8	0.0	29.3	30.0	0.0	30.7	0.3	0.0	0.4	15.3	0.0	13.3
LnGrp LOS	F	A	C	C	A	C	A	A	A	B	A	B
Approach Vol, veh/h		103			91			449			1530	
Approach Delay, s/veh		103.3			30.6			0.3			14.3	
Approach LOS		F			C			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		66.0		24.0		66.0		24.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		60.0		18.0		60.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0		20.0		34.6		20.0				
Green Ext Time (p_c), s		3.1		0.0		13.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			16.3
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	112	0	6	35	7	23	245	8	39	747	214
Future Volume (veh/h)	145	112	0	6	35	7	23	245	8	39	747	214
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1737	1737	1737	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	126	0	8	44	9	31	327	11	49	934	268
Peak Hour Factor	0.89	0.89	0.89	0.79	0.79	0.79	0.75	0.75	0.75	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	11	11	11	2	2	2	2	2	2
Cap, veh/h	228	239	0	23	132	28	108	1364	52	95	1528	430
Arrive On Green	0.13	0.13	0.00	0.05	0.05	0.05	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1767	1856	0	428	2401	502	100	2279	87	87	2552	719
Grp Volume(v), veh/h	163	126	0	32	0	29	156	0	213	670	0	581
Grp Sat Flow(s),veh/h/ln	1767	1856	0	1716	0	1616	781	0	1685	1800	0	1558
Q Serve(g_s), s	8.0	5.7	0.0	1.6	0.0	1.6	1.0	0.0	9.5	12.7	0.0	30.7
Cycle Q Clear(g_c), s	8.0	5.7	0.0	1.6	0.0	1.6	31.7	0.0	9.5	30.2	0.0	30.7
Prop In Lane	1.00		0.00	0.25		0.31	0.20		0.05	0.07		0.46
Lane Grp Cap(c), veh/h	228	239	0	94	0	89	516	0	1009	1121	0	933
V/C Ratio(X)	0.72	0.53	0.00	0.34	0.00	0.33	0.30	0.00	0.21	0.60	0.00	0.62
Avail Cap(c_a), veh/h	412	433	0	254	0	239	516	0	1009	1121	0	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.64	0.00	0.64
Uniform Delay (d), s/veh	37.6	36.6	0.0	41.0	0.0	40.9	18.0	0.0	18.3	26.4	0.0	26.8
Incr Delay (d2), s/veh	4.2	1.8	0.0	2.1	0.0	2.1	1.5	0.0	0.5	1.5	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.7	0.0	0.7	0.0	0.7	2.9	0.0	4.2	15.1	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	38.4	0.0	43.1	0.0	43.1	19.5	0.0	18.8	27.9	0.0	28.8
LnGrp LOS	D	D	A	D	A	D	B	A	B	C	A	C
Approach Vol, veh/h		289			61			369			1251	
Approach Delay, s/veh		40.3			43.1			19.1			28.3	
Approach LOS		D			D			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.6		18.5		60.6		10.9				
Change Period (Y+Rc), s		* 6.7		6.9		* 6.7		6.0				
Max Green Setting (Gmax), s		* 36		21.0		* 36		13.3				
Max Q Clear Time (g_c+I1), s		33.7		10.0		32.7		3.6				
Green Ext Time (p_c), s		0.6		0.9		2.4		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			28.8									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	138	16	1	25	9	14	35	8	76	85	10
Future Volume (veh/h)	6	138	16	1	25	9	14	35	8	76	85	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	0.98		0.95	0.96		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	8	172	20	2	40	14	27	67	15	95	106	12
Peak Hour Factor	0.80	0.80	0.80	0.63	0.63	0.63	0.52	0.52	0.52	0.80	0.80	0.80
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	3	3	3
Cap, veh/h	75	1373	155	70	1134	370	523	542	121	287	304	32
Arrive On Green	0.90	0.90	0.90	0.45	0.45	0.45	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	71	3037	343	59	2507	818	1248	1464	328	620	821	86
Grp Volume(v), veh/h	105	0	95	29	0	27	27	0	82	213	0	0
Grp Sat Flow(s),veh/h/ln	1827	0	1624	1836	0	1548	1248	0	1791	1527	0	0
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.9	0.0	0.0	2.7	6.2	0.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	0.6	0.8	0.0	0.9	1.5	0.0	2.7	9.0	0.0	0.0
Prop In Lane	0.08		0.21	0.07		0.53	1.00		0.18	0.45		0.06
Lane Grp Cap(c), veh/h	869	0	734	873	0	700	523	0	663	623	0	0
V/C Ratio(X)	0.12	0.00	0.13	0.03	0.00	0.04	0.05	0.00	0.12	0.34	0.00	0.00
Avail Cap(c_a), veh/h	869	0	734	873	0	700	523	0	663	623	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.00	0.89	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.4	0.0	2.4	13.7	0.0	13.7	18.3	0.0	18.7	20.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.1	0.0	0.1	0.2	0.0	0.4	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.2	0.3	0.0	0.3	0.4	0.0	1.2	3.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.0	2.7	13.8	0.0	13.8	18.5	0.0	19.1	22.1	0.0	0.0
LnGrp LOS	A	A	A	B	A	B	B	A	B	C	A	A
Approach Vol, veh/h		200			56			109			213	
Approach Delay, s/veh		2.7			13.8			19.0			22.1	
Approach LOS		A			B			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.8		42.2		47.8		42.2				
Change Period (Y+Rc), s		7.1		* 8.9		7.1		* 8.9				
Max Green Setting (Gmax), s		40.7		* 33		40.7		* 33				
Max Q Clear Time (g_c+I1), s		2.6		11.0		2.9		4.7				
Green Ext Time (p_c), s		1.2		1.3		0.3		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	7	0	7	2	13	1	53	3	12	103	2
Future Vol, veh/h	0	7	0	7	2	13	1	53	3	12	103	2
Conflicting Peds, #/hr	0	0	32	32	0	0	3	0	11	11	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	57	57	57	79	79	79	68	68	68	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	0	12	0	9	3	16	1	78	4	14	124	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	248	251	160	284	250	91	129	0	0	93	0	0
Stage 1	156	156	-	93	93	-	-	-	-	-	-	-
Stage 2	92	95	-	191	157	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.236	-	-	2.218	-	-
Pot Cap-1 Maneuver	706	652	885	668	653	967	1444	-	-	1501	-	-
Stage 1	846	769	-	914	818	-	-	-	-	-	-	-
Stage 2	915	816	-	811	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	684	636	856	626	637	957	1440	-	-	1485	-	-
Mov Cap-2 Maneuver	684	636	-	626	637	-	-	-	-	-	-	-
Stage 1	843	759	-	904	809	-	-	-	-	-	-	-
Stage 2	896	807	-	766	758	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	9.7	0.1	0.8
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1440	-	-	636	788	1485	-	-
HCM Lane V/C Ratio	0.001	-	-	0.019	0.035	0.01	-	-
HCM Control Delay (s)	7.5	0	-	10.8	9.7	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	27	10	19	15	30	0	170	12	27	440	60
Future Volume (veh/h)	35	27	10	19	15	30	0	170	12	27	440	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.96	0.97		0.96	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	51	40	15	25	19	39	0	230	16	32	524	71
Peak Hour Factor	0.68	0.68	0.68	0.77	0.77	0.77	0.74	0.74	0.74	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	135	95	28	90	67	93	0	2486	172	137	2157	288
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	616	773	229	309	545	757	0	3435	231	125	2901	387
Grp Volume(v), veh/h	106	0	0	83	0	0	0	121	125	329	0	298
Grp Sat Flow(s),veh/h/ln	1617	0	0	1611	0	0	0	1763	1810	1787	0	1626
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.48		0.14	0.30		0.47	0.00		0.13	0.10		0.24
Lane Grp Cap(c), veh/h	258	0	0	250	0	0	0	1311	1346	1373	0	1209
V/C Ratio(X)	0.41	0.00	0.00	0.33	0.00	0.00	0.00	0.09	0.09	0.24	0.00	0.25
Avail Cap(c_a), veh/h	559	0	0	552	0	0	0	1311	1346	1373	0	1209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	0.0	36.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	0.8	0.0	0.0	0.0	0.1	0.1	0.4	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	1.7	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	0.0	0.0	37.2	0.0	0.0	0.0	0.1	0.1	0.4	0.0	0.5
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		106			83			246			627	
Approach Delay, s/veh		37.8			37.2			0.1			0.4	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.9		17.1		72.9		17.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		49.0		29.0		49.0		29.0				
Max Q Clear Time (g_c+I1), s		2.0		7.1		2.0		6.1				
Green Ext Time (p_c), s		1.5		0.5		4.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			7.0									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	15	7	27	77	23
Future Vol, veh/h	14	15	7	27	77	23
Conflicting Peds, #/hr	0	22	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	77	77	74	74
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	19	20	9	35	104	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	173	142	135	0	-	0
Stage 1	120	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.254	-	-	-
Pot Cap-1 Maneuver	808	895	1425	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	803	876	1425	-	-	-
Mov Cap-2 Maneuver	803	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	9.5		1.6		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1425	-	839	-	-
HCM Lane V/C Ratio	0.006	-	0.046	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	6	15	2	10	2	9	173	8	3	334	43
Future Volume (veh/h)	13	6	15	2	10	2	9	173	8	3	334	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.78	1.00		0.84	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1781	1781	1781	1826	1826	1826	1870	1870	1870
Adj Flow Rate, veh/h	21	10	25	4	20	4	10	199	9	4	412	53
Peak Hour Factor	0.61	0.61	0.61	0.50	0.50	0.50	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	6	6	6	8	8	8	5	5	5	2	2	2
Cap, veh/h	128	61	130	154	126	25	99	1828	82	42	1090	911
Arrive On Green	0.11	0.11	0.11	0.09	0.09	0.09	0.58	0.58	0.58	0.19	0.19	0.19
Sat Flow, veh/h	1187	565	1201	1697	1392	278	95	3127	141	3	1865	1558
Grp Volume(v), veh/h	31	0	25	4	0	24	113	0	105	416	0	53
Grp Sat Flow(s),veh/h/ln	1752	0	1201	1697	0	1671	1729	0	1633	1868	0	1558
Q Serve(g_s), s	1.4	0.0	1.7	0.2	0.0	1.2	0.0	0.0	2.6	0.0	0.0	2.5
Cycle Q Clear(g_c), s	1.4	0.0	1.7	0.2	0.0	1.2	2.5	0.0	2.6	17.4	0.0	2.5
Prop In Lane	0.68		1.00	1.00		0.17	0.09		0.09	0.01		1.00
Lane Grp Cap(c), veh/h	189	0	130	154	0	151	1054	0	955	1133	0	911
V/C Ratio(X)	0.16	0.00	0.19	0.03	0.00	0.16	0.11	0.00	0.11	0.37	0.00	0.06
Avail Cap(c_a), veh/h	360	0	247	320	0	316	1054	0	955	1133	0	911
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	36.4	0.0	36.6	37.3	0.0	37.8	8.3	0.0	8.3	22.1	0.0	16.1
Incr Delay (d2), s/veh	0.4	0.0	0.7	0.1	0.0	0.5	0.2	0.0	0.2	0.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.5	0.1	0.0	0.5	1.0	0.0	0.9	8.9	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	0.0	37.3	37.4	0.0	38.3	8.5	0.0	8.5	23.0	0.0	16.2
LnGrp LOS	D	A	D	D	A	D	A	A	A	C	A	B
Approach Vol, veh/h		56			28			218			469	
Approach Delay, s/veh		37.0			38.1			8.5			22.2	
Approach LOS		D			D			A			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.1		15.7		60.1		14.1				
Change Period (Y+Rc), s		7.5		6.0		7.5		6.0				
Max Green Setting (Gmax), s		35.0		18.5		35.0		17.0				
Max Q Clear Time (g_c+I1), s		4.6		3.7		19.4		3.2				
Green Ext Time (p_c), s		1.3		0.1		2.5		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			C									

Intersection						
Int Delay, s/veh	1.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	7	26	67	11
Future Vol, veh/h	11	3	7	26	67	11
Conflicting Peds, #/hr	0	18	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	82	82	81	81
Heavy Vehicles, %	3	3	14	14	3	3
Mvmt Flow	16	4	9	32	83	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	143	111	100	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	50	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.24	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.326	-	-	-
Pot Cap-1 Maneuver	847	940	1421	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	837	921	1417	-	-	-
Mov Cap-2 Maneuver	837	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	967	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1417	-	854	-	-
HCM Lane V/C Ratio	0.006	-	0.024	-	-
HCM Control Delay (s)	7.6	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	13	7	33	54	12
Future Vol, veh/h	5	13	7	33	54	12
Conflicting Peds, #/hr	0	33	33	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	67	67	82	82
Heavy Vehicles, %	2	2	10	10	2	2
Mvmt Flow	6	15	10	49	66	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	176	140	114	0	-	0
Stage 1	107	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	814	908	1427	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	759	852	1382	-	-	-
Mov Cap-2 Maneuver	759	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1382	-	824	-	-
HCM Lane V/C Ratio	0.008	-	0.026	-	-
HCM Control Delay (s)	7.6	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	13	25	3	26	294	16	1231	3	80	697	69
Future Volume (veh/h)	88	13	25	3	26	294	16	1231	3	80	697	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	15	29	4	31	346	18	1353	3	85	741	73
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.91	0.91	0.91	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	37	384	69	428	384	53	2175	5	178	1448	140
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	1.00	1.00	1.00	0.62	0.62	0.62
Sat Flow, veh/h	870	150	1554	99	1733	1554	19	3509	8	208	2337	227
Grp Volume(v), veh/h	119	0	29	35	0	346	715	0	659	364	0	535
Grp Sat Flow(s),veh/h/ln	1020	0	1554	1832	0	1554	1836	0	1701	1111	0	1661
Q Serve(g_s), s	8.2	0.0	1.3	0.0	0.0	19.4	0.0	0.0	0.0	4.0	0.0	16.3
Cycle Q Clear(g_c), s	9.5	0.0	1.3	1.3	0.0	19.4	0.0	0.0	0.0	10.6	0.0	16.3
Prop In Lane	0.87		1.00	0.11		1.00	0.03		0.00	0.23		0.14
Lane Grp Cap(c), veh/h	327	0	384	497	0	384	1179	0	1054	738	0	1029
V/C Ratio(X)	0.36	0.00	0.08	0.07	0.00	0.90	0.61	0.00	0.63	0.49	0.00	0.52
Avail Cap(c_a), veh/h	395	0	484	612	0	484	1179	0	1054	738	0	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.23	0.00	0.23	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	26.0	26.0	0.0	32.8	0.0	0.0	0.0	8.2	0.0	9.6
Incr Delay (d2), s/veh	0.7	0.0	0.1	0.1	0.0	17.1	0.5	0.0	0.7	2.4	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.5	0.6	0.0	8.9	0.2	0.0	0.2	3.5	0.0	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	26.1	26.1	0.0	49.9	0.5	0.0	0.7	10.5	0.0	11.5
LnGrp LOS	C	A	C	C	A	D	A	A	A	B	A	B
Approach Vol, veh/h		148			381			1374			899	
Approach Delay, s/veh		29.3			47.7			0.6			11.1	
Approach LOS		C			D			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.8		28.2		61.8		28.2				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0		50.0		28.0				
Max Q Clear Time (g_c+I1), s		2.0		11.5		18.3		21.4				
Green Ext Time (p_c), s		14.1		0.8		8.5		0.8				

Intersection Summary			
HCM 6th Ctrl Delay			11.9
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	41	2	21	142	77	94	881	15	15	543	145
Future Volume (veh/h)	230	41	2	21	142	77	94	881	15	15	543	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.88	1.00		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	295	53	3	26	178	96	107	1001	17	16	597	159
Peak Hour Factor	0.78	0.78	0.78	0.80	0.80	0.80	0.88	0.88	0.88	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	339	19	38	263	142	123	1179	23	54	1246	326
Arrive On Green	0.19	0.19	0.19	0.04	0.04	0.04	0.95	0.95	0.95	0.16	0.16	0.16
Sat Flow, veh/h	1781	1744	99	291	1993	1074	159	2488	48	27	2629	689
Grp Volume(v), veh/h	295	0	56	166	0	134	524	0	601	416	0	356
Grp Sat Flow(s),veh/h/ln	1781	0	1842	1856	0	1503	1004	0	1691	1805	0	1540
Q Serve(g_s), s	14.4	0.0	2.3	7.9	0.0	7.9	23.7	0.0	5.8	0.0	0.0	19.0
Cycle Q Clear(g_c), s	14.4	0.0	2.3	7.9	0.0	7.9	42.7	0.0	5.8	18.2	0.0	19.0
Prop In Lane	1.00		0.05	0.16		0.71	0.20		0.03	0.04		0.45
Lane Grp Cap(c), veh/h	346	0	358	245	0	198	524	0	801	897	0	730
V/C Ratio(X)	0.85	0.00	0.16	0.68	0.00	0.68	1.00	0.00	0.75	0.46	0.00	0.49
Avail Cap(c_a), veh/h	433	0	448	274	0	222	524	0	801	897	0	730
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	0.99	0.00	0.99	1.00	0.00	1.00	0.72	0.00	0.72
Uniform Delay (d), s/veh	35.0	0.0	30.1	41.2	0.0	41.2	10.1	0.0	1.4	27.7	0.0	28.0
Incr Delay (d2), s/veh	12.6	0.0	0.2	5.6	0.0	6.9	39.5	0.0	6.4	1.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	1.0	4.2	0.0	3.5	9.8	0.0	2.1	9.4	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	0.0	30.3	46.8	0.0	48.0	49.6	0.0	7.8	28.9	0.0	29.7
LnGrp LOS	D	A	C	D	A	D	F	A	A	C	A	C
Approach Vol, veh/h		351			300			1125			772	
Approach Delay, s/veh		44.8			47.3			27.2			29.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	48.7	23.5	48.7	17.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	36.8	21.9	36.8	13.3
Max Q Clear Time (g_c+I1), s	44.7	16.4	21.0	9.9
Green Ext Time (p_c), s	0.0	0.6	4.7	0.5

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	54	7	15	150	92	62	184	12	19	87	24
Future Volume (veh/h)	5	54	7	15	150	92	62	184	12	19	87	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	0.95		0.93	0.96		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1870	1870	1870	1870	1870	1870	1826	1826	1826
Adj Flow Rate, veh/h	6	69	9	18	176	108	66	196	13	22	102	28
Peak Hour Factor	0.78	0.78	0.78	0.85	0.85	0.85	0.94	0.94	0.94	0.85	0.85	0.85
Percent Heavy Veh, %	6	6	6	2	2	2	2	2	2	5	5	5
Cap, veh/h	117	1249	161	101	913	520	525	638	42	103	438	112
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	158	2762	356	126	2018	1149	1200	1725	114	155	1184	302
Grp Volume(v), veh/h	44	0	40	163	0	139	66	0	209	152	0	0
Grp Sat Flow(s),veh/h/ln	1697	0	1578	1816	0	1477	1200	0	1839	1641	0	0
Q Serve(g_s), s	0.0	0.0	1.3	0.0	0.0	5.1	0.0	0.0	7.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	0.0	1.3	4.7	0.0	5.1	3.2	0.0	7.3	5.4	0.0	0.0
Prop In Lane	0.14		0.23	0.11		0.78	1.00		0.06	0.14		0.18
Lane Grp Cap(c), veh/h	813	0	714	866	0	668	525	0	680	653	0	0
V/C Ratio(X)	0.05	0.00	0.06	0.19	0.00	0.21	0.13	0.00	0.31	0.23	0.00	0.00
Avail Cap(c_a), veh/h	813	0	714	866	0	668	525	0	680	653	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.8	0.0	13.9	14.8	0.0	14.9	18.9	0.0	20.2	19.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.5	0.0	0.7	0.5	0.0	1.2	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.5	2.0	0.0	1.8	1.0	0.0	3.3	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	14.0	15.3	0.0	15.6	19.4	0.0	21.3	20.4	0.0	0.0
LnGrp LOS	B	A	B	B	A	B	B	A	C	C	A	A
Approach Vol, veh/h		84			302			275			152	
Approach Delay, s/veh		14.0			15.4			20.9			20.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.8		42.2		47.8		42.2				
Change Period (Y+Rc), s		7.1		* 8.9		7.1		* 8.9				
Max Green Setting (Gmax), s		40.7		* 33		40.7		* 33				
Max Q Clear Time (g_c+I1), s		3.3		7.4		7.1		9.3				
Green Ext Time (p_c), s		0.5		0.9		1.9		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	10	4	18	16	26	5	226	11	10	116	2
Future Vol, veh/h	4	10	4	18	16	26	5	226	11	10	116	2
Conflicting Peds, #/hr	3	0	20	20	0	3	53	0	33	33	0	53
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	63	63	63	79	79	79	86	86	86	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	16	6	23	20	33	6	263	13	13	149	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	541	551	224	523	546	306	205	0	0	309	0	0
Stage 1	230	230	-	315	315	-	-	-	-	-	-	-
Stage 2	311	321	-	208	231	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	452	442	815	465	445	734	1366	-	-	1252	-	-
Stage 1	773	714	-	696	656	-	-	-	-	-	-	-
Stage 2	699	652	-	794	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	387	400	759	419	403	709	1297	-	-	1213	-	-
Mov Cap-2 Maneuver	387	400	-	419	403	-	-	-	-	-	-	-
Stage 1	730	670	-	671	632	-	-	-	-	-	-	-
Stage 2	640	629	-	745	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	13.4	0.2	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1297	-	-	443	503	1213	-	-
HCM Lane V/C Ratio	0.004	-	-	0.064	0.151	0.011	-	-
HCM Control Delay (s)	7.8	0	-	13.7	13.4	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	40	24	20	29	75	10	517	26	59	424	48
Future Volume (veh/h)	139	40	24	20	29	75	10	517	26	59	424	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.91	0.98		0.91	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	164	47	28	27	39	100	11	581	29	62	446	51
Peak Hour Factor	0.85	0.85	0.85	0.75	0.75	0.75	0.89	0.89	0.89	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	253	63	33	83	112	224	56	2109	104	234	1624	186
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	1.00	1.00	1.00	0.85	0.85	0.85
Sat Flow, veh/h	820	276	146	161	493	990	23	3296	163	288	2538	290
Grp Volume(v), veh/h	239	0	0	166	0	0	327	0	294	272	0	287
Grp Sat Flow(s),veh/h/ln	1242	0	0	1644	0	0	1830	0	1651	1482	0	1634
Q Serve(g_s), s	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1
Cycle Q Clear(g_c), s	16.8	0.0	0.0	8.1	0.0	0.0	0.0	0.0	0.0	2.4	0.0	3.1
Prop In Lane	0.69		0.12	0.16		0.60	0.03		0.10	0.23		0.18
Lane Grp Cap(c), veh/h	349	0	0	419	0	0	1213	0	1056	997	0	1046
V/C Ratio(X)	0.68	0.00	0.00	0.40	0.00	0.00	0.27	0.00	0.28	0.27	0.00	0.27
Avail Cap(c_a), veh/h	634	0	0	745	0	0	1213	0	1056	997	0	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	0.0	30.1	0.0	0.0	0.0	0.0	0.0	2.6	0.0	2.6
Incr Delay (d2), s/veh	2.4	0.0	0.0	0.6	0.0	0.0	0.5	0.0	0.6	0.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	0.0	3.2	0.0	0.0	0.2	0.0	0.2	0.9	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.0	0.0	0.0	30.7	0.0	0.0	0.5	0.0	0.6	3.3	0.0	3.3
LnGrp LOS	D	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		239			166			621			559	
Approach Delay, s/veh		36.0			30.7			0.6			3.3	
Approach LOS		D			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		63.6		26.4		63.6		26.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		38.0		40.0		38.0		40.0				
Max Q Clear Time (g_c+I1), s		2.0		18.8		5.1		10.1				
Green Ext Time (p_c), s		4.3		1.6		4.1		1.1				
Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	28	24	158	97	50
Future Vol, veh/h	26	28	24	158	97	50
Conflicting Peds, #/hr	3	26	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	81	81	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	33	35	30	195	108	56

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	394	162	164	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	611	883	1408	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	596	861	1408	-	-	-
Mov Cap-2 Maneuver	596	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	10.6		1		0	
HCM LOS	B					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1408	-	709	-	-
HCM Lane V/C Ratio	0.021	-	0.095	-	-
HCM Control Delay (s)	7.6	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	20	26	10	31	21	15	435	13	14	299	80
Future Volume (veh/h)	89	20	26	10	31	21	15	435	13	14	299	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.46	1.00		0.66	0.89		0.79	0.92		0.79
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	22	29	11	34	23	17	489	15	15	315	84
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.89	0.89	0.89	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	273	61	134	285	136	92	61	1335	40	55	721	505
Arrive On Green	0.19	0.19	0.19	0.16	0.16	0.16	0.40	0.40	0.40	0.80	0.80	0.80
Sat Flow, veh/h	1470	327	721	1753	834	564	47	3323	100	33	1795	1257
Grp Volume(v), veh/h	121	0	29	11	0	57	273	0	248	330	0	84
Grp Sat Flow(s),veh/h/ln	1797	0	721	1753	0	1398	1817	0	1653	1828	0	1257
Q Serve(g_s), s	5.3	0.0	3.1	0.5	0.0	3.2	0.0	0.0	9.5	0.0	0.0	1.4
Cycle Q Clear(g_c), s	5.3	0.0	3.1	0.5	0.0	3.2	9.2	0.0	9.5	4.8	0.0	1.4
Prop In Lane	0.82		1.00	1.00		0.40	0.06		0.06	0.05		1.00
Lane Grp Cap(c), veh/h	333	0	134	285	0	228	772	0	664	776	0	505
V/C Ratio(X)	0.36	0.00	0.22	0.04	0.00	0.25	0.35	0.00	0.37	0.43	0.00	0.17
Avail Cap(c_a), veh/h	339	0	136	302	0	241	772	0	664	776	0	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.96	0.00	0.96
Uniform Delay (d), s/veh	32.0	0.0	31.1	31.7	0.0	32.9	18.9	0.0	19.0	5.8	0.0	5.4
Incr Delay (d2), s/veh	0.7	0.0	0.8	0.1	0.0	0.6	1.3	0.0	1.6	1.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.6	0.2	0.0	1.1	4.1	0.0	3.8	1.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	0.0	31.9	31.8	0.0	33.4	20.1	0.0	20.6	7.4	0.0	6.1
LnGrp LOS	C	A	C	C	A	C	C	A	C	A	A	A
Approach Vol, veh/h		150			68			521			414	
Approach Delay, s/veh		32.5			33.2			20.3			7.1	
Approach LOS		C			C			C			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.6		24.2		43.6		22.2				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		35.0		17.0		35.0		15.5				
Max Q Clear Time (g_c+I1), s		11.5		7.3		6.8		5.2				
Green Ext Time (p_c), s		3.3		0.5		2.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Intersection						
Int Delay, s/veh	2.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	28	34	154	112	17
Future Vol, veh/h	25	28	34	154	112	17
Conflicting Peds, #/hr	0	44	15	0	0	15
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	86	86	92	92
Heavy Vehicles, %	2	2	6	6	4	4
Mvmt Flow	37	42	40	179	122	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	405	190	155	0	-	0
Stage 1	146	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	602	852	1401	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	566	805	1381	-	-	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	11.1		1.4		0	
HCM LOS	B					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1381	-	671	-	-
HCM Lane V/C Ratio	0.029	-	0.118	-	-
HCM Control Delay (s)	7.7	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection						
Int Delay, s/veh	3.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	14	11	119	119	11
Future Vol, veh/h	55	14	11	119	119	11
Conflicting Peds, #/hr	0	120	103	0	0	103
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	75	75	88	88
Heavy Vehicles, %	2	2	8	8	2	2
Mvmt Flow	71	18	15	159	135	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	434	365	251	0	-	0
Stage 1	245	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.18	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.272	-	-	-
Pot Cap-1 Maneuver	579	680	1280	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	464	543	1154	-	-	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	760	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1154	-	478	-	-
HCM Lane V/C Ratio	0.013	-	0.185	-	-
HCM Control Delay (s)	8.2	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	14	20	4	11	95	6	454	5	257	1269	72
Future Volume (veh/h)	53	14	20	4	11	95	6	454	5	257	1269	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	16	22	4	12	106	7	504	6	286	1410	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	8	342	38	91	342	42	2289	27	335	1640	101
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	1.00	1.00	1.00	0.67	0.67	0.67
Sat Flow, veh/h	0	39	1576	0	421	1576	17	3433	41	444	2460	151
Grp Volume(v), veh/h	75	0	22	16	0	106	267	0	250	890	0	886
Grp Sat Flow(s),veh/h/ln	39	0	1576	421	0	1576	1796	0	1695	1380	0	1674
Q Serve(g_s), s	0.0	0.0	1.3	0.0	0.0	6.8	0.0	0.0	0.0	72.5	0.0	45.0
Cycle Q Clear(g_c), s	26.0	0.0	1.3	26.0	0.0	6.8	0.0	0.0	0.0	72.5	0.0	45.0
Prop In Lane	0.79		1.00	0.25		1.00	0.03		0.02	0.32		0.09
Lane Grp Cap(c), veh/h	62	0	342	129	0	342	1228	0	1130	960	0	1116
V/C Ratio(X)	1.21	0.00	0.06	0.12	0.00	0.31	0.22	0.00	0.22	0.93	0.00	0.79
Avail Cap(c_a), veh/h	62	0	342	129	0	342	1228	0	1130	960	0	1116
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.92	0.00	0.92	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.5	0.0	37.3	38.8	0.0	39.5	0.0	0.0	0.0	18.8	0.0	14.2
Incr Delay (d2), s/veh	181.0	0.0	0.1	0.4	0.0	0.5	0.4	0.0	0.4	16.0	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.5	0.4	0.0	2.7	0.1	0.0	0.1	24.8	0.0	17.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	237.5	0.0	37.4	39.3	0.0	40.0	0.4	0.0	0.4	34.7	0.0	20.0
LnGrp LOS	F	A	D	D	A	D	A	A	A	C	A	C
Approach Vol, veh/h		97			122			517			1776	
Approach Delay, s/veh		192.1			39.9			0.4			27.4	
Approach LOS		F			D			A			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		86.5		33.5		86.5		33.5				
Change Period (Y+Rc), s		6.5		7.5		6.5		7.5				
Max Green Setting (Gmax), s		80.0		26.0		80.0		26.0				
Max Q Clear Time (g_c+I1), s		2.0		28.0		74.5		28.0				
Green Ext Time (p_c), s		3.7		0.0		4.7		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		28.8
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	135	2	7	50	8	29	296	10	47	899	256
Future Volume (veh/h)	173	135	2	7	50	8	29	296	10	47	899	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1737	1737	1737	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	192	150	2	8	56	9	32	329	11	52	999	284
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	11	11	11	2	2	2	2	2	2
Cap, veh/h	235	243	3	269	236	38	93	1200	46	86	1383	387
Arrive On Green	0.13	0.13	0.13	0.16	0.16	0.16	0.73	0.73	0.73	0.55	0.55	0.55
Sat Flow, veh/h	1767	1826	24	1654	1456	234	103	2198	84	98	2532	709
Grp Volume(v), veh/h	192	0	152	8	0	65	151	0	221	715	0	620
Grp Sat Flow(s),veh/h/ln	1767	0	1851	1654	0	1690	700	0	1685	1791	0	1548
Q Serve(g_s), s	12.7	0.0	9.3	0.5	0.0	4.0	6.5	0.0	5.2	19.8	0.0	36.4
Cycle Q Clear(g_c), s	12.7	0.0	9.3	0.5	0.0	4.0	43.0	0.0	5.2	35.5	0.0	36.4
Prop In Lane	1.00		0.01	1.00		0.14	0.21		0.05	0.07		0.46
Lane Grp Cap(c), veh/h	235	0	246	269	0	274	418	0	920	1010	0	845
V/C Ratio(X)	0.82	0.00	0.62	0.03	0.00	0.24	0.36	0.00	0.24	0.71	0.00	0.73
Avail Cap(c_a), veh/h	353	0	370	379	0	387	418	0	920	1010	0	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.40	0.00	0.40
Uniform Delay (d), s/veh	50.6	0.0	49.1	42.3	0.0	43.8	13.6	0.0	8.2	20.2	0.0	20.6
Incr Delay (d2), s/veh	8.7	0.0	2.5	0.0	0.0	0.4	2.4	0.0	0.6	1.7	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	4.5	0.2	0.0	1.7	1.5	0.0	1.9	14.9	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	0.0	51.6	42.3	0.0	44.2	16.0	0.0	8.8	21.9	0.0	22.9
LnGrp LOS	E	A	D	D	A	D	B	A	A	C	A	C
Approach Vol, veh/h		344			73			372			1335	
Approach Delay, s/veh		55.9			44.0			11.7			22.4	
Approach LOS		E			D			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.0		26.0		72.0		22.0				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.0				
Max Green Setting (Gmax), s		49.5		27.5		49.5		24.0				
Max Q Clear Time (g_c+I1), s		38.4		6.0		45.0		14.7				
Green Ext Time (p_c), s		6.8		0.3		1.0		1.0				

Intersection Summary		
HCM 6th Ctrl Delay		26.7
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

HCM 6th Signalized Intersection Summary
3: Washington Street & Calhoun Street

No Build AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	165	20	1	30	11	25	56	10	91	103	12
Future Volume (veh/h)	7	165	20	1	30	11	25	56	10	91	103	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	0.98		0.96	0.97		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	8	183	22	1	33	12	28	62	11	101	114	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	3	3	3
Cap, veh/h	60	986	115	48	818	274	692	767	136	377	408	44
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	53	3049	355	20	2530	848	1239	1536	273	639	818	88
Grp Volume(v), veh/h	112	0	101	24	0	22	28	0	73	228	0	0
Grp Sat Flow(s),veh/h/ln	1835	0	1621	1858	0	1540	1239	0	1809	1546	0	0
Q Serve(g_s), s	0.0	0.0	4.0	0.0	0.0	0.9	0.0	0.0	1.9	4.8	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	4.0	0.8	0.0	0.9	1.1	0.0	1.9	7.3	0.0	0.0
Prop In Lane	0.07		0.22	0.04		0.55	1.00		0.15	0.44		0.06
Lane Grp Cap(c), veh/h	636	0	524	642	0	498	692	0	903	829	0	0
V/C Ratio(X)	0.18	0.00	0.19	0.04	0.00	0.04	0.04	0.00	0.08	0.28	0.00	0.00
Avail Cap(c_a), veh/h	636	0	524	642	0	498	692	0	903	829	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.00	0.83	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.9	0.0	22.0	20.9	0.0	20.9	11.6	0.0	11.8	13.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.1	0.0	0.2	0.1	0.0	0.2	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.6	0.4	0.0	0.3	0.3	0.0	0.8	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	22.6	21.0	0.0	21.1	11.7	0.0	12.0	13.9	0.0	0.0
LnGrp LOS	C	A	C	C	A	C	B	A	B	B	A	A
Approach Vol, veh/h		213			46			101			228	
Approach Delay, s/veh		22.5			21.0			11.9			13.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		52.0		38.0		52.0		38.0
Change Period (Y+Rc), s		7.1		* 8.9		7.1		* 8.9
Max Green Setting (Gmax), s		44.9		* 29		44.9		* 29
Max Q Clear Time (g_c+I1), s		9.3		2.9		3.9		6.0
Green Ext Time (p_c), s		1.6		0.2		0.5		1.2

Intersection Summary			
HCM 6th Ctrl Delay			17.2
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	0	8	2	16	1	84	4	14	126	2
Future Vol, veh/h	0	8	0	8	2	16	1	84	4	14	126	2
Conflicting Peds, #/hr	0	0	32	32	0	0	3	0	11	11	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	4	4	4	2	2	2
Mvmt Flow	0	9	0	9	2	18	1	93	4	16	140	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	283	286	176	318	285	106	145	0	0	108	0	0
Stage 1	176	176	-	108	108	-	-	-	-	-	-	-
Stage 2	107	110	-	210	177	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.14	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.236	-	-	2.218	-	-
Pot Cap-1 Maneuver	669	623	867	635	624	948	1425	-	-	1483	-	-
Stage 1	826	753	-	897	806	-	-	-	-	-	-	-
Stage 2	898	804	-	792	753	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	646	607	838	596	608	938	1421	-	-	1467	-	-
Mov Cap-2 Maneuver	646	607	-	596	608	-	-	-	-	-	-	-
Stage 1	823	742	-	887	797	-	-	-	-	-	-	-
Stage 2	878	795	-	750	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	9.9	0.1	0.7
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1421	-	-	607	770	1467	-	-
HCM Lane V/C Ratio	0.001	-	-	0.015	0.038	0.011	-	-
HCM Control Delay (s)	7.5	0	-	11	9.9	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	32	12	23	18	36	0	205	14	32	427	72
Future Volume (veh/h)	42	32	12	23	18	36	0	205	14	32	427	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.96	0.97		0.96	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	47	36	13	26	20	40	0	228	16	36	474	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	118	83	25	76	59	84	0	2675	186	170	2196	367
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	660	747	220	331	531	750	0	3433	233	171	2741	458
Grp Volume(v), veh/h	96	0	0	86	0	0	0	120	124	308	0	282
Grp Sat Flow(s),veh/h/ln	1627	0	0	1612	0	0	0	1763	1810	1757	0	1613
Q Serve(g_s), s	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.49		0.14	0.30		0.47	0.00		0.13	0.12		0.28
Lane Grp Cap(c), veh/h	226	0	0	219	0	0	0	1412	1450	1441	0	1292
V/C Ratio(X)	0.42	0.00	0.00	0.39	0.00	0.00	0.00	0.08	0.09	0.21	0.00	0.22
Avail Cap(c_a), veh/h	540	0	0	536	0	0	0	1412	1450	1441	0	1292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.0	0.0	0.0	49.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	1.1	0.0	0.0	0.0	0.1	0.1	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	0.0	0.0	51.0	0.0	0.0	0.0	0.1	0.1	0.3	0.0	0.4
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		96			86			244			590	
Approach Delay, s/veh		51.3			51.0			0.1			0.4	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		101.1		18.9		101.1		18.9				
Change Period (Y+Rc), s		5.0		5.5		5.0		5.5				
Max Green Setting (Gmax), s		71.0		38.5		71.0		38.5				
Max Q Clear Time (g_c+I1), s		2.0		8.1		2.0		7.6				
Green Ext Time (p_c), s		1.5		0.5		4.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	19	10	33	102	27
Future Vol, veh/h	17	19	10	33	102	27
Conflicting Peds, #/hr	0	22	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	6	6	6	2	2
Mvmt Flow	19	21	11	37	113	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	187	150	143	0	-	0
Stage 1	128	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.46	6.26	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	2.254	-	-	-
Pot Cap-1 Maneuver	793	886	1415	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	953	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	787	867	1415	-	-	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	953	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	1.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1415	-	827	-	-
HCM Lane V/C Ratio	0.008	-	0.048	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	7	18	2	12	2	11	210	10	4	410	51
Future Volume (veh/h)	16	7	18	2	12	2	11	210	10	4	410	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.78	1.00		0.88	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1781	1781	1781	1826	1826	1826	1870	1870	1870
Adj Flow Rate, veh/h	18	8	20	2	13	2	12	233	11	4	456	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	6	6	8	8	8	5	5	5	2	2	2
Cap, veh/h	129	57	127	193	168	26	101	1901	90	32	1151	963
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1212	539	1196	1697	1476	227	111	3078	146	3	1865	1559
Grp Volume(v), veh/h	26	0	20	2	0	15	133	0	123	460	0	57
Grp Sat Flow(s),veh/h/ln	1750	0	1196	1697	0	1703	1702	0	1633	1868	0	1559
Q Serve(g_s), s	1.6	0.0	1.8	0.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	0.0	1.8	0.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.69		1.00	1.00		0.13	0.09		0.09	0.01		1.00
Lane Grp Cap(c), veh/h	186	0	127	193	0	193	1084	0	1008	1184	0	963
V/C Ratio(X)	0.14	0.00	0.16	0.01	0.00	0.08	0.12	0.00	0.12	0.39	0.00	0.06
Avail Cap(c_a), veh/h	299	0	204	325	0	326	1084	0	1008	1184	0	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	48.6	0.0	48.7	47.2	0.0	47.6	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6	0.0	0.0	0.2	0.2	0.0	0.2	0.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.6	0.1	0.0	0.4	0.1	0.0	0.1	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	0.0	49.3	47.2	0.0	47.7	0.2	0.0	0.2	0.9	0.0	0.1
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		46			17			256			517	
Approach Delay, s/veh		49.1			47.7			0.2			0.9	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		80.6		20.1		80.6		19.3				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5				
Max Green Setting (Gmax), s		57.0		23.0		57.0		20.5				
Max Q Clear Time (g_c+I1), s		2.0		2.9		2.0		3.8				
Green Ext Time (p_c), s		3.5		0.0		1.7		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			4.3
HCM 6th LOS			A

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	4	8	31	80	13
Future Vol, veh/h	13	4	8	31	80	13
Conflicting Peds, #/hr	0	18	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	14	14	3	3
Mvmt Flow	14	4	9	34	89	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	151	117	106	0	-	0
Stage 1	99	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.24	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.326	-	-	-
Pot Cap-1 Maneuver	838	932	1413	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	827	913	1409	-	-	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	965	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1409	-	846	-	-
HCM Lane V/C Ratio	0.006	-	0.022	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	16	8	40	75	14
Future Vol, veh/h	6	16	8	40	75	14
Conflicting Peds, #/hr	0	33	33	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	10	10	2	2
Mvmt Flow	7	18	9	44	83	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	186	157	132	0	-	0
Stage 1	124	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	803	889	1405	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	748	834	1361	-	-	-
Mov Cap-2 Maneuver	748	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1361	-	809	-	-
HCM Lane V/C Ratio	0.007	-	0.03	-	-
HCM Control Delay (s)	7.7	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	16	30	4	31	361	19	1472	4	99	848	82
Future Volume (veh/h)	105	16	30	4	31	361	19	1472	4	99	848	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	18	33	4	34	401	21	1636	4	110	942	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	4	369	31	201	369	44	2280	6	169	1368	131
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	1.00	1.00	1.00	0.65	0.65	0.65
Sat Flow, veh/h	0	19	1553	0	844	1553	23	3483	9	203	2091	201
Grp Volume(v), veh/h	135	0	33	38	0	401	864	0	797	388	0	755
Grp Sat Flow(s),veh/h/ln	19	0	1553	844	0	1553	1814	0	1700	829	0	1665
Q Serve(g_s), s	0.0	0.0	2.2	0.0	0.0	30.9	0.0	0.0	0.0	26.5	0.0	37.2
Cycle Q Clear(g_c), s	30.9	0.0	2.2	30.9	0.0	30.9	0.0	0.0	0.0	31.6	0.0	37.2
Prop In Lane	0.87		1.00	0.11		1.00	0.02		0.01	0.28		0.12
Lane Grp Cap(c), veh/h	56	0	369	231	0	369	1216	0	1113	578	0	1090
V/C Ratio(X)	2.41	0.00	0.09	0.16	0.00	1.09	0.71	0.00	0.72	0.67	0.00	0.69
Avail Cap(c_a), veh/h	56	0	369	231	0	369	1216	0	1113	578	0	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.00	0.09	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.6	0.0	38.6	39.7	0.0	49.5	0.0	0.0	0.0	11.7	0.0	14.2
Incr Delay (d2), s/veh	683.3	0.0	0.1	0.3	0.0	72.0	0.3	0.0	0.4	6.1	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	0.0	0.8	1.0	0.0	19.3	0.1	0.0	0.1	6.9	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	745.9	0.0	38.7	40.0	0.0	121.5	0.3	0.0	0.4	17.8	0.0	17.8
LnGrp LOS	F	A	D	D	A	F	A	A	A	B	A	B
Approach Vol, veh/h		168			439			1661			1143	
Approach Delay, s/veh		607.0			114.5			0.3			17.8	
Approach LOS		F			F			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		91.6		38.4		91.6		38.4				
Change Period (Y+Rc), s		6.5		7.5		6.5		7.5				
Max Green Setting (Gmax), s		85.1		30.9		85.1		30.9				
Max Q Clear Time (g_c+I1), s		2.0		32.9		39.2		32.9				
Green Ext Time (p_c), s		23.5		0.0		15.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			50.8
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	275	52	9	25	175	92	113	1054	18	18	664	173
Future Volume (veh/h)	275	52	9	25	175	92	113	1054	18	18	664	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.92	0.98		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	306	58	10	28	194	102	126	1171	20	20	738	192
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	247	43	358	224	118	162	1320	23	33	964	327
Arrive On Green	0.16	0.16	0.16	0.20	0.20	0.20	0.16	0.16	0.16	0.98	0.98	0.98
Sat Flow, veh/h	1781	1526	263	1781	1117	588	262	2685	46	9	1960	665
Grp Volume(v), veh/h	306	0	68	28	0	296	589	0	728	511	0	439
Grp Sat Flow(s),veh/h/ln	1781	0	1789	1781	0	1705	1302	0	1691	1113	0	1521
Q Serve(g_s), s	21.0	0.0	4.3	1.7	0.0	21.8	55.0	0.0	54.7	9.2	0.0	1.5
Cycle Q Clear(g_c), s	21.0	0.0	4.3	1.7	0.0	21.8	57.7	0.0	54.7	63.9	0.0	1.5
Prop In Lane	1.00		0.15	1.00		0.34	0.21		0.03	0.04		0.44
Lane Grp Cap(c), veh/h	288	0	289	358	0	342	674	0	831	576	0	748
V/C Ratio(X)	1.06	0.00	0.24	0.08	0.00	0.86	0.87	0.00	0.88	0.89	0.00	0.59
Avail Cap(c_a), veh/h	288	0	289	391	0	374	674	0	831	576	0	748
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.82	0.00	0.82	1.00	0.00	1.00	0.21	0.00	0.21
Uniform Delay (d), s/veh	54.5	0.0	47.5	42.2	0.0	50.2	51.3	0.0	50.6	25.4	0.0	0.6
Incr Delay (d2), s/veh	70.8	0.0	0.4	0.1	0.0	14.9	14.7	0.0	12.5	4.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	0.0	2.0	0.7	0.0	10.7	23.0	0.0	27.8	5.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.3	0.0	47.9	42.3	0.0	65.2	65.9	0.0	63.1	30.1	0.0	1.3
LnGrp LOS	F	A	D	D	A	E	E	A	E	C	A	A
Approach Vol, veh/h		374			324			1317			950	
Approach Delay, s/veh		111.2			63.2			64.4			16.8	
Approach LOS		F			E			E			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	70.4	32.6	70.4	27.0
Change Period (Y+Rc), s	6.5	6.5	6.5	6.0
Max Green Setting (Gmax), s	61.5	28.5	61.5	21.0
Max Q Clear Time (g_c+I1), s	65.9	23.8	59.7	23.0
Green Ext Time (p_c), s	0.0	0.8	1.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	65	11	18	179	110	79	230	14	23	107	29
Future Volume (veh/h)	6	65	11	18	179	110	79	230	14	23	107	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.97		0.96	0.97		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1870	1870	1870	1870	1870	1870	1826	1826	1826
Adj Flow Rate, veh/h	7	72	12	20	199	122	88	256	16	26	119	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	6	6	2	2	2	2	2	2	5	5	5
Cap, veh/h	60	410	66	61	316	179	900	1156	72	171	758	195
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	87	2615	418	106	2015	1143	1202	1737	109	189	1140	293
Grp Volume(v), veh/h	46	0	45	187	0	154	88	0	272	177	0	0
Grp Sat Flow(s),veh/h/ln	1567	0	1553	1821	0	1443	1202	0	1845	1621	0	0
Q Serve(g_s), s	0.0	0.0	2.2	2.3	0.0	9.1	0.0	0.0	5.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.1	0.0	2.2	8.5	0.0	9.1	1.6	0.0	5.2	3.4	0.0	0.0
Prop In Lane	0.15		0.27	0.11		0.79	1.00		0.06	0.15		0.18
Lane Grp Cap(c), veh/h	292	0	244	330	0	226	900	0	1228	1125	0	0
V/C Ratio(X)	0.16	0.00	0.18	0.57	0.00	0.68	0.10	0.00	0.22	0.16	0.00	0.00
Avail Cap(c_a), veh/h	615	0	554	686	0	515	900	0	1228	1125	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.8	0.0	32.9	35.6	0.0	35.8	5.3	0.0	5.9	5.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.4	1.5	0.0	3.6	0.2	0.0	0.4	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.9	3.9	0.0	3.4	0.6	0.0	2.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	0.0	33.3	37.1	0.0	39.4	5.5	0.0	6.3	5.9	0.0	0.0
LnGrp LOS	C	A	C	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		91			341			360			177	
Approach Delay, s/veh		33.2			38.1			6.1			5.9	
Approach LOS		C			D			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	67.0	23.0	67.0	23.0
Change Period (Y+Rc), s	7.1	* 8.9	7.1	* 8.9
Max Green Setting (Gmax), s	41.9	* 32	41.9	* 32
Max Q Clear Time (g_c+I1), s	5.4	11.1	7.2	11.1
Green Ext Time (p_c), s	1.2	2.0	2.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	19.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	12	5	22	19	31	6	284	13	12	143	2
Future Vol, veh/h	5	12	5	22	19	31	6	284	13	12	143	2
Conflicting Peds, #/hr	3	0	20	20	0	3	53	0	33	33	0	53
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	13	6	24	21	34	7	316	14	13	159	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	607	616	233	586	610	359	214	0	0	363	0	0
Stage 1	239	239	-	370	370	-	-	-	-	-	-	-
Stage 2	368	377	-	216	240	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	408	406	806	422	409	685	1356	-	-	1196	-	-
Stage 1	764	708	-	650	620	-	-	-	-	-	-	-
Stage 2	652	616	-	786	707	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	345	367	751	381	369	662	1288	-	-	1158	-	-
Mov Cap-2 Maneuver	345	367	-	381	369	-	-	-	-	-	-	-
Stage 1	720	665	-	625	596	-	-	-	-	-	-	-
Stage 2	590	593	-	741	664	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	14.4	0.2	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1288	-	-	409	461	1158	-	-
HCM Lane V/C Ratio	0.005	-	-	0.06	0.174	0.012	-	-
HCM Control Delay (s)	7.8	0	-	14.4	14.4	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.6	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	48	29	24	35	90	12	624	31	71	508	57
Future Volume (veh/h)	166	48	29	24	35	90	12	624	31	71	508	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.92	1.00		0.92	0.98		0.96	0.98		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	184	53	32	27	39	100	13	693	34	79	564	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	252	59	36	82	120	257	48	2176	106	234	1627	181
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	1.00	1.00	1.00	0.66	0.66	0.66
Sat Flow, veh/h	806	232	140	196	469	1007	29	3279	159	301	2451	273
Grp Volume(v), veh/h	269	0	0	166	0	0	388	0	352	328	0	378
Grp Sat Flow(s),veh/h/ln	1178	0	0	1672	0	0	1816	0	1652	1386	0	1639
Q Serve(g_s), s	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	13.1
Cycle Q Clear(g_c), s	29.3	0.0	0.0	11.1	0.0	0.0	0.0	0.0	0.0	10.8	0.0	13.1
Prop In Lane	0.68		0.12	0.16		0.60	0.03		0.10	0.24		0.17
Lane Grp Cap(c), veh/h	348	0	0	459	0	0	1234	0	1096	954	0	1088
V/C Ratio(X)	0.77	0.00	0.00	0.36	0.00	0.00	0.31	0.00	0.32	0.34	0.00	0.35
Avail Cap(c_a), veh/h	586	0	0	730	0	0	1234	0	1096	954	0	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.97	0.00	0.97	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.3	0.0	0.0	40.2	0.0	0.0	0.0	0.0	0.0	9.0	0.0	9.6
Incr Delay (d2), s/veh	3.7	0.0	0.0	0.5	0.0	0.0	0.6	0.0	0.8	1.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	4.5	0.0	0.0	0.2	0.0	0.2	4.0	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	0.0	0.0	40.7	0.0	0.0	0.6	0.0	0.8	10.0	0.0	10.4
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	B
Approach Vol, veh/h		269			166			740			706	
Approach Delay, s/veh		52.0			40.7			0.7			10.2	
Approach LOS		D			D			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		91.3		38.7		91.3		38.7				
Change Period (Y+Rc), s		5.0		5.5		5.0		5.5				
Max Green Setting (Gmax), s		63.0		56.5		63.0		56.5				
Max Q Clear Time (g_c+I1), s		15.1		13.1		2.0		31.3				
Green Ext Time (p_c), s		5.8		1.2		5.6		1.9				

Intersection Summary			
HCM 6th Ctrl Delay			15.1
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	34	35	195	121	60
Future Vol, veh/h	31	34	35	195	121	60
Conflicting Peds, #/hr	3	26	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	34	38	39	217	134	67

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	466	194	201	0	-	0
Stage 1	168	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	555	847	1365	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	826	1365	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	753	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	11.2		1.2		0	
HCM LOS	B					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1365	-	657	-	-
HCM Lane V/C Ratio	0.028	-	0.11	-	-
HCM Control Delay (s)	7.7	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	24	31	12	37	25	18	532	16	17	363	96
Future Volume (veh/h)	106	24	31	12	37	25	18	532	16	17	363	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.42	1.00		0.67	0.92		0.84	0.93		0.84
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	27	34	13	41	28	20	591	18	19	403	107
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	224	51	103	309	147	100	63	1712	52	50	921	696
Arrive On Green	0.15	0.15	0.15	0.18	0.18	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1463	335	673	1753	835	570	64	3288	99	41	1769	1338
Grp Volume(v), veh/h	145	0	34	13	0	69	327	0	302	422	0	107
Grp Sat Flow(s),veh/h/ln	1797	0	673	1753	0	1404	1789	0	1662	1810	0	1338
Q Serve(g_s), s	9.7	0.0	5.9	0.8	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	0.0	5.9	0.8	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.81		1.00	1.00		0.41	0.06		0.06	0.05		1.00
Lane Grp Cap(c), veh/h	276	0	103	309	0	247	961	0	865	971	0	696
V/C Ratio(X)	0.53	0.00	0.33	0.04	0.00	0.28	0.34	0.00	0.35	0.43	0.00	0.15
Avail Cap(c_a), veh/h	339	0	127	344	0	275	961	0	865	971	0	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.91	0.00	0.91
Uniform Delay (d), s/veh	50.7	0.0	49.1	44.5	0.0	46.4	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	1.8	0.1	0.0	0.6	1.0	0.0	1.1	1.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	1.0	0.4	0.0	2.0	0.3	0.0	0.3	0.3	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	0.0	50.9	44.5	0.0	47.0	1.0	0.0	1.1	1.3	0.0	0.4
LnGrp LOS	D	A	D	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		179			82			629			529	
Approach Delay, s/veh		52.0			46.6			1.0			1.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		74.2		29.4		74.2		26.4				
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5				
Max Green Setting (Gmax), s		60.5		25.5		60.5		24.5				
Max Q Clear Time (g_c+I1), s		2.0		7.5		2.0		11.7				
Green Ext Time (p_c), s		3.6		0.4		4.6		0.8				

Intersection Summary			
HCM 6th Ctrl Delay			10.1
HCM 6th LOS			B

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	33	41	184	134	20
Future Vol, veh/h	30	33	41	184	134	20
Conflicting Peds, #/hr	0	44	15	0	0	15
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	6	6	4	4
Mvmt Flow	33	37	46	204	149	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	471	219	186	0	-	0
Stage 1	175	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.16	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.254	-	-	-
Pot Cap-1 Maneuver	551	821	1365	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	515	775	1346	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	11.5		1.4		0	
HCM LOS	B					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1346	-	625	-	-
HCM Lane V/C Ratio	0.034	-	0.112	-	-
HCM Control Delay (s)	7.8	0	11.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	17	13	142	142	13
Future Vol, veh/h	66	17	13	142	142	13
Conflicting Peds, #/hr	0	120	103	0	0	103
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	8	8	2	2
Mvmt Flow	73	19	14	158	158	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	454	388	275	0	-	0
Stage 1	268	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.18	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.272	-	-	-
Pot Cap-1 Maneuver	564	660	1254	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	846	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	452	527	1131	-	-	-
Mov Cap-2 Maneuver	452	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1131	-	466	-	-
HCM Lane V/C Ratio	0.013	-	0.198	-	-
HCM Control Delay (s)	8.2	0	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	203	19	14	787	837	0
Future Volume (veh/h)	203	19	14	787	837	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	246	0	16	874	930	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	340	151	61	2628	1442	0
Arrive On Green	0.10	0.00	1.00	1.00	0.77	0.00
Sat Flow, veh/h	3563	1585	25	3494	1870	0
Grp Volume(v), veh/h	246	0	471	419	930	0
Grp Sat Flow(s),veh/h/ln	1781	1585	1817	1617	1870	0
Q Serve(g_s), s	6.0	0.0	0.0	0.0	20.4	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0	0.0	20.4	0.0
Prop In Lane	1.00	1.00	0.03			0.00
Lane Grp Cap(c), veh/h	340	151	1442	1247	1442	0
V/C Ratio(X)	0.72	0.00	0.33	0.34	0.64	0.00
Avail Cap(c_a), veh/h	713	317	1442	1247	1442	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.92	0.92	1.00	0.00
Uniform Delay (d), s/veh	39.5	0.0	0.0	0.0	4.7	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.6	0.7	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.2	0.2	6.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.5	0.0	0.6	0.7	6.9	0.0
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	246			890	930	
Approach Delay, s/veh	42.5			0.6	6.9	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		75.4		14.6		75.4
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		60.0		18.0		60.0
Max Q Clear Time (g_c+I1), s		2.0		8.0		22.4
Green Ext Time (p_c), s		7.2		0.6		9.4

Intersection Summary			
HCM 6th Ctrl Delay			8.4
HCM 6th LOS			A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	353	116	7	92	8	135	92	10	47	722	256
Future Volume (veh/h)	0	353	116	7	92	8	135	92	10	47	722	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.98	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1737	1737	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	392	129	8	102	9	150	102	11	52	802	284
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	3	11	11	2	2	2	2	2	2	2
Cap, veh/h	0	621	202	163	374	33	323	1022	110	683	1235	437
Arrive On Green	0.00	0.24	0.24	0.48	0.48	0.48	0.02	0.20	0.20	0.48	0.48	0.48
Sat Flow, veh/h	0	2700	847	816	1570	139	1781	1656	179	1256	2573	910
Grp Volume(v), veh/h	0	263	258	8	0	111	150	0	113	52	554	532
Grp Sat Flow(s),veh/h/ln	0	1763	1692	816	0	1709	1781	0	1835	1256	1777	1706
Q Serve(g_s), s	0.0	12.0	12.3	0.7	0.0	3.5	3.5	0.0	4.5	2.0	21.2	21.2
Cycle Q Clear(g_c), s	0.0	12.0	12.3	13.0	0.0	3.5	3.5	0.0	4.5	2.0	21.2	21.2
Prop In Lane	0.00		0.50	1.00		0.08	1.00		0.10	1.00		0.53
Lane Grp Cap(c), veh/h	0	420	403	163	0	407	323	0	1133	683	853	819
V/C Ratio(X)	0.00	0.63	0.64	0.05	0.00	0.27	0.46	0.00	0.10	0.08	0.65	0.65
Avail Cap(c_a), veh/h	0	541	519	214	0	515	355	0	1133	683	853	819
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.98	0.00	0.98	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	30.7	30.8	26.4	0.0	18.9	14.1	0.0	15.5	12.7	17.7	17.7
Incr Delay (d2), s/veh	0.0	1.5	1.7	0.1	0.0	0.4	1.0	0.0	0.2	0.2	3.8	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.2	5.1	0.1	0.0	1.3	1.4	0.0	1.9	0.6	9.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	32.2	32.5	26.5	0.0	19.2	15.1	0.0	15.7	12.9	21.5	21.7
LnGrp LOS	A	C	C	C	A	B	B	A	B	B	C	C
Approach Vol, veh/h		521			119			263			1138	
Approach Delay, s/veh		32.4			19.7			15.4			21.2	
Approach LOS		C			B			B			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		62.1		27.9	12.4	49.7		27.9
Change Period (Y+Rc), s		6.5		* 6.5	6.5	6.5		6.5
Max Green Setting (Gmax), s		49.9		* 28	7.5	35.9		27.1
Max Q Clear Time (g_c+I1), s		6.5		14.3	5.5	23.2		15.0
Green Ext Time (p_c), s		0.7		2.7	0.1	6.1		0.4

Intersection Summary			
HCM 6th Ctrl Delay			23.2
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	210	20	1	72	11	25	550	10	91	602	12
Future Volume (veh/h)	180	210	20	1	72	11	25	550	10	91	602	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.97		0.98	1.00		0.97	0.99		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	200	233	22	1	80	12	28	611	11	101	669	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	3	3	3
Cap, veh/h	190	328	31	42	225	33	420	2233	40	149	894	17
Arrive On Green	0.11	0.39	0.39	0.07	0.07	0.07	1.00	1.00	1.00	0.63	0.63	0.63
Sat Flow, veh/h	3428	1667	157	13	3018	440	759	3569	64	167	1429	27
Grp Volume(v), veh/h	200	0	255	49	0	44	28	304	318	783	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1824	1861	0	1610	759	1777	1857	1623	0	0
Q Serve(g_s), s	5.0	0.0	10.6	0.0	0.0	2.3	0.0	0.0	0.0	19.8	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	10.6	2.2	0.0	2.3	0.0	0.0	0.0	29.9	0.0	0.0
Prop In Lane	1.00		0.09	0.02		0.27	1.00		0.03	0.13		0.02
Lane Grp Cap(c), veh/h	190	0	359	179	0	120	420	1111	1161	1060	0	0
V/C Ratio(X)	1.05	0.00	0.71	0.27	0.00	0.37	0.07	0.27	0.27	0.74	0.00	0.00
Avail Cap(c_a), veh/h	190	0	568	390	0	304	420	1111	1161	1060	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.00	0.79	1.00	0.00	1.00	0.97	0.97	0.97	0.68	0.00	0.00
Uniform Delay (d), s/veh	40.0	0.0	25.1	39.6	0.0	39.6	0.0	0.0	0.0	11.5	0.0	0.0
Incr Delay (d2), s/veh	71.7	0.0	2.1	0.8	0.0	1.9	0.3	0.6	0.6	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	3.9	1.1	0.0	1.0	0.0	0.2	0.2	10.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.7	0.0	27.2	40.4	0.0	41.5	0.3	0.6	0.6	14.7	0.0	0.0
LnGrp LOS	F	A	C	D	A	D	A	A	A	B	A	A
Approach Vol, veh/h		455			93			650			783	
Approach Delay, s/veh		64.4			40.9			0.6			14.7	
Approach LOS		E			D			A			B	
Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		63.4	11.0	15.6		63.4		26.6				
Change Period (Y+Rc), s		7.1	6.0	* 8.9		7.1		* 8.9				
Max Green Setting (Gmax), s		46.0	5.0	* 17		46.0		* 28				
Max Q Clear Time (g_c+I1), s		31.9	7.0	4.3		2.0		12.6				
Green Ext Time (p_c), s		5.5	0.0	0.3		4.8		1.3				
Intersection Summary												
HCM 6th Ctrl Delay			22.7									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	91	0	15	44	87	36	507	12	52	587	2
Future Volume (veh/h)	0	91	0	15	44	87	36	507	12	52	587	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	0.93		0.94	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	0	101	0	17	49	97	40	563	13	58	652	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	0	309	0	58	92	156	158	2137	49	111	1157	3
Arrive On Green	0.00	0.05	0.00	0.17	0.17	0.17	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	0	1870	0	85	556	943	160	3046	70	96	1649	5
Grp Volume(v), veh/h	0	101	0	163	0	0	307	0	309	712	0	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	1585	0	0	1615	0	1662	1750	0	0
Q Serve(g_s), s	0.0	4.7	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.7	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.00		0.00	0.10		0.60	0.13		0.04	0.08		0.00
Lane Grp Cap(c), veh/h	0	309	0	306	0	0	1178	0	1166	1271	0	0
V/C Ratio(X)	0.00	0.33	0.00	0.53	0.00	0.00	0.26	0.00	0.27	0.56	0.00	0.00
Avail Cap(c_a), veh/h	0	374	0	360	0	0	1178	0	1166	1271	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	0.00	0.00	0.99	0.00	0.99	0.46	0.00	0.00
Uniform Delay (d), s/veh	0.0	37.7	0.0	34.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	1.4	0.0	0.0	0.5	0.0	0.6	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	0.0	3.4	0.0	0.0	0.2	0.0	0.2	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	38.3	0.0	36.3	0.0	0.0	0.5	0.0	0.6	0.8	0.0	0.0
LnGrp LOS	A	D	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		101			163			616			712	
Approach Delay, s/veh		38.3			36.3			0.5			0.8	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		69.1		20.9		69.1		20.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		60.0		18.0		60.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0		6.7		2.0		10.4				
Green Ext Time (p_c), s		4.9		0.3		7.0		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			6.7									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	47	12	23	32	71	0	61	14	108	364	72
Future Volume (veh/h)	42	47	12	23	32	71	0	61	14	108	364	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.97	0.98		0.95	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	52	13	26	36	79	0	68	16	120	404	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	136	28	74	77	132	0	1075	253	495	1615	319
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.00	0.73	0.73	1.00	1.00	1.00
Sat Flow, veh/h	529	909	189	180	516	886	0	1464	344	598	2200	435
Grp Volume(v), veh/h	112	0	0	141	0	0	0	0	84	307	0	297
Grp Sat Flow(s),veh/h/ln	1626	0	0	1581	0	0	0	0	1808	1617	0	1617
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.2	0.0	0.0	7.3	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0
Prop In Lane	0.42		0.12	0.18		0.56	0.00		0.19	0.39		0.27
Lane Grp Cap(c), veh/h	299	0	0	283	0	0	0	0	1328	1243	0	1187
V/C Ratio(X)	0.37	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.06	0.25	0.00	0.25
Avail Cap(c_a), veh/h	619	0	0	609	0	0	0	0	1328	1243	0	1187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	0.65	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	0.0	35.6	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.4	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.5	0.0	0.0	36.5	0.0	0.0	0.0	0.0	3.4	0.5	0.0	0.5
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		112			141			84			604	
Approach Delay, s/veh		35.5			36.5			3.4			0.5	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.1		18.9		71.1		18.9				
Change Period (Y+Rc), s		5.0		5.5		5.0		5.5				
Max Green Setting (Gmax), s		47.0		32.5		47.0		32.5				
Max Q Clear Time (g_c+I1), s		3.2		7.2		2.0		9.3				
Green Ext Time (p_c), s		0.5		0.6		4.3		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			10.3									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	83	18	28	42	115	8	311	30	134	367	34
Future Volume (veh/h)	25	83	18	28	42	115	8	311	30	134	367	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	0.96		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1870	1811	1870	1870	1870	1811	1811	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	92	20	31	47	128	9	346	33	149	408	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	2	6	2	2	2	6	6	2	2	2	2
Cap, veh/h	82	203	40	72	74	164	68	2153	202	294	783	70
Arrive On Green	0.05	0.05	0.05	0.16	0.16	0.16	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	214	1266	247	161	462	1022	37	3048	286	346	1109	99
Grp Volume(v), veh/h	140	0	0	206	0	0	204	0	184	595	0	0
Grp Sat Flow(s),veh/h/ln	1727	0	0	1645	0	0	1775	0	1597	1554	0	0
Q Serve(g_s), s	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.9	0.0	0.0	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.20		0.14	0.15		0.62	0.04		0.18	0.25		0.06
Lane Grp Cap(c), veh/h	325	0	0	310	0	0	1295	0	1127	1147	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.66	0.00	0.00	0.16	0.00	0.16	0.52	0.00	0.00
Avail Cap(c_a), veh/h	426	0	0	407	0	0	1295	0	1127	1147	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	0.72	0.00	0.00	1.00	0.00	0.00	0.99	0.00	0.99	0.80	0.00	0.00
Uniform Delay (d), s/veh	39.0	0.0	0.0	36.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	2.6	0.0	0.0	0.3	0.0	0.3	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	4.5	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.6	0.0	0.0	38.7	0.0	0.0	0.3	0.0	0.3	1.3	0.0	0.0
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		140			206			388			595	
Approach Delay, s/veh		39.6			38.7			0.3			1.3	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	69.6	20.4	69.6	20.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	58.0	20.0	58.0	20.0
Max Q Clear Time (g_c+I1), s	2.0	8.9	2.0	12.6
Green Ext Time (p_c), s	2.7	0.5	5.7	0.7

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	15	18	2	19	2	11	286	10	4	481	51
Future Volume (veh/h)	16	15	18	2	19	2	11	286	10	4	481	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		0.91	1.00		0.98	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1811	1781	1781	1870	1826	1870	1826	1870	1870	1870
Adj Flow Rate, veh/h	18	17	20	2	21	2	12	318	11	4	534	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	6	6	8	8	2	5	2	5	2	2	2
Cap, veh/h	96	91	140	174	162	15	82	1719	59	53	1643	174
Arrive On Green	0.11	0.11	0.11	0.10	0.10	0.10	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	908	858	1325	1697	1587	151	53	3315	113	4	3169	335
Grp Volume(v), veh/h	35	0	20	2	0	23	178	0	163	316	0	279
Grp Sat Flow(s),veh/h/ln	1766	0	1325	1697	0	1738	1803	0	1679	1867	0	1642
Q Serve(g_s), s	1.3	0.0	1.0	0.1	0.0	0.9	0.0	0.0	3.7	0.0	0.0	7.0
Cycle Q Clear(g_c), s	1.3	0.0	1.0	0.1	0.0	0.9	3.6	0.0	3.7	7.0	0.0	7.0
Prop In Lane	0.51		1.00	1.00		0.09	0.07		0.07	0.01		0.20
Lane Grp Cap(c), veh/h	187	0	140	174	0	178	989	0	871	1019	0	851
V/C Ratio(X)	0.19	0.00	0.14	0.01	0.00	0.13	0.18	0.00	0.19	0.31	0.00	0.33
Avail Cap(c_a), veh/h	507	0	381	547	0	560	989	0	871	1019	0	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	29.0	28.8	0.0	29.1	9.1	0.0	9.2	10.0	0.0	10.0
Incr Delay (d2), s/veh	0.5	0.0	0.5	0.0	0.0	0.3	0.4	0.0	0.5	0.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3	0.0	0.0	0.4	1.4	0.0	1.3	2.8	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	0.0	29.4	28.8	0.0	29.5	9.5	0.0	9.6	10.7	0.0	11.0
LnGrp LOS	C	A	C	C	A	C	A	A	A	B	A	B
Approach Vol, veh/h		55			25			341			595	
Approach Delay, s/veh		29.5			29.4			9.6			10.9	
Approach LOS		C			C			A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	43.5	13.8	43.5	14.1
Change Period (Y+Rc), s	6.5	6.5	6.5	6.5
Max Green Setting (Gmax), s	37.0	23.0	37.0	20.5
Max Q Clear Time (g_c+I1), s	9.0	2.9	5.7	3.3
Green Ext Time (p_c), s	3.9	0.1	2.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	4	8	107	151	20
Future Vol, veh/h	21	4	8	107	151	20
Conflicting Peds, #/hr	0	18	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	14	14	3	3
Mvmt Flow	23	4	9	119	168	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	319	200	193	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.24	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.326	-	-	-
Pot Cap-1 Maneuver	672	838	1312	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	663	821	1308	-	-	-
Mov Cap-2 Maneuver	663	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	884	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1308	-	684	-	-
HCM Lane V/C Ratio	0.007	-	0.041	-	-
HCM Control Delay (s)	7.8	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	16	8	115	136	14
Future Vol, veh/h	6	16	8	115	136	14
Conflicting Peds, #/hr	0	33	33	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	10	10	2	2
Mvmt Flow	7	18	9	128	151	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	338	225	200	0	-	0
Stage 1	192	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	658	814	1326	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	881	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	613	764	1284	-	-	-
Mov Cap-2 Maneuver	613	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1284	-	716	-	-
HCM Lane V/C Ratio	0.007	-	0.034	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	76	106	14	35	106	56	226	15	76	207	0
Future Volume (veh/h)	0	76	106	14	35	106	56	226	15	76	207	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	84	118	16	39	118	62	251	17	84	230	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	252	213	55	59	149	450	1825	126	335	891	0
Arrive On Green	0.00	0.13	0.13	0.13	0.13	0.13	0.73	0.73	0.73	0.97	0.97	0.00
Sat Flow, veh/h	0	1870	1585	81	436	1108	539	2492	173	388	1218	0
Grp Volume(v), veh/h	0	84	118	173	0	0	165	0	165	314	0	0
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1624	0	0	1533	0	1671	1605	0	0
Q Serve(g_s), s	0.0	3.7	6.3	3.8	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.7	6.3	9.2	0.0	0.0	2.3	0.0	2.6	0.5	0.0	0.0
Prop In Lane	0.00		1.00	0.09		0.68	0.37		0.10	0.27		0.00
Lane Grp Cap(c), veh/h	0	252	213	262	0	0	1177	0	1223	1226	0	0
V/C Ratio(X)	0.00	0.33	0.55	0.66	0.00	0.00	0.14	0.00	0.13	0.26	0.00	0.00
Avail Cap(c_a), veh/h	0	561	476	525	0	0	1177	0	1223	1226	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.81	0.00	0.00
Uniform Delay (d), s/veh	0.0	35.3	36.4	37.6	0.0	0.0	3.5	0.0	3.6	0.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	2.2	2.8	0.0	0.0	0.2	0.0	0.2	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	2.5	3.9	0.0	0.0	0.8	0.0	0.8	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	36.1	38.7	40.5	0.0	0.0	3.8	0.0	3.8	0.7	0.0	0.0
LnGrp LOS	A	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		202			173			330			314	
Approach Delay, s/veh		37.6			40.5			3.8			0.7	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	71.9	18.1	71.9	18.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	51.0	27.0	51.0	27.0
Max Q Clear Time (g_c+I1), s	4.6	8.3	2.5	11.2
Green Ext Time (p_c), s	2.3	0.8	2.4	0.9

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	19	14	787	837	0
Future Volume (vph)	203	19	14	787	837	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt	0.987					
Flt Protected	0.956			0.999		
Satd. Flow (prot)	3410	0	0	3536	1863	0
Flt Permitted	0.956			0.933		
Satd. Flow (perm)	3410	0	0	3302	1863	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	10					
Link Speed (mph)	30			30	30	
Link Distance (ft)	236			1194	177	
Travel Time (s)	5.4			27.1	4.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	226	21	16	874	930	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	247	0	0	890	930	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0	24.0	24.0	
Total Split (s)	24.0		66.0	66.0	66.0	
Total Split (%)	26.7%		73.3%	73.3%	73.3%	
Maximum Green (s)	18.0		60.0	60.0	60.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	6.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	11.6			66.4	66.4	
Actuated g/C Ratio	0.13			0.74	0.74	
v/c Ratio	0.55			0.37	0.68	
Control Delay	37.7			2.6	9.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	37.7			2.6	9.8	
LOS	D			A	A	
Approach Delay	37.7			2.6	9.8	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 10.0 Intersection LOS: B
Intersection Capacity Utilization 60.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Washington Street & E Bay Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	353	116	7	92	8	135	92	10	47	722	256
Future Volume (vph)	0	353	116	7	92	8	135	92	10	47	722	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		100	150		100
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99		0.99				0.99				
Frt		0.963			0.988			0.985			0.961	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3354	0	1626	1702	0	1770	1823	0	1770	3401	0
Flt Permitted				0.319			0.137			0.684		
Satd. Flow (perm)	0	3354	0	543	1702	0	255	1823	0	1274	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			5			10			66	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			293			942			779	
Travel Time (s)		9.6			6.7			21.4			17.7	
Confl. Peds. (#/hr)			9	9					34			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	3%	11%	11%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	392	129	8	102	9	150	102	11	52	802	284
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	521	0	8	111	0	150	113	0	52	1086	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type		NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases				8			2			6		
Detector Phase		4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)		8.0		20.0	20.0		6.0	6.0		20.0	20.0	
Minimum Split (s)		24.0		33.5	33.5		12.5	23.5		34.5	34.5	
Total Split (s)		33.6		33.6	33.6		14.0	56.4		42.4	42.4	
Total Split (%)		37.3%		37.3%	37.3%		15.6%	62.7%		47.1%	47.1%	
Maximum Green (s)		27.6		27.1	27.1		7.5	49.9		35.9	35.9	
Yellow Time (s)		3.0		3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)		3.0		3.5	3.5		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode		None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)		7.0		9.0	9.0			9.0		8.0	8.0	
Flash Dont Walk (s)		11.0		18.0	18.0			8.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)		21.3		20.8	20.8		56.2	56.2		41.1	41.1	
Actuated g/C Ratio		0.24		0.23	0.23		0.62	0.62		0.46	0.46	
v/c Ratio		0.62		0.06	0.28		0.50	0.10		0.09	0.68	
Control Delay		31.2		44.1	48.4		13.0	6.7		15.9	21.4	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		31.2		44.1	48.4		13.0	6.7		15.9	21.4	
LOS		C		D	D		B	A		B	C	
Approach Delay		31.2			48.1			10.3			21.2	
Approach LOS		C			D			B			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 86 (96%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

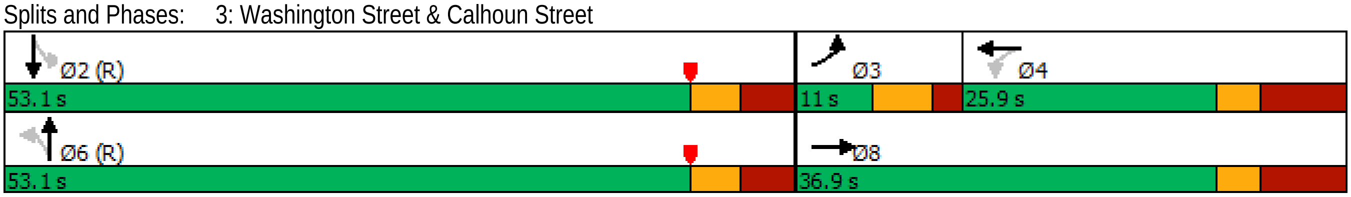
Splits and Phases: 2: E Bay Street & Calhoun Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	210	20	1	72	11	25	550	10	91	602	12
Future Volume (vph)	180	210	20	1	72	11	25	550	10	91	602	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	2		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98	1.00			1.00	
Frt		0.987			0.981			0.997			0.998	
Flt Protected	0.950				0.999		0.950				0.994	
Satd. Flow (prot)	3400	1815	0	0	3468	0	1770	3526	0	0	1827	0
Flt Permitted	0.950				0.947		0.343				0.837	
Satd. Flow (perm)	3400	1815	0	0	3288	0	628	3526	0	0	1536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			12			3			1	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		293			586			952			1194	
Travel Time (s)		6.7			13.3			26.0			32.6	
Confl. Peds. (#/hr)			6	6			61		24	24		61
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	200	233	22	1	80	12	28	611	11	101	669	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	255	0	0	93	0	28	622	0	0	783	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	8			4			6			2	
Permitted Phases				4			6			2		
Detector Phase	3	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	25.9		25.9	25.9		28.1	28.1		28.1	28.1	
Total Split (s)	11.0	36.9		25.9	25.9		53.1	53.1		53.1	53.1	
Total Split (%)	12.2%	41.0%		28.8%	28.8%		59.0%	59.0%		59.0%	59.0%	
Maximum Green (s)	5.0	28.0		17.0	17.0		46.0	46.0		46.0	46.0	
Yellow Time (s)	4.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.0	5.9		5.9	5.9		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	8.9			8.9		7.1	7.1			7.1	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	6.9	18.4			8.4		55.6	55.6			55.6	
Actuated g/C Ratio	0.08	0.20			0.09		0.62	0.62			0.62	
v/c Ratio	0.78	0.68			0.29		0.07	0.29			0.83	
Control Delay	73.7	18.5			34.4		7.0	7.0			16.4	
Queue Delay	0.0	0.1			0.0		0.0	0.0			0.0	
Total Delay	73.7	18.6			34.4		7.0	7.0			16.4	
LOS	E	B			C		A	A			B	
Approach Delay		42.8			34.4			7.0			16.4	
Approach LOS		D			C			A			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 20.2	Intersection LOS: C
Intersection Capacity Utilization 86.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Washington Street & Calhoun Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	91	0	15	44	87	36	507	12	52	587	2
Future Volume (vph)	0	91	0	15	44	87	36	507	12	52	587	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor					0.99			1.00			1.00	
Frt					0.920			0.997				
Flt Protected					0.995			0.997			0.996	
Satd. Flow (prot)	0	1863	0	0	1705	0	0	3447	0	0	1855	0
Flt Permitted					0.950			0.875			0.910	
Satd. Flow (perm)	0	1863	0	0	1616	0	0	3025	0	0	1693	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					73			5				
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		277			488			976			952	
Travel Time (s)		6.3			11.1			26.6			26.0	
Confl. Peds. (#/hr)			32	32			3		11	11		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Adj. Flow (vph)	0	101	0	17	49	97	40	563	13	58	652	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	101	0	0	163	0	0	616	0	0	712	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type		NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	24.0	24.0		24.0	24.0		66.0	66.0		66.0	66.0	
Total Split (%)	26.7%	26.7%		26.7%	26.7%		73.3%	73.3%		73.3%	73.3%	
Maximum Green (s)	18.0	18.0		18.0	18.0		60.0	60.0		60.0	60.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		10.9			10.9			67.1			67.1	
Actuated g/C Ratio		0.12			0.12			0.75			0.75	
v/c Ratio		0.45			0.63			0.27			0.56	
Control Delay		41.9			31.4			4.2			1.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		41.9			31.4			4.2			1.5	
LOS		D			C			A			A	
Approach Delay		41.9			31.4			4.2			1.5	
Approach LOS		D			C			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 56 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: Washington Street & Laurens Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	47	12	23	32	71	0	61	14	108	364	72
Future Volume (vph)	42	47	12	23	32	71	0	61	14	108	364	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor		0.99			0.97						0.99	
Frt		0.984			0.924			0.974			0.980	
Flt Protected		0.979			0.991						0.990	
Satd. Flow (prot)	0	1794	0	0	1653	0	0	1814	0	0	3422	0
Flt Permitted		0.719			0.918						0.867	
Satd. Flow (perm)	0	1303	0	0	1531	0	0	1814	0	0	2987	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			79			16			28	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		362			273			265			933	
Travel Time (s)		9.9			7.4			6.0			21.2	
Confl. Peds. (#/hr)	16					16				20		6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	52	13	26	36	79	0	68	16	120	404	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	0	0	141	0	0	84	0	0	604	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		11.0	11.0		11.0	11.0	
Total Split (s)	38.0	38.0		38.0	38.0		52.0	52.0		52.0	52.0	
Total Split (%)	42.2%	42.2%		42.2%	42.2%		57.8%	57.8%		57.8%	57.8%	
Maximum Green (s)	32.5	32.5		32.5	32.5		47.0	47.0		47.0	47.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.5			5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		11.6			11.6			67.9			67.9	
Actuated g/C Ratio		0.13			0.13			0.75			0.75	
v/c Ratio		0.64			0.53			0.06			0.27	
Control Delay		50.7			25.2			2.4			3.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		50.7			25.2			2.4			3.9	
LOS		D			C			A			A	
Approach Delay		50.7			25.2			2.4			3.9	
Approach LOS		D			C			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 72 (80%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 39.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: E Bay Street & Hasell Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	83	18	28	42	115	8	311	30	134	367	34
Future Volume (vph)	25	83	18	28	42	115	8	311	30	134	367	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99										
Frt		0.981			0.916			0.987			0.991	
Flt Protected		0.990			0.993			0.999			0.988	
Satd. Flow (prot)	0	1766	0	0	1694	0	0	3369	0	0	1824	0
Flt Permitted		0.768			0.901			0.942			0.794	
Satd. Flow (perm)	0	1370	0	0	1537	0	0	3177	0	0	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			84			22			8	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			395			349			976	
Travel Time (s)		7.4			10.8			9.5			26.6	
Confl. Peds. (#/hr)			22									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	6%	2%	2%	2%	6%	6%	2%	2%	2%	2%
Adj. Flow (vph)	28	92	20	31	47	128	9	346	33	149	408	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	0	0	206	0	0	388	0	0	595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	26.0	26.0		26.0	26.0		64.0	64.0		64.0	64.0	
Total Split (%)	28.9%	28.9%		28.9%	28.9%		71.1%	71.1%		71.1%	71.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		58.0	58.0		58.0	58.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.0			13.0			65.0			65.0	
Actuated g/C Ratio		0.14			0.14			0.72			0.72	
v/c Ratio		0.68			0.70			0.17			0.56	
Control Delay		42.8			33.8			3.8			2.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		42.8			33.8			3.8			2.3	
LOS		D			C			A			A	
Approach Delay		42.8			33.8			3.8			2.3	
Approach LOS		D			C			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 84 (93%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

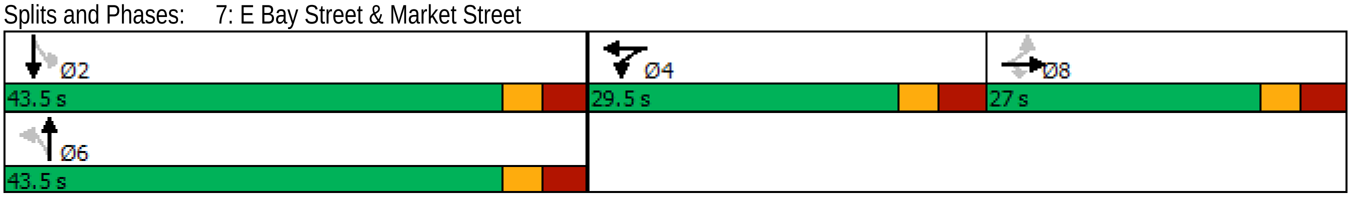
Splits and Phases: 6: Washington Street & Hasell Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	15	18	2	19	2	11	286	10	4	481	51
Future Volume (vph)	16	15	18	2	19	2	11	286	10	4	481	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	50		0	0		50	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.91	0.93				1.00				
Frt			0.850		0.987			0.995			0.986	
Flt Protected		0.975		0.950				0.998				
Satd. Flow (prot)	0	1782	1524	1671	1745	0	0	3502	0	0	3490	0
Flt Permitted		0.826		0.950				0.932			0.953	
Satd. Flow (perm)	0	1510	1385	1556	1745	0	0	3269	0	0	3326	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		2			4			13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		425			436			386			309	
Travel Time (s)		11.6			11.9			8.8			7.0	
Confl. Peds. (#/hr)			29	29			20		18			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	6%	8%	8%	2%	5%	2%	5%	2%	2%	2%
Adj. Flow (vph)	18	17	20	2	21	2	12	318	11	4	534	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	20	2	23	0	0	341	0	0	595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		30			30			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases		8		4	4			6			2	
Permitted Phases	8		8				6			2		
Detector Phase	8	8	8	4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	26.5	26.5	26.5	29.5	29.5		39.5	39.5		27.5	27.5	
Total Split (s)	27.0	27.0	27.0	29.5	29.5		43.5	43.5		43.5	43.5	
Total Split (%)	27.0%	27.0%	27.0%	29.5%	29.5%		43.5%	43.5%		43.5%	43.5%	
Maximum Green (s)	20.5	20.5	20.5	23.0	23.0		37.0	37.0		37.0	37.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5			6.5			6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	13.0	13.0	13.0	16.0	16.0		26.0	26.0		14.0	14.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		7.0	7.0	6.4	6.4			49.6			49.6	
Actuated g/C Ratio		0.11	0.11	0.10	0.10			0.75			0.75	
v/c Ratio		0.22	0.08	0.01	0.14			0.14			0.24	
Control Delay		32.4	0.7	29.5	29.8			6.2			6.5	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		32.4	0.7	29.5	29.8			6.2			6.5	
LOS		C	A	C	C			A			A	
Approach Delay		20.8			29.8			6.2			6.5	
Approach LOS		C			C			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 66.3	
Natural Cycle: 100	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.24	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 51.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7: E Bay Street & Market Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	4	8	107	151	20
Future Volume (vph)	21	4	8	107	151	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.980				0.984	
Flt Protected	0.959			0.996		
Satd. Flow (prot)	1734	0	0	1660	1815	0
Flt Permitted	0.959			0.996		
Satd. Flow (perm)	1734	0	0	1660	1815	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	436			369	676	
Travel Time (s)	11.9			10.1	18.4	
Confl. Peds. (#/hr)		18	3			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	14%	14%	3%	3%
Adj. Flow (vph)	23	4	9	119	168	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	128	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	30			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 26.7%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	16	8	115	136	14
Future Volume (vph)	6	16	8	115	136	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.903				0.987	
Flt Protected	0.986			0.997		
Satd. Flow (prot)	1659	0	0	1722	1839	0
Flt Permitted	0.986			0.997		
Satd. Flow (perm)	1659	0	0	1722	1839	0
Link Speed (mph)	25			30	25	
Link Distance (ft)	431			200	369	
Travel Time (s)	11.8			4.5	10.1	
Confl. Peds. (#/hr)		33	33			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	10%	10%	2%	2%
Adj. Flow (vph)	7	18	9	128	151	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	25	0	0	137	167	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

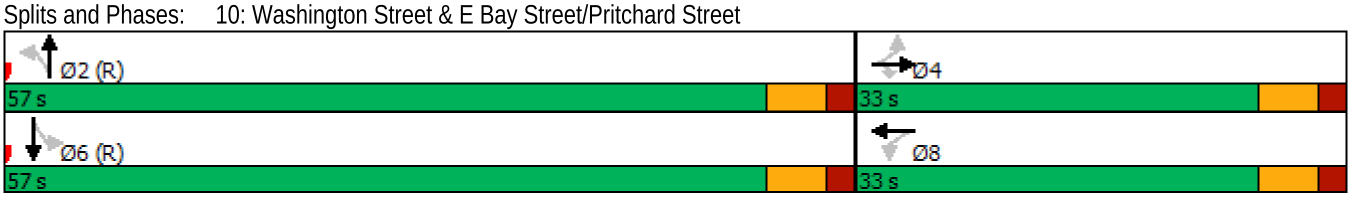
Intersection Summary		
Area Type:	Other	
Control Type: Unsignalized		
Intersection Capacity Utilization 29.3%		ICU Level of Service A
Analysis Period (min) 15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	76	106	14	35	106	56	226	15	76	207	0
Future Volume (vph)	0	76	106	14	35	106	56	226	15	76	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850		0.908			0.992				
Flt Protected					0.995			0.991			0.987	
Satd. Flow (prot)	0	1863	1583	0	1683	0	0	3479	0	0	1839	0
Flt Permitted					0.956			0.838			0.828	
Satd. Flow (perm)	0	1863	1583	0	1617	0	0	2942	0	0	1542	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118		118			10				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		194			427			408			349	
Travel Time (s)		5.3			11.6			11.1			9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	84	118	16	39	118	62	251	17	84	230	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	118	0	173	0	0	330	0	0	314	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		57.0	57.0		57.0	57.0	
Total Split (%)	36.7%	36.7%	36.7%	36.7%	36.7%		63.3%	63.3%		63.3%	63.3%	
Maximum Green (s)	27.0	27.0	27.0	27.0	27.0		51.0	51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		9.9	9.9		9.9			68.1			68.1	
Actuated g/C Ratio		0.11	0.11		0.11			0.76			0.76	
v/c Ratio		0.41	0.42		0.61			0.15			0.27	
Control Delay		39.4	10.5		23.2			3.4			1.7	
Queue Delay		0.0	0.0		0.0			0.0			0.5	
Total Delay		39.4	10.5		23.2			3.4			2.2	
LOS		D	B		C			A			A	
Approach Delay		22.5			23.2			3.4			2.2	
Approach LOS		C			C			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 24 (27%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 10: Washington Street & E Bay Street/Pritchard Street



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	521	31	35	1929	615	0
Future Volume (veh/h)	521	31	35	1929	615	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	611	0	39	2143	683	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	0
Cap, veh/h	674	300	65	2325	1280	0
Arrive On Green	0.19	0.00	1.00	1.00	0.68	0.00
Sat Flow, veh/h	3563	1585	37	3481	1870	0
Grp Volume(v), veh/h	611	0	1171	1011	683	0
Grp Sat Flow(s),veh/h/ln	1781	1585	1816	1617	1870	0
Q Serve(g_s), s	15.9	0.0	0.0	0.0	17.2	0.0
Cycle Q Clear(g_c), s	15.9	0.0	0.0	0.0	17.2	0.0
Prop In Lane	1.00	1.00	0.03			0.00
Lane Grp Cap(c), veh/h	674	300	1282	1107	1280	0
V/C Ratio(X)	0.91	0.00	0.91	0.91	0.53	0.00
Avail Cap(c_a), veh/h	675	300	1282	1107	1280	0
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.42	0.42	1.00	0.00
Uniform Delay (d), s/veh	37.7	0.0	0.0	0.0	7.4	0.0
Incr Delay (d2), s/veh	16.0	0.0	5.4	6.2	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	1.9	1.9	6.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.7	0.0	5.4	6.2	9.0	0.0
LnGrp LOS	D	A	A	A	A	A
Approach Vol, veh/h	611			2182	683	
Approach Delay, s/veh	53.7			5.8	9.0	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.0		24.0		71.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		65.0		18.0		65.0
Max Q Clear Time (g_c+I1), s		2.0		17.9		19.2
Green Ext Time (p_c), s		40.1		0.0		5.7

Intersection Summary			
HCM 6th Ctrl Delay			14.9
HCM 6th LOS			B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	380	141	25	351	92	253	324	18	18	625	173
Future Volume (veh/h)	0	380	141	25	351	92	253	324	18	18	625	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.98	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1856	1856	1737	1737	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	422	157	28	390	102	281	360	20	20	694	192
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	3	3	11	11	2	2	2	2	2	2	2
Cap, veh/h	0	715	263	183	376	98	399	1015	56	469	1094	302
Arrive On Green	0.00	0.28	0.28	0.57	0.57	0.57	0.11	0.58	0.58	0.40	0.40	0.40
Sat Flow, veh/h	0	2608	926	774	1322	346	1781	1753	97	988	2750	760
Grp Volume(v), veh/h	0	294	285	28	0	492	281	0	380	20	448	438
Grp Sat Flow(s),veh/h/ln	0	1763	1678	774	0	1668	1781	0	1851	988	1777	1733
Q Serve(g_s), s	0.0	13.6	13.9	2.7	0.0	27.0	8.3	0.0	10.3	1.2	19.3	19.3
Cycle Q Clear(g_c), s	0.0	13.6	13.9	16.6	0.0	27.0	8.3	0.0	10.3	1.2	19.3	19.3
Prop In Lane	0.00		0.55	1.00		0.21	1.00		0.05	1.00		0.44
Lane Grp Cap(c), veh/h	0	501	477	183	0	474	399	0	1071	469	707	689
V/C Ratio(X)	0.00	0.59	0.60	0.15	0.00	1.04	0.70	0.00	0.35	0.04	0.63	0.63
Avail Cap(c_a), veh/h	0	510	486	183	0	474	488	0	1071	469	707	689
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.75	0.00	0.75	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	29.2	29.3	23.7	0.0	20.5	16.7	0.0	10.6	17.6	23.0	23.1
Incr Delay (d2), s/veh	0.0	1.7	1.9	0.3	0.0	45.9	3.5	0.0	0.9	0.2	4.3	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.9	5.7	0.4	0.0	12.2	3.5	0.0	4.2	0.3	8.7	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	30.9	31.2	24.0	0.0	66.4	20.2	0.0	11.5	17.8	27.4	27.5
LnGrp LOS	A	C	C	C	A	F	C	A	B	B	C	C
Approach Vol, veh/h		579			520			661			906	
Approach Delay, s/veh		31.1			64.1			15.2			27.2	
Approach LOS		C			E			B			C	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		61.5		33.5	17.2	44.3		33.5
Change Period (Y+Rc), s		6.5		* 6.5	6.5	6.5		6.5
Max Green Setting (Gmax), s		55.0		* 28	15.5	33.0		27.0
Max Q Clear Time (g_c+I1), s		12.3		15.9	10.3	21.3		29.0
Green Ext Time (p_c), s		2.6		2.8	0.4	4.6		0.0

Intersection Summary			
HCM 6th Ctrl Delay			32.3
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	118	11	18	235	110	79	1218	14	23	510	29
Future Volume (veh/h)	281	118	11	18	235	110	79	1218	14	23	510	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	312	131	12	20	261	122	88	1353	16	26	567	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	3	3	3
Cap, veh/h	253	579	53	57	402	179	1341	5448	64	109	2327	129
Arrive On Green	0.12	0.58	0.58	0.18	0.18	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	3428	1673	153	89	2247	999	816	3596	43	46	1536	85
Grp Volume(v), veh/h	312	0	143	219	0	184	88	668	701	625	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	1826	1824	0	1510	816	1777	1862	1668	0	0
Q Serve(g_s), s	7.0	0.0	3.6	2.7	0.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	3.6	10.5	0.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		0.08	0.09		0.66	1.00		0.02	0.04		0.05
Lane Grp Cap(c), veh/h	253	0	633	368	0	270	1341	2692	2821	2566	0	0
V/C Ratio(X)	1.24	0.00	0.23	0.59	0.00	0.68	0.07	0.25	0.25	0.24	0.00	0.00
Avail Cap(c_a), veh/h	253	0	633	368	0	270	1341	2692	2821	2566	0	0
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.00	0.81	1.00	0.00	1.00	0.72	0.72	0.72	0.83	0.00	0.00
Uniform Delay (d), s/veh	41.7	0.0	13.9	36.3	0.0	36.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	130.4	0.0	0.7	6.9	0.0	13.1	0.1	0.2	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	1.5	5.4	0.0	4.9	0.0	0.1	0.1	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	172.0	0.0	14.5	43.2	0.0	49.6	0.1	0.2	0.2	0.2	0.0	0.0
LnGrp LOS	F	A	B	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		455			403			1457			625	
Approach Delay, s/veh		122.5			46.1			0.2			0.2	
Approach LOS		F			D			A			A	

Timer - Assigned Phs		2	3	4		6		8				
Phs Duration (G+Y+Rc), s		153.9	15.9	25.9		153.9		41.8				
Change Period (Y+Rc), s		7.1	* 8.9	* 8.9		7.1		* 8.9				
Max Green Setting (Gmax), s		49.0	* 7	* 17		49.0		* 30				
Max Q Clear Time (g_c+I1), s		2.0	9.0	12.9		2.0		5.6				
Green Ext Time (p_c), s		6.0	0.0	0.9		15.9		0.7				

Intersection Summary			
HCM 6th Ctrl Delay			25.4
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	109	5	31	75	124	53	1179	22	56	502	2
Future Volume (veh/h)	5	109	5	31	75	124	53	1179	22	56	502	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.91	0.94		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1841	1841	1841	1870	1870	1870
Adj Flow Rate, veh/h	6	121	6	34	83	138	59	1310	24	62	558	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	45	322	15	69	110	160	96	1990	37	88	763	3
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.46	0.46	0.46	1.00	1.00	1.00
Sat Flow, veh/h	29	1729	83	137	589	857	80	2895	53	68	1110	4
Grp Volume(v), veh/h	133	0	0	255	0	0	643	0	750	622	0	0
Grp Sat Flow(s),veh/h/ln	1841	0	0	1584	0	0	1364	0	1665	1182	0	0
Q Serve(g_s), s	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	33.1	29.7	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0	14.8	0.0	0.0	28.9	0.0	33.1	62.7	0.0	0.0
Prop In Lane	0.05		0.05	0.13		0.54	0.09		0.03	0.10		0.00
Lane Grp Cap(c), veh/h	383	0	0	338	0	0	978	0	1144	854	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.75	0.00	0.00	0.66	0.00	0.66	0.73	0.00	0.00
Avail Cap(c_a), veh/h	445	0	0	392	0	0	978	0	1144	854	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.93	0.00	0.93	0.44	0.00	0.00
Uniform Delay (d), s/veh	33.9	0.0	0.0	37.3	0.0	0.0	14.7	0.0	16.9	5.4	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	6.9	0.0	0.0	3.2	0.0	2.7	2.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	6.3	0.0	0.0	11.7	0.0	14.3	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	0.0	0.0	44.3	0.0	0.0	17.9	0.0	19.7	7.8	0.0	0.0
LnGrp LOS	C	A	A	D	A	A	B	A	B	A	A	A
Approach Vol, veh/h		133			255			1393			622	
Approach Delay, s/veh		34.4			44.3			18.9			7.8	
Approach LOS		C			D			B			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		71.3		23.7		71.3		23.7
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		62.0		21.0		62.0		21.0
Max Q Clear Time (g_c+I1), s		35.1		8.0		64.7		16.8
Green Ext Time (p_c), s		12.7		0.5		0.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	66	29	24	54	137	12	193	31	159	435	57
Future Volume (veh/h)	166	66	29	24	54	137	12	193	31	159	435	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	0.99		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	73	32	27	60	152	13	214	34	177	483	63
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	92	37	74	143	306	65	910	140	484	1273	166
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	711	321	129	112	503	1074	42	1505	232	706	2106	275
Grp Volume(v), veh/h	289	0	0	239	0	0	261	0	0	345	0	378
Grp Sat Flow(s),veh/h/ln	1161	0	0	1689	0	0	1779	0	0	1439	0	1647
Q Serve(g_s), s	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	11.2
Cycle Q Clear(g_c), s	23.2	0.0	0.0	11.5	0.0	0.0	6.3	0.0	0.0	10.2	0.0	11.2
Prop In Lane	0.64		0.11	0.11		0.64	0.05		0.13	0.51		0.17
Lane Grp Cap(c), veh/h	393	0	0	523	0	0	1115	0	0	928	0	996
V/C Ratio(X)	0.74	0.00	0.00	0.46	0.00	0.00	0.23	0.00	0.00	0.37	0.00	0.38
Avail Cap(c_a), veh/h	608	0	0	779	0	0	1115	0	0	928	0	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.09	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	0.0	28.4	0.0	0.0	8.7	0.0	0.0	9.3	0.0	9.6
Incr Delay (d2), s/veh	2.7	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	1.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.0	4.5	0.0	0.0	2.5	0.0	0.0	3.6	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	0.0	0.0	28.5	0.0	0.0	9.2	0.0	0.0	10.4	0.0	10.7
LnGrp LOS	D	A	A	C	A	A	A	A	A	B	A	B
Approach Vol, veh/h		289			239			261			723	
Approach Delay, s/veh		36.1			28.5			9.2			10.6	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.4		32.6		62.4		32.6				
Change Period (Y+Rc), s		5.0		5.5		5.0		5.5				
Max Green Setting (Gmax), s		42.0		42.5		42.0		42.5				
Max Q Clear Time (g_c+I1), s		8.3		25.2		13.2		13.5				
Green Ext Time (p_c), s		1.7		1.8		5.3		1.7				
Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	97	33	73	56	229	29	590	79	254	209	69
Future Volume (veh/h)	40	97	33	73	56	229	29	590	79	254	209	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.97		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1870	1811	1870	1870	1870	1811	1811	1870	1870	1870	1870
Adj Flow Rate, veh/h	44	108	37	81	62	254	32	656	88	282	232	77
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	6	2	6	2	2	2	6	6	2	2	2	2
Cap, veh/h	92	198	59	102	62	210	99	1897	251	381	284	91
Arrive On Green	0.07	0.07	0.07	0.21	0.21	0.21	1.00	1.00	1.00	0.88	0.88	0.88
Sat Flow, veh/h	214	941	281	267	295	997	88	2861	378	490	429	138
Grp Volume(v), veh/h	189	0	0	397	0	0	408	0	368	591	0	0
Grp Sat Flow(s),veh/h/ln	1436	0	0	1559	0	0	1747	0	1580	1056	0	0
Q Serve(g_s), s	0.0	0.0	0.0	8.7	0.0	0.0	0.0	0.0	0.0	21.6	0.0	0.0
Cycle Q Clear(g_c), s	11.3	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	22.6	0.0	0.0
Prop In Lane	0.23		0.20	0.20		0.64	0.08		0.24	0.48		0.13
Lane Grp Cap(c), veh/h	349	0	0	374	0	0	1199	0	1048	756	0	0
V/C Ratio(X)	0.54	0.00	0.00	1.06	0.00	0.00	0.34	0.00	0.35	0.78	0.00	0.00
Avail Cap(c_a), veh/h	349	0	0	374	0	0	1199	0	1048	756	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	0.35	0.00	0.00	1.00	0.00	0.00	0.91	0.00	0.91	0.73	0.00	0.00
Uniform Delay (d), s/veh	39.7	0.0	0.0	38.6	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	63.9	0.0	0.0	0.7	0.0	0.8	5.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	0.0	15.5	0.0	0.0	0.2	0.0	0.2	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	0.0	0.0	102.5	0.0	0.0	0.7	0.0	0.8	8.9	0.0	0.0
LnGrp LOS	D	A	A	F	A	A	A	A	A	A	A	A
Approach Vol, veh/h		189			397			776			591	
Approach Delay, s/veh		40.3			102.5			0.8			8.9	
Approach LOS		D			F			A			A	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		69.0		26.0		69.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s		63.0		20.0		63.0		20.0
Max Q Clear Time (g_c+I1), s		2.0		13.3		24.6		22.0
Green Ext Time (p_c), s		6.4		0.6		7.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑			↰↑↱			↰↑↱	
Traffic Volume (veh/h)	106	33	31	12	46	25	18	620	16	17	456	96
Future Volume (veh/h)	106	33	31	12	46	25	18	620	16	17	456	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.93	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1811	1811	1781	1781	1870	1826	1870	1826	1870	1870	1870
Adj Flow Rate, veh/h	118	37	34	13	51	28	20	689	18	19	507	107
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	6	6	8	8	2	5	2	5	2	2	2
Cap, veh/h	223	70	235	201	124	68	69	1531	39	69	1265	261
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1328	416	1402	1697	1048	576	40	3375	87	41	2789	576
Grp Volume(v), veh/h	155	0	34	13	0	79	378	0	349	336	0	297
Grp Sat Flow(s),veh/h/ln	1745	0	1402	1697	0	1624	1818	0	1684	1807	0	1598
Q Serve(g_s), s	6.1	0.0	1.6	0.5	0.0	3.4	0.0	0.0	10.7	0.0	0.0	9.4
Cycle Q Clear(g_c), s	6.1	0.0	1.6	0.5	0.0	3.4	10.4	0.0	10.7	9.0	0.0	9.4
Prop In Lane	0.76		1.00	1.00		0.35	0.05		0.05	0.06		0.36
Lane Grp Cap(c), veh/h	293	0	235	201	0	192	875	0	764	870	0	725
V/C Ratio(X)	0.53	0.00	0.14	0.06	0.00	0.41	0.43	0.00	0.46	0.39	0.00	0.41
Avail Cap(c_a), veh/h	617	0	496	453	0	433	875	0	764	870	0	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	26.6	29.4	0.0	30.6	14.0	0.0	14.1	13.6	0.0	13.7
Incr Delay (d2), s/veh	1.5	0.0	0.3	0.1	0.0	1.4	1.6	0.0	2.0	1.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.5	0.2	0.0	1.4	4.4	0.0	4.1	3.8	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	0.0	26.9	29.5	0.0	32.0	15.6	0.0	16.1	14.9	0.0	15.5
LnGrp LOS	C	A	C	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h		189			92			727			633	
Approach Delay, s/veh		29.4			31.7			15.8			15.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		40.5		19.1		40.5		15.4
Change Period (Y+Rc), s		6.5		6.5		6.5		6.5
Max Green Setting (Gmax), s		34.0		26.5		34.0		20.0
Max Q Clear Time (g_c+I1), s		12.7		8.1		11.4		5.4
Green Ext Time (p_c), s		4.7		0.9		4.2		0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	33	41	272	227	29
Future Vol, veh/h	39	33	41	272	227	29
Conflicting Peds, #/hr	0	18	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	3	14	14	3	3
Mvmt Flow	43	37	46	302	252	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	665	289	287	0	-	0
Stage 1	271	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.24	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.326	-	-	-
Pot Cap-1 Maneuver	424	748	1209	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	402	733	1206	-	-	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1206	-	507	-	-
HCM Lane V/C Ratio	0.038	-	0.158	-	-
HCM Control Delay (s)	8.1	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	66	17	13	230	235	13
Future Vol, veh/h	66	17	13	230	235	13
Conflicting Peds, #/hr	0	33	33	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	10	10	2	2
Mvmt Flow	73	19	14	256	261	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	585	334	308	0	-	0
Stage 1	301	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	473	708	1209	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	438	664	1171	-	-	-
Mov Cap-2 Maneuver	438	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1171	-	471	-	-
HCM Lane V/C Ratio	0.012	-	0.196	-	-
HCM Control Delay (s)	8.1	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	88	106	19	47	140	171	572	18	88	219	0
Future Volume (veh/h)	0	88	106	19	47	140	171	572	18	88	219	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	98	118	21	52	156	190	636	20	98	243	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	317	269	55	73	187	515	1656	52	276	662	0
Arrive On Green	0.00	0.17	0.17	0.17	0.17	0.17	0.70	0.70	0.70	1.00	1.00	0.00
Sat Flow, veh/h	0	1870	1585	83	434	1104	651	2351	74	323	940	0
Grp Volume(v), veh/h	0	98	118	229	0	0	388	0	458	341	0	0
Grp Sat Flow(s),veh/h/ln	0	1870	1585	1621	0	0	1387	0	1689	1263	0	0
Q Serve(g_s), s	0.0	4.4	6.3	6.0	0.0	0.0	0.0	0.0	10.4	3.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.4	6.3	12.9	0.0	0.0	12.5	0.0	10.4	13.6	0.0	0.0
Prop In Lane	0.00		1.00	0.09		0.68	0.49		0.04	0.29		0.00
Lane Grp Cap(c), veh/h	0	317	269	316	0	0	1033	0	1189	938	0	0
V/C Ratio(X)	0.00	0.31	0.44	0.72	0.00	0.00	0.38	0.00	0.38	0.36	0.00	0.00
Avail Cap(c_a), veh/h	0	571	484	532	0	0	1033	0	1189	938	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.09	0.00	0.00
Uniform Delay (d), s/veh	0.0	34.6	35.4	38.0	0.0	0.0	5.8	0.0	5.7	0.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	1.1	3.2	0.0	0.0	1.0	0.0	0.9	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	2.5	5.4	0.0	0.0	3.1	0.0	3.5	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	35.1	36.5	41.2	0.0	0.0	6.8	0.0	6.6	0.5	0.0	0.0
LnGrp LOS	A	D	D	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		216			229			846			341	
Approach Delay, s/veh		35.9			41.2			6.7			0.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.9		22.1		72.9		22.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		54.0		29.0		54.0		29.0				
Max Q Clear Time (g_c+I1), s		14.5		8.3		15.6		14.9				
Green Ext Time (p_c), s		7.2		0.9		3.0		1.2				

Intersection Summary			
HCM 6th Ctrl Delay			14.1
HCM 6th LOS			B

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	521	31	35	1929	615	0
Future Volume (vph)	521	31	35	1929	615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	0.95	0.95	0.95	1.00	1.00
Frt	0.992					
Flt Protected	0.955			0.999		
Satd. Flow (prot)	3423	0	0	3536	1863	0
Flt Permitted	0.955			0.929		
Satd. Flow (perm)	3423	0	0	3288	1863	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6					
Link Speed (mph)	30			30	30	
Link Distance (ft)	236			1194	177	
Travel Time (s)	5.4			27.1	4.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	579	34	39	2143	683	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	613	0	0	2182	683	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1		1	2	2	
Detector Template	Left		Left	Thru	Thru	
Leading Detector (ft)	20		20	100	100	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	20		20	6	6	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	24.0		24.0	24.0	24.0	
Total Split (s)	24.0		71.0	71.0	71.0	
Total Split (%)	25.3%		74.7%	74.7%	74.7%	
Maximum Green (s)	18.0		65.0	65.0	65.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	6.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		C-Max	C-Max	C-Max	
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0			65.0	65.0	
Actuated g/C Ratio	0.19			0.68	0.68	
v/c Ratio	0.94			0.97	0.54	
Control Delay	64.3			21.6	9.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	64.3			21.6	9.4	
LOS	E			C	A	
Approach Delay	64.3			21.6	9.4	
Approach LOS	E			C	A	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 52 (55%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 104.0% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: Washington Street & E Bay Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	380	141	25	351	92	253	324	18	18	625	173
Future Volume (vph)	0	380	141	25	351	92	253	324	18	18	625	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		100	150		100
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99		0.99				1.00				
Frt		0.959			0.969			0.992			0.967	
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	0	3337	0	1626	1687	0	1770	1841	0	1770	3422	0
Flt Permitted				0.309			0.161			0.536		
Satd. Flow (perm)	0	3337	0	526	1687	0	300	1841	0	998	3422	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			14			5			41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		422			293			942			779	
Travel Time (s)		9.6			6.7			21.4			17.7	
Confl. Peds. (#/hr)			9	9					34			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	3%	3%	11%	11%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	422	157	28	390	102	281	360	20	20	694	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	579	0	28	492	0	281	380	0	20	886	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)		100		20	100		20	100		20	100	
Trailing Detector (ft)		0		0	0		0	0		0	0	
Detector 1 Position(ft)		0		0	0		0	0		0	0	
Detector 1 Size(ft)		6		20	6		20	6		20	6	
Detector 1 Type		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type		NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases				8			2			6		
Detector Phase		4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)		8.0		20.0	20.0		6.0	6.0		20.0	20.0	
Minimum Split (s)		24.0		33.5	33.5		12.5	23.5		34.5	34.5	
Total Split (s)		33.5		33.5	33.5		22.0	61.5		39.5	39.5	
Total Split (%)		35.3%		35.3%	35.3%		23.2%	64.7%		41.6%	41.6%	
Maximum Green (s)		27.5		27.0	27.0		15.5	55.0		33.0	33.0	
Yellow Time (s)		3.0		3.0	3.0		3.5	3.5		3.5	3.5	
All-Red Time (s)		3.0		3.5	3.5		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.0		6.5	6.5		6.5	6.5		6.5	6.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode		None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)		7.0		9.0	9.0			9.0		8.0	8.0	
Flash Dont Walk (s)		11.0		18.0	18.0			8.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)		27.5		27.0	27.0		55.0	55.0		35.4	35.4	
Actuated g/C Ratio		0.29		0.28	0.28		0.58	0.58		0.37	0.37	
v/c Ratio		0.58		0.19	1.01		0.75	0.36		0.05	0.68	
Control Delay		28.5		18.0	61.8		26.3	11.6		21.4	27.7	
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		28.5		18.0	61.8		26.3	11.6		21.4	27.7	
LOS		C		B	E		C	B		C	C	
Approach Delay		28.5			59.4			17.8			27.5	
Approach LOS		C			E			B			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 8 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

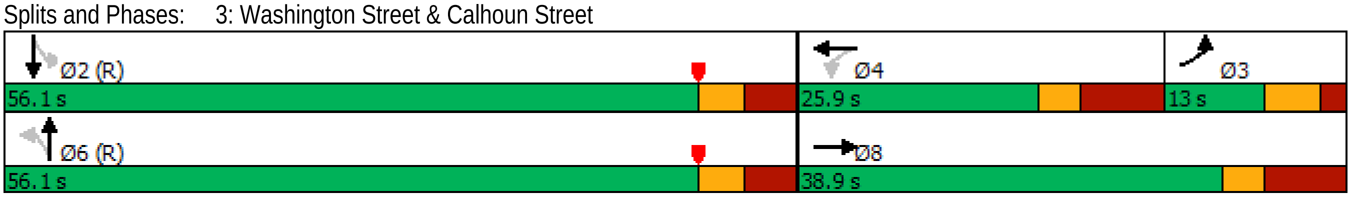
Splits and Phases: 2: E Bay Street & Calhoun Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	281	118	11	18	235	110	79	1218	14	23	510	29
Future Volume (vph)	281	118	11	18	235	110	79	1218	14	23	510	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	0		0
Storage Lanes	2		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00		0.98	1.00			1.00	
Frt		0.987			0.955			0.998			0.993	
Flt Protected	0.950				0.998		0.950				0.998	
Satd. Flow (prot)	3400	1815	0	0	3373	0	1770	3530	0	0	1819	0
Flt Permitted	0.950				0.927		0.366				0.796	
Satd. Flow (perm)	3400	1815	0	0	3131	0	665	3530	0	0	1451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			26			2			4	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		293			586			952			1194	
Travel Time (s)		6.7			13.3			26.0			32.6	
Confl. Peds. (#/hr)			6	6			61		24	24		61
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	312	131	12	20	261	122	88	1353	16	26	567	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	312	143	0	0	403	0	88	1369	0	0	625	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	8			4			6			2	
Permitted Phases				4			6			2		
Detector Phase	3	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	25.9		25.9	25.9		28.1	28.1		28.1	28.1	
Total Split (s)	13.0	38.9		25.9	25.9		56.1	56.1		56.1	56.1	
Total Split (%)	13.7%	40.9%		27.3%	27.3%		59.1%	59.1%		59.1%	59.1%	
Maximum Green (s)	7.0	30.0		17.0	17.0		49.0	49.0		49.0	49.0	
Yellow Time (s)	4.0	3.0		3.0	3.0		3.3	3.3		3.3	3.3	
All-Red Time (s)	2.0	5.9		5.9	5.9		3.8	3.8		3.8	3.8	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	
Total Lost Time (s)	6.0	8.9			8.9		7.1	7.1			7.1	
Lead/Lag	Lag			Lead	Lead							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	7.0	30.0			17.0		49.0	49.0			49.0	
Actuated g/C Ratio	0.07	0.32			0.18		0.52	0.52			0.52	
v/c Ratio	1.25	0.25			0.69		0.26	0.75			0.83	
Control Delay	163.6	5.2			41.2		19.0	23.7			26.8	
Queue Delay	0.0	0.0			1.3		0.0	0.0			0.0	
Total Delay	163.6	5.2			42.5		19.0	23.7			26.8	
LOS	F	A			D		B	C			C	
Approach Delay		113.8			42.5			23.5			26.8	
Approach LOS		F			D			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 12 (13%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay: 40.8	Intersection LOS: D
Intersection Capacity Utilization 93.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Washington Street & Calhoun Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	109	5	31	75	124	53	1179	22	56	502	2
Future Volume (vph)	5	109	5	31	75	124	53	1179	22	56	502	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99			1.00			1.00	
Frt		0.994			0.927			0.997				
Flt Protected		0.998			0.993			0.998			0.995	
Satd. Flow (prot)	0	1839	0	0	1715	0	0	3451	0	0	1853	0
Flt Permitted		0.975			0.934			0.893			0.747	
Satd. Flow (perm)	0	1797	0	0	1599	0	0	3088	0	0	1391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			57			4				
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		277			488			976			952	
Travel Time (s)		6.3			11.1			26.6			26.0	
Confl. Peds. (#/hr)			32	32			3		11	11		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Adj. Flow (vph)	6	121	6	34	83	138	59	1310	24	62	558	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	255	0	0	1393	0	0	622	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	27.0	27.0		27.0	27.0		68.0	68.0		68.0	68.0	
Total Split (%)	28.4%	28.4%		28.4%	28.4%		71.6%	71.6%		71.6%	71.6%	
Maximum Green (s)	21.0	21.0		21.0	21.0		62.0	62.0		62.0	62.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		16.4			16.4			66.6			66.6	
Actuated g/C Ratio		0.17			0.17			0.70			0.70	
v/c Ratio		0.43			0.79			0.64			0.64	
Control Delay		37.6			46.0			8.1			3.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		37.6			46.0			8.1			3.7	
LOS		D			D			A			A	
Approach Delay		37.6			46.0			8.1			3.7	
Approach LOS		D			D			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 72 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 99.4%	ICU Level of Service F
Analysis Period (min) 15	

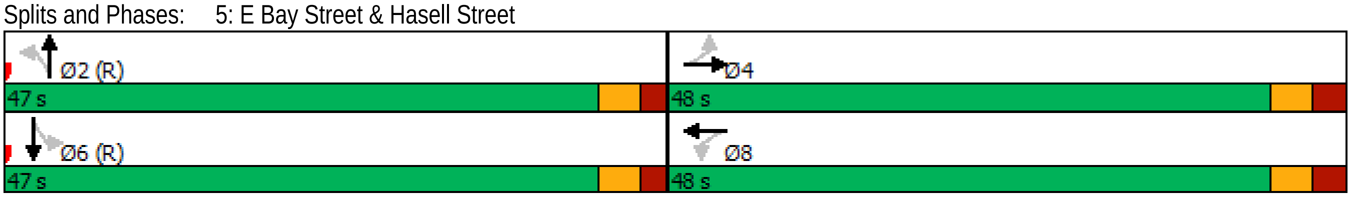
Splits and Phases: 4: Washington Street & Laurens Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	66	29	24	54	137	12	193	31	159	435	57
Future Volume (vph)	166	66	29	24	54	137	12	193	31	159	435	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor		0.98			0.96						0.99	
Frt		0.985			0.914			0.982			0.987	
Flt Protected		0.969			0.994			0.998			0.988	
Satd. Flow (prot)	0	1778	0	0	1631	0	0	1826	0	0	3443	0
Flt Permitted		0.590			0.944			0.960			0.783	
Satd. Flow (perm)	0	1066	0	0	1549	0	0	1756	0	0	2719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			120			10			13	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		362			273			265			933	
Travel Time (s)		9.9			7.4			6.0			21.2	
Confl. Peds. (#/hr)	16					16				20		6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	73	32	27	60	152	13	214	34	177	483	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	289	0	0	239	0	0	261	0	0	723	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	25.5	25.5		25.5	25.5		11.0	11.0		11.0	11.0	
Total Split (s)	48.0	48.0		48.0	48.0		47.0	47.0		47.0	47.0	
Total Split (%)	50.5%	50.5%		50.5%	50.5%		49.5%	49.5%		49.5%	49.5%	
Maximum Green (s)	42.5	42.5		42.5	42.5		42.0	42.0		42.0	42.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.5			5.5			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0							
Flash Dont Walk (s)	13.0	13.0		13.0	13.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)		28.6			28.6			55.9			55.9	
Actuated g/C Ratio		0.30			0.30			0.59			0.59	
v/c Ratio		0.88			0.43			0.25			0.45	
Control Delay		56.9			12.5			13.6			13.4	
Queue Delay		0.0			0.4			0.0			0.0	
Total Delay		56.9			12.9			13.6			13.4	
LOS		E			B			B			B	
Approach Delay		56.9			12.9			13.6			13.4	
Approach LOS		E			B			B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 60 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: E Bay Street & Hasell Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	97	33	73	56	229	29	590	79	254	209	69
Future Volume (vph)	40	97	33	73	56	229	29	590	79	254	209	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		50
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.98										
Frt		0.974			0.914			0.983			0.982	
Flt Protected		0.988			0.990			0.998			0.977	
Satd. Flow (prot)	0	1736	0	0	1686	0	0	3355	0	0	1787	0
Flt Permitted		0.654			0.834			0.912			0.469	
Satd. Flow (perm)	0	1149	0	0	1420	0	0	3066	0	0	858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			85			31			17	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		273			395			349			976	
Travel Time (s)		7.4			10.8			9.5			26.6	
Confl. Peds. (#/hr)			22									
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	2%	6%	2%	2%	2%	6%	6%	2%	2%	2%	2%
Adj. Flow (vph)	44	108	37	81	62	254	32	656	88	282	232	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	189	0	0	397	0	0	776	0	0	591	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.0	24.0		24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	26.0	26.0		26.0	26.0		69.0	69.0		69.0	69.0	
Total Split (%)	27.4%	27.4%		27.4%	27.4%		72.6%	72.6%		72.6%	72.6%	
Maximum Green (s)	20.0	20.0		20.0	20.0		63.0	63.0		63.0	63.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		20.0			20.0			63.0			63.0	
Actuated g/C Ratio		0.21			0.21			0.66			0.66	
v/c Ratio		0.75			1.08			0.38			1.03	
Control Delay		45.1			101.6			5.5			53.7	
Queue Delay		0.1			0.0			0.2			0.0	
Total Delay		45.2			101.6			5.7			53.7	
LOS		D			F			A			D	
Approach Delay		45.2			101.6			5.7			53.7	
Approach LOS		D			F			A			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 43.5	Intersection LOS: D
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

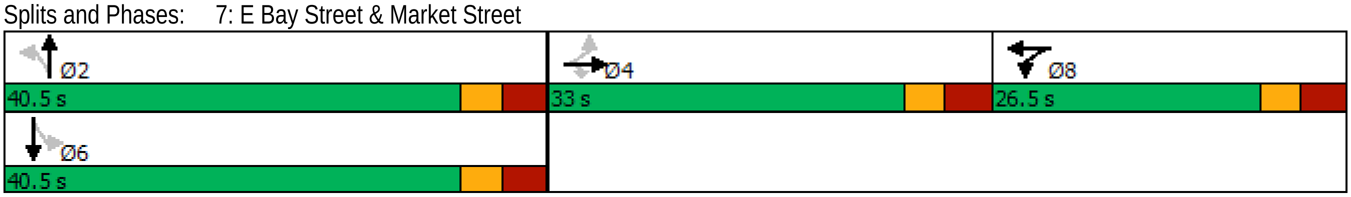
Splits and Phases: 6: Washington Street & Hasell Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	33	31	12	46	25	18	620	16	17	456	96
Future Volume (vph)	106	33	31	12	46	25	18	620	16	17	456	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	50		0	0		50	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor			0.92	0.95				1.00				
Frt			0.850		0.947			0.996			0.975	
Flt Protected		0.963		0.950				0.999			0.999	
Satd. Flow (prot)	0	1777	1524	1671	1699	0	0	3511	0	0	3447	0
Flt Permitted		0.133		0.950				0.926			0.919	
Satd. Flow (perm)	0	245	1399	1586	1699	0	0	3253	0	0	3171	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		25			3			26	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		425			436			386			309	
Travel Time (s)		11.6			11.9			8.8			7.0	
Confl. Peds. (#/hr)			29	29			20		18			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	6%	6%	8%	8%	2%	5%	2%	5%	2%	2%	2%
Adj. Flow (vph)	118	37	34	13	51	28	20	689	18	19	507	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	155	34	13	79	0	0	727	0	0	633	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		30			30			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Split	NA		Perm	NA		Perm	NA	
Protected Phases		4		8	8			2			6	
Permitted Phases	4		4				2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	29.5	29.5	29.5	26.5	26.5		27.5	27.5		39.5	39.5	
Total Split (s)	33.0	33.0	33.0	26.5	26.5		40.5	40.5		40.5	40.5	
Total Split (%)	33.0%	33.0%	33.0%	26.5%	26.5%		40.5%	40.5%		40.5%	40.5%	
Maximum Green (s)	26.5	26.5	26.5	20.0	20.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.5	6.5	6.5	6.5			6.5			6.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	16.0	16.0	16.0	13.0	13.0		14.0	14.0		26.0	26.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		26.5	26.5	8.4	8.4			37.0			37.0	
Actuated g/C Ratio		0.30	0.30	0.09	0.09			0.42			0.42	
v/c Ratio		2.15	0.07	0.08	0.43			0.54			0.47	
Control Delay		578.4	0.3	37.0	34.7			22.5			20.8	
Queue Delay		0.0	0.0	0.0	0.0			0.3			0.0	
Total Delay		578.4	0.3	37.0	34.7			22.9			20.8	
LOS		F	A	D	C			C			C	
Approach Delay		474.4			35.1			22.9			20.8	
Approach LOS		F			D			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 89	
Natural Cycle: 100	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 2.15	
Intersection Signal Delay: 74.7	Intersection LOS: E
Intersection Capacity Utilization 58.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: E Bay Street & Market Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	33	41	272	227	29
Future Volume (vph)	39	33	41	272	227	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.938				0.985	
Flt Protected	0.974			0.993		
Satd. Flow (prot)	1685	0	0	1655	1817	0
Flt Permitted	0.974			0.993		
Satd. Flow (perm)	1685	0	0	1655	1817	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	436			369	676	
Travel Time (s)	11.9			10.1	18.4	
Confl. Peds. (#/hr)		18	3			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	14%	14%	3%	3%
Adj. Flow (vph)	43	37	46	302	252	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	348	284	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	30			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 49.1%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	66	17	13	230	235	13
Future Volume (vph)	66	17	13	230	235	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.972				0.993	
Flt Protected	0.962			0.997		
Satd. Flow (prot)	1742	0	0	1722	1850	0
Flt Permitted	0.962			0.997		
Satd. Flow (perm)	1742	0	0	1722	1850	0
Link Speed (mph)	25			30	25	
Link Distance (ft)	431			200	369	
Travel Time (s)	11.8			4.5	10.1	
Confl. Peds. (#/hr)		33	33			3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	10%	10%	2%	2%
Adj. Flow (vph)	73	19	14	256	261	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	0	270	275	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary		
Area Type: Other		
Control Type: Unsignalized		
Intersection Capacity Utilization 40.0%		ICU Level of Service A
Analysis Period (min) 15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	88	106	19	47	140	171	572	18	88	219	0
Future Volume (vph)	0	88	106	19	47	140	171	572	18	88	219	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850		0.908			0.996				
Flt Protected					0.995			0.989			0.986	
Satd. Flow (prot)	0	1863	1583	0	1683	0	0	3486	0	0	1837	0
Flt Permitted					0.957			0.771			0.646	
Satd. Flow (perm)	0	1863	1583	0	1619	0	0	2718	0	0	1203	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118		117			4				
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		194			427			408			349	
Travel Time (s)		5.3			11.6			11.1			9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	98	118	21	52	156	190	636	20	98	243	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	118	0	229	0	0	846	0	0	341	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type		NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0		24.0	24.0		24.0	24.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		60.0	60.0		60.0	60.0	
Total Split (%)	36.8%	36.8%	36.8%	36.8%	36.8%		63.2%	63.2%		63.2%	63.2%	
Maximum Green (s)	29.0	29.0	29.0	29.0	29.0		54.0	54.0		54.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		6.0	6.0		6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		12.6	12.6		12.6			70.4			70.4	
Actuated g/C Ratio		0.13	0.13		0.13			0.74			0.74	
v/c Ratio		0.40	0.38		0.72			0.42			0.38	
Control Delay		40.8	13.4		31.9			6.0			5.8	
Queue Delay		0.0	0.0		0.0			0.0			1.2	
Total Delay		40.8	13.4		31.9			6.0			7.0	
LOS		D	B		C			A			A	
Approach Delay		25.8			31.9			6.0			7.0	
Approach LOS		C			C			A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 94 (99%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Washington Street & E Bay Street/Pritchard Street