APPENDIX

H HARBOR DRIVE 2.0

PORT of SAN DIEGO

SAN DIEGO UNIFIED PORT DISTRICT

HARBOR DRIVE 2.0

A Greener, Smarter, and Healthier Harbor Drive

JANUARY 2020

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HARBOR DRIVE 2.0

SAN DIEGO UNIFIED PORT DISTRICT

A Greener, Smarter, and Healthier Harbor Drive

DATE: JANUARY 2020

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HARBOR DRIVE 2.0: A CONNECTED FLEXIBLE CORRIDOR

The Harbor Drive corridor is a unique multimodal transportation asset for the San Diego Unified Port District (District), the cities of San Diego and National City, and the entire San Diego region. As part of the *Harbor Drive Multimodal Corridor Study*, the project team identified opportunities to improve mobility, safety and quality of life for everyone who lives, works, or plays around the Harbor Drive corridor and in the surrounding communities. More specifically the studies goals were:

- Improve community safety, mobility, and health
- Improve efficient goods movement
- Improve naval base access and circulation
- Improve shipyard access and parking
- Ensure cost effectiveness

Through the literature review and project development process within the study, the project team identified Harbor Drive 2.0 (HD 2.0) as a project opportunity to improve goods movement through the corridor in a cost-effective manner, while maintaining community safety, mobility and health goals in the surrounding communities.

The District currently encourages truckers to use a preferred freight route for trucks to access the Port including National City Marine Terminal (NCMT), Tenth Avenue Marine Terminal (TAMT), Interstate 5, and State Route 15. The HD 2.0 project considers the Barrio Logan Community's goals in implementing truck prohibitions and parking prohibitions in neighboring communities and demonstrates how improvements to that route can benefit the local communities, commuters, active walkers/bicyclists, drivers, and truckers at the same time.

Some of the important features of the HD 2.0 project are enhancements to make the currently designated freight route a connected, flexible corridor providing enhanced freight connectivity between NCMT and TAMT and regional freeways while also providing the capability for potential use by other transportation modes such as buses and shuttles. Moreover, while providing more efficient movement of freight, HD 2.0 also incentivizes freight trucks to avoid entering neighborhoods like Barrio Logan and National City, enhancing the quality of life for neighborhood residents and improving public safety.

The opportunity exists to leverage emerging technologies, such as connected/automated trucks and cars and provide for more efficient freight movement utilizing technology and data to provide for priority truck movement during specific times of the day. Further, because HD 2.0 is technology agnostic, it will not require truckers to install specialized equipment in their trucks and can thereby ensure that the route can serve both existing and future technologies. This report will look at the features, proposed concepts, potential travel time savings, environmental considerations, and potential costs of HD 2.0.

Note: At the December 10, 2019 Board of Port Commissioners Meeting, the Board encouraged staff to rename this concept to be more reflective of how the corridor will be improved.

INFRASTRUCTURE, ITS, AND RELATED FEATURES

There are several features that the proposed HD 2.0 will include and are shown in Figure 1. The features of HD 2.0 will include the following infrastructure and transportation engineering improvements along the corridor, as well as Intelligent Transportation System (ITS) technologies and other considerations.

Figure 1 Harbor Drive 2.0 Overview Map

INFRASTRUCTURE AND TRANSPORTATION ENGINEERING IMPROVEMENTS

Infrastructure and transportation engineering improvements are types of improvements that consider the roadway's physical features as well as access control at intersections. The following improvements are proposed for the corridor:

- Truck queue jumps: Queue jumps are proposed for several signalized intersections along the corridor so trucks can bypass other vehicles at these intersections. This not only allows the trucks to avoid queue formations, it also segregates trucks from other vehicles, increasing safety.
- Off-peak dedicated truck lanes: During off-peak traffic periods along the corridor, regular through traffic lanes will be re-designated as truck only lanes utilizing ITS technology and wayfinding gantries.
- Physical improvements: Where the right-of-way is feasible within the existing roadway cross section, HD 2.0 will have a separated, dedicated truck lane at all times of day. Other physical improvements to the roadway are included as needed to facilitate truck movements.
- New traffic signals: New traffic signals are proposed at new access locations or intersections that require more controlled movement of the traffic.

ITS TECHNOLOGIES

ITS technologies are improvements that involve the use of technological systems to facilitate and enable mobility. These systems include a combination of physical improvements to support communications as well as data collection and dissemination, as well as software applications to support methods and control of movement within in the corridor. Some ITS technologies that are proposed for this corridor include:

- Freight Signal Priority (FSP): Technology that evaluates real-time traffic conditions for a specific vehicle type, in this case trucks, and gives signal priority to these freight vehicles traveling along the designated freight route.
- Gate Operating System (GOS): If the District requires queue management at the gate, the District can install a GOS that connects with its Terminal Operating System (TOS) to manage the flow of trucks through the terminals' gates. The GOS provides truck drivers at the gate with accurate automated work assignments which reduces wait times outside the gate and truck cycle times within the terminal.
- Truck Reservation System (TRS): A TRS can be combined with a GOS to allow freight trucks to make appointments for cargo delivery or receipt within specific time windows. This system automatically disperses truck reservations over a range of time to reduce the peaking of truck traffic at the gate and avoid queuing along the designated freight route.
- Geofencing: Geographic Positioning System (GPS) and Geographic Information System (GIS) data, vehicle telematics and other ITS technologies can be used to track the location and path of freight vehicles prior to entering or after exiting the port. Geofencing can be used to monitor and incentivize trucks to follow designated freight routes and provide disincentives, such as limited access to the TRS, to trucks that use local residential roads.

OTHER CONSIDERATIONS

Within the full implementation of HD 2.0 there are several other items that should be considered to enhance the roadway and fully integrate the project.

- Outreach and Marketing: Seek public understanding and acceptance of the goals and operations of any deployments or testing activities. Additionally, promoting awareness and education for legislators and policymakers.

- Data Management: Enhance data sharing efforts between regional agencies, and with the private sector, including the City of San Diego, City of National City, SANDAG, the Navy and the Port of San Diego. Understanding the data, can facilitate coordination to determine additional opportunities for optimization.

The corridor is ideal for freight-focused pilot demonstration projects which are aligned with regional goals, including increasing awareness of residents, gaining agency experience, and furthering regional safety and mobility goals. Attachment A has further considerations that should be noted for Connected and Autonomous Vehicles (CAV) implementation along the corridor, (including policy and regulatory considerations) as well as successfully funded project examples.

Figure 2 and Figure 3 show a conceptual cross section of HD 2.0 in a couple of representative areas along the corridor.

Figure 2 HD 2.0 Northern Section

Figure 3 HD 2.0 Southern Section

CONCEPT PLAN

Considering the range of improvement opportunities to support HD 2.0, a concept plan has been developed for the entire corridor. There are several potential concepts and details that can be applied to specific areas of the corridor, and the purpose of this developed concept is to review the existing conditions and outline a high-level concept that would work within the visible constraints. Additional analysis would be needed to review other improvement opportunities. Therefore, Attachment B depicts is just one potential concept plan for HD 2.0.

The concept has been developed and has organized the corridor in the following way:

- Exclusive SB Truck-Only Lane from the end of the bridge south of Park Boulevard (TAMT Egress) to Sampson Street
- Mixed flow traffic lanes with non-peak hour truck only lanes, through electronic wayfinding (i.e. changeable message signs); as well as truck queue jumps, from Sampson Street to 32nd Street
- Exclusive NB Truck Only Lane, from 32nd Street to Vesta Street Gate
- Exclusive NB and SB Truck Only Lanes, from Vesta Street Gate to 8th Street
- Exclusive NB Truck Only Lane from 8th Street to Civic Center Drive

By showing different potential configurations for HD 2.0 down the corridor, the high-level review shows that multiple concepts are feasible including a dedicated, reversible truck only lane down the center of Harbor Drive.

TRAVEL TIME ANALYSIS

The proposed HD 2.0's key benefit is the future ability to reduce travel times for freight and heavy vehicles through the Harbor Drive corridor and onto the Interstate Highway System. A more reliable freight truck travel time, realized through the implementation of freight signal priority, dedicated lanes and queue jump signal timing, has the potential to not just be more efficient, thereby providing cost benefits for goods movement, but also improve the quality of life of residents along the corridor by reducing idling time and truck emissions.

The Study's analysis provided a "first-look" at the potential travel time savings for a HD 2.0, as the project was incorporated into the "Horizon Year All Project" travel time analysis scenario. Because the HD 2.0 is not a clearly defined project at this time, and only includes conceptual components, the project team represented the project in the travel time analysis by including the implementation of coordinated and optimized traffic signal timing of the traffic signals along Harbor Drive. Table 1 below shows the freight travel times in the AM and PM peak hours for this analysis and the corresponding travel time savings to and from the TAMT in the AM and PM peak hours, which is also consistent with the approved truck route for the corridor.

However, this initial look does not look at the potential additional travel time savings because of implementing dedicated truck only lanes, freight signal priority, and freight truck queue jumping. These travel time savings were also calculated during the composite peak hour analyzed in the greater multimodal study, **and not** during off-peak hours where freight movement is more likely to be in operation. As a result, Table 1 provides a baseline of potential travel savings but the benefit could be greater. To quantify the potential net benefit, the project team determined that a reasonable range of additional travel time savings could be 10%-40%. Meaning that with the implementation of additional ITS technology along the corridor, specifically for truck movement, and the travel of trucks during off-peak times, we anticipate that travel times could be further reduced by 10%-40%. Table 2 below shows what those potential freight travel time savings would look like.

Table 1: Base Travel Times Savings

Origin	Destination	Access Ramp	Segment Distance (ft.)	Model Scenario - Travel Times (min)		
				Horizon Year No Build	Horizon Year All Build	Horizon Year Travel Time Differential
AM Peak Hour						
TAMT @ Cesar Chavez Parkway	I-5 NB	28th Street	7,050	10.5	9.4	**-1.1**
		8th Street	15,730	16.2	17.0	0.8
	I-5 SB	28th Street	6,610	9.2	7.6	**-1.6**
		8th Street	14,890	15.9	16.6	0.8
		Civic Center Drive (proxy for NCMT)	15,580	16.4	17.1	0.8
	I-15	32nd Street	8,920	13.3	13.1	**-0.3**
I-5 NB	TAMT @ Cesar Chavez Parkway	Civic Center Drive (proxy for NCMT)	17,080	32.0	20.5	**-11.5**
		28th Street	7,670	31.7	11.9	**-19.8**
I-5 SB		8th Street	15,790	52.1	23.3	**-28.8**
		28th Street	7,880	51.4	23.2	**-28.1**
SR-15		32nd Street	11,400	48.2	22.5	**-25.8**
PM Peak Hour						
TAMT @ Cesar Chavez Parkway	I-5 NB	28th Street	7,050	16.5	7.1	**-9.3**
		8th Street	15,730	33.1	17.1	**-16.0**
	I-5 SB	28th Street	6,610	14.0	6.0	**-8.0**
		8th Street	14,890	27.3	14.2	**-13.1**
		Civic Center Drive (proxy for NCMT)	15,580	26.7	20.1	**-6.6**
	I-15	32nd Street	8,920	13.9	6.9	**-7.0**
I-5 NB	TAMT @ Cesar Chavez Parkway	Civic Center Drive (proxy for NCMT)	17,080	9.6	12.1	2.4
		28th Street	7,670	9.3	16.1	6.8
I-5 SB		8th Street	15,790	28.8	19.7	**-9.1**
		28th Street	7,880	5.6	7.0	1.4
SR-15		32nd Street	11,400	13.9	8.5	**-5.4**

Table 2: Travel Time Savings Range (With ITS Components)

Origin	Destination	Access Ramp	Segment Distance (ft.)	Model Scenario - Travel Times (min)			
				Horizon Year No Build	Freight Travel Time (+10% Benefit)	Freight Travel Time (+40% Benefit)	Travel Time Savings Range
AM Peak Hour							
TAMT @ Cesar Chavez Parkway	I-5 NB	28th Street	7,050	10.5	8.4	5.6	**-2 to -4.8**
		8th Street	15,730	16.2	15.3	10.2	**-0.9 to -6**
	I-5 SB	28th Street	6,610	9.2	6.8	4.6	**-2.4 to -4.7**
		8th Street	14,890	15.9	15.0	10.0	**-0.9 to -5.9**
		Civic Center Drive (proxy for NCMT)	15,580	16.4	15.4	10.3	**-1 to -6.1**
	I-15	32nd Street	8,920	13.3	11.7	7.8	**-1.6 to -5.5**
I-5 NB	TAMT @ Cesar Chavez Parkway	Civic Center Drive (proxy for NCMT)	17,080	32.0	18.5	12.3	**-13.5 to -19.7**
		28th Street	7,670	31.7	10.7	7.1	**-21 to -24.6**
I-5 SB		8th Street	15,790	52.1	21.0	14.0	**-31.1 to -38.1**
		28th Street	7,880	51.4	20.9	13.9	**-30.4 to -37.4**
SR-15		32nd Street	11,400	48.2	20.2	13.5	**-28 to -34.7**
PM Peak Hour							
TAMT @ Cesar Chavez Parkway	I-5 NB	28th Street	7,050	16.5	6.4	4.3	**-10 to -12.2**
		8th Street	15,730	33.1	15.4	10.3	**-17.7 to -22.8**
	I-5 SB	28th Street	6,610	14.0	5.4	3.6	**-8.6 to -10.4**
		8th Street	14,890	27.3	12.8	8.5	**-14.5 to -18.8**
		Civic Center Drive (proxy for NCMT)	15,580	26.7	18.1	12.0	**-8.6 to -14.6**
	I-15	32nd Street	8,920	13.9	6.2	4.1	**-7.7 to -9.7**
I-5 NB	TAMT @ Cesar Chavez Parkway	Civic Center Drive (proxy for NCMT)	17,080	9.6	10.9	7.2	**1.2 to -2.4**
		28th Street	7,670	9.3	14.5	9.7	**5.2 to 0.4**
I-5 SB		8th Street	15,790	28.8	17.7	11.8	**-11.1 to -17**
		28th Street	7,880	5.6	6.3	4.2	**0.7 to -1.4**
SR-15		32nd Street	11,400	13.9	7.7	5.1	**-6.2 to -8.8**

ENVIRONMENTAL CONSIDERATIONS

The anticipated environmental documentation and list of technical studies are based on a high-level review of existing and readily accessible databases, online mapping tools, and conceptual design plans. The preliminary review focused on a qualitative environmental constraint analysis related to the HD 2.0 Concept Plan (Concept Plan).

Since the Concept Plan proposes to add a separated, dedicated truck lane along Harbor Drive, the proposed project would increase vehicular capacity along Harbor Drive and would be a non-exempt undertaking per the California Environmental Quality Act (CEQA). As a non-exempt undertaking, the proposed project would require an Initial Study (IS) as formal documentation of the CEQA process. It is anticipated the IS would lead to a Negative or Mitigated Negative Declaration.

The following list of technical reports may be required in support of the environmental documentation for the project:

- Air Quality and GHG Emissions Analysis
- Biological Evaluation/Assessment
- Cultural and Historic Evaluation Report
- Hazards and Hazardous Materials Assessment
- Hydrology and Water Quality Assessment
- Noise and Vibration Analysis
- Socioeconomic Assessment
- Traffic Impact Analysis
- Visual Impact Assessment

At this time, the only regulatory permits that are anticipated to be needed is a Coastal Development Permit, as impacts to jurisdictional waters, waters of the state, and regulated species are not expected to occur.

POTENTIAL COSTS

A preliminary rough order of magnitude cost estimate was developed for this conceptual project based on the engineering assumptions and evaluation, in accordance with standard practices.

PAVEMENT STRUCTURAL SECTION

The main part of the concept is the reconstruction of the existing roadway to include a dedicated truck-only lane for much of the corridor. Additionally, the lanes closest to the middle of the roadway would be used exclusively for trucks during the off-peak hours. With the additional truck usage and for the longevity of the new roadway based on this usage, a pavement structural section that would accommodate this use was developed for estimating purposes. This pavement was applied for the new dedicated lane as well as two additional lanes where there would be trucks during the off-peak times. The remaining lanes along Harbor Drive are proposed to be reconstructed with standard pavement for this type of roadway and would consist of a mill and overlay of the existing pavement.

RIGHT-OF-WAY

The unit costs are identified from standard sources, such as Caltrans Costs database.

ITS/ELECTRICAL

The ITS elements include fiber optic communication connections to all the traffic signals along the entire corridor as well as upgrades to the communications connections to the City of San Diego Transportation Management Center (TMC). New sign gantries and variable message signs are also included in the ITS costs. Electrical items would include upgraded lighting along the roadway and other electrical elements to support the overall communications and ITS elements.

CONTINGENCY

Based on standard practices for a project at this stage, a cost contingency of 40% was used.

UNIT COSTS AND OTHER ITEMS

Since this project is only at a preliminary stage of concept development, many work items in the estimate were developed using a percentage of the overall costs. This type of percentage estimate of costs is based on prior experience and projects. Other work item costs were estimated using databases of recent construction costs.

Table 3 Summary of Potential Costs

HARBOR DRIVE 2.0 CONNECTED FLEXIBLE CORRIDOR CONCEPT SUMMARY OF COSTS		
	Cost Range	
Summary of Items	**Low**	**High**
Pavement Structural Section	$6,300,000	$10,000,000
Drainage and Water Quality	$500,000	$500,000
Signing and Striping	$100,000	$100,000
Utilities	$300,000	$300,000
ITS/Electrical	$1,000,000	$1,500,000
Stage Construction	$350,000	$500,000
Traffic Signals (6 new + 13 mod)	$1,850,000	$2,475,000
Roadway Subtotal	*$10,400,000*	*$15,375,000*
Minor Items and Mobilization - 10%	$1,040,000	$1,537,500
Contingencies - 40%	$4,160,000	$6,150,000
Total Capital Construction Cost	**$15,600,000**	**$23,062,500**
Environmental Analyses	$500,000	$700,000
Preliminary Design - 5%	$780,000	$1,153,125
Final Design - 10%	$1,560,000	$2,306,250
Project Management - 5%	$780,000	$1,153,125
Construction Management - 12%	$1,872,000	$2,767,500
Professional Liability - 2.5%	$390,000	$576,563
Total Soft Costs	**$5,882,000**	**$8,656,563**
Total Project Cost	**$21,482,000**	**$31,719,063**

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ATTACHMENT A: HARBOR DRIVE: POTENTIAL STRATEGIES TO LEVERAGE CAV TECHNOLOGIES

New Freight is creating a paradigm shift in how all participants in goods movement (from supplier to end consumer) interface with transportation infrastructure. This high-level overview outlines potential strategies to help advance the corridor's ability to leverage emerging technologies, such as those expected to be realized as more connected/automated trucks and cars on the road. This list of strategies is intended to help guide the team as plans and concepts are being developed for the Harbor Drive corridor that optimize freight movements.

INFRASTRUCTURE AND VEHICLE ASSETS

- Review and use regional ITS Architecture.
- Prepare for the latest technologies by including accommodations for CAV with new projects or improvement projects.
- Evaluate and document any telecommunications needs – fiber, cellular installations, conduit, power, etc. Make plans to improve if needed.
- Evaluate and document any signal controller needs. Make plans to improve if needed.
- Evaluate and document any centralized signal system needs. Make plans to improve if needed.
- Implement a process to include the consideration of new technologies in agency vehicle purchases and vehicle upgrades. These can be integrated into new vehicles, aftermarket installations, or in-vehicle mobile devices.

DEPLOYMENTS

The Harbor Drive corridor is ideal for freight focused pilot demonstration projects which are aligned with regional goals, including increasing awareness of residents, gaining agency experience, and furthering regional safety and mobility goals.

EXAMPLES

- Freight signal priority using MMITTS
- Freight specific traveler information / routing
- Sharing port data with corridor operations (e.g. when to expect higher volumes of trucks due to the arrival of a large ship)
- Incentive program to encourage use of New Freight routes
- Strong enforcement of prohibited truck activity
- Truck arrival and scheduling system for port gates
- Truck parking identification / development
- Truck parking data collection and sharing
- Providing enhancement to encourage autonomous truck operations along the corridor (e.g. lane marking, markers, policies)

DATA MANAGEMENT

- Enhance data sharing efforts between regional agencies, with academia, and with the private sector, including the City of San Diego, SANDAG, and the District.
- Develop a data business plan that will set a baseline for data sharing and operation system improvements based on data analytics and performance monitoring.
- Work with regional partners to develop an approach to sharing and warehousing standard connected vehicle data like signal information and information coming from vehicles (e.g. SPaT, MAP, and BSMs).
- Support the implementation of strong privacy principles for data management.

OUTREACH AND MARKETING

- Seek public understanding and acceptance of the goals and operations of any deployments or testing activities.
- Promote awareness and education for legislators and policymakers.

TECHNOLOGY AND WORKFORCE ADVANCEMENT

- Support the advancement of technological capabilities that are crucial to progressing the state of the practice, locally and more broadly.
- Develop plans to facilitate CAV knowledge, skill set development, and abilities in the local workforce.
- Collaborate with partners to identify common operational and maintenance needs arising from the introduction of CAV, and look to share knowledge and possibly resources.

POLICY AND REGULATIONS

- Review and update local regulations as appropriate to help achieve regional goals related to CAV, and advocate for updates to state and federal policy needed to accomplish our goals.
- Look at the federal, state, regional, and local levels to understand what the latest trends in CAV and tie these to future planning activities.
- Identify specific regulations or policies that may require special permission or exemptions to operate as planned.

PARTNERSHIPS

- Ensure ongoing communication and knowledge sharing among agencies, partners, and stakeholders through regional forums, such as SANDAG's Freight Stakeholders Working Group.
- Define private sector engagement guidelines and use these to promote the establishment of partnerships with industry affiliates.
- Work towards interoperability of systems (from different partners, across different jurisdictions) to support consistency and regional collaboration.

- Collaborate with local universities and other academic institutions for data analysis, development of safety applications, literature reviews, etc.

EVALUATION

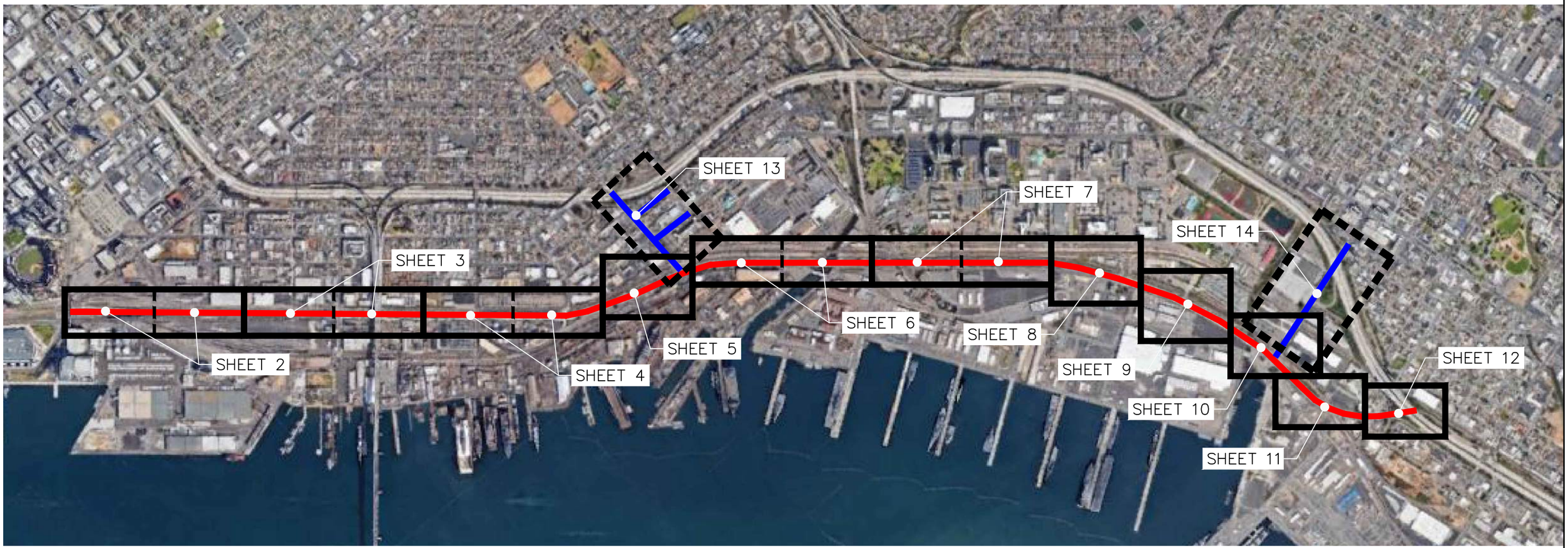
- Measure the economic impact and the ability to meet other regional goals, such as the reduction of GHGs and VMT.

FUNDED PROJECT EXAMPLES

- https://www.fhwa.dot.gov/fastact/factsheets/advtranscongmgmtfs.cfm
- https://ops.fhwa.dot.gov/fastact/atcmtd/2017/applications/portofva/project.htm (2017)
- https://www.fhwa.dot.gov/pressroom/fhwa1717i.cfm (2019)
- https://www.fhwa.dot.gov/pressroom/fhwa1651_losangeles.cfm (2016)

The examples above are just a select few funding opportunities chosen to be showcased for the purposes of this report. There are various potential local and federal funding opportunities that could contribute to this project's funding.

ATTACHMENT B: CONCEPTUAL PLANS



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HARBOR DR. 2.0

KEY MAP

PORT of SAN DIEGO

NORTH

DATE

SHEET NO. 1 OF 14

SCALE

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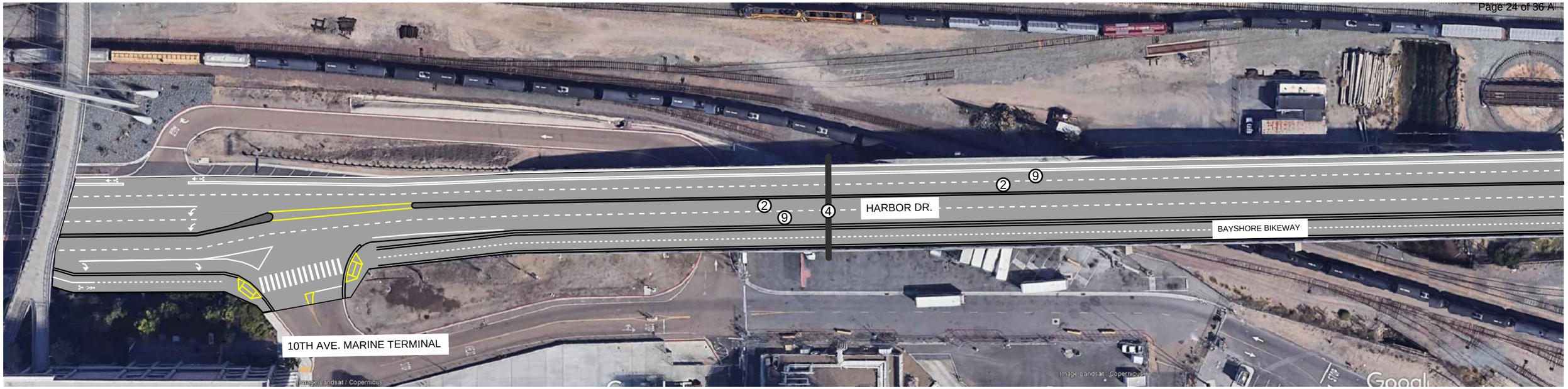

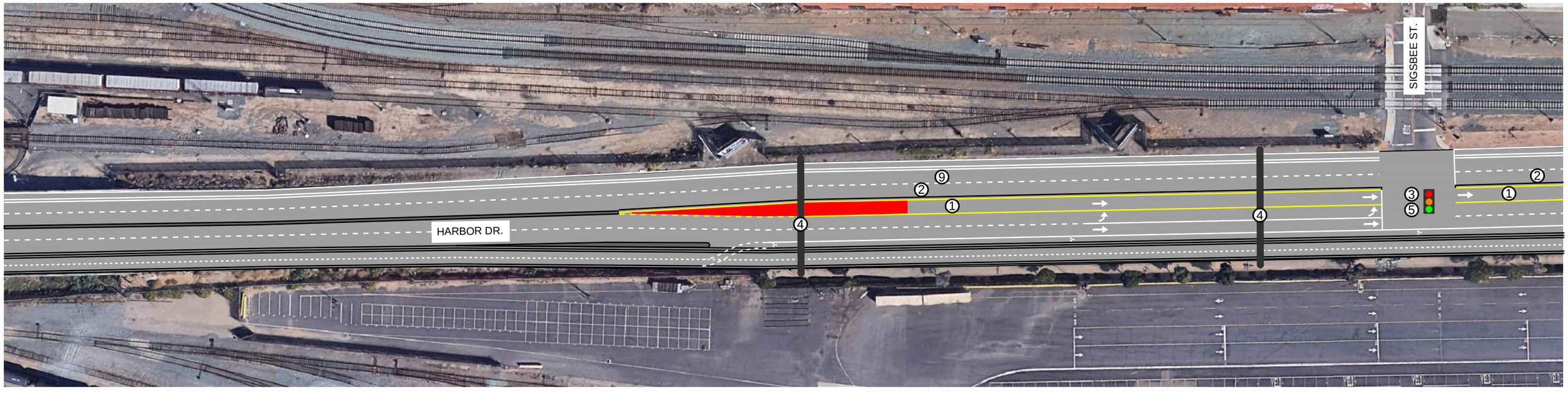

LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
6. CLOSE INTERSECTION – PAVE NEW MEDIAN
7. MIXED FLOW W/ TRUCK ROUTING
8. SIGNAL TRUCK QUEUE JUMP
9. AUTO ONLY DURING NON-PEAK
10. URBAN GREENING

EXISTING/PROPOSED TRAFFIC SIGNAL

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PORT of SAN DIEGO

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SHEET NO. 2 OF 14

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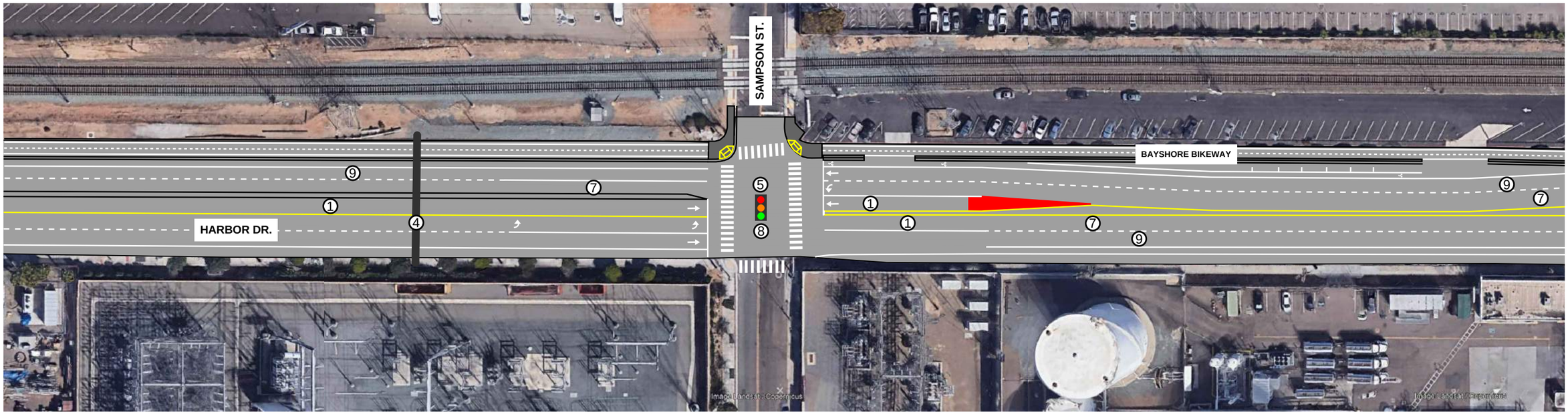

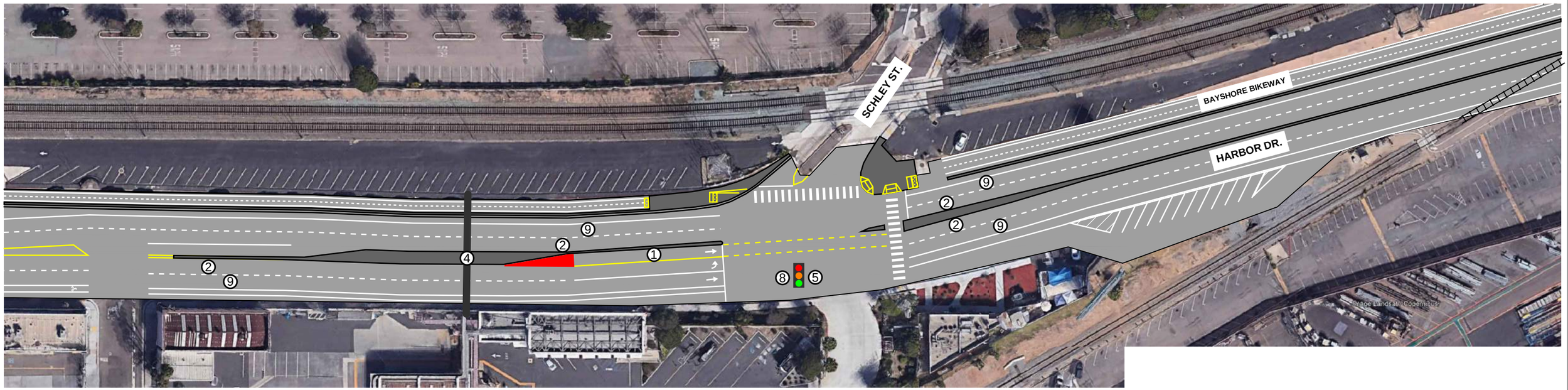

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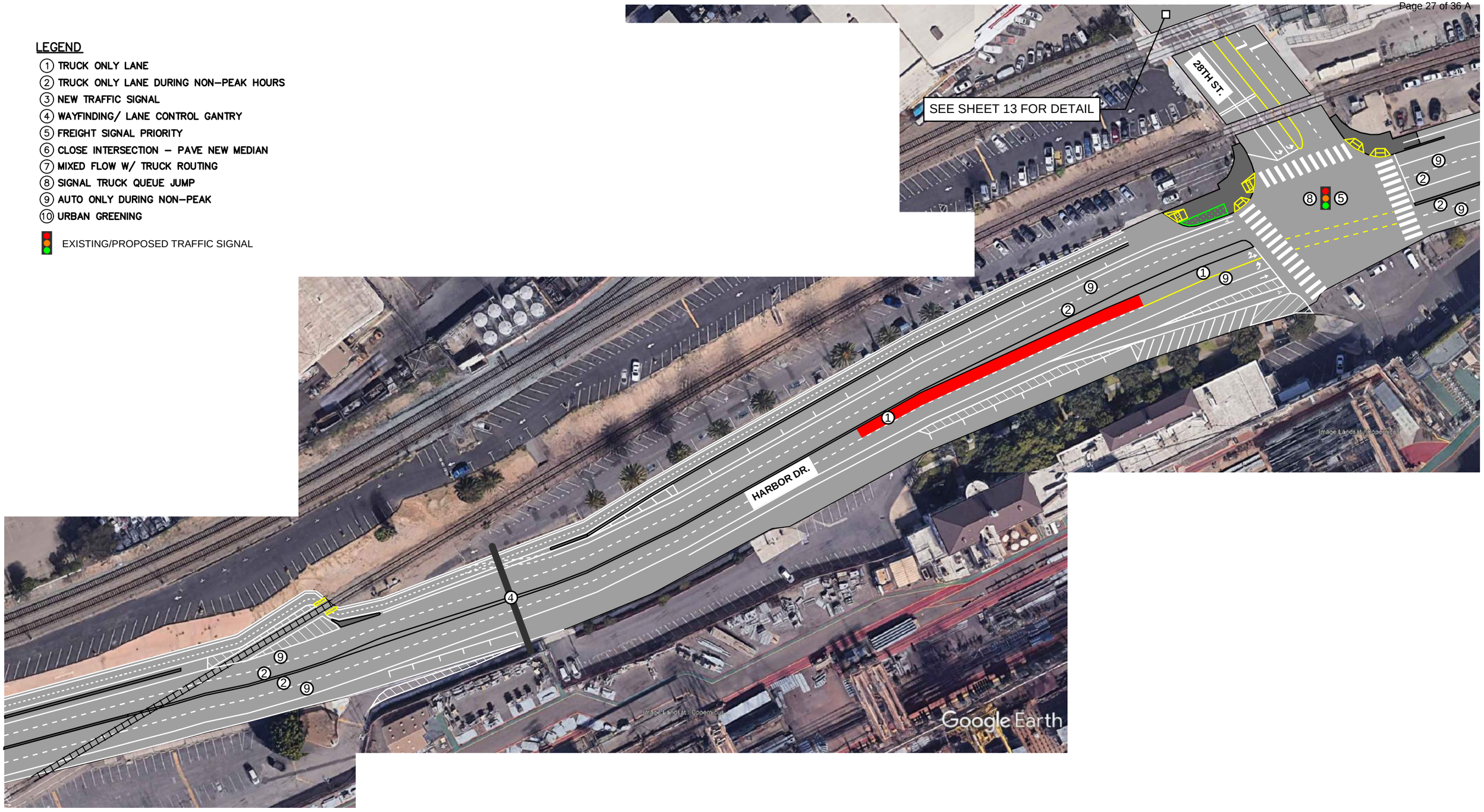
EXISTING/PROPOSED TRAFFIC SIGNAL



wsp
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HARBOR DR. 2.0

HARBOR DR.

PORT of SAN DIEGO

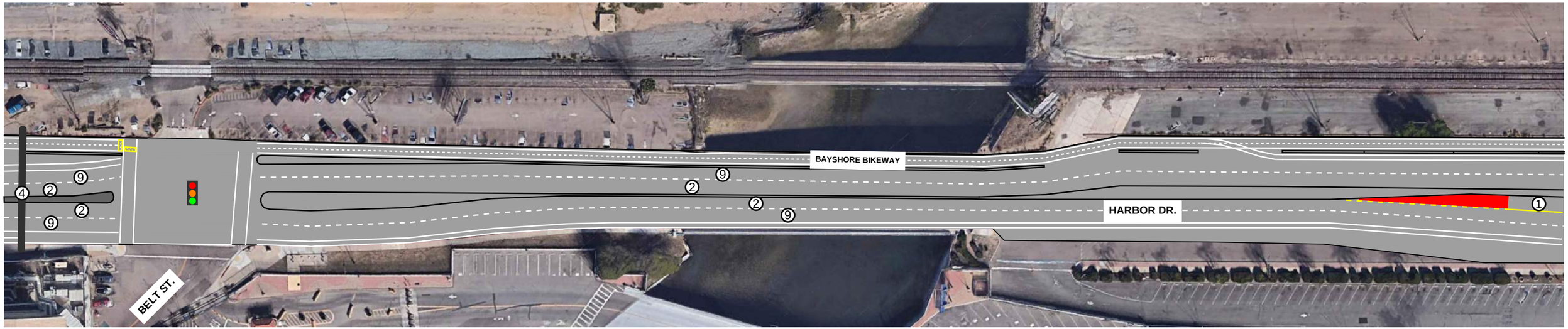
NORTH

DATE

SHEET NO. 5 OF 14

SCALE

0 80 160 Feet



LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
6. CLOSE INTERSECTION – PAVE NEW MEDIAN
7. MIXED FLOW W/ TRUCK ROUTING
8. SIGNAL TRUCK QUEUE JUMP
9. AUTO ONLY DURING NON-PEAK
10. URBAN GREENING

EXISTING/PROPOSED TRAFFIC SIGNAL

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HARBOR DR.

PORT of SAN DIEGO

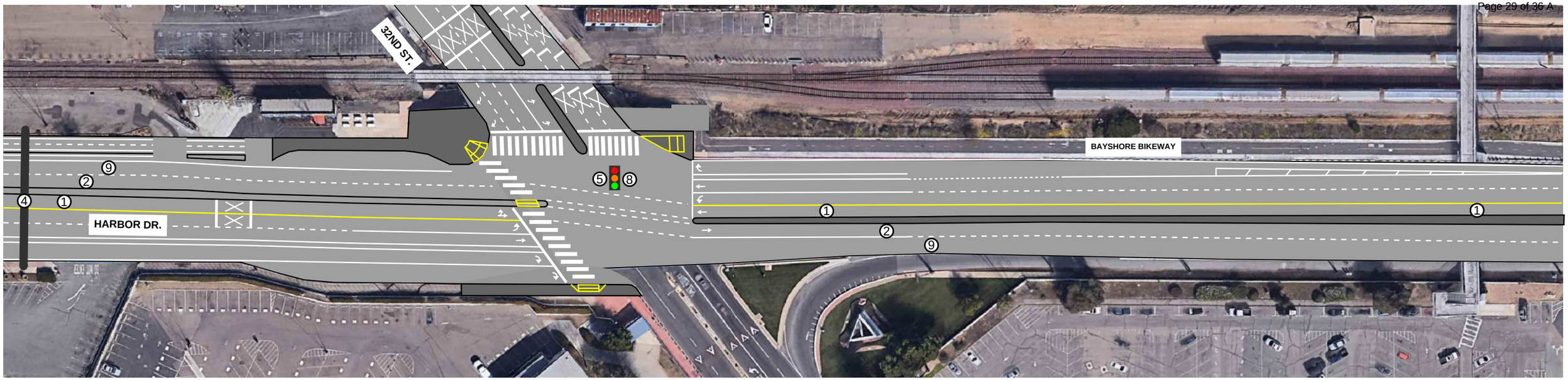
NORTH

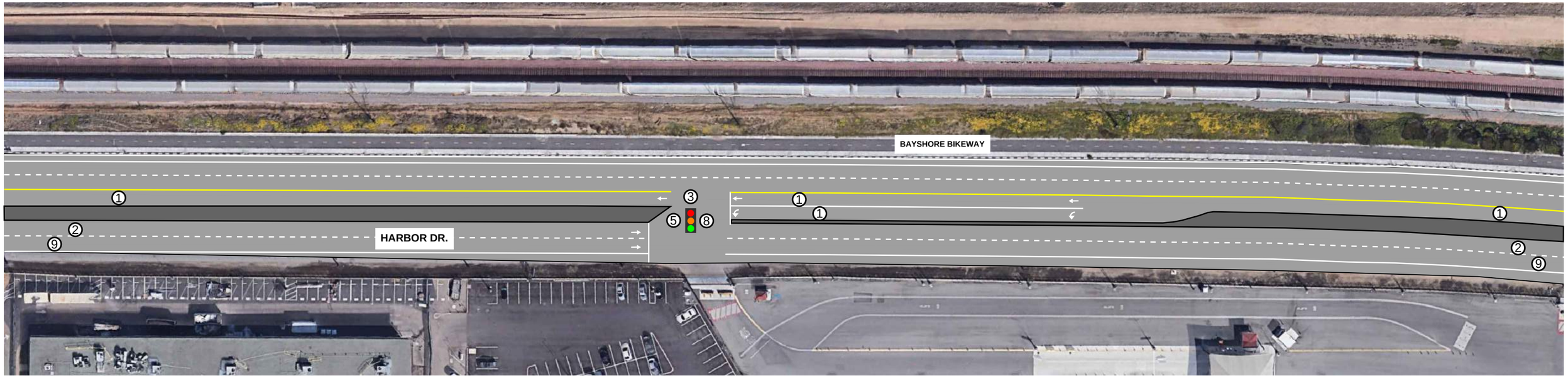
SCALE

0 80 160 Feet

DATE

SHEET NO. 6 OF 14





LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
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PORT of SAN DIEGO

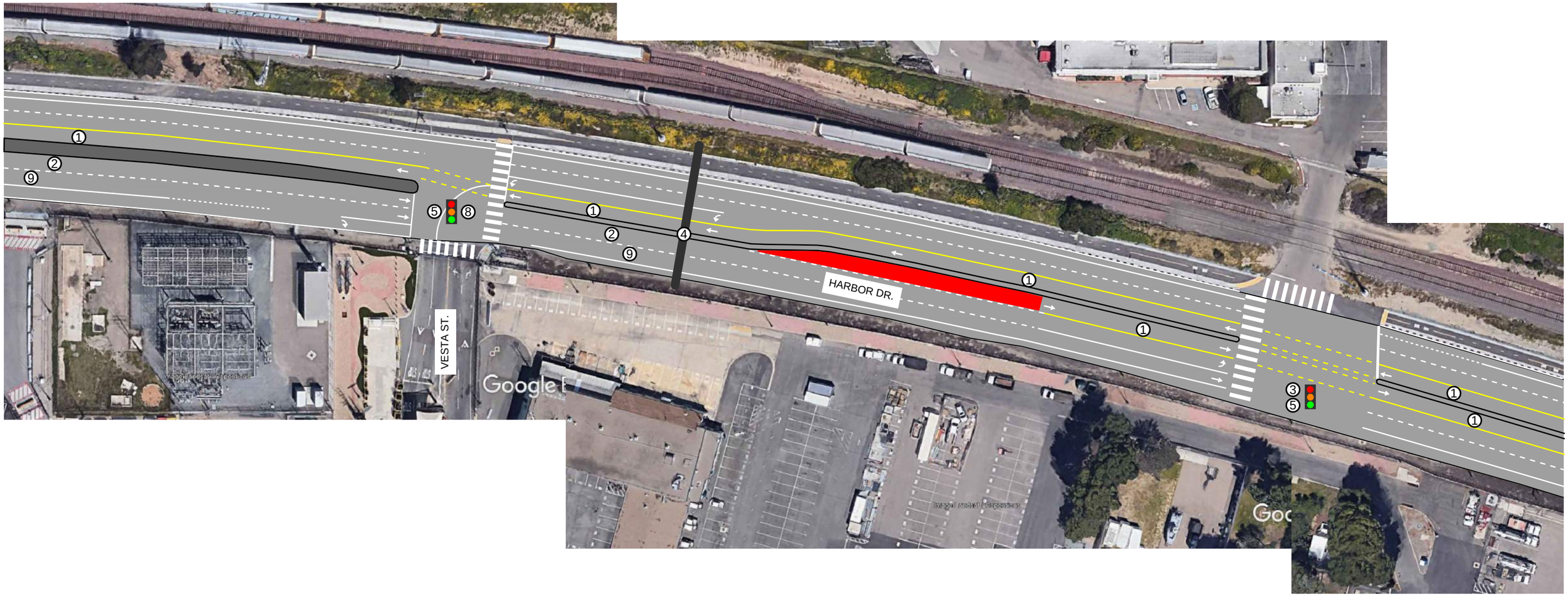
NORTH

SCALE

0 80 160 Feet

DATE

SHEET NO. 7 OF 14



LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
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PORT of SAN DIEGO

NORTH

SCALE

0 80 160 Feet

DATE

SHEET NO. 8 OF 14

LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
6. CLOSE INTERSECTION – PAVE NEW MEDIAN
7. MIXED FLOW W/ TRUCK ROUTING
8. SIGNAL TRUCK QUEUE JUMP
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HARBOR DR. 2.0

HARBOR DR.

PORT of SAN DIEGO

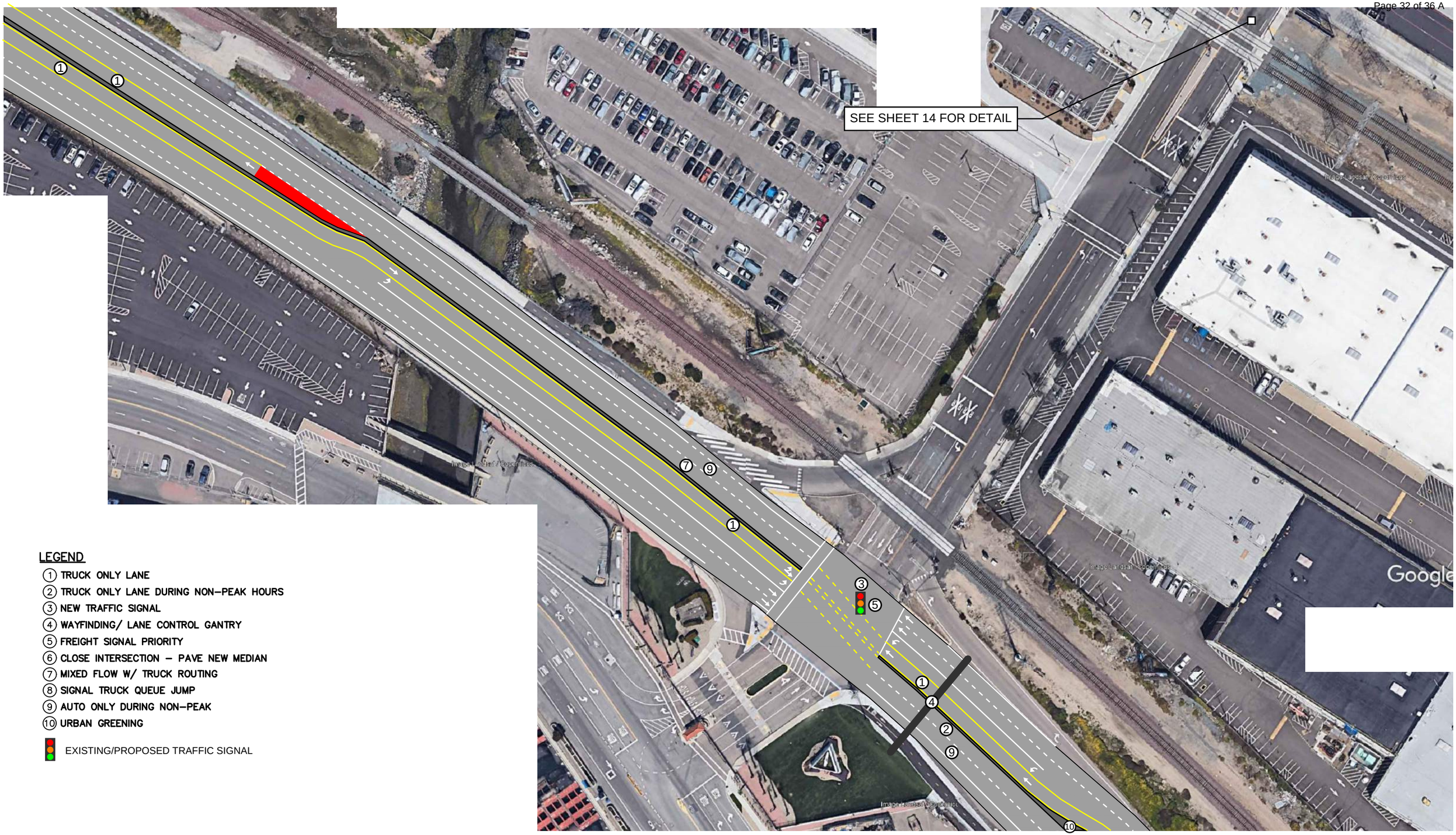
NORTH

SCALE

0 80 160 Feet

DATE

SHEET NO. 9 OF 14



LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
6. CLOSE INTERSECTION – PAVE NEW MEDIAN
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HARBOR DR.

PORT of SAN DIEGO

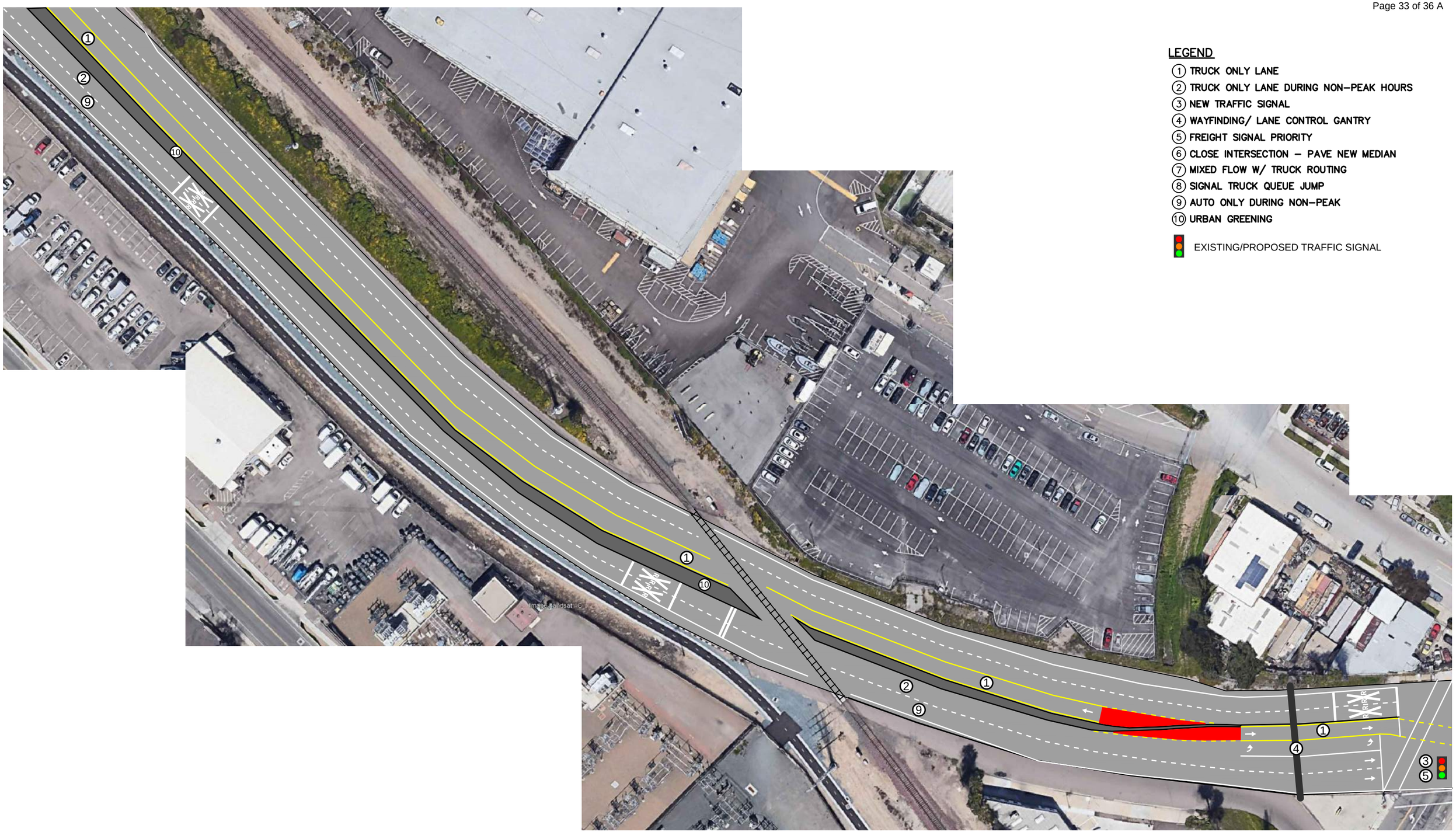
NORTH

SCALE

0 80 160 Feet

DATE

SHEET NO. 10 OF 14



LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
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HARBOR DR.

PORT of SAN DIEGO

NORTH

SCALE

0 80 160 Feet

DATE

SHEET NO. 11 OF 14

LEGEND

1. TRUCK ONLY LANE
2. TRUCK ONLY LANE DURING NON-PEAK HOURS
3. NEW TRAFFIC SIGNAL
4. WAYFINDING/ LANE CONTROL GANTRY
5. FREIGHT SIGNAL PRIORITY
6. CLOSE INTERSECTION – PAVE NEW MEDIAN
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HARBOR DR. 2.0

HARBOR DR.

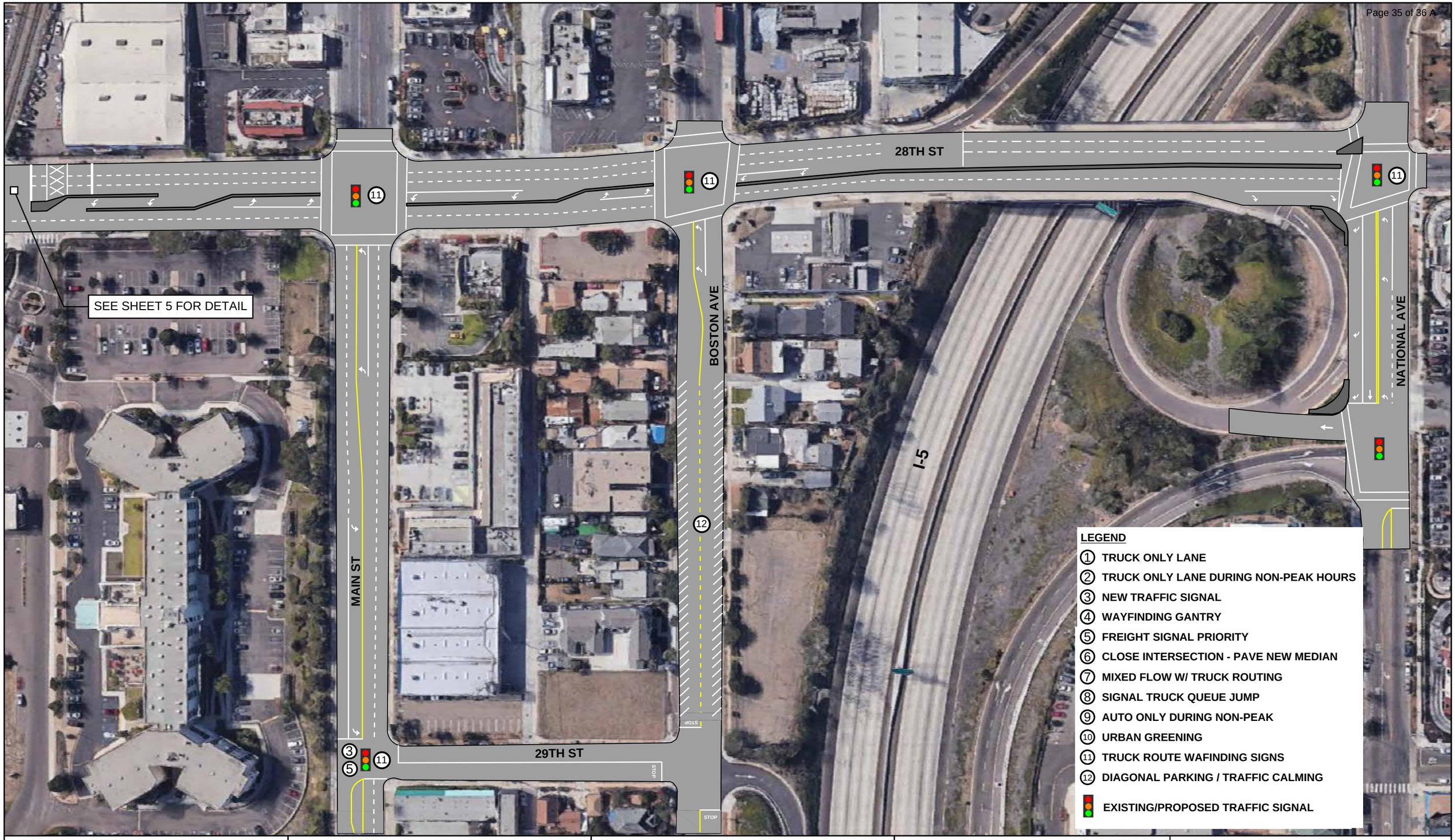
PORT of SAN DIEGO

NORTH

SCALE

DATE

SHEET NO. 12 OF 14



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HARBOR DR. 2.0

28TH STREET

PORT of SAN DIEGO

NORTH

SCALE

0 100 200 Feet

DATE

SHEET NO. 13 OF 14

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HARBOR DR. 2.0

8TH STREET

PORT of SAN DIEGO

NORTH

DATE

SHEET NO. 14 OF 14

SCALE

0 120 240 Feet