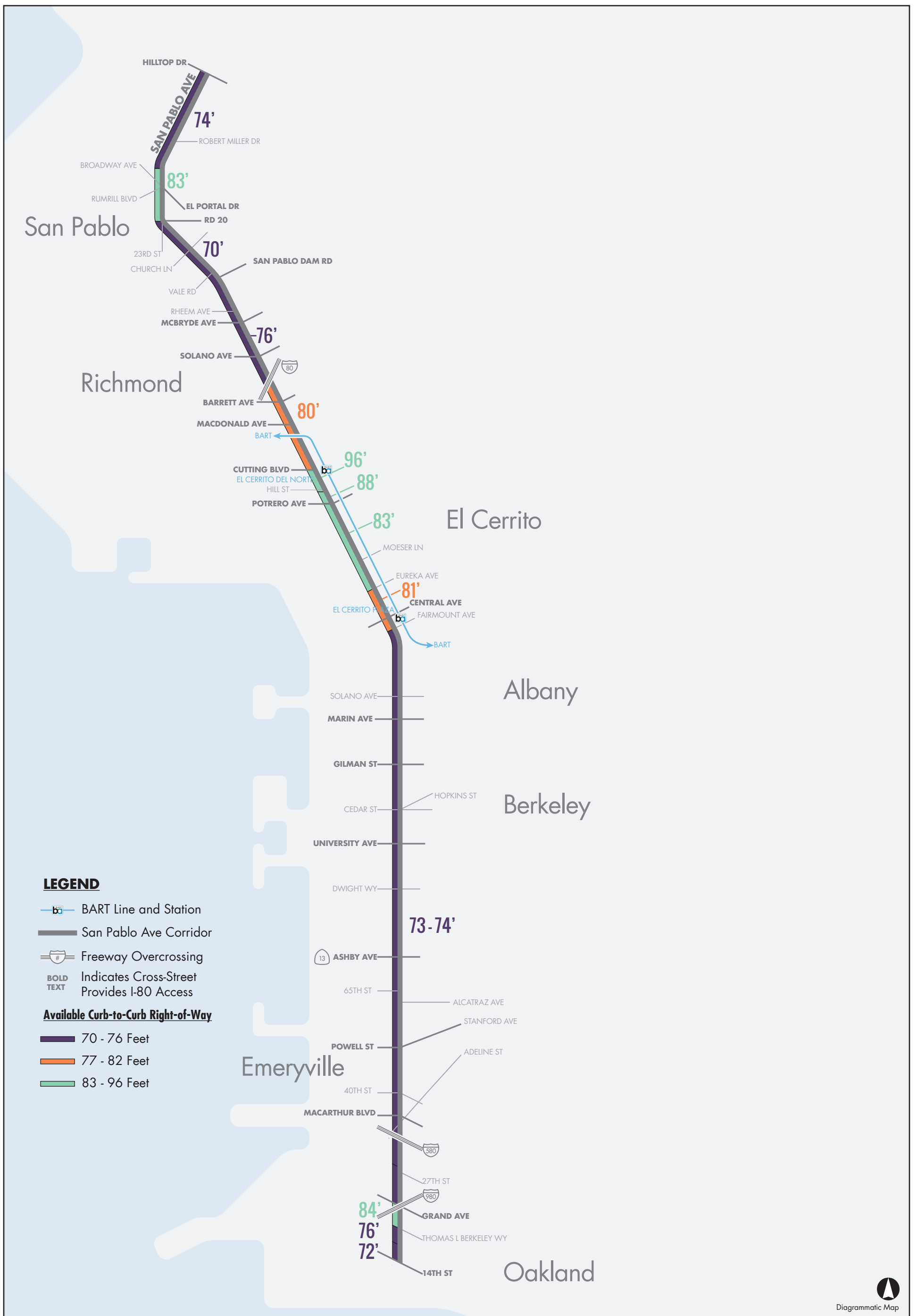
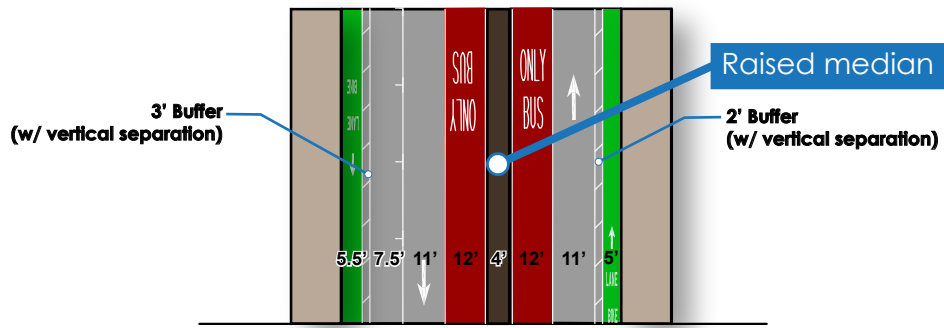




APPENDIX A

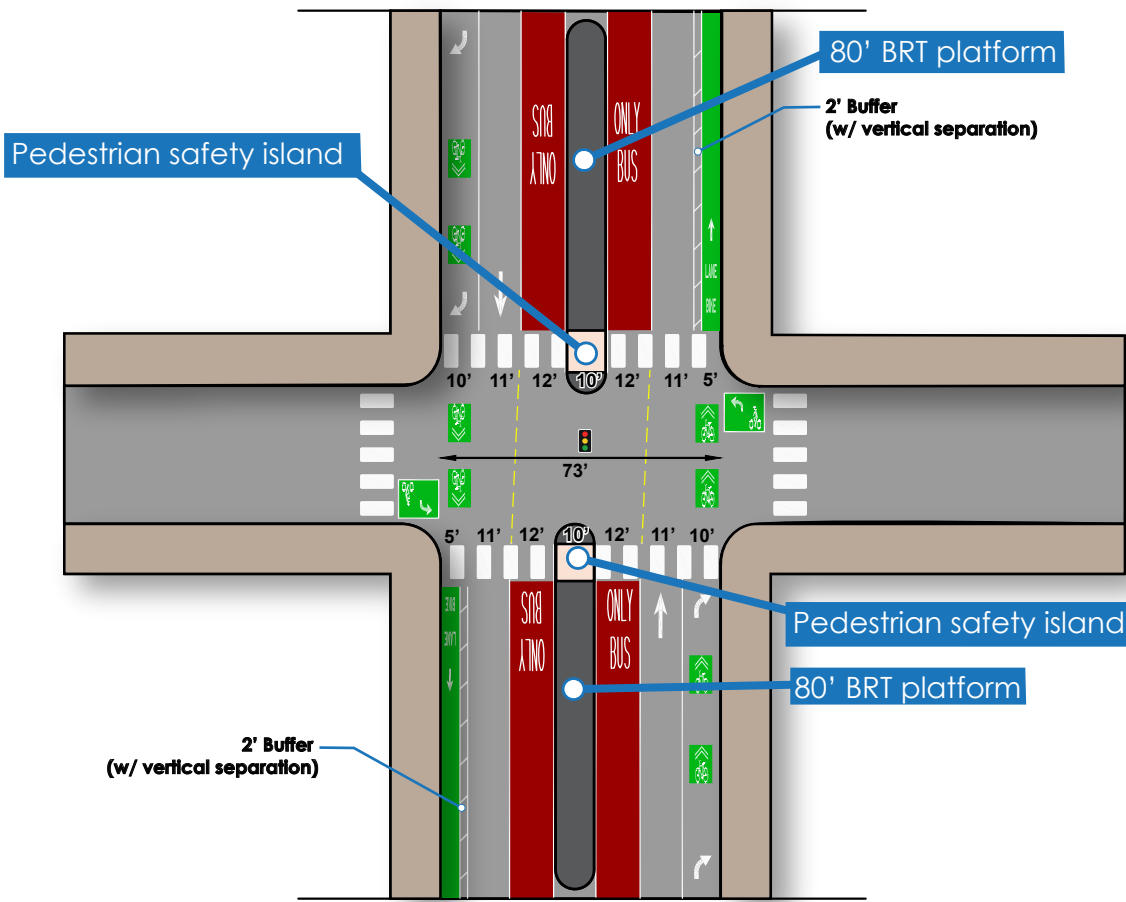
RIGHT-OF-WAY AND CONCEPT PROTOTYPE DRAWINGS





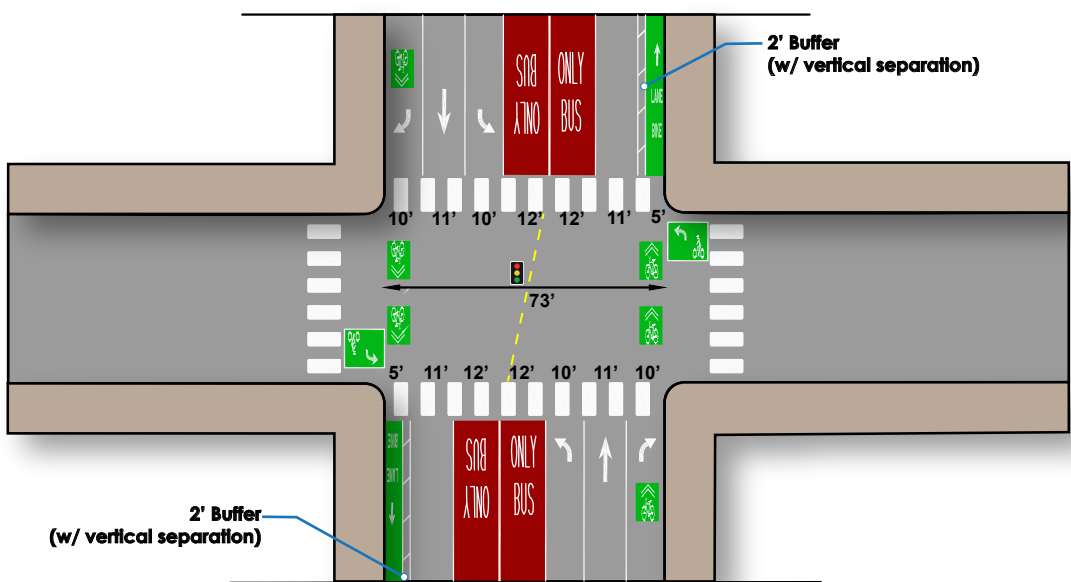
I. MID-BLOCK

- Parking on one side and center median
- Option for parking on both sides with no median where the curb-to-curb width is greater than or equal to 78'



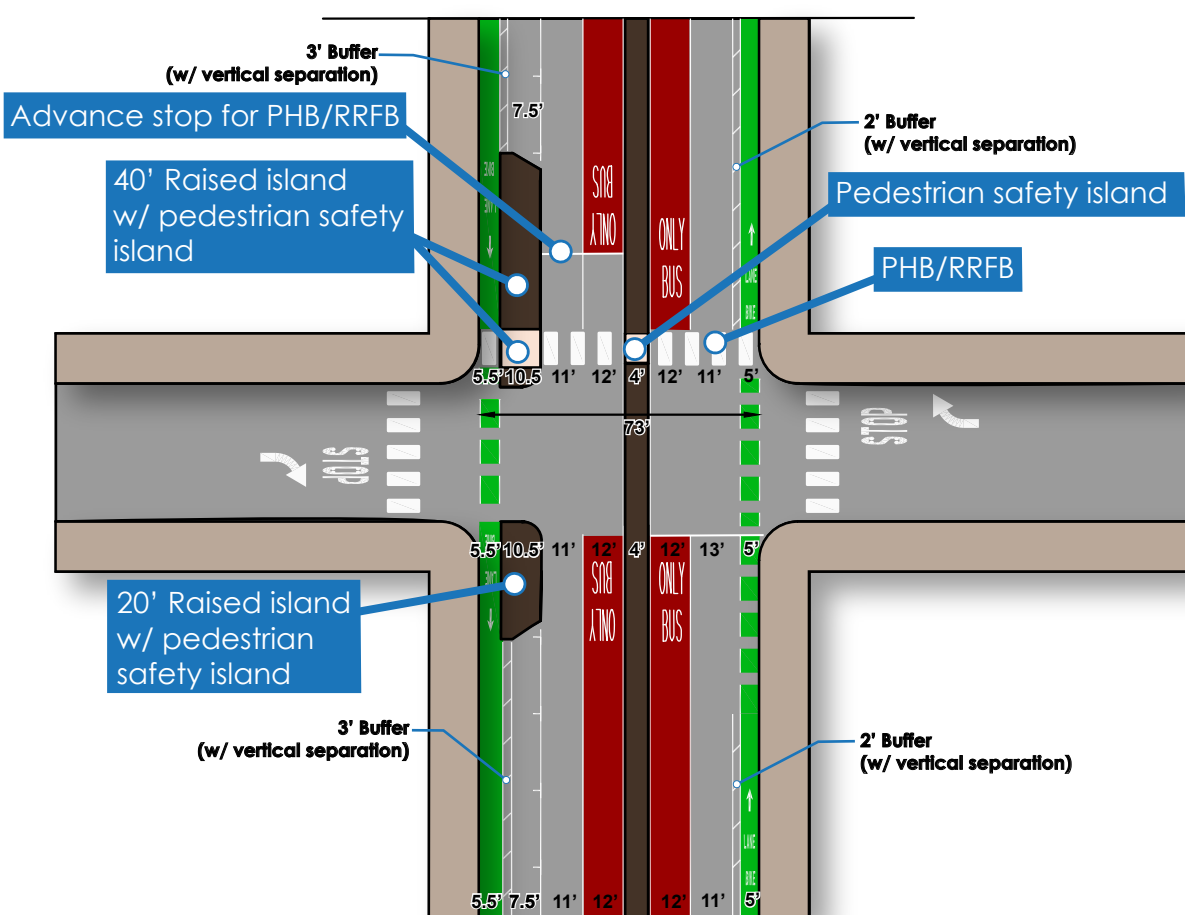
II. SIGNALIZED WITH STATION

- No right turn on red for minor street
- No left turns from San Pablo Ave allowed



III. SIGNALIZED WITHOUT STATION

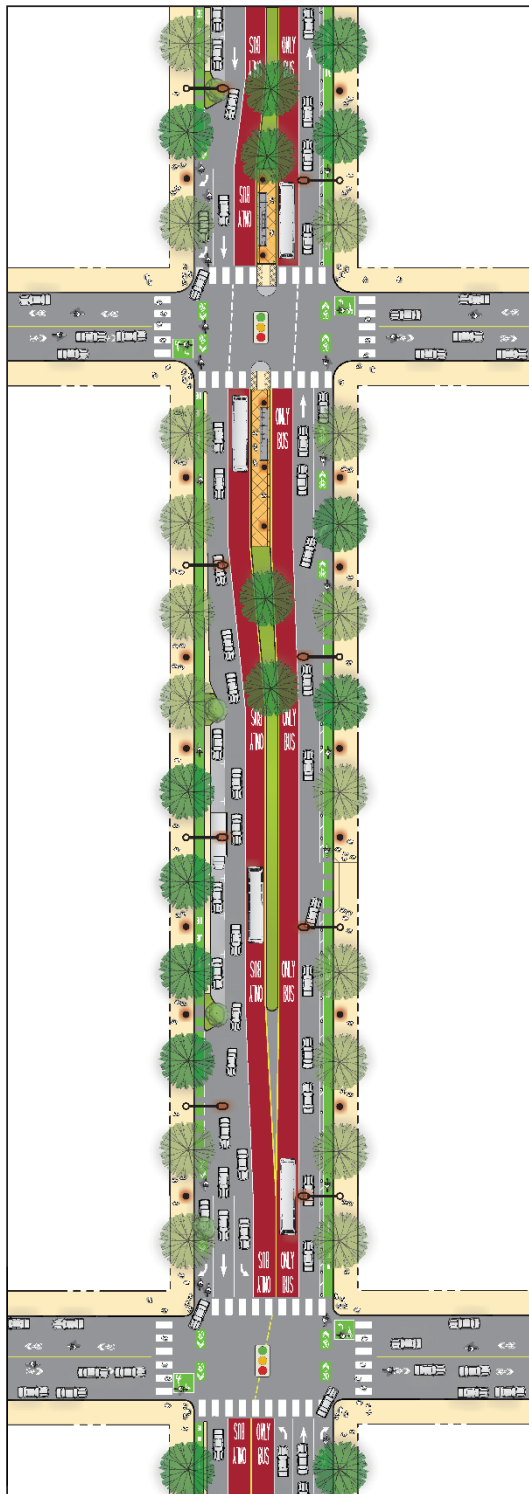
- No right turn on red for minor street



IV. UNSIGNALIZED WITHOUT STATION

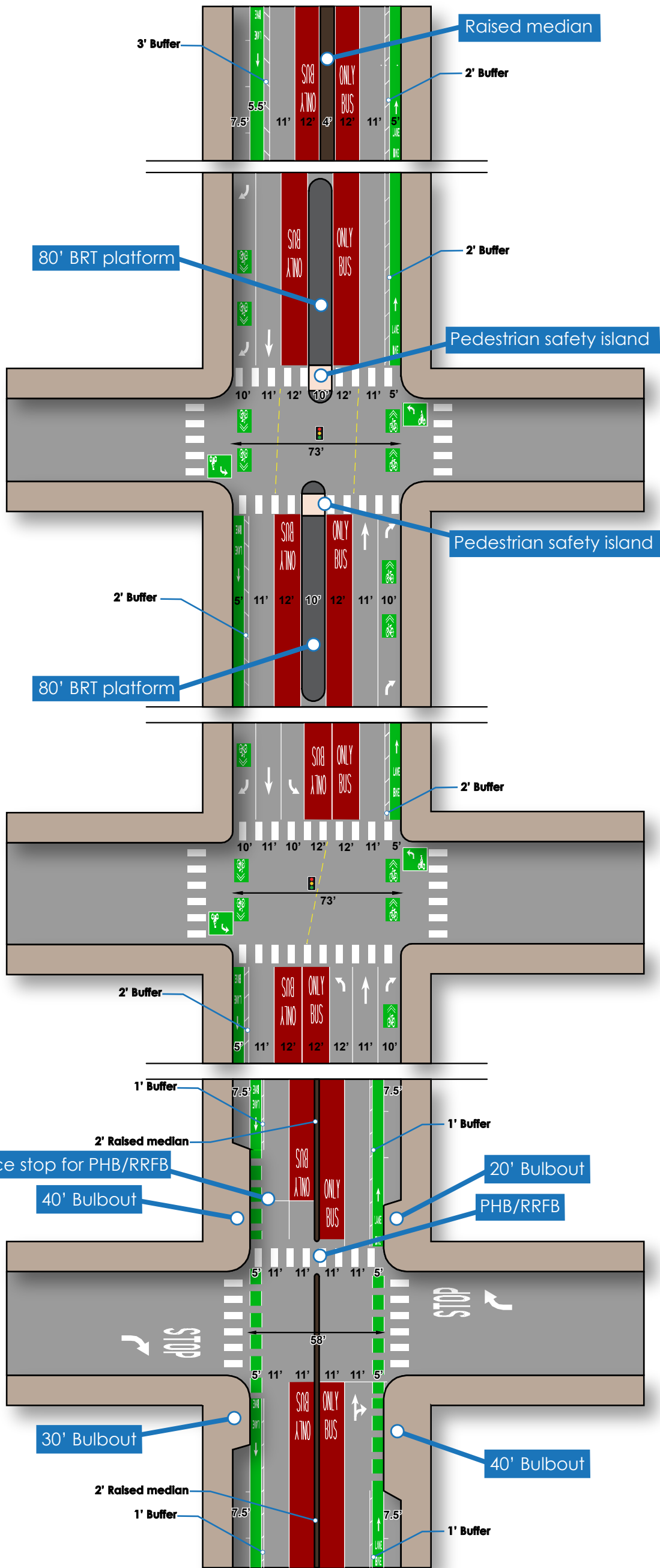
- Left turn prohibition from minor street
- Provision of PHB/RRFB will be at select locations, generally spaced at 500'

Concept A with Center-running Bus Lanes



LEGEND

- PROPERTY LINE
- EXISTING TREE
- NEW TREE
- TRAFFIC SIGNAL
- ROADWAY LIGHT FIXTURE
- PEDESTRIAN-SCALE LIGHT FIXTURE
- LANDSCAPING/ GREEN INFRASTRUCTURE*
- TRANSIT PLATFORM
- SIDEWALK
- *WHERE APPLICABLE



I. MID-BLOCK

- Parking on one side and center median
- Option for parking on both sides with no median where the curb-to-curb width is greater than or equal to 78'

II. SIGNALIZED WITH STATION

- No right turn on red for minor street
- No left turns from San Pablo Ave allowed

III. SIGNALIZED WITHOUT STATION

- No right turn on red for minor street

IV. UNSIGNALIZED WITHOUT STATION

- Left turn prohibition from minor street
- Provision of PHB/RRFB will be at select locations, generally spaced at 500'



I. MID-BLOCK

- Parking on one side and center median
- Option for parking on both sides with no median where the curb-to-curb width is greater than or equal to 76'

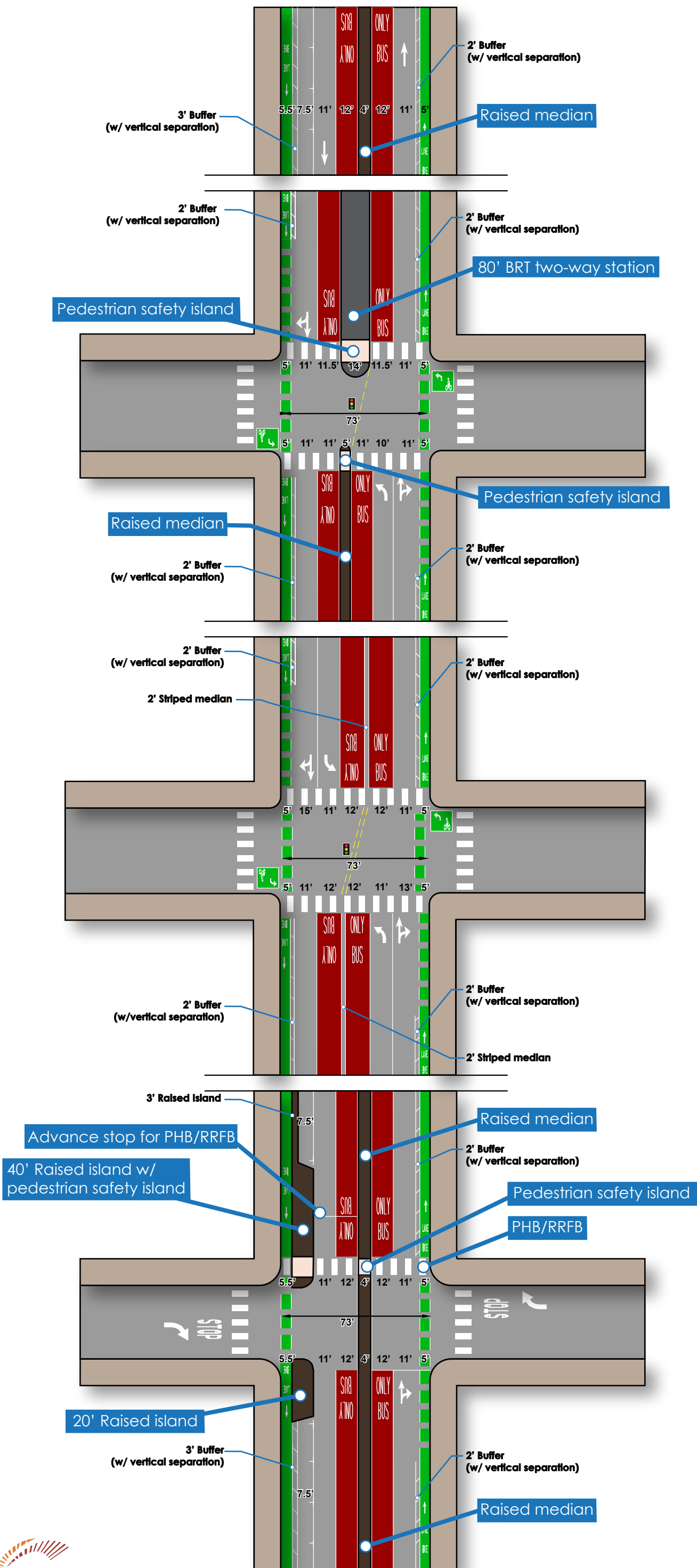
II. SIGNALIZED WITH STATION

- No right turn on red for minor street

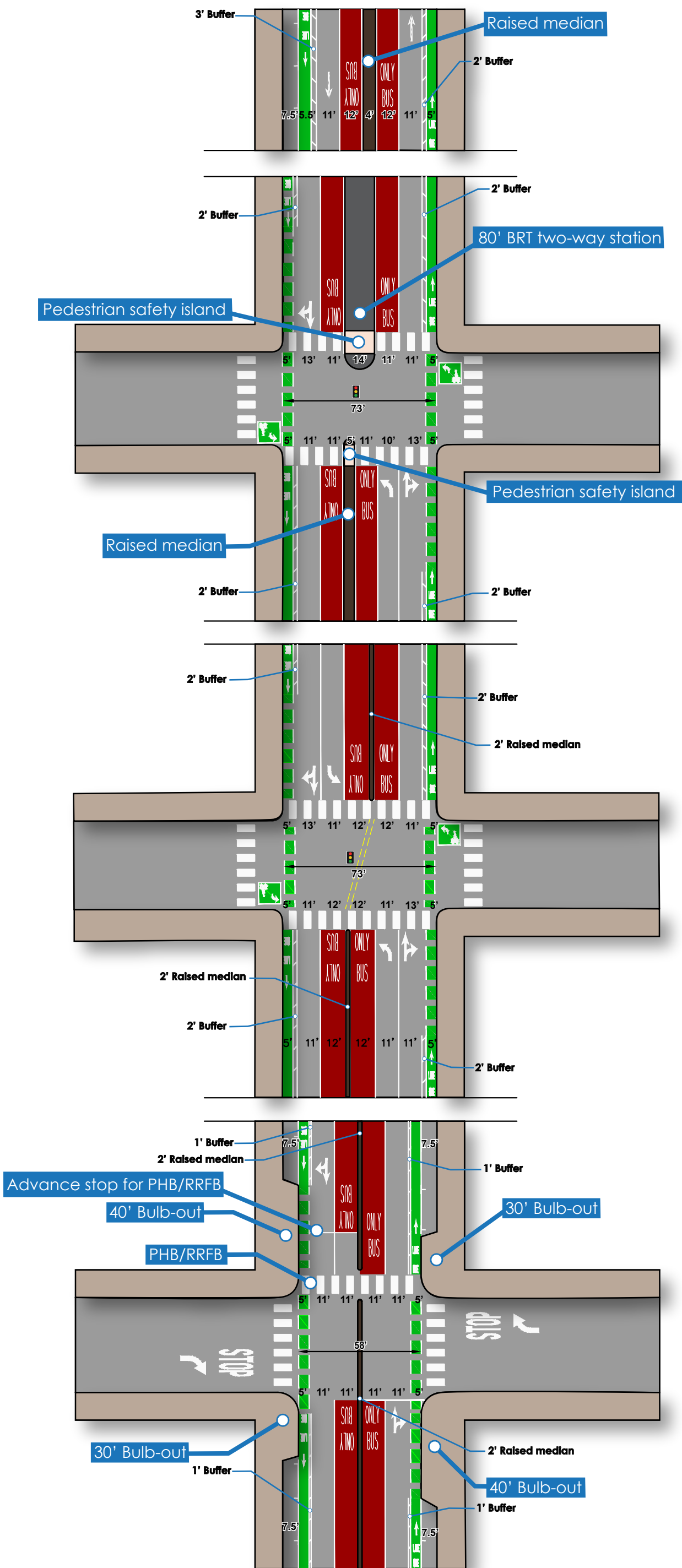
III. SIGNALIZED WITHOUT STATION

IV. UNSIGNALIZED WITHOUT STATION

- Provision of PHB/RRFB will be at select locations, generally spaced at 500'



Concept A - Center-running (Separated Bikeway, Double-sided Platform)



I. MID-BLOCK (OPTION 1)

- Parking on one side and center median
- Option for parking on both sides with no median where the curb-to-curb width is greater than or equal to 76'

II. SIGNALIZED WITH STATION

- No right turn on red for main street

III. SIGNALIZED WITHOUT STATION

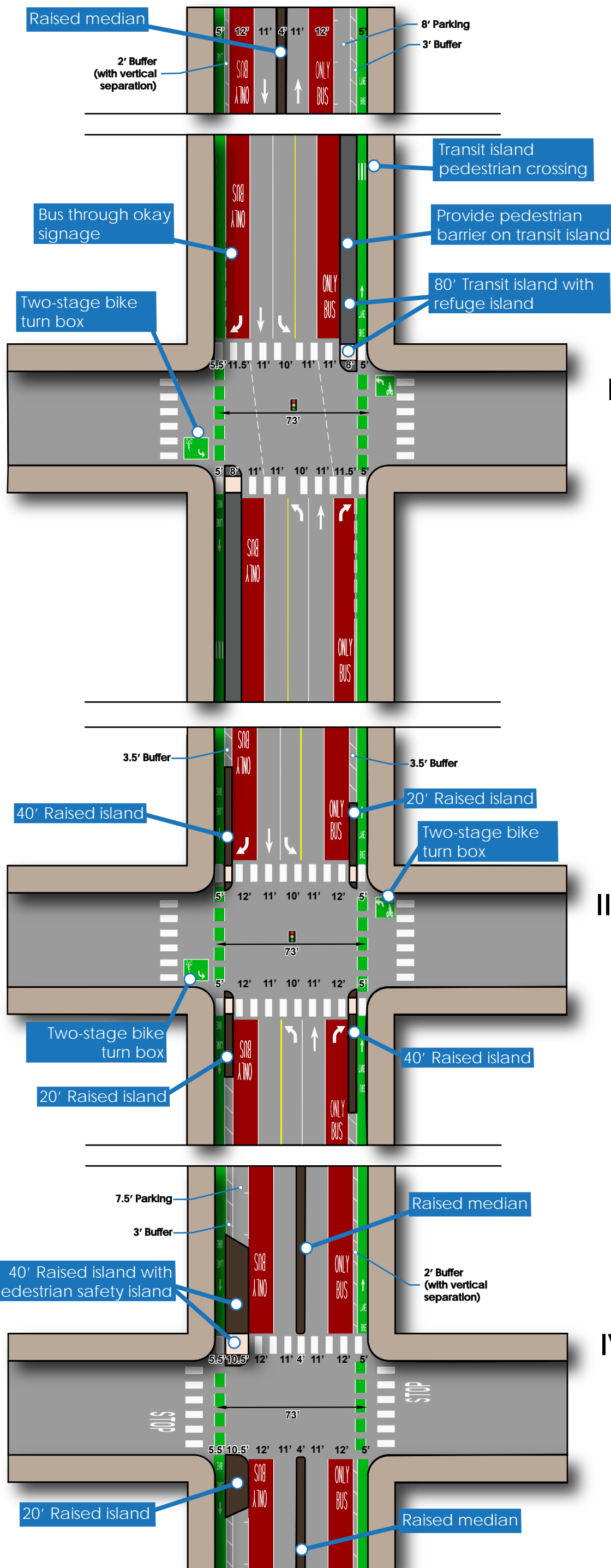
IV. UNSIGNALIZED WITHOUT STATION

- Provision of PHB/RRFB will be at select locations, generally spaced at 500'

V. MID-BLOCK (OPTION 2)

- Parking on both sides with narrow median and narrow bus lanes
- If additional width available, allocate to bus lanes, median, and buffer (in order of priority)





I. TYPICAL MID-BLOCK WITH PARKING ONE SIDE AND MEDIAN

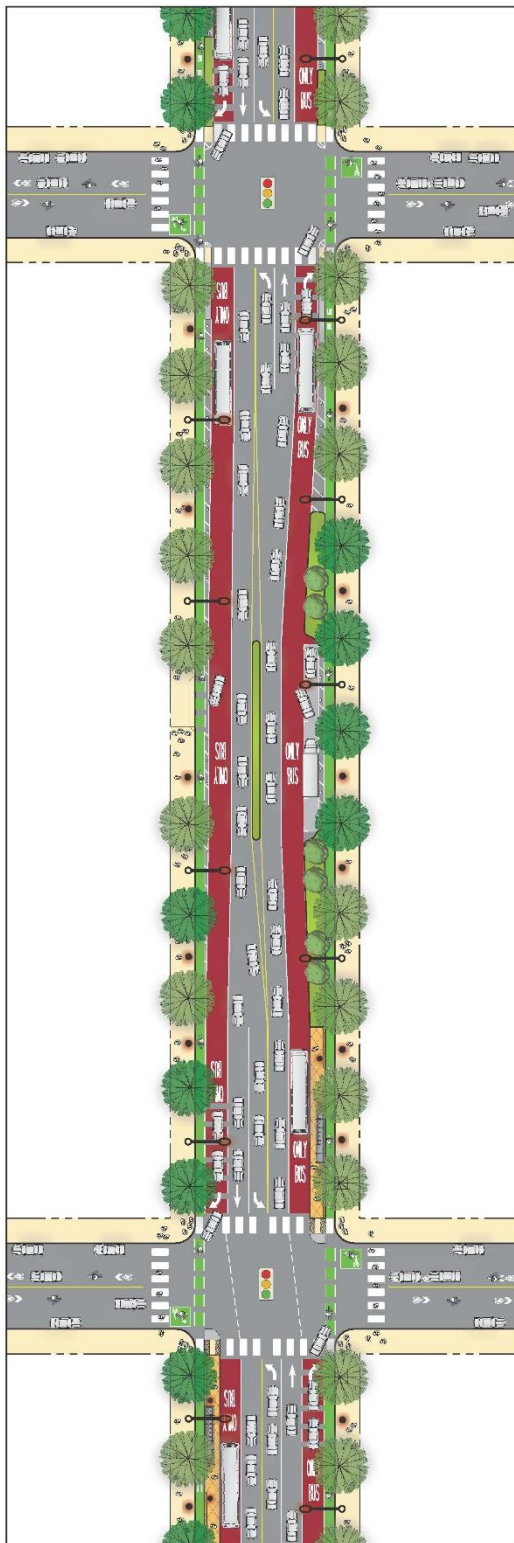
II. STATION (TRANSIT ISLAND, SIDE-RUNNING BRT)

III. NO STATION (QUEUE JUMP PROVIDED)

IV. UNSIGNALIZED / TYPICAL MID-BLOCK WITH PARKING ONE SIDE AND MEDIAN

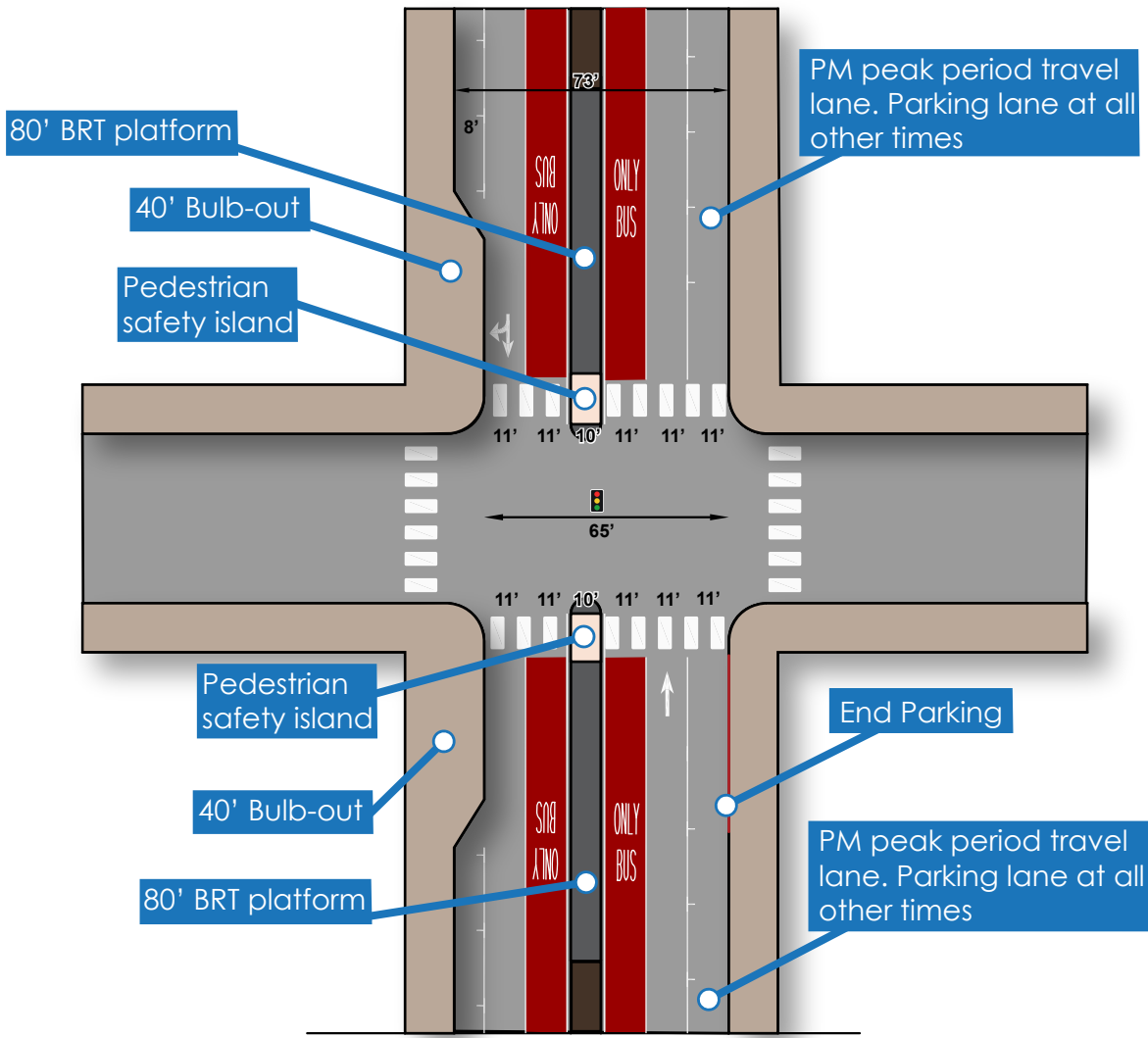


Concept A with Side-running Bus Lanes



LEGEND

- PROPERTY LINE
- EXISTING TREE
- NEW TREE
- TRAFFIC SIGNAL
- ROADWAY LIGHT FIXTURE
- PEDESTRIAN-SCALE LIGHT FIXTURE
- LANDSCAPING/ GREEN INFRASTRUCTURE*
- TRANSIT PLATFORM
- SIDEWALK
- *WHERE APPLICABLE

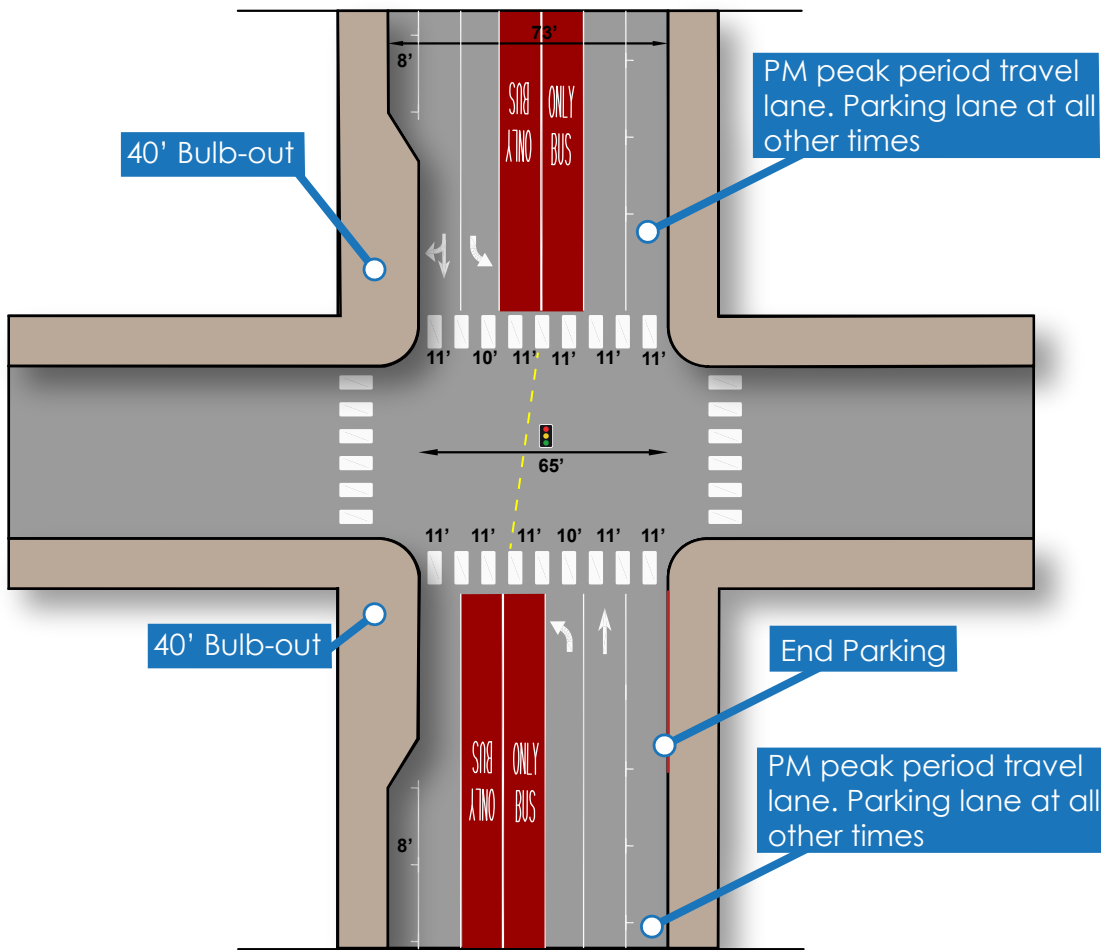


I. MID-BLOCK

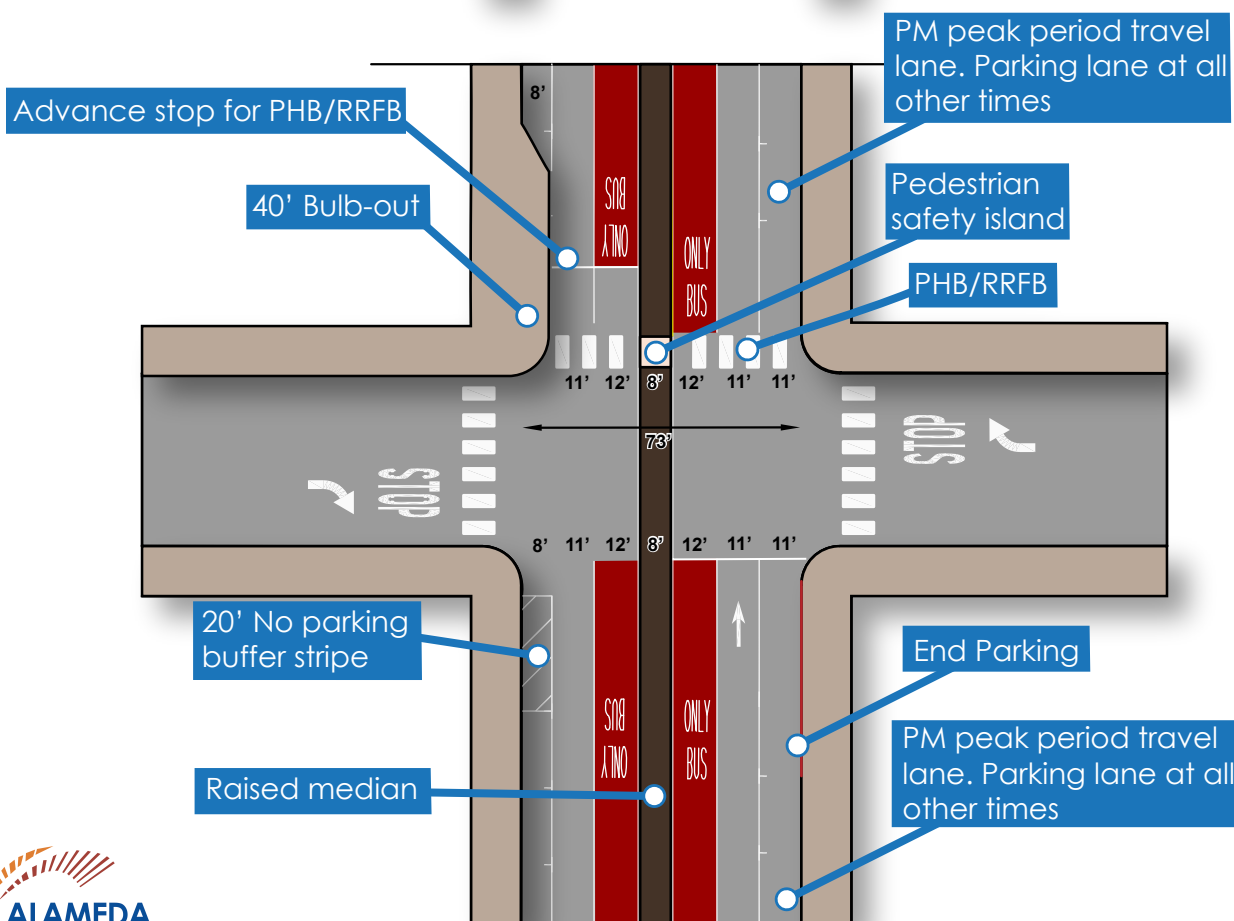
- Parking on both sides plus median, except in northbound direction during PM Peak (hours to be determined)

II. SIGNALIZED WITH STATION

- No left turns from San Pablo Ave allowed



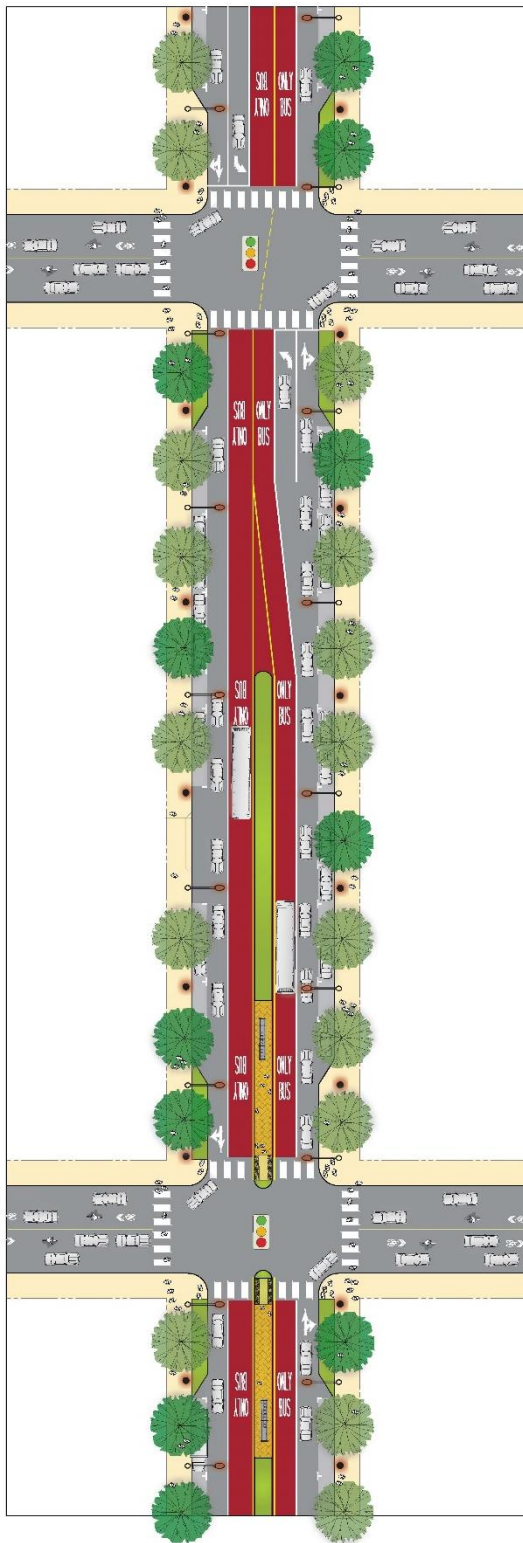
III. SIGNALIZED WITHOUT STATION



IV. UNSIGNALIZED WITHOUT STATION

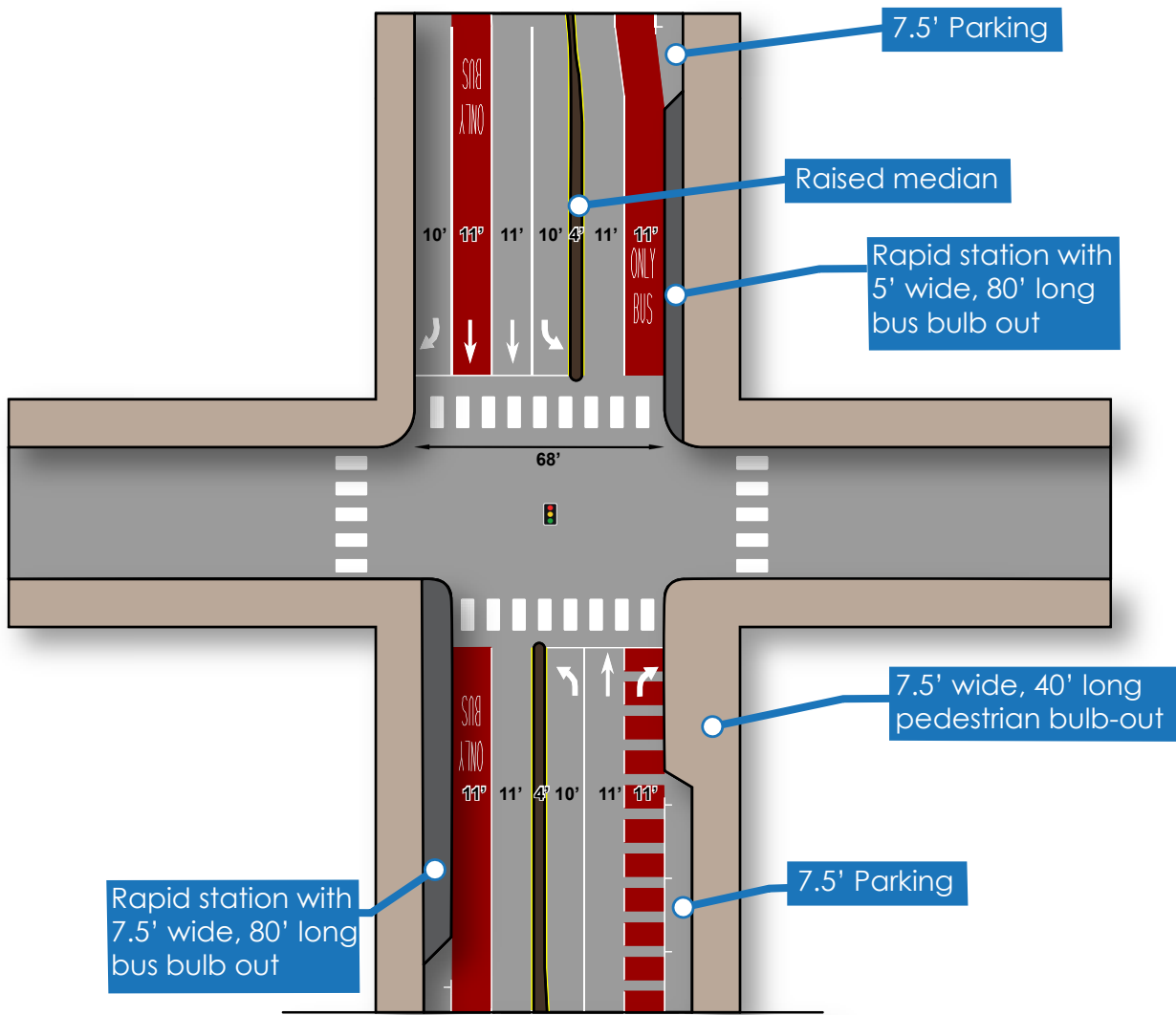
- Left turn prohibition from minor street
- Provision of PHB/RRFB will be at select locations, generally spaced at 500'

Concept B with Center-running Bus Lanes

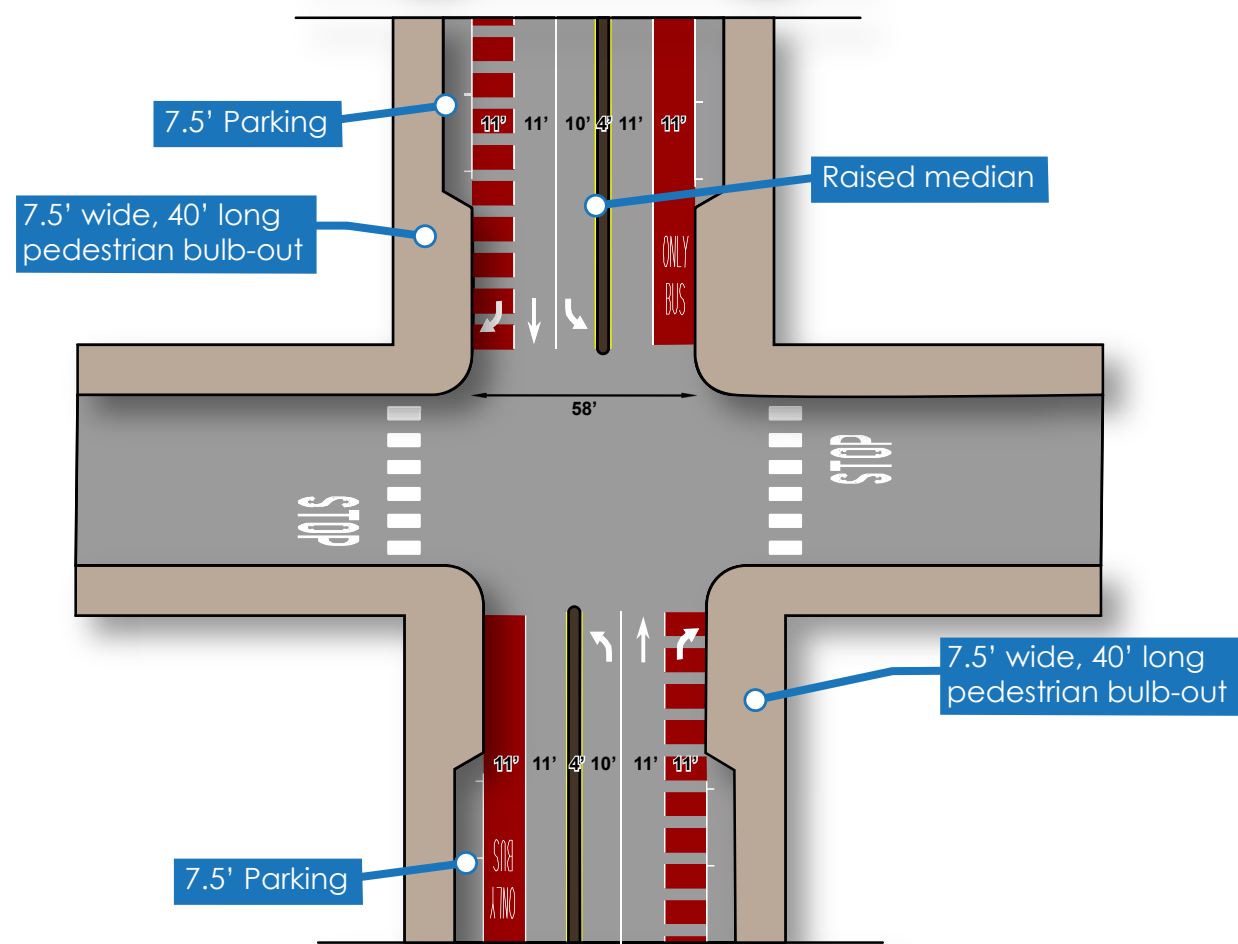


LEGEND

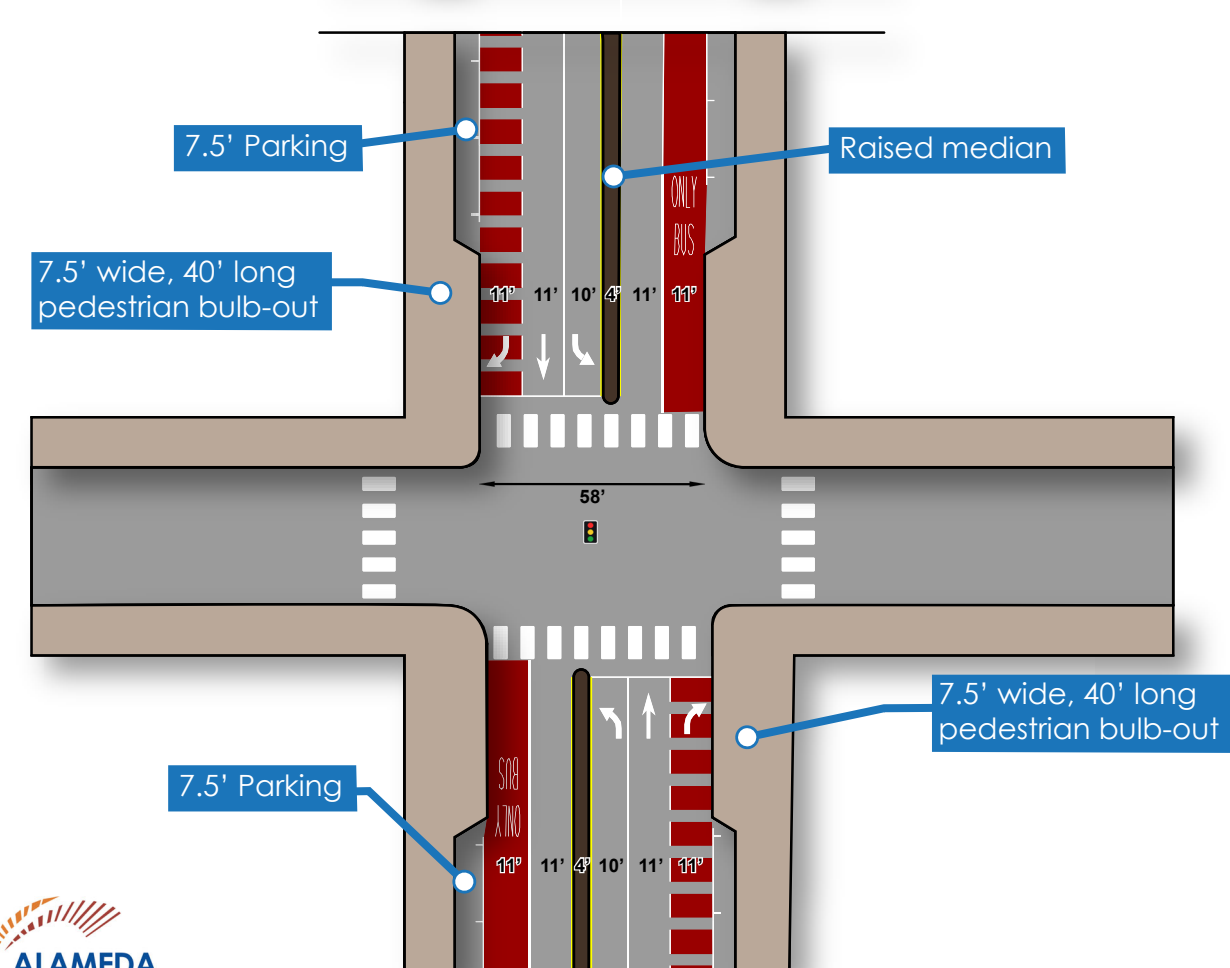
- PROPERTY LINE
- EXISTING TREE
- NEW TREE
- TRAFFIC SIGNAL
- ROADWAY LIGHT FIXTURE
- PEDESTRIAN-SCALE LIGHT FIXTURE
- LANDSCAPING/ GREEN INFRASTRUCTURE*
- TRANSIT PLATFORM
- SIDEWALK
- *WHERE APPLICABLE



SIGNALIZED WITH STATION

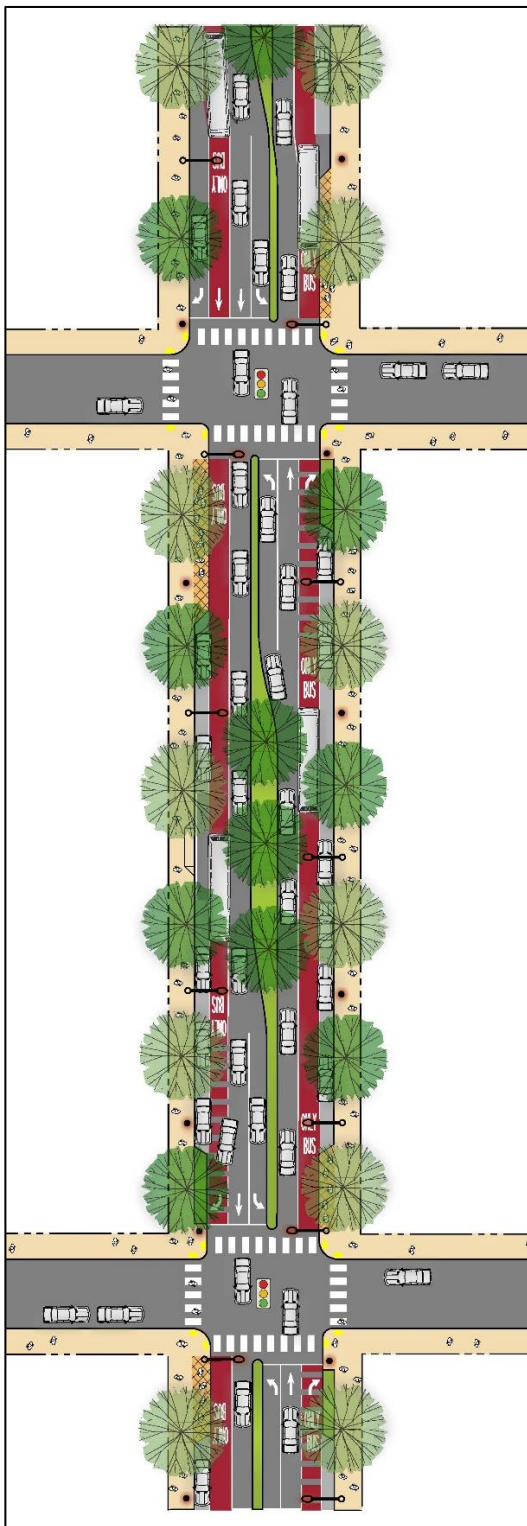


UNSIGNALIZED/TYPICAL MID BLOCK



SIGNALIZED WITH NO STATION

Concept B with Side-running Bus Lanes

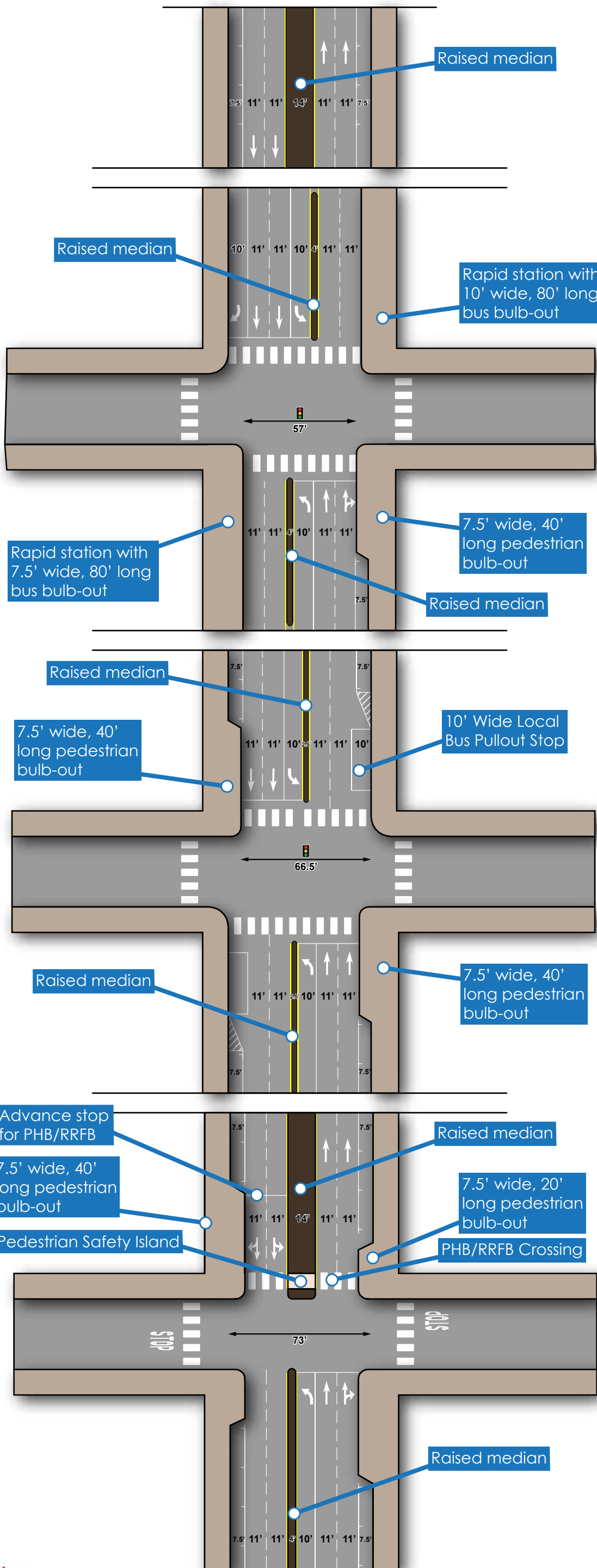


LEGEND

- PROPERTY LINE
- EXISTING TREE
- NEW TREE
- TRAFFIC SIGNAL
- ROADWAY LIGHT FIXTURE
- PEDESTRIAN-SCALE LIGHT FIXTURE
- LANDSCAPING/ GREEN INFRASTRUCTURE*
- TRANSIT PLATFORM
- SIDEWALK
- *WHERE APPLICABLE



TYPICAL MID-BLOCK W/ PARKING & MEDIAN



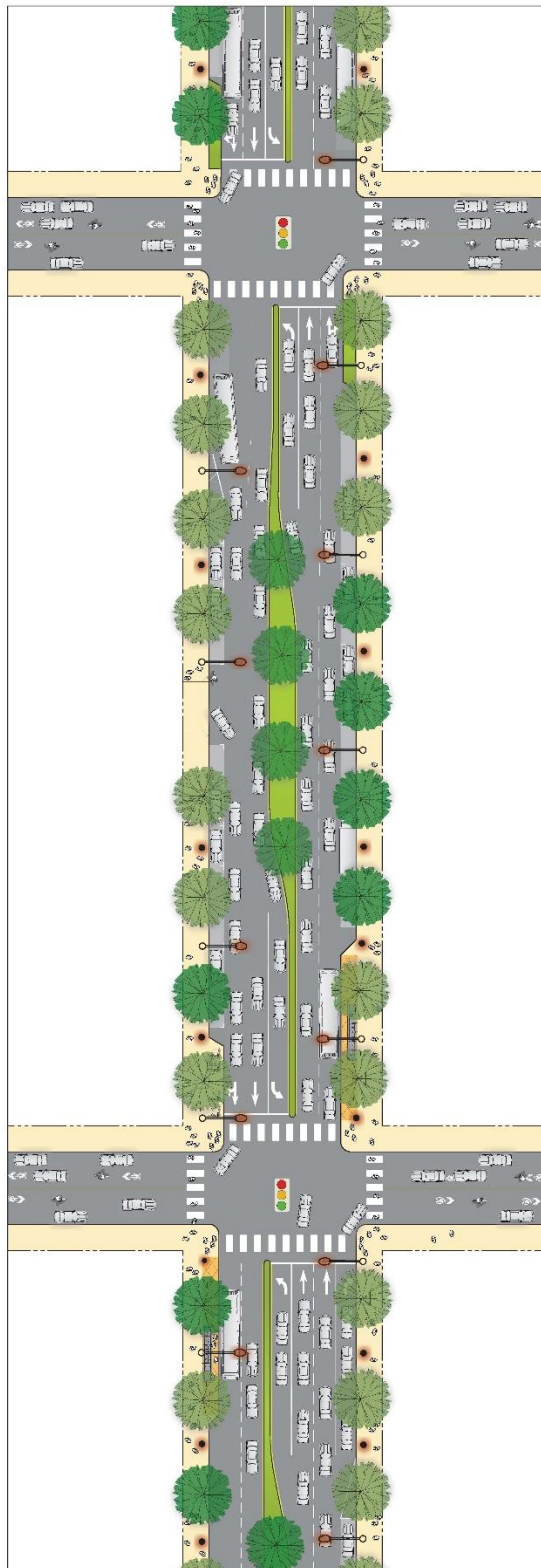
SIGNALIZED WITH RAPID AND LOCAL STOP

SIGNALIZED WITH LOCAL BUS STOP ONLY

UNSIGNALIZED WITHOUT STATION



Concept D



LEGEND

- PROPERTY LINE
- EXISTING TREE
- NEW TREE
- TRAFFIC SIGNAL
- ROADWAY LIGHT FIXTURE
- PEDESTRIAN SCALE LIGHT FIXTURE
- LANDSCAPING/ GREEN INFRASTRUCTURE*
- TRANSIT PLATFORM
- SIDEWALK
- *WHERE APPLICABLE



APPENDIX B

OTHER ALTERNATIVES CONSIDERED AND REJECTED

INTRODUCTION

As part of the Phase 1 study, additional concepts were considered and ultimately deemed either infeasible or removed from further consideration due to a variety of factors, such as geometric conditions on San Pablo Avenue, travel demand in the San Pablo corridor, feedback received from stakeholders, and transportation best practices. These concepts included:

- Concept C (Bike Lane + On-street Parking)
- Full Road Diet Option
- Two-way Bikeway (side-running, median-running)
- Reversible or non-reversible single lane bus lane
- Pedestrian Overcrossing
- 23rd Street BRT Alternative to San Pablo Avenue

Appendix B contains an explanation of why these concepts were removed from further consideration.

CONCEPTS

Concept C

One of the three concepts presented as part of the 2019 public engagement process, Concept C proposed protected bike lanes on San Pablo Avenue. Parking would be preserved in some locations. Transit priority treatments would generally be limited to bus bulbs at stations, with the bus operating in mixed-flow conditions.

Concept C was eliminated from further consideration in Alameda County as a result of Phase 1 project efforts. This was primarily a result of the concept offering fewer benefits and receiving less support during the public outreach process, notably:

- least popular option in Alameda County
- limited constituency for support (not preferred by AC Transit or bicycle advocacy groups)
- very limited bus performance benefits
- does not achieve the objective of an all ages and abilities bicycle facility on San Pablo Avenue.

Enhancing the effectiveness of the bus service on San Pablo Avenue in Alameda County was widely viewed as a priority for the corridor. However, Concept C did the least of the concepts to improve transit on San Pablo Avenue.

Full Road Diet

A full road diet option similar to Telegraph Avenue in Oakland was initially considered for San Pablo Avenue. Such a configuration would remove an auto lane in order to provide both a protected bike facility and on-street parking. The full road diet would reduce the number of mixed-flow travel lanes to one. This concept was removed from consideration early on in the project process because it would result in the bus being confined to the single mixed-flow lane. With any mixed-flow lane reduction, the amount of congestion on San Pablo Avenue is anticipated to increase. However, all of the other concepts proposed for advancement that include the reduction of mixed-flow lanes also include a transit lane. The road diet option that doesn't include a transit lane would result in a significant increase to transit delay and a decrease in reliability, thereby reducing viable transportation options for users, running counter to the goals of this project.

Two-way Bikeway (side-running/median-running)

Two-way separated bikeways can be installed in either side-running or median-running configurations. Both were deemed infeasible on San Pablo Avenue for the reasons detailed below.

Side-running two-way bikeway

San Pablo Avenue has relatively short blocks, typically between 300 and 400', and numerous driveways. Two-way separated bikeways are generally not a good solution in these conditions, because these features allow frequent uncontrolled movements across the bikeway which undermine safety improvements gained by separating bikes from through-traffic. These uncontrolled movements create new conflict points detailed below:

- **Right Turn/Right Hook from San Pablo:** A driver driving on San Pablo Avenue attempts to turn right onto a side street or into a driveway across the path of a bicyclist who is traveling in the same direction. This is one of the most common and dangerous types of collisions for cyclists with any bicycle lane, called a "right hook". However, it is also a risk for bicyclists traveling in the contraflow direction, especially since the driver may not be looking out for a cyclist traveling against the flow of traffic.

- **Left Turn/Left Hook from San Pablo:** A driver traveling along San Pablo on the opposite side of the street from the bikeway turns left across the path of a bicyclist traveling in the contra-flow direction. A driver making this movement is going to primarily be looking for oncoming traffic in the standard direction of travel and is unlikely to check for bicyclists traveling in the same direction as they are traveling. As with any bike lane, this is also a risk for the bicyclists traveling in the standard direction of travel.
- **Right Turn onto San Pablo:** A driver approaching San Pablo from a side street or driveway turns right across the path of a bicyclist traveling in the contraflow direction. This driver is primarily focused on looking for travelers moving in the standard direction of travel and may not see the bicyclist traveling in the contraflow direction.

These conflicts would occur very frequently on San Pablo Avenue given the substantial number of driveways and intersections. A safe two-way bikeway would require significantly limiting left-turn movements to and from side streets at unsignalized intersections and closing a large number of business driveways, which was deemed infeasible given the high level of business activity, the need for neighborhood access, and the potential for removal of on-street parking, making access to off-street parking and side-street parking more vital.

Ideal two-way separated bikeways also required separate signal phases. The MassDOT Separated Bikeway Guide recommends that multi-lane streets, like San Pablo Avenue, have a protected left-turn signal. This stops bicycles and removes the conflict point as vehicles turn left across the bikeway. Additionally, if there are more than 100 conflicting right-turning vehicles in an hour, which occurs in many locations along the corridor, the right-turn across the two-way bikeway is recommended to be protected as well. Each separate signal phase increases travel time for all users (people biking, walking, in a bus, and in a car), potentially significantly, and would undermine other improvements on the corridor.

Separated two-way bikeways are often recommended on roads that have a much higher proportion of driveways on only one side of the street. By placing the bikeway on the opposite side of the street of the driveways, it allows cyclists in both directions to avoid driveway conflicts noted above. For example, the planned 40th Street Bus Hub Design project in Emeryville includes a two-way bikeway on the north side of the street where there are a limited number of driveways as opposed to the south side where there is a

major retail center¹. San Pablo Avenue, however, has a similar number of driveways on both sides of the street, thus placing the bike on one side or the other would not limit the number of driveway conflicts.

Median-running two-way bikeway

Median-running bikeways are generally appropriate in a limited access setting where long segments of bikeway can proceed uninterrupted, and where the need to access street-side uses is more limited, for example Mandela Parkway in West Oakland. Turning movements across a median-running two-way bikeway are highly recommended be signal controlled to avoid significant auto/bicycle conflicts, which would require additional signalization and/or median closure at unsignalized intersections. The frequency of signalized and unsignalized intersections along San Pablo, as well as frequent protected left turn pockets, and high demand for left-turn movements at unsignalized intersections on San Pablo Avenue make a median-running two-way bikeway infeasible.

At signalized intersections, to accommodate protected left-turn pockets, the bikeway would have to shift to accommodate left-turn lanes, creating a significant offset through the intersection slowing travel times for cyclists, creating wayfinding difficulties, and potentially creating conflict points with other modes

A median-running two-way separated bikeway would also limit bicyclist access to and from mid-block land uses. With a median bikeway, cyclists would need to access all mid-block businesses by using the nearest crosswalk and walking their bicycle on the sidewalk to nearest bicycle rack. This could also create incentives for cyclists to ride on the sidewalk or in the other side-running travel lanes, reintroducing conflicts at driveways, with other vehicles and/or with pedestrians.

Additionally, bicycle turning movements from the median bikeway would be challenging for several reasons. They would require either a dedicated queuing space in the median to avoid conflicts between through and turning cyclists or a dedicated bicycle-only phase. Dedicated queuing space requires physical space that is not available on San Pablo Avenue and each separate signal phase increases travel time for all users (people biking, walking, in a bus, and in a car), and would undermine other improvements on the corridor potentially significantly.

¹ Section 4.3.1 of the Summary Report summarizes the considerations for integrating the 40th Street Bus Hub Design Project with the San Pablo Avenue Corridor Project as part of the Phase 2 study.

Geometry for two-way bikeways

Two-way separated bikeways are more space efficient than a one-way separated facility because both directions of bike travel may share a buffer; a two-way facility takes up one to two feet less space than two one-way facilities. An evaluation of the specific geometry of San Pablo Avenue indicates that while it is extremely space-constrained in certain segments, the one to two feet saved by a two-way bikeway is not sufficient to allow for the significant enhancement of any other potential facilities on the corridor.

Reversible or non-reversible single lane bus lane

In order to conserve limited right-of-way space, a single-lane bus lane was considered, including two distinct operating plans, and both were found to be infeasible.

One form of operation would be a **single reversible center lane used by buses traveling in the peak direction only**: southbound in the A.M. and northbound in the P.M. This was deemed infeasible for several reasons:

- Congestion and transit ridership on San Pablo Avenue is not constrained to the peak direction. While there is significant peak-direction congestion, there is still considerable congestion in the reverse direction. In a configuration where San Pablo Avenue would be reduced to one lane in each direction with the reversible bus lane, off-peak buses would share a single lane with personal automobiles and trucks, leading to significant impacts to reliability, on-time performance, and operating cost. Similarly, ridership is fairly closely balanced between both directions in significant portions of the corridor, notably south of University Avenue where northbound and southbound PM peak period transit vehicle loads are within 20 percent of each other.
- While this configuration would need less space than a two-way bus lane in the mid-block sections, it would not create any more space at intersections with stops, which are the most constrained locations along the corridor. Because two buses traveling in opposite directions would need to be able to serve any given stop simultaneously, a dedicated lane would be required in both directions on either side of all stops.
- Signal operations would be complicated by the fact that reverse-direction buses departing a stop would need to receive a queue jump to rejoin the single lane of traffic, lengthening the signal cycle phase and delaying travel times for all users.

The second proposed operation method is a **center lane used by buses traveling in both directions simultaneously**. Under this operation method, there would be two

bus lanes (one each direction) mid-block and one bus lane total (shared by both directions) where there are left-turn lanes at signalized intersections. The benefit of this configuration would be a reduction in the cross-section required at signalized intersections. When two buses approach one another, one would yield upstream while at a stop in a two-lane section while the other passed through the one-lane segment. Given bus acceleration/deceleration speeds and typical required left-turn pocket lengths, yielding buses could be required to wait approximately 40 to 45 seconds for an opposing bus to clear the upcoming segment. This would frequently cause the yielding bus to miss the traffic signal green phase, requiring riders to wait for the next signal cycle phase and resulting in total delay of over two minutes at each crossing location, of which there would be numerous throughout the corridor. These delays would significantly undermine the potential benefits of a dedicated lane and the transit signal priority system.

In addition, portions of the corridor currently have more than one bus trip per signal cycle. In such a situation, the corridor would never be able to recover from a single bus delay, with delays cascading through the system. With planned increases in frequency leading from the corridor project, conflicts would only increase, leading to significant bus delays and schedule unpredictability.

Other noteworthy considerations for either configuration of a reversible lane include:

- A blockage of the bus lane, whether caused by a bus breakdown, a collision, debris on the road, etc., would impact both directions of service rather than a single direction.
- Striping and signaling over the entire corridor would be non-standard and could lead to driver confusion and safety concerns.
- A private vehicle illegally using the transit lane would have the potential to collide head-on with a bus, a substantial safety hazard.
- Such a configuration of bi-directional operating in a single lane simultaneously has not been implemented in the Caltrans network. The liability associated with this design exception might result in Caltrans being unwilling to consider this option.

Pedestrian Overcrossing

Pedestrian overcrossings are used to provide safe passage for those traveling by foot or other non-motorized form over a variety of barriers. These barriers include natural features such as waterways or valleys, or human-made ones such as freeways, railways, or busy surface streets. In the cases of natural features, freeways, or railways, a pedestrian

overcrossing may be the only feasible means of traversing the barrier – people will use it because they have no other option.

For surface streets, however, a pedestrian overcrossing may compete with existing at-grade travel pathways. In most cases, the pedestrian path of travel to climb a ramp or staircase and traverse an overpass will be significantly longer than simply crossing a street at grade. To accommodate traffic below on a busy arterial truck/bus route such as San Pablo Avenue, a pedestrian bridge must commonly provide at least 17' of vertical clearance. Pedestrian bridges themselves are typically no less than 3' in depth, meaning that pedestrians need to climb 20' to the deck of the bridge before descending. ADA requirements limit the slope of the ramp and require landings, meaning that a ramp must be approximately 400' long to attain the 20' vertical height required to cross. At a walking speed of 3.5 feet/second (recommended by the MUTCD for calculating pedestrian clearance intervals for traffic signals), a pedestrian using ascending and descending ramps to access an overcrossing will add nearly four minutes to their trip, minus any signal delay they would have experienced with an at-grade crossing, which commonly average around one to two minutes on San Pablo Avenue.

Due to the longer travel times associated with using ramps for an overcrossing, when both an overcrossing and at-grade crossing are provided, pedestrians far more commonly use at-grade crossings. When an at-grade crossing is not provided, pedestrians will commonly walk into the street even without a crossing, creating a greater safety hazard since the signals may not be timed to facilitate safe pedestrian crossings.

Pedestrian overcrossings are costly to construct and require significant amounts of space to overcome the vertical rise between the street surface and the overcrossing deck. A pedestrian overcrossing not requiring any additional right-of-way and not including an elevator would likely cost in excess of \$5 Million per location. Stairs present the most direct means of accessing an overcrossing for able-bodied pedestrians; or those willing to carrying a bicycle, scooter, or stroller. However, a staircase alone will not satisfy ADA requirements and must be provided along with ramps or an elevator, which would be costly and must be maintained. Ramps require less maintenance, but as mentioned above, approximately 400' of ramp must be provided (longer than some blocks that border San Pablo Avenue), either in a straight line or switchbacks. Given the relatively narrow sidewalks on San Pablo Avenue, new ramps would require significant property acquisition, impacting existing businesses and residents and a time-consuming and costly process.

Existing striped crosswalks occur every 300-600' on San Pablo Avenue. A program of installing pedestrian overcrossings could take several forms:

1. Provide overcrossings at major streets and eliminate other existing striped crosswalks
2. Provide overcrossings at minor streets while retaining at-grade crossings at major streets
3. Provide overcrossings at all existing striped crosswalks

None of the above options were deemed feasible. Option 1 would significantly decrease pedestrian access between the two sides of San Pablo Avenue and the neighborhoods that border it, option 2 would reduce vehicle delay but would still require significant property acquisition from land-holders, and option 3 would be too expensive to be feasible.

23rd Street as Alternative to San Pablo

San Pablo Avenue and 23rd Street have both been analyzed in previous planning efforts. The possibility of Bus Rapid Transit (BRT) on 23rd Street was considered in the 2017 West Contra High Capacity Transit Study and was advanced as one of the refined alternatives. Such a project would connect future ferry service at the Richmond ferry terminal to Richmond BART, Contra Costa College, Hilltop Mall, and Hercules Transit Center via 23rd Street and San Pablo Avenue in the cities of San Pablo and Hercules.

BRT on San Pablo Avenue serving El Cerrito Plaza BART, El Cerrito del Norte BART, Contra Costa College, Hilltop Mall, Richmond Parkway Transit Center, and Hercules Transit Center through the cities of El Cerrito, Richmond, San Pablo, and Hercules was considered as a separate refined alternative.

If constructed, the 23rd Street BRT would supplement or replace the existing AC Transit Route 74, a community-serving route with relatively low daily ridership (1,300 average weekday trips) which runs every 30 minutes. Existing land use on the corridor does not support additional transit-supportive density and will not in the near-term without significant zoning changes. AC Transit cannot currently increase service frequency due to funding limitations.

San Pablo Avenue is the alignment of the Route 72 family of routes, which serve as regional connectors with high ridership. AC Transit is currently focused on improving service on Route 72. Due to a significant amount of anticipated growth in El Cerrito and Emeryville, the corridor is likely to become increasingly congested and will require additional transit service to accommodate growing travel demand.

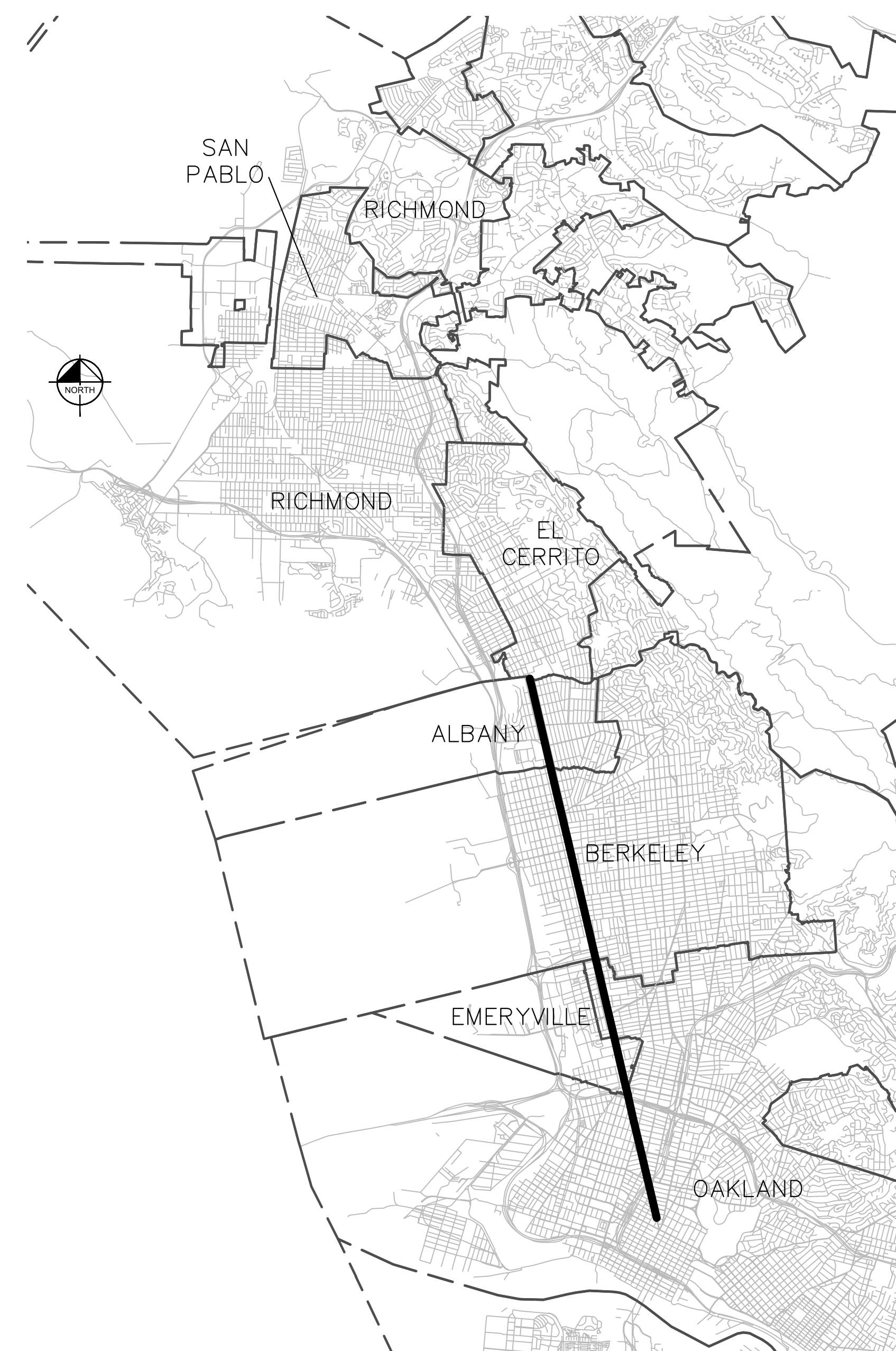


APPENDIX C

VERY NEAR-TERM PLANS

SAN PABLO AVENUE CORRIDOR PROJECT DRAFT VERY NEAR TERM IMPROVEMENTS

JUNE 2020



NOT TO SCALE

PROPOSED VERY NEAR-TERM IMPROVEMENT SUMMARY

The improvements proposed herein are scaled for implementation within the very near-term (1- to 3-year timeframe) and were informed by field observations, baseline analyses, community input, and existing and on-going planning efforts by each stakeholder jurisdiction and agency. To fit within the very near-term timeframe, improvements are limited to those that would require minimal environmental and Caltrans review processes, a relatively short construction duration, and do not include any right-of-way or easement acquisition.

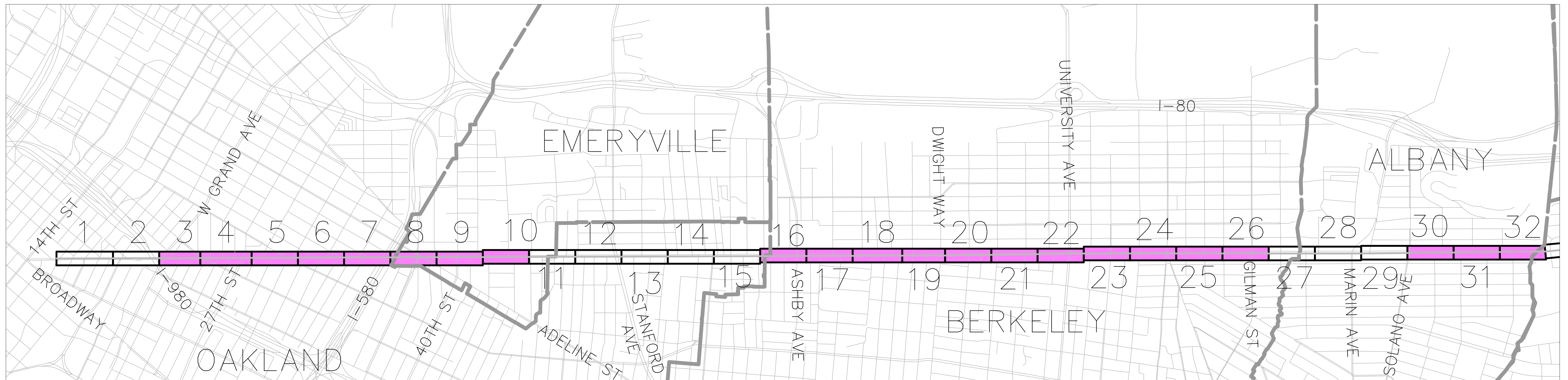
Improvements are aligned to meet the identified project needs for comfort and quality and enhanced safety. As shown in the “Improvement Legend” in the following pages, a symbol was developed for types of improvements that are most prevalent along the corridor, including continental crosswalk striping and ramp reconstruction. Text call-outs provide additional information for improvements that are location specific and not commonly proposed along the corridor. Several types of improvements are proposed to be applied consistently throughout the corridor, including:

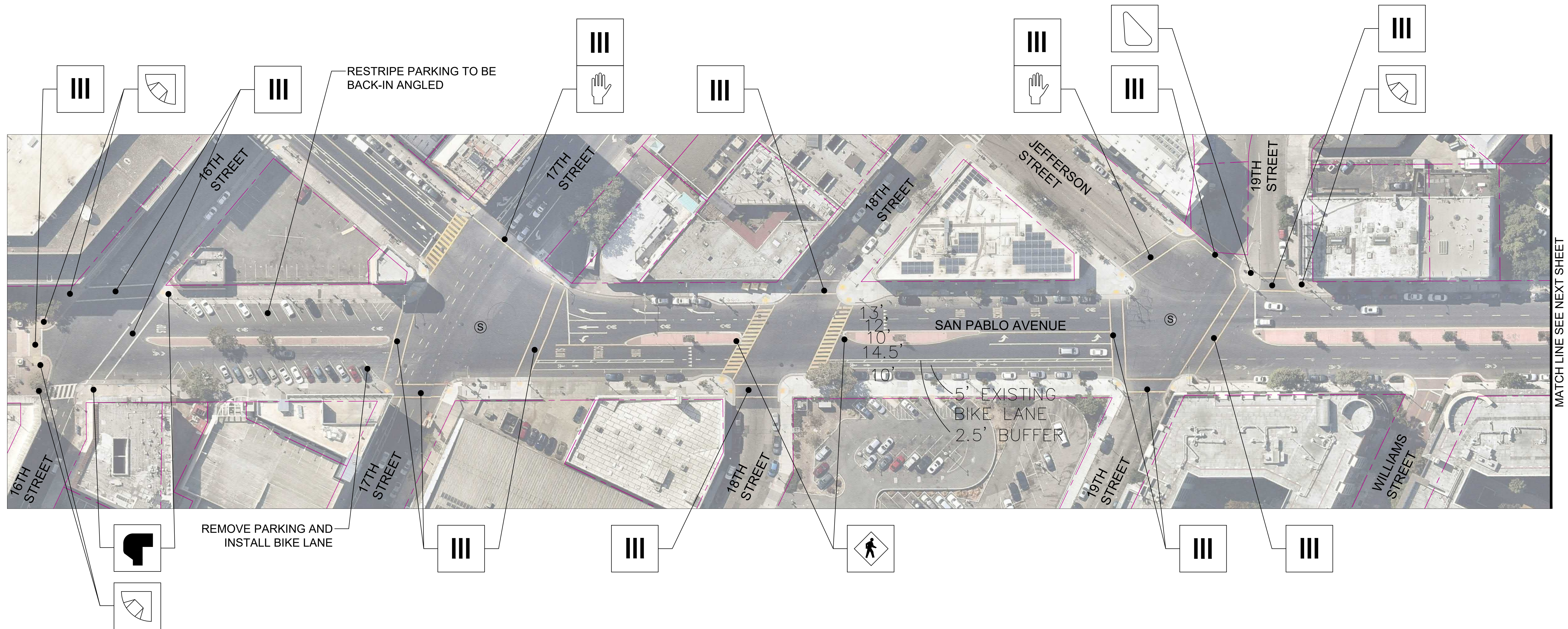
- **Continental striping for crosswalks.** All existing crosswalks with standard striping (i.e., transverse lines only) proposed to be restriped with continental striping to enhance crosswalk visibility. No existing crosswalks with ladder striping are proposed for improvement. All proposed continental striping improvements also include installation of advanced stop bars at signalized intersections and yield pavement markings at uncontrolled crossings.
- **Ramp upgrades.** Ramps identified to be deficient per current ADA standards are proposed to be improved, with the provision of directional ramps where feasible (to be determined in a further design stage)
- **Sharrows.** All existing sharrows proposed to be replaced with green-backed sharrows.
- **Leading pedestrian interval.** Leading pedestrian intervals are proposed at all intersections within the high injury pedestrian network.
- **Adaptive pedestrian signal.** Adaptive pedestrian signals are primarily proposed near senior centers and schools. Further investigation of existing signal controllers to determine compatibility is needed.
- **RRFB/HAWK installation.** Proposed locations for an RRFB/HAWK is based on spacing to nearby signalized and enhanced crossings. At a further stage of project development, a warrant analysis is proposed to be conducted to determine where a HAWK signal is warranted.
- **AC Transit bus stops.** AC Transit has completed an inventory of the bus stop amenities and conditions along the project corridor and provide recommended improvements. The recommendations have been incorporated into the improvements proposed in these plans.
- **Stop amenities.** A number of existing or relocated bus stops are proposed for additional amenities, which may include one or more trash cans, benches, bike parking, and shelters are identified. Further coordination will be needed with local jurisdictions and AC Transit on the specific amenities to be provided at each stop.

The Project Team collected field observations of existing signal equipment; however, the following improvement types and their locations should be confirmed by each jurisdiction:

- Countdown pedestrian heads
- Audible pedestrian signal and pushbutton

PRIORITY IMPROVEMENT AREAS

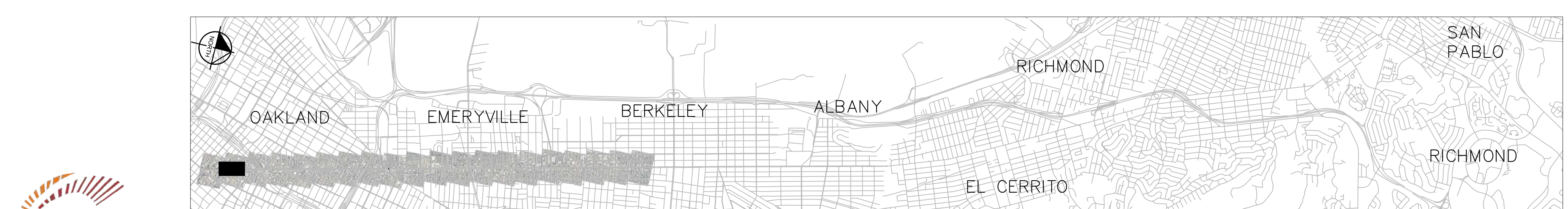




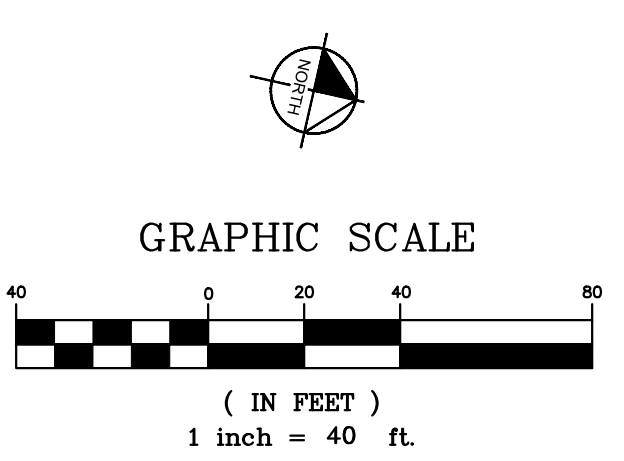
MATCH LINE SEE NEXT SHEET

IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		CONSTRUCT CURB RAMP
	INSTALL PEDESTRIAN HEADS		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		INSTALL AUDIBLE PEDESTRIAN SIGNAL
	INSTALL COUNTDOWN PEDESTRIAN HEADS		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		EXISTING BUS STOP TO BE ELIMINATED
	INSTALL COUNTDOWN PEDESTRIAN HEADS		RELOCATED BUS STOP		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		

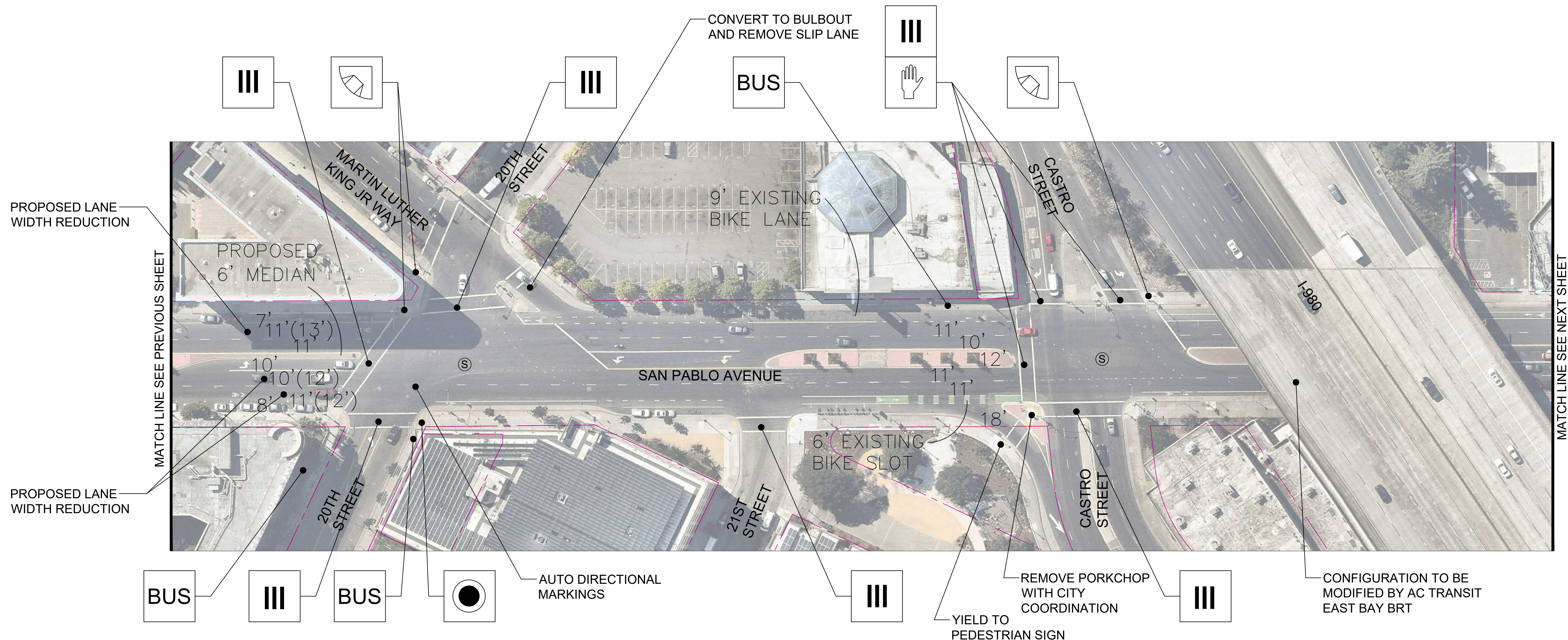
① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION

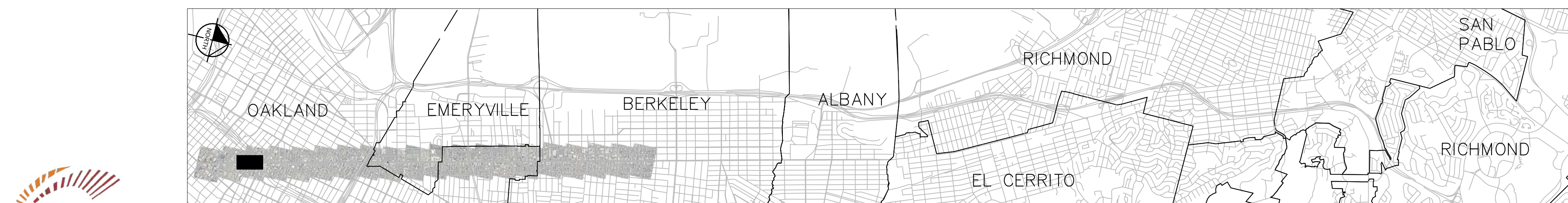


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
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	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		CONSTRUCT CURB RAMP
	INSTALL AUDIBLE PEDESTRIAN SIGNAL		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN
	EXISTING BUS STOP TO BE ELIMINATED		EXISTING BUS STOP TO BE RELOCATED		RELOCATED BUS STOP		SIGNALIZED INTERSECTION

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION

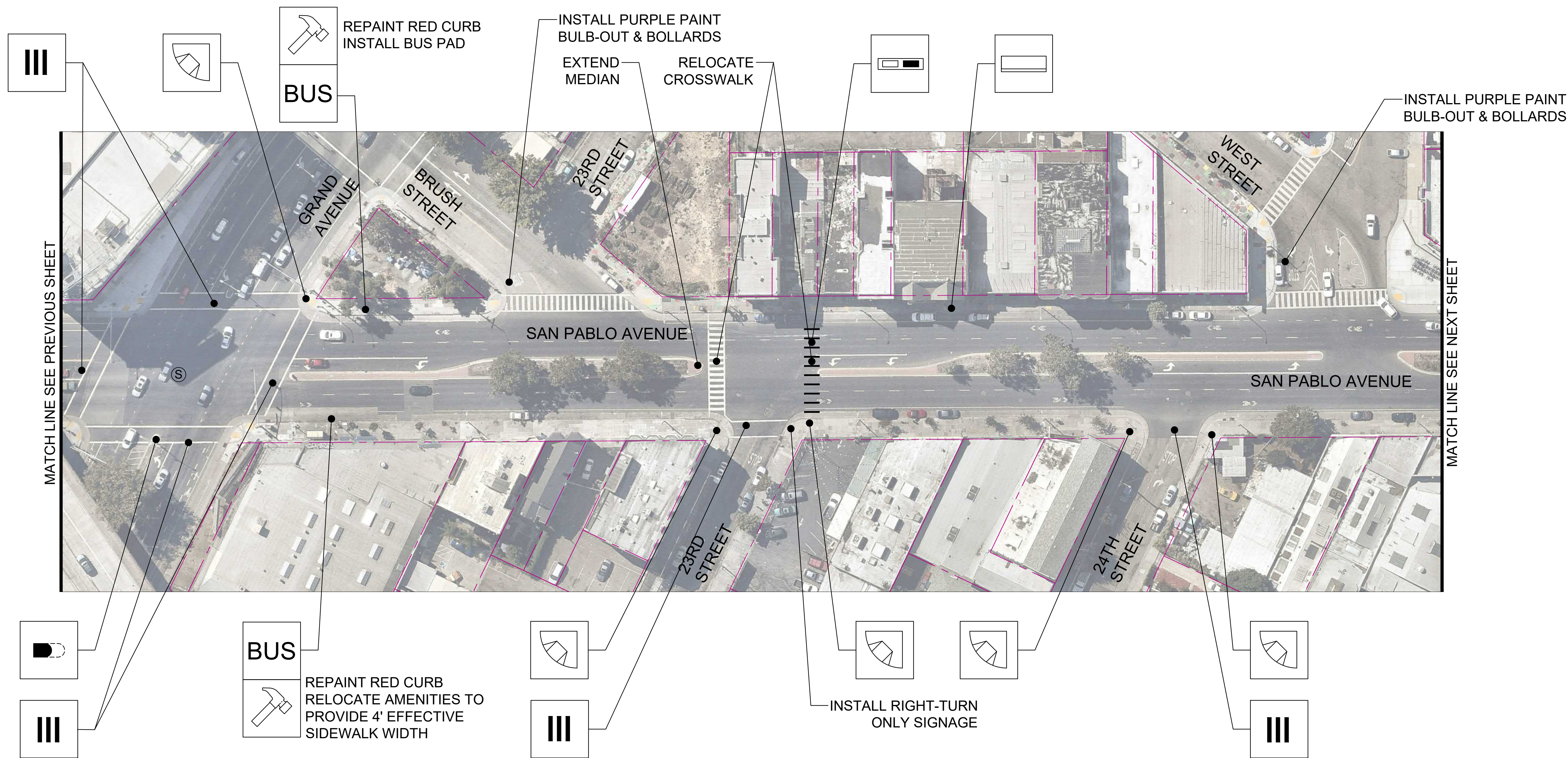
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

BASE MAP
MARCH 2019

SHEET 2 OF 32

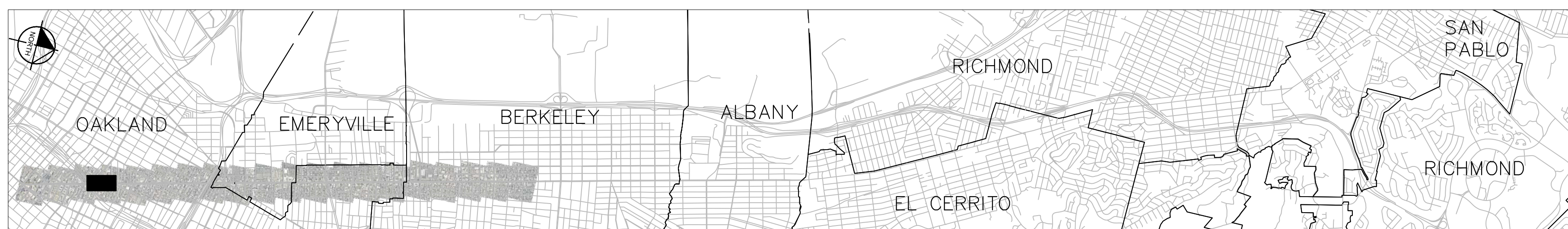


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

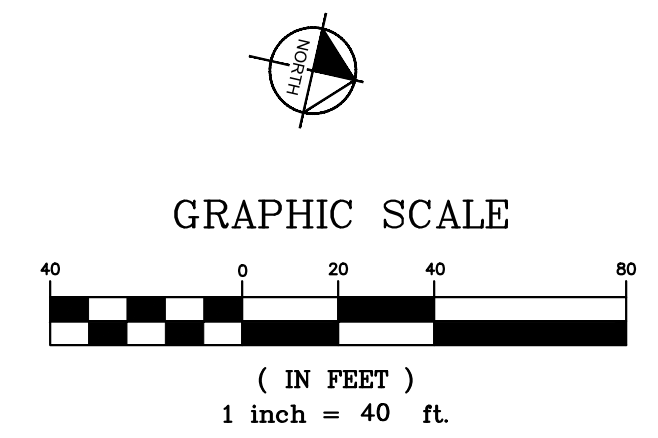


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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	IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		CONSTRUCT CURB RAMP		EXISTING BUS STOP TO REMAIN
	EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP		EXISTING BUS STOP TO BE RELOCATED		SIGNALIZED INTERSECTION

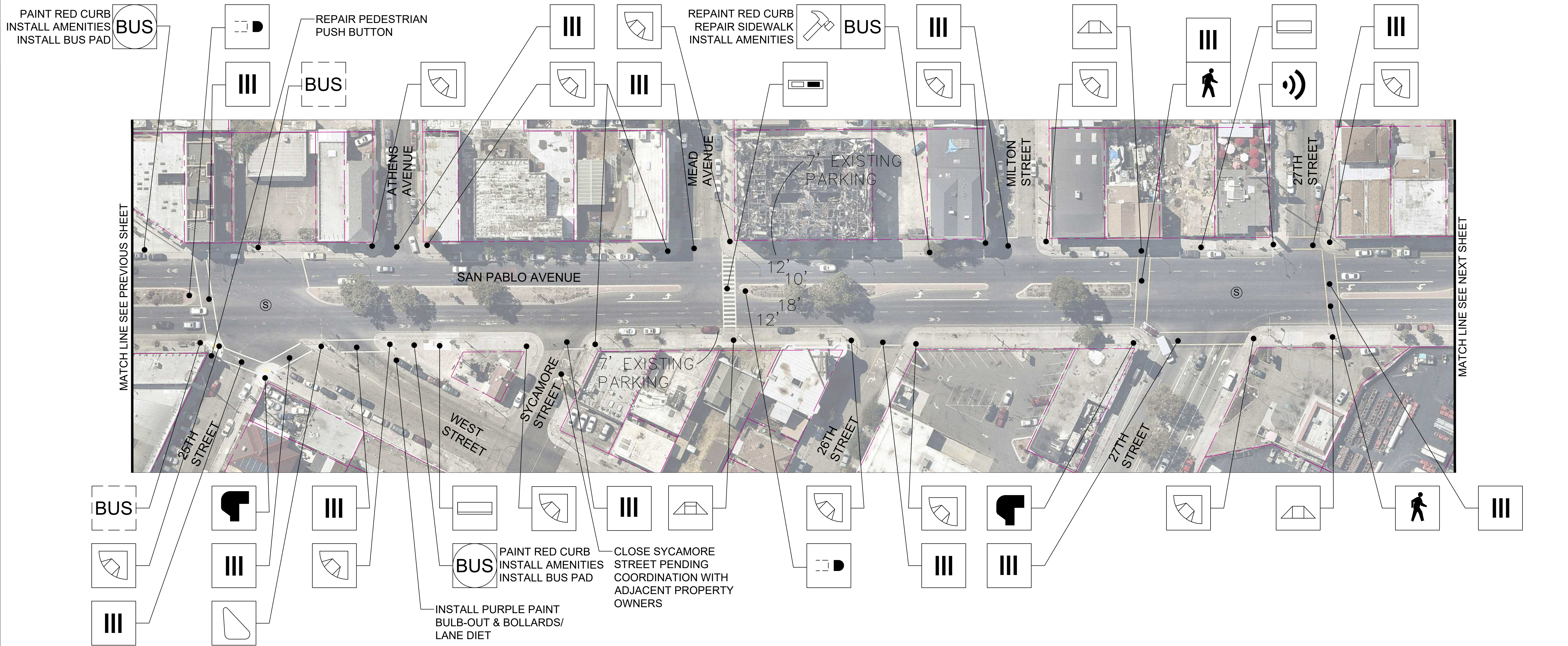
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LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



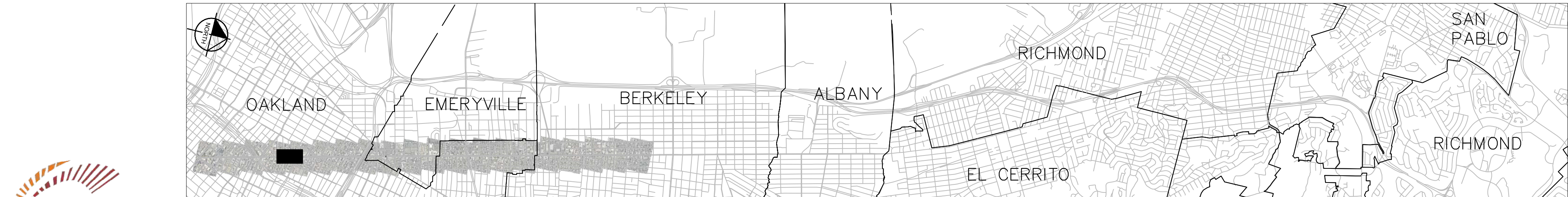
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

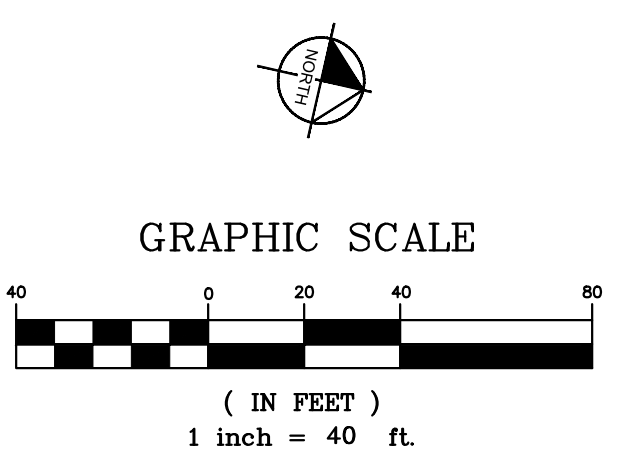
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED
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LEGEND

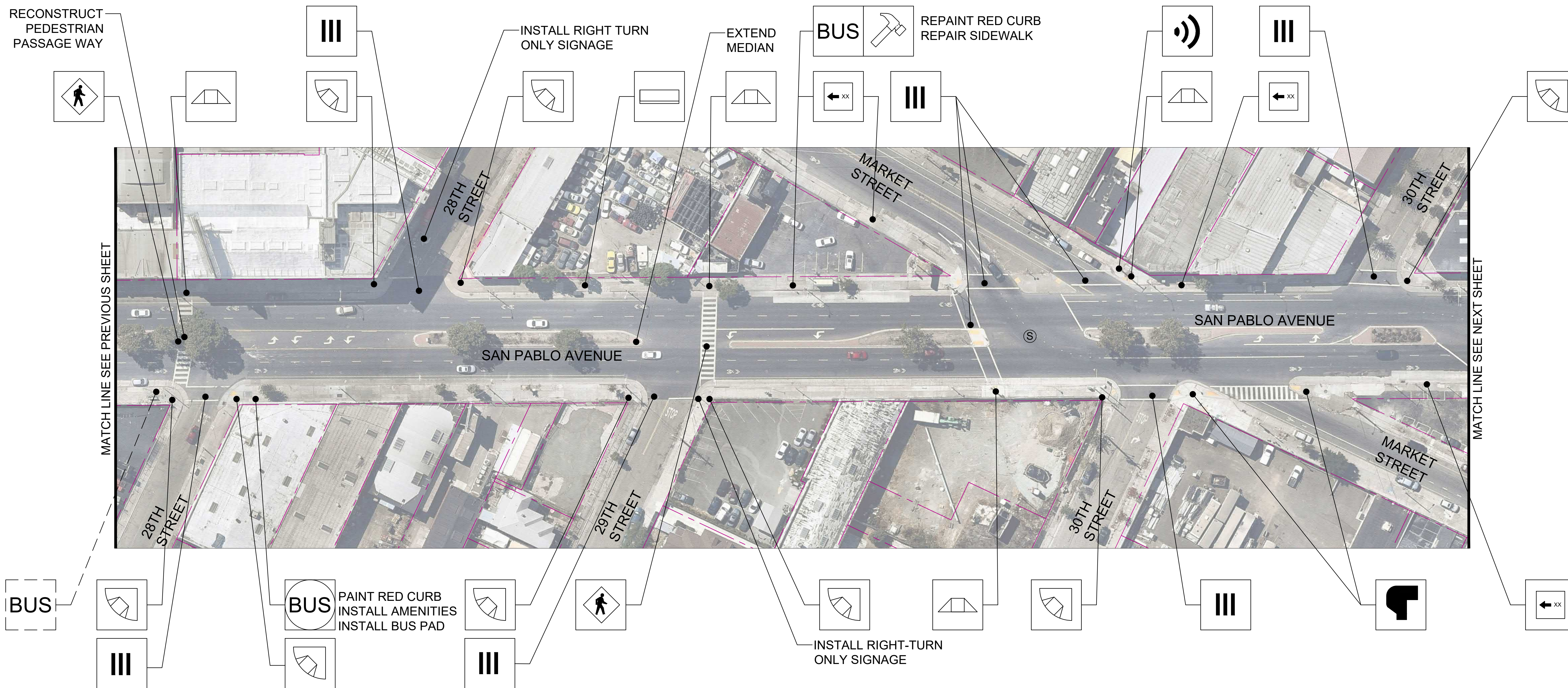
- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



BASE MAP MARCH 2019

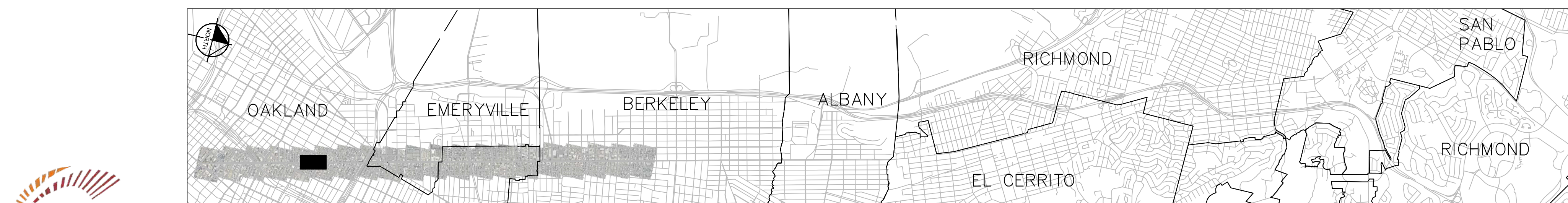


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT
	EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		INSTALL AUDIBLE PEDESTRIAN SIGNAL		CONSTRUCT CURB RAMP
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① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
- Signalized intersection

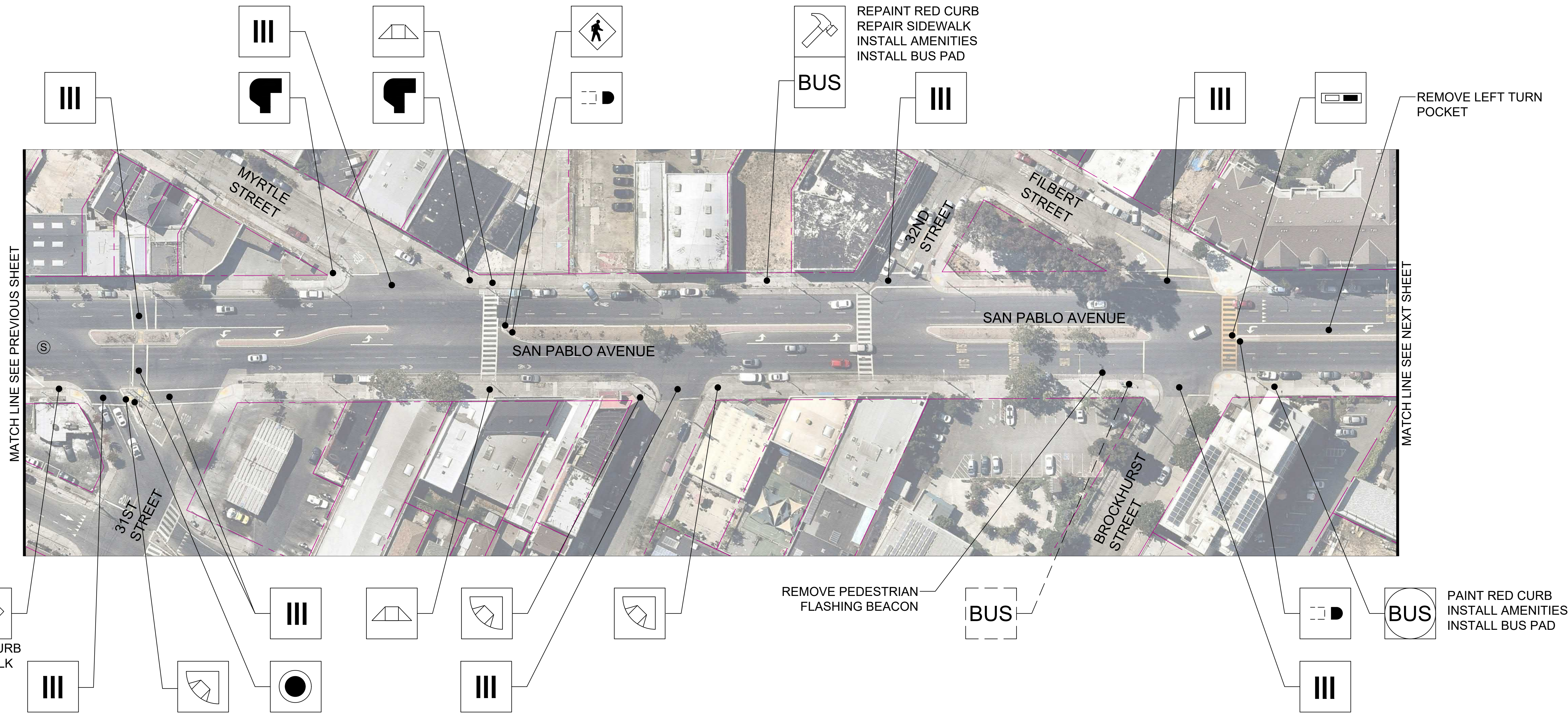
GRAPHIC SCALE
 (IN FEET)
 1 inch = 40 ft.

BASE MAP
 MARCH 2019

SHEET 5 OF 32

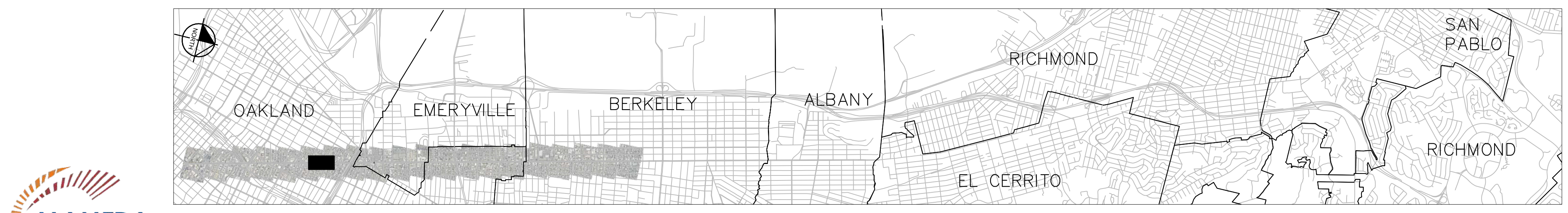


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
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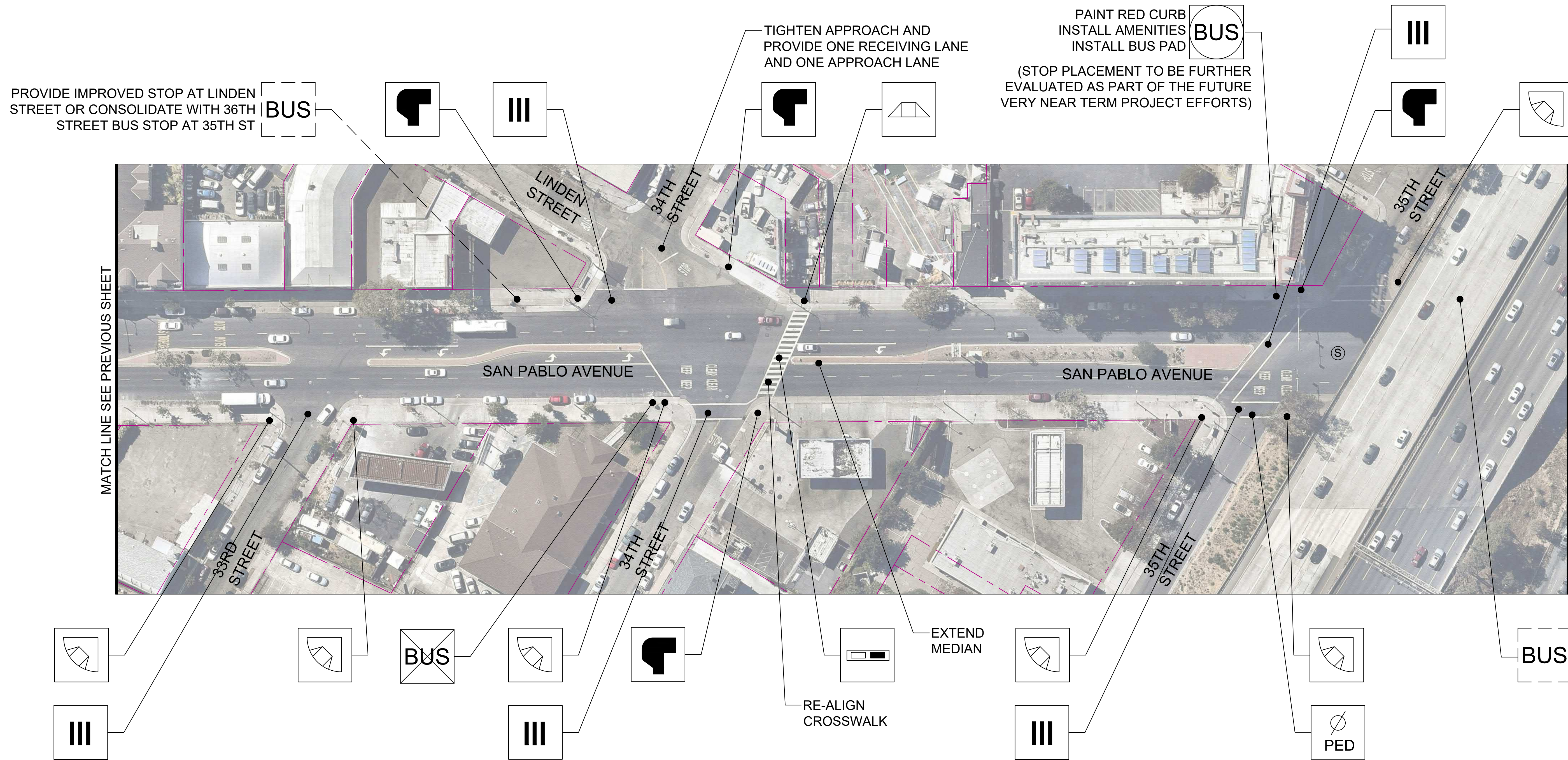
GRAPHIC SCALE
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BASE MAP
 MARCH 2019

SHEET 6 OF 32

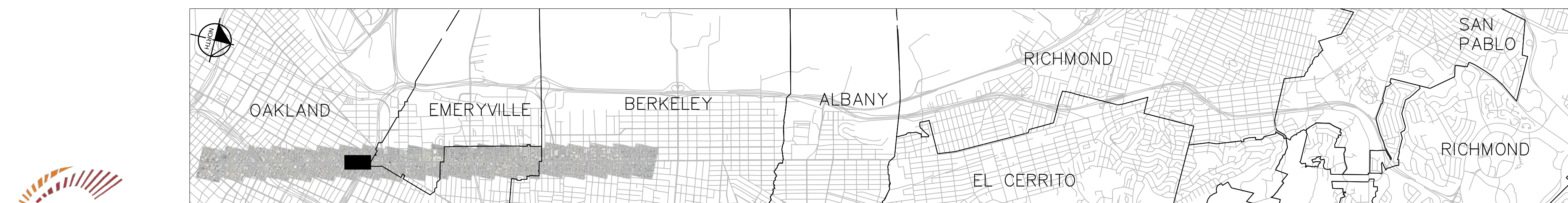


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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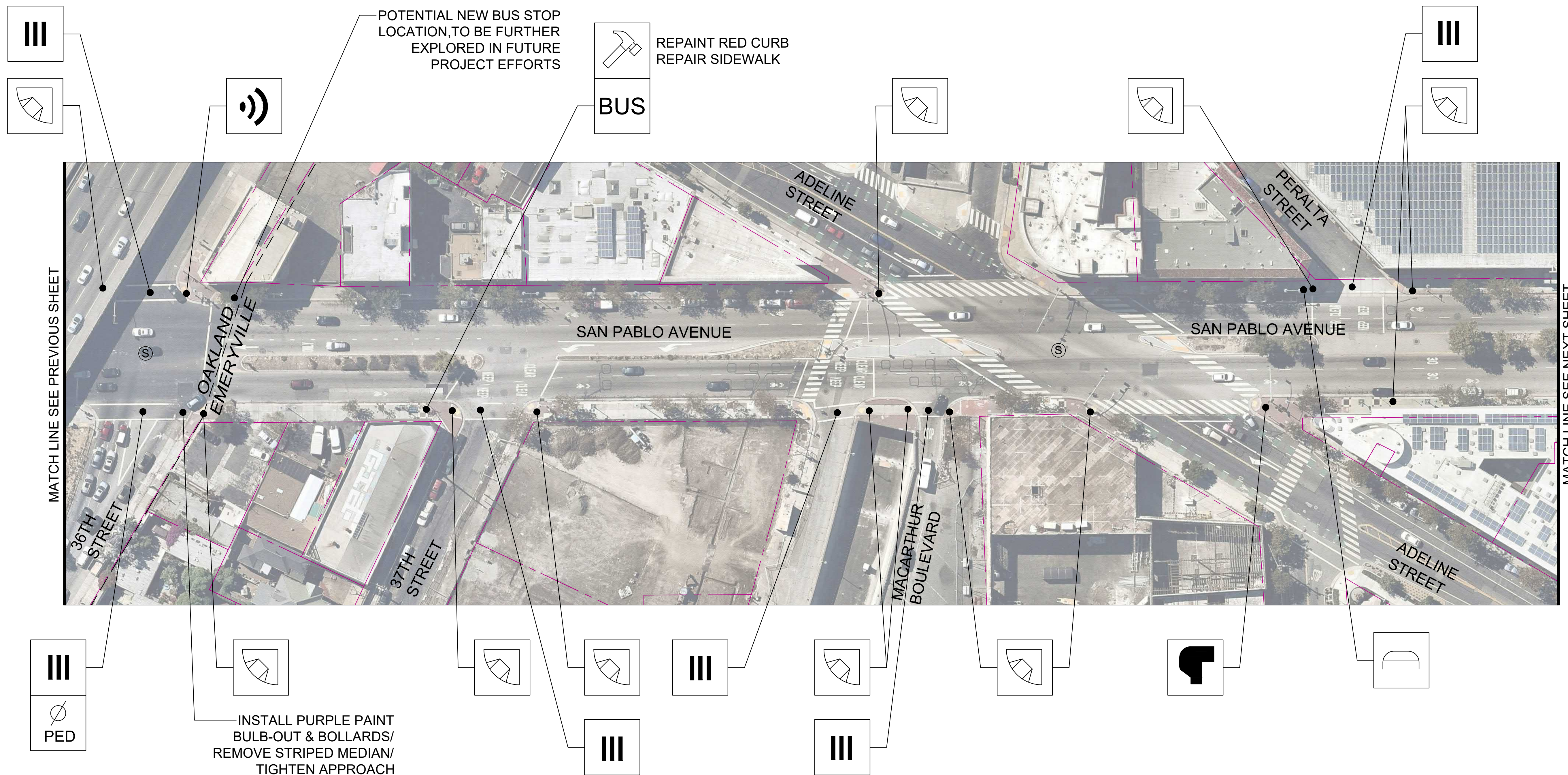
LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
- Signalized intersection

GRAPHIC SCALE
 (IN FEET)
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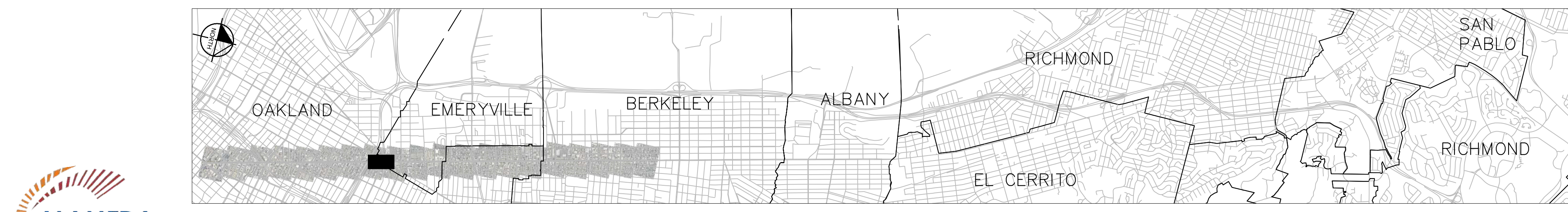


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
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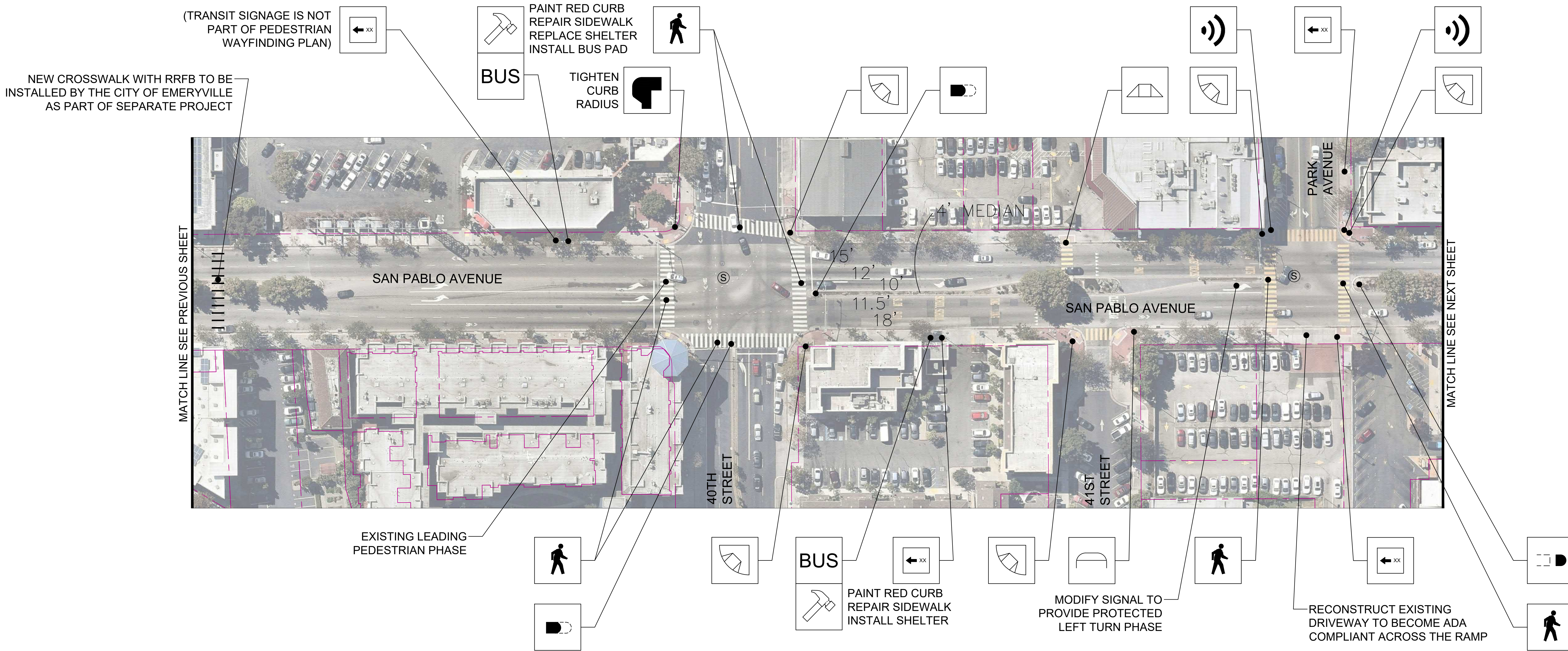
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION

GRAPHIC SCALE
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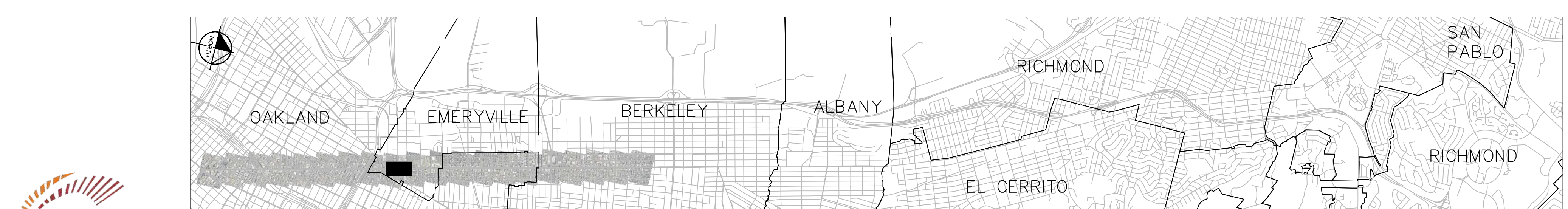


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
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	RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		INSTALL AUDIBLE PEDESTRIAN SIGNAL		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		EXISTING BUS STOP TO REMAIN
	EXISTING BUS STOP TO BE RELOCATED		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP		

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LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
- Signalized intersection

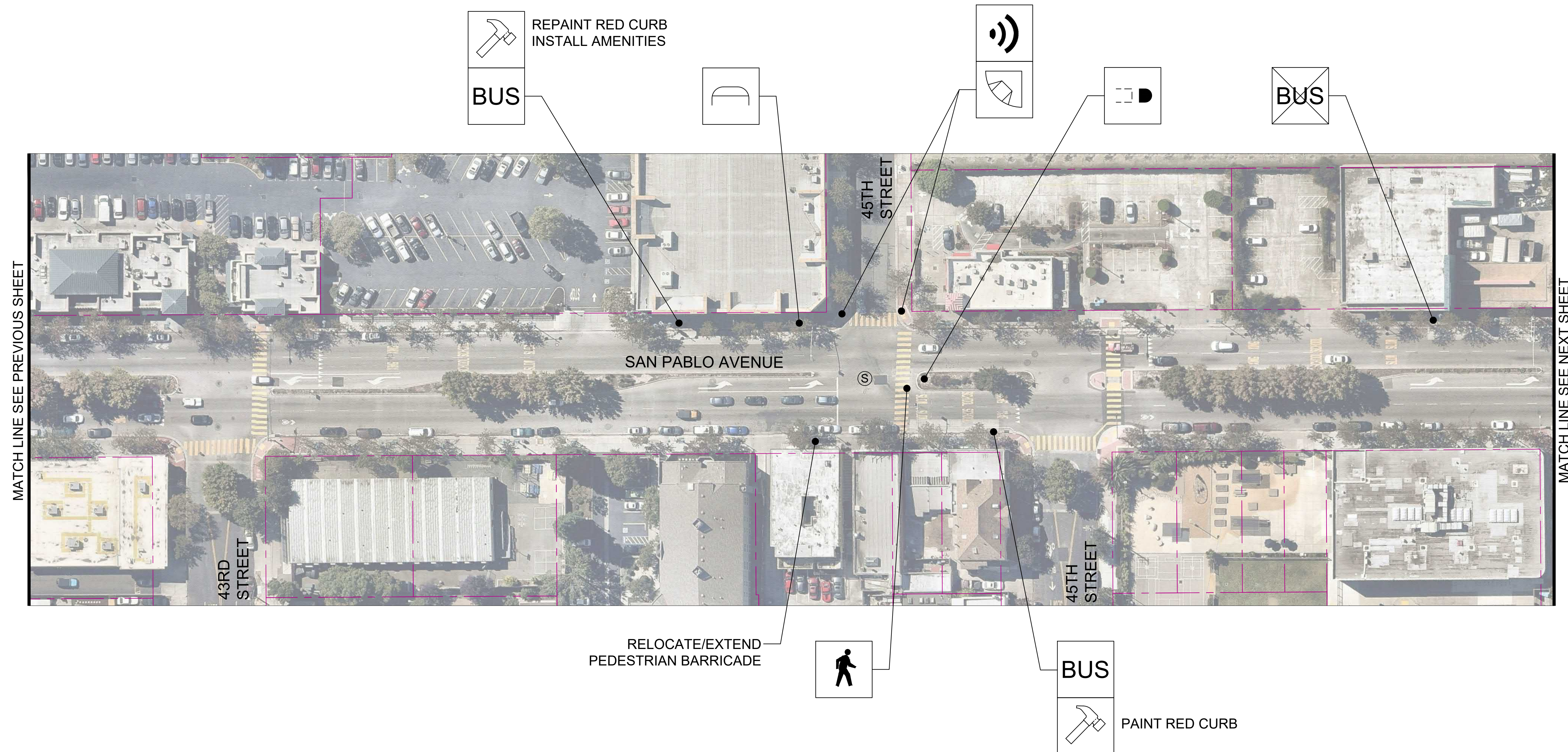
GRAPHIC SCALE
 (IN FEET)
 1 inch = 40 ft.

BASE MAP MARCH 2019

SHEET 9 OF 32

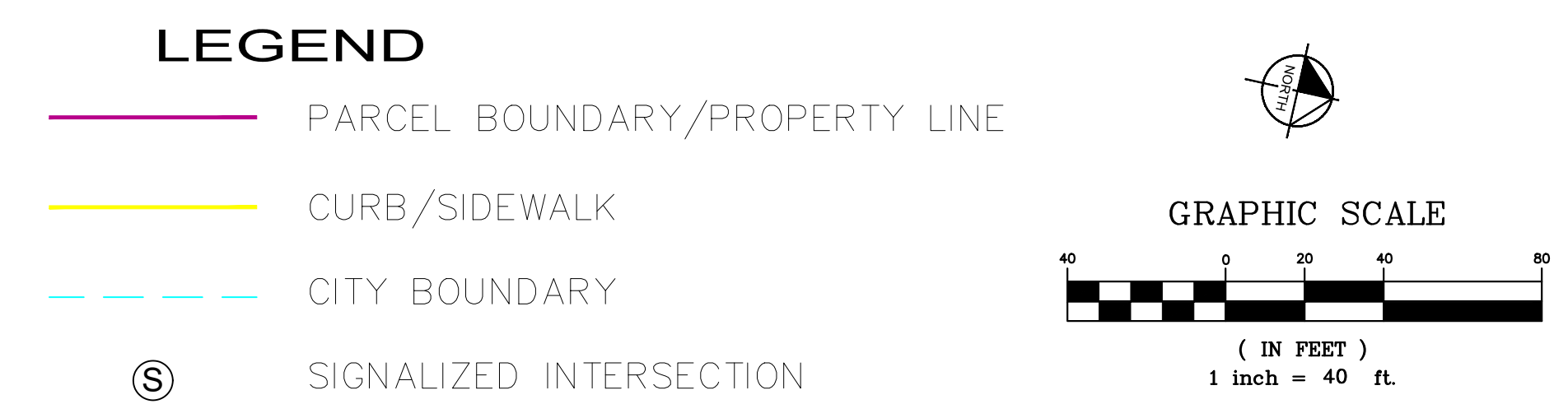
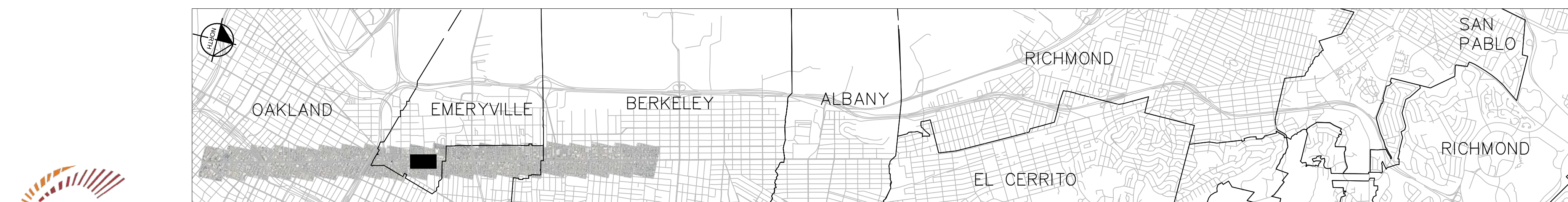


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

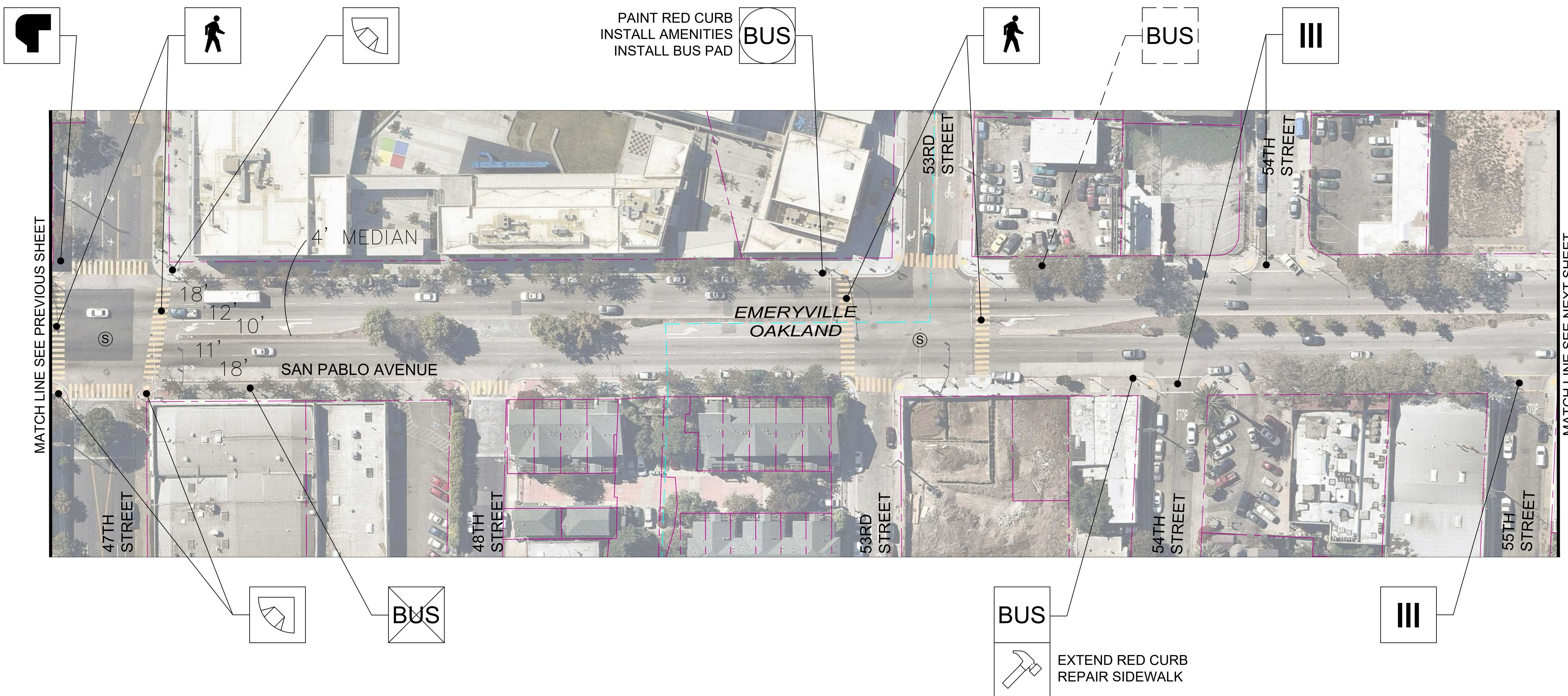


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		RECONSTRUCT SIDEWALK		INSTALL AUDIBLE PEDESTRIAN SIGNAL
	RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		CONSTRUCT CURB RAMP		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)
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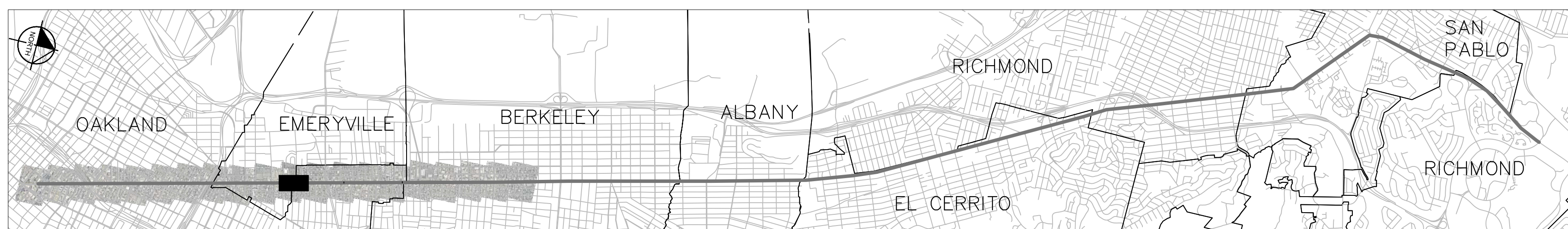


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

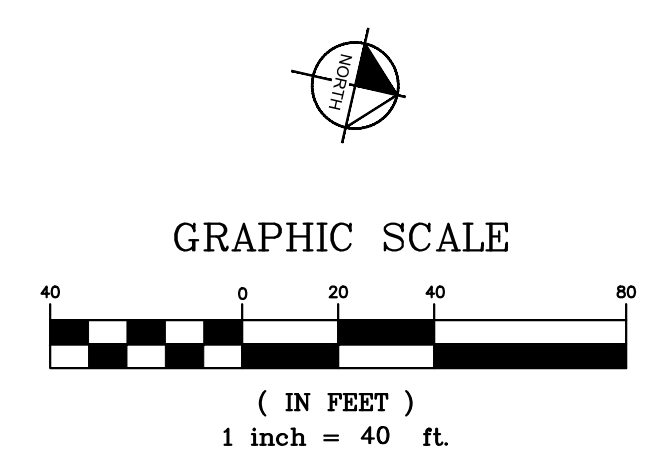


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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	INSTALL PEDESTRIAN BARRICADE		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		INSTALL AUDIBLE PEDESTRIAN SIGNAL
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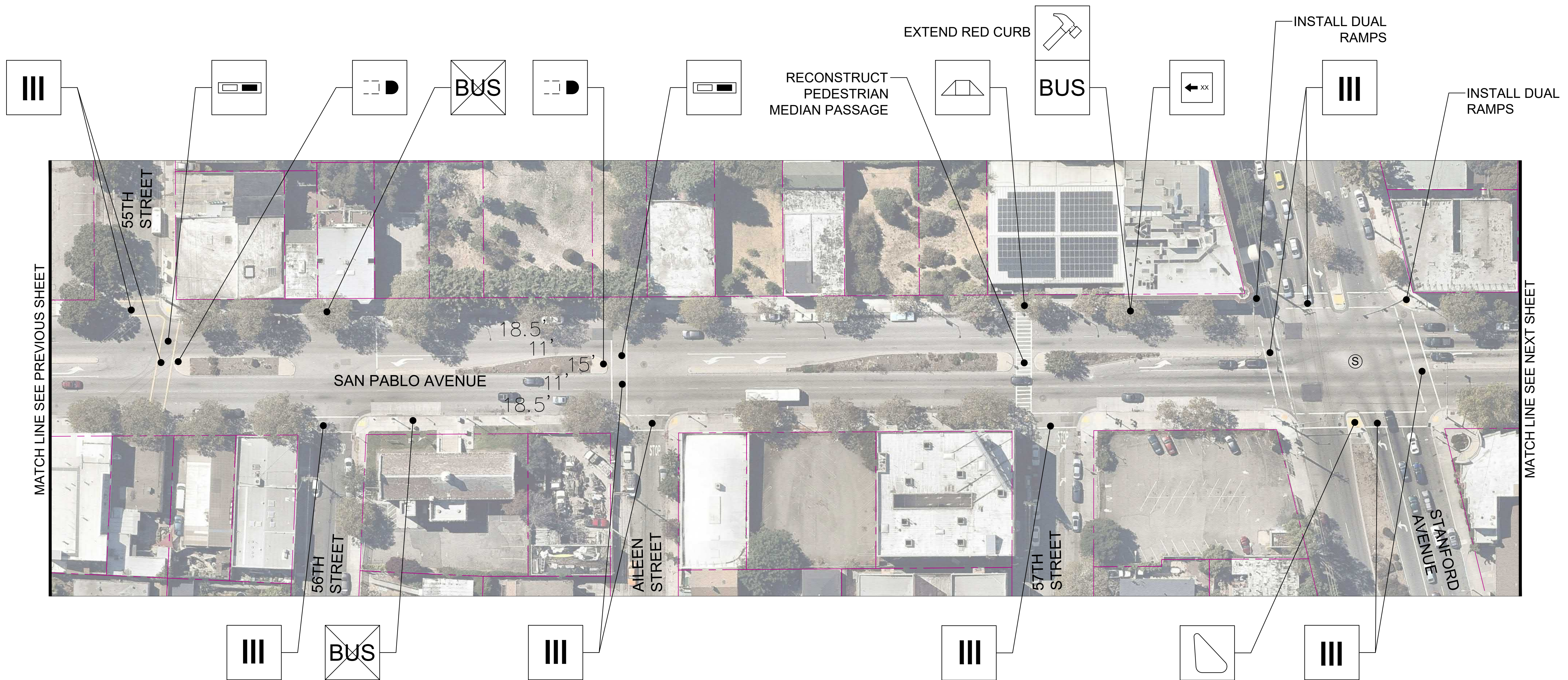
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LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



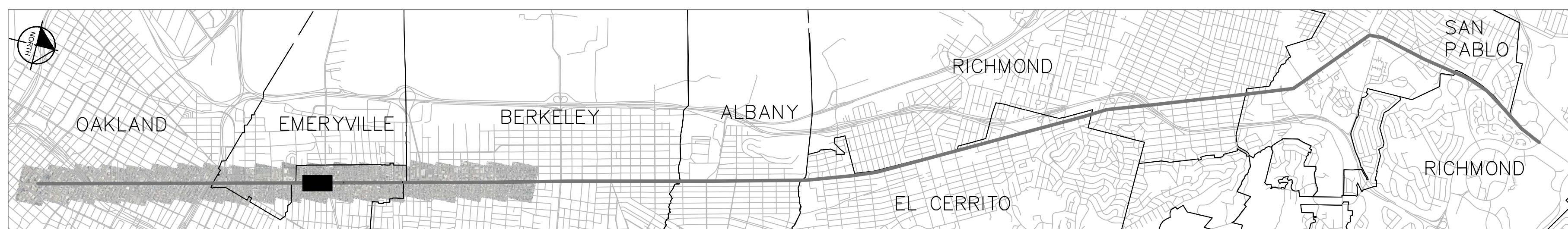
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

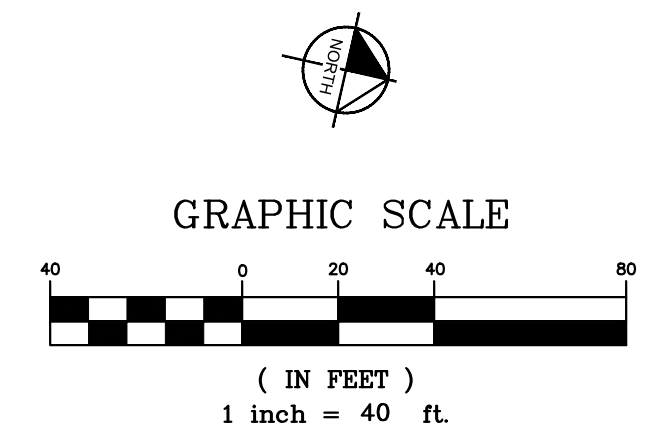
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		
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	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)						
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE										

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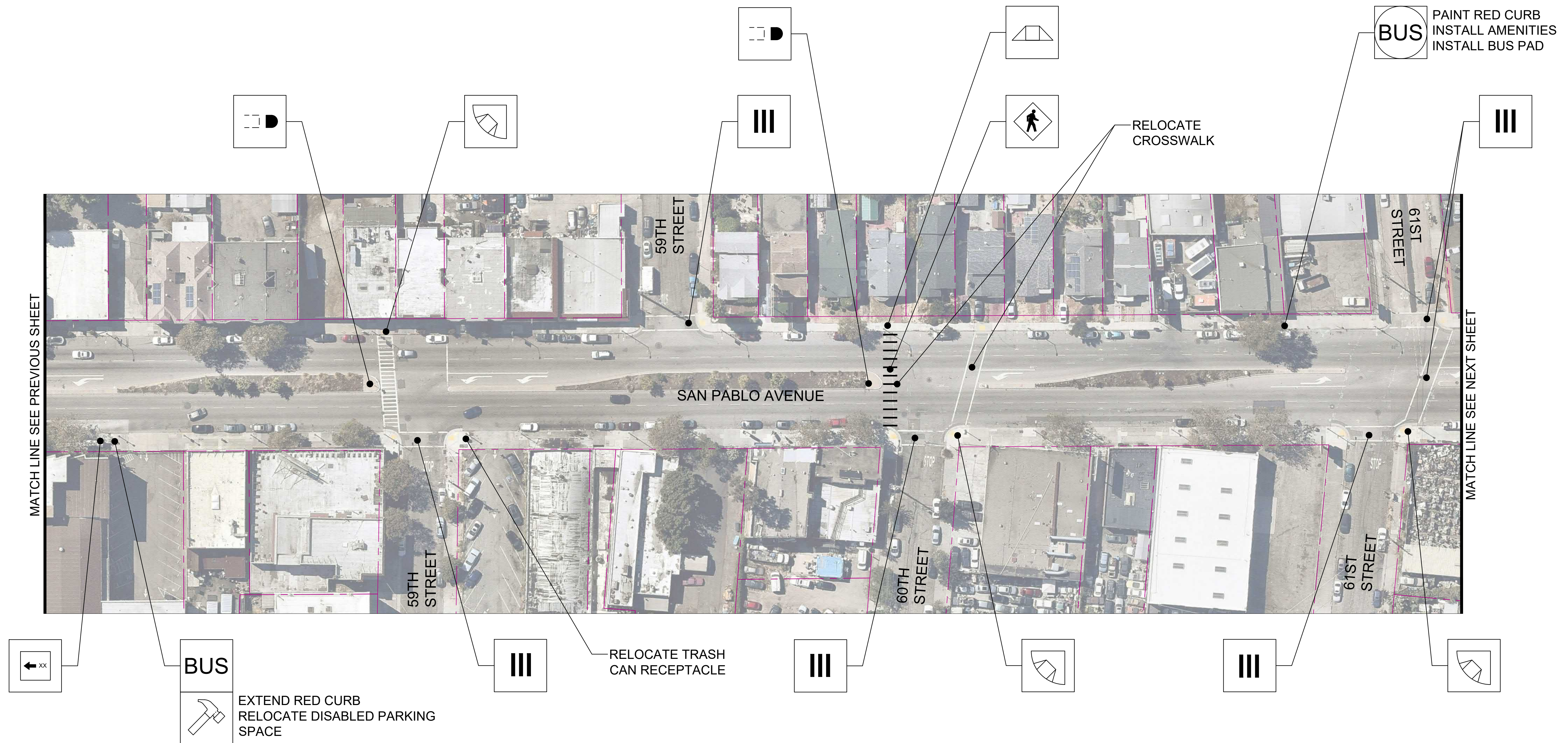
LEGEND

	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



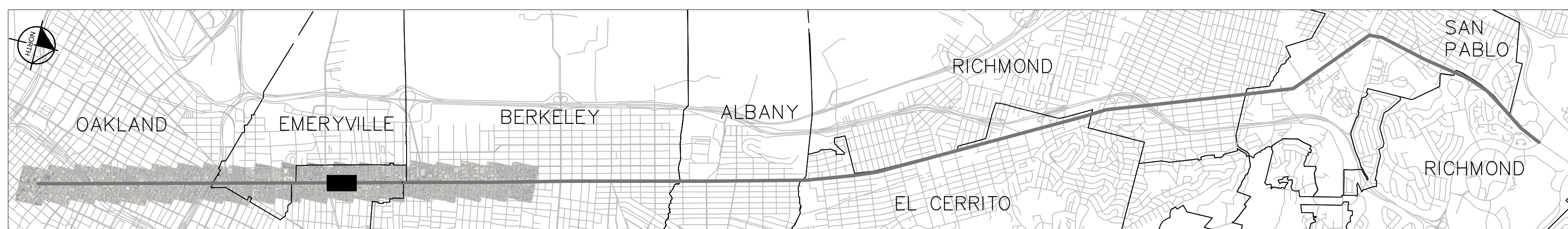
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

BASE MAP MARCH 2019

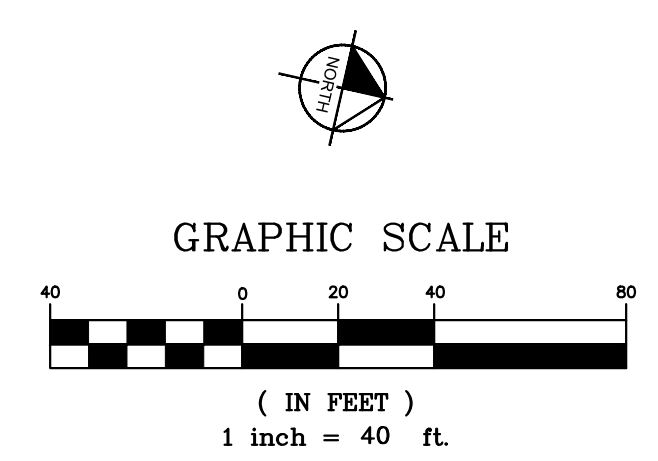


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		INSTALL AUDIBLE PEDESTRIAN SIGNAL
	EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE ELIMINATED		EXISTING BUS STOP TO BE RELOCATED		RELOCATED BUS STOP

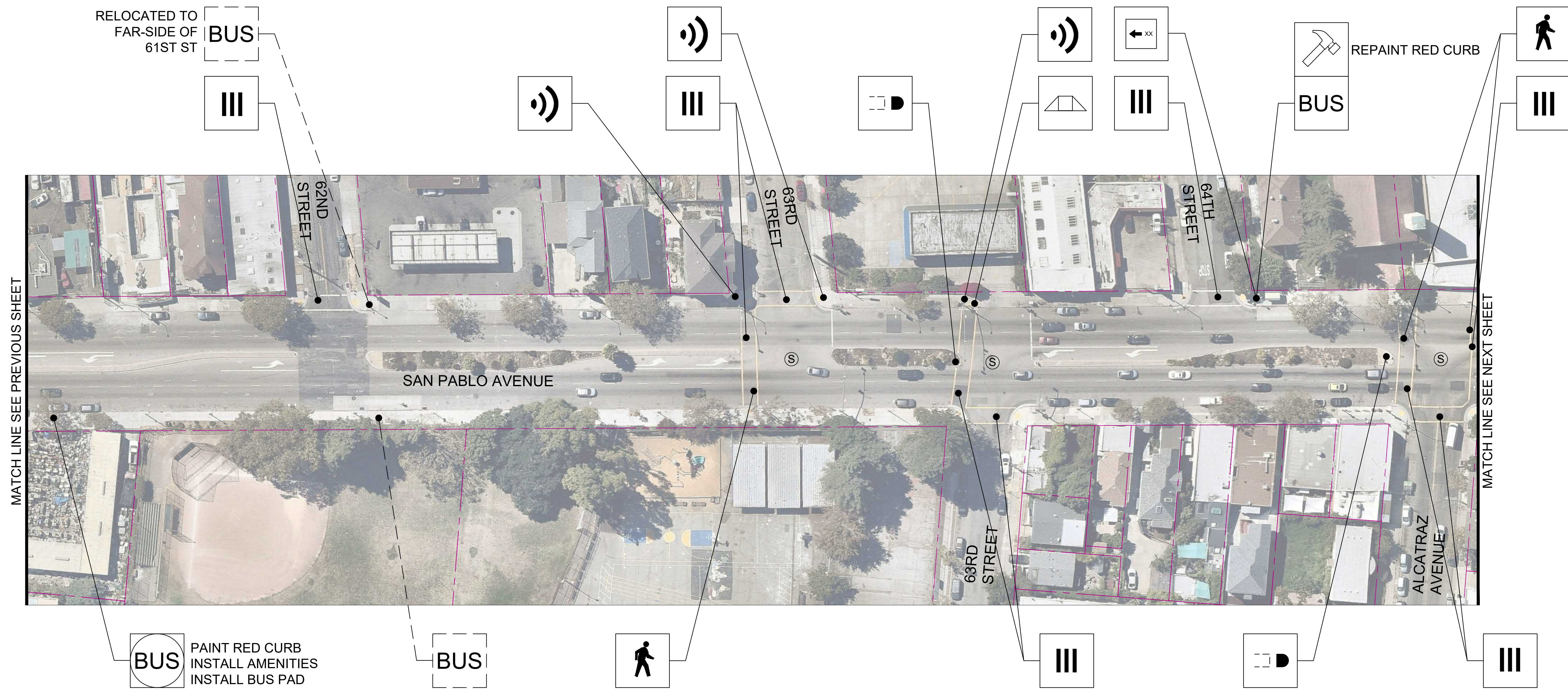
① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION

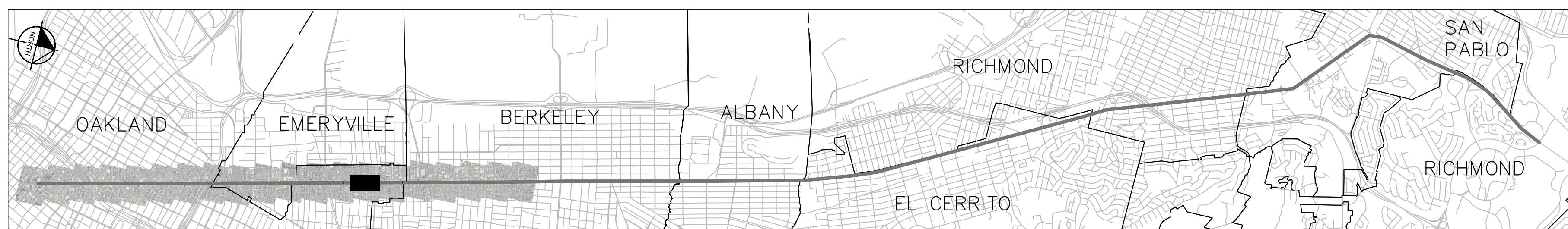


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

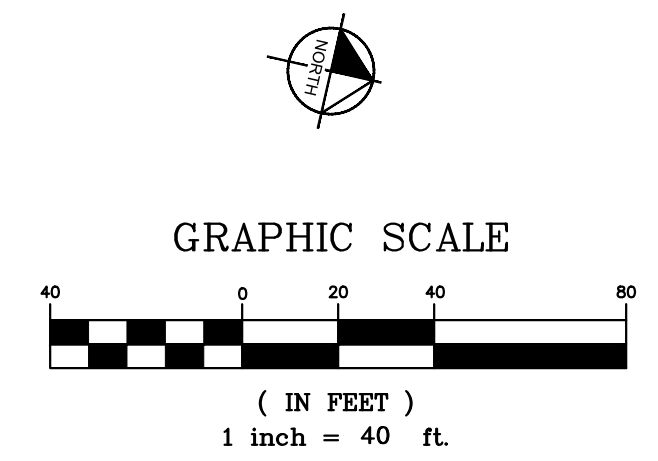


IMPROVEMENT LEGEND											
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE		CONSTRUCT CURB RAMP		EXISTING BUS STOP TO BE ELIMINATED
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE		INSTALL AUDIBLE PEDESTRIAN SIGNAL		RELOCATED BUS STOP
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)				

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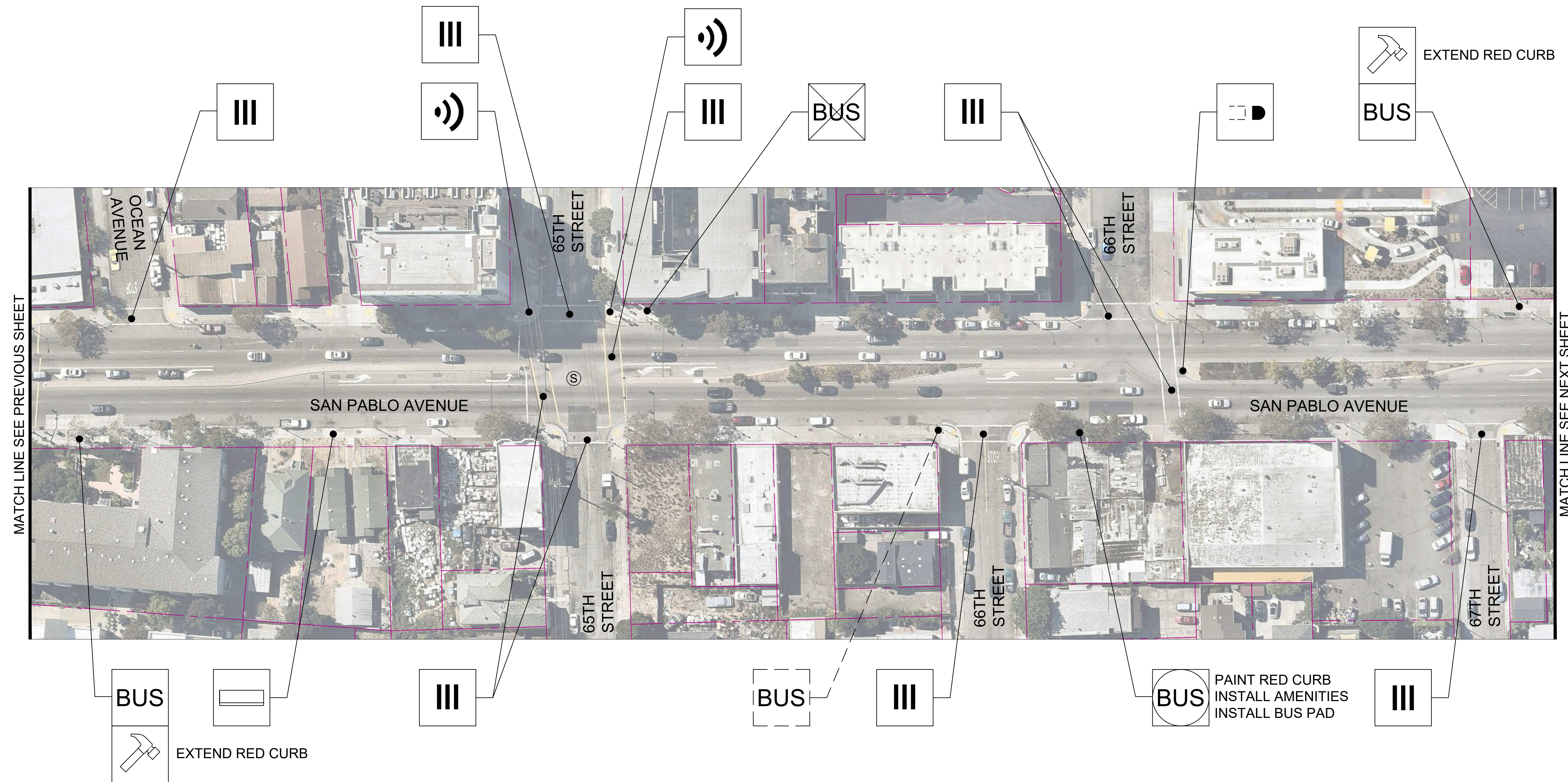


LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

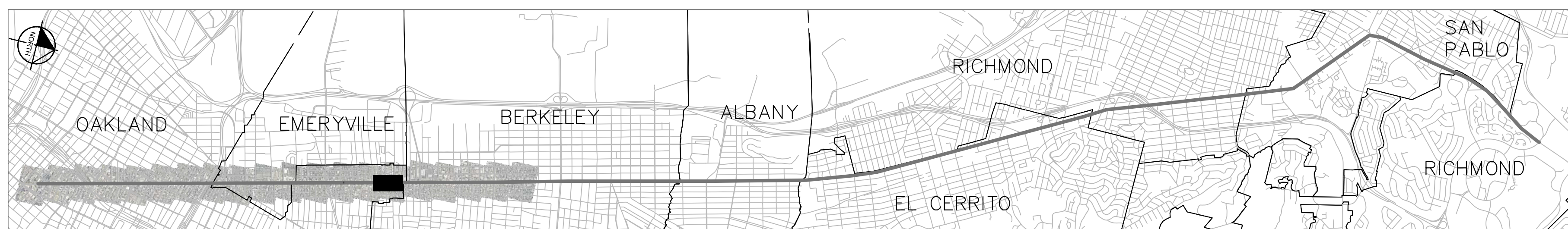
BASE MAP MARCH 2019



IMPROVEMENT LEGEND

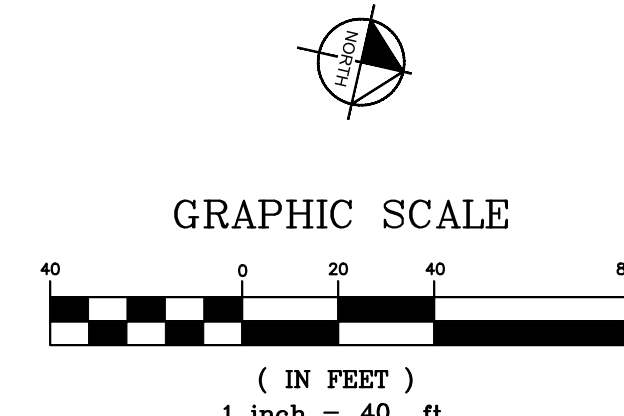
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE		CONSTRUCT CURB RAMP		INSTALL AUDIBLE PEDESTRIAN SIGNAL		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP
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	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE										

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



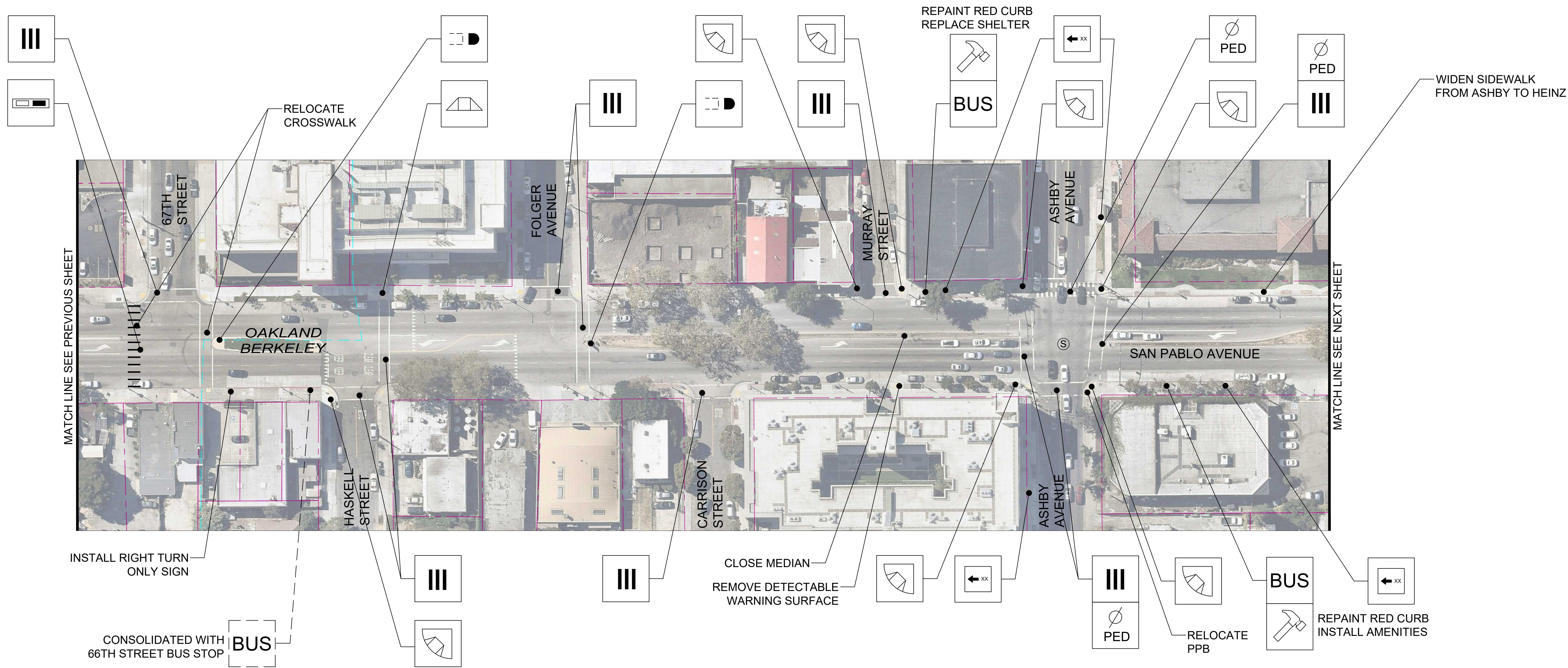
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

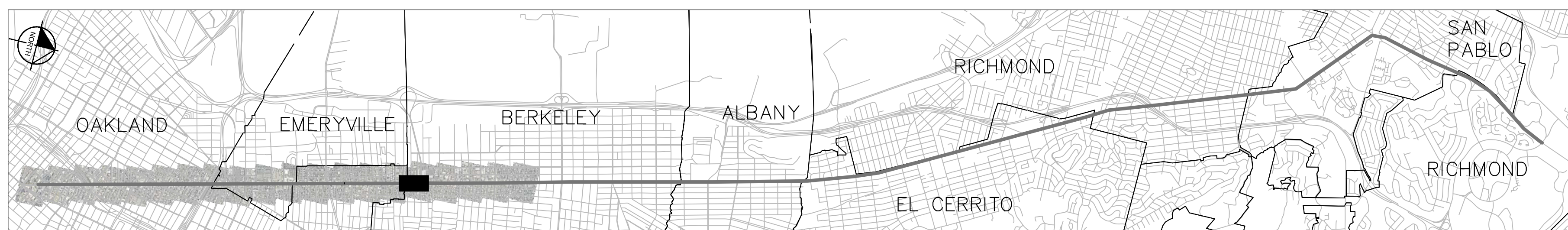
BASE MAP MARCH 2019



IMPROVEMENT LEGEND

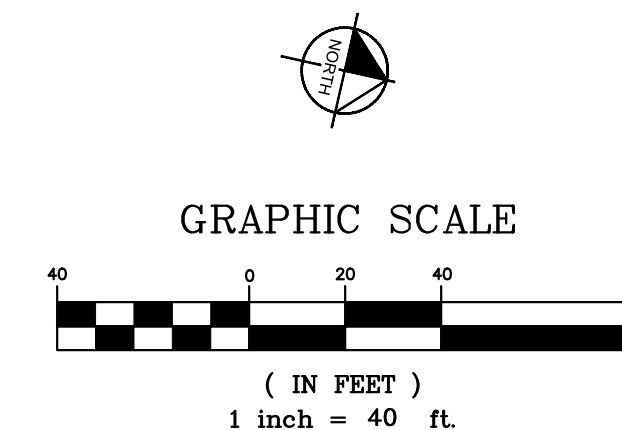
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	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		RELOCATE PEDESTRIAN REFUGE MEDIAN NOSE		INSTALL LEADING PEDESTRIAN PHASE						

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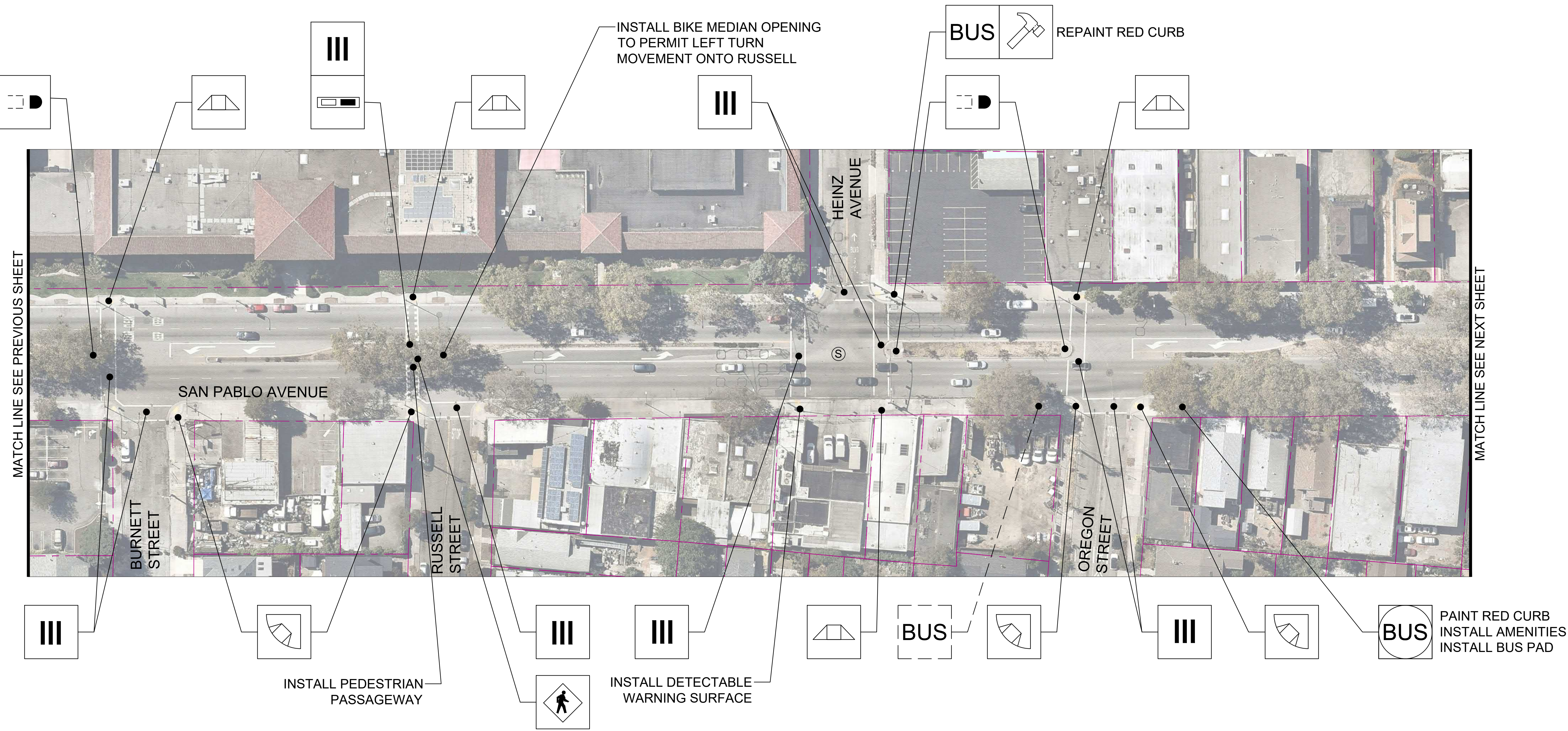
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



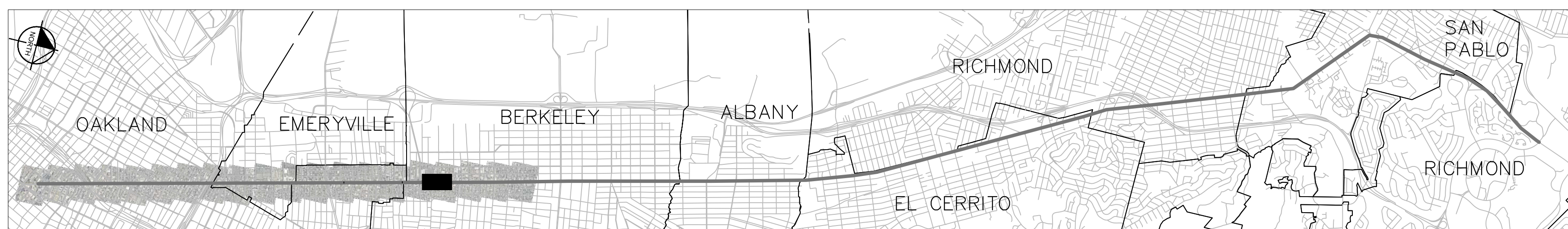
BASE MAP MARCH 2019



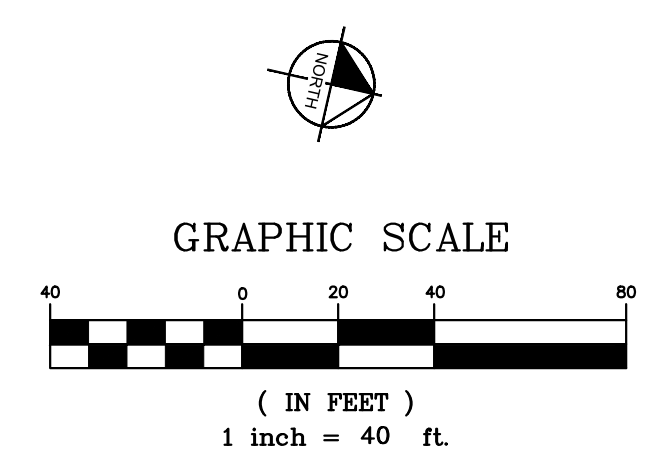


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL WAYFINDING SIGN		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	INSTALL PEDESTRIAN BARRICADE		INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE
	INSTALL AUDIBLE PEDESTRIAN SIGNAL		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		EXISTING BUS STOP TO BE ELIMINATED
	IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		RELOCATED BUS STOP				

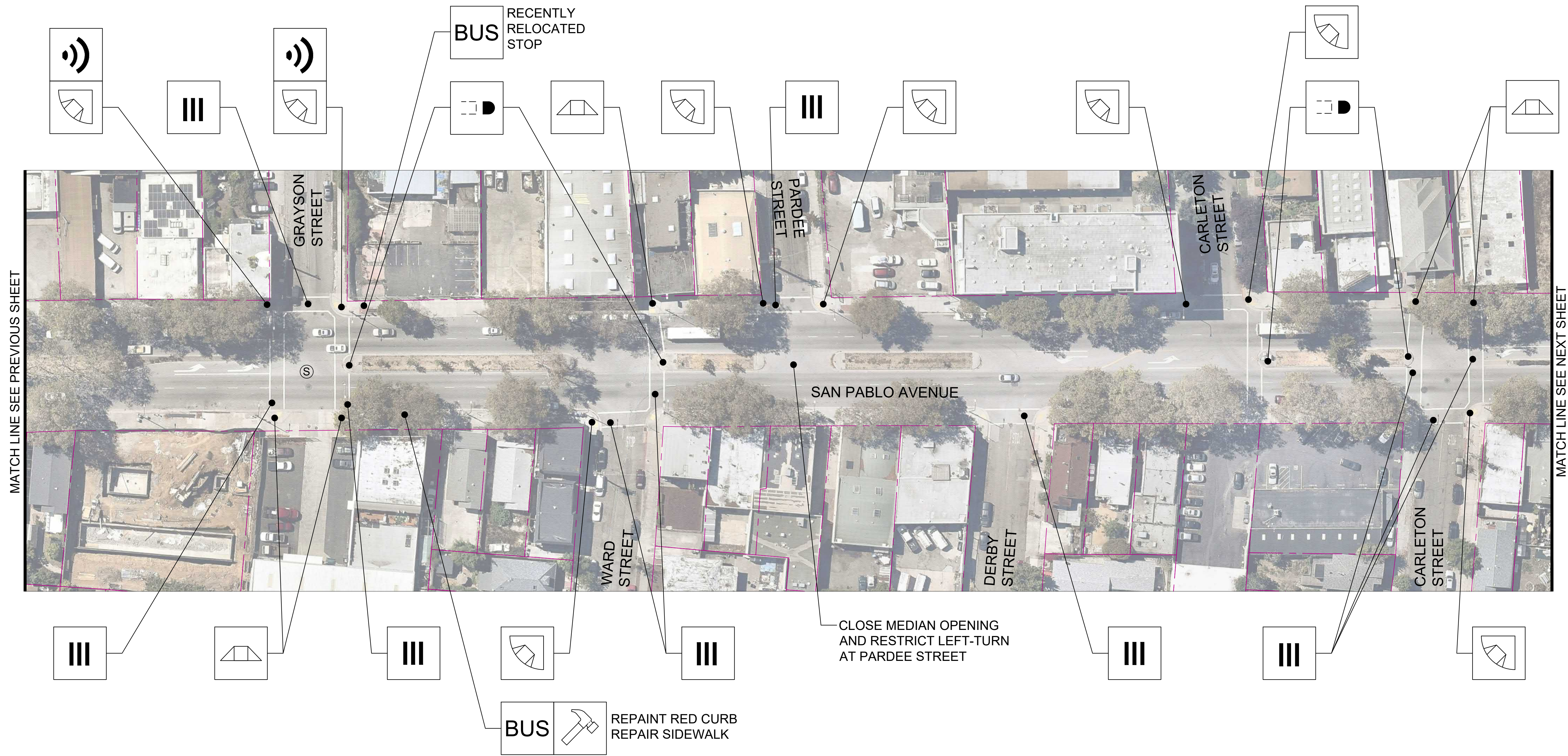
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LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



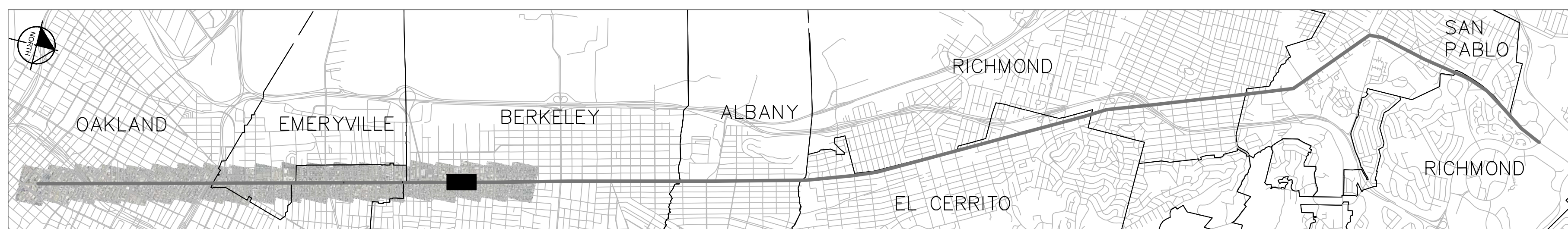
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

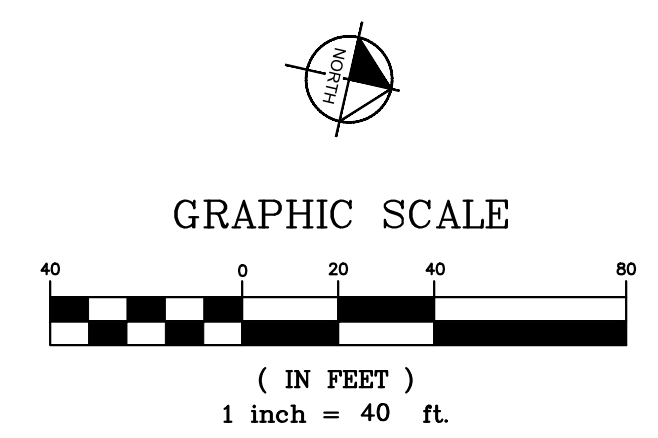
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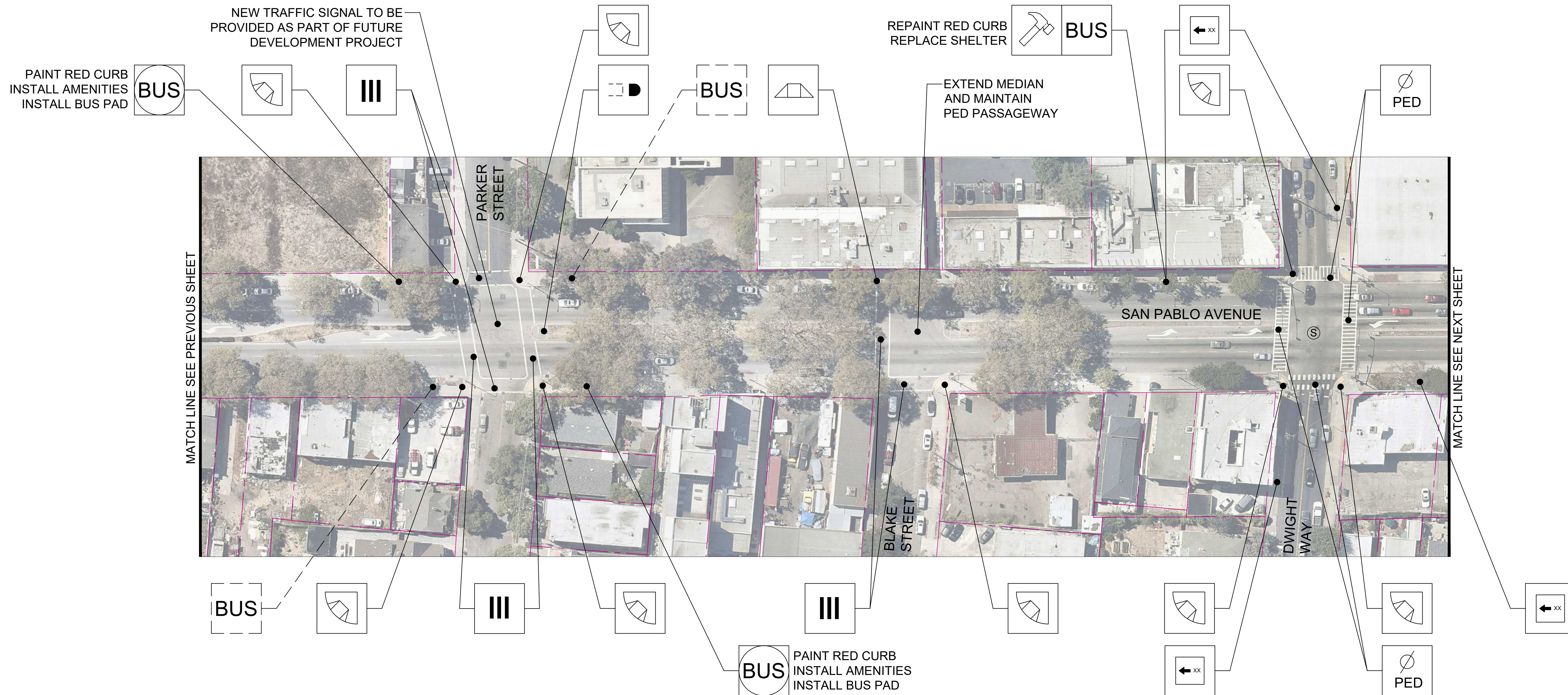
LEGEND

	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



BASE MAP MARCH 2019

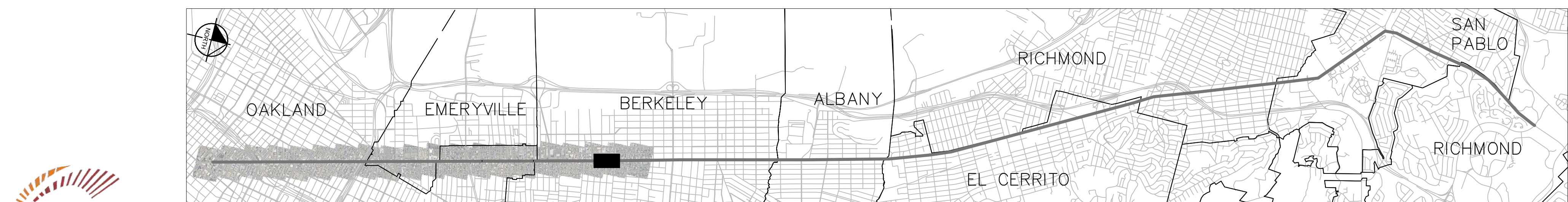




IMPROVEMENT LEGEND

	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED
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LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
- Signalized intersection

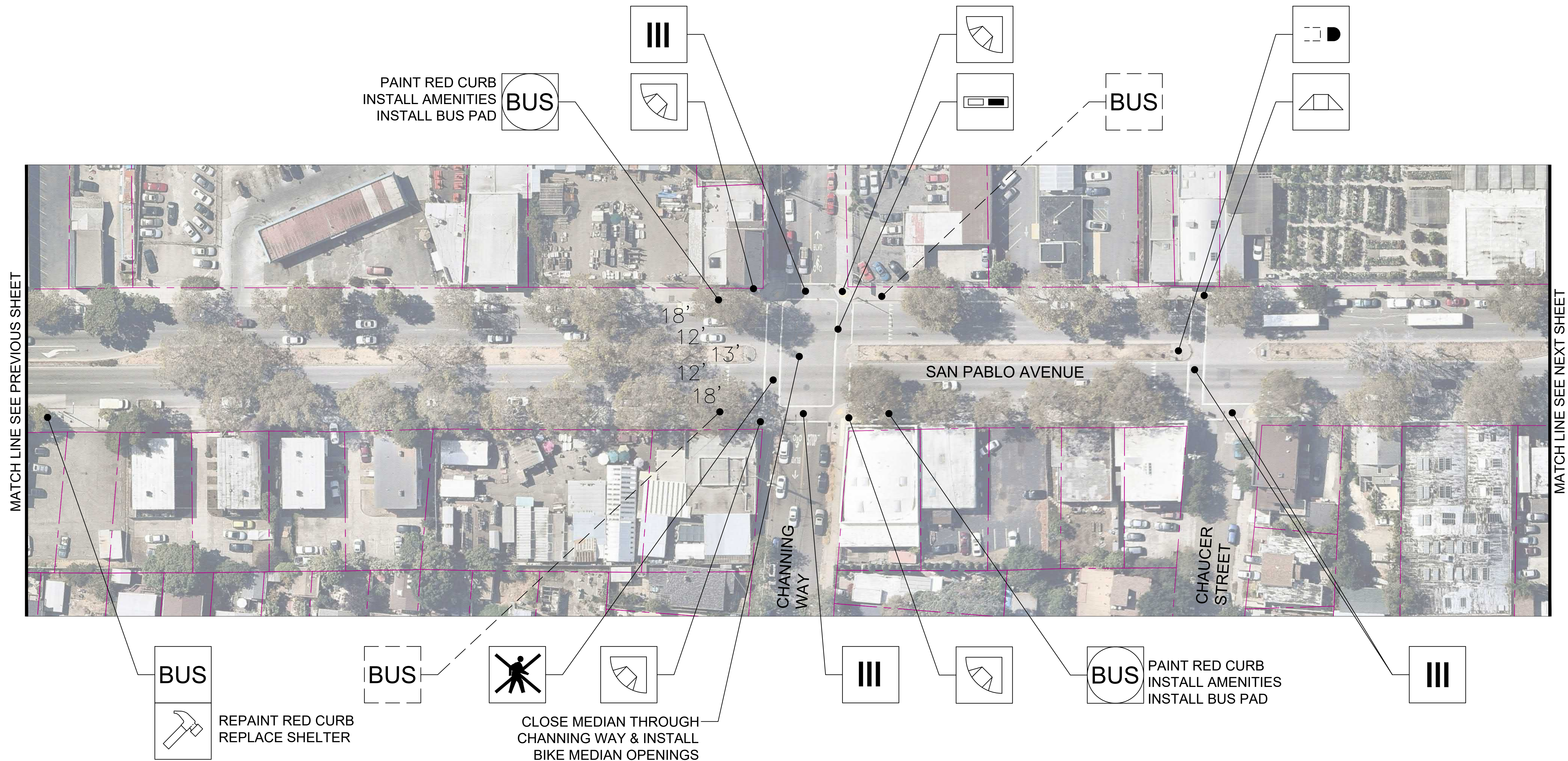
GRAPHIC SCALE
 (IN FEET)
 1 inch = 40 ft.

BASE MAP
 MARCH 2019

SHEET 19 OF 32

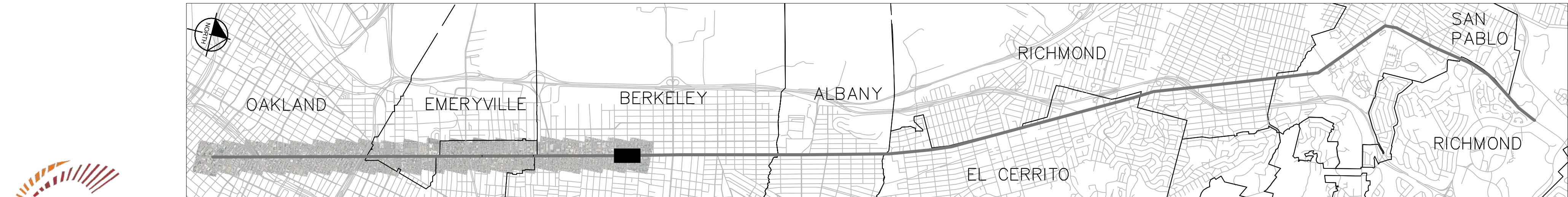


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL PHB AS DETERMINED BY WARRANT		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL WAYFINDING SIGN		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	RECONSTRUCT SIDEWALK		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT
	CONSTRUCT CURB RAMP		INSTALL AUDIBLE PEDESTRIAN SIGNAL		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		EXISTING BUS STOP TO REMAIN
	EXISTING BUS STOP TO BE RELOCATED		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP		SIGNALIZED INTERSECTION

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LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
- Signalized intersection

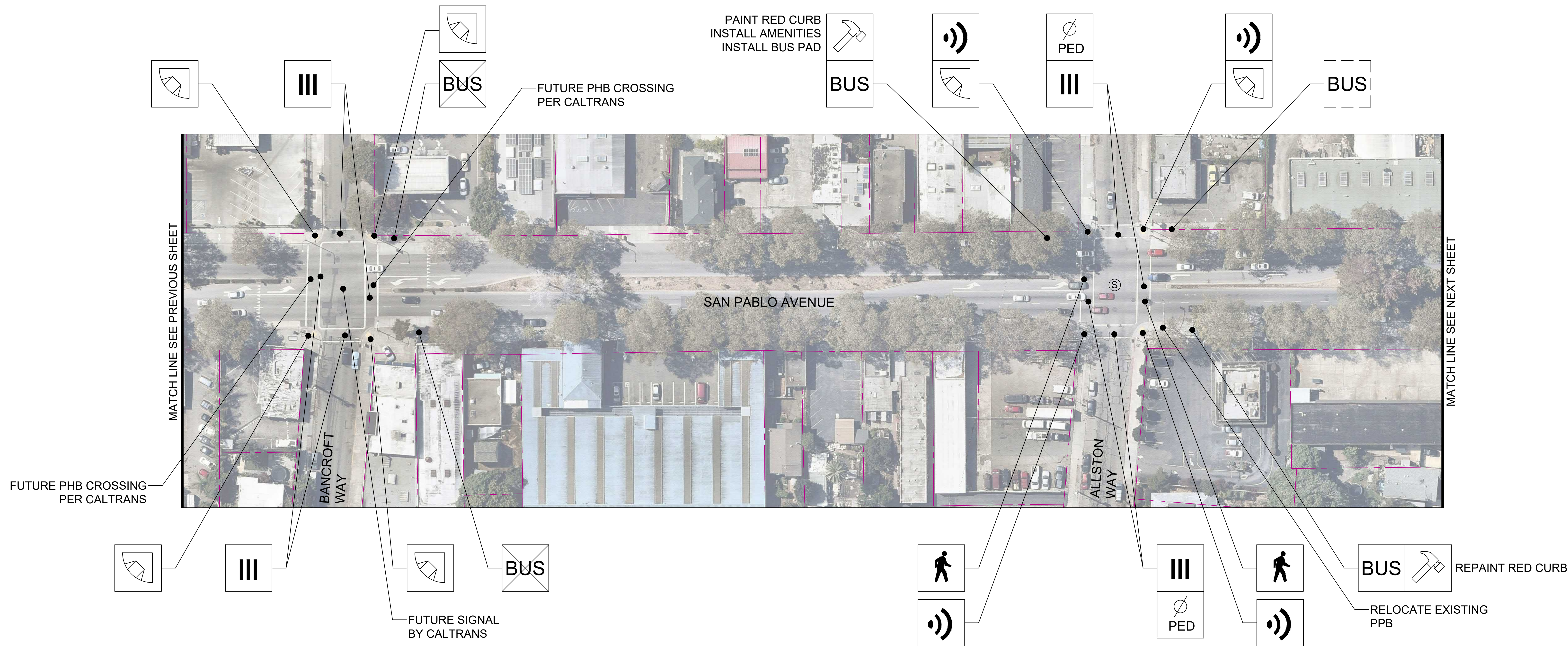
GRAPHIC SCALE
 (IN FEET)
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BASE MAP MARCH 2019

SHEET 20 OF 32

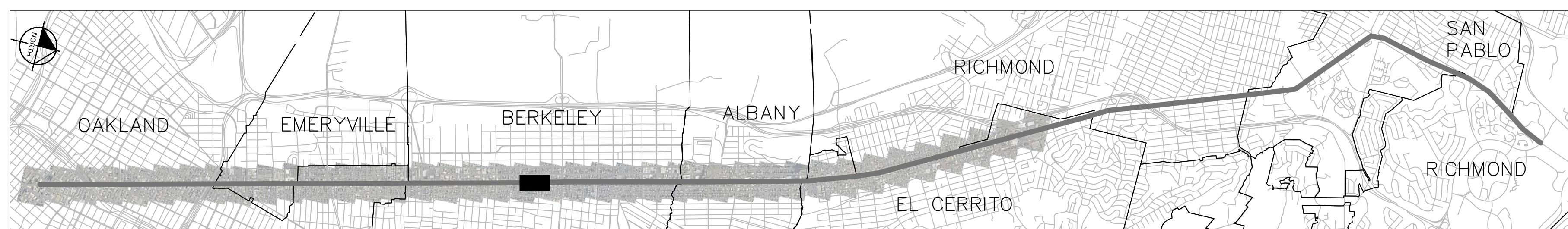


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

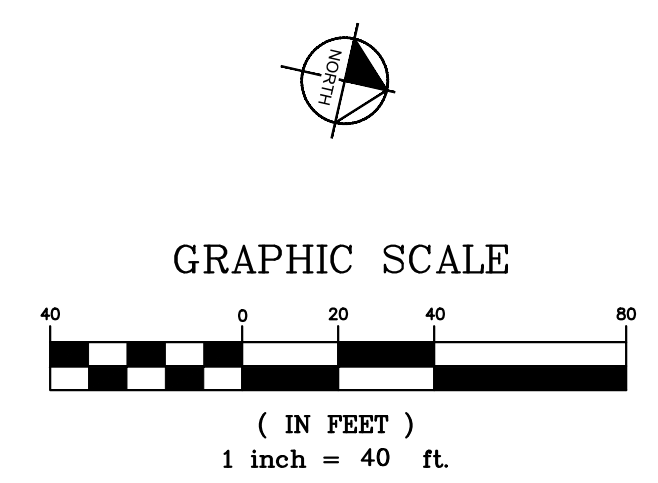


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
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	CONSTRUCT CURB RAMP		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED
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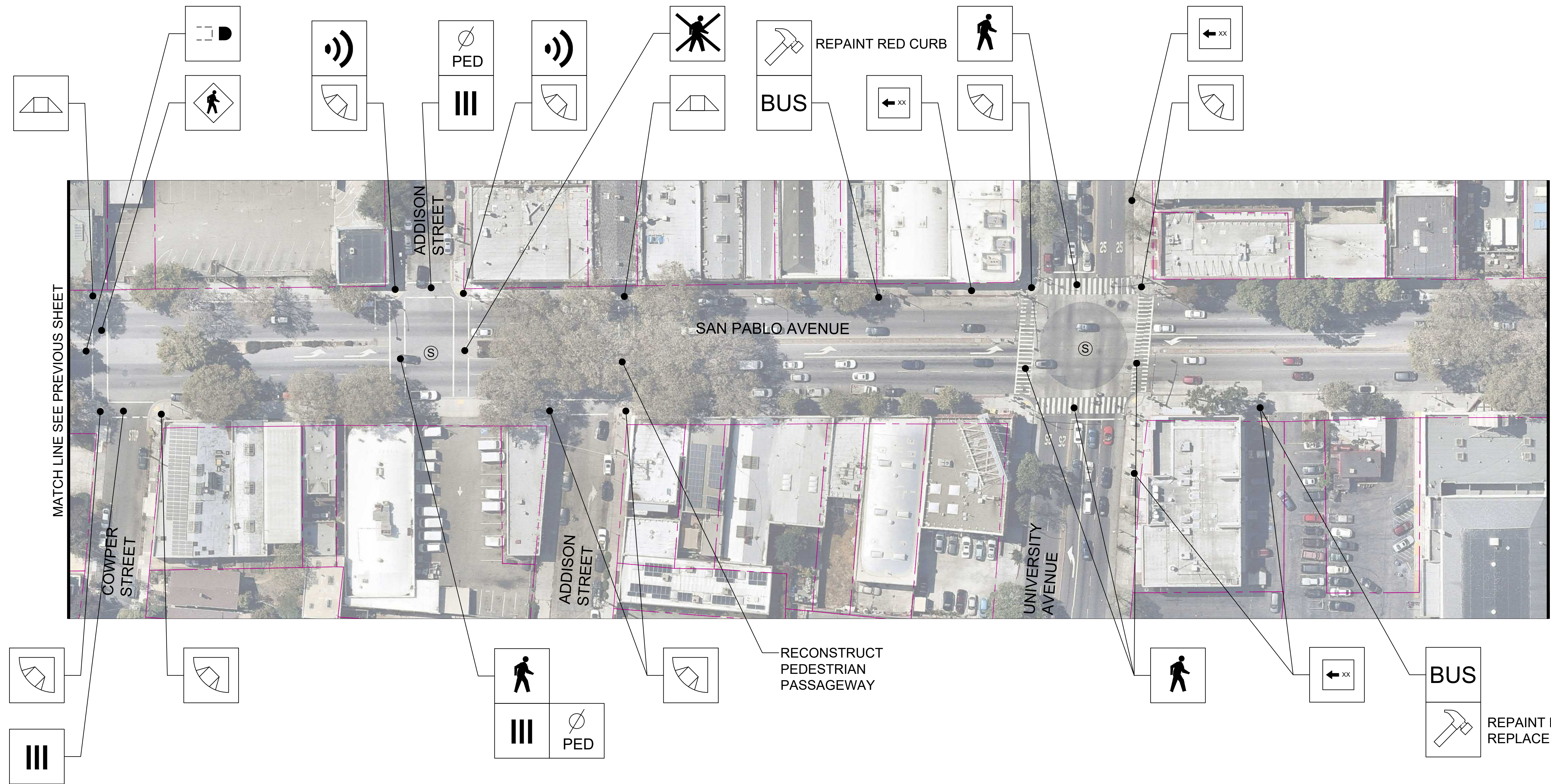
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LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



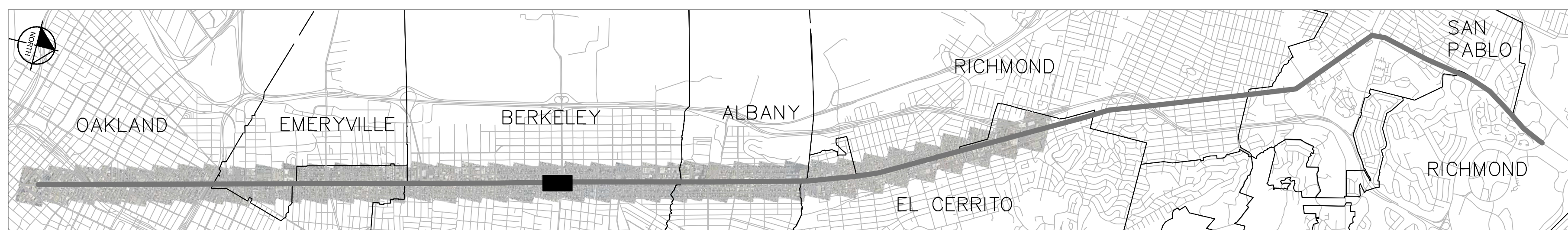
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

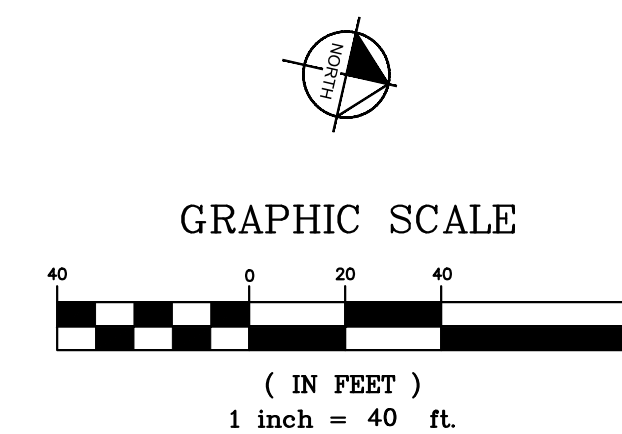
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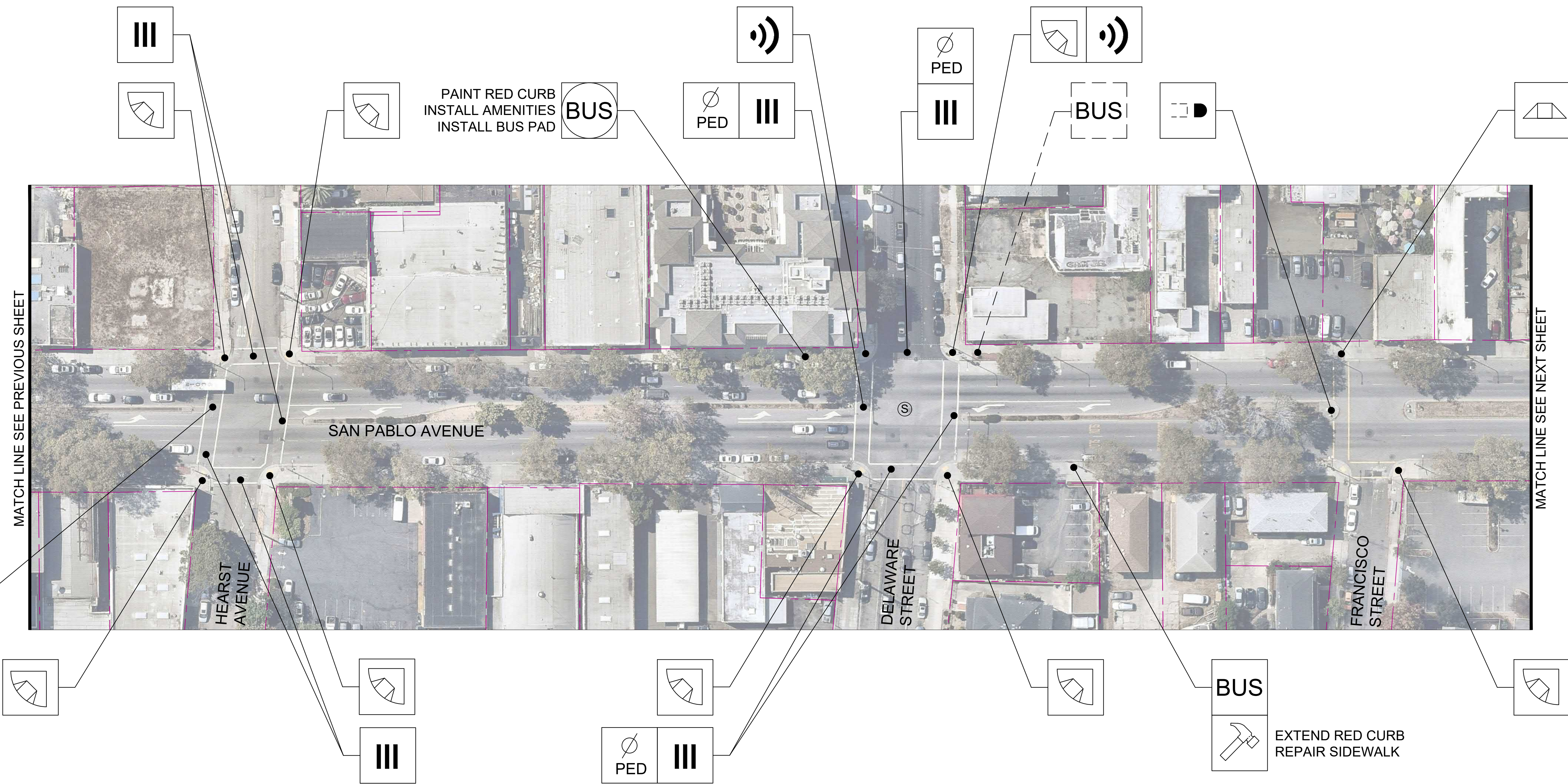
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



BASE MAP MARCH 2019

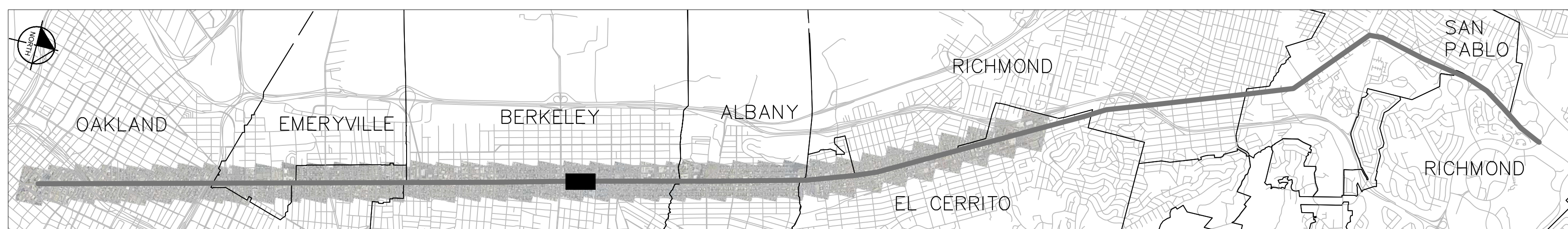




IMPROVEMENT LEGEND

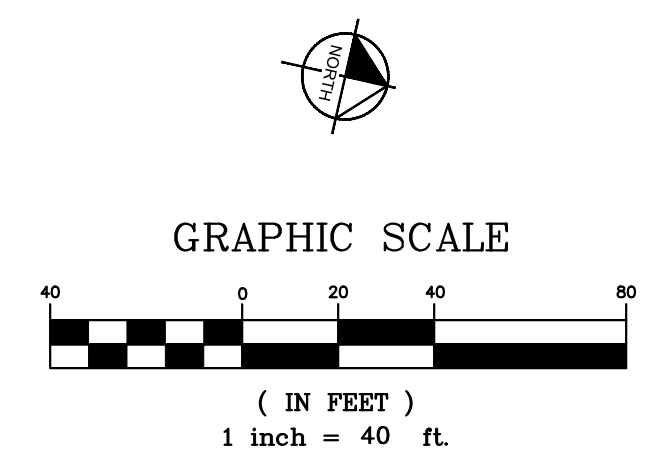
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			RECONSTRUCT SIDEWALK		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE						

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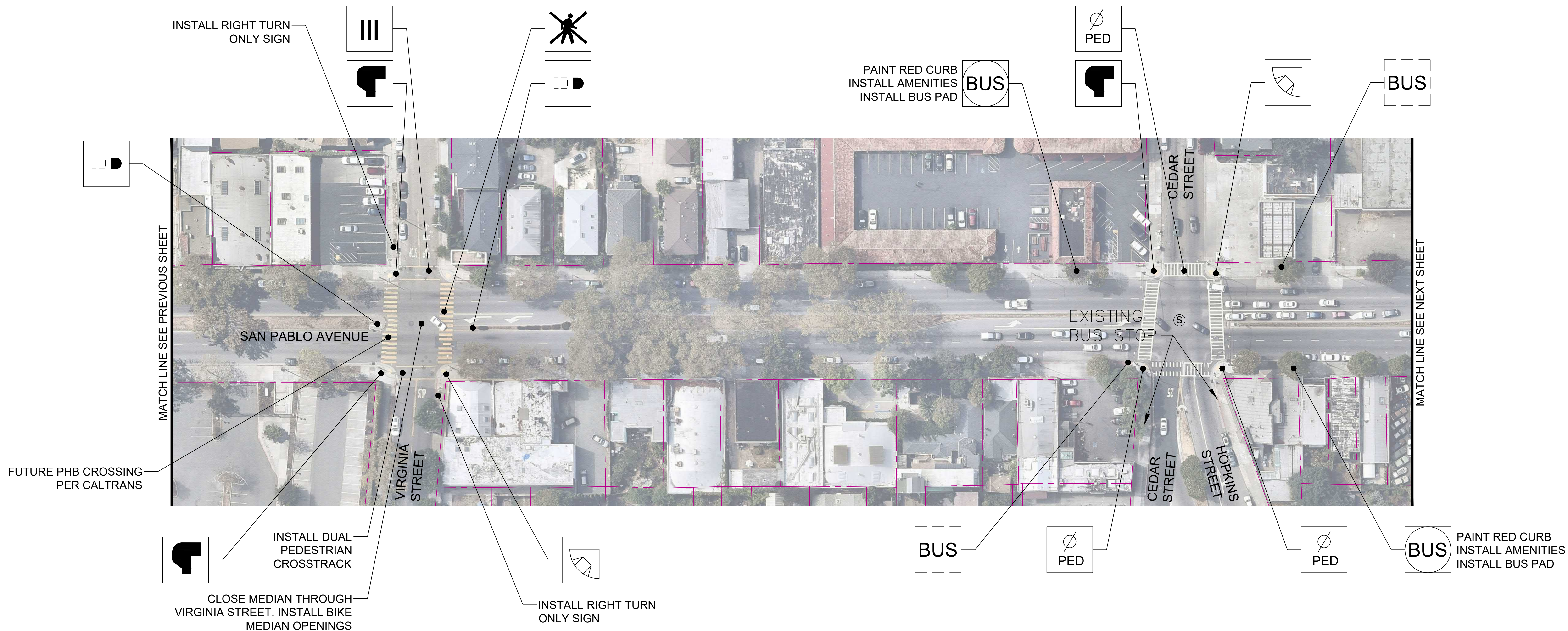


LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



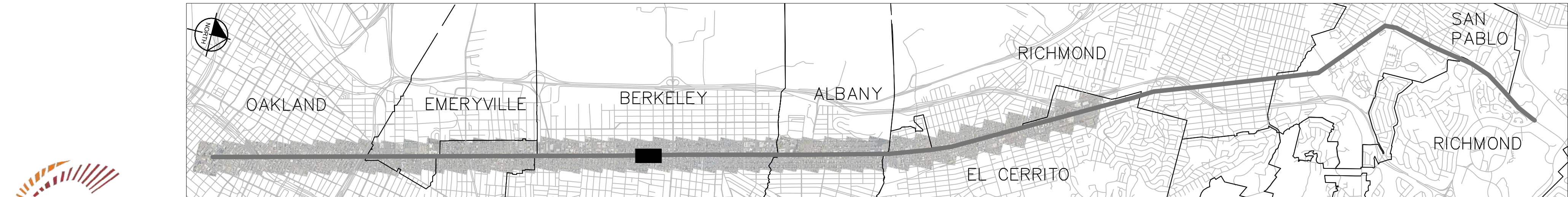
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

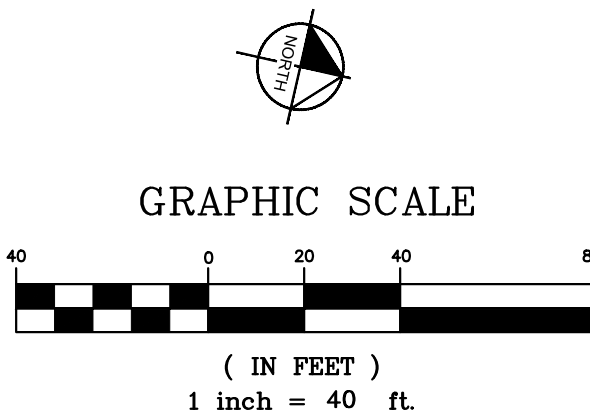
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	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE		INSTALL AUDIBLE PEDESTRIAN SIGNAL				
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)						

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



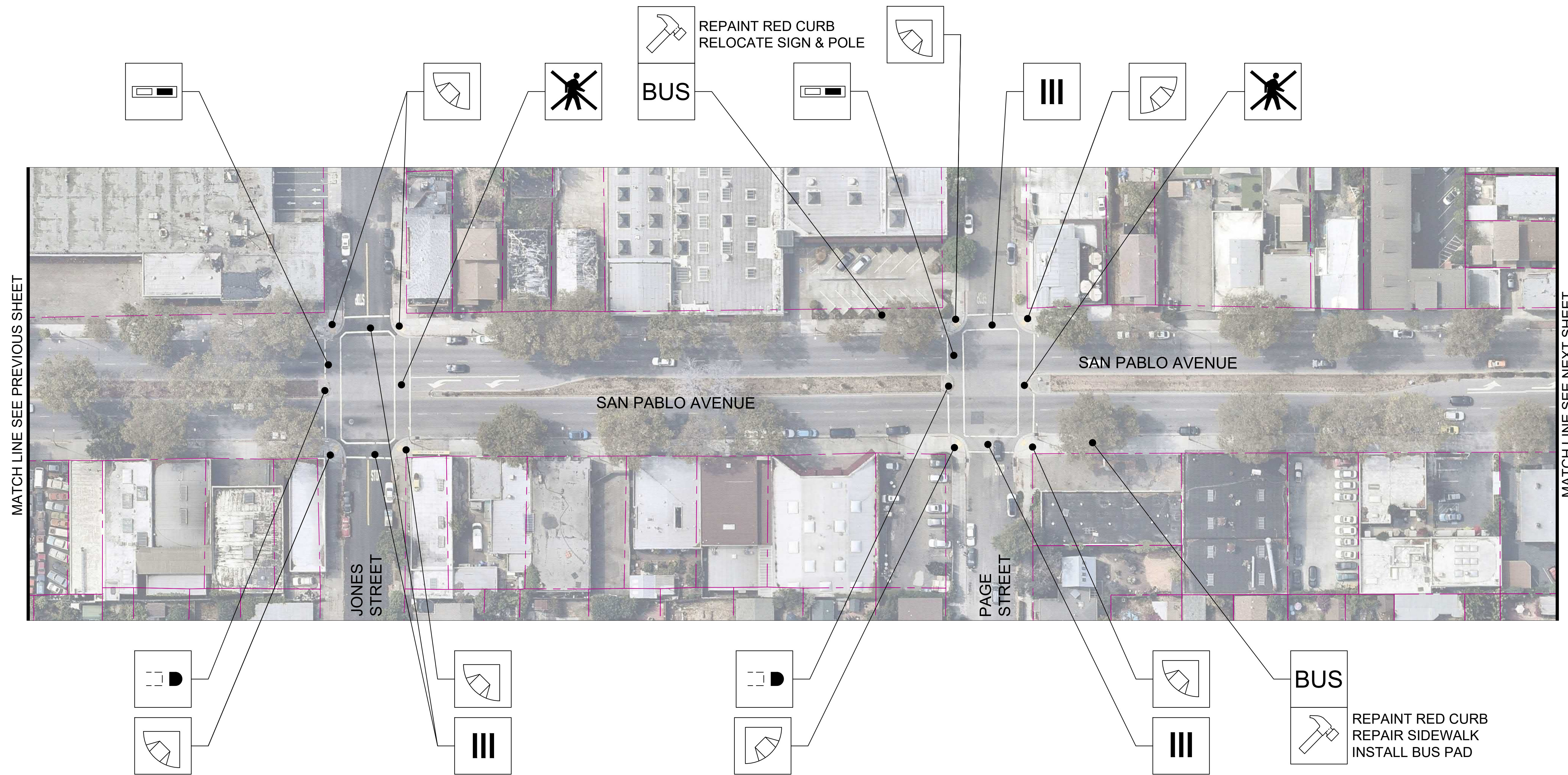
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



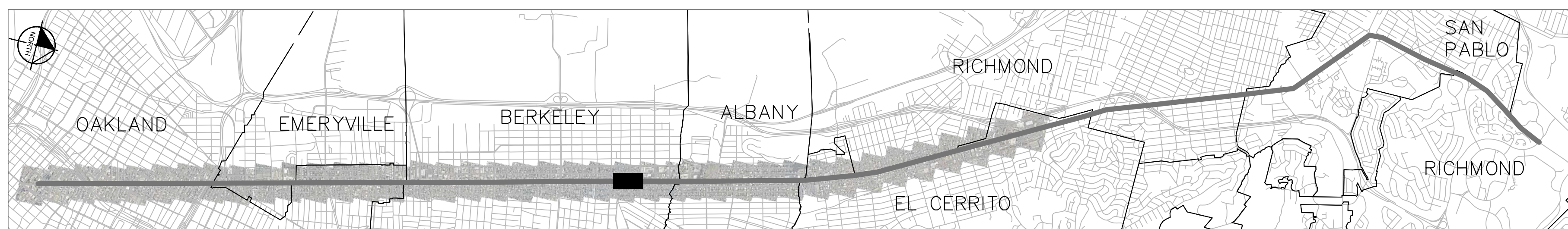
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

BASE MAP MARCH 2019

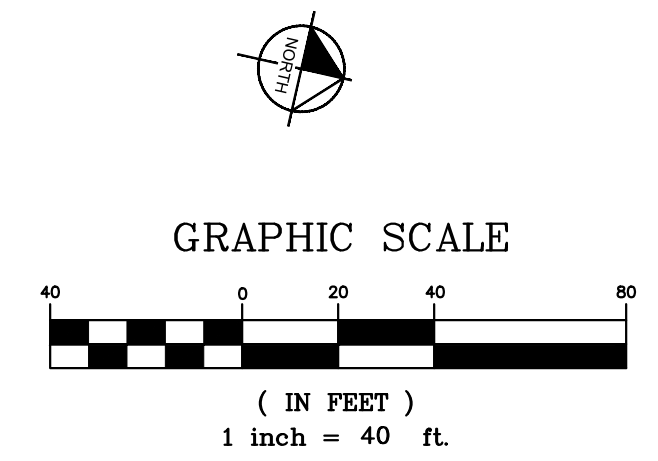


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT
	EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		CONSTRUCT CURB RAMP		EXISTING BUS STOP TO BE ELIMINATED
	RELOCATED BUS STOP		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		INSTALL AUDIBLE PEDESTRIAN SIGNAL		RELOCATED BUS STOP

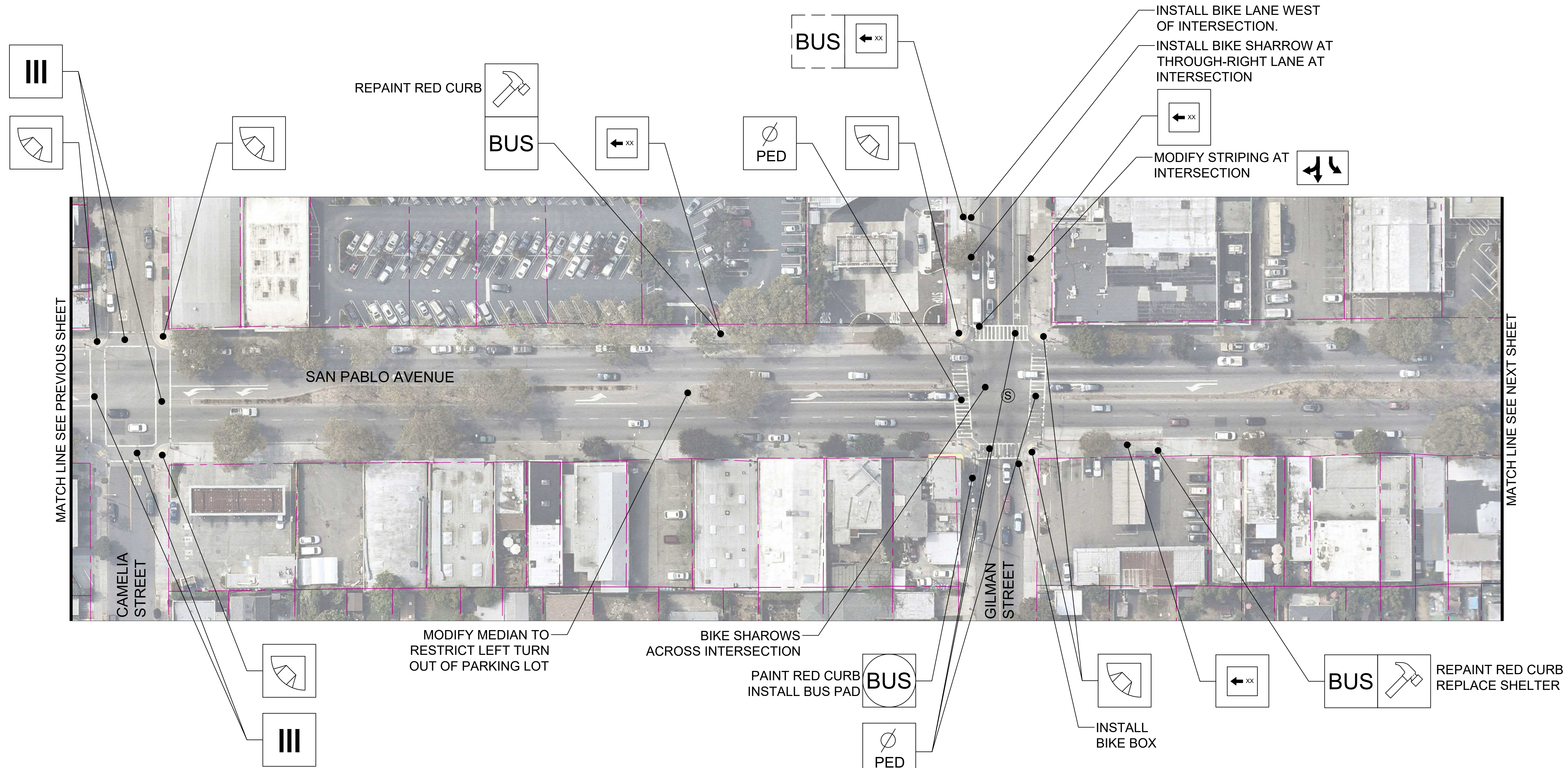
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LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION

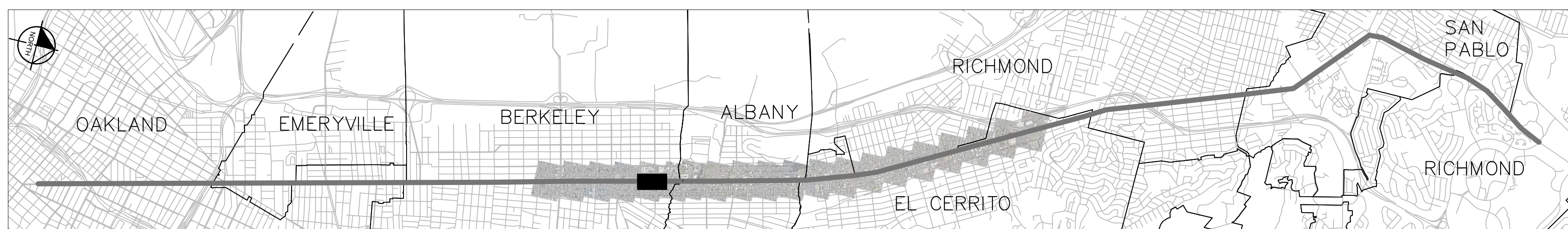


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

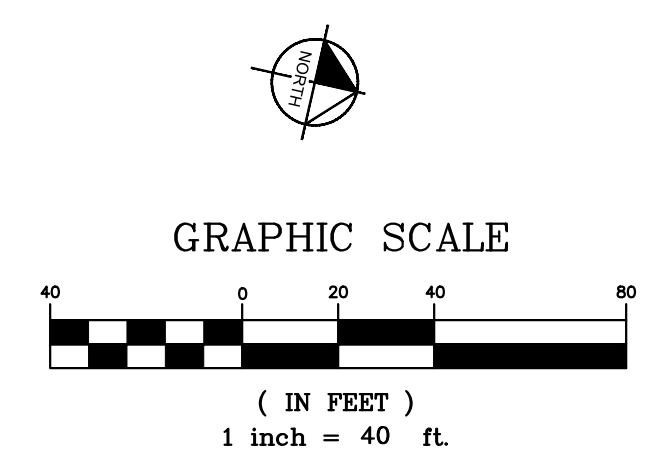


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		CONSTRUCT CURB RAMP
	INSTALL AUDIBLE PEDESTRIAN SIGNAL		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE ELIMINATED		EXISTING BUS STOP TO BE RELOCATED
	IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		RELOCATED BUS STOP				

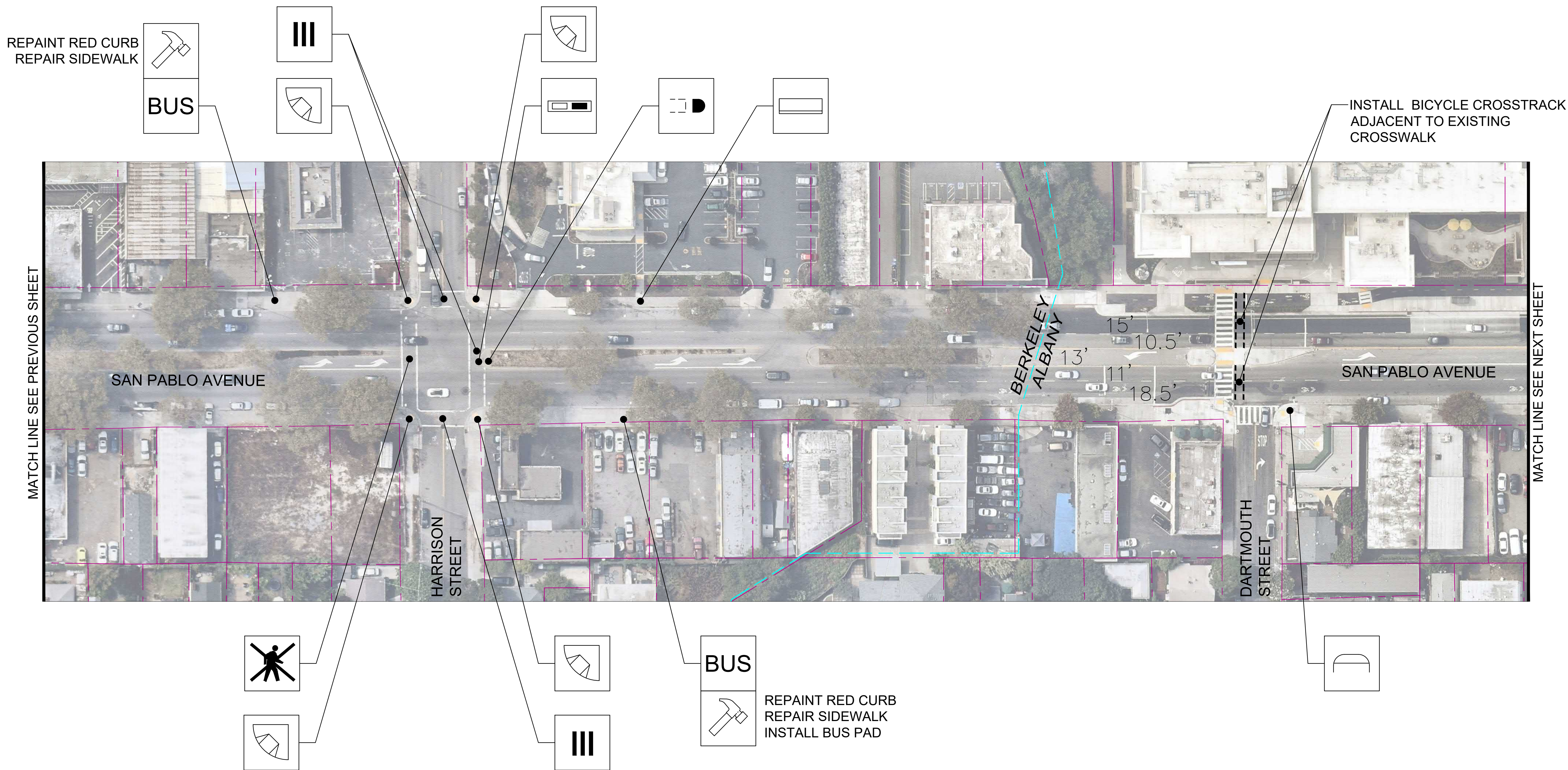
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LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



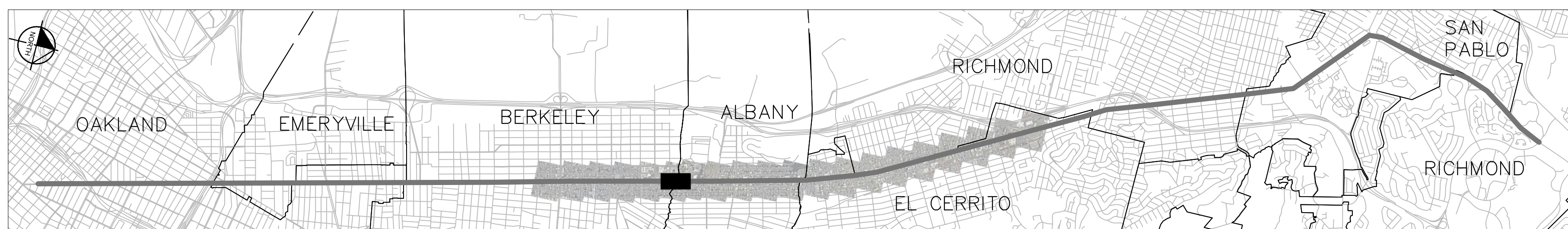
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

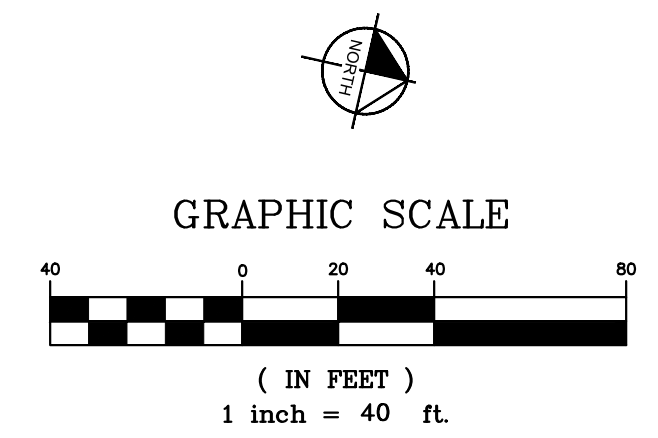
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE		CONSTRUCT CURB RAMP		INSTALL AUDIBLE PEDESTRIAN SIGNAL		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL WAYFINDING SIGN		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)						
			INSTALL PHB AS DETERMINED BY WARRANT		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE								

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



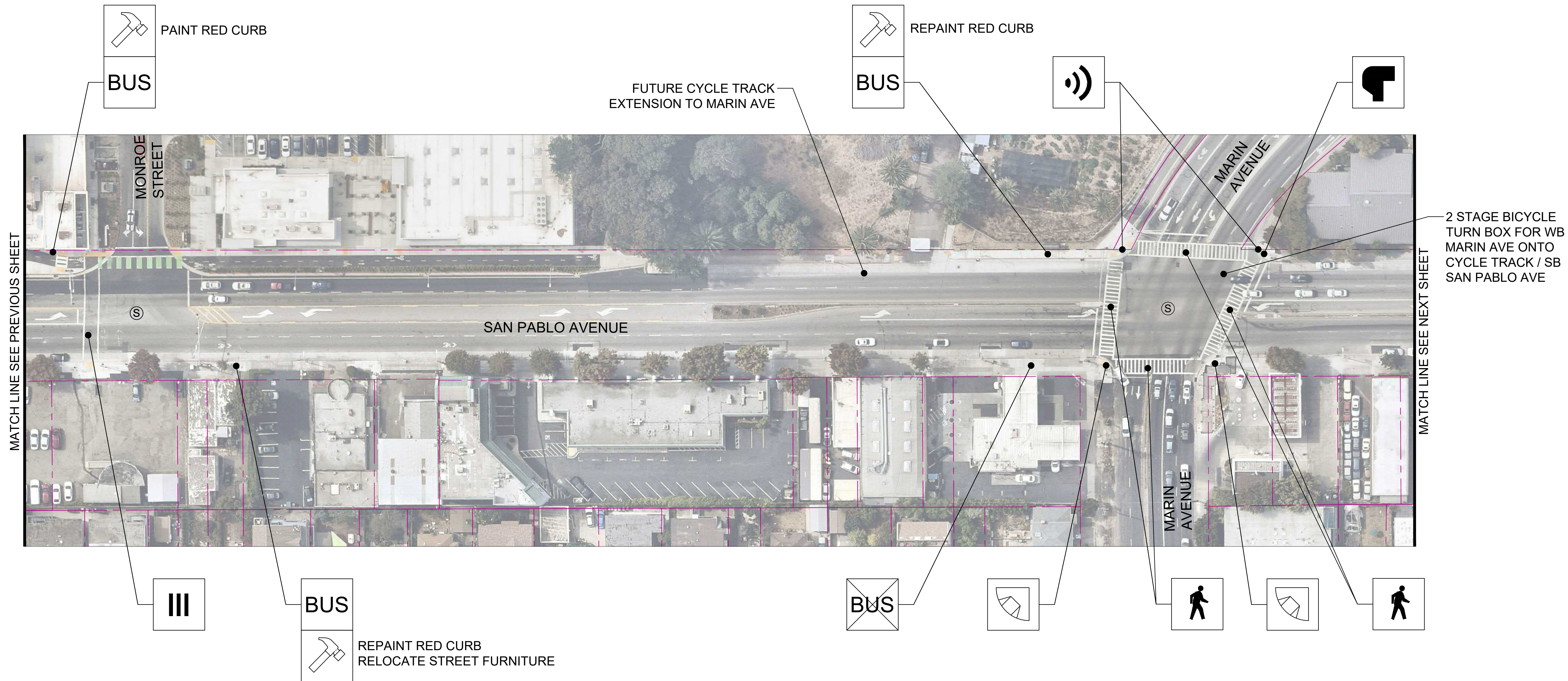
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

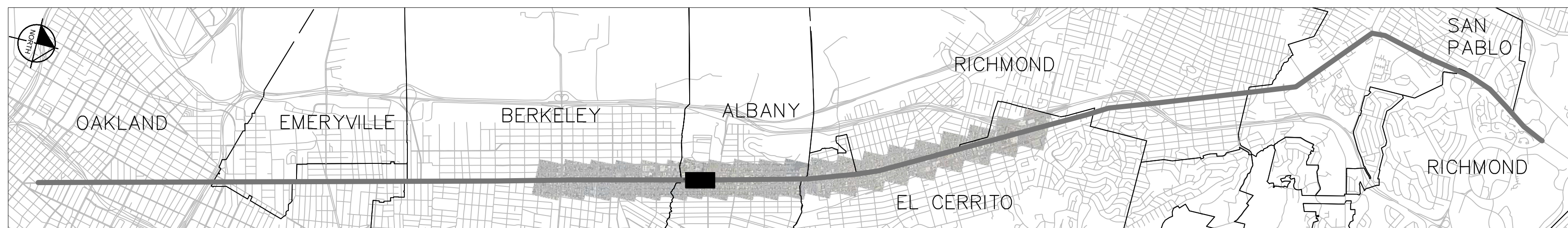
BASE MAP MARCH 2019



IMPROVEMENT LEGEND

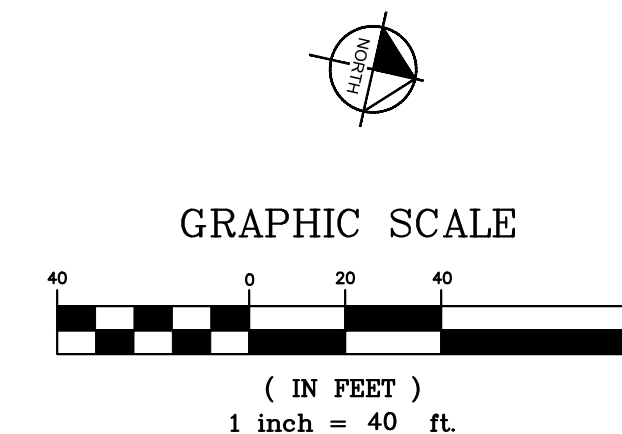
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE		CONSTRUCT CURB RAMP		INSTALL AUDIBLE PEDESTRIAN SIGNAL		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)						
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE										

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



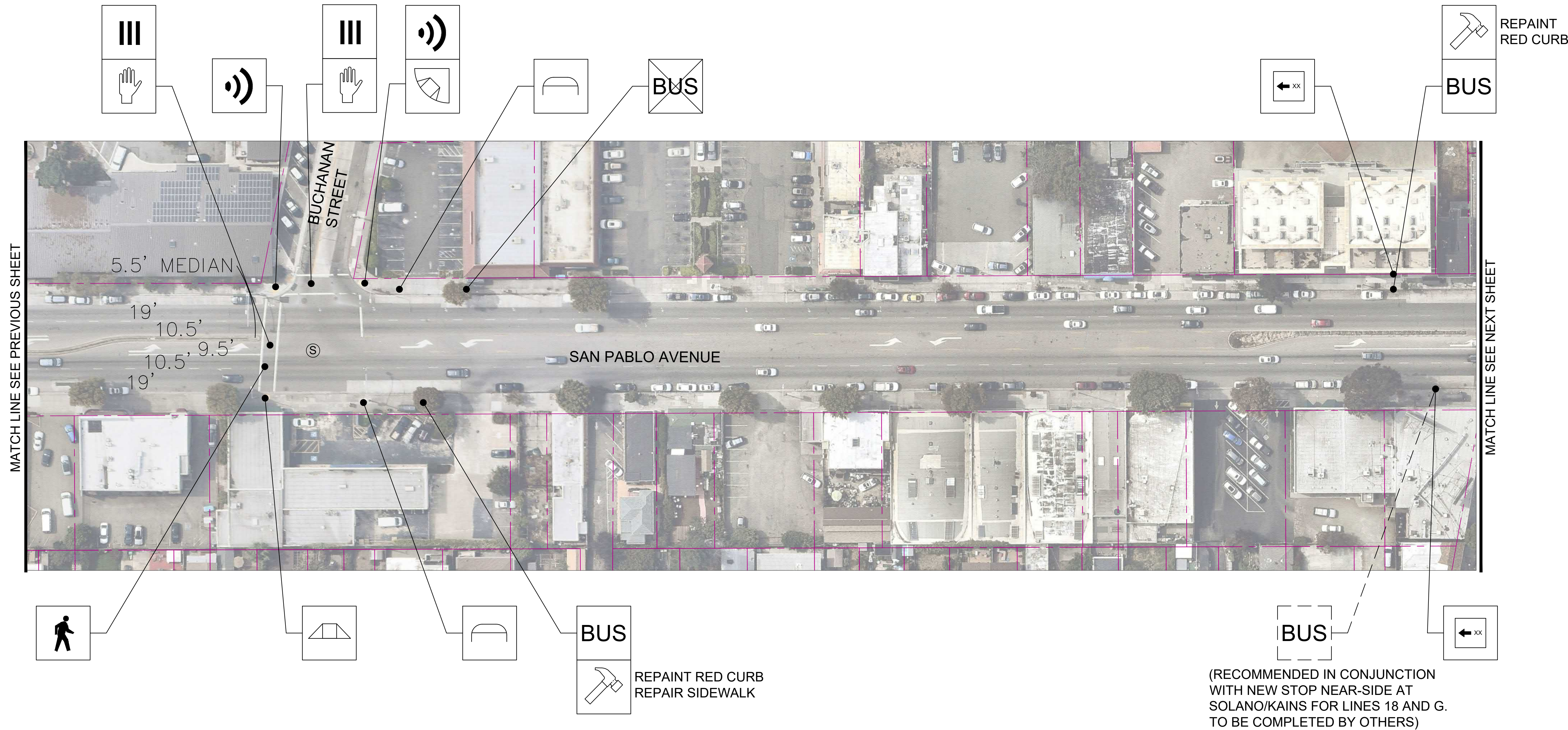
LEGEND

- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



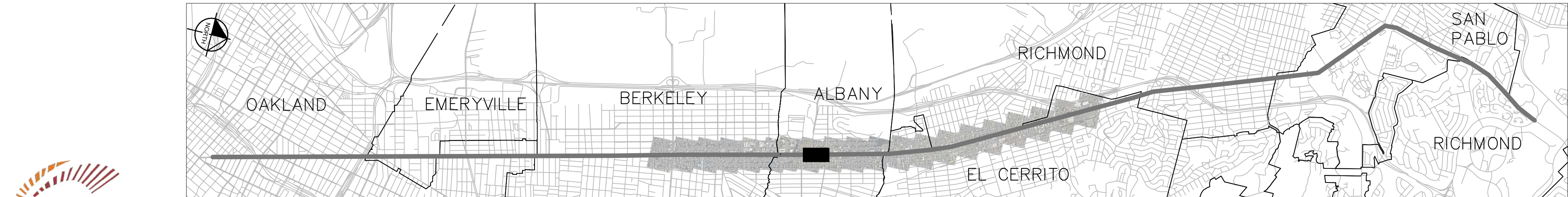
BASE MAP MARCH 2019





IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
			INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE
					EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE ELIMINATED
					EXISTING BUS STOP TO BE RELOCATED		RELOCATED BUS STOP
					CONSTRUCT CURB RAMP		INSTALL AUDIBLE PEDESTRIAN SIGNAL
					RECONSTRUCT SIDEWALK WITH CURB		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND

- Parcel boundary/property line
- Curb/sidewalk
- City boundary
- Signalized intersection

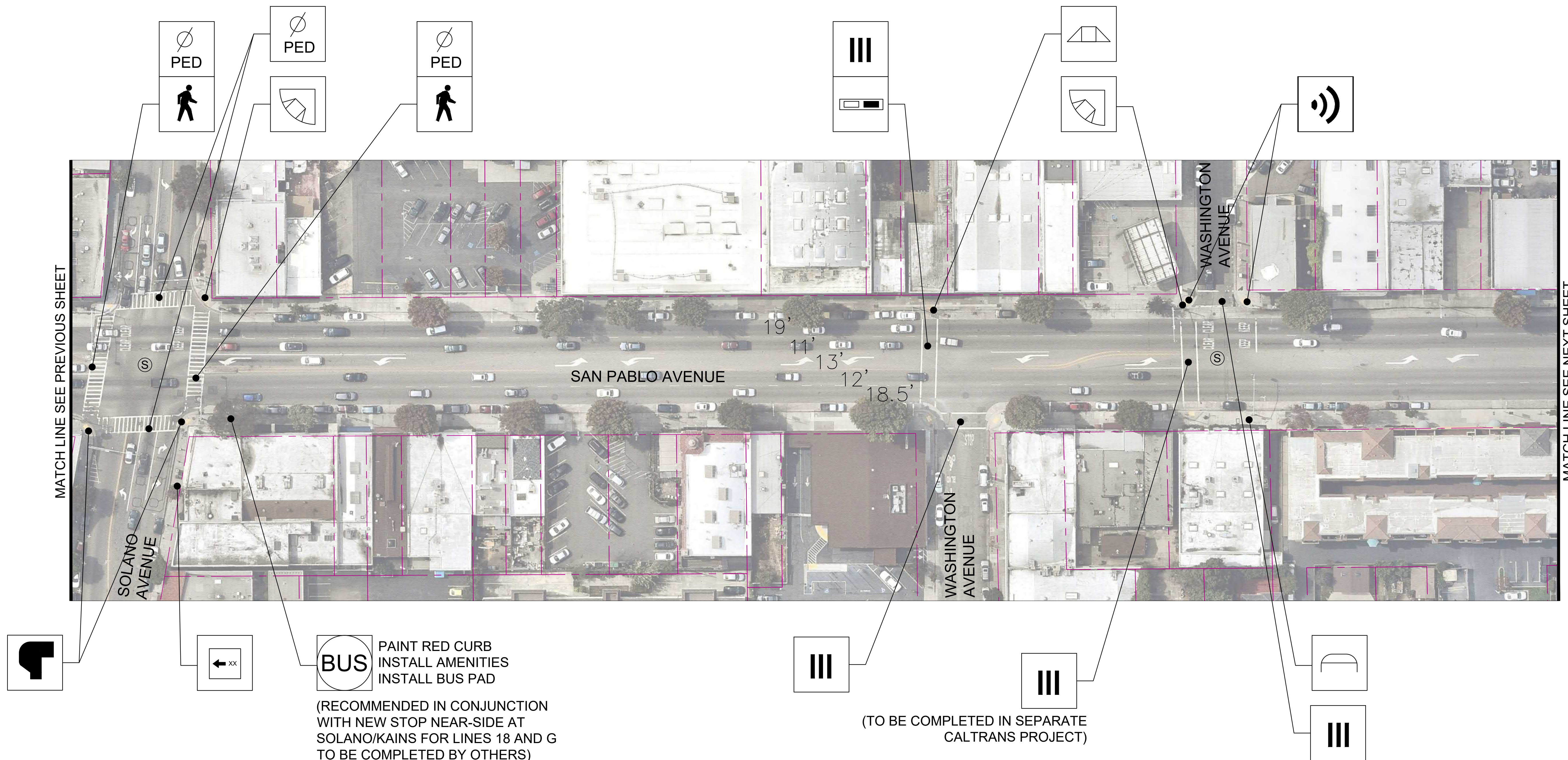
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

BASE MAP
MARCH 2019

SHEET 29 OF 32



VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



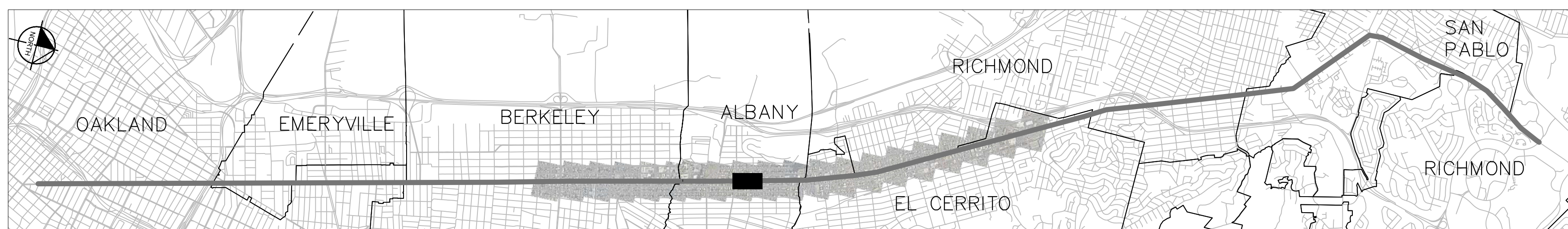
BUS PAINT RED CURB
INSTALL AMENITIES
INSTALL BUS PAD

(RECOMMENDED IN CONJUNCTION
WITH NEW STOP NEAR-SIDE AT
SOLANO/KAINS FOR LINES 18 AND G
TO BE COMPLETED BY OTHERS)

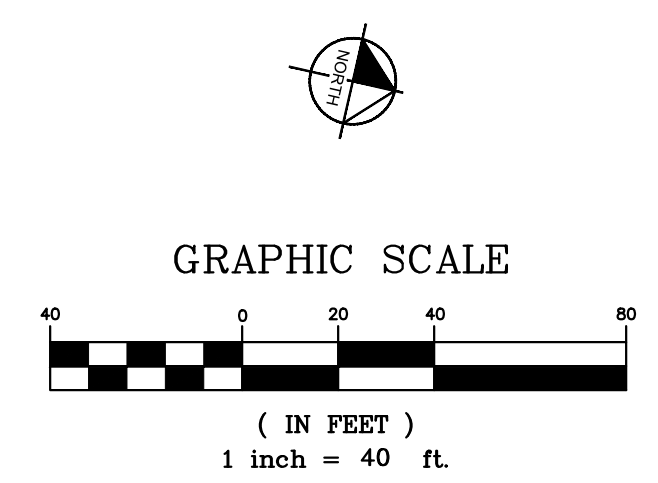
(TO BE COMPLETED IN SEPARATE
CALTRANS PROJECT)

IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE		INSTALL AUDIBLE PEDESTRIAN SIGNAL
	RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		CONSTRUCT CURB RAMP		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)		EXISTING BUS STOP TO REMAIN
	EXISTING BUS STOP TO BE RELOCATED		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP		

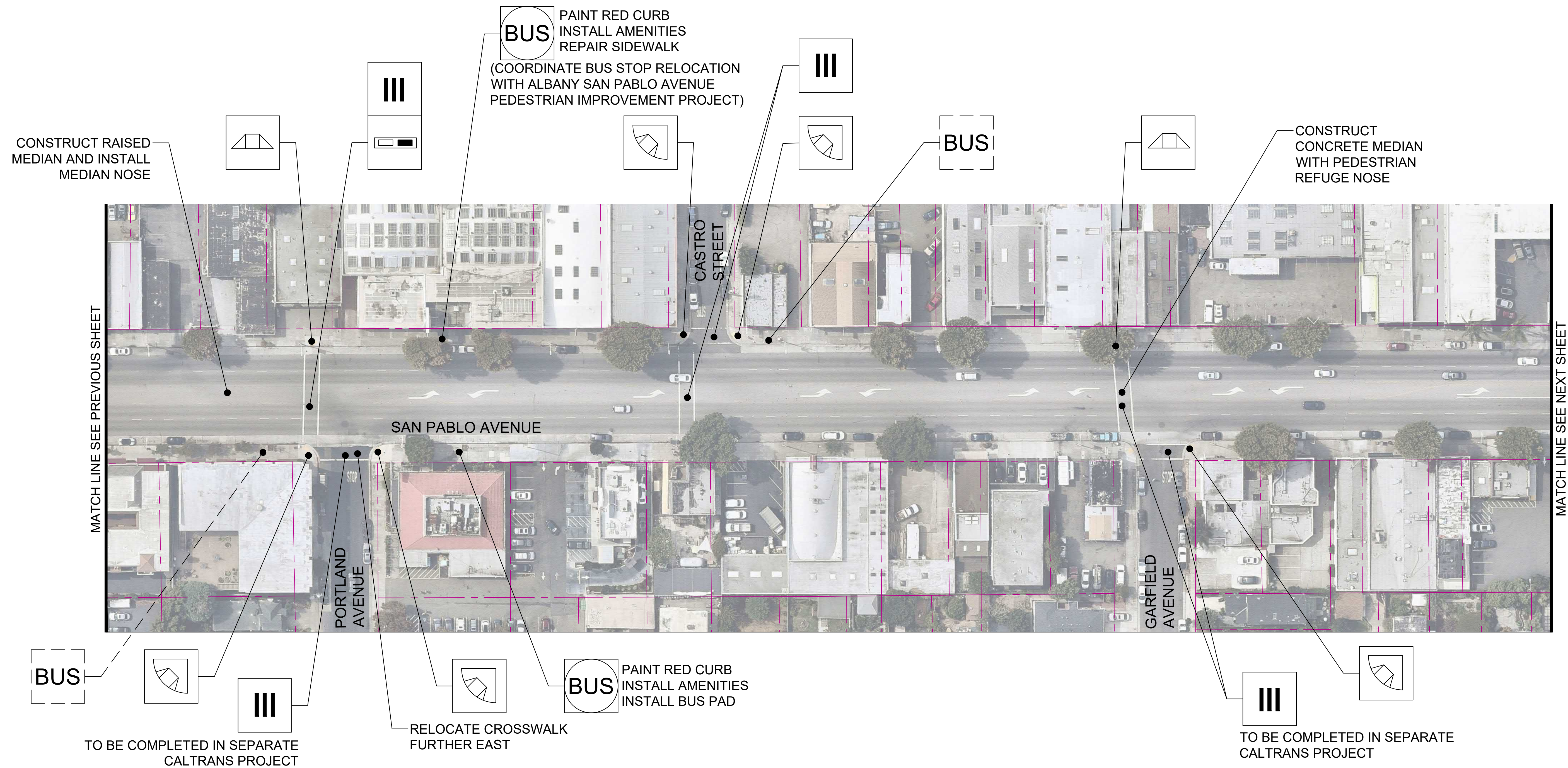
① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



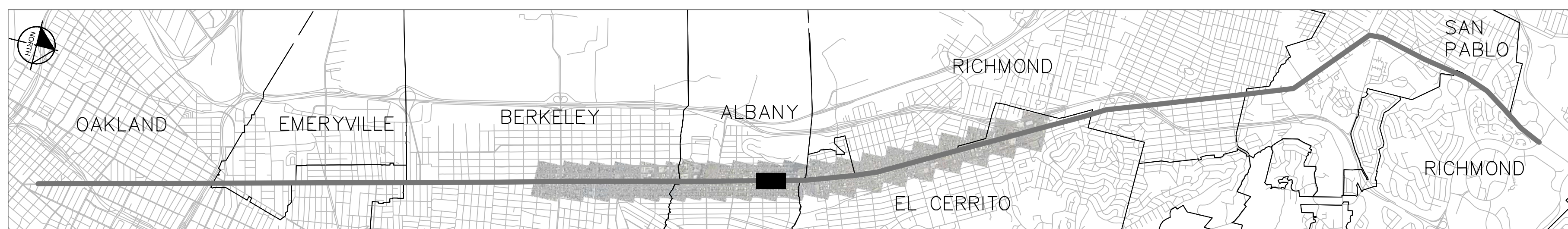
VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT



IMPROVEMENT LEGEND

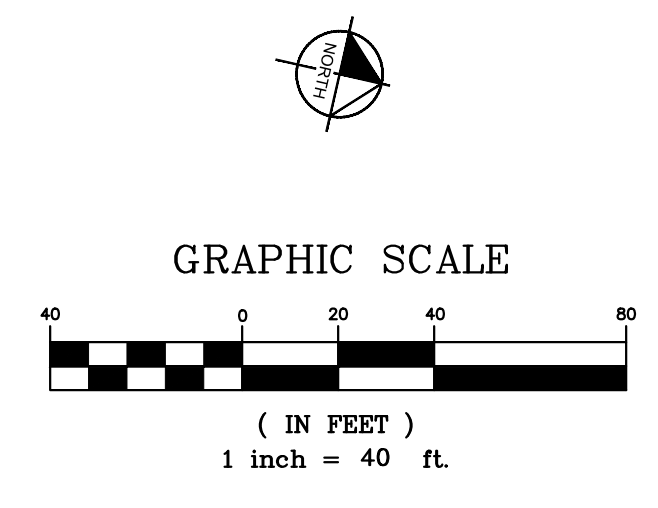
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON		RECONSTRUCT RETURN AND RAMP(S) WITH A BULB-OUT		EXISTING BUS STOP TO REMAIN		EXISTING BUS STOP TO BE RELOCATED		
	RECONSTRUCT PORK CHOP/ MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE		CONSTRUCT CURB RAMP		INSTALL AUDIBLE PEDESTRIAN SIGNAL		EXISTING BUS STOP TO BE ELIMINATED		RELOCATED BUS STOP
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE		IMPROVE EXISTING BUS STOP (IMPROVEMENTS NOTED ON PLAN)						
	INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE										

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND

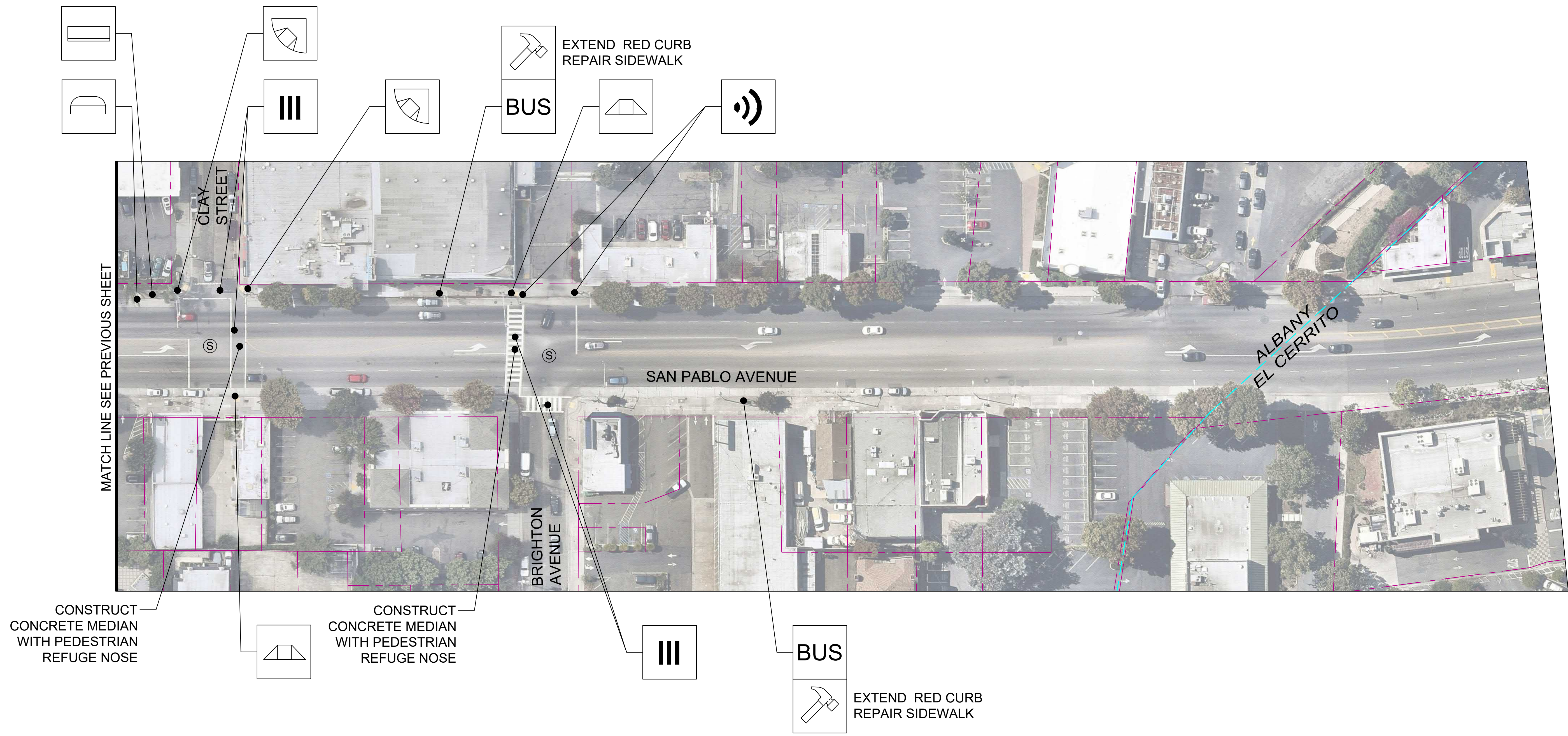
- PARCEL BOUNDARY/PROPERTY LINE
- CURB/SIDEWALK
- CITY BOUNDARY
- SIGNALIZED INTERSECTION



BASE MAP MARCH 2019

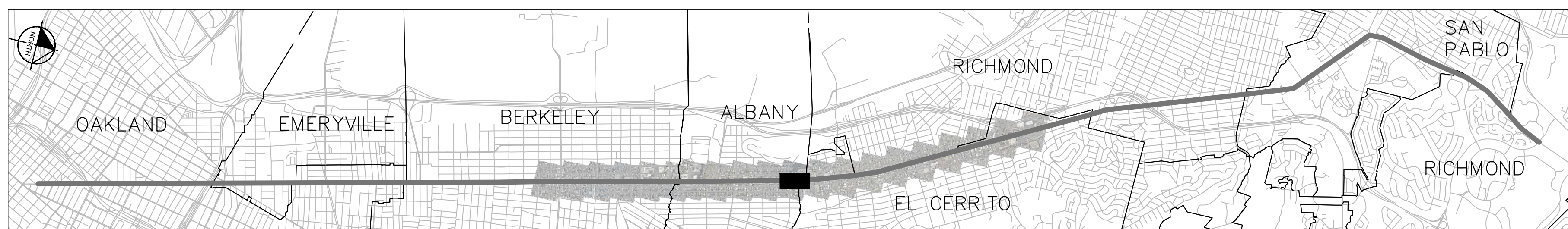


VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

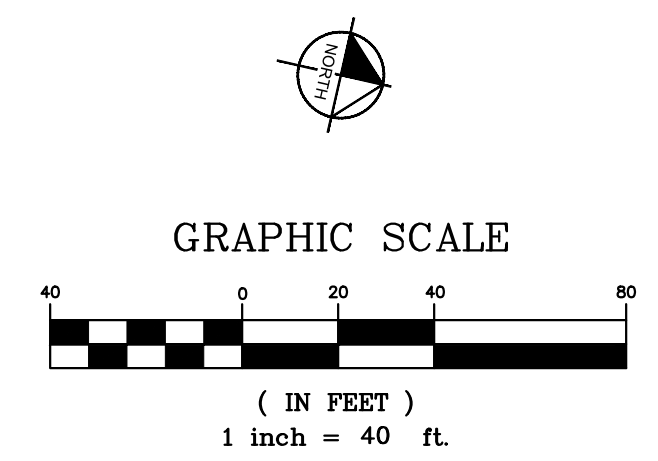


IMPROVEMENT LEGEND							
	RECONSTRUCT RETURN AND RAMP(S)		INSTALL PEDESTRIAN BARRICADE		REPLACE CROSSWALK WITH CONTINENTAL STRIPING		RELOCATE PEDESTRIAN PUSH BUTTON
	RECONSTRUCT PORK CHOP/MEDIAN ISLANDS TO MEET ADA		INSTALL ADAPTIVE PEDESTRIAN SIGNAL		INSTALL PEDESTRIAN SIGN		INSTALL LEADING PEDESTRIAN PHASE
	INSTALL COUNTDOWN PEDESTRIAN HEADS		INSTALL PHB AS DETERMINED BY WARRANT		REMOVE CROSSWALK		CUT BACK MEDIAN NOSE
			INSTALL WAYFINDING SIGN		RECONSTRUCT SIDEWALK		CONSTRUCT PEDESTRIAN REFUGE MEDIAN NOSE
					BUS		EXTEND RED CURB REPAIR SIDEWALK
					BUS		EXISTING BUS STOP TO REMAIN
					BUS		EXISTING BUS STOP TO BE RELOCATED
					BUS		EXISTING BUS STOP TO BE ELIMINATED
					BUS		RELOCATED BUS STOP

① WHERE INSTALLING CONTINENTAL CROSSWALK, STRIPE ADVANCED STOP BAR AND YIELD PAVEMENT MARKINGS WHERE UNCONTROLLED. REPLACE ALL EXISTING SHARROWS WITH SHARROWS ON GREEN BACKGROUND



LEGEND	
	PARCEL BOUNDARY/PROPERTY LINE
	CURB/SIDEWALK
	CITY BOUNDARY
	SIGNALIZED INTERSECTION



VERY NEAR TERM PROPOSED IMPROVEMENTS - JUNE 2020 DRAFT

BASE MAP MARCH 2019



APPENDIX D

VERY NEAR-TERM AND NEAR-TERM COST ESTIMATES

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Very Near-Term Berkeley & Albany
 Concept Level Estimate-Unit Prices

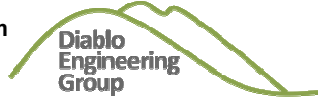


3-Feb-20
 Prepared By: JAH

ITEM	DESCRIPTION	UNIT	UNIT PRICE	ASSUMPTIONS
MOBILIZATION/ TRAFFIC CONTROL				
1	Mobilization/ De-mobilization	LS	10% of Construction	Approximately 10% of Construction Cost
2	Traffic Control	LS	8% of Construction	Approximately 8% of Construction Cost
3	Develop and Implement SWPPP	LS	0.5% of Construction	Approximately 0.5% of Construction Cost
4	Construction Survey	LS	0.8% of Construction	Approximately 0.8% of Construction Cost
5	Utility Protection/ potholing by Contractor	LS	3% of Construction	Approximately 3% of Construction Cost
DEMOLITION				
6	Clearing and Grubbing	LS	2% of Construction	Approximately 2% of Construction Cost
7	Demolition	LS	3% of Construction	Approximately 3% of Construction Cost
STREET IMPROVEMENTS				
8	Reconstruct Return and Ramp(s)	EA	\$20,000.00	Construct PCC curb, gutter, ADA ramp(s), sidewalk, AC Plug, Install DWS (estimate \$50/SF @ 400SF)
9	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	Construct PCC curb, gutter, ADA ramp, sidewalk, AC Plug, Install DWS (up to 400 SF of concrete with 1 ramp) 400 SF x \$30/SF + \$5,000 ramp
10	Reconstruct Driveway	SF	\$40.00	Construct PCC curb, gutter, driveway slope, sidewalk, AC Plug
11	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	At curb returns and median areas
12	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	At curb returns
13	Adjust MH Lid to grade	EA	\$2,000.00	At curb returns
14	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	Construct PCC curb, gutter, ADA ramp(s), sidewalk, AC Plug, Install DWS \$30/SF+\$20/SF ramps and other forming, box adjustments
15	Storm Drain Improvements at bulb-out	EA	\$50,000.00	One manhole, one inlet, 80 LF pipe, 20% misc.
16	Reconstruct Sidewalk	SF	\$30.00	
17	Widen sidewalk	SF	\$30.00	Very minor landscape/irrigation repair needed
18	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	Construct PCC curb, AC Plug, Repair median hardscape/landscape/irrigation
19	Relocate Post with Signs at Median	EA	\$400.00	At median areas
20	Re-construct Pedestrian Passageway	SF	\$45.00	Construct PCC curb, AC Plug, Repair median hardscape/landscape/irrigation, ADA passageway
21	Close median opening	SF	\$40.00	Construct PCC curb, AC Plug, Repair median hardscape/landscape/irrigation
22	Construct Raised concrete median with pedestrian refuge	SF	\$45.00	Construct PCC curb, AC Plug, Repair median hardscape/landscape/irrigation, ADA passageway
23	Construct bus stop concrete pad	SF	\$40.00	
24	Install pedestrian barricade	EA	\$2,000.00	
SIGNING AND STRIPING				
25	Remove crosswalk	SF	\$2.00	Fog Seal over removed crosswalk
26	Replace crosswalk with continental striping	SF	\$5.00	24" @ 2' spacing, 10' wide center to center with 3' gap per other's recently constructed
27	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	Assumes green pavement skipped, so only half the area would be green. Unit cost was halved.
28	Miscellaneous striping	SF	\$16.00	green pavement
29	Install wayfinding sign	EA	\$500.00	
30	Install pedestrian sign	EA	\$500.00	
31	Install miscellaneous signs	EA	\$500.00	
SIGNALS & LIGHTING				
32	Install countdown pedestrian heads	EA	\$1,000.00	Locations noted on plan
33	Install adaptive pedestrian signal	EA	\$20,000.00	Locations noted on plan
34	Install PHB as determined by warrant	EA	\$100,000.00	Locations noted on plan
35	Relocate pedestrian push button	EA	\$5,000.00	assembly post per Caltrans standard plan ES-7A
36	Install leading pedestrian phase	EA	\$500.00	Locations noted on plan
37	Install audible pedestrian signal	EA	\$1,000.00	Locations noted on plan
38	Install Pedestrian Lighting @ Bus Stops	EA	\$15,000.00	Two lights/ bus stop
39	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	Two lights/ unsignalized intersection

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Very Near-Term
Berkeley & Albany Concept Level Estimate
2/3/2020



Item	Item Description	Unit	Unit Price													Quantity	Estimate
				27	28	29	30	31	32	TOTAL	\$ TOTAL						
MOBILIZATION/ TRAFFIC CONTROL																	
1	Mobilization/ De-mobilization	LS	10% of Constructon	1	\$43,936	1	\$37,707	1	\$16,351	1	\$59,721	1	\$60,293	1	\$28,409	17	\$902,133
2	Traffic Control	LS	8% of Constructon	1	\$35,149	1	\$30,166	1	\$13,081	1	\$47,776	1	\$48,234	1	\$22,727	17	\$721,706
3	Develop and Implement SWPPP	LS	0.5% of Constructon	1	\$2,197	1	\$1,885	1	\$818	1	\$2,986	1	\$3,015	1	\$1,420	17	\$45,107
4	Construction Survey	LS	0.8% of Constructon	1	\$3,515	1	\$3,017	1	\$1,308	1	\$4,778	1	\$4,823	1	\$2,273	17	\$72,171
5	Utility Protection/ potholing by Contractor	LS	3% of Constructon	1	\$13,181	1	\$11,312	1	\$4,905	1	\$17,916	1	\$18,088	1	\$8,523	17	\$270,640
	Subtotal				\$97,978		\$84,087		\$36,463		\$133,177		\$134,452		\$63,351		\$2,011,757
DEMOLITION																	
6	Clearing and Grubbing	LS	2% of Construction	1	\$8,787	1	\$7,541	1	\$3,270	1	\$11,944	1	\$12,059	1	\$5,682	17	\$180,427
7	Demolition	LS	3% of Construction	1	\$13,181	1	\$11,312	1	\$4,905	1	\$17,916	1	\$18,088	1	\$8,523	17	\$270,640
	Subtotal				\$21,968		\$18,854		\$8,176		\$29,860		\$30,146		\$14,204		\$451,067
STREET IMPROVEMENTS																	
8	Reconstruct Return and Ramp(s)	EA	\$20,000.00	4	\$80,000	2	\$40,000	1	\$20,000	3	\$60,000	3	\$60,000	2	\$40,000	89	\$1,780,000
9	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	2	\$34,000	1	\$17,000	1	\$17,000	3	\$51,000	2	\$34,000	23	\$391,000
10	Reconstruct Driveway	SF	\$40.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	942	\$37,680
11	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	10	\$30,000	10	\$30,000	3	\$9,000	11	\$33,000	10	\$30,000	10	\$30,000	347	\$1,041,000
12	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	0	\$0	1	\$4,000	0	\$0	1	\$4,000	1	\$4,000	8	\$32,000
13	Adjust MH Lid to grade	EA	\$2,000.00	0	\$0	2	\$4,000	0	\$0	0	\$0	0	\$0	0	\$0	4	\$8,000
14	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	0	\$0	889	\$44,450	0	\$0	3248	\$162,400	0	\$0	0	\$0	9480	\$474,000
15	Storm Drain Improvements at bulb-out	EA	\$50,000.00	0	\$0	1	\$50,000	0	\$0	2	\$100,000	0	\$0	0	\$0	6	\$300,000
16	Reconstruct Sidewalk	SF	\$30.00	0	\$0	0	\$0	225	\$6,750	0	\$0	240	\$7,200	0	\$0	465	\$13,950
17	Widen Sidewalk	SF	\$30.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	8567	\$257,010
18	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	1	\$5,000	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	16	\$80,000
19	Relocate Post with Signs at Median	EA	\$400.00	3	\$1,200	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	30	\$12,000
20	Re-construct Pedestrian Passageway	SF	\$45.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	450	\$20,250
21	Close median opening	SF	\$40.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	1961	\$78,440
22	Construct Raised concrete median with pedestrian refuge	SF	\$45.00	0	\$0	0	\$0	0	\$0	0	\$0	3293	\$148,185	2478	\$111,510	12052	\$542,340
23	Construct bus stop concrete pad	SF	\$40.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	600	\$24,000
24	Install pedestrian barricade	EA	\$2,000.00	3	\$6,000	0	\$0	2	\$4,000	1	\$2,000	0	\$0	0	\$0	15	\$30,000
	Subtotal				\$122,200		\$202,450		\$60,750		\$374,400		\$300,385		\$219,510		\$5,121,670
SIGNING AND STRIPING																	
25	Remove crosswalk	SF	\$2.00	332	\$664	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	1992	\$3,984
26	Replace crosswalk with continental striping	SF	\$5.00	366	\$1,830	332	\$1,660	552	\$2,760	661	\$3,305	1508	\$7,540	515	\$2,575	15461	\$77,305
27	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	389	\$4,668	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	1476	\$17,712
28	Miscellaneous striping	SF	\$16.00	0	\$0	60	\$960	0	\$0	0	\$0	0	\$0	0	\$0	260	\$4,160
29	Install wayfinding sign	EA	\$500.00	0	\$0	0	\$0	2	\$1,000	1	\$500	0	\$0	0	\$0	17	\$8,500
30	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	2	\$1,000
31	Install miscellaneous signs	EA	\$500.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	7	\$3,500
	Subtotal				\$7,162		\$2,620		\$3,760		\$3,805		\$7,540		\$2,575		\$116,161
SIGNALS & LIGHTING																	
32	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	2	\$2,000	0	\$0	0	\$0	0	\$0	2	\$2,000
33	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	4	\$80,000	1	\$20,000	2	\$40,000	0	\$0	0	\$0	14	\$280,000
34	Install PHB as determined by warrant	EA	\$100,000.00	1	\$100,000	0	\$0	0	\$0	1	\$100,000	1	\$100,000	0	\$0	7	\$700,000
35	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0	2	\$10,000
36	Install leading pedestrian phase	EA	\$500.00	0	\$0	0	\$0	0	\$0	4	\$2,000	0	\$0	0	\$0	29	\$14,500
37	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	2	\$2,000	2	\$2,000	2	\$2,000	0	\$0	2	\$2,000	17	\$17,000
38	Install Pedestrian Lighting @ Bus Stops	EA	\$15,000.00	6	\$90,000	6	\$90,000	5	\$75,000	2	\$30,000	4	\$60,000	4	\$60,000	80	\$1,200,000
39	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	8	\$120,000	0	\$0	0	\$0	3	\$45,000	9	\$135,000	0	\$0	104	\$1,560,000
	Subtotal				\$310,000		\$172,000		\$99,000		\$219,000		\$295,000		\$62,000		\$3,783,500
	TOTAL				\$559,308		\$480,010		\$208,148		\$760,242		\$767,524		\$361,640		\$11,484,154
	30% Contingency				\$167,792		\$144,003		\$62,444		\$228,073		\$230,257		\$108,492		\$3,445,246
	Construction Total (2020 Year)				\$727,100		\$624,013		\$270,593		\$988,315		\$997,781		\$470,132		\$14,929,401
	PA/ED/PS&E/ Soft Costs (40%)				\$290,840		\$249,605		\$108,237		\$395,326		\$399,112		\$188,053		\$5,971,760
	GRAND TOTAL				\$1,017,940		\$873,618		\$378,830		\$1,383,640		\$1,396,893		\$658,185		\$20,900,000

Table 1: Near-term Cost Estimates

Item	Option 2	Option 4
Mobilization/ Traffic Control	\$15,640,000	\$18,100,000
Demolition	\$4,150,000	\$4,800,000
Utilities	\$0	\$1,660,000
Street Improvements	\$51,740,000	\$37,720,000
Signing and Striping	\$3,260,000	\$3,500,000
Signals and Lighting	\$15,120,000	\$14,190,000
Landscape and Site Furnishings	\$7,370,000	\$5,240,000
AC Transit BRT Bus Fleet	\$0	\$3,480,000
Total	\$97,270,000	\$106,690,000
10% Utility Relocations	\$0	\$10,670,000
30% Contingency	\$29,180,000	\$32,010,000
Construction Total	\$126,450,000	\$149,370,000
PA/ED/PS&E/ Soft costs	\$50,580,000	\$59,750,000
GRAND TOTAL	\$177,000,000	\$209,000,000

OPINION OF PROBABLE COST
San Pablo Avenue Corridor Project - Near-Term Alt 2 Oakland and Emeryville
Concept Level Estimate-Unit Prices



10-Mar-20
 Prepared By: JAH

ITEM	DESCRIPTION	UNIT	UNIT PRICE	ASSUMPTIONS
MOBILIZATION/ TRAFFIC CONTROL				
1	Mobilization/ De-mobilization	LS	10% of Construction	Approximately 10% of Construction Cost
2	Traffic Control	LS	8% of Construction	Approximately 8% of Construction Cost
3	Develop and Implement SWPPP	LS	0.5% of Construction	Approximately 0.5% of Construction Cost
4	Construction Survey	LS	0.8% of Construction	Approximately 0.8% of Construction Cost
5	Utility Protection/ potholing by Contractor	LS	3% of Construction	Approximately 3% of Construction Cost
DEMOLITION				
6	Clearing and Grubbing	LS	2% of Construction	Approximately 2% of Construction Cost
7	Demolition	LS	3% of Construction	Approximately 3% of Construction Cost
8	Unclassified Excavation	CY	\$120.00	2,000 CY per mile transit stations or islands
STREET IMPROVEMENTS				
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	Construct PCC curb, gutter, ADA ramp(s), sidewalk, AC Plug, Install DWS (estimate \$50/SF @ 400SF)
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	Construct PCC curb, gutter, ADA ramp, sidewalk, AC Plug, Install DWS (up to 400 SF of concrete with 1 ramp) 400 SF x \$30/SF + \$5,000 ramp
11	Reconstruct Driveway	SF	\$40.00	Construct PCC curb, gutter, driveway slope, sidewalk, AC Plug
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	At curb returns and median areas
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	At curb returns
14	Adjust MH Lid to grade	EA	\$2,000.00	At curb returns
15	Relocate fire hydrant	EA	\$20,000.00	At some curb return bulbs
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	Construct PCC curb, gutter, ADA ramp(s), sidewalk, AC Plug, Install DWS \$30/SF+\$20/SF ramps and other forming, box adjustments
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	One manhole, one inlet, 80 LF pipe, 20% misc.
18	Reconstruct Sidewalk	SF	\$30.00	Assume 250 SF per new street tree @4/ 100 ft
19	Median hardscape	SF	\$20.00	Per sample layout, estimated 6 SF/ LF of BRT (includes center and side medians)
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	Construct PCC curb, AC Plug, Repair median hardscape/landscape/irrigation (includes cut back median nose quantity for side streets)
21	Install pedestrian barricade	EA	\$2,000.00	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	Construct PCC curb, AC Plug, Repair median hardscape, ADA passageway
23	Street closure	EA	\$15,000.00	Depends upon closure method.
24	Concrete BRT platform with apperences	EA	\$600,000.00	See East Bay BRT Bid results +15% inflation since April 2016, 2 per stop location. Includes concrete platform, bus stop shelter, bench, trash, handrails, electrical, CCTV, ticketing, and signage (some overlap w/ bulbouts, cost reduced from median platforms)
25	Construct Median Curb	LF	\$50.00	60% of BRT length assumed to have median, times 2 for each side of the median + 90% of BRT length assumed to have median for bike protection, times 2 for each side of the median = 3 x BRT length
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	This is a placeholder as each will vary and will be analyzed further in the next stage. Assumes full signal and accessibility upgrades, may impact right of way at some locations.
27	Asphalt concrete pavement rehab	SY	\$100.00	Minor base repairs, grind & overlay 0.2', assumes each agency has on-going rehab prior
SIGNING AND STRIPING				
28	Replace crosswalk with continental striping	SF	\$5.00	24" @ 2' spacing, 10' wide center to center with 3' gap per other's recently constructed
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	Assumes green pavement skipped, so only half the area would be green. Unit cost was halved.
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	4 stripes (\$5/LF each), sign (\$500) and "Bus Only" (42 SF@\$15/SF) every 300 LF+red pvmt
31	Green bike lane	SF	\$16.00	Includes thermoplastic pavement markings & green pavement (assume 20% of bike lanes are green)
32	Purple paint bulbout with bollards	SF	\$20.00	Includes purple paint and bollards
33	Miscellaneous striping	SF	\$5.00	Includes thermoplastic pavement markings & striping
34	Install wayfinding sign	EA	\$500.00	
35	Install pedestrian sign	EA	\$500.00	
36	Install miscellaneous signs	EA	\$500.00	
SIGNALS & LIGHTING				
37	Install countdown pedestrian heads	EA	\$1,000.00	Locations noted on plan
38	Install adaptive pedestrian signal	EA	\$20,000.00	Locations noted on plan
39	Install PHB as determined by warrant	EA	\$150,000.00	Locations noted on plan
40	Relocate pedestrian push button	EA	\$5,000.00	plan ES-7A
41	Install audible pedestrian signal	EA	\$1,000.00	Locations noted on plan
42	BRT corridor lighting	MILE	\$2,100,000.00	Spacing assumed between 60' and 100' on each side of the street because of existing lighting, average spacing of 85' and assuming each light is \$20,000
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	Two lights/ unsignalized intersection
44	New signal	EA	\$400,000.00	Locations noted previously from F&P. Detection included.
45	Signal modification	EA	\$200,000.00	All signals where there is BRT.
LANDSCAPE AND SITE FURNISHINGS				
46	Street Tree in tree well	EA	\$2,500.00	5 per station location with iron tree grate
47	Gateway Features/ Public Art	MILE	\$60,000.00	Estimated, all alternatives have the same assumption
48	Corridor Landscaping	MILE	\$100,000.00	Estimated, minor enhancements to bulb areas
49	Corridor Street Trees	MILE	\$1,050,000.00	Trees with tree grate every 40 feet on both sides of the street, 264 trees per mile x 80% of length, 210 trees per mile, \$5000 each
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	1 bike rack/corral at each station
51	Iron Tree Grate	EA	\$3,600.00	5 per station location
52	Irrigation/Hose Bibs	LS	\$20,000.00	1 per area identified
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	1 per tree
54	BRT Buses and Layover	MILE	\$1,200,000.00	30 bus upgrades @\$200K for 12 miles of BRT, \$8M layover improvements.

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term Alt 2
Oakland and Emeryville Concept Level Estimate

3/10/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number									
				Oakland City R/W									
				1	2	3	4	1	2	3	4		
MOBILIZATION/ TRAFFIC CONTROL													
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$517,745	1	\$514,762	1	\$372,327	1	\$796,605		
2	Traffic Control	LS	8% of Constructiton	1	\$414,196	1	\$411,809	1	\$297,861	1	\$637,284		
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$25,887	1	\$25,738	1	\$18,616	1	\$39,830		
4	Construction Survey	LS	0.8% of Constructiton	1	\$41,420	1	\$41,181	1	\$29,786	1	\$63,728		
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$155,324	1	\$154,429	1	\$111,698	1	\$238,982		
	Subtotal				\$1,154,572		\$1,147,919		\$830,289		\$1,776,430		
DEMOLITION													
6	Clearing and Grubbing	LS	2% of Construction	1	\$103,549	1	\$102,952	1	\$74,465	1	\$159,321		
7	Demolition	LS	3% of Construction	1	\$155,324	1	\$154,429	1	\$111,698	1	\$238,982		
8	Unclassified Excavation	CY	\$120.00	425	\$51,000	348	\$41,727	309	\$37,091	386	\$46,364		
	Subtotal				\$309,873		\$299,108		\$223,254		\$444,666		
STREET IMPROVEMENTS													
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	5	\$100,000	3	\$60,000	1	\$20,000	0	\$0		
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	0	\$0	0	\$0	3	\$51,000		
11	Reconstruct Driveway	SF	\$40.00	0	\$0	0	\$0	0	\$0	2500	\$100,000		
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	7	\$21,000	5	\$15,000	9	\$27,000	26	\$78,000		
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	6	\$24,000	0	\$0	1	\$4,000		
14	Adjust MH Lid to grade	EA	\$2,000.00	3	\$6,000	2	\$4,000	1	\$2,000	5	\$10,000		
15	Relocate fire hydrant	EA	\$20,000.00	2	\$40,000	1	\$20,000	1	\$20,000	5	\$100,000		
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	2742	\$137,100	8720	\$436,000	4090	\$204,500	18826	\$941,300		
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	3	\$150,000	3	\$150,000	5	\$250,000	15	\$750,000		
18	Reconstruct Sidewalk	SF	\$30.00	13200	\$396,000	10800	\$324,000	9900	\$297,000	12600	\$378,000		
19	Median hardscape	SF	\$20.00	2000	\$40,000	2000	\$40,000	2000	\$40,000	2000	\$40,000		
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	0	\$0	2	\$10,000	2	\$10,000		
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	546	\$24,570	0	\$0	0	\$0	0	\$0		
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	1	\$15,000		
24	Concrete BRT platform with apperences	EA	\$600,000.00	0	\$0	2	\$1,200,000	0	\$0	2	\$1,200,000		
25	Construct Median Curb	LF	\$50.00	660	\$33,000	660	\$33,000	660	\$33,000	660	\$33,000		
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	2	\$2,000,000	1	\$1,000,000	1	\$1,000,000	2	\$2,000,000		
27	Asphalt concrete pavement rehab	SY	\$100.00	10080.6	\$1,008,056	8647	\$864,667	7048	\$704,778	8871	\$887,111		
	Subtotal				\$3,955,726		\$4,170,667		\$2,608,278		\$6,597,411		
SIGNING AND STRIPING													
28	Replace crosswalk with continental striping	SF	\$5.00	4530	\$22,650	2051	\$10,255	2922	\$14,610	2246	\$11,230		
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	0	\$0	0	\$0	500	\$6,000	500	\$6,000		
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	1122	\$195,228	918	\$159,732	816	\$141,984	1020	\$177,480		
31	Green bike lane	SF	\$16.00	0	\$0	0	\$0	0	\$0	400	\$6,400		
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	8425	\$168,500	0	\$0		
33	Miscellaneous striping	SF	\$5.00	820	\$4,100	670	\$3,350	670	\$3,350	670	\$3,350		
34	Install wayfinding sign	EA	\$500.00	0	\$0	0	\$0	0	\$0	0	\$0		
35	Install pedestrian sign	EA	\$500.00	2	\$1,000	0	\$0	0	\$0	0	\$0		
36	Install miscellaneous signs	EA	\$500.00	1	\$500	1	\$500	2	\$1,000	5	\$2,500		
	Subtotal				\$223,478		\$173,837		\$335,444		\$206,960		
SIGNALS & LIGHTING													
37	Install countdown pedestrian heads	EA	\$1,000.00	2	\$2,000	3	\$3,000	0	\$0	0	\$0		
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	0	\$0	0	\$0	2	\$40,000		
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	1	\$150,000	1	\$150,000		
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	1	\$5,000	0	\$0	0	\$0		
41	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	1	\$1,000		
42	BRT corridor lighting	MILE	\$2,100,000.00	0.21	\$446,250	0.17	\$365,114	0.15	\$324,545	0.19	\$405,682		
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	10	\$150,000	2	\$30,000	7	\$105,000	11	\$165,000		
44	New signal	EA	\$400,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
45	Signal modification	EA	\$200,000.00	2	\$400,000	2	\$400,000	1	\$200,000	2	\$400,000		
	Subtotal				\$998,250		\$803,114		\$779,545		\$1,161,682		
LANDSCAPE AND SITE FURNISHINGS													
46	Street Tree in tree well	EA	\$2,500.00	0	\$0	10	\$25,000	0	\$0	10	\$25,000		
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.21	\$12,750	0.17	\$10,432	0.15	\$9,273	0.19	\$11,591		
48	Corridor Landscaping	MILE	\$100,000.00	0.21	\$21,250	0.17	\$17,386	0.15	\$15,455	0.19	\$19,318		
49	Corridor Street Trees	MILE	\$1,050,000.00	0.21	\$223,125	0.17	\$182,557	0.15	\$162,273	0.19	\$202,841		
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	0	\$0	2	\$10,000	0	\$0	2	\$10,000		
51	Iron Tree Grate	EA	\$3,600.00	0	\$0	10	\$36,000	0	\$0	10	\$36,000		
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	1	\$20,000	0	\$0	0	\$0		
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	0	\$0	10	\$25,000	0	\$0	10	\$25,000		
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.21	\$255,000	0.17	\$208,636	0.15	\$185,455	0.19	\$231,818		
	Subtotal				\$512,125		\$535,011		\$372,455		\$561,568		
	TOTAL				\$7,154,023		\$7,129,655		\$5,149,265		\$10,748,717		
	30% Contingency				\$2,146,207		\$2,138,897		\$1,544,779		\$3,224,615		
	Construction Total (2020 Year)				\$9,300,230		\$9,268,552		\$6,694,044		\$13,973,332		
	PA/ED/PS&E/ Soft Costs (40%)				\$3,720,092		\$3,707,421		\$2,677,618		\$5,589,333		
	GRAND TOTAL				\$13,020,323		\$12,975,973		\$9,371,662		\$19,562,665		

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term Alt 2
Oakland and Emeryville Concept Level Estimate
3/10/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number								
				Oakland City R/W								
				5		6		7		8		
MOBILIZATION/ TRAFFIC CONTROL												
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$532,520	1	\$403,862	1	\$584,690	1	\$57,249	
2	Traffic Control	LS	8% of Constructiton	1	\$426,016	1	\$323,090	1	\$467,752	1	\$45,800	
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$26,626	1	\$20,193	1	\$29,234	1	\$2,862	
4	Construction Survey	LS	0.8% of Constructiton	1	\$42,602	1	\$32,309	1	\$46,775	1	\$4,580	
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$159,756	1	\$121,159	1	\$175,407	1	\$17,175	
	Subtotal				\$1,187,519		\$900,613		\$1,303,858		\$127,666	
DEMOLITION												
6	Clearing and Grubbing	LS	2% of Construction	1	\$106,504	1	\$80,772	1	\$116,938	1	\$11,450	
7	Demolition	LS	3% of Construction	1	\$159,756	1	\$121,159	1	\$175,407	1	\$17,175	
8	Unclassified Excavation	CY	\$120.00	346	\$41,534	349	\$41,920	348	\$41,727	39	\$4,636	
	Subtotal				\$307,794		\$243,852		\$334,072		\$33,261	
STREET IMPROVEMENTS												
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	4	\$80,000	2	\$40,000	5	\$100,000	1	\$20,000	
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	3	\$51,000	2	\$34,000	1	\$17,000	0	\$0	
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	2500	\$100,000	2500	\$100,000	0	\$0	
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	9	\$27,000	1	\$3,000	11	\$33,000	2	\$6,000	
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
14	Adjust MH Lid to grade	EA	\$2,000.00	3	\$6,000	1	\$2,000	0	\$0	0	\$0	
15	Relocate fire hydrant	EA	\$20,000.00	2	\$40,000	0	\$0	3	\$60,000	0	\$0	
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	6360	\$318,000	3925	\$196,250	13420	\$671,000	800	\$40,000	
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	7	\$350,000	2	\$100,000	5	\$250,000	1	\$50,000	
18	Reconstruct Sidewalk	SF	\$30.00	11050	\$331,500	10850	\$325,500	10800	\$324,000	1200	\$36,000	
19	Median hardscape	SF	\$20.00	3500	\$70,000	3500	\$70,000	3500	\$70,000	400	\$8,000	
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	2	\$10,000	0	\$0	0	\$0	
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	0	\$0	1	\$45	
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
24	Concrete BRT platform with apperences	EA	\$600,000.00	2	\$1,200,000	0	\$0	2	\$1,200,000	0	\$0	
25	Construct Median Curb	LF	\$50.00	1050	\$52,500	1050	\$52,500	1050	\$52,500	150	\$7,500	
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	1	\$1,000,000	1	\$1,000,000	1	\$1,000,000	0	\$0	
27	Asphalt concrete pavement rehab	SY	\$100.00	7853	\$785,333	7911	\$791,111	7744	\$774,444	918	\$91,833	
	Subtotal				\$4,411,333		\$2,724,361		\$4,651,944		\$259,378	
SIGNING AND STRIPING												
28	Replace crosswalk with continental striping	SF	\$5.00	2230	\$11,150	2637	\$13,185	1461	\$7,305	800	\$4,000	
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	500	\$6,000	0	\$0	0	\$0	0	\$0	
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	914	\$158,993	922	\$160,472	918	\$159,732	102	\$17,748	
31	Green bike lane	SF	\$16.00	0	\$0	0	\$0	0	\$0	0	\$0	
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	0	\$0	2350	\$47,000	
33	Miscellaneous striping	SF	\$5.00	560	\$2,800	560	\$2,800	560	\$2,800	560	\$2,800	
34	Install wayfinding sign	EA	\$500.00	4	\$2,000	0	\$0	0	\$0	0	\$0	
35	Install pedestrian sign	EA	\$500.00	2	\$1,000	1	\$500	0	\$0	0	\$0	
36	Install miscellaneous signs	EA	\$500.00	5	\$2,500	1	\$500	0	\$0	0	\$0	
	Subtotal				\$184,443		\$177,457		\$169,837		\$71,548	
SIGNALS & LIGHTING												
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	1	\$5,000	0	\$0	0	\$0	
41	Install audible pedestrian signal	EA	\$1,000.00	1	\$1,000	0	\$0	0	\$0	1	\$1,000	
42	BRT corridor lighting	MILE	\$2,100,000.00	0.17	\$363,423	0.17	\$366,804	0.17	\$365,114	0.02	\$40,568	
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	11	\$165,000	11	\$165,000	4	\$60,000	0	\$0	
44	New signal	EA	\$400,000.00	0	\$0	1	\$400,000	1	\$400,000	0	\$0	
45	Signal modification	EA	\$200,000.00	1	\$200,000	1	\$200,000	1	\$200,000	1	\$200,000	
	Subtotal				\$729,423		\$1,136,804		\$1,025,114		\$241,568	
LANDSCAPE AND SITE FURNISHINGS												
46	Street Tree in tree well	EA	\$2,500.00	10	\$25,000	0	\$0	10	\$25,000	0	\$0	
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.17	\$10,384	0.17	\$10,480	0.17	\$10,432	0.02	\$1,159	
48	Corridor Landscaping	MILE	\$100,000.00	0.17	\$17,306	0.17	\$17,467	0.17	\$17,386	0.02	\$1,932	
49	Corridor Street Trees	MILE	\$1,050,000.00	0.17	\$181,712	0.17	\$183,402	0.17	\$182,557	0.02	\$20,284	
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	2	\$10,000	0	\$0	2	\$10,000	0	\$0	
51	Iron Tree Grate	EA	\$3,600.00	10	\$36,000	0	\$0	10	\$36,000	0	\$0	
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	10	\$25,000	0	\$0	10	\$25,000	0	\$0	
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.17	\$207,670	0.17	\$209,602	0.17	\$208,636	0.02	\$23,182	
	Subtotal				\$513,071		\$420,951		\$515,011		\$46,557	
	TOTAL				\$7,333,584		\$5,604,037		\$7,999,836		\$779,979	
	30% Contingency				\$2,200,075		\$1,681,211		\$2,399,951		\$233,994	
	Construction Total (2020 Year)				\$9,533,659		\$7,285,248		\$10,399,787		\$1,013,972	
	PA/ED/PS&E/ Soft Costs (40%)				\$3,813,464		\$2,914,099		\$4,159,915		\$405,589	
	GRAND TOTAL				\$13,347,123		\$10,199,347		\$14,559,702		\$1,419,561	

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term Alt 2
Oakland and Emeryville Concept Level Estimate

3/10/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number								
				Emeryville Caltrans R/W								
				8		9		10		11		
MOBILIZATION/ TRAFFIC CONTROL												
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$487,842	1	\$460,710	1	\$227,532	1	\$311,690	
2	Traffic Control	LS	8% of Constructiton	1	\$390,273	1	\$368,568	1	\$182,025	1	\$249,352	
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$24,392	1	\$23,036	1	\$11,377	1	\$15,584	
4	Construction Survey	LS	0.8% of Constructiton	1	\$39,027	1	\$36,857	1	\$18,203	1	\$24,935	
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$146,353	1	\$138,213	1	\$68,259	1	\$93,507	
	Subtotal				\$1,087,887		\$1,027,383		\$507,395		\$695,068	
DEMOLITION												
6	Clearing and Grubbing	LS	2% of Construction	1	\$97,568	1	\$92,142	1	\$45,506	1	\$62,338	
7	Demolition	LS	3% of Construction	1	\$146,353	1	\$138,213	1	\$68,259	1	\$93,507	
8	Unclassified Excavation	CY	\$120.00	309	\$37,091	348	\$41,727	348	\$41,727	170	\$20,400	
	Subtotal				\$281,012		\$272,082		\$155,493		\$176,245	
STREET IMPROVEMENTS												
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	6	\$120,000	3	\$60,000	1	\$20,000	2	\$40,000	
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	1	\$17,000	0	\$0	0	\$0	
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	2500	\$100,000	2500	\$100,000	2500	\$100,000	
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	6	\$18,000	16	\$48,000	2	\$6,000	9	\$27,000	
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	1	\$4,000	0	\$0	0	\$0	
14	Adjust MH Lid to grade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
15	Relocate fire hydrant	EA	\$20,000.00	1	\$20,000	1	\$20,000	0	\$0	1	\$20,000	
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	3985	\$199,250	2200	\$110,000	800	\$40,000	1600	\$80,000	
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	4	\$200,000	3	\$150,000	1	\$50,000	2	\$100,000	
18	Reconstruct Sidewalk	SF	\$30.00	9600	\$288,000	10800	\$324,000	10800	\$324,000	5280	\$158,400	
19	Median hardscape	SF	\$20.00	3100	\$62,000	3500	\$70,000	3500	\$70,000	1700	\$34,000	
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	2	\$10,000	1	\$5,000	0	\$0	
21	Install pedestrian barricade	EA	\$2,000.00	1	\$2,000	1	\$2,000	2	\$4,000	0	\$0	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	0	\$0	0	\$0	
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
24	Concrete BRT platform with apperences	EA	\$600,000.00	2	\$1,200,000	2	\$1,200,000	0	\$0	2	\$1,200,000	
25	Construct Median Curb	LF	\$50.00	900	\$45,000	1050	\$52,500	1050	\$52,500	500	\$25,000	
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	1	\$1,000,000	0	\$0	0	\$0	0	\$0	
27	Asphalt concrete pavement rehab	SY	\$100.00	7553	\$755,278	8475	\$847,500	8014	\$801,444	4056	\$405,556	
	Subtotal				\$4,009,528		\$3,015,000		\$1,472,944		\$2,189,956	
SIGNING AND STRIPING												
28	Replace crosswalk with continental striping	SF	\$5.00	2712	\$13,560	2791	\$13,955	1545	\$7,725	1410	\$7,050	
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	500	\$6,000	500	\$6,000	0	\$0	0	\$0	
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	816	\$141,984	918	\$159,732	918	\$159,732	449	\$78,091	
31	Green bike lane	SF	\$16.00	0	\$0	0	\$0	0	\$0	0	\$0	
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	0	\$0	0	\$0	
33	Miscellaneous striping	SF	\$5.00	560	\$2,800	560	\$2,800	560	\$2,800	560	\$2,800	
34	Install wayfinding sign	EA	\$500.00	0	\$0	4	\$2,000	0	\$0	0	\$0	
35	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	0	\$0	0	\$0	
36	Install miscellaneous signs	EA	\$500.00	0	\$0	1	\$500	0	\$0	1	\$500	
	Subtotal				\$164,344		\$184,987		\$170,257		\$88,441	
SIGNALS & LIGHTING												
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	6	\$120,000	1	\$20,000	3	\$60,000	
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
41	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	2	\$2,000	2	\$2,000	0	\$0	
42	BRT corridor lighting	MILE	\$2,100,000.00	0.15	\$324,545	0.17	\$365,114	0.17	\$365,114	0.09	\$178,500	
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	12	\$180,000	8	\$120,000	3	\$45,000	0	\$0	
44	New signal	EA	\$400,000.00	0	\$0	1	\$400,000	0	\$0	1	\$400,000	
45	Signal modification	EA	\$200,000.00	1	\$200,000	2	\$400,000	1	\$200,000	1	\$200,000	
	Subtotal				\$704,545		\$1,407,114		\$632,114		\$838,500	
LANDSCAPE AND SITE FURNISHINGS												
46	Street Tree in tree well	EA	\$2,500.00	10	\$25,000	10	\$25,000	0	\$0	10	\$25,000	
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.15	\$9,273	0.17	\$10,432	0.17	\$10,432	0.09	\$5,100	
48	Corridor Landscaping	MILE	\$100,000.00	0.15	\$15,455	0.17	\$17,386	0.17	\$17,386	0.09	\$8,500	
49	Corridor Street Trees	MILE	\$1,050,000.00	0.15	\$162,273	0.17	\$182,557	0.17	\$182,557	0.09	\$89,250	
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	2	\$10,000	2	\$10,000	0	\$0	2	\$10,000	
51	Iron Tree Grate	EA	\$3,600.00	10	\$36,000	10	\$36,000	0	\$0	10	\$36,000	
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	1	\$20,000	0	\$0	0	\$0	
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	10	\$25,000	10	\$25,000	0	\$0	10	\$25,000	
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.15	\$185,455	0.17	\$208,636	0.17	\$208,636	0.09	\$102,000	
	Subtotal				\$468,455		\$535,011		\$419,011		\$300,850	
	TOTAL				\$6,715,771		\$6,441,578		\$3,357,215		\$4,289,060	
	30% Contingency				\$2,014,731		\$1,932,473		\$1,007,164		\$1,286,718	
	Construction Total (2020 Year)				\$8,730,502		\$8,374,051		\$4,364,379		\$5,575,777	
	PA/ED/PS&E/ Soft Costs (40%)				\$3,492,201		\$3,349,620		\$1,745,752		\$2,230,311	
	GRAND TOTAL				\$12,222,702		\$11,723,671		\$6,110,131		\$7,806,088	

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term Alt 2
Oakland and Emeryville Concept Level Estimate

3/10/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number								
				Oakland Caltrans R/W								
				11		12		13		14		
MOBILIZATION/ TRAFFIC CONTROL												
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$132,949	1	\$315,512	1	\$480,273	1	\$314,287	
2	Traffic Control	LS	8% of Constructiton	1	\$106,360	1	\$252,409	1	\$384,219	1	\$251,430	
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$6,647	1	\$15,776	1	\$24,014	1	\$15,714	
4	Construction Survey	LS	0.8% of Constructiton	1	\$10,636	1	\$25,241	1	\$38,422	1	\$25,143	
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$39,885	1	\$94,654	1	\$144,082	1	\$94,286	
	Subtotal				\$296,477		\$703,591		\$1,071,010		\$700,861	
DEMOLITION												
6	Clearing and Grubbing	LS	2% of Construction	1	\$26,590	1	\$63,102	1	\$96,055	1	\$62,857	
7	Demolition	LS	3% of Construction	1	\$39,885	1	\$94,654	1	\$144,082	1	\$94,286	
8	Unclassified Excavation	CY	\$120.00	178	\$21,327	348	\$41,727	348	\$41,727	348	\$41,727	
	Subtotal				\$87,802		\$199,483		\$281,864		\$198,871	
STREET IMPROVEMENTS												
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	1	\$17,000	2	\$34,000	1	\$17,000	
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	2500	\$100,000	2500	\$100,000	2500	\$100,000	
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	0	\$0	26	\$78,000	19	\$57,000	8	\$24,000	
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	2	\$8,000	0	\$0	0	\$0	
14	Adjust MH Lid to grade	EA	\$2,000.00	0	\$0	2	\$4,000	1	\$2,000	0	\$0	
15	Relocate fire hydrant	EA	\$20,000.00	0	\$0	1	\$20,000	1	\$20,000	0	\$0	
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	0	\$0	4000	\$200,000	9600	\$480,000	4000	\$200,000	
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	0	\$0	5	\$250,000	10	\$500,000	5	\$250,000	
18	Reconstruct Sidewalk	SF	\$30.00	5520	\$165,600	10800	\$324,000	10800	\$324,000	10800	\$324,000	
19	Median hardscape	SF	\$20.00	1800	\$36,000	3500	\$70,000	5700	\$114,000	3500	\$70,000	
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	2	\$10,000	2	\$10,000	2	\$10,000	
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	0	\$0	0	\$0	
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
24	Concrete BRT platform with apperences	EA	\$600,000.00	0	\$0	0	\$0	2	\$1,200,000	0	\$0	
25	Construct Median Curb	LF	\$50.00	550	\$27,500	1050	\$52,500	1440	\$72,000	1050	\$52,500	
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
27	Asphalt concrete pavement rehab	SY	\$100.00	4074	\$407,444	8126	\$812,611	8324	\$832,389	8328	\$832,778	
	Subtotal				\$736,544		\$1,946,111		\$3,745,389		\$1,880,278	
SIGNING AND STRIPING												
28	Replace crosswalk with continental striping	SF	\$5.00	1179	\$5,895	3172	\$15,860	1560	\$7,800	2290	\$11,450	
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	500	\$6,000	0	\$0	0	\$0	0	\$0	
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	469	\$81,641	918	\$159,732	918	\$159,732	918	\$159,732	
31	Green bike lane	SF	\$16.00	0	\$0	0	\$0	0	\$0	0	\$0	
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	0	\$0	0	\$0	
33	Miscellaneous striping	SF	\$5.00	560	\$2,800	560	\$2,800	440	\$2,200	560	\$2,800	
34	Install wayfinding sign	EA	\$500.00	0	\$0	1	\$500	1	\$500	1	\$500	
35	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	1	\$500	0	\$0	
36	Install miscellaneous signs	EA	\$500.00	0	\$0	0	\$0	3	\$1,500	0	\$0	
	Subtotal				\$96,336		\$178,892		\$172,232		\$174,482	
SIGNALS & LIGHTING												
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
38	Install adaptive pedestrian signal	EA	\$20,000.00	1	\$20,000	0	\$0	0	\$0	3	\$60,000	
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	2	\$300,000	0	\$0	0	\$0	
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
41	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	3	\$3,000	
42	BRT corridor lighting	MILE	\$2,100,000.00	0.09	\$186,614	0.17	\$365,114	0.17	\$365,114	0.17	\$365,114	
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	6	\$90,000	11	\$165,000	8	\$120,000	4	\$60,000	
44	New signal	EA	\$400,000.00	0	\$0	0	\$0	1	\$400,000	0	\$0	
45	Signal modification	EA	\$200,000.00	1	\$200,000	1	\$200,000	0	\$0	3	\$600,000	
	Subtotal				\$496,614		\$1,030,114		\$885,114		\$1,088,114	
LANDSCAPE AND SITE FURNISHINGS												
46	Street Tree in tree well	EA	\$2,500.00	0	\$0	0	\$0	10	\$25,000	0	\$0	
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.09	\$5,332	0.17	\$10,432	0.17	\$10,432	0.17	\$10,432	
48	Corridor Landscaping	MILE	\$100,000.00	0.09	\$8,886	0.17	\$17,386	0.17	\$17,386	0.17	\$17,386	
49	Corridor Street Trees	MILE	\$1,050,000.00	0.09	\$93,307	0.17	\$182,557	0.17	\$182,557	0.17	\$182,557	
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	0	\$0	0	\$0	2	\$10,000	0	\$0	
51	Iron Tree Grate	EA	\$3,600.00	0	\$0	0	\$0	10	\$36,000	0	\$0	
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	1	\$20,000	0	\$0	0	\$0	
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	0	\$0	0	\$0	10	\$25,000	0	\$0	
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.09	\$106,636	0.17	\$208,636	0.17	\$208,636	0.17	\$208,636	
	Subtotal				\$214,161		\$439,011		\$515,011		\$419,011	
	TOTAL				\$1,927,934		\$4,497,202		\$6,670,620		\$4,461,616	
	30% Contingency				\$578,380		\$1,349,161		\$2,001,186		\$1,338,485	
	Construction Total (2020 Year)				\$2,506,315		\$5,846,363		\$8,671,806		\$5,800,101	
	PA/ED/PS&E/ Soft Costs (40%)				\$1,002,526		\$2,338,545		\$3,468,722		\$2,320,041	
	GRAND TOTAL				\$3,508,841		\$8,184,908		\$12,140,528		\$8,120,142	

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term Alt 2
Oakland and Emeryville Concept Level Estimate

3/10/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number				Quantity	Estimate
				15		16			
								TOTAL	\$ TOTAL
MOBILIZATION/ TRAFFIC CONTROL									
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$408,874	1	\$91,965	18	\$7,011,394
2	Traffic Control	LS	8% of Constructiton	1	\$327,099	1	\$73,572	18	\$5,609,115
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$20,444	1	\$4,598	18	\$350,570
4	Construction Survey	LS	0.8% of Constructiton	1	\$32,710	1	\$7,357	18	\$560,912
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$122,662	1	\$27,590	18	\$2,103,418
	Subtotal				\$911,788		\$205,083		\$15,635,408
DEMOLITION									
6	Clearing and Grubbing	LS	2% of Construction	1	\$81,775	1	\$18,393	18	\$1,402,279
7	Demolition	LS	3% of Construction	1	\$122,662	1	\$27,590	18	\$2,103,418
8	Unclassified Excavation	CY	\$120.00	348	\$41,727	56	\$6,761	5350	\$641,943
	Subtotal				\$246,164		\$52,744		\$4,147,640
STREET IMPROVEMENTS									
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	0	\$0	0	\$0	33	\$660,000
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	0	\$0	14	\$238,000
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	0	\$0	32500	\$1,300,000
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	2	\$6,000	4	\$12,000	162	\$486,000
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	0	\$0	10	\$40,000
14	Adjust MH Lid to grade	EA	\$2,000.00	1	\$2,000	0	\$0	19	\$38,000
15	Relocate fire hydrant	EA	\$20,000.00	2	\$40,000	1	\$20,000	22	\$440,000
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	2400	\$120,000	1600	\$80,000	89068	\$4,453,400
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	3	\$150,000	2	\$100,000	76	\$3,800,000
18	Reconstruct Sidewalk	SF	\$30.00	11100	\$333,000	1750	\$52,500	167650	\$5,029,500
19	Median hardscape	SF	\$20.00	3500	\$70,000	1050	\$21,000	49750	\$995,000
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	1	\$5,000	0	\$0	16	\$80,000
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	4	\$8,000
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	547	\$24,615
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	1	\$15,000
24	Concrete BRT platform with apperences	EA	\$600,000.00	2	\$1,200,000	0	\$0	18	\$10,800,000
25	Construct Median Curb	LF	\$50.00	1050	\$52,500	525	\$26,250	15105	\$755,250
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	0	\$0	0	\$0	10	\$10,000,000
27	Asphalt concrete pavement rehab	SY	\$100.00	8554	\$855,444	1169	\$116,889	125747	\$12,574,667
	Subtotal				\$2,933,944		\$428,639		\$51,737,432
SIGNING AND STRIPING									
28	Replace crosswalk with continental striping	SF	\$5.00	2029	\$10,145	534	\$2,670	38099	\$190,495
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	0	\$0	0	\$0	3000	\$36,000
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	918	\$159,732	149	\$25,883	14123	\$2,457,359
31	Green bike lane	SF	\$16.00	0	\$0	0	\$0	400	\$6,400
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	10775	\$215,500
33	Miscellaneous striping	SF	\$5.00	560	\$2,800	560	\$2,800	10550	\$52,750
34	Install wayfinding sign	EA	\$500.00	560	\$280,000	0	\$0	571	\$285,500
35	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	6	\$3,000
36	Install miscellaneous signs	EA	\$500.00	0	\$0	1	\$500	21	\$10,500
	Subtotal			1	\$452,677		\$31,853		\$3,257,504
SIGNALS & LIGHTING									
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	5	\$5,000
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	0	\$0	16	\$320,000
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	4	\$600,000
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	2	\$10,000
41	Install audible pedestrian signal	EA	\$1,000.00	2	\$2,000	0	\$0	12	\$12,000
42	BRT corridor lighting	MILE	\$2,100,000.00	0.17	\$365,114	0.03	\$59,162	3	\$5,617,003
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	9	\$135,000	0	\$0	117	\$1,755,000
44	New signal	EA	\$400,000.00	0	\$0	1	\$400,000	6	\$2,400,000
45	Signal modification	EA	\$200,000.00	1	\$200,000	0	\$0	22	\$4,400,000
	Subtotal				\$702,114		\$459,162		\$15,119,003
LANDSCAPE AND SITE FURNISHINGS									
46	Street Tree in tree well	EA	\$2,500.00	10	\$25,000	0	\$0	90	\$225,000
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.17	\$10,432	0.03	\$1,690	3	\$160,486
48	Corridor Landscaping	MILE	\$100,000.00	0.17	\$17,386	0.03	\$2,817	3	\$267,476
49	Corridor Street Trees	MILE	\$1,050,000.00	0.17	\$182,557	0.03	\$29,581	3	\$2,808,501
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	2	\$10,000	0	\$0	18	\$90,000
51	Iron Tree Grate	EA	\$3,600.00	10	\$36,000	0	\$0	90	\$324,000
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	0	\$0	3	\$60,000
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	10	\$25,000	0	\$0	90	\$225,000
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.17	\$208,636	0.03	\$33,807	3	\$3,209,716
	Subtotal				\$515,011		\$67,895		\$7,370,179
	TOTAL				\$5,761,698		\$1,245,375		\$97,267,166
	30% Contingency				\$1,728,510		\$373,613		\$29,180,150
	Construction Total (2020 Year)				\$7,490,208		\$1,618,988		\$126,447,315
	PA/ED/PS&E/ Soft Costs (40%)				\$2,996,083		\$647,595		\$50,578,926
	GRAND TOTAL				\$10,486,291		\$2,266,583		\$177,026,242

OPINION OF PROBABLE COST
San Pablo Avenue Corridor Project - Near-Term Oakland and Emeryville
Concept Level Estimate-Unit Prices



2-Mar-20
 Prepared By: JAH

ITEM	DESCRIPTION	UNIT	UNIT PRICE	ASSUMPTIONS
MOBILIZATION/ TRAFFIC CONTROL				
1	Mobilization/ De-mobilization	LS	10% of Construction	Approximately 10% of Construction Cost
2	Traffic Control	LS	8% of Construction	Approximately 8% of Construction Cost
3	Develop and Implement SWPPP	LS	0.5% of Construction	Approximately 0.5% of Construction Cost
4	Construction Survey	LS	0.8% of Construction	Approximately 0.8% of Construction Cost
5	Utility Protection/ potholing by Contractor	LS	3% of Construction	Approximately 3% of Construction Cost
DEMOLITION				
6	Clearing and Grubbing	LS	2% of Construction	Approximately 2% of Construction Cost
7	Demolition	LS	3% of Construction	Approximately 3% of Construction Cost
8	Unclassified Excavation	CY	\$120.00	2,000 CY per mile transit stations or islands
STREET IMPROVEMENTS				
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	Construct PCC curb, gutter, ADA ramp(s), sidewalk, AC Plug, Install DWS (estimate \$50/SF @ 400SF)
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	Construct PCC curb, gutter, ADA ramp, sidewalk, AC Plug, Install DWS (up to 400 SF of concrete with 1 ramp) 400 SF x \$30/SF + \$5,000 ramp
11	Reconstruct Driveway	SF	\$40.00	Construct PCC curb, gutter, driveway slope, sidewalk, AC Plug
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	At curb returns and median areas
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	At curb returns
14	Adjust MH Lid to grade	EA	\$2,000.00	At curb returns
15	Relocate fire hydrant	EA	\$20,000.00	At some curb return bulbs
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	Construct PCC curb, gutter, ADA ramp(s), sidewalk, AC Plug, Install DWS \$30/SF+\$20/SF ramps and other forming, box adjustments
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	One manhole, one inlet, 80 LF pipe, 20% misc.
18	Reconstruct Sidewalk	SF	\$30.00	Assume 250 SF per new street tree @4/ 100 ft
19	Median hardscape	SF	\$20.00	Per sample layout, estimated 6 SF/ LF of BRT (includes center and side medians)
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	Construct PCC curb, AC Plug, Repair median hardscape/landscape/irrigation (includes cut back median nose quantity for side streets)
21	Install pedestrian barricade	EA	\$2,000.00	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	Construct PCC curb, AC Plug, Repair median hardscape, ADA passageway
23	Street closure	EA	\$15,000.00	Depends upon closure method.
24	Concrete BRT platform with apperences	EA	\$700,000.00	See East Bay BRT Bid results +15% inflation since April 2016, 2 per stop location. Includes concrete platform, bus stop shelter, bench, trash, handrails, electrical, CCTV, ticketing, and signage
25	Construct Median Curb	LF	\$50.00	60% of BRT length assumed to have median, times 2 for each side of the median + 90% of BRT length assumed to have median for bike protection, times 2 for each side of the median = 3 x BRT length
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	This is a placeholder as each will vary and will be analyzed further in the next stage. Assumes full signal and accessibility upgrades, may impact right of way at some locations.
27	Asphalt concrete pavement rehab	SY	\$100.00	Minor base repairs, grind & overlay 0.2', assumes each agency has on-going rehab prior
SIGNING AND STRIPING				
28	Replace crosswalk with continental striping	SF	\$5.00	24" @ 2' spacing, 10' wide center to center with 3' gap per other's recently constructed
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	Assumes green pavement skipped, so only half the area would be green. Unit cost was halved.
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	4 stripes (\$5/LF each), sign (\$500) and "Bus Only" (42 SF@\$15/SF) every 300 LF+red pvmt
31	Green bike lane	SF	\$16.00	Includes thermoplastic pavement markings & green pavement (assume 20% of bike lanes are green)
32	Purple paint bulbout with bollards	SF	\$20.00	Includes purple paint and bollards
33	Miscellaneous striping	SF	\$5.00	Includes thermoplastic pavement markings & striping
34	Install wayfinding sign	EA	\$500.00	
35	Install pedestrian sign	EA	\$500.00	
36	Install miscellaneous signs	EA	\$500.00	
SIGNALS & LIGHTING				
37	Install countdown pedestrian heads	EA	\$1,000.00	Locations noted on plan
38	Install adaptive pedestrian signal	EA	\$20,000.00	Locations noted on plan
39	Install PHB as determined by warrant	EA	\$150,000.00	Locations noted on plan
40	Relocate pedestrian push button	EA	\$5,000.00	plan ES-7A
41	Install audible pedestrian signal	EA	\$1,000.00	Locations noted on plan
42	BRT corridor lighting	MILE	\$2,100,000.00	Spacing assumed between 60' and 100' on each side of the street because of existing lighting, average spacing of 85' and assuming each light is \$20,000
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	Two lights/ unsignalized intersection
44	New signal	EA	\$400,000.00	Locations noted previously from F&P. Detection included.
45	Signal modification	EA	\$200,000.00	All signals where there is BRT.
LANDSCAPE AND SITE FURNISHINGS				
46	Street Tree in tree well	EA	\$2,500.00	5 per station location with iron tree grate
47	Gateway Features/ Public Art	MILE	\$60,000.00	Estimated, all alternatives have the same assumption
48	Corridor Landscaping	MILE	\$100,000.00	Estimated, minor enhancements to bulb areas
49	Corridor Street Trees	MILE	\$1,050,000.00	Trees with tree grate every 40 feet on both sides of the street, 264 trees per mile x 80% of length, 210 trees per mile, \$5000 each
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	1 bike rack/corral at each station
51	Iron Tree Grate	EA	\$3,600.00	5 per station location
52	Irrigation/Hose Bibs	LS	\$20,000.00	1 per area identified
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	1 per tree
54	BRT Buses and Layover	MILE	\$1,200,000.00	30 bus upgrades @\$200K for 12 miles of BRT, \$8M layover improvements.

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term
Oakland and Emeryville Concept Level Estimate
3/2/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number								
				Oakland City R/W								
				1	2	3	4					
MOBILIZATION/ TRAFFIC CONTROL												
1	Mobilization/ De-mobilization	LS	10% of Construciton	1	\$550,849	1	\$560,543	1	\$394,559	1	\$845,445	
2	Traffic Control	LS	8% of Construciton	1	\$440,679	1	\$448,434	1	\$315,647	1	\$676,356	
3	Develop and Implement SWPPP	LS	0.5% of Construciton	1	\$27,542	1	\$28,027	1	\$19,728	1	\$42,272	
4	Construction Survey	LS	0.8% of Construciton	1	\$44,068	1	\$44,843	1	\$31,565	1	\$67,636	
5	Utility Protection/ potholing by Contractor	LS	3% of Construciton	1	\$165,255	1	\$168,163	1	\$118,368	1	\$253,634	
Subtotal					\$1,228,394		\$1,250,010		\$879,866		\$1,885,343	
DEMOLITION												
6	Clearing and Grubbing	LS	2% of Construction	1	\$110,170	1	\$112,109	1	\$78,912	1	\$169,089	
7	Demolition	LS	3% of Construction	1	\$165,255	1	\$168,163	1	\$118,368	1	\$253,634	
8	Unclassified Excavation	CY	\$120.00	425	\$51,000	348	\$41,727	309	\$37,091	386	\$46,364	
Subtotal					\$326,425		\$321,999		\$234,370		\$469,086	
STREET IMPROVEMENTS												
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	5	\$100,000	3	\$60,000	1	\$20,000	0	\$0	
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	0	\$0	0	\$0	3	\$51,000	
11	Reconstruct Driveway	SF	\$40.00	0	\$0	0	\$0	0	\$0	2500	\$100,000	
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	7	\$21,000	5	\$15,000	9	\$27,000	26	\$78,000	
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	6	\$24,000	0	\$0	1	\$4,000	
14	Adjust MH Lid to grade	EA	\$2,000.00	3	\$6,000	2	\$4,000	1	\$2,000	5	\$10,000	
15	Relocate fire hydrant	EA	\$20,000.00	2	\$40,000	1	\$20,000	1	\$20,000	5	\$100,000	
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	2742	\$137,100	8720	\$436,000	4090	\$204,500	18826	\$941,300	
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	3	\$150,000	3	\$150,000	5	\$250,000	15	\$750,000	
18	Reconstruct Sidewalk	SF	\$30.00	13200	\$396,000	10800	\$324,000	9900	\$297,000	12600	\$378,000	
19	Median hardscape	SF	\$20.00	7920	\$158,400	6480	\$129,600	5760	\$115,200	7200	\$144,000	
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	0	\$0	2	\$10,000	2	\$10,000	
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	546	\$24,570	0	\$0	0	\$0	0	\$0	
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	1	\$15,000	
24	Concrete BRT platform with apperences	EA	\$700,000.00	0	\$0	2	\$1,400,000	0	\$0	2	\$1,400,000	
25	Construct Median Curb	LF	\$50.00	3960	\$198,000	3240	\$162,000	2880	\$144,000	3600	\$180,000	
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	2	\$2,000,000	1	\$1,000,000	1	\$1,000,000	2	\$2,000,000	
27	Asphalt concrete pavement rehab	SY	\$100.00	10080.6	\$1,008,056	8647	\$864,667	7048	\$704,778	8871	\$887,111	
Subtotal					\$4,239,126		\$4,589,267		\$2,794,478		\$7,048,411	
SIGNING AND STRIPING												
28	Replace crosswalk with continental striping	SF	\$5.00	4530	\$22,650	2051	\$10,255	2922	\$14,610	2246	\$11,230	
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	0	\$0	0	\$0	500	\$6,000	500	\$6,000	
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	1122	\$195,228	918	\$159,732	816	\$141,984	1020	\$177,480	
31	Green bike lane	SF	\$16.00	2640	\$42,240	2160	\$34,560	1920	\$30,720	2400	\$38,400	
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	8425	\$168,500	0	\$0	
33	Miscellaneous striping	SF	\$5.00	1900	\$9,500	1600	\$8,000	1750	\$8,750	1750	\$8,750	
34	Install wayfinding sign	EA	\$500.00	0	\$0	0	\$0	0	\$0	0	\$0	
35	Install pedestrian sign	EA	\$500.00	2	\$1,000	0	\$0	0	\$0	0	\$0	
36	Install miscellaneous signs	EA	\$500.00	1	\$500	1	\$500	2	\$1,000	5	\$2,500	
Subtotal					\$271,118		\$213,047		\$371,564		\$244,360	
SIGNALS & LIGHTING												
37	Install countdown pedestrian heads	EA	\$1,000.00	2	\$2,000	3	\$3,000	0	\$0	0	\$0	
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	0	\$0	0	\$0	2	\$40,000	
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	1	\$150,000	1	\$150,000	
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	1	\$5,000	0	\$0	0	\$0	
41	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	1	\$1,000	
42	BRT corridor lighting	MILE	\$2,100,000.00	0.21	\$446,250	0.17	\$365,114	0.15	\$324,545	0.19	\$405,682	
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	10	\$150,000	2	\$30,000	7	\$105,000	11	\$165,000	
44	New signal	EA	\$400,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
45	Signal modification	EA	\$200,000.00	2	\$400,000	2	\$400,000	1	\$200,000	2	\$400,000	
Subtotal					\$998,250		\$803,114		\$779,545		\$1,161,682	
LANDSCAPE AND SITE FURNISHINGS												
46	Street Tree in tree well	EA	\$2,500.00	0	\$0	10	\$25,000	0	\$0	10	\$25,000	
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.21	\$12,750	0.17	\$10,432	0.15	\$9,273	0.19	\$11,591	
48	Corridor Landscaping	MILE	\$100,000.00	0.21	\$21,250	0.17	\$17,386	0.15	\$15,455	0.19	\$19,318	
49	Corridor Street Trees	MILE	\$1,050,000.00	0.21	\$223,125	0.17	\$182,557	0.15	\$162,273	0.19	\$202,841	
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	0	\$0	2	\$10,000	0	\$0	2	\$10,000	
51	Iron Tree Grate	EA	\$3,600.00	0	\$0	10	\$36,000	0	\$0	10	\$36,000	
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	1	\$20,000	0	\$0	0	\$0	
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	0	\$0	10	\$25,000	0	\$0	10	\$25,000	
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.21	\$255,000	0.17	\$208,636	0.15	\$185,455	0.19	\$231,818	
Subtotal					\$512,125		\$535,011		\$372,455		\$561,568	
TOTAL					\$7,575,437		\$7,712,448		\$5,432,278		\$11,370,450	
30% Contingency					\$2,272,631		\$2,313,734		\$1,629,683		\$3,411,135	
Construction Total (2020 Year)					\$9,848,068		\$10,026,182		\$7,061,961		\$14,781,586	
PA/ED/PS&E/ Soft Costs (40%)					\$3,939,227		\$4,010,473		\$2,824,785		\$5,912,634	
GRAND TOTAL					\$13,787,296		\$14,036,655		\$9,886,746		\$20,694,220	

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term
Oakland and Emeryville Concept Level Estimate
3/2/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number								
				Oakland City R/W								
				5	6	7	8	5	6	7	8	
MOBILIZATION/ TRAFFIC CONTROL												
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$573,330	1	\$424,974	1	\$625,651	1	\$59,918	
2	Traffic Control	LS	8% of Constructiton	1	\$458,664	1	\$339,979	1	\$500,520	1	\$47,935	
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$28,666	1	\$21,249	1	\$31,283	1	\$2,996	
4	Construction Survey	LS	0.8% of Constructiton	1	\$45,866	1	\$33,998	1	\$50,052	1	\$4,793	
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$171,999	1	\$127,492	1	\$187,695	1	\$17,976	
	Subtotal				\$1,278,526		\$947,692		\$1,395,201		\$133,618	
DEMOLITION												
6	Clearing and Grubbing	LS	2% of Construction	1	\$114,666	1	\$84,995	1	\$125,130	1	\$11,984	
7	Demolition	LS	3% of Construction	1	\$171,999	1	\$127,492	1	\$187,695	1	\$17,976	
8	Unclassified Excavation	CY	\$120.00	346	\$41,534	349	\$41,920	348	\$41,727	39	\$4,636	
	Subtotal				\$328,199		\$254,408		\$354,553		\$34,596	
STREET IMPROVEMENTS												
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	4	\$80,000	2	\$40,000	5	\$100,000	1	\$20,000	
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	3	\$51,000	2	\$34,000	1	\$17,000	0	\$0	
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	2500	\$100,000	2500	\$100,000	0	\$0	
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	9	\$27,000	1	\$3,000	11	\$33,000	2	\$6,000	
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
14	Adjust MH Lid to grade	EA	\$2,000.00	3	\$6,000	1	\$2,000	0	\$0	0	\$0	
15	Relocate fire hydrant	EA	\$20,000.00	2	\$40,000	0	\$0	3	\$60,000	0	\$0	
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	6360	\$318,000	3925	\$196,250	13420	\$671,000	800	\$40,000	
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	7	\$350,000	2	\$100,000	5	\$250,000	1	\$50,000	
18	Reconstruct Sidewalk	SF	\$30.00	11050	\$331,500	10850	\$325,500	10800	\$324,000	1200	\$36,000	
19	Median hardscape	SF	\$20.00	6450	\$129,000	6510	\$130,200	6480	\$129,600	720	\$14,400	
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	2	\$10,000	0	\$0	0	\$0	
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	0	\$0	1	\$45	
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
24	Concrete BRT platform with apperences	EA	\$700,000.00	2	\$1,400,000	0	\$0	2	\$1,400,000	0	\$0	
25	Construct Median Curb	LF	\$50.00	3225	\$161,250	3255	\$162,750	3240	\$162,000	360	\$18,000	
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	1	\$1,000,000	1	\$1,000,000	1	\$1,000,000	0	\$0	
27	Asphalt concrete pavement rehab	SY	\$100.00	7853	\$785,333	7911	\$791,111	7744	\$774,444	918	\$91,833	
	Subtotal				\$4,779,083		\$2,894,811		\$5,021,044		\$276,278	
SIGNING AND STRIPING												
28	Replace crosswalk with continental striping	SF	\$5.00	2230	\$11,150	2637	\$13,185	1461	\$7,305	800	\$4,000	
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	500	\$6,000	0	\$0	0	\$0	0	\$0	
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	914	\$158,993	922	\$160,472	918	\$159,732	102	\$17,748	
31	Green bike lane	SF	\$16.00	2150	\$34,400	2170	\$34,720	2160	\$34,560	240	\$3,840	
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	0	\$0	2350	\$47,000	
33	Miscellaneous striping	SF	\$5.00	1750	\$8,750	1750	\$8,750	1750	\$8,750	1750	\$8,750	
34	Install wayfinding sign	EA	\$500.00	4	\$2,000	0	\$0	0	\$0	0	\$0	
35	Install pedestrian sign	EA	\$500.00	2	\$1,000	1	\$500	0	\$0	0	\$0	
36	Install miscellaneous signs	EA	\$500.00	5	\$2,500	1	\$500	0	\$0	0	\$0	
	Subtotal				\$224,793		\$218,127		\$210,347		\$81,338	
SIGNALS & LIGHTING												
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	1	\$5,000	0	\$0	0	\$0	
41	Install audible pedestrian signal	EA	\$1,000.00	1	\$1,000	0	\$0	0	\$0	1	\$1,000	
42	BRT corridor lighting	MILE	\$2,100,000.00	0.17	\$363,423	0.17	\$366,804	0.17	\$365,114	0.02	\$40,568	
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	11	\$165,000	11	\$165,000	4	\$60,000	0	\$0	
44	New signal	EA	\$400,000.00	0	\$0	1	\$400,000	1	\$400,000	0	\$0	
45	Signal modification	EA	\$200,000.00	1	\$200,000	1	\$200,000	1	\$200,000	1	\$200,000	
	Subtotal				\$729,423		\$1,136,804		\$1,025,114		\$241,568	
LANDSCAPE AND SITE FURNISHINGS												
46	Street Tree in tree well	EA	\$2,500.00	10	\$25,000	0	\$0	10	\$25,000	0	\$0	
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.17	\$10,384	0.17	\$10,480	0.17	\$10,432	0.02	\$1,159	
48	Corridor Landscaping	MILE	\$100,000.00	0.17	\$17,306	0.17	\$17,467	0.17	\$17,386	0.02	\$1,932	
49	Corridor Street Trees	MILE	\$1,050,000.00	0.17	\$181,712	0.17	\$183,402	0.17	\$182,557	0.02	\$20,284	
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	2	\$10,000	0	\$0	2	\$10,000	0	\$0	
51	Iron Tree Grate	EA	\$3,600.00	10	\$36,000	0	\$0	10	\$36,000	0	\$0	
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	10	\$25,000	0	\$0	10	\$25,000	0	\$0	
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.17	\$207,670	0.17	\$209,602	0.17	\$208,636	0.02	\$23,182	
	Subtotal				\$513,071		\$420,951		\$515,011		\$46,557	
	TOTAL				\$7,853,095		\$5,872,793		\$8,521,270		\$813,955	
	30% Contingency				\$2,355,929		\$1,761,838		\$2,556,381		\$244,187	
	Construction Total (2020 Year)				\$10,209,024		\$7,634,631		\$11,077,650		\$1,058,142	
	PA/ED/PS&E/ Soft Costs (40%)				\$4,083,610		\$3,053,852		\$4,431,060		\$423,257	
	GRAND TOTAL				\$14,292,634		\$10,688,483		\$15,508,711		\$1,481,398	

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term
Oakland and Emeryville Concept Level Estimate
3/2/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number								
				Emeryville Caltrans R/W								
				8		9		10		11		
MOBILIZATION/ TRAFFIC CONTROL												
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$526,729	1	\$515,495	1	\$248,493	1	\$342,330	
2	Traffic Control	LS	8% of Constructiton	1	\$421,383	1	\$412,396	1	\$198,794	1	\$273,864	
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$26,336	1	\$25,775	1	\$12,425	1	\$17,117	
4	Construction Survey	LS	0.8% of Constructiton	1	\$42,138	1	\$41,240	1	\$19,879	1	\$27,386	
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$158,019	1	\$154,649	1	\$74,548	1	\$102,699	
	Subtotal				\$1,174,605		\$1,149,554		\$554,138		\$763,397	
DEMOLITION												
6	Clearing and Grubbing	LS	2% of Construction	1	\$105,346	1	\$103,099	1	\$49,699	1	\$68,466	
7	Demolition	LS	3% of Construction	1	\$158,019	1	\$154,649	1	\$74,548	1	\$102,699	
8	Unclassified Excavation	CY	\$120.00	309	\$37,091	348	\$41,727	348	\$41,727	170	\$20,400	
	Subtotal				\$300,455		\$299,475		\$165,974		\$191,565	
STREET IMPROVEMENTS												
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	6	\$120,000	3	\$60,000	1	\$20,000	2	\$40,000	
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	1	\$17,000	0	\$0	0	\$0	
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	2500	\$100,000	2500	\$100,000	2500	\$100,000	
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	6	\$18,000	16	\$48,000	2	\$6,000	9	\$27,000	
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	1	\$4,000	0	\$0	0	\$0	
14	Adjust MH Lid to grade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
15	Relocate fire hydrant	EA	\$20,000.00	1	\$20,000	1	\$20,000	0	\$0	1	\$20,000	
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	3985	\$199,250	2200	\$110,000	800	\$40,000	1600	\$80,000	
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	4	\$200,000	3	\$150,000	1	\$50,000	2	\$100,000	
18	Reconstruct Sidewalk	SF	\$30.00	9600	\$288,000	10800	\$324,000	10800	\$324,000	5280	\$158,400	
19	Median hardscape	SF	\$20.00	5760	\$115,200	6480	\$129,600	6480	\$129,600	3168	\$63,360	
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	2	\$10,000	1	\$5,000	0	\$0	
21	Install pedestrian barricade	EA	\$2,000.00	1	\$2,000	1	\$2,000	2	\$4,000	0	\$0	
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	0	\$0	0	\$0	
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
24	Concrete BRT platform with apperences	EA	\$700,000.00	2	\$1,400,000	2	\$1,400,000	0	\$0	2	\$1,400,000	
25	Construct Median Curb	LF	\$50.00	2880	\$144,000	3240	\$162,000	3240	\$162,000	1584	\$79,200	
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	1	\$1,000,000	0	\$0	0	\$0	0	\$0	
27	Asphalt concrete pavement rehab	SY	\$100.00	7553	\$755,278	8475	\$847,500	8014	\$801,444	4056	\$405,556	
	Subtotal				\$4,361,728		\$3,384,100		\$1,642,044		\$2,473,516	
SIGNING AND STRIPING												
28	Replace crosswalk with continental striping	SF	\$5.00	2712	\$13,560	2791	\$13,955	1545	\$7,725	1410	\$7,050	
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	500	\$6,000	500	\$6,000	0	\$0	0	\$0	
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	816	\$141,984	918	\$159,732	918	\$159,732	449	\$78,091	
31	Green bike lane	SF	\$16.00	1920	\$30,720	10800	\$172,800	2160	\$34,560	1056	\$16,896	
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	0	\$0	0	\$0	
33	Miscellaneous striping	SF	\$5.00	1750	\$8,750	1750	\$8,750	1750	\$8,750	1750	\$8,750	
34	Install wayfinding sign	EA	\$500.00	0	\$0	4	\$2,000	0	\$0	0	\$0	
35	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	0	\$0	0	\$0	
36	Install miscellaneous signs	EA	\$500.00	0	\$0	1	\$500	0	\$0	1	\$500	
	Subtotal				\$201,014		\$363,737		\$210,767		\$111,287	
SIGNALS & LIGHTING												
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	6	\$120,000	1	\$20,000	3	\$60,000	
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	0	\$0	0	\$0	
41	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	2	\$2,000	2	\$2,000	0	\$0	
42	BRT corridor lighting	MILE	\$2,100,000.00	0.15	\$324,545	0.17	\$365,114	0.17	\$365,114	0.09	\$178,500	
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	12	\$180,000	8	\$120,000	3	\$45,000	0	\$0	
44	New signal	EA	\$400,000.00	0	\$0	1	\$400,000	0	\$0	1	\$400,000	
45	Signal modification	EA	\$200,000.00	1	\$200,000	2	\$400,000	1	\$200,000	1	\$200,000	
	Subtotal				\$704,545		\$1,407,114		\$632,114		\$838,500	
LANDSCAPE AND SITE FURNISHINGS												
46	Street Tree in tree well	EA	\$2,500.00	10	\$25,000	10	\$25,000	0	\$0	10	\$25,000	
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.15	\$9,273	0.17	\$10,432	0.17	\$10,432	0.09	\$5,100	
48	Corridor Landscaping	MILE	\$100,000.00	0.15	\$15,455	0.17	\$17,386	0.17	\$17,386	0.09	\$8,500	
49	Corridor Street Trees	MILE	\$1,050,000.00	0.15	\$162,273	0.17	\$182,557	0.17	\$182,557	0.09	\$89,250	
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	2	\$10,000	2	\$10,000	0	\$0	2	\$10,000	
51	Iron Tree Grate	EA	\$3,600.00	10	\$36,000	10	\$36,000	0	\$0	10	\$36,000	
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	1	\$20,000	0	\$0	0	\$0	
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	10	\$25,000	10	\$25,000	0	\$0	10	\$25,000	
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.15	\$185,455	0.17	\$208,636	0.17	\$208,636	0.09	\$102,000	
	Subtotal				\$468,455		\$535,011		\$419,011		\$300,850	
	TOTAL				\$7,210,802		\$7,138,991		\$3,624,048		\$4,679,114	
	30% Contingency				\$2,163,241		\$2,141,697		\$1,087,214		\$1,403,734	
	Construction Total (2020 Year)				\$9,374,043		\$9,280,688		\$4,711,263		\$6,082,849	
	PA/ED/PS&E/ Soft Costs (40%)				\$3,749,617		\$3,712,275		\$1,884,505		\$2,433,139	
	GRAND TOTAL				\$13,123,660		\$12,992,963		\$6,595,768		\$8,515,988	

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term
Oakland and Emeryville Concept Level Estimate
3/2/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number									
				Oakland Caltrans R/W									
				11	12	13	14						
MOBILIZATION/ TRAFFIC CONTROL													
1	Mobilization/ De-mobilization	LS	10% of Construcion	1	\$143,865	1	\$336,473	1	\$514,944	1	\$335,248		
2	Traffic Control	LS	8% of Construcion	1	\$115,092	1	\$269,178	1	\$411,956	1	\$268,199		
3	Develop and Implement SWPPP	LS	0.5% of Construcion	1	\$7,193	1	\$16,824	1	\$25,747	1	\$16,762		
4	Construction Survey	LS	0.8% of Construcion	1	\$11,509	1	\$26,918	1	\$41,196	1	\$26,820		
5	Utility Protection/ potholing by Contractor	LS	3% of Construcion	1	\$43,159	1	\$100,942	1	\$154,483	1	\$100,575		
	Subtotal				\$320,818		\$750,334		\$1,148,326		\$747,604		
DEMOLITION													
6	Clearing and Grubbing	LS	2% of Construction	1	\$28,773	1	\$67,295	1	\$102,989	1	\$67,050		
7	Demolition	LS	3% of Construction	1	\$43,159	1	\$100,942	1	\$154,483	1	\$100,575		
8	Unclassified Excavation	CY	\$120.00	178	\$21,327	348	\$41,727	348	\$41,727	348	\$41,727		
	Subtotal				\$93,260		\$209,964		\$299,199		\$209,351		
STREET IMPROVEMENTS													
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	1	\$17,000	2	\$34,000	1	\$17,000		
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	2500	\$100,000	2500	\$100,000	2500	\$100,000		
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	0	\$0	26	\$78,000	19	\$57,000	8	\$24,000		
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	2	\$8,000	0	\$0	0	\$0		
14	Adjust MH Lid to grade	EA	\$2,000.00	0	\$0	2	\$4,000	1	\$2,000	0	\$0		
15	Relocate fire hydrant	EA	\$20,000.00	0	\$0	1	\$20,000	1	\$20,000	0	\$0		
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	0	\$0	4000	\$200,000	9600	\$480,000	4000	\$200,000		
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	0	\$0	5	\$250,000	10	\$500,000	5	\$250,000		
18	Reconstruct Sidewalk	SF	\$30.00	5520	\$165,600	10800	\$324,000	10800	\$324,000	10800	\$324,000		
19	Median hardscape	SF	\$20.00	3312	\$66,240	6480	\$129,600	6480	\$129,600	6480	\$129,600		
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	0	\$0	2	\$10,000	2	\$10,000	2	\$10,000		
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	0	\$0	0	\$0		
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
24	Concrete BRT platform with apperences	EA	\$700,000.00	0	\$0	0	\$0	2	\$1,400,000	0	\$0		
25	Construct Median Curb	LF	\$50.00	1656	\$82,800	3240	\$162,000	3240	\$162,000	3240	\$162,000		
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
27	Asphalt concrete pavement rehab	SY	\$100.00	4074	\$407,444	8126	\$812,611	8324	\$832,389	8328	\$832,778		
	Subtotal				\$822,084		\$2,115,211		\$4,050,989		\$2,049,378		
SIGNING AND STRIPING													
28	Replace crosswalk with continental striping	SF	\$5.00	1179	\$5,895	3172	\$15,860	1560	\$7,800	2290	\$11,450		
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	500	\$6,000	0	\$0	0	\$0	0	\$0		
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	469	\$81,641	918	\$159,732	918	\$159,732	918	\$159,732		
31	Green bike lane	SF	\$16.00	1104	\$17,664	2160	\$34,560	2160	\$34,560	2160	\$34,560		
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	0	\$0	0	\$0		
33	Miscellaneous striping	SF	\$5.00	1750	\$8,750	1750	\$8,750	1750	\$8,750	1750	\$8,750		
34	Install wayfinding sign	EA	\$500.00	0	\$0	1	\$500	1	\$500	1	\$500		
35	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	1	\$500	0	\$0		
36	Install miscellaneous signs	EA	\$500.00	0	\$0	0	\$0	3	\$1,500	0	\$0		
	Subtotal				\$119,950		\$219,402		\$213,342		\$214,992		
SIGNALS & LIGHTING													
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
38	Install adaptive pedestrian signal	EA	\$20,000.00	1	\$20,000	0	\$0	0	\$0	3	\$60,000		
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	2	\$300,000	0	\$0	0	\$0		
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	0	\$0	0	\$0		
41	Install audible pedestrian signal	EA	\$1,000.00	0	\$0	0	\$0	0	\$0	3	\$3,000		
42	BRT corridor lighting	MILE	\$2,100,000.00	0.09	\$186,614	0.17	\$365,114	0.17	\$365,114	0.17	\$365,114		
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	6	\$90,000	11	\$165,000	8	\$120,000	4	\$60,000		
44	New signal	EA	\$400,000.00	0	\$0	0	\$0	1	\$400,000	0	\$0		
45	Signal modification	EA	\$200,000.00	1	\$200,000	1	\$200,000	0	\$0	3	\$600,000		
	Subtotal				\$496,614		\$1,030,114		\$885,114		\$1,088,114		
LANDSCAPE AND SITE FURNISHINGS													
46	Street Tree in tree well	EA	\$2,500.00	0	\$0	0	\$0	10	\$25,000	0	\$0		
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.09	\$5,332	0.17	\$10,432	0.17	\$10,432	0.17	\$10,432		
48	Corridor Landscaping	MILE	\$100,000.00	0.09	\$8,886	0.17	\$17,386	0.17	\$17,386	0.17	\$17,386		
49	Corridor Street Trees	MILE	\$1,050,000.00	0.09	\$93,307	0.17	\$182,557	0.17	\$182,557	0.17	\$182,557		
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	0	\$0	0	\$0	2	\$10,000	0	\$0		
51	Iron Tree Grate	EA	\$3,600.00	0	\$0	0	\$0	10	\$36,000	0	\$0		
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	1	\$20,000	0	\$0	0	\$0		
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	0	\$0	0	\$0	10	\$25,000	0	\$0		
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.09	\$106,636	0.17	\$208,636	0.17	\$208,636	0.17	\$208,636		
	Subtotal				\$214,161		\$439,011		\$515,011		\$419,011		
	TOTAL				\$2,066,887		\$4,764,036		\$7,111,982		\$4,728,450		
	30% Contingency				\$620,066		\$1,429,211		\$2,133,594		\$1,418,535		
	Construction Total (2020 Year)				\$2,686,954		\$6,193,247		\$9,245,576		\$6,146,985		
	PA/ED/PS&E/ Soft Costs (40%)				\$1,074,781		\$2,477,299		\$3,698,230		\$2,458,794		
	GRAND TOTAL				\$3,761,735		\$8,670,545		\$12,943,806		\$8,605,779		

OPINION OF PROBABLE COST

San Pablo Avenue Corridor Project - Near-Term
Oakland and Emeryville Concept Level Estimate
3/2/2020



Item	Item Description	Unit	Unit Price	Estimate by Page Number				Quantity	Estimate
				15		16			
								TOTAL	\$ TOTAL
MOBILIZATION/ TRAFFIC CONTROL									
1	Mobilization/ De-mobilization	LS	10% of Constructiton	1	\$509,335	1	\$93,120	18	\$7,601,301
2	Traffic Control	LS	8% of Constructiton	1	\$407,468	1	\$74,496	18	\$6,081,041
3	Develop and Implement SWPPP	LS	0.5% of Constructiton	1	\$25,467	1	\$4,656	18	\$380,065
4	Construction Survey	LS	0.8% of Constructiton	1	\$40,747	1	\$7,450	18	\$608,104
5	Utility Protection/ potholing by Contractor	LS	3% of Constructiton	1	\$152,800	1	\$27,936	18	\$2,280,390
	Subtotal				\$1,135,816		\$207,658		\$16,950,901
DEMOLITION									
6	Clearing and Grubbing	LS	2% of Construction	1	\$101,867	1	\$18,624	18	\$1,520,260
7	Demolition	LS	3% of Construction	1	\$152,800	1	\$27,936	18	\$2,280,390
8	Unclassified Excavation	CY	\$120.00	348	\$41,727	56	\$6,761	5350	\$641,943
	Subtotal				\$296,395		\$53,322		\$4,442,594
STREET IMPROVEMENTS									
9	Reconstruct Return and Ramp(s)	EA	\$20,000.00	0	\$0	0	\$0	33	\$660,000
10	Construct/Reconstruct Mid-block Curb Ramp	EA	\$17,000.00	0	\$0	0	\$0	14	\$238,000
11	Reconstruct Driveway	SF	\$40.00	2500	\$100,000	0	\$0	32500	\$1,300,000
12	Relocate/Adjust to grade Utility Boxes	EA	\$3,000.00	2	\$6,000	4	\$12,000	162	\$486,000
13	Relocate/Adjust to grade Utility Vault	EA	\$4,000.00	0	\$0	0	\$0	10	\$40,000
14	Adjust MH Lid to grade	EA	\$2,000.00	1	\$2,000	0	\$0	19	\$38,000
15	Relocate fire hydrant	EA	\$20,000.00	2	\$40,000	1	\$20,000	22	\$440,000
16	Reconstruct Return and Ramp(s) with a Bulb-out	SF	\$50.00	2400	\$120,000	1600	\$80,000	89068	\$4,453,400
17	Storm Drain Improvements at bulb-out	EA	\$50,000.00	3	\$150,000	2	\$100,000	76	\$3,800,000
18	Reconstruct Sidewalk	SF	\$30.00	11100	\$333,000	1750	\$52,500	167650	\$5,029,500
19	Median hardscape	SF	\$20.00	6480	\$129,600	1050	\$21,000	99690	\$1,993,800
20	Construct Pedestrian Refuge Median Nose	EA	\$5,000.00	1	\$5,000	0	\$0	16	\$80,000
21	Install pedestrian barricade	EA	\$2,000.00	0	\$0	0	\$0	4	\$8,000
22	Reconstruct pork chop/median island to meet ADA	SF	\$45.00	0	\$0	0	\$0	547	\$24,615
23	Street closure	EA	\$15,000.00	0	\$0	0	\$0	1	\$15,000
24	Concrete BRT platform with apperenances	EA	\$700,000.00	2	\$1,400,000	0	\$0	18	\$12,600,000
25	Construct Median Curb	LF	\$50.00	3240	\$162,000	525	\$26,250	49845	\$2,492,250
26	Intersection Reconstruction and Realignment	EA	\$1,000,000.00	0	\$0	0	\$0	10	\$10,000,000
27	Asphalt concrete pavement rehab	SY	\$100.00	8554	\$855,444	1169	\$116,889	125747	\$12,574,667
	Subtotal				\$3,303,044		\$428,639		\$56,273,232
SIGNING AND STRIPING									
28	Replace crosswalk with continental striping	SF	\$5.00	2029	\$10,145	534	\$2,670	38099	\$190,495
29	Install bicycle crosstrack adjacent to existing crosswalk	SF	\$12.00	0	\$0	0	\$0	3000	\$36,000
30	Red Bus Only Roadway Signing and Striping	LF	\$174.00	918	\$159,732	149	\$25,883	14123	\$2,457,359
31	Green bike lane	SF	\$16.00	2160	\$34,560	350	\$5,600	41870	\$669,920
32	Purple paint bulbout with bollards	SF	\$20.00	0	\$0	0	\$0	10775	\$215,500
33	Miscellaneous striping	SF	\$5.00	1750	\$8,750	1750	\$8,750	31500	\$157,500
34	Install wayfinding sign	EA	\$500.00	1750	\$875,000	0	\$0	1761	\$880,500
35	Install pedestrian sign	EA	\$500.00	0	\$0	0	\$0	6	\$3,000
36	Install miscellaneous signs	EA	\$500.00	0	\$0	1	\$500	21	\$10,500
	Subtotal			1	\$1,088,187		\$43,403		\$4,620,774
SIGNALS & LIGHTING									
37	Install countdown pedestrian heads	EA	\$1,000.00	0	\$0	0	\$0	5	\$5,000
38	Install adaptive pedestrian signal	EA	\$20,000.00	0	\$0	0	\$0	16	\$320,000
39	Install PHB as determined by warrant	EA	\$150,000.00	0	\$0	0	\$0	4	\$600,000
40	Relocate pedestrian push button	EA	\$5,000.00	0	\$0	0	\$0	2	\$10,000
41	Install audible pedestrian signal	EA	\$1,000.00	2	\$2,000	0	\$0	12	\$12,000
42	BRT corridor lighting	MILE	\$2,100,000.00	0.17	\$365,114	0.03	\$59,162	3	\$5,617,003
43	Install Pedestrian Lighting @ Crosswalks	EA	\$15,000.00	9	\$135,000	0	\$0	117	\$1,755,000
44	New signal	EA	\$400,000.00	0	\$0	1	\$400,000	6	\$2,400,000
45	Signal modification	EA	\$200,000.00	1	\$200,000	0	\$0	22	\$4,400,000
	Subtotal				\$702,114		\$459,162		\$15,119,003
LANDSCAPE AND SITE FURNISHINGS									
46	Street Tree in tree well	EA	\$2,500.00	10	\$25,000	0	\$0	90	\$225,000
47	Gateway Features/ Public Art	MILE	\$60,000.00	0.17	\$10,432	0.03	\$1,690	3	\$160,486
48	Corridor Landscaping	MILE	\$100,000.00	0.17	\$17,386	0.03	\$2,817	3	\$267,476
49	Corridor Street Trees	MILE	\$1,050,000.00	0.17	\$182,557	0.03	\$29,581	3	\$2,808,501
50	Bike Rack/Corral Accommodations	EA	\$5,000.00	2	\$10,000	0	\$0	18	\$90,000
51	Iron Tree Grate	EA	\$3,600.00	10	\$36,000	0	\$0	90	\$324,000
52	Irrigation/Hose Bibs	LS	\$20,000.00	0	\$0	0	\$0	3	\$60,000
53	Electrical Outlets at Trees w/ conduit	EA	\$2,500.00	10	\$25,000	0	\$0	90	\$225,000
54	BRT Buses and Layover	MILE	\$1,200,000.00	0.17	\$208,636	0.03	\$33,807	3	\$3,209,716
	Subtotal				\$515,011		\$67,895		\$7,370,179
	TOTAL				\$7,040,567		\$1,260,079		\$104,776,682
	30% Contingency				\$2,112,170		\$378,024		\$31,433,005
	Construction Total (2020 Year)				\$9,152,737		\$1,638,102		\$136,209,686
	PA/ED/PS&E/ Soft Costs (40%)				\$3,661,095		\$655,241		\$54,483,875
	GRAND TOTAL				\$12,813,832		\$2,293,343		\$190,693,561



APPENDIX E

OAKLAND NEAR-TERM DESIGN CONCEPTS

Oakland Near-Term Alternatives

While San Pablo Avenue in northern Oakland contains standard grid intersections, San Pablo Avenue in southern Oakland has a number of skewed intersections, some of which contain up to five legs (star intersections) which create additional design challenges. The two segments selected in Oakland are 24th Street to 27th Street and Stanford Avenue to 61st Street. Future project phases will include concept development for the full extent of San Pablo Avenue in these cities.

- **Segment 1** (24th Street to 27th Street) was selected as it contains a handful of offset intersections, one major star intersection (West Street and Sycamore Street), and one major offset intersection (27th Street). This segment of Oakland also contains a mix of merchants and vacant properties with residential development located on neighboring streets.
- **Segment 2** (Stanford Avenue to 61st Avenue) was also selected for its mostly grid-like intersections, although several crossing streets have offset intersections where the side street legs do not align. Segment 2 differs from Segment 1 in that the area is almost exclusively residential except for a small handful of businesses near Stanford Avenue.

In this near-term improvement, the extents of the transit lane are assumed to be limited to part of the corridor; therefore, it is assumed that the hybrid transit service described in Section 2.5 would not yet be implemented and transit service along the corridor would remain similar to existing conditions, with a higher-quality Rapid or BRT-like service overlaid on a local service. Both BRT stations and local stops are provided in all options. The very near-term improvements for pedestrian safety described in the prior section, such as PHBs or RRFBs, enhanced lighting, installation of high-visibility crosswalks, bus bulbs, and pedestrian bulb-outs, are included as well.

As shown in **Table 4-1** in the body of this report, a bike lane is provided in two of the options and would be protected (Class IV) where feasible; however, a protected bicycle facility is not feasible in several segments of the corridor due to insufficient curb-to-curb width associated with auto turning lanes, BRT stations or bus stops, auto parking, or other facilities. The type of the bicycle protection (e.g., raised bike lane, bollards, planters, or raised islands) will be determined in future project phases.

Similar to the concepts described in Chapter 2, each of these near-term options requires complex trade-offs between preserving parking, bike facility comfort, transit

performance, and auto performance. Although no one of the alternatives is more beneficial in all respects than the others, a few key conclusions and takeaways are evident:

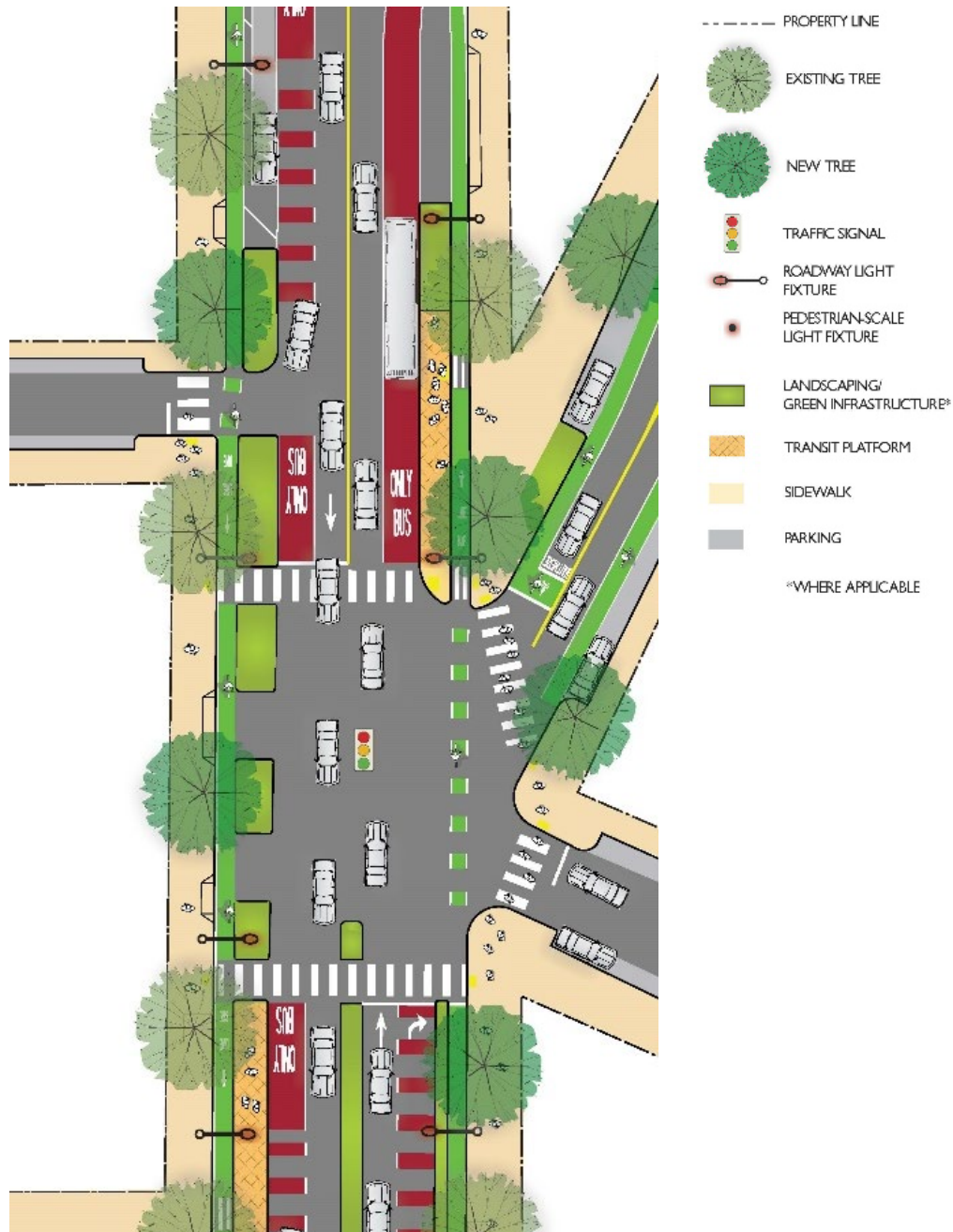
- Center-running bus options have the greatest potential to optimize transit performance, but they limit local access through median closures, as summarized in Chapter 2.
- Side-running bus options have lower construction costs and greater implementation flexibility and thus are more viable for near-term implementation.
- Bike travel on San Pablo Avenue has challenges in all configurations due to lack of continuous protection resulting from driveways/curb cuts and shared facilities at right turns. The limitations of bicycle facilities on San Pablo Avenue are summarized in Chapter 2.
- The options with no bike lanes have the least parking loss, while options that include a bike lane would require removal of nearly all on-street parking.
- The options with no bike lanes have the greatest potential to add bulb-outs to benefit pedestrian safety and comfort.

Alternative 1 - Side-running bus and bike lane

This alternative provides a dedicated side-running transit lane and buffered bike lane by eliminating a travel lane in each direction and removing a parking where necessary along the corridor. Bicycle facility improvements include buffered, striped, or raised bike lanes depending on available width and driveway placement. Where driveway access is provided and parking is maintained, striped buffers are utilized in lieu of raised bicycle protection. Due to the presence of driveways throughout the segment, a facility with continuous raised bicycle protection is not achievable. Medians would be reconstructed or removed to accommodate a transit lane, a bike facility, and turning movements. Left-turn and right-turn movements are preserved at all existing locations, although through bus and right-turning motorists would share a lane. This alternative has more conflicts between modes, with right-turning vehicles and transit vehicles interacting with bicycles at intersections.

See **Figure 1** for depiction of this alternative within Oakland Segments 1 and 2. The full concepts developed for the two segments are included later in **Appendix D**.

Figure 1: Near-term Alternative 1

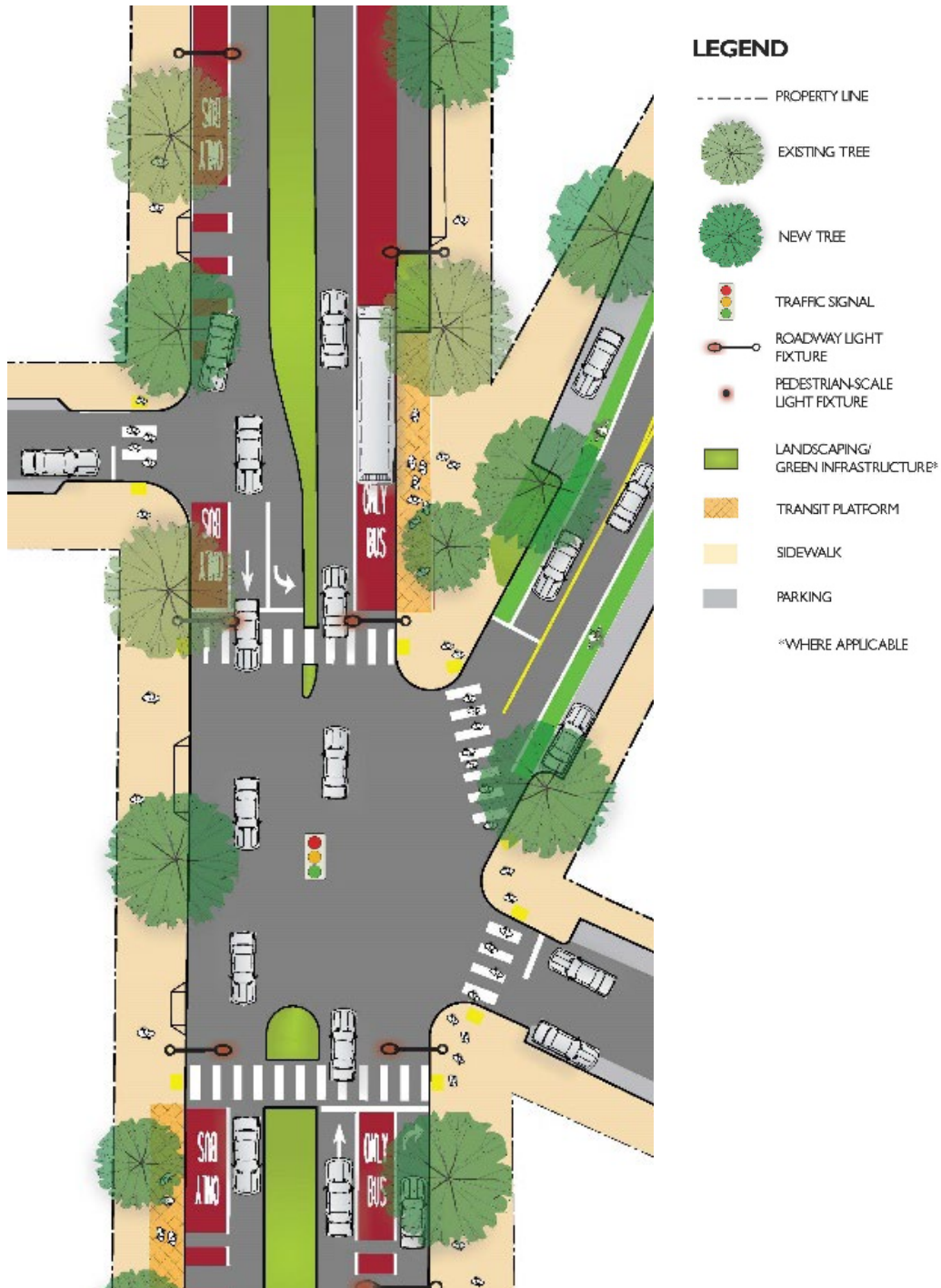


Alternative 2 – Side-running bus (parking preserved)

A dedicated transit lane is implemented while preserving existing parking. Bicycle facilities are improved on parallel routes, but are not provided on San Pablo Avenue itself. Although parallel corridor improvements were not specified as part of this analysis, this alternative assumes the implementation of improvements on, and encouraged use of, parallel bike routes. Of the alternatives presented, this alternative is anticipated to be the least expensive to implement with less disturbance to the built environment. A travel lane would be converted to a transit lane, restriped, and painted red. Additional amenities would be provided at bus stops, such as lighting, shelters, and bulb-outs. Similar to Alternative 1, existing auto-turning movements are preserved. In this alternative, right-turning vehicles and parking maneuvers are mixed with transit movements.

See **Figure 2** for depiction of this alternative within Oakland Segments 1 and 2. The full concepts developed for the two segments are included later in **Appendix D**.

Figure 2: Near-term Alternative 2

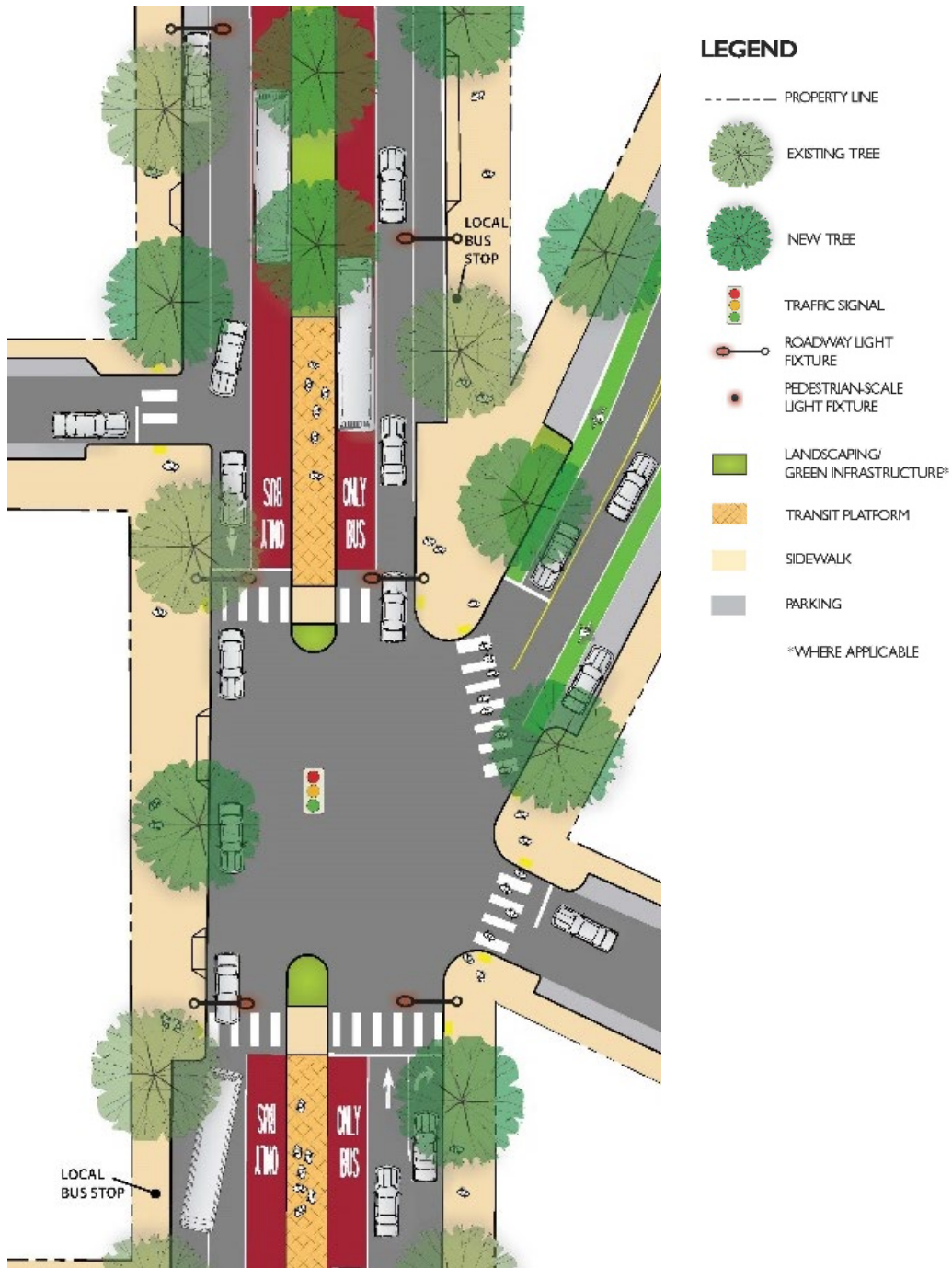


Alternative 3 – Center-running bus (parking preserved)

A center-running bus lane alternative converts the middle travel lane to a transit lane and preserves most existing parking. Existing center-island medians are modified in a number of locations to provide sufficient width for bus operations and to preserve right-turn lanes where possible. Bicycle facilities are improved on parallel routes, but are not provided on San Pablo Avenue. Similar to Alternative 2, although this exercise did not specify the parallel bike network, implementation of parallel bike network improvements is assumed. This alternative has the least amount of mixing between modes with no autos entering the bus lanes and bicycle facilities not located on San Pablo Avenue. This alternative could have an additional sub-alternative, not illustrated, in which a second travel lane is preserved during the peak period in lieu of parking (see Concept B in Chapter 2).

See **Figure 3** for depiction of this alternative within Oakland Segments 1 and 2. The full concepts developed for the two segments are included later in **Appendix D**.

Figure 3: Near-term Alternative 3

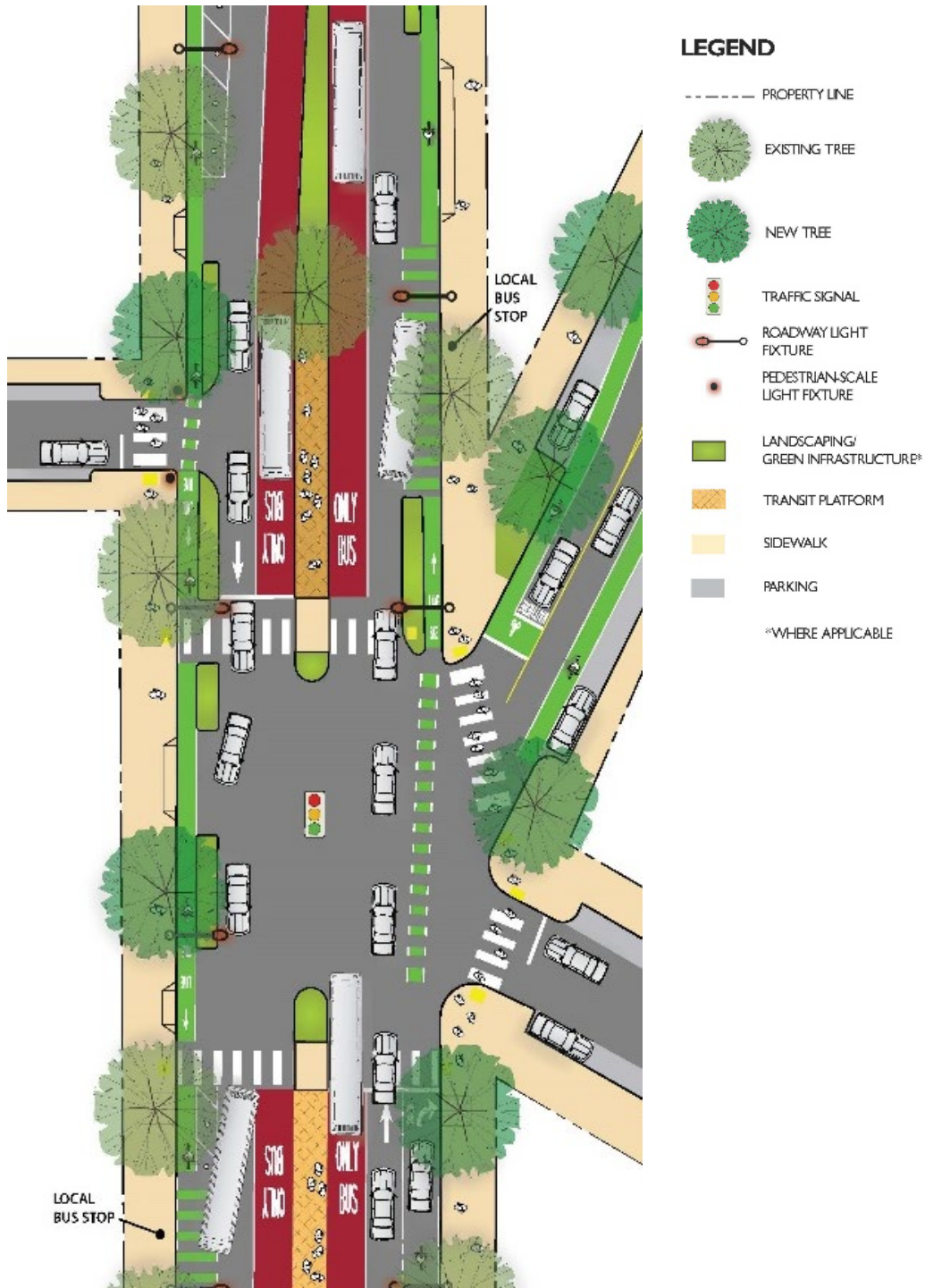


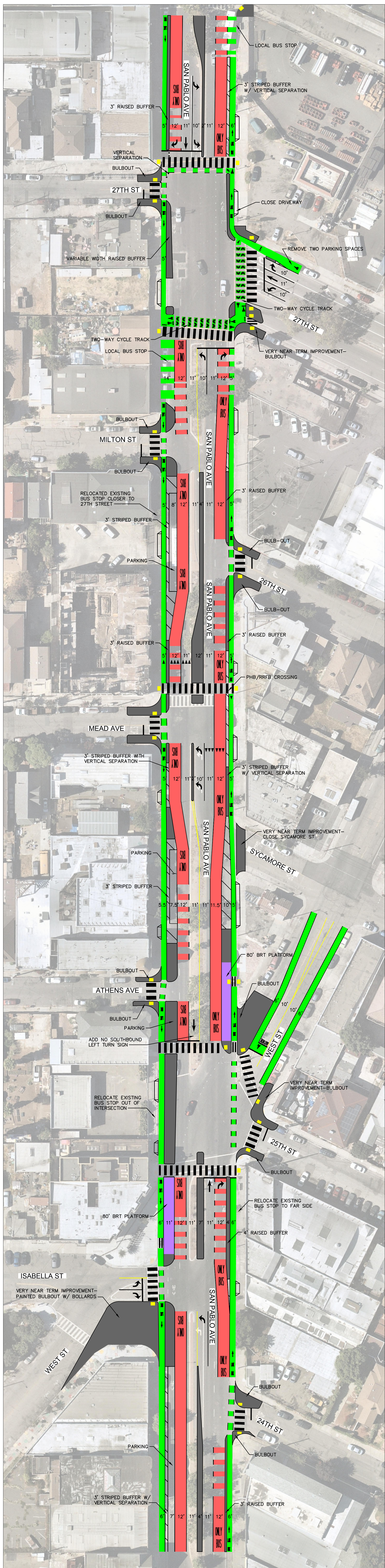
Alternative 4 – Center-running bus and bike lane

This alternative incorporates a bike facility into Alternative 3 which requires a significant amount of parking on the corridor to be removed and the most median modifications of all the alternatives. This is the most expensive and challenging alternative to implement as a result of the significant curb and median work required. Similar to Alternative 1, the nature of the bike lane separation has not yet been determined, although permeability across the separation is required at driveways and separation may not be feasible at many intersections and local bus stops.

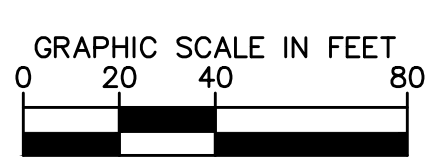
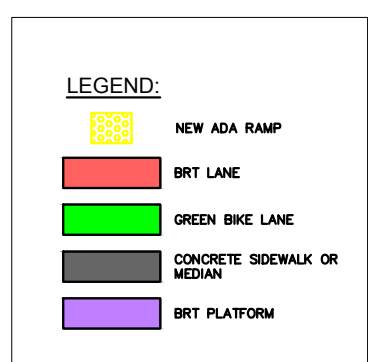
See **Figure 4** for depiction of this alternative within Oakland Segments 1 and 2. The full concepts developed for the two segments are included later in **Appendix D**.

Figure 4: Near-term Alternative 4

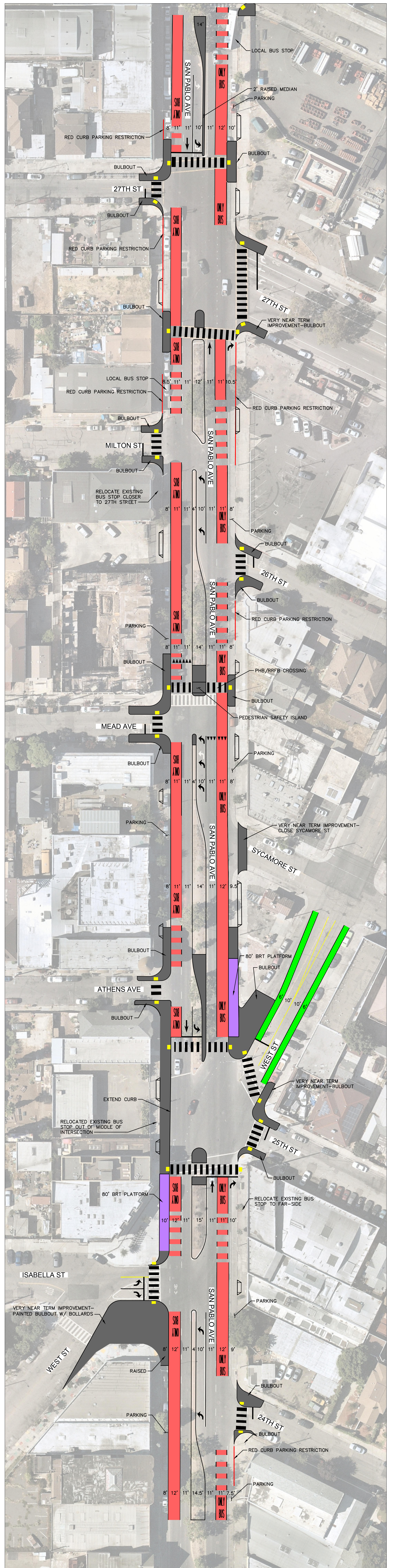




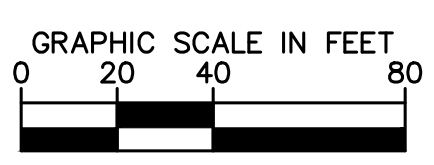
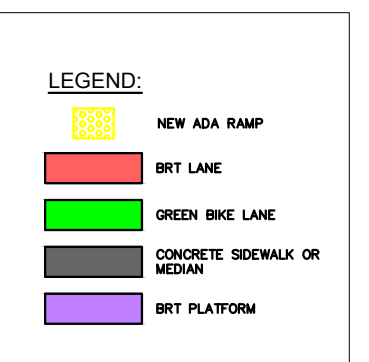
PARKING SPACES	EXISTING	PROPOSED	NET CHANGE
NORTHBOUND	33	0	-33
SOUTHBOUND	38	6	-32



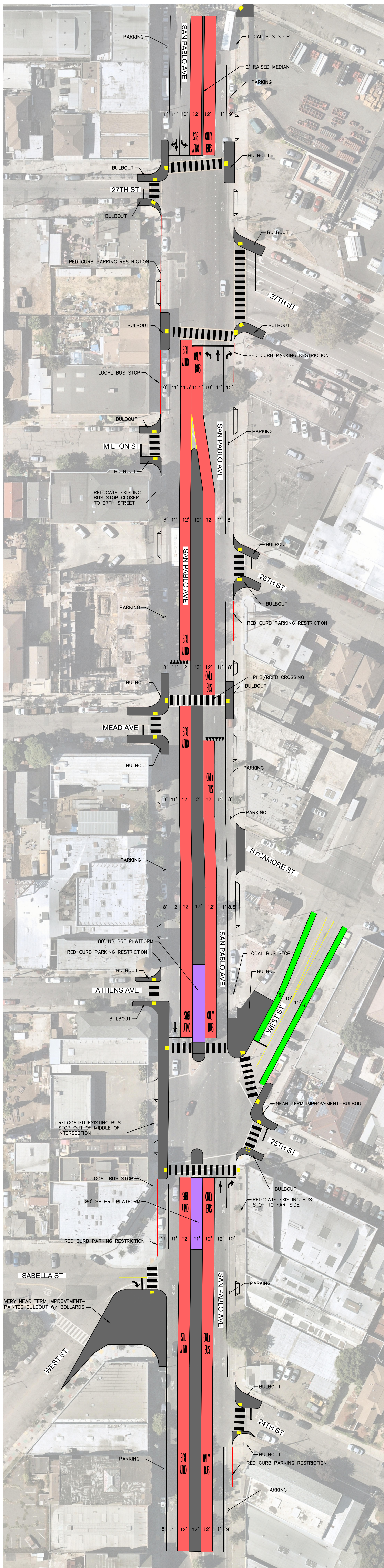
SAN PABLO AVE CORRIDOR STUDY - 24TH ST. TO 27TH ST.
 ALTERNATIVE 1
 CONCEPT A2: SIDE-RUNNING BUS AND BIKE
 DECEMBER 2019



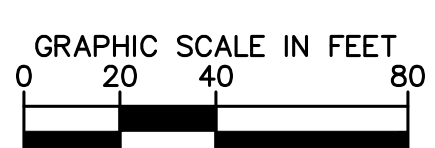
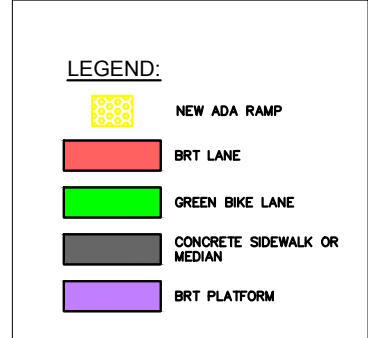
PARKING SPACES	EXISTING	PROPOSED	NET CHANGE
NORTHBOUND	33	24	-9
SOUTHBOUND	38	28	-10



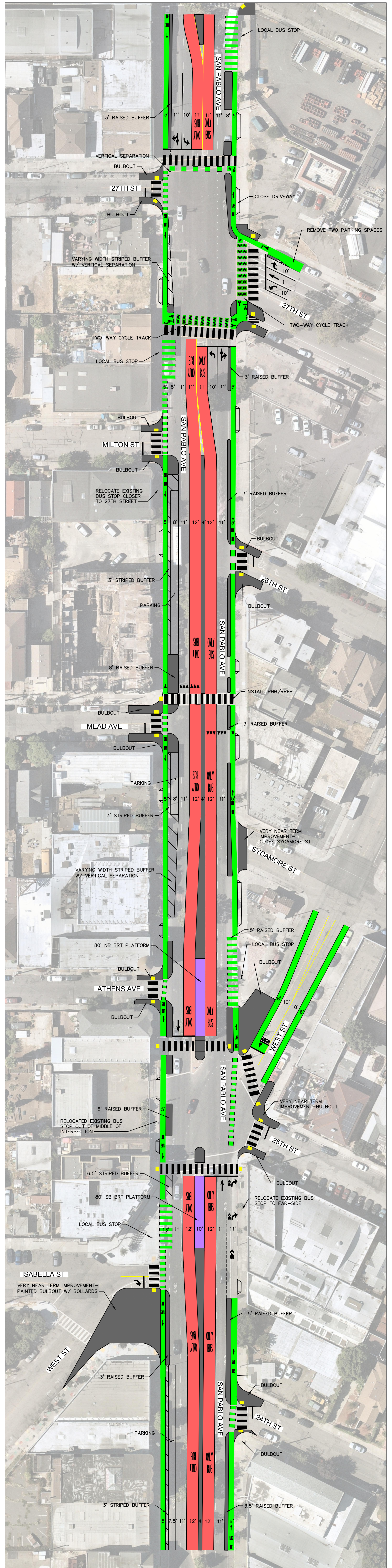
SAN PABLO AVE CORRIDOR STUDY - 24TH ST. TO 27TH ST.
 ALTERNATIVE 2
 CONCEPT B2: SIDE-RUNNING BUS AND PARKING
 DECEMBER 2019



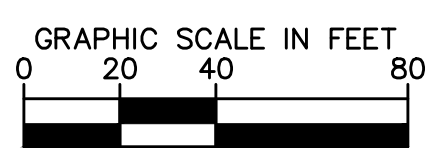
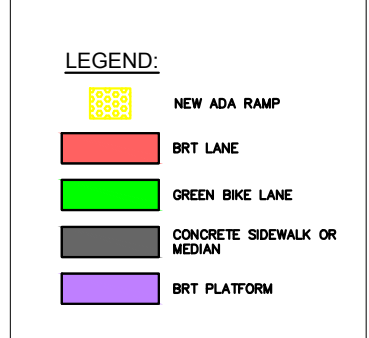
PARKING SPACES	DIRECTION	EXISTING	PROPOSED	NET CHANGE
NORTHBOUND		33	23	-10
		38	32	-6



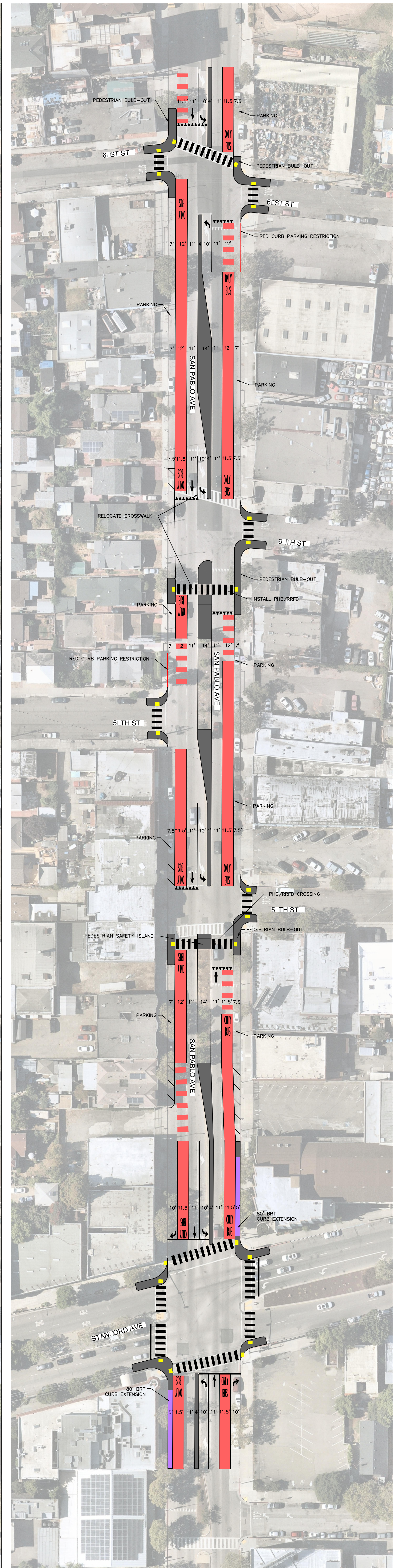
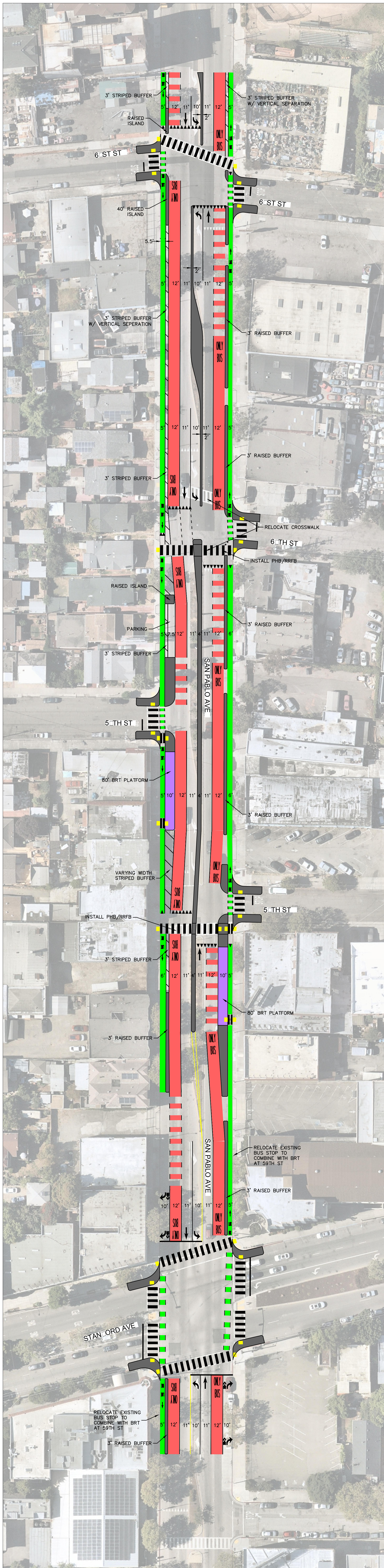
SAN PABLO AVE CORRIDOR STUDY – 24TH ST. TO 27TH ST.
 ALTERNATIVE 3
 CONCEPT B1: CENTER-RUNNING BUS AND PARKING
 DECEMBER 2019



PARKING SPACES	DIRECTION	EXISTING	PROPOSED	NET CHANGE
NORTHBOUND		33	0	-33
		38	17	-21



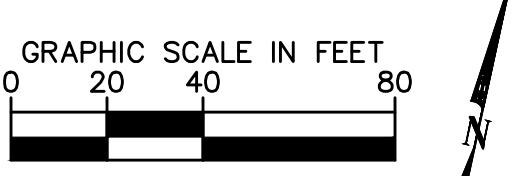
SAN PABLO AVE CORRIDOR STUDY – 24TH ST. TO 27TH ST.
 ALTERNATIVE 4
 CONCEPT A1: CENTER-RUNNING BUS AND BIKE
 DECEMBER 2019



PARKING SPACES	EXISTING	PROPOSED	NET CHANGE
DIRECTION	44	0	-44
NORTHBOUND			
SOUTHBOUND	33	1	-32

LEGEND:

- NEW ADA RAMP
- BRT LANE
- GREEN BIKE LANE
- CONCRETE SIDEWALK OR MEDIAN
- BUS STOP PLATFORM

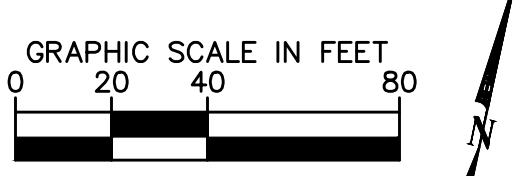


SAN PABLO AVE CORRIDOR STUDY – STANFORD AVE. TO 61 ST.
 ALTERNATIVE 1
 CONCEPT A2: SIDE-RUNNING BUS AND BIKE
 DECEMBER 2019

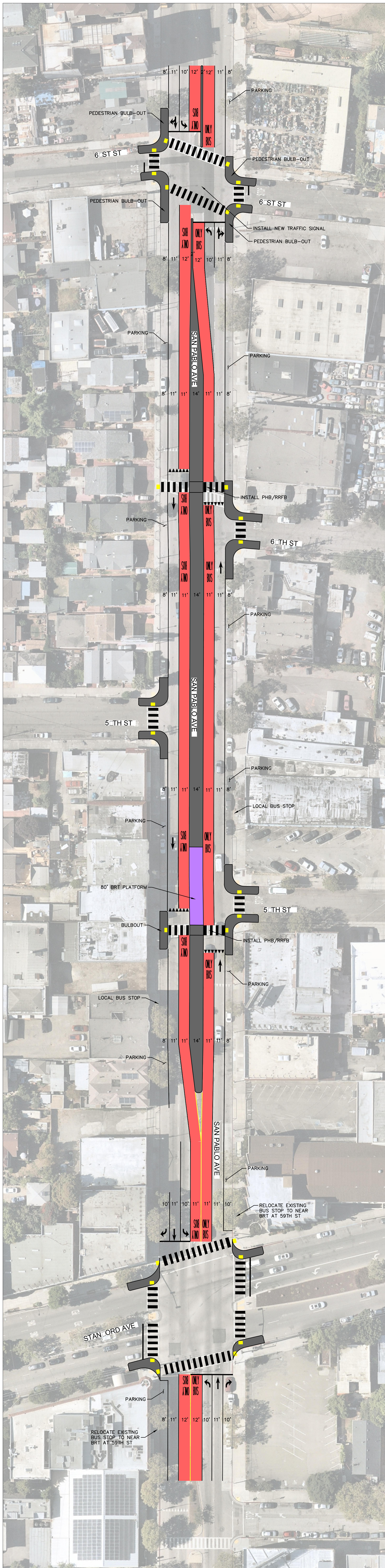
PARKING SPACES	EXISTING	PROPOSED	NET CHANGE
DIRECTION	44	28	-16
NORTHBOUND			
SOUTHBOUND	33	20	-13

LEGEND:

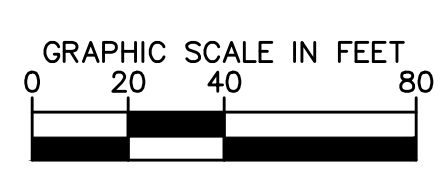
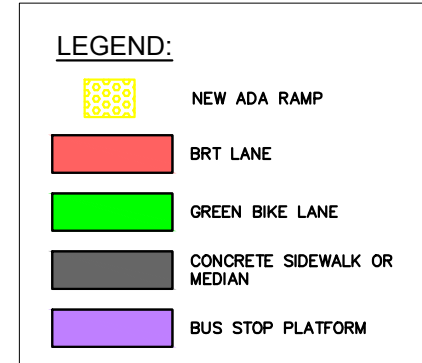
- NEW ADA RAMP
- BRT LANE
- GREEN BIKE LANE
- CONCRETE SIDEWALK OR MEDIAN
- BUS STOP PLATFORM



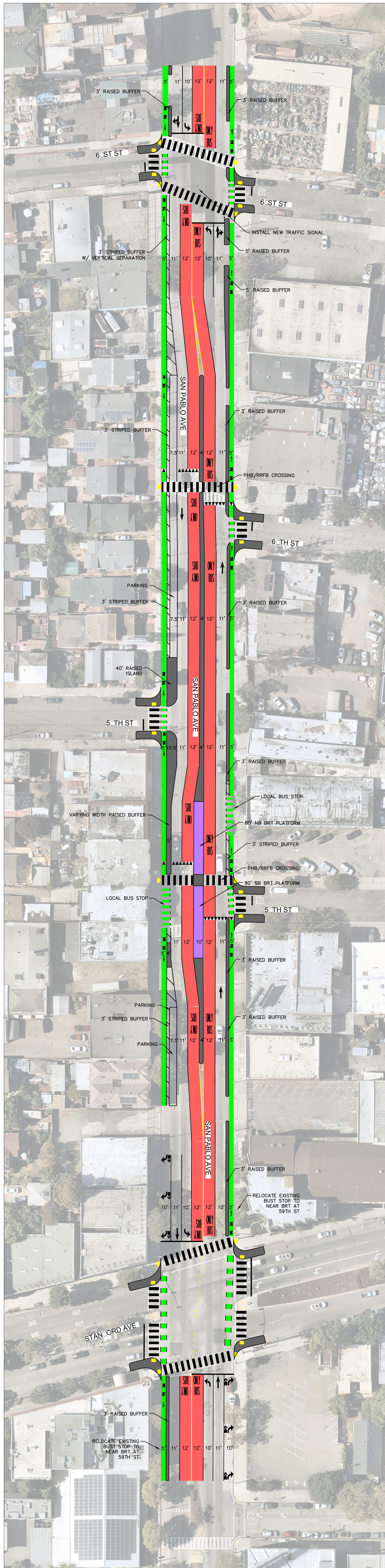
SAN PABLO AVE CORRIDOR STUDY – STANFORD AVE. TO 61 ST.
 ALTERNATIVE 2
 CONCEPT B2: SIDE-RUNNING BUS AND PARKING
 DECEMBER 2019



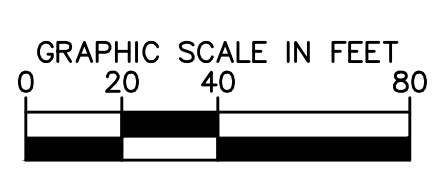
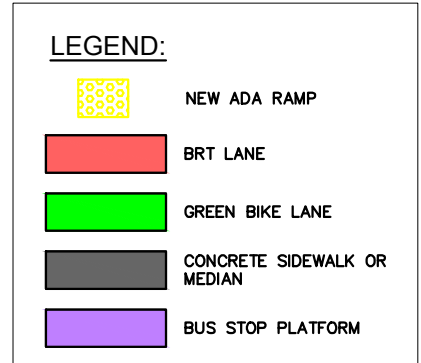
PARKING SPACES	EXISTING	PROPOSED	NET CHANGE
DIRECTION	44	35	-9
NORTHBOUND			
SOUTHBOUND	33	33	0



SAN PABLO AVE CORRIDOR STUDY – STANFORD AVE. TO 61 ST.
 ALTERNATIVE 3
 CONCEPT B1: CENTER-RUNNING BUS AND PARKING
 DECEMBER 2019



PARKING SPACES	EXISTING	PROPOSED	NET CHANGE
DIRECTION	44	0	-44
NORTHBOUND			
SOUTHBOUND	33	13	-20



SAN PABLO AVE CORRIDOR STUDY – STANFORD AVE. TO 61 ST.
 ALTERNATIVE 4
 CONCEPT A1: CENTER-RUNNING BUS AND BIKE
 DECEMBER 2019

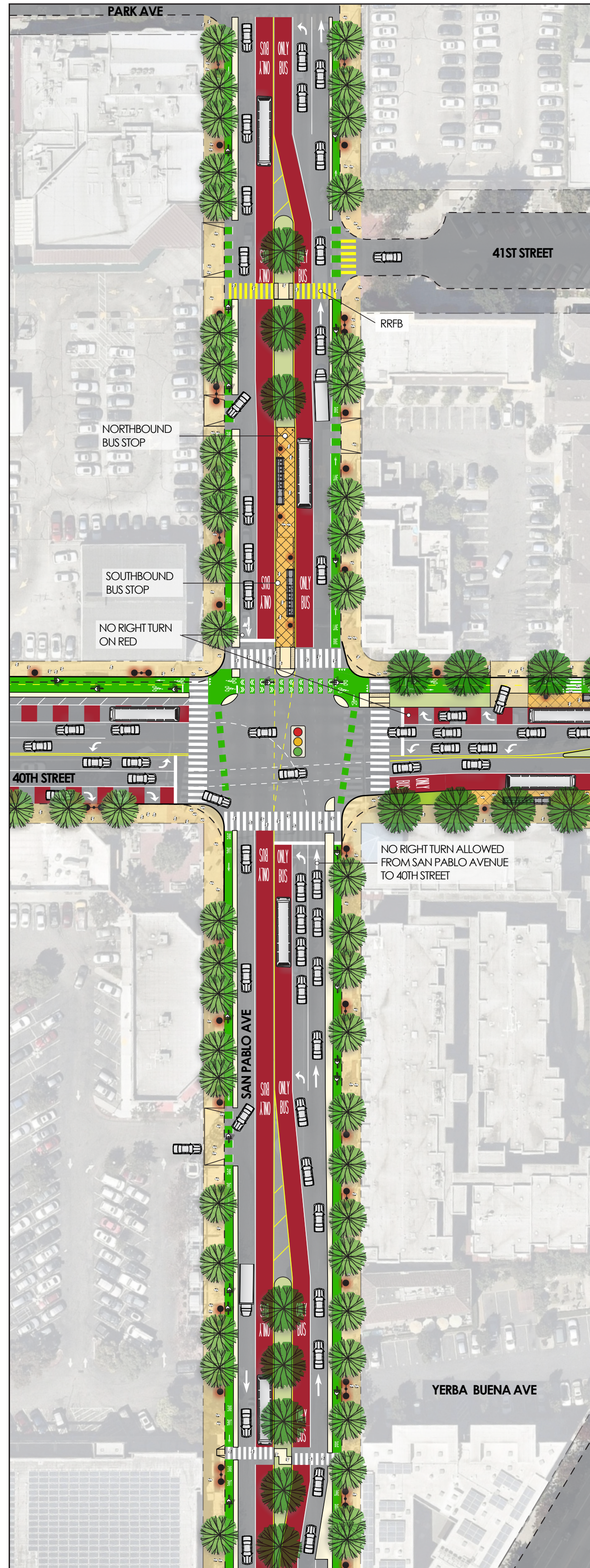


APPENDIX F

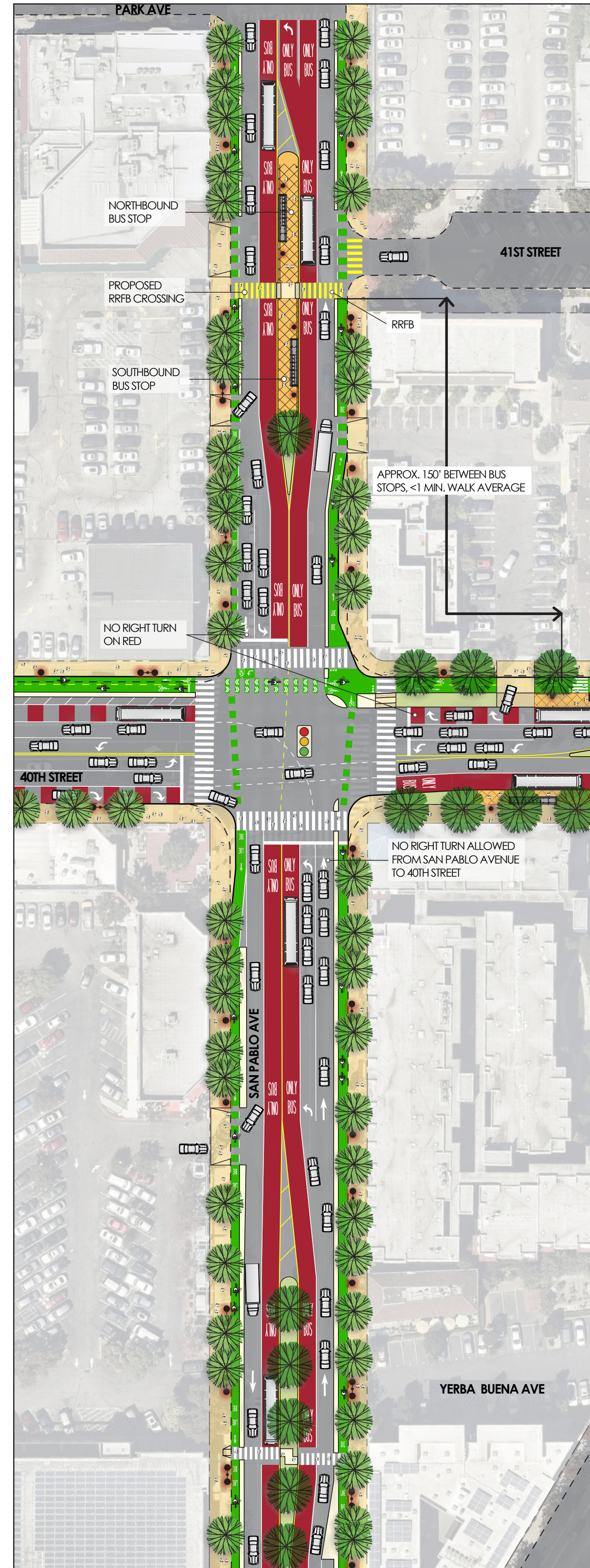
40TH STREET AND SAN PABLO AVENUE (EMERYVILLE) INTERSECTION CONCEPTS

San Pablo Avenue and 40th Street Intersection Options

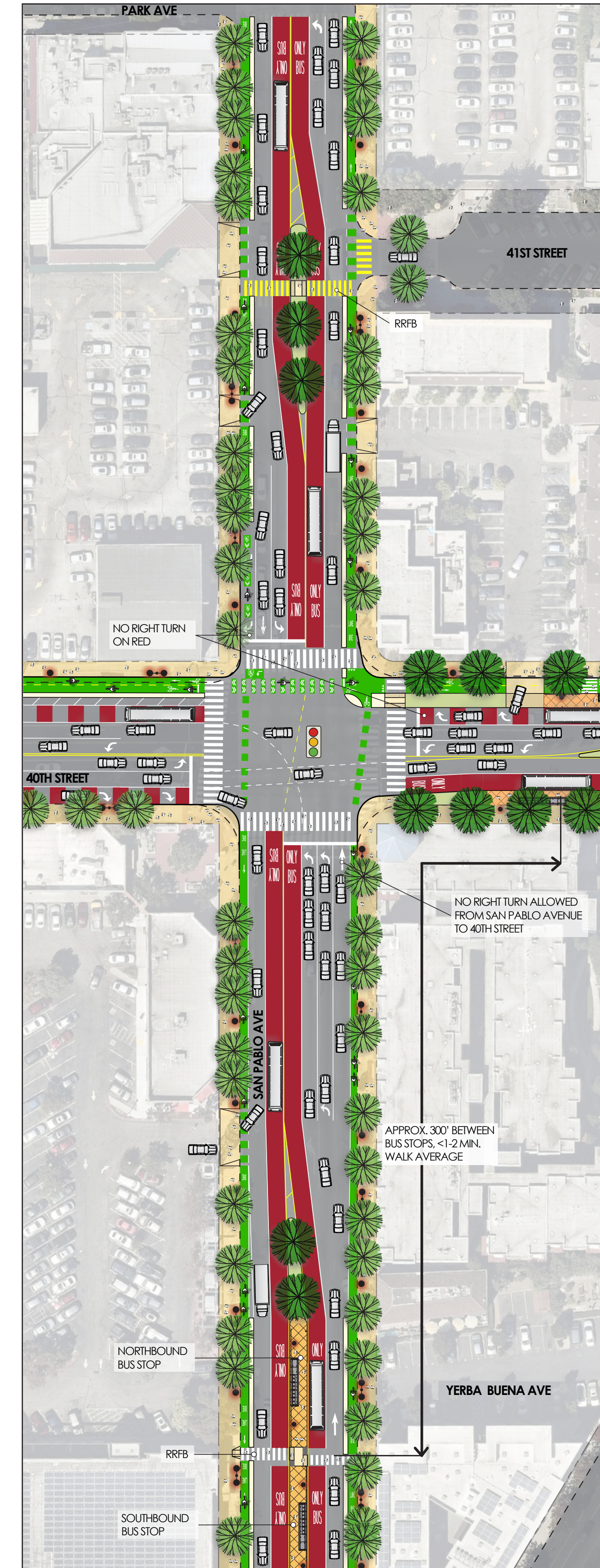
Concept A Applied to San Pablo Near 40th St Bus Stops at 40th St (Option 1)



Concept A Applied to San Pablo Near 40th St Bus Stops at 41st St (Option 2)



Concept A Applied to San Pablo Near 40th St Bus Stops at Yerba Buena (Option 3)



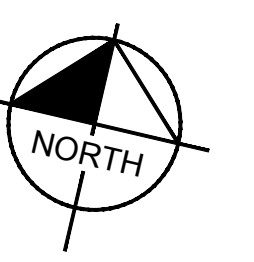
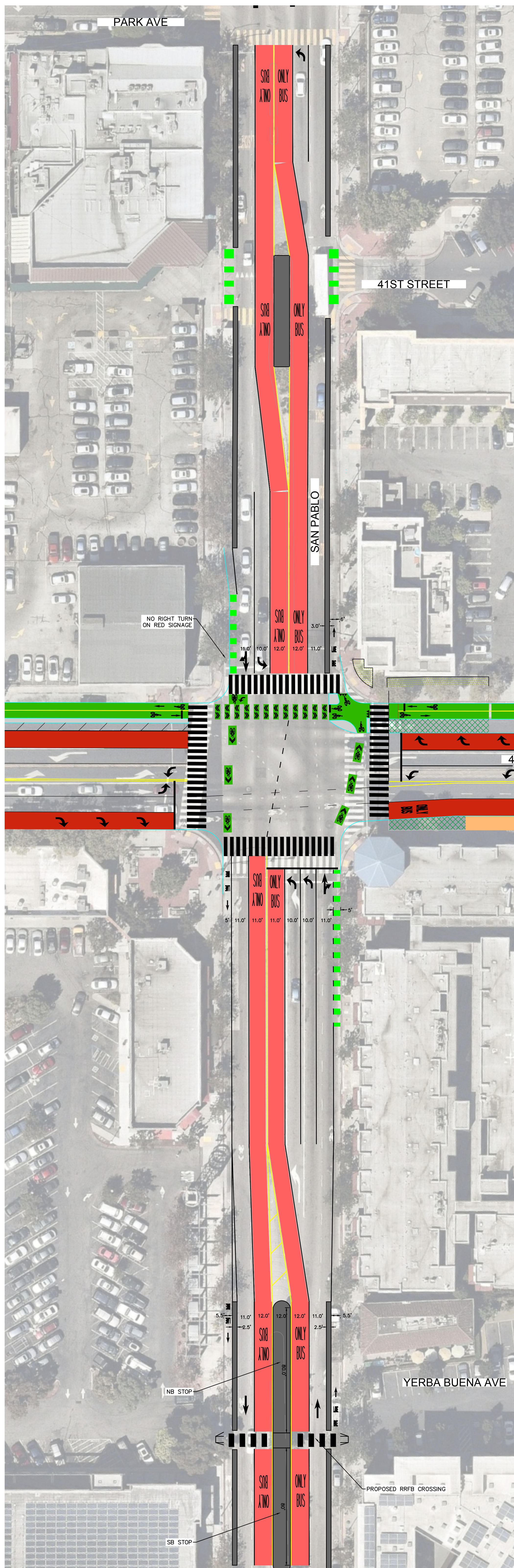
LEGEND

- PROPERTY LINE
- EXISTING TREE
- NEW TREE
- TRAFFIC SIGNAL
- ROADWAY LIGHT FIXTURE
- PEDESTRIAN-SCALE LIGHT FIXTURE
- BIKE LANE
- BIKE BUFFER
- BUS LANE
- TRANSIT PLATFORM
- SIDEWALK
- MEDIAN/LANDSCAPING*
- RRFB RECTANGULAR RAPID FLASHING BEACON

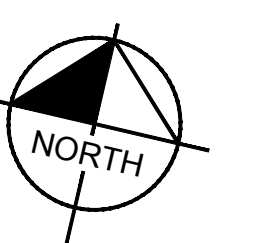
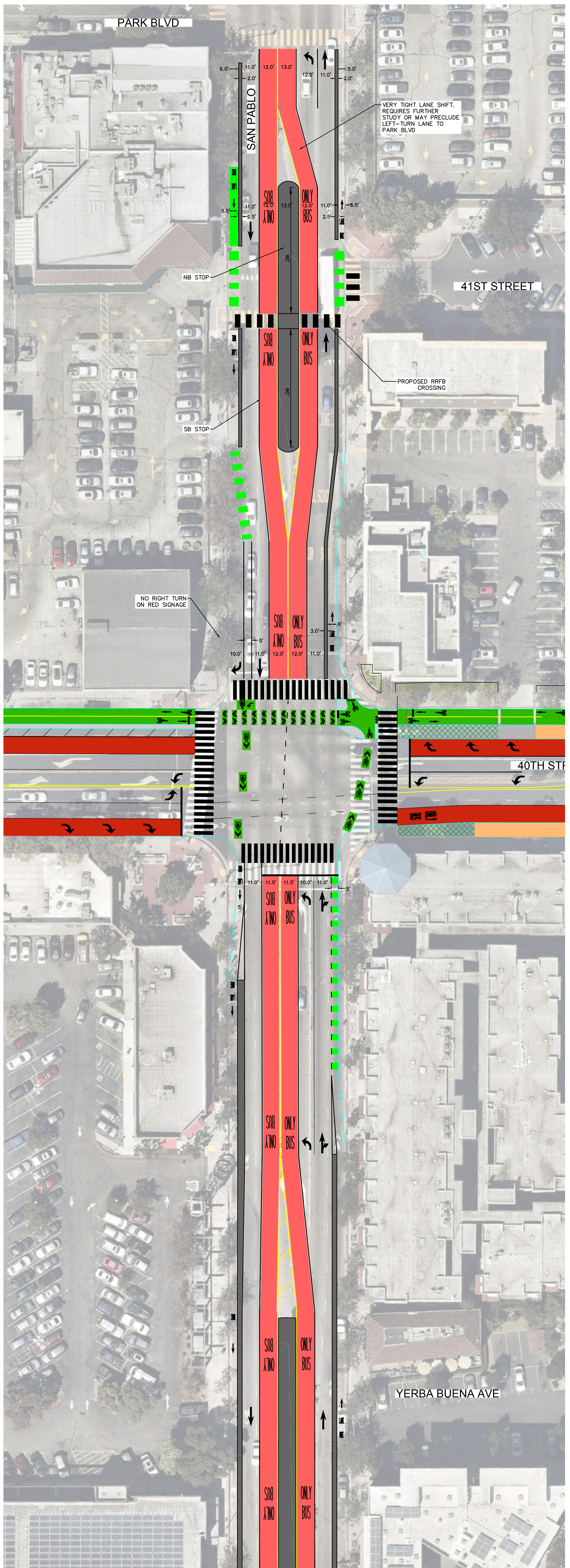
* WHERE APPLICABLE

NOTE: All options reflect an existing 74-foot curb-to-curb width on San Pablo Avenue near 40th Street.

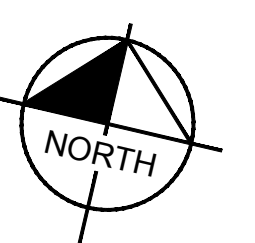
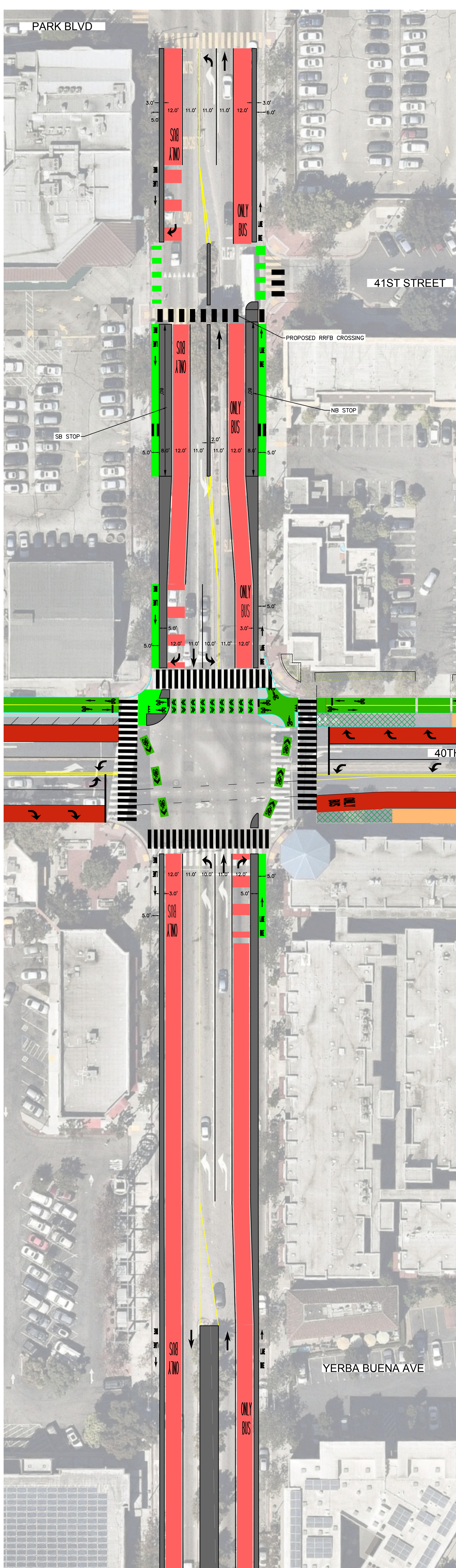
DRAFT



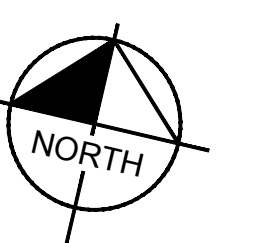
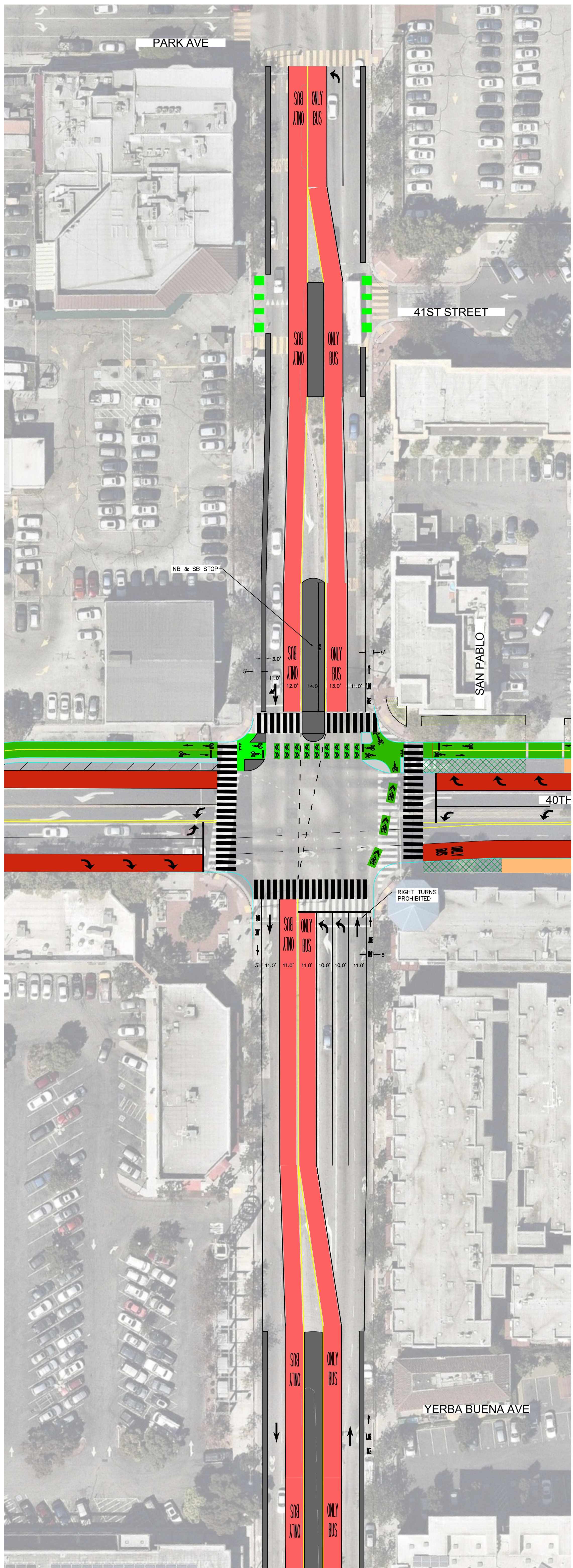
DRAFT



DRAFT



DRAFT



DRAFT

