



Port of  
**LONG BEACH**

*The Green Port*

December 9, 2019

Mary Nichols  
California Air Resources Board  
Clerk's Office  
1001 I Street  
Sacramento, CA 95814

Dear Chairperson Nichols:

**SUBJECT: COMMENTS ON THE PROPOSED REGULATION ORDER,  
"AIRBORNE TOXIC CONTROL MEASURE FOR AUXILIARY  
DIESEL ENGINES OPERATED ON OCEAN-GOING VESSELS  
AT-BERTH IN A CALIFORNIA PORT"**

The Port of Long Beach (Port) appreciates this opportunity to provide additional comments on the California Air Resources Board (CARB) proposed regulation order, "Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port" released in the Initial Statement of Reasons (ISOR). Concluding the Board Hearing on December 6, 2019 in West Oakland, the Port would like to make additional comments on the ISOR and CARB staff's presentation.

The proposed revised framework and timeline presented at the Board Hearing aligned well with the direction CARB staff has communicated in recent meetings. However, the emissions benefits and state of technology described in the meeting were overstated, and the presentation minimized the technology challenges the industry faces to comply with the proposed rule.

The Port would like to clarify a few items that were discussed during the staff presentation:

- The presentation implied that roll-on, roll-off (RoRo) vessels could utilize the current emission capture and control technology. This is not true. The technology for RoRo vessels will need to be engineered to accommodate the greater reach requirements of the RoRo vessels and different stack configurations. A technology capable of scrubbing RoRo emissions has never been demonstrated to date.



- The T121 Marathon terminal does have shore power capability that is being utilized by one tanker vessel. The single vessel capable of shore power is unique, using diesel-electric engines. The rest of the current tanker fleet visiting the Ports are not capable of shore power retrofits, as their boilers cannot be electrified. Thus, it is inappropriate to point to this example and extrapolate the possibility to the rest of the tanker fleets in California.
- The Port disagrees the staff work to date constitutes a robust feasibility assessment. As stated in the joint Port of Los Angeles and Port of Long Beach comment letter dated July 2, 2019, the berth analysis developed by CARB is not a technical document. It is an aggregation of terminal operator and harbor pilot opinions, and Google Maps research. The ISOR states that it is also founded upon port conversations; however, the analysis does not reflect Port of Long Beach input. The berth analysis should have been founded upon an engineering assessment of the infrastructure required at the terminals. Further, the costs used by CARB in the ISOR are based on conversations with technology developers, rather than real quotes. The Port provided CARB invoices from previous shore power construction projects and cost estimates for future shore power work required by the rule in the joint Port of Los Angeles and Port of Long Beach comment letter dated May 20, 2019. CARB staff overlooked the engineering assessment, which was based upon real data. In addition, the CARB OGV Technology Assessment referenced in the Board Hearing looked at the technologies available to date - and did not include a formal engineering assessment to address the readiness to control emissions from other vessel types. Previous letters from the ports, provided in the attachments, described the information that should be included in a feasibility assessment.
- Technology advancement for the RoRo and tanker technologies will be critical, and the industry needs more than the proposed \$10 million for a tanker demonstration to foster market growth and acceptance for alternative emission capture and control technologies. It is clear from the hearing and from discussions with industry that there are considerable engineering and safety hurdles, and across California, the operational constraints are different from port to port. As we have requested in our previous comment letter, we believe \$200 million will be needed statewide to support technology advancement and deployment, which is on the scale of the Prop 1B funds allocated to support the 2007 At-Berth Regulation. The Ports have significant experience successfully managing grant dollars and pushing technology innovation with the support of state grant funds.

The Port would like to provide the following comments to improve the integrity of the ISOR:



- The ISOR utilizes a report by the Mercator International in 2016, which estimates activity at the Port of Los Angeles and Port of Long Beach will grow by 57% between 2021 and 2032 as measured in 20-foot equivalent units (TEU). CARB staff used this to estimate emissions without the implementation of the new At-Berth Regulation. The results are a significant overestimation, as the TEU growth metric does not account for the fact that while cargo increases, the ships are getting larger and fewer ships are calling the Port. Since 2005, container throughput is up 21% at the Port of Long Beach, while containership calls are down 25% according to the 2018 Emissions Inventory. TEUs per call are up 60%.
- The ISOR does not adequately capture the emissions benefits associated with RoRo vessels. The Port in partnership with the Port of Los Angeles and the Pacific Merchant Shipping Association (PMSA) asked a third party consultant to develop a cost-effectiveness analysis for RoRo ships in the San Pedro Bay Ports (SPBP) which must comply with the proposed regulation. Given CARB's assumption that the RoRo industry will opt for barge-based emission capture and control technology, the analysis considers the emissions benefits of this technology, and the additional emissions produced from the harbor craft responsible for moving and placing the barge-based system. The anticipated benefits are shown below. The analysis identified that greenhouse gases and sulfur oxides will increase as a result of this regulation. The NO<sub>x</sub> and DPM benefits are small considering the respective Ports emissions inventories. Overall, auto carrier and RoRo at-berth emissions made up approximately 1% of all OGV emissions in the SPBP's 2018 inventory, or between 2-4.5% of all at-berth emissions. Furthermore, the analysis estimates cost effectiveness to range between \$115k and \$200k for the utilization for four, third party barge-based emission capture and control systems. The analysis is included in the attachments and a summary of the results is available in Table A1 below.

**Table A1: RoRo Vessel Reductions from Barge-Based at-Berth Capture and Control, tpy**

Port	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	DPM tpy	NO <sub>x</sub> tpy	SO <sub>x</sub> tpy	HC tpy	CO tpy	CO <sub>2</sub> e mt/yr
<b>Emission Reductions (or increases)</b>								
POLB	0.40	0.38	0.38	19.61	-0.66	-0.73	-5.04	-1,615
POLA	0.22	0.20	0.18	8.98	-0.37	-0.43	-3.30	-1,005
<b>Total</b>	<b>0.62</b>	<b>0.58</b>	<b>0.56</b>	<b>28.59</b>	<b>-1.03</b>	<b>-1.15</b>	<b>-8.33</b>	<b>-2,620</b>
<b>Percent Reduction (or increase)</b>								
POLB	36%	36%	38%	40%	-28%	-44%	-113%	-49%
POLA	39%	38%	39%	40%	-35%	-52%	-151%	-53%
<b>Total</b>	<b>37%</b>	<b>37%</b>	<b>38%</b>	<b>40%</b>	<b>-30%</b>	<b>-47%</b>	<b>-125%</b>	<b>-50%</b>

- The emissions inventory for the ISOR takes credit for Prop 1B emissions benefits which are already anticipated to occur. 12 berths at the Port of Long Beach



received Prop 1B funding for shore power installations, and thus, must meet the strict requirement that 90% of vessels visiting these berths control at berth emissions. The ISOR should only take credit for incremental emission reductions above and beyond the requirements in place today.

- The ISOR assumes the regulated terminals at the Port of Long Beach will not require any additional shore power upgrades to meet the proposed regulation. This does not align with information submitted by the Port of Long Beach in our May 20, 2019 comment letter. Port staff provided CARB with an engineering assessment of the infrastructure needed to maximize shore power at the regulated terminals. The Port would need to build an additional 42 shore power outlets and invest an additional \$106 million in infrastructure to ensure nearly every vessel plugs in. This estimate was informed by previous shore power cost estimates and design, and the invoices utilized were provided to CARB staff. It is important to note that even with the additional infrastructure, we recognize that not every vessel would plug in 100% of the time. For example, some vessels which have not been retrofitted for shore power may still arrive. Given the uncertainty of the new framework, which regulates on a per vessel call basis, rather than fleet averaging, it is clear the terminals will need additional shore power outlets to mitigate the risk of noncompliance. It is disappointing that CARB did not utilize the engineering assessment nor the invoices providing true shore power costs. This information was developed based upon the knowledge and expertise of the Ports and our engineering experts. The Ports have more experience with shore power installation than any other entity.
- Some of the costs incorporated into the ISOR were gathered from casual conversations with terminal operators, technology developers, and vessel operators. In many cases, these parties were not briefed that the estimates would be used in the rule development, nor were the estimates verified. Additional vetting is necessary to ensure the cost analysis is robust and defensible.

Fundamentally, the ISOR package should be founded upon real data. It is understood that much of this data does not exist today because the technologies either do not exist, or have not been demonstrated. For this reason, we support the additional evaluation that will be completed for the 2023 feasibility assessment proposed in the regulation.

It is essential that CARB staff communicate the data gaps, the status of the technology, and the true public health benefits to the CARB Board and the public. The ISOR as it stands today overstates the emission and public health benefits of the proposed At-Berth Regulation, and utilizes unvetted data. While the Port of Long Beach supports reducing emissions from vessels at-berth, we do not support the ISOR package due to its limited data sources, and unrealistic assumptions.



We look forward to continued and productive coordination between the staffs of the Port of Long Beach and CARB over the next few months, and we anticipate that the final regulatory package will better reflect the true state of technology, associated costs, and projected emissions benefits.

Please feel free to reach out to Morgan Caswell, Port of Long Beach Manager of Air Quality Practices at (562) 283-7138 or via email at [morgan.caswell@polb.com](mailto:morgan.caswell@polb.com) with any specific questions.

Sincerely,



MARIO CORDERO  
Executive Director  
Port of Long Beach

cc: Bonnie Soriano, CARB (via email [Bonnie.Soriano@arb.ca.gov](mailto:Bonnie.Soriano@arb.ca.gov))  
Angela Csondes, CARB (via email [Angela.Csondes@arb.ca.gov](mailto:Angela.Csondes@arb.ca.gov))  
Nicole Light, CARB (via email [Nicole.Light@arb.ca.gov](mailto:Nicole.Light@arb.ca.gov))

Attachments:

POLA/POLB At-Berth Regulation Comment Letter February 6, 2019  
POLA/POLB At-Berth Regulation Comment Letter May 20, 2019  
POLA/POLB At-Berth Regulation Comment Letter July 1, 2019  
POLA/POLB At-Berth Regulation Comment Letter December 3, 2019  
CARB At-Berth Regulation Cost Effectiveness Analysis for Auto Carriers and RoRo  
Ships at Port of Long Beach & Port of Los Angeles



# SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

February 6, 2019

Bonnie Soriano  
Chief, Freight Activity Branch  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

**SUBJECT: PORT OF LOS ANGELES AND PORT OF LONG BEACH COMMENTS ON PROPOSED DRAFT REGULATORY LANGUAGE, "CONTROL MEASURE FOR OCEAN-GOING VESSELS OPERATING AT BERTH AND AT ANCHOR"**

Dear Ms. Soriano:

The Port of Long Beach and Port of Los Angeles (Ports) appreciate this opportunity to provide comments on the California Air Resources Board (CARB) proposed draft regulatory language, "Control Measure for Ocean-Going Vessels Operating At Berth and At Anchor."

We value the partnership we have built with CARB and credit this positive relationship in large part to helping us achieve very significant emissions reductions at the Ports and throughout the freight industry over the last decade. Likewise, we appreciate CARB's willingness to continue to work with us to find solutions for overcoming the various challenges to meet our common emissions goals.

As described in the 2017 Clean Air Action Plan (CAAP) Update, the Ports' support increased efforts to capture at-berth emissions from ships and to obtain more emissions reductions from non-regulated vessels, and we are committed to working with CARB to achieve these goals.

The purpose of this comment letter is to assist CARB in the development of a feasible at-berth regulation that maximizes public health benefits, and also to communicate the challenges associated with implementing the draft regulatory language as currently proposed.



Port of Long Beach | Environmental Planning  
4801 Airport Plaza Drive | Long Beach, CA 90815  
562.283.7100



Port of Los Angeles | Environmental Management  
425 S. Palos Verdes Street | San Pedro, CA 90731  
310.732.3675



The following summarizes comments of the Ports regarding proposed components of the draft regulation:

- **A Requirement to Control 100% of Visits Is Not Realistic** – Requiring 100% of vessel visits to use at-berth controls will require redundant systems to ensure coverage at all times, leading to skyrocketing costs for Ports, terminal operators, and ship owners with little additional emissions benefit. We urge reconsideration of such an absolute goal, even in light of your proposed use of exceptions, including terminal safety and emergency events, equipment failure, and physical and spatial constraints.
- **The Proposed Implementation Timelines Are Too Aggressive** – Of particular concern to the Ports, and our respective engineering staffs, is the implementation timeline for the proposed at-berth regulation. Expansion of shore power infrastructure, either through additional shore power outlets (SPOs) or via cable reel management systems, to meet the updated regulation requirement of 100% compliance for container, refrigerated cargo (reefer vessels) and cruise ships by 2021 will be a near impossible task for the Ports or the terminal operators to achieve due to the requisite planning and construction process for capital construction projects. The Port of Long Beach has estimated both the cost and timeline required to maximize compliance with the proposed draft regulation in the attached document, “Potential Strategies and Costs to Address the At-Berth Regulation” (Attachment A). The potential completion date for infrastructure required at the Port of Long Beach to accommodate the proposed regulations for container terminals is December 2025 at the earliest, depending on the extent of infrastructure required. Port of Los Angeles Engineering staff estimates the timelines and costs would be similar.

Further, given the lack of proven and available shore power or alternative options for at-berth controls that can be utilized by Tankers and Auto/Ro-Ros, it is highly unlikely that technically feasible, cost-effective technologies will be available for implementation by 2025. Additional time is needed to allow for the necessary capital improvements and/or technology advancements that will be required.

The Ports also believe that adequate time should be built into the schedule for submittal of terminal operator and Port plans, well in advance of the compliance deadline, in order to provide ample opportunity to adjust their plan given CARB feedback. It would also be helpful to see more details on what the required elements of such plans would be in the regulation.



- **A Technology Feasibility Assessment Process Is Needed** – As you know, the CAAP relies on a process for preparing regular feasibility assessments to assess the state of technology development and its readiness to be deployed in the marketplace to support efforts to achieve air quality benefits consistent with our CAAP goals. Given the reliance of the proposed regulatory amendment on emerging technologies, we believe a similar process would be appropriate and helpful for understanding the state of the technologies that would be needed to meet the requirements of the proposed regulatory language. This feasibility assessment should include an evaluation of:
  - (i) The state of technology for both shore power and alternative emission control devices and deployment readiness;
  - (ii) the requisite timeline for design, build, testing, and deployment of shore power and alternative control technologies for each California port and identification of any associated constraints such as wharf space;
  - (iii) safety and navigation of harbor waters space due to applications of new technologies for unregulated vessel types;
  - (iv) number and types of alternative control technologies, which would be needed at each California port;
  - (iv) and the availability of incentives to encourage early demonstration of such technologies.

Attachment A provides very useful information about the many technical challenges associated with the compliance options available today. These include immaturity of shore power for the non-container fleet, the safety concerns associated with using shore power and alternative emission control technologies to control emissions from tankers, and the navigability, space, and wharf integrity challenges associated with alternative emission control technologies. It is our finding that alternative compliance options may increase greenhouse gases, and cable reel management systems, which are needed for instances where ships do not line up with their requisite shore power outlet, are not in the shore power standard today (IEC/IEEE-80005), posing safety risks to ships and terminal equipment.

In order to accelerate the development and deployment of shore power and alternative control options, including infrastructure, for non-container terminals and vessels, the Ports would like to see CARB prioritize funding in their investment plan, as they did for the currently regulated fleet through Proposition 1B in 2006. This funding would assist with economic feasibility and ensure this regulation is not an unfunded state mandate.



- **A Cost Effectiveness Assessment Is Needed** – An increase in at-berth control levels for currently regulated fleets and the addition of at-berth control requirements for other vessel categories will result in considerable costs to ports, terminals, and shipping lines. The Ports of Long Beach and Los Angeles have already spent more than \$400M in infrastructure to meet the current shore power rule. Both Ports estimate that it would take at least another \$100M per port to bring their container terminal infrastructure to a level to meet the 100% requirement proposed by the at-berth rule. Additional costs, which have not yet been defined, will be associated with implementing at-berth controls for Tankers and Auto/Ro-Ros. In addition, millions more dollars would be needed to outfit unregulated ships for shore power.

While we fully support the goal of increased control of ocean-going ship emissions, we recommend a study be undertaken to determine how the marginal cost of bringing container ship emission controls from 80% to 100% under the proposed rule compares with other potential efforts to reduce emissions from ocean-going ships, including transiting or maneuvering movements. We also wonder whether emissions reductions from other sources at ports could be identified as more cost-effective investments for control programs, such as incentive programs to retrofit or replace harbor craft engines as an example. Further, we encourage a discussion among stakeholders to determine the sequencing of emission control programs for all of the key source categories that operate in and around ports, in order to identify where money should be spent first to move forward with cleaning the air regionally and throughout California.

- **Compliance Comes First** - The proposed At-Berth Regulatory language imposes a substantial infrastructure obligation on the Ports and their tenants. As a result, should the regulation be adopted as is, the Ports and their tenants will need to align their priorities and resources to ensure compliance with the regulation is achieved. As a result, the Ports may need to divert funds from other CAAP commitments, including zero-emissions terminal equipment and near-zero and zero-emissions trucks. We urge a discussion among key stakeholders to consider the trade-offs of investing in one program versus another, based on overall local, regional and state air quality needs.
- **The Best Practices Checklist Is a Concept Worth Pursuing** – The Ports acknowledge that a major goal of this rule-making is to assign roles and responsibilities so that CARB may apportion compliance enforcement if multiple parties are at fault when a vessel fails to connect to shore power. Previously, CARB had suggested development of a “best



practices checklist” which the vessel owner, the terminal operator, and the Ports would follow to maximize compliance. The Ports support exploration of this concept.

The Ports thank CARB staff for the consideration of our comments. The Ports agree that more can be done to increase at-berth emission reductions over the next decade in parallel to our efforts to advance zero-emissions terminal equipment and trucks; it is a matter of finding the balance among all of these CAAP commitments by establishing realistic timeframes and implementation objectives with approved and verified technologies.

We look forward to meeting with the CARB in the future to further discuss the proposed amendments to the At-Berth Regulation. Please feel free to contact us with any questions or concerns regarding this letter.

Sincerely,



CHRISTOPHER CANNON  
Director of Environmental Management  
Port of Los Angeles



HEATHER TOMLEY  
Acting Managing Director of Environmental  
Affairs and Planning  
Port of Long Beach

CC: CARB – Cynthia Marvin ([Cynthia.Marvin@arb.ca.gov](mailto:Cynthia.Marvin@arb.ca.gov))  
Angela Csondes ([Angela.Csondes@arb.ca.gov](mailto:Angela.Csondes@arb.ca.gov))  
Nicole Light ([Nicole.Light@arb.ca.gov](mailto:Nicole.Light@arb.ca.gov))  
Kaylin Huang ([Kaylin.Huang@arb.ca.gov](mailto:Kaylin.Huang@arb.ca.gov))



## **Potential Strategies and Costs to Address the At-Berth Regulation**

### **Background**

In August 2018 the California Air Resources Board (CARB) released draft regulatory concepts and the associated preliminary cost analysis for the Control Measure for Ocean Going Vessels At Berth and At Anchor Regulation (At-Berth Regulation). If adopted, CARB would require control of emissions from container and refrigerated cargo vessels for 100% of visits to the Port of Long Beach beginning in 2021. Roll-on roll-off (RoRo) vessels will need to reduce auxiliary engine emissions for 100% of visits beginning January 1, 2025. Tanker vessels must control auxiliary engine emissions through an interim CARB approved technology beginning January 1, 2025. All vessel visits for tankers must control auxiliary engine emissions through a CARB approved emission control beginning January 1, 2031. In addition to the auxiliary engine reduction requirements for all tankers, tanker vessels with steam driven product pumps are required to reduce their tanker auxiliary boiler emissions.

### **About This Assessment**

In response to the proposed regulatory amendments, the Port of Long Beach (Port) has conducted a preliminary analysis of the infrastructure needed at each container terminal, the assumptions and caveats related to each method proposed to maximize compliance, the time required to design and install the necessary infrastructure, and the costs for each solution. The Port also estimated the hours of control required and operational costs for both container and non-container vessels visits to meet the proposed regulatory language requirements should alternative compliance strategies such as barge and land-based emission control technologies be utilized. This document outlines the Port's findings, which includes content from a third party analysis and in-house expertise.

### **Assumptions**

In assessing the potential options for complying with the proposed regulation, the Port made several assumptions. First, the Port assumed that ships would meet the following requirements:

- All ships calling the Port will have shore power equipment available on both sides of the vessel.
- All shipside shore power equipment meets the IEC/IEEE 80005-01 standard, including "sufficient cable length to reach the shore side supply point (considering the tide loading conditions, etc.) plus 10 meters."
- Vessels calling the Port are equipped with 60 Hertz (Hz) operation.<sup>1</sup>

Ships not meeting these requirements may not be able to plug into shore power; however, this is outside of the Port's control.

Additionally, the Port assumed that all potential strategies must comply with the IEC/IEEE 80005-01 shore power standard and the National Electrical Code at least by the time the

---

<sup>1</sup> To provide infrastructure for 50 Hz ships would require complete duplication of the 60 Hz shore power infrastructure, including installation of transformers, substations, and SPOs. This solution is cost and operationally prohibitive. It is estimated only 1-2% of vessels which call the Port are equipped with 50 Hz operation.



regulation takes effect, that is, by January 1, 2020. Only strategies that have been proven and certified by these standards agencies have been deemed fit for deployment.

### Potential Shore Power Compliance Strategies for Container Vessels

The Port evaluated three potential strategies for maximizing shore power usage.

- Installation of additional shore power outlets (SPOs)
- Cable-reel management system – currently under development and assumed to be approved and certified by 2021
- A combination of the above

Although other potential strategies exist, including cable chains with SPOs mounted on the face of the wharf and moveable transformers, these technologies are unproven and cost prohibitive.

#### *Shore Power Outlet (SPOs) Installations*

Installing additional shore power outlets is the only strategy that fully complies with IEC/IEEE 80005-1 and National Electrical Code, and it is the only strategy that is proven and ready for execution today. The Port already has installed 78 SPOs at all of its container terminals. At some terminals, these SPOs are spaced approximately every 200 feet. At other terminals, the SPOs are spaced at varying intervals according to berthing analyses performed several years ago based on the strings of vessels information provided by the terminal operators and shipping lines.

Per the IEC/IEEE 80005-1 code, ships at berth must provide enough cable to reach the SPO plus 10 meters. Given this requirement, the Port would need to install SPOs every 64 feet at container terminals in order to ensure that every compliant ship can meet an SPO.

Unfortunately, this solution is implausible. Each SPO vault measures roughly 12 feet across and requires significant cuts into the wharf's edge. Additionally, the placement of SPO vaults has limitations, such as the presence of mooring anchors and fender systems or vaults for water lines. Thus, installing SPOs every 64 feet would compromise the structural integrity of the wharf and pose significant operational and safety impacts. In other words, there is a physical limit to the number of new SPOs the Port can install.

As stated earlier, additional SPOs do not solve connectivity issues for ships with inadequate cable length, cables on the opposite side of the vessel, or 50 Hz ships. Further, upstream electrical constraints may impede connection. One transformer serves multiple SPOs; only one ship can connect to that transformer at any given time. Thus, while additional SPOs may appear to provide more opportunities for ships to connect, as long as those SPOs are tied to a single transformer, the connectivity is limited by the upstream equipment. Each new SPO requires additional equipment at the substation. Each substation can only accept a limited amount of additional equipment at which point another substation need be installed. The space requirements along the wharf and inside the terminal along with the costs make this option unfeasible.

In summary, even with additional SPOs, there are likely to be instances in which a ship cannot connect.

#### *Cable Reel Management Systems*



A potential strategy to maximize shore power compliance at container terminals is a cable reel management system. Cable reel management systems provide additional cable length between the SPO and ship-side connection point. In theory, these systems should be able to close the gap between a ship and an SPO that is out of reach. The Port and its operators have purchased a few 100' cable management systems. These systems were limited to 100' in length due to space constraints; however, these systems have not yet been successfully deployed due to limitations of the technology and conflicts with current code.

First, 100' of cable is not long enough to facilitate ship connections 100% of the time. In order to achieve 100% compliance, cable reels of up to 600' would be required.

Second, the cable reel system is not a proven, approved technology in the shore power standard (IEC/IEEE 80005-1). The system also does not comply with the National Electrical Code, which does not allow for exposed high-voltage cables. This lack of certification raises issues about safety and labor's willingness to employ the system. It is unclear when the cable reel management system will be adopted under the shore power standard. If this system has not been adopted by January 1, 2020, the Port will be unable to use this strategy.

Third, if the cable reel management system is approved, some terminals may not have sufficient space between the cranes and guard timber to accommodate the cable reel system. This will necessitate wharf upgrades and cable-containment strategies. Custom cable extensions may need to be fabricated for a ship that does not line up with an existing SPO, which could require additional cable extensions at each berth.

Lastly, cable reel management systems may interfere with shore power communications systems, and thus, some ships may not be able to connect.

The Port analyzed the cost and timeframe for deploying cable reel management systems. Additional costs will be incurred by the tenant each time the cable reel system is deployed, removed and stored and are not included in the table below.

Costs and anticipated timeline per pier for cable reel systems are summarized in Table 3 below.

Table 3. Deployment of Cable Reel Management Systems

	Cost	Expected Completion Date
Pier A	\$3,000,000	May 2021
Pier C	\$2,000,000	May 2021
Pier E	\$3,000,000	May 2021
Pier G	\$3,000,000	May 2021
Pier J	\$4,000,000	May 2021
Pier T	\$4,000,000	July 2021
<b>All Container Terminals</b>	<b>\$19,000,000</b>	<b>July 2021</b>

\*This table estimates a start date for design as January 1, 2020 when the regulation would go into effect.

\*\*Assume \$1 million per each 200 linear foot Cable Reel Management System and 1 per berth were used for the estimates which includes equipment, additional mobile platform for the existing wharf, and soft costs.



In summary, absent changes to the National Electrical Code and IEC/IEEE 80005-1 standard, cable reel management systems are not a solution port-wide, and even with these changes, require significant infrastructure improvements and may not be a solution for every terminal

### *SPOs and Cable Reel Management Systems*

The Port analyzed a combination of new SPOs and cable reel management systems. This option utilizes additional SPOs to ensure a maximum of 200 feet between SPO installations and one 100-foot, cable reel management system at each berth to provide the needed extension from the shipside shore power equipment to the designated terminal SPOs.

A major challenge with this option is that it still would require the installation of an additional 67 SPOs. This strategy does not eliminate the challenges detailed above under the subsection “Shore Power Outlet (SPOs) Installations” nor subsection “Cable Reel Management Systems.” Therefore, issues such as a limited upstream transformation and lack of standardization for cable reel management systems will also interfere with successful deployment of this strategy. Therefore at this time this option is not feasible.

Costs and anticipated timeline per pier for SPOs every 200 feet, combined with one 100-foot cable reel system at each berth are summarized in Table 4 below.

Table 4. Deployment of SPOs approximately every 200 feet, combined with one 100-foot cable reel system

Deployment of SPO every 200 feet and one cable reel per berth	Cost	Expected Completion Date
Pier A	\$15,750,000	Dec. 2025
Pier C	\$10,500,000	Dec. 2025
Pier E	\$13,450,000	Dec. 2025
Pier G	\$17,050,000	Dec. 2025
Pier J	\$13,800,000	Dec. 2025
Pier T	\$23,300,000	Dec. 2025
<b>All Container Terminals</b>	<b>\$93,850,000</b>	<b>Dec. 2025</b>

\*This table estimates a start date for design as January 1, 2020 when the regulation would go into effect.

\*\* Costs include construction cost and soft cost to plan, design, and construct additional SPOs at each terminal. Pier G includes a new transformer to provide the power to one berth.

### **Additional Strategies**

The Port also evaluated additional strategies not related to landside infrastructure that could improve shore power compliance. These strategies are likely to be undertaken by the terminal operators and shipping lines, not the Port itself.

- Worker training
- Alternative compliance systems for ships not capable of connecting to the landside infrastructure

### *Worker Training*



The Port believes training of workers responsible for plugging and unplugging ships will improve shore power compliance. Assuming a ship can make a physical connection, with the requisite training, workers would be more likely to successfully troubleshoot connection problems as they occur, and provide the needed adjustment of the circuit breaker settings and other components involved in connection.

With or without training, Port terminals are going to continue to face situations where shore power connection is simply not possible, even after implementation of any of the pathways described above.

### *Alternative Compliance*

Terminal operators may opt to invest in emission capture and control devices, rather than investing in additional shore power.

#### Container Terminals

It is estimated the container terminals will require an additional 15,000 hours of emissions control time.

Annual operating costs alone could be \$23.2 million<sup>2</sup> dollars per year.

#### Non-Container Terminals

It is estimated the non-container terminals will require an additional 42,000 hours of emission control time.

Annual operational costs alone could be \$39.4 million dollars per year.

The terminal operators may decide to design and construct their own emissions capture and control system to ensure the system is always available, and there will be significant upfront costs on the order of \$5,000,000-\$10,000,000.

#### Limitations of Alternative Control Systems

Alternative control systems face two key challenges for deployment in the timeframe proposed by CARB:

- Lack of available units
- Lack of wharf space for barge-based system berthing

#### Lack of Available Units

As of today, only two barge-based systems have been certified and a land-based system has yet to be tested. Many more systems would be required to help meet the 100% compliance deadline of 2021 for the regulated fleet and 2025 for the unregulated fleet. There are currently no production

---

<sup>2</sup> Operating costs used in this document only include the hourly labor cost to operate the emission capture and control systems. The Port assumed \$1,000 per hour for barge-based systems, and \$1,100 per hour for land-based systems, which is consistent with CARB assumptions. Any increases in these costs over time are not accounted for, nor are any capital or other operational/maintenance costs.



## Potential Strategies and Costs to Maximize Compliance with the At-Berth Regulation

Page -6-

facilities manufacturing these systems. It is doubtful such systems can be certified, cost effective, and commercially available in such a short amount of time.

### Lack of Wharf Space

One significant barrier to deploying barge-based systems is the lack of berth space for units that are not in use. The Port of Long Beach only has 2,000 linear feet of wharf space – equivalent to two berths – that are open and could be available for barge-based systems:

- D52, which is used for temporary berthing. 600' linear feet.
- T124, which is really designed for OGVs and thus would require fender installations and wharf modifications to accommodate barges. 1,400 linear feet.

All other space is leased out, which means the Port will be limited in its storage capacity for emissions capture and control systems.

### **Summary of Findings**

The Port cannot identify a single method to ensure 100% shore power, but has established internal consensus that a mix of methods may be required to maximize shore power compliance for container vessels.

The most promising way to maximize compliance at a container terminal is for the Port to install additional SPOs with additional support from cable reel management systems.

Table 5. Comparison of Three Strategies to Maximize At-Berth Compliance

Strategy	Cost for all Container Terminals	Timeline (Design, Bid and Award, Construction)	State of Technology	Remaining Challenges
Additional SPOs Every 64 Feet	-----	-----	Established/Proven	<ul style="list-style-type: none"><li>• Wharf Integrity</li><li>• Operation and safety</li><li>• Physically impossible to install at 64'</li></ul>
Cable Reel Management System	Approx. \$20 million	2 Years	Unproven	<ul style="list-style-type: none"><li>• No Standard</li><li>• Electrical Code Issues</li><li>• Requires additional mobile platform to the existing wharves</li><li>• Moderate Cost</li></ul>
SPOs + 1 Cable Reel System	Approx. 94 million	5 Years	Unproven	<ul style="list-style-type: none"><li>• Timeline</li><li>• High Cost</li><li>• No Standard</li><li>• Electrical Code Issues</li><li>• Requires additional mobile platform to the existing wharves</li></ul>



In all of these scenarios, the Port is apt to spend millions of dollars on infrastructure beyond the roughly \$200 million already spent on shore power. Additionally, the timeframe for completing these projects is likely to go well past January 1, 2021.

It is unclear what strategy non-container terminal operators will choose for regulatory compliance. Given shore power is an unproved technology for the proposed non-container vessel categories and the stringent timeline proposed, the Port assumed in this assessment that ships and terminals would opt for alternative compliance through emission capture and control systems. Should the non-container industry choose this strategy, it is clear industry will bear millions of dollars in operating costs per year.

### **Path Forward**

The Port will need to produce a more detailed berthing analysis prior to entering the formal design process upon adoption of the proposed At-Berth Regulation. This analysis will directly inform decision-makers, including terminal operators and Port staff, and the design of each container terminal shore power compliance plan. In addition, the Port should continue to work with IEC/IEEE on the effort to update the current shore power regulation for container ships to ensure the cable reel management systems are safe, and standardized pieces of equipment







# SAN PEDRO BAY PORTS **CLEAN AIR ACTION PLAN**

May 20, 2019

Bonnie Soriano  
Chief, Freight Activity Branch  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

**SUBJECT: PORT OF LOS ANGELES AND PORT OF LONG BEACH COMMENTS ON  
FEBRUARY 22-23 2019 WORKSHOPS FOR THE "CONTROL MEASURE FOR OCEAN-  
GOING VESSELS OPERATING AT BERTH AND AT ANCHOR"**

Dear Ms. Soriano:

The Port of Long Beach and Port of Los Angeles (Ports) appreciate this opportunity to provide comments on the concepts and berth analyses presented at the California Air Resources Board (CARB) February 22-23, 2019 workshops regarding the, "Control Measure for Ocean-Going Vessels Operating At Berth and At Anchor".

We want to thank CARB for continuing to work with the Ports and our tenants during this regulatory process to obtain the best available data and to craft a regulation which achieves significant public health benefits.

The purpose of this comment letter is to respond to the Regulatory Concepts and Berth Analyses provided at the February workshops. In the appendices, CARB will find specific information and data relative to each Port.



The following summarizes the Ports' comments regarding the regulatory concepts presented at the February 2019 workshops:

- **We agree that 100% compliance cannot be met by vessels in any category**– We want to thank CARB staff for adjusting the concepts to reflect the impossible goal of 100% compliance. It remains unclear whether or not terminals and vessel operators can meet the new minimum of 95% compliance. We urge CARB to produce a feasibility assessment to better inform this regulation, described below.
- **The Proposed Implementation Timelines are Still Too Aggressive** – In the updated concepts, container terminals are still required to control ship emissions for every visit, with 5% flexibility for Terminal Incident Events (TIEs), by 2021. This timeline is unreasonable based on lack of infrastructure needed to support such a high level of plug-in so quickly. In addition, there is considerable doubt regarding the ability of terminal operators, and/or third party vendors to develop and deploy a sufficient number of alternative emission control devices on a stringent time line of one year.
- **A Technology Feasibility Assessment Process Is Needed** – The Ports still urge CARB to develop a technology feasibility assessment, which would look at the state of technology development and its readiness to be deployed in the marketplace to support efforts to achieve public health benefits. Through conversations with stakeholders, it is clear there are challenges associated with the technologies upon which this regulation depends that may be too costly, technologically and operationally infeasible in some cases, or unsafe to use. For example, the Los Angeles/Long Beach Harbor Safety Committee has many substantial concerns regarding the use of barge-based emission capture systems for tankers.

This feasibility assessment should include an evaluation of: (i) state of technology for both shore power and alternative emission control devices and deployment readiness (ii) the requisite timeline for design, build, testing, and deployment of shore power and alternative control technologies for each California port to achieve at minimum 95% compliance, and identification of any associated constraints such as wharf space (iii) safety and navigation of harbor waters space due to applications of new technologies for unregulated vessel types (iv) number and types of alternative control technologies, which would be needed at each California port (v) and the cost of the various types of technologies and availability of incentives to encourage early demonstration of such technologies.



As stated in our previous letter, in order to accelerate the development and deployment of shore power and alternative control options, including infrastructure, for non-container terminals and vessels, the Ports would like to see CARB prioritize funding as they did for the currently regulated fleet through Proposition 1B in 2006. CARB has not prioritized funding for shore power in their latest Cap-and-Trade Auction Proceeds Third Investment Plan, posted in January 2019. We urge CARB to work cross-divisionally on finding opportunities to invest in the nascent technology required for tankers and RoRos.

- **The Berth-Level Analyses report too few ship calls, and do not accurately reflect the infrastructure needed at each port**— CARB provided berth—level analyses of the infrastructure which will be required for each terminal to meet the new proposed concepts at the February 2019 workshops. These analyses are founded upon Google Maps research, interviews with port tenants, and discussion with piloting companies. The analysis is not based on any engineering assessment of what it would take to expand shore power or to accommodate alternative capture and control technologies. Unfortunately, none of the analysis provided by POLB related to container terminal infrastructure was included in this berth-level analysis either. Subsequently to the February workshops, the POLB has updated and refined its estimate. The analysis utilizes costs from previous shore power projects, states the design requirements a terminal would need to maximize plug-in while ships are at-berth, and uses these metrics to quantify the anticipated costs to maximize connection at POLB container terminals. In this letter, POLB has provided more granular detail around the basis of the cost estimates, photographs which demarcate the existing shore power infrastructure, and improved vessel call data from the 2017 Wharfinger Report in Appendix B. In the Ports' previous letter to CARB POLA engineering staff had agreed with the POLB engineering analysis. Subsequently, POLA developed their own assessment of the infrastructure they will need, the associated cost and timeline, and additional edits to the CARB Berth-Level Analyses, which are included in Appendix A. In summary, the POLB and POLA estimates approximately \$106 million and \$147-\$193 million respectively for additional electrical infrastructure. These estimates are rough orders of magnitude, with many exclusions and limitations, so the actual cost could be much higher. We are hopeful CARB will utilize this information, particularly in a feasibility assessment, as it is the most informed reflection of the current infrastructure at the POLA/POLB terminals today. The feasibility assessment should go into greater depth than the calculations provided herein.

CARB's Berth-Level Analyses as written today are not founded upon the requisite design and engineering expertise, and should therefore, not be used today to quantify the costs of



the newly proposed concepts. These costs can be more adequately captured through the process of a feasibility assessment.

- **Compliance may hinder CAAP efforts** – Lastly, the Ports are still concerned the cost of these proposed concepts will hinder the ability to meet their goals under the 2017 CAAP Update given the significant upfront costs of an At-Berth Infrastructure Program. In addition, the staff who are currently designing the near-zero and zero-emission terminal infrastructure for technology demonstration projects, and future full-scale deployments are the same staff members who would be responsible for designing the infrastructure to support the new At-Berth Regulation. This underscores the need for prioritizing programs and funding, as described in the Feasibility Assessment bullet above, in order to determine how to most effectively allocate our resources to participate in the development of your regulatory program.

The Ports thank CARB staff for hosting additional workshops, engaging with us directly, and their consideration of the comments contained in this letter as well as in the attached appendices.

We look forward to meeting with the CARB in the future to further discuss the proposed amendments to the At-Berth Regulation. Please feel free contact us with any questions or concerns regarding this letter.

Sincerely,



CHRISTOPHER CANNON  
Director of Environmental Management  
Port of Los Angeles



MATTHEW ARMS  
Acting Director of Environmental Affairs  
and Planning  
Port of Long Beach

Attachments: Appendix A, Appendix B

CC: CARB – Cynthia Marvin ([Cynthia.Marvin@arb.ca.gov](mailto:Cynthia.Marvin@arb.ca.gov))  
Angela Csondes ([Angela.Csondes@arb.ca.gov](mailto:Angela.Csondes@arb.ca.gov))  
Nicole Light ([Nicole.Light@arb.ca.gov](mailto:Nicole.Light@arb.ca.gov))  
Kaylin Huang ([Kaylin.Huang@arb.ca.gov](mailto:Kaylin.Huang@arb.ca.gov))





425 S. Palos Verdes Street Post Office Box 151 San Pedro, CA 90733-0151 TEL/TDD 310 SEA-PORT www.portoflosangeles.org

Eric Garcetti

*Mayor, City of Los Angeles*

Board of Harbor  
Commissioners

Jaime L. Lee  
*President*

Diane L. Middleton  
*Commissioner*

Lucia Moreno-Linares  
*Commissioner*

Anthony Pirozzi, Jr.  
*Commissioner*

Edward R. Renwick  
*Commissioner*

Eugene D. Seroka

*Executive Director*

## **APPENDIX A**

### **Port of Los Angeles**

### **Response to CARB At Berth Regulation Berth Analysis Matrices**

The Port of Los Angeles (POLA or Port) appreciates this opportunity to provide more detailed comments on the California Air Resources Board (CARB) Berth Analysis Matrices presented on February 22, 2019. Below are our comments on the various "CARB Staff Analysis of Potential Emission Reduction Strategies" for POLA.

#### Container and Refrigerated Cargo (Reefer) Vessels

POLA would like to reiterate that the timeline for container terminals is still too aggressive. The specific reasons why the deadline to meet 2021 is listed below.

The container shipping industry is going through tremendous changes including the consolidation of shipping lines and the emergence of new alliances, resulting in larger ships calling to POLA. The shore power vaults at the Port were designed for the average vessel size calling to POLA in the early 2000's, which were 10,000 to 12,000 TEU vessels. The vessels calling to POLA now are closer to 14,000 to 16,000 TEU. From our latest 2017 POLA Emissions Inventory, NOx emissions reduced from ocean-going vessels from 3,204 tons per year in 2016 to 3,061 tons per year, which is a 4% reduction in NOx. The number of TEUS increased by 5% from 2016 to 2017 (8,856,783 TEU vs. 9,343,193 TEU), but the number of container ship calls decreased by 8% from 2016 to 2017 (1,251 vs. 1,154). Our EI reports have shown that these larger container vessels have improved efficiency and helped to reduce emissions at POLA.

Unfortunately, the larger ships calling a terminal can limit the berth availability of shore power especially when multiple ships call the same terminal as the shore power cables are not lining up with the vault containing the shore power outlet. Cable management extension systems (cable reels) allow a vessel to plug into shore power without having the vessel's cables to be directly aligned to the vault. The cable reels currently available for purchase are 8 feet wide and the wharfs at five out of our seven container terminals only have 4-5 feet of space.

Fenix Marine Services and APM Terminals have a "vendor lane" which runs between the ship to shore cranes and the edge of the wharf, providing the necessary clearance to place a cable reel. At the moment, a narrower cable reel system is being designed for use on terminals without a vendor lane. However, there is currently no prototype and the system will require structural modifications to the wharf, the extent of which are unknown at this time. The cost for this narrower system is also unknown at this time. The current



cable reel system is estimated to cost \$550,000. If a narrower system cannot be designed, then the wharfs will need to be extended.

Extending wharfs creates a host of issues. The Army Core of Engineers will not allow the wharfs at POLA to be extended any further into the water, as there would not be enough space to navigate the vessels in the water. This means that the wharfs have to be extended on the landside. The cranes and the cranes' rail management would need to be pushed back. Moving all the cranes back requires the crane arms to be extended in order to reach a vessel's cargo. Assuming funding is procured for the construction at a terminal, it would take at least 18 months to design the construction, 18-24 months for environmental assessment, 6 months to go to bid, and then 18 months to build. The total estimated time per a project would be 60 to 66 months or 5 to 5.5 years on average, but it may take longer as each terminal is unique. The estimated cost to extend one container berth could be between \$35-40 million. In addition to all the construction, the terminal would not be able to use of their berth during the construction. The terminal would be operating at a decreased capacity and would be losing revenue during the construction and diverting cargo to other ports outside of California.

The Port preliminary responsibilities as indicated by CARB is to *"install and maintain any necessary emissions control infrastructure and/or equipment needed for compliance with the regulation that is outside of a terminal's contractual ability to provide."* In order to meet our responsibility outlined by CARB, POLA engineering staff has estimated that a vault would be needed every 200 feet apart per a berth with at least one 100-foot mobile cable reel at every berth. This is the same assessment as Port of Long Beach engineers had determined in the Ports' first joint letter to CARB. This would be a total of six vaults per a berth. The cost per a new vault is estimated to be \$500,000. The cost to provide the necessary power to the terminals is approximately \$2.5 million (\$2 million for electrical equipment and \$500,000 for installation). For purposes of POLA engineering assessment the cost of the cable reel system is estimated at \$550,000 based on the currently available system. The cost for a narrower system for five of our terminals could be higher as the actual cost is unknown at this time.

Table 1 summarizes POLA engineering staff evaluation of just electrical infrastructure and costs for POLA to meet the Port's obligation under the current draft language for existing container terminal berths.



Table 1: POLA Container Terminal Electrical Infrastructure Evaluation

Tenant	Berth	# Existing Vaults	# New Vaults Needed	Total Cost of New Vaults	Cost of Equipment	Cost of Cable Reel	Total Overall Cost
WBCT - China Shipping	100	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	102	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
WBCT – Yang Ming	121	2	4	\$2,000,000	\$2,500,000	\$550,000	\$5,050,000
	126	2	4	\$2,000,000	\$2,500,000	\$550,000	\$5,050,000
TraPac	136	2	4	\$2,000,000	\$2,500,000	\$550,000	\$5,050,000
	139	2	4	\$2,000,000	\$2,500,000	\$550,000	\$5,050,000
Yusen Terminals Inc.	212	2	4	\$2,000,000	\$2,500,000	\$550,000	\$5,050,000
	216	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	220	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	228	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
Everport <sup>1</sup>	230	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	302	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
Fenix Marine Services	303	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	304	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
APM Terminals	305	3	3	\$1,500,000	\$2,500,000	\$550,000	\$4,550,000
	401	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	402	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	403	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	404	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
	405	4	2	\$1,000,000	\$2,500,000	\$550,000	\$4,050,000
				Subtotal =			\$95,600,000
				20% Contingency =			\$19,120,000
				Subtotal =			\$14,720,000
				28% Soft Cost (Engineering & Construction) =			\$32,121,600
				<b>Total Cost =</b>			<b>\$146,841,600</b>

<sup>1</sup> As of 2019 there are only two vaults each at Berths 228 & 230. Two additional vaults at each berth have already been designed and construction is scheduled to begin within the next 18 months. This cost assessment only added two more vaults to Berths 228 & 230 in order to meet the Port's obligations estimated to be six vaults per a berth.



Table 2 summarizes POLA engineering staff evaluation of just electrical infrastructure and costs for POLA to meet the Port's obligation under the current draft language for berths that may be used as container terminals in the future.

Table 2: Future POLA Container Terminal Electrical Infrastructure Evaluation

Tenant	Berth	# Existing Vaults	# New Vaults Needed	Total Cost of New Vaults	Cost of Equipment	Cost of Cable Reel	Total Overall Cost
Fenix Marine Services	306	0	6	\$3,000,000	\$6,000,000	\$550,000	\$9,550,000
Unknown	206	0	6	\$3,000,000	\$7,000,000	\$550,000	\$10,550,000
Pasha	174	0	6	\$3,000,000	\$7,000,000	\$550,000	\$10,550,000
				Subtotal =			\$30,650,000
				20% Contingency =			\$6,130,000
				Subtotal =			\$36,780,000
				28% Soft Cost (Engineering & Construction) =			\$10,298,400
				<b>Total Cost =</b>			<b>\$47,078,400</b>

Grand Total = \$193,920,000 for only electrical infrastructure costs.



As shown, the estimated cost for the Port to meet our obligations for our container terminals would be \$147-\$193 million. Similar to wharf extensions, the estimated time from start to finish for installing this infrastructure would be approximately 5-5.5 years per a project. Even if the Port could procure this funding and start working on providing electrical infrastructure at all our terminals instantly, the soonest that this undertaking would be completed is 2024-2025, well beyond CARB's proposed deadline of 2021. POLA does not have the resources to undertake that many projects at the same time, so some terminals' electrical infrastructure would not be completed before 2025.

Landside shore power electrical infrastructure life cycle appears to be 15-20 years with required updates, annual maintenance, and frequent cleaning of the equipment during this period. Currently Port staff costs are about \$500,000 a year for maintenance and about \$125,000 a year for recordkeeping for a total annual cost of approximately \$625,000. This cost is so far for the currently regulated fleet of container, reefers, and cruise vessels. With the increased infrastructure, the staff cost for maintenance would increase to approximately \$866,000 and recordkeeping would be around \$135,000 for an estimated total staff cost of over \$1 million.

Shipside infrastructure appears to have a much lower life cycle. Conversations with various shipping lines have found that the shipside electrical infrastructure life cycle is about five years with equipment needing to be fully replaced in the fifth year. The cost to install shore power onto container and reefer vessels is estimated to be \$750,000 to \$1 million. This five-year cost for shipping lines may cause them to see the alternative at berth emissions control technology as a more attractive option than having to invest close to \$1 million every five years for shore power. This would be counterproductive to the regulation as shore power has been shown to have higher emissions reduction rate than use of the alternative emission control systems.

As for alternative emission control systems, there are currently only two certified barge based systems operating at both POLA and Port of Long Beach for container vessels. A land-based system is still being demonstrated at this time. There is serious doubt that more of these systems can be developed and deployed by 2021. The two San Pedro Bay Ports had solicited proposals for alternative emission control systems for ocean going vessels in 2018 as part of our Technology Advancement Program. In January 2019, the two Ports did not award any of the proposals as none met the requirements for the solicitation satisfactorily. This highlights the need for a CARB feasibility assessment on these technologies and their use at each California port.

### Passenger Vessels

POLA has on average about 110 cruise vessels call to our World Cruise Center on an annual basis. The assessment CARB has for passenger vessels is lower than our average number. POLA asks that CARB adjust the assessment with our annual average number of cruise vessels.



As cruise vessels increase in size, the amount of power drawn by these larger cruise vessels increase as well. The World Cruise Center underwent electrical upgrade construction to allow cruise vessels to draw 6.6 KV and 11 KV of power when at berth from June 2017 to April 2018. This upgrade took about three years to complete from initial planning to completion of the construction. Cruise vessels could not plug into both berths during the construction period. No new vaults were added to the berths for this upgrade. The cost of the upgrade was about \$11 million. Table 3 lists the number of vaults currently at the World Cruise Center.

Table 3: POLA World Cruise Center Electrical Infrastructure

World Cruise Center (Berths 90-93)	# of Vaults	Power Provided
Berth 92	2	11 kV (2)
Berth 93A	4	6.6 kV (2); 11 kV (2)

After the electrical upgrade, the Port has seen an increase in the use of shore power by cruise vessels that call to our World Cruise Center. POLA Engineers have determined that Berth 92 would need an additional two vaults and a cable reel system to ensure the Port meets our infrastructure obligations per the current draft regulation. The cable reel for the cruise vessel is estimated to cost more than one for containers, as it will need to be able to operate at both 6.6 kV and 11 kV. Table 4 is an estimate of the cost for the added electrical infrastructure at Berth 92.

Table 4: Estimated Additional Infrastructure Cost at Berth 92

Berth	# of Existing Vaults	# New Vaults Needed	Total Cost of New Vaults	Cost of Equipment	Cost of Cable Reel	Total Overall Cost
92	2	2	\$1,400,000	\$5,000,000	\$1,000,000	\$7,400,000
20% Contingency =						\$1,480,000
Subtotal =						\$8,880,000
28% Soft Cost (Engineering & Construction) =						\$2,486,400
Total Cost =						<b>\$11,366,400</b>

The cost to install shore power onto a cruise vessel is estimated to be between \$1 to \$1.5 million. The cost of maintaining and recordkeeping for Port staff was included in the container/refer section above. Construction for this project would probably take between 3-5 years.

#### Auto/Ro-Ro Vessels

POLA only has one automotive terminal, Wllenius Wilhelmsen Solutions (WWS) Vehicle Services America (Berths 195-199). Automotive carriers/Ro-Ros mainly call to berths 197-199. Table 5 shows vessel activity at WWS for the last 3 years.



Table 5: Vessel Activity at WWS 2016-2018

Berth #	# Auto & Ro-Ro Calls 2016	# Auto & Ro-Ro Calls 2017	# Auto & Ro-Ro Calls 2018
195	0	0	0
196	0	0	0
197	4	4	0
198	80	101	71
199	20	17	2
Total =	104	122	73

As shown by Table 5, the number of calls to WWS vary year by year. There is no real set average as the number of vessels is dependent on the market demand for automotive vehicles. Very few of the vessels calling are what CARB would define as "frequent" visitors (calling to the terminal four or more times in a calendar year) from year to year. A vessel may be in the string for a couple years, and then pulled from rotation if there is not enough demand or it is sent to a different string. For example, the "Pearl Ace" had five calls to WWS in 2016, one call in 2017, and no calls in 2018. Another example is the "Viking Sea." The "Viking Sea" had called WWS six times in 2016, three calls in 2017, and no calls in 2018.

Due to the infrequency of the automotive and Ro-Ro vessels to the Port, it is unlikely that the automotive shipping lines will invest the time and money to install shore power onboard their vessels. However, POLA engineers have calculated the cost of installing the necessary infrastructure for shore power at WWS if our tenant and the shipping lines it serves decides to use shore power, see Table 6. POLA assumes only one berth would require electrical infrastructure installed. Estimated time of completion is again approximately five years. The cost of these vaults are estimated to be slightly less at \$400,000 per a vault due to the lower power needs of these types of vessels.

Table 6: POLA Engineering Electrical Infrastructure Costs at WWS

Terminal	# New Vaults Needed	Total Cost of New Vaults	Cost of Equipment	Cost of Cable Reel	Total Overall Cost
WWS (Berths 195-199)	4	\$1,600,000	\$9,000,000	\$500,000	\$11,100,000
20% Contingency =					\$2,220,000
Subtotal =					\$13,320,000
28% Soft Cost (Engineering & Construction) =					\$3,729,600
Total Cost =					<b>\$17,049,600</b>

This leaves the use of an alternative emissions capture and control system. Currently there is no certified alternative emissions capture and control system for automotive or



Ro-Ro vessels. As stated in the joint cover letter, POLA believes a feasibility study of this technology's utilization, including potential increased greenhouse gas emissions generated by this technology, is needed.

Port Engineers have determined the berths at WWS would likely be structurally sound enough to hold the weight of a land-based control system. In addition, there is likely enough room on the dock for a land-based control system. This is solely based on the currently demonstrating land-based control system at our Pasha terminal. As there is currently no certified system for use on automotive/Ro-Ro vessels, this assessment may change in the future if a land-based system is significantly different from the current land-based system being tested on Pasha's container steamships. The current cost to build the land-based system at Pasha is approximately \$5 million. This does not include any labor or maintenance costs. These costs are hard to determine at this time, as there are still negotiations on the type of labor that will be used to operate and maintain the equipment.

POLA Port Pilots have determined it would be best to avoid a barge-based system for vessels that call to WWS. Ro-Ro vessels fuel when calling to WWS via a bunker barge. For safety reasons, the current barge-based system cannot be connected to a container vessel when the container vessel is fueling or bunkering. Similar safety concerns would prevent barge-based systems to connect to an automotive/Ro-Ro vessel when the vessel is fueling or bunkering. Automotive/Ro-Ro vessels are at WWS for less than 24 hours. A disconnected barge system may not have enough time to reconnect to the vessel before it is ready for departure.

On rare occasions, there are two vessels dock at WWS at the same time. When that happens, Port Pilots sometimes are required to sail a vessel around the one forward of the departing vessel. The Port Pilots require the offshore side of the forward vessel to be clear of any obstructions. A barge-based system connected to the forward vessel would have to be disconnected and moved in order for the Port Pilots to move the other vessel. Again, there may not be enough time for a disconnected barge system to reconnect to the vessel prior to its departure.

### Tanker Vessels

The CARB Tanker Berth Analysis listed six liquid bulk terminals. POLA currently has seven liquid bulk terminals. Kinder Morgan is expected to leave Berths 118-119 by 2024. Table 7 is a list of POLA liquid bulk terminals with vessel calls for the last three years.



Table 7: Vessel Activity at POLA Liquid Bulk Terminals 2016-2018

Terminal	Berths	# Tanker Calls 2016	# Tanker Calls 2017	# Tanker Calls 2018
Kinder Morgan	Berths 118-119	38	34	37
NuStar Energy LP	Berth 163	4	6	13
PBF Energy	Berths 238-240C	30	46	33
Phillips 66	Berths 148-151	30	49	41
Shell Oil Products	Berths 167-169	45	60	34
Valero	Berths 164	28	40	27
Vopak Terminals	Berths 187-190	111	118	111

Wharfs for tanker terminals are currently being redesigned to meet California State Lands Commission requirements, Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS). The new terminal design will be a pier that goes out into the water. The platform at the end of the pier will be only large enough to hold the necessary equipment for pumping tanker product in/out of the tanker. The tanker will be moored by tying up at nearby dolphin moors. POLA has already provided an example engineering drawing of the new terminal design in prior communications with CARB. There would not be any space to place shore power or a land based alternative system on these new piers.

Below is a list of future plans for the marine oil terminals at POLA.

- Berth 118-119 – Kinder Morgan Terminal – Berths are scheduled for demolition in the next few years.
- Berths 148-149 – Phillips 66 Terminal – This berth will cease operations as a marine oil terminal when the new berth at 150-151 is completed
- Berths 150-151 – Phillips 66 Terminal – This berth will be demolished and reconstructed as a typical modern marine oil terminal, with a minimal unloading platform and independent mooring and berthing dolphins connected by catwalks. A land-based emissions capture system will not be feasible. A barge-mounted emissions capture system could be used, but may be difficult due to the terminal's location on one of the main turning basins for the Port. The tenant will be required to conduct a feasibility study for a barge-based system as a condition of their environmental document, which is currently underway.
- Berth 163 – Nustar Terminal – This berth will be demolished and reconstructed as a typical modern marine oil terminal, with a minimal unloading platform and independent mooring and berthing dolphins connected by catwalks. A land-based emissions capture system will not be feasible. A barge-mounted emissions capture system could be used, and would be largely free of impacts from large passing vessels. The tenant will be required to conduct a feasibility study for a



barge-based system as a condition of their environmental document, which is currently underway.

- Berth 164 – Valero Terminal – This berth will be demolished and reconstructed as a typical modern marine oil terminal, with a minimal unloading platform and independent mooring and berthing dolphins connected by catwalks. A land-based emissions capture system will not be feasible. A barge-mounted emissions capture system could be used, but would be impacted by the narrow channel and vessels entering and exiting Berth 163. The tenant will be required to conduct a feasibility study for a barge-based system as a condition of their environmental document, which is currently underway.
- Berths 167-169 – Shell Terminal – This berth will be demolished and reconstructed as a typical modern marine oil terminal, with a minimal unloading platform and independent mooring and berthing dolphins connected by catwalks the tenant is required to conduct a feasibility study for a barge-based system as a condition of their environmental document, which is complete.

As was stated in our email to CARB dated on March 8, 2019, our Port Pilots had determined that if the barge-based system is employed at Shell Berth 167 for a panamax size vessel (228M x 32M) or larger and there is a bulk vessel at Berths 154-155, access to the northern berths in the slip (Berths 165, 164, 163, & 161) will be restricted. Tugs and barges may be able to get by; however, if a barge-based system is also placed alongside a vessel at Berths 154-155 or the tanker at Berths 167-169 then access to the northern berths may not be adequate for a ship to pass.

This would be a hindrance to three of our tenants' terminal operations past Shell: US Borax (Berth 165) that does dry bulk, Valero (Berth 164) that does tanker operations, and Nustar (Berth 163) that does tanker operations. This gives other terminals that would not be effected by this restriction an economic competitive edge over these terminals. In addition, our Construction and Maintenance (C&M) division is located at Berth 161. C&M does maintenance of the docks and wharfs for the Port and could be hindered as well. Our C&M division needs to have unrestricted access to enter and leave Berth 161 to conduct any emergency repairs that may arise at any time at the Port.

- Berths 187-189 – Vopak Terminal – This terminal consists of a full width, full length wharf that will be upgraded to comply with MOTEMS standards instead of being reconstructed. The tenant has chosen this option, and will be performing the design and construction themselves, in order to minimize impacts to ongoing operations. However, the existing timber wharf has deteriorated vertical load carrying capacity, which will not be fully restored by the planned upgrade. Upgrading the capacity of the wharf to HS-20 (highway) capacity would cost approximately \$8.8 million. This cost estimate is based on the restoration of a very



similar wharf at Berths 196-199 that was completed in 2018. The project cost for this wharf, including contingency, was approximately \$5,300 per lineal feet. The wharf at Berths 187-189 is approximately 1660 lineal feet. The tenant is required to conduct a feasibility study for a capture and control system as a condition of their environmental document, which has not yet commenced.

POLA Port Pilots have determined that if a barge based system is placed alongside a panamax or larger size tanker at Vopak Berth 189 it will restrict ship access to Berth 187 for the duration of the vessel's stay alongside Berth 189. Tug and barge traffic will be able to continue; however, there will not be enough room in the slip (Slip #5) for a ship of any size to access Berth 187. This would limit Vopak's operational capability and lower its economic competitiveness with other tanker terminals.

- Berths 238-239 – PBF Terminal – This berth will be demolished and reconstructed as a typical modern marine oil terminal, with a minimal unloading platform and independent mooring and berthing dolphins connected by catwalks. A barge-mounted emissions capture system is feasible, as the terminal is on the wide Main Channel of the Port. The tenant is required to conduct a feasibility study for a barge-based system as a condition of their environmental document, which is complete.

We again stress the need for a CARB technology feasibility assessment on the state of alternative emission control technology. POLA is requiring our marine oil terminals to conduct feasibility studies on the use of alternative emission control systems. However, these feasibility studies will be terminal specific and could not be used by other terminals to determine the feasibility of the technology for their purposes.

An email from CARB staff dated March 28, 2019 requested information on the cost estimate and duration for routing the tanker vessel auxiliary engine and boiler emissions to a land based emissions control system. This question should be asked to the tanker ship manufacturers and the alternative emissions control system companies. The Port does not have expertise in this field. We are unable to provide a cost estimate, but we can provide CARB with general information about what this project could entail.

Many of the tanker vessels that call to POLA would not be defined by CARB as a "frequent" visitor (calling to the terminal four or more times in a calendar year). Due to this infrequency, it is unlikely that shipping lines with tankers would spend the time and money to change an existing tanker's exhaust system to be able to be treated in this fashion. If a shipping line did decide to undergo this type of project, the tanker would have to be taken out of service and dry docked. The Port does not have the knowledge to provide an estimate of how long the retrofitting would take. It would be more cost effective to design and build a new tanker to have this feature rather than try to retrofit an existing tanker.



The Port thank CARB staff for the consideration of our comments. We look forward to meeting with the CARB in the future to further discuss the proposed amendments to the At-Berth Regulation.



**APPENDIX B**  
**Port of Long Beach**  
**Response to CARB's February 22-23<sup>rd</sup>, 2019 Workshops and**  
**Additional Cost Estimate Detail**

**Background**

February 22-23<sup>rd</sup>, 2019, the California Air Resources Board (CARB) held workshops for the Control Measure for Ocean Going Vessels At Berth and At Anchor Regulation (At-Berth Regulation). In the newly proposed regulatory concepts, CARB would require control of auxiliary engine emissions from container, passenger, and refrigerated cargo vessels for every vessel visit to the Port of Long Beach beginning in 2021. Each terminal would have an allocated number of acceptable Terminal Incident Events (TIEs) to provide flexibility. These TIEs equate to 5% of total container vessel visits received during the previous year. Roll-on roll-off (RoRo) vessels will need to reduce auxiliary engine emissions for every vessel visit beginning January 1, 2025, with TIEs flexibility, calculated as 10% of the vessel calls of the previous year. Beginning January 1, 2027, acceptable TIEs for RoRos drop to 5%. Tanker vessels must control auxiliary engine emissions through a CARB approved technology beginning January 1, 2027, with the equivalent TIEs allocation calculation as the RoRos (10% of the previous year's calls). In 2029, tanker acceptable TIEs will drop to 5%. Tanker vessels with steam driven product pumps are no longer required to reduce their tanker auxiliary boiler emissions. Lastly, CARB provided stakeholders with berth analyses of the necessary infrastructure for each vessel type to meet these proposed requirements.

**About This Response**

The Port of Long Beach (Port) is providing supplementary information per CARB request on the estimates provided in the joint comment letter the Ports of Los Angeles and Long Beach, "Potential Strategies and Costs to Address the At-Berth Regulation", submitted on February 6<sup>th</sup>, 2019. Importantly, these cost estimates were developed using data from previous shore power installations, such as progress payments, bid analyses, and maps of the shore power infrastructure at the container terminals. Those documents are provided in the attachments to this appendix. The attachments also provide vessel call data as reported in the 2017 Wharfinger Reports to better inform the berth analyses CARB distributed at the February workshops. The estimated hours of control required and operational costs for both container and non-container vessels visits should alternative compliance strategies such as barge and land-based emission control technologies be utilized has been revised. Lastly, this appendix provides documentation of the costs associated with the Prop 1B shore power installations – specifically at Piers A, G, T, and G. Under the Prop 1B program, the Port was required to tease out hard costs from the progress payments. These hard costs have been provided to help inform future CARB analyses of infrastructure costs. It's important to note that these costs are in 2012 dollars, and future estimates should account for escalation.

**Shore Power Outlets Calculation & Locations**

The proposed concepts explained in the February 2019 workshops are written in such a way that terminals would need to make a reasonable effort to control emissions for every vessel visit. The Port would like to highlight that terminals would not plan a compliance strategy, which meets a



95% control criteria, as TIEs can occur due to reasons out of their control. They would plan to meet 100% emission control while ships are at berth, knowing unforeseen circumstances will hinder their success, hopefully, within the 5% threshold.

To maximize shore power connection at the container terminals, Port staff established design criteria, which requires shore power outlets (SPOs) every 200 feet, combined with a 100-foot cable reel system. This design criteria was used to calculate the minimum number of SPOs required at each pier. As demonstrated in Table 1, staff divided the wharf length for each berth by 200 feet, providing the optimal number of SPOs given 200-foot spacing. Staff then subtracted the existing number of SPOs at each berth to determine the additional shore power outlets required.

Table 1.

Location	Existing SPOs	Number of Berths	Length of Wharf (ft)	SPO @200'	Additional SPOs required for 200' spacing given current infrastructure	Number of Cable Reel Management Systems Required
Pier A Berths A88-A96	9	3	3556	18	9	3
Pier C SSA Terminals	8	2	1797	9	1	2
Pier E	15	3	4369	22	7	3
Pier G						
Berth G232	5	2	1337	7	2	2
Berth G236	6	2	1290	6	0	2
Berths G234, G235	1	1	1243	6	5	1
Pier J						
Berth J245-J247	9	2	2019	10	1	2
Berth J266-J270	11	3	2694	13	2	3
Pier T	11	4	5022	25	14	4
Total	75	22			42	22

The total count of functional SPOs today is 75, however, Pier E will be installing 5 SPOs as part of Phase 3 of the Middle Harbor Project at Long Beach Container Terminal. These SPOs are included in the Pier E calculation above. SPOs which have been abandoned or de-energized are not included in the calculation in Table 1. As far as cable-reel management systems, staff made an assumption that each berth would require one, 100-foot cable reel management system. Because the Port has 22 berths, it is assumed 22 cable reel management systems are required.

### Cost Estimates & Timeline

The updated estimate for all six piers is approximately \$107 million. To prepare this estimate, Port staff analyzed three previous shore power installation projects at Pier A, Pier J, and Pier T,



initiated in 2012, in order to develop a combined average cost per shore power outlet (SPO). Staff calculated the average SPO cost at each pier using progress payment documentation and tracked staff hours specific to these projects, and then averaged the average SPO cost of each project in order to get the combined average SPO cost. The total cost estimate is based on the average SPO cost multiplied by the number of new SPOs in Table 1, plus one cable reel per berth. The narrative describing the average SPO cost calculation is provided in ATTACHMENT A, Supporting Documentation for Container Terminal Cost Estimates.

The timeline to complete each pier is approximately 5.25 to 5.75 years, which includes 15 to 18 months to do preliminary design and environmental clearances, 15 to 18 months for design, 7 months for bid and award of a construction contract, and 26 months for construction and commissioning.

### **Exclusions and Limitations**

The various existing wharves were built at different times and have different configurations and structural limitations. Wharf modifications may be necessary to accommodate the density of SPOs, which is not included in the cost estimate.

The estimated total number of additional SPOs does not account for the exact location of the current SPOs, so additional SPOs may be necessary to meet the functional requirement.

Many wharves do not have sufficient space at the edge of the wharf to accommodate the current cable reel design. It is unclear if a narrow cable reel can be designed to fit the specific space constraints at each pier, and wharf modifications may still be necessary to be able to safely use cable reel in the narrow space. If that is not possible, more extensive wharf modifications would be required. The cost estimate does not include any wharf modifications to accommodate the cable reel, and assumes a narrow cable reel is roughly the same cost as the current design.

The combined average cost per SPO does not include transformer costs nor any contingency. Staff removed the transformer costs from the bids on the previous SPO projects used to calculate the average SPO cost, making an assumption each container terminal has enough power today. If any terminal requires additional power, the total cost for additional shore power at the Port could increase on the scale of millions of dollars.

POLB resources, both money and staff, are finite, and the POLB is in the midst of a significant capital improvement program. There is not sufficient staff to complete all piers simultaneously within the existing capital program, and there may not be financial capacity to accommodate all of the additional capital expense within the timeframe. Therefore, it is highly likely some of the piers would take longer to complete, resulting in additional cost escalation not included in the current estimate.

### **Updated Alternative Emission Control Hours**

The Port has updated the additional emission control time required if container, passenger, refrigerated cargo, RoRo, and tanker ships must control emissions for every visit. Updates



include refined detail on which berths received Prop 1B funding, and thus are subject to higher shore power connection requirements earlier and consideration of the minimum and maximum number of additional applicable ships that will require emission control technology on a given day. The findings utilize the 2017 Ports of Los Angeles and Long Beach Emissions Inventory data and are as follows:

- 1) There will need to be at least 26 barge-based systems online in the San Pedro Bay to meet the 2029 requirements (95% of calls must be controlled with an exception of 5% TIEs for all regulated ship types) - assuming vessel traffic remains at 2017 levels. At the Port of Long Beach, the maximum number of applicable ships that are not using shore power is 14 per day, the average is 8, and the minimum is 2 ships. In 2017, 147 days occurred where the number of barges needed if the proposed regulation were in place exceeded the average. Looking at the San Pedro Bay Complex, the average number of applicable ships which would require a barge-based system is 15 per day, with a maximum of 26, and a minimum of 4 ships per day. The Ports would be required to have 26 barge-based systems to meet the requisite emission control requirement from ships on a peak day.
- 2) An additional 40k-52k hours per year of emissions will need to be controlled via alternative capture and control technology to meet the every vessel, every visit requirement for the proposed ship types.<sup>12</sup>
- 4) To keep a fleet of at least 26 barges “viable” the operational cost per hour will have to double to at least \$2,000 per hour. This is due to the costs associated with both active and inactive barges. The operational cost is estimated to be \$81-\$105 million dollars per year<sup>3</sup>.

These estimates assume that a barge-based system will be used for ships, which do not utilize shore power. It is, however, more likely that tankers will strongly consider land-based systems. Given the Port has not demonstrated land-based alternative control technologies for the proposed vessel types, and the potential steep costs associated with a land-based device (wharf upgrades, increased power consumption, etc.) the Port decided assuming the use of the barge-based system provides a more conservative estimate of the costs associated with this regulation. It is also important to note that accommodating a fleet of 26 barge-based emission capture and control systems would require significant berthing space at both ports, which have limited wharf availability.

- Attachment A - Supporting Documentation for Container Terminal Shore Power Infrastructure Cost Estimates
- Attachment B – Prop 1B Shore Power Infrastructure Costs
- Attachment C – Maps of Container Terminal Shore Power Infrastructure
- Attachment D – Port of Long Beach Vessel Visits by Berth

---

<sup>1</sup> The lower additional emission control hours reflect a scenario in which all currently unregulated ship calls which will be subject to the new At-Berth Regulation are controlled via barge-based systems and all currently controlled ship-types are handled by additional shore power infrastructure. The higher emission control value reflects a scenario in which all currently unregulated and regulated ship types will be controlled by a barge-based system, and no additional shore power infrastructure will be installed.

<sup>2</sup> These estimates assume a requirement of 1.5 hours per arrival and departure for connecting and disconnecting times where there will be no emission reductions.

<sup>3</sup> This cost does not include costs related to barge movements, anchorages, lay berths, etc.



**ATTACHMENT A**  
**Supporting Documentation for**  
**Container Terminal Shore Power Infrastructure Cost Estimates**

Average Cost per Shore Power Outlet (SPO) Calculation Narrative

- Staff used the actual contract bid and change order prices from three separate Port construction contracts to install SPOs in 2012. The contracts were for Pier J, Pier T, and Pier A.
- For each contract, the cost of providing and installing transformers was deducted from the total contract amount. This assumes that if SPOs are added in the future, there is already adequate capacity at the terminals for additional SPOs. Therefore, the cost of transformers should not be included in the average cost of future SPOs. If there is not adequate capacity, the cost per SPO would increase.
- The cost of installing SPOs includes all design, permit, and management costs (as referred to as soft costs). The costs for each project are tracked in the City's cost accounting system (also known as FAMIS or EZFAMIS). The EZFAMIS report for each project was run to acquire the soft costs for each project.
- The total project cost (construction contract plus soft costs, less transformer costs) was then escalated using 2.5% per year from the construction contract award date (2012) to the midpoint of earliest possible future SPO construction contract award (2022).
  - The earliest possible future SPO construction contract date is based on a January 1, 2020 regulation start date, and includes the time necessary to do design, bid, and award.
  - If the regulation date is pushed out, the cost per SPO would increase to reflect the additional cost escalation.
  - The 2.5% is a relatively low average cost escalation, and is much lower than what we have seen in the local market the last 2-3 years. The average cost per SPO would increase if the cost escalation is higher than 2.5%.
- The escalated total project cost was then divided by the number of SPOs installed, providing an average escalated cost per SPO per project.
- We averaged the combination of each projects' average cost per SPO to get the combined average cost per SPO in 2022 of \$2,272,609.

Pier J Shore to Ship Power Project

- The work under the Pier J project included retrofitting of four berths of the existing north wharfs (J245-J247) and south wharfs (J266-J270), including the installation of twenty (20) shore power outlet vaults on the wharf face, all associated conduit, electrical cables and connections, and four electrical substations to supply power to each individual berth. (SPO location Exhibit attached)
- The original construction contract amount awarded to Helix Electric Inc. was \$25,200,000 (Analysis of Bids Exhibit dated February 7, 2012 attached)
- Transformer costs are from Bid Items 22, 23, 24, and 25 (Progress Payment#27) and are excluded from the SPO cost calculations.
- Project soft cost included planning, design and construction management costs (EZFAMIS Report of Work Order HA1316) and are incorporated in the SPO cost calculation.



- Costs related to SCE work to bring the power to Pier J, installation of 66KV Substation and Site Preparation for the substation (Griffith Contract) is excluded from the cost calculations (SCE related cost items were highlighted in orange in the attached EZFAMIS Report).
- Average cost per SPO is calculated based on 20 SPO Vaults.

#### Pier T Shore to Ship Power Project

- The work under the Pier T project included retrofitting four berths of the existing south wharfs (T132-T140), including the installation of eleven (11) shore power outlet vaults on the wharf face, all associated conduit, electrical cables and connections, and four electrical substations to supply power to each individual berth. (SPO location Exhibit attached).
- The original construction contract amount awarded to The Ryan Company is \$20,559,112 (Analysis of Bids Exhibit dated February 14, 2012 attached)
- Transformer costs are from Bid Items 18, 19, 20, and 21 (Progress Payment#19) and were not included in this calculation.
- Project soft costs included planning, design and construction management costs (EZFAMIS Report of Work Order HA1317 attached)
- Costs related to SCE work is excluded from the cost calculations.
- Average cost per SPO is calculated based on 11 SPO Vaults.

#### Pier A Shore to Ship Power Project

- The work under the Pier A project included retrofitting of four berths of the existing south wharfs (A88-A96), the installation of nine (9) shore power outlet vaults on the wharf face, all associated conduit, electrical cables and connections, and two electrical substations to supply power to each individual berth. Substation A provides power to Berth A94-96 and Substation B provides power to berths (A88-A90) and (A92-A94), respectively. (SPO location Exhibit attached)
- The original construction contract amount awarded to Schimmick Construction Company is \$11,513,850 (Analysis of Bids Exhibit dated January 31, 2012 attached)
- Transformer costs are from Bid Items 20, 21 and 22 (Progress Payment#15 attached)
- Project soft cost included planning, design and construction management costs (EZFAMIS Report of Work Order HA1314 attached)
- Costs related to SCE work is excluded from the cost calculations.
- Average cost per SPO is calculated based on 9 SPO Vaults.

#### Summary of the Average SPO Costs (2022)

	<b>Average \$/SPO (2022)</b>
<b>Pier J</b>	\$ 2,221,185.36
<b>Pier T</b>	\$ 2,303,100.04
<b>Pier A</b>	\$ 2,293,541.56
<b>Combined Average Cost Per SPO</b>	<b>\$ 2,272,608.98</b>

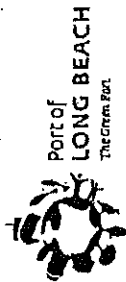


The cost of the 100-foot cable reel management system is expected to be \$500,000 each. The Port estimated that each berth would require one 100-foot cable reel management system. Today there are 22 berths. The estimated total cost for cable reel management systems \$11,000,000.

Cost Estimate for Six Piers to Install Additional Required SPOs

$\$2,272,608.98 \times 42 \text{ SPOs} + \$11,000,000 = \mathbf{\$106,449,577.16}.$





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 1 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 1 - Progress Schedule: Furnish all labor, materials, tools, equipment, and incidentals necessary to prepare, furnish, update, revise and maintain the cost and resource loaded scheduling... for the lump sum price (minimum amount of \$25,000) of -	Lump Sum	100,000.00	100,000.00	25,000.00	25,000.00	33,460.00	33,460.00	138,415.00	138,415.00	25,000.00	25,000.00
ITEM NO. 2 - Site Specific Safety Plan: Furnish all labor, materials, tools, equipment, and incidentals necessary to develop, submit, implement and maintain a Site Specific Safety Plan, including... for the lump sum price (minimum amount of \$30,000) of -	Lump Sum	150,000.00	150,000.00	30,000.00	30,000.00	35,535.00	35,535.00	107,658.00	107,658.00	30,000.00	30,000.00
ITEM NO. 3 - Furnish and Place Temporary K-Rail and Chain Link Fence: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish, place, move, relocate, store, remove and dispose of temporary K-Rail... for the lump sum price of -	Lump Sum	1,400,000.00	1,400,000.00	600,000.00	600,000.00	686,711.00	686,711.00	661,212.00	661,212.00	1,500,000.00	1,500,000.00
ITEM NO. 4 - Mobilization/Demobilization: Furnish all labor, materials, tools, equipment, and incidentals necessary for Mobilization and Demobilization as specified and shown for the lump sum price (fixed amount of \$1,200) of -	Lump Sum	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00	1,200,000.00
ITEM NO. 5 - Maintain Demobilization/Remoobilization: Furnish all labor, materials, tools, equipment and incidentals necessary to temporarily demobilize from the above-wharf work area, including temporary... for the unit price per each combined event of -	Unit Price	9,000.00	135,000.00	1,000.00	15,000.00	3,554.00	53,310.00	5,775.15	86,627.25	4,380.00	65,700.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

Helix Electric, Inc.

LOWEST RESPONSIBLE BIDDER

483309/EXP-11/30/2013

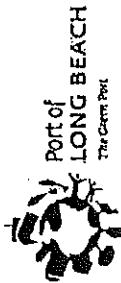
LICENSE NUMBER

\$25,200,000.00

AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit

NO. HD-S2341

DATE OPENED: February 7, 2012

at Pier J, Berths J245-J247 and J255-J270

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.			Shinnick Construction Company			Sully-Killer Contracting Company			The Ryan Company			Griffith/Rosenfeld JV		
		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 6 - Storm Water Pollution Prevention Plans (SWPPP) Development and Compliance: Furnish all labor, materials, tools, equipment, and incidentals necessary to develop, provide, monitor... for the lump sum price (minimum amount of \$150,000) of -	Lump Sum	300,000.00	300,000.00		150,000.00	150,000.00		259,553.00	259,553.00		184,554.00	184,554.00		150,000.00	150,000.00	
ITEM NO. 7 - City Ordinance Construction Waste Management Plan: Furnish all labor, materials, tools, equipment, logistics, forms, and incidentals necessary... (exclusive of the maximum \$50,000 deposit) for the lump sum price (minimum amount of \$5,000) of -	Lump Sum	10,000.00	10,000.00		5,000.00	5,000.00		6,186.00	6,186.00		6,275.00	6,275.00		5,000.00	5,000.00	
ITEM NO. 8 - Soil Handling and Disposal, Non-Hazardous Waste: Furnish all labor, materials, tools, equipment, and incidentals necessary to excavate, stockpile... approximately seventeen-thousand six-hundred (17,600) tons... for the unit price per ton of -	Unit Price	12.00	100,800.00		12.00	100,800.00		21.00	176,400.00		40.97	344,148.00		7.90	66,360.00	
ITEM NO. 9 - Shoring for Excavations: Furnish all labor, materials, tools, equipment, and incidentals necessary to design, place, maintain, move, and remove excavation shoring adequate for worker... for the lump sum price (minimum amount of \$30,000) of -	Lump Sum	150,000.00	150,000.00		300,000.00	300,000.00		105,445.00	105,445.00		106,882.00	106,882.00		150,000.00	150,000.00	
ITEM NO. 10 - (Import Soil): Furnish all labor, materials, tools, equipment, and incidentals necessary to test, certify, load, transport, stockpile, place... approximately six thousand eight hundred ten (6,810) tons... for the unit price per ton of -	Unit Price	25.00	177,050.00		42.00	286,020.00		40.30	274,443.00		14.55	99,153.80		36.00	245,160.00	
TOTAL:																
CERTIFIED CHECK OR BOND:																

Helix Electric, Inc.

LOWEST RESPONSIBLE BIDDER

483309/EXP.11/30/2013

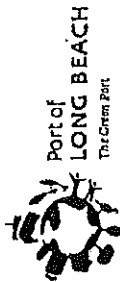
LICENSE NUMBER

\$25,200,000.00

AMOUNT

AUTHORIZED SIGNATURE





Port of  
LONG BEACH  
The Green Port

# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J246-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc. 12260 Camino Santa Fe #A San Diego, CA 92121 Phone: (619) 535-0505 Fax: (619) 535-0738	Shimick Construction Company 3201 Edgewater Drive Oakland, CA 94618 Phone: (949) 333-1500 Fax: (949) 333-1510	Sully-Miller Contracting Company 135 E. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9900 Fax: (714) 445-8775	The Ryan Company 16 Commerce Way Norton, MA 02706 Phone: (508) 742-2500 Fax: (508) 742-2540	Griffith/Rosendin JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 329-1123 Fax: (562) 864-7033
ITEM NO. 11 - 3/4-inch Crushed Rock: Furnish all labor, materials, tools, equipment, and incidentals necessary to load, transport, stockpile, place, compact and grade approximately two thousand five hundred (2,500) tons... for the unit price per ton of -	Unit Price	25.00	40.00	50.20	25.50	27.00
ITEM NO. 12 - Disposal of Non-Hazardous Waste: Furnish all labor, materials, tools, equipment, and incidentals necessary to profile, load, transport... approximately thirteen thousand four hundred (13,400) tons... for the unit price per ton of -	Unit Price	10.00	45.00	25.75	43.80	42.50
ITEM NO. 13 - Crushed Miscellaneous Base from Port Crusher Site: Furnish all labor, materials, tools, equipment, and incidentals necessary to load, weigh... approximately five thousand six hundred eighty (5,680) tons... for the unit price per ton of -	Unit Price	40.00	18.00	37.50	24.10	30.80
ITEM NO. 14 - Furnish and Place Pavement Striping: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and place 4-inch wide pavement striping complete as specified, for the unit price per linear foot of -	Unit Price	2.00	1.00	0.85	1.21	0.80
ITEM NO. 15 - Furnish and Place Pavement Markings: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and place pavement markings, complete as specified, for the unit price per square foot of -	Unit Price	6.00	3.00	2.55	3.02	2.40
TOTAL:						
CERTIFIED CHECK OR BOND:						

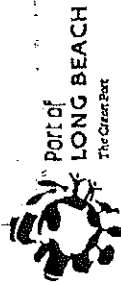
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

433309/EXP.11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

*[Signature]*  
AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 4 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit

at Pier J, Berths J245-J247 and J265-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.		Shimlick Construction Company		Sully-Miller Contracting Company		The Ryan Company		Griffin-Rosenfeld JV	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 16 - Furnish and Place Chain Link Fence and Gates: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and place permanent chain link fence and gates including all footings, chain... for the lump sum price of -	Lump Sum	60,000.00	60,000.00	35,000.00	35,000.00	292,631.00	292,631.00	72,300.00	72,300.00	35,000.00	35,000.00
ITEM NO. 17 - Steel Guard Posts: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and install ninety-five (95) steel guard posts, fixed and removable, including concrete footings... for the unit price per each of -	Unit Price	1,400.00	133,000.00	1,200.00	114,000.00	1,785.00	165,575.00	1,566.35	148,803.25	1,470.00	139,650.00
ITEM NO. 18 - Shore Power Outlet Vaults for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, materials, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	400,000.00	400,000.00	550,000.00	550,000.00	815,045.00	815,045.00	248,506.00	248,506.00	845,000.00	845,000.00
ITEM NO. 19 - Shore Power Outlet Vaults for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, materials, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	500,000.00	500,000.00	450,000.00	450,000.00	496,428.00	496,428.00	95,546.00	95,546.00	516,000.00	516,000.00
ITEM NO. 20 - Shore Power Outlet Vaults for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals necessary to perform demolition and construction of shore to... for the lump sum price of -	Lump Sum	580,000.00	580,000.00	750,000.00	750,000.00	969,828.00	969,828.00	283,187.00	283,187.00	750,000.00	750,000.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

Helix Electric, Inc.

LOWEST RESPONSIBLE BIDDER

483309/EXP.11/30/2013

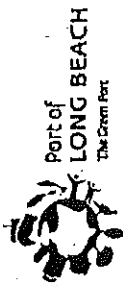
LICENSE NUMBER

\$25,200,000.00

AMOUNT

AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit at Pier J, Berths J245-J247 and J266-J270  
NO. HD-S2341  
DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.			Shimnick Construction Company			Sully-Miller Contracting Company			The Ryan Company			Griffith/Rosenfeld JV		
		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 21 - Shore Power Outlets for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, materials, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	550,000.00	550,000.00		500,000.00	500,000.00		681,001.00	681,001.00		218,699.00	218,699.00		630,000.00	630,000.00	
ITEM NO. 22 - Transformer(s) for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a complete system... for the lump sum price of -	Lump Sum	600,000.00	600,000.00		600,000.00	600,000.00		617,070.00	617,070.00		641,584.00	641,584.00		595,348.00	595,348.00	
ITEM NO. 23 - Transformer(s) for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a complete system... for the lump sum price of -	Lump Sum	600,000.00	600,000.00		600,000.00	600,000.00		617,070.00	617,070.00		641,584.00	641,584.00		595,348.00	595,348.00	
ITEM NO. 24 - Transformer(s) for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, materials, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a... for the lump sum price of -	Lump Sum	600,000.00	600,000.00		600,000.00	600,000.00		617,070.00	617,070.00		641,584.00	641,584.00		595,348.00	595,348.00	
ITEM NO. 25 - Transformer(s) for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a complete... for the lump sum price of -	Lump Sum	600,000.00	600,000.00		600,000.00	600,000.00		617,070.00	617,070.00		641,584.00	641,584.00		595,348.00	595,348.00	
TOTAL:																
CERTIFIED CHECK OR BOND:																

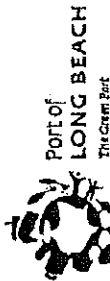
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/Exp.11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

*[Signature]*  
AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.		Shimnick Construction Company		Suby-Miller Contracting Company		The Ryan Company		Griffith/Rosendin JV	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 26 - Switchgear Assembly(s) for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a... for the lump sum price of -	Lump Sum	1,112,440.00	1,112,440.00	1,950,000.00	1,950,000.00	2,257,118.00	2,257,118.00	1,983,333.00	1,983,333.00	1,803,184.00	1,803,184.00
ITEM NO. 27 - Switchgear Assembly(s) for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a complete... for the lump sum price of -	Lump Sum	1,000,000.00	1,000,000.00	2,000,000.00	2,000,000.00	2,180,872.00	2,180,872.00	1,983,333.00	1,983,333.00	1,839,885.00	1,839,885.00
ITEM NO. 28 - Switchgear Assembly(s) for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as... for the lump sum price of -	Lump Sum	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,313,947.00	2,313,947.00	1,983,333.00	1,983,333.00	1,852,170.00	1,852,170.00
ITEM NO. 29 - Switchgear Assembly(s) for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a... for the lump sum price of -	Lump Sum	2,200,000.00	2,200,000.00	2,190,000.00	2,190,000.00	2,380,942.00	2,380,942.00	1,983,333.00	1,983,333.00	2,028,687.00	2,028,687.00
ITEM NO. 30 - Switchgear Assembly(s) for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a... for the lump sum price of -	Lump Sum	1,500,000.00	1,500,000.00	2,000,000.00	2,000,000.00	1,014,160.00	1,014,160.00	1,146,820.00	1,146,820.00	1,150,000.00	1,150,000.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

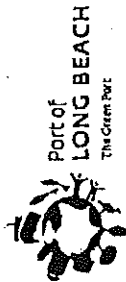
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/EXP. 11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 7 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J286-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc. 8250 Camino Santa Fe #A San Diego, CA 92121 Phone: (619) 535-0505 Fax: (619) 535-0738	Shimmick Construction Company 8201 Edgewater Drive Oakland, CA 94618 Phone: (949) 333-1500 Fax: (949) 333-1510	Sully-Miller Contracting Company 135 E. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9600 Fax: (714) 443-5775	The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540	Griffith/Rosendin JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 929-1128 Fax: (562) 964-7938
ITEM NO. 31 - Ductbank and Raceways for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the ductbanks and raceways as part of a complete... for the lump sum price of -	Lump Sum	1,500,000.00	1,000,000.00	814,440.00	928,874.00	1,150,000.00
ITEM NO. 32 - Ductbank and Raceways for Berth J248 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the ductbanks and raceways as... for the lump sum price of -	Lump Sum	2,000,000.00	1,800,000.00	1,278,178.00	1,835,453.00	1,320,000.00
ITEM NO. 33 - Ductbank and Raceways for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the ductbanks and raceways as part of... for the lump sum price of -	Lump Sum	1,500,000.00	1,300,000.00	1,175,073.00	1,066,532.00	1,330,000.00
ITEM NO. 34 - Conductors for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system as... for the lump sum price of -	Lump Sum	400,000.00	550,000.00	637,918.00	556,501.00	604,784.00
ITEM NO. 35 - Conductors for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system as specified... for the lump sum price of -	Lump Sum	200,000.00	400,000.00	451,610.00	400,827.00	457,211.00
TOTAL:						
CERTIFIED CHECK OR BOND:						

Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/EXP.11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 8 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.		Shimmitz Construction Company		Sully-Miller Contracting Company		The Ryan Company		Griffith/Rosenfield JV	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 35 - Conductors for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system... for the lump sum price of -	Lump Sum	500,000.00	500,000.00	800,000.00	800,000.00	887,968.00	887,968.00	813,159.00	813,159.00	756,811.00	756,811.00
ITEM NO. 37 - Conductors for Berth J270 (SPO 15, SPO 17, SPO 18, SPO 20); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system... for the lump sum price of -	Lump Sum	400,000.00	400,000.00	650,000.00	650,000.00	852,670.00	852,670.00	788,446.00	788,446.00	631,055.00	631,055.00
ITEM NO. 38 - SPO Assemblies for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete system... for the lump sum price of -	Lump Sum	150,000.00	150,000.00	175,000.00	175,000.00	138,722.00	138,722.00	442,719.00	442,719.00	390,978.00	390,978.00
ITEM NO. 39 - SPO Assemblies for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete system... for the lump sum price of -	Lump Sum	100,000.00	100,000.00	175,000.00	175,000.00	173,403.00	173,403.00	354,175.00	354,175.00	475,401.00	475,401.00
ITEM NO. 40 - SPO Assemblies for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete system... for the lump sum price of -	Lump Sum	170,000.00	170,000.00	175,000.00	175,000.00	208,083.00	208,083.00	531,262.00	531,262.00	559,717.00	559,717.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483303/Exp.11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

AUTHORIZED SIGNATURE





Port of  
LONG BEACH  
The Great Port

# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.		Shimnick Construction Company		Sully-Miller Contracting Company		The Ryan Company		Griffith/Rosendin JV	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 41 - SPO Assemblies for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20); Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete... for the lump sum price of -	Lump Sum	150,000.00	150,000.00	175,000.00	175,000.00	173,403.00	173,403.00	442,719.00	442,719.00	475,401.00	475,401.00
ITEM NO. 42 - All Other Electrical Work for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5); Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work for Berth... for the lump sum price of -	Lump Sum	150,000.00	150,000.00	300,000.00	300,000.00	197,569.00	197,569.00	127,595.00	127,595.00	1.00	1.00
ITEM NO. 43 - All Other Electrical Work for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9); Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work for Berth J247 as... for the lump sum price of -	Lump Sum	150,000.00	150,000.00	250,000.00	250,000.00	167,008.00	167,008.00	220,414.00	220,414.00	1.00	1.00
ITEM NO. 44 - All Other Electrical Work for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15); Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work... for the lump sum price of -	Lump Sum	150,000.00	150,000.00	275,000.00	275,000.00	195,201.00	195,201.00	247,849.00	247,849.00	1.00	1.00
ITEM NO. 45 - All Other Electrical Work for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20); Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work for... for the lump sum price of -	Lump Sum	150,000.00	150,000.00	250,000.00	250,000.00	167,008.00	167,008.00	127,595.00	127,595.00	1.00	1.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/EXP. 11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

*[Signature]*  
AUTHORIZED SIGNATURE



## ANALYSIS OF BIDS

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Helix Electric, Inc.		Shimnick Construction Company		Sully-Miller Contracting Company		The Ryan Company		Griffith-Rosenfield JV	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 46 - All Other Work: Furnish all labor, materials, tools, equipment, and incidentals necessary to perform all other work not included in the other Bid Items as indicated in Paragraph SC-22 of the Special Conditions for the lump sum price of:-	Lump Sum	200,000.00	200,000.00	0	0	530,999.00	530,999.00	3,142,993.00	3,142,993.00	4,310,000.00	4,310,000.00
ITEM NO. 47 - Extended Contractor Overhead: Furnish all labor, material, tools, equipment, and incidentals necessary to complete the work beyond the initial Contract Time due to Excusable Compensable Delays as indicated... for the unit price per day of -	Unit Price	1,000.00	60,000.00	1,500.00	90,000.00	144.00	8,640.00	3,137.70	188,262.00	1,145.00	88,700.00
ITEM NO. 48 - Standby Time: Period of time during which work is interrupted and the Contractor shall hold Contractor's labor personnel and equipment in a state of readiness as indicated in Paragraph SC-30 of the... for the unit price per man hour of -	Unit Price	80.00	240,000.00	60.00	240,000.00	172.00	688,000.00	80.50	322,000.00	72.50	290,000.00
ITEM NO. 49 - Commissioning for Berths J245-J247: Furnish all labor, materials, tools, equipment, and incidentals necessary to commission Berths J245-J247 complete as specified in Section 16999 "Commissioning" for the unit price per man hour of -	Unit Price	200.00	200,000.00	400.00	400,000.00	358.00	358,000.00	132.54	132,540.00	237.91	237,910.00
ITEM NO. 50 - Commissioning for Berths J266-J270: Furnish all labor, materials, tools, equipment, and incidentals necessary to commission Berths J266-J270 complete as specified in Section 16999 "Commissioning" for the unit price per man hour of -	Unit Price	200.00	200,000.00	400.00	400,000.00	358.00	358,000.00	132.54	132,540.00	237.91	237,910.00
TOTAL:		\$235,200,000.00		\$28,485,080.00		\$28,891,481.00		\$28,290,225.10		\$31,333,185.00	
CERTIFIED CHECK OR BOND:		10% Bond		10% Bond		10% Bond		10% Bond		10% Bond	

**Helix Electric, Inc.**

**LOWEST RESPONSIBLE BIDDER**

483309/Exp.11/30/2013

**LICENSE NUMBER**

**\$25,200,000.00**

AMOUNT

**AUTHORIZED SIGNATURE**





Port of  
LONG BEACH  
The Great Port

# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 11 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Dynalectric			Comet Electric, Inc.								
		RATE	AMOUNT		RATE	AMOUNT							
ITEM NO. 1 - Progress Schedule: Furnish all labor, materials, tools, equipment, and incidentals necessary to prepare, furnish, update, revise and maintain the cost and resource loaded scheduling... for the lump sum price (minimum amount of \$25,000) of -	Lump Sum	192,500.00	192,500.00		99,324.00	99,324.00							
ITEM NO. 2 - Site Specific Safety Plan: Furnish all labor, materials, tools, equipment, and incidentals necessary to develop, submit, implement and maintain a Site Specific Safety Plan, including... for the lump sum price (minimum amount of \$30,000) of -	Lump Sum	34,000.00	34,000.00		33,330.00	33,330.00							
ITEM NO. 3 - Furnish and Place Temporary K-Rail and Chain Link Fence: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish, place, move, relocate, store, remove and dispose of temporary K-Rail... for the lump sum price of -	Lump Sum	309,500.00	309,500.00		77,770.00	77,770.00							
ITEM NO. 4 - Mobilization/Demobilization: Furnish all labor, materials, tools, equipment, and incidentals necessary for Mobilization and Demobilization as specified and shown for the lump sum price (fixed amount of \$1,200) of -	Lump Sum	1,200,000.00	1,200,000.00		1,200,000.00	1,200,000.00							
ITEM NO. 5 - Intern Demobilization/Demobilization: Furnish all labor, materials, tools, equipment and incidentals necessary to temporarily demobilize from the above-wharf work area, including temporary... for the unit price per each combined event of -	Unit Price	5,000.00	75,000.00		15,000.00	225,000.00							
TOTAL:													
CERTIFIED CHECK OR BOND:													

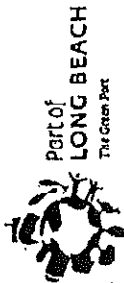
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/EXP.11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

DATE OPENED: February 7, 2012

NO. HD-S2341

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

ESTIMATED QUANTITIES		Dynalectric		Comet Electric, Inc.							
ITEM		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 6 - Storm Water Pollution Prevention Plan(s) (SWPPP) Development and Compliance; Furnish all labor, materials, tools, equipment, and incidentals necessary to develop, provide, monitor... for the lump sum price (minimum amount of \$150,000) of -	Lump Sum	316,300.00	316,300.00	166,650.00	166,650.00						
ITEM NO. 7 - City Ordinance Construction Waste Management Plan; Furnish all labor, material, tools, equipment, logistics, forms, and incidentals necessary... (exclusive of the maximum \$50,000 deposit) for the lump sum price (minimum amount of \$5,000) of -	Lump Sum	5,700.00	5,700.00	73,215.00	73,215.00						
ITEM NO. 8 - Soil Handling and Disposal, Non-Hazardous Waste; Furnish all labor, materials, tools, equipment, and incidentals necessary to excavate, stockpile... approximately seventeen-thousand six-hundred (17,500) tons... for the unit price per ton of -	Unit Price	28.15	236,460.00	28.33	237,872.00						
ITEM NO. 9 - Shoring for Excavation; Furnish all labor, materials, tools, equipment, and incidentals necessary to design, place, maintain, move, and remove excavation shoring adequate for worker... for the lump sum price (minimum amount of \$30,000) of -	Lump Sum	287,000.00	287,000.00	122,390.00	122,390.00						
ITEM NO. 10 - Import Soil; Furnish all labor, material, tools, equipment, and incidentals necessary to test, certify, load, transport, stockpile, place... approximately six thousand eight hundred ten (6,810) tons... for the unit price per ton of -	Unit Price	42.78	291,331.80	45.33	308,697.30						
TOTAL:											
CERTIFIED CHECK OR BOND:											

\$25,200,000.00  
AMOUNT

483309/Exp. 11/30/2013  
LICENSE NUMBER

Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 13 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM		ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 11 - 3/4-inch Crushed Rock: Furnish all labor, materials, tools, equipment, and incidentals necessary to load, transport, stockpile, place, compact and grade approximately two thousand five hundred (2,500) tons... for the unit price per ton of -		Unit Price	90.06	225,150.00	28.33	70,825.00				
ITEM NO. 12 - Disposal of Non-Hazardous Waste: Furnish all labor, materials, tools, equipment, and incidentals necessary to profile, load, transport... approximately thirteen thousand four hundred (13,400) tons... for the unit price per ton of -		Unit Price	93.48	1,252,632.00	65.73	880,782.00				
ITEM NO. 13 - Crushed Miscellaneous Base from Port Crusher Site: Furnish all labor, materials, tools, equipment, and incidentals necessary to load, weigh... approximately five thousand six hundred eighty (5,680) tons... for the unit price per ton of -		Unit Price	31.51	176,976.80	47.50	270,388.00				
ITEM NO. 14 - Furnish and Place Pavement Stripping: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and place 4-inch wide pavement stripping complete as specified, for the unit price per linear foot of -		Unit Price	3.38	20,280.00	0.57	3,420.00				
ITEM NO. 15 - Furnish and Place Pavement Markings: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and place pavement markings, complete as specified, for the unit price per square foot of -		Unit Price	4.50	27,000.00	3.31	19,890.00				
TOTAL:										
CERTIFIED CHECK OR BOND:										

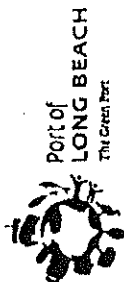
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/Exp. 11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

*[Signature]*  
AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

DATE OPENED: February 7, 2012

NO. HD-S2341

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J256-J270

ITEM	ESTIMATED QUANTITIES	Dynalectric		Comel Electric, Inc.	
		RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 18 - Furnish and Place Chain Link Fence and Gates; Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and place permanent chain link fence and gates including all footings, chain... for the lump sum price of -	Lump Sum	29,720.00	29,720.00	31,413.00	31,413.00
ITEM NO. 17 - Steel Guard Posts: Furnish all labor, materials, tools, equipment, and incidentals necessary to furnish and install ninety-five (95) steel guard posts, fixed and removable, including concrete footings... for the unit price per each of -	Unit Price	1,687.47	160,309.65	1,784.82	169,557.90
ITEM NO. 18 - Shore Power Outlet Vaults for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	557,250.00	557,250.00	879,322.00	879,322.00
ITEM NO. 19 - Shore Power Outlet Vaults for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	457,200.00	457,200.00	704,410.00	704,410.00
ITEM NO. 20 - Shore Power Outlet Vaults for Berth J256 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	686,700.00	686,700.00	1,187,501.00	1,187,501.00
TOTAL:					
CERTIFIED CHECK OR BOND:					

483309/EXP.11/30/2013

483309/EXP.11/30/2013

Heilix Electric, Inc.

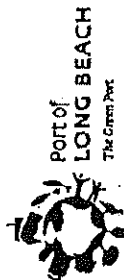
LOWEST RESPONSIBLE BIDDER

\$25,200,000.00

AMOUNT

AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 15 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J255-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Dynalectric			Comet Electric, Inc.		
		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 21 - Shore Power Outlets for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals necessary to perform demolition and construction of shore to ship power... for the lump sum price of -	Lump Sum	580,000.00	580,000.00		994,741.00	994,741.00	
ITEM NO. 22 - Transformer(s) for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a complete system... for the lump sum price of -	Lump Sum	650,000.00	650,000.00		630,000.00	630,000.00	
ITEM NO. 23 - Transformer(s) for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a complete system... for the lump sum price of -	Lump Sum	650,000.00	650,000.00		630,000.00	630,000.00	
ITEM NO. 24 - Transformer(s) for Berth J256 (SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a... for the lump sum price of -	Lump Sum	650,000.00	650,000.00		630,000.00	630,000.00	
ITEM NO. 25 - Transformer(s) for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the transformer(s) as part of a complete... for the lump sum price of -	Lump Sum	650,000.00	650,000.00		630,000.00	630,000.00	
TOTAL:							
CERTIFIED CHECK OR BOND:							

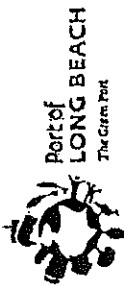
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/EXP. 11/30/2013  
LICENSE NUMBER

525,200,000.00  
AMOUNT

*[Signature]*  
AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J285-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Dynalectrics			Cornel Electric, Inc.								
		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 26 - Switchgear Assembly(s) for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a... for the lump sum price of -	Lump Sum	1,992,000.00	1,992,000.00		2,150,000.00	2,150,000.00		2,150,000.00	2,150,000.00				
ITEM NO. 27 - Switchgear Assembly(s) for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a complete... for the lump sum price of -	Lump Sum	2,032,000.00	2,032,000.00		2,163,000.00	2,163,000.00		2,163,000.00	2,163,000.00				
ITEM NO. 28 - Switchgear Assembly(s) for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as... for the lump sum price of -	Lump Sum	2,045,300.00	2,045,300.00		2,244,000.00	2,244,000.00		2,244,000.00	2,244,000.00				
ITEM NO. 29 - Switchgear Assembly(s) for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the switchgear assembly as part of a... for the lump sum price of -	Lump Sum	2,235,400.00	2,235,400.00		2,519,000.00	2,519,000.00		2,519,000.00	2,519,000.00				
ITEM NO. 30 - Ductbank and Raceways for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install and test the ductbanks and raceways as part of a... for the lump sum price of -	Lump Sum	1,920,500.00	1,920,500.00		1,929,000.00	1,929,000.00		1,929,000.00	1,929,000.00				
TOTAL:													
CERTIFIED CHECK OR BOND:													

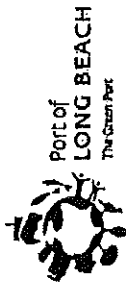
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309EXP.11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

AUTHORIZED SIGNATURE





ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 17 of 20

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Dynalectric		Cornel Electric, Inc.									
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 31 - Ductbank and Raceways for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the ductbanks and raceways as part of a complete... for the lump sum price of -	Lump Sum	774,500.00	774,500.00	1,723,000.00	1,723,000.00	1,723,000.00	1,723,000.00						
ITEM NO. 32 - Ductbank and Raceways for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the ductbanks and raceways as... for the lump sum price of -	Lump Sum	2,857,500.00	2,857,500.00	3,008,000.00	3,008,000.00	3,008,000.00	3,008,000.00						
ITEM NO. 33 - Ductbank and Raceways for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the ductbanks and raceways as part of... for the lump sum price of -	Lump Sum	1,234,500.00	1,234,500.00	2,897,000.00	2,897,000.00	2,897,000.00	2,897,000.00						
ITEM NO. 34 - Conductors for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system as... for the lump sum price of -	Lump Sum	519,250.00	519,250.00	627,000.00	627,000.00	627,000.00	627,000.00						
ITEM NO. 35 - Conductors for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system as specified... for the lump sum price of -	Lump Sum	371,200.00	371,200.00	460,000.00	460,000.00	460,000.00	460,000.00						
TOTAL:													
CERTIFIED CHECK OR BOND:													

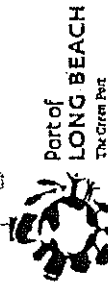
Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/EXP-11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

NO. HD-S2341

DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Dynaslectric		Comet Electric, Inc.									
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 38 - Conductors for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system... for the lump sum price of -	Lump Sum	766,400.00	766,400.00	977,000.00	977,000.00								
ITEM NO. 37 - Conductors for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the conductor(s) as part of a complete system... for the lump sum price of -	Lump Sum	633,725.00	633,725.00	822,000.00	822,000.00								
ITEM NO. 36 - SPO Assemblies for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete system... for the lump sum price of -	Lump Sum	168,200.00	168,200.00	638,000.00	638,000.00								
ITEM NO. 35 - SPO Assemblies for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete system... for the lump sum price of -	Lump Sum	150,600.00	150,600.00	392,000.00	392,000.00								
ITEM NO. 40 - SPO Assemblies for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a... for the lump sum price of -	Lump Sum	230,800.00	230,800.00	596,000.00	596,000.00								
TOTAL:													
CERTIFIED CHECK OR BOND:													

Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER

483309/Exp. 11/30/2013  
LICENSE NUMBER

\$25,200,000.00  
AMOUNT

*[Signature]*  
AUTHORIZED SIGNATURE





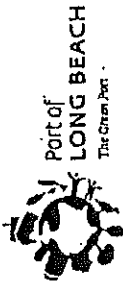
ANALYSIS OF BIDS  
CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270  
NO. HD-S2341  
DATE OPENED: February 7, 2012

ITEM	ESTIMATED QUANTITIES	Dynalectric			Connet Electric, Inc.		
		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 41 - SPO Assemblies for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test the SPO assemblies as part of a complete... for the lump sum price of -	Lump Sum	192,400.00	192,400.00		489,000.00	489,000.00	
ITEM NO. 42 - All Other Electrical Work for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5): Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work for Berth... for the lump sum price of -	Lump Sum	265,250.00	265,250.00		162,000.00	162,000.00	
ITEM NO. 43 - All Other Electrical Work for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9): Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work for Berth J247 as... for the lump sum price of -	Lump Sum	151,050.00	151,050.00		162,000.00	162,000.00	
ITEM NO. 44 - All Other Electrical Work for Berth J266 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15): Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work... for the lump sum price of -	Lump Sum	183,000.00	183,000.00		154,000.00	154,000.00	
ITEM NO. 45 - All Other Electrical Work for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20): Provide all labor, material, equipment, and incidentals required to furnish, install, and test all other electrical work for... for the lump sum price of -	Lump Sum	159,000.00	159,000.00		176,000.00	176,000.00	
TOTAL:							
CERTIFIED CHECK OR BOND:							

Helix Electric, Inc.  
LOWEST RESPONSIBLE BIDDER  
483309/EXP.11/30/2013  
LICENSE NUMBER  
\$25,200,000.00  
AMOUNT  
AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

DATE OPENED: February 7, 2012

NO. HD-S2341

SPECIFICATIONS FOR: Shore to Ship Power Retrofit  
at Pier J, Berths J245-J247 and J266-J270

ITEM	ESTIMATED QUANTITIES	Dynalectric		Comet Electric, Inc.							
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 46 - All Other Work: Furnish all labor, materials, tools, equipment, and incidentals necessary to perform all other work not included in the other Bid Items as indicated in Paragraph SC-22 of the Special Conditions for the lump sum price of -	Lump Sum	2,928,804.00	2,928,804.00	12,533.00	12,533.00						
ITEM NO. 47 - Extended Contractor Overhead: Furnish all labor, material, tools, equipment, and incidentals necessary to complete the work beyond the initial Contract Time due to Excusable Compensable Delays as indicated... for the unit price per day of -	Unit Price	1,125.67	57,600.20	5,743.00	404,580.00						
ITEM NO. 48 - Standby Time: Period of time during which work is interrupted and the Contractor shall hold Contractor's labor personnel and equipment in a state of readiness as indicated in Paragraph SC-30 of the... for the unit price per man hour of -	Unit Price	305.79	1,227,150.00	800.00	3,200,000.00						
ITEM NO. 49 - Commissioning for Berths J245-J247: Furnish all labor, materials, tools, equipment, and incidentals necessary to commission Berths J245-J247 complete as specified in Section 16599 "Commissioning" for the unit price per man hour of -	Unit Price	268.50	268,500.00	269.00	269,000.00						
ITEM NO. 50 - Commissioning for Berths J266-J270: Furnish all labor, materials, tools, equipment, and incidentals necessary to commission Berths J266-J270 complete as specified in Section 16599 "Commissioning" for the unit price per man hour of -	Unit Price	268.50	268,500.00	269.00	269,000.00						
TOTAL:											
CERTIFIED CHECK OR BOND:											

Helix Electric, Inc.

483309/EXP.11/30/2013

10% Bond

LOWEST RESPONSIBLE BIDDER

AMOUNT

\$25,220,000.00

AUTHORIZED SIGNATURE



RECEIVED  
P.O.L.B. FINANCE  
15 APR 22 AM 11:23  
ACCTS PAYABLE

Progress Payment No. 27

Period Ending: 4/15/2015

PAYMENT DUE: 5/5/15

Specification: HD-S3341 - Shore to Ship Power Retrofit at Pier J, Berths J245-J247 and J266 - J270.

Contractor: Helix Electric, Inc.

LBHD Contract No: HD-7972

Item No.	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	J245 \$ Amount This Month	J247 \$ Amount This Month	J266 \$ Amount This Month	J270 \$ Amount This Month	Previous Qty or %	Total % of Item Comp	TOTAL Amount to Date
TOTALS	TOTAL CHANGE ORDERS			\$ 1,102,766.75	\$ 25,200,000.00	0%	\$ 3,467.00	\$ 3,467.00	\$ 43,592.73	\$ 43,592.73	99.67%	100.00%	\$ 25,200,000.00
NEW CONTRACT AMOUNT 25,200,000.00													

THIS IS TO CERTIFY THAT FUNDS ARE APPROVED  
BY BOARD OF HARBOR COMMISSIONERS.

4/17/15

MS  
GM Initials

*Deepen Upadhyay*

Deepen Upadhyay  
Project Manager

Date

4/9/15

*Suzanne C. Pleda*

Suzanne C. Pleda, P.E.  
Director of Construction Management

Date

Gross Earnings:	\$ 28,303,766.75
Previous Payments:	\$ 28,120,994.69
Previous Retention:	\$ (80,672.61)
Earned This Period:	\$ 93,999.45
Less Retention: E	\$ (4,699.67)
AMOUNT DUE THIS ESTIMATE:	\$ 89,259.48

DPHA15003141  
DPHA15003145 *eevaw*

EPO No.	INDEX CODE	PROJ	PROJ DET	Subjct Code	Amount	Retention	Pay Amount
BPNA1202074	HACJCMCN	H41316	112341	21020	\$ 93,999.45	\$ (4,699.67)	\$ 89,259.48

RECEIVED BY DEEPEEN UPADHYAY  
ON 4/16/15.



Progress Payment No. Z7  
Period Ending: 1/15/2015  
PAYMENT DUE: 5/6/15  
Specification: HD-52341 - Shore to Ship Power Retrofit at Pier J, Berths J245-J247 and J266 - J270.  
Contractor: Holix Electric, Inc.

LBHD Contract No: HD-7872

Item No. Item		Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	J245 \$ Amount This Month	J247 \$ Amount This Month	J266 \$ Amount This Month	J270 \$ Amount This Month	Previous Qty or %	Total % of Item Comp	\$ TOTAL Amount to Date
Original Bid Amt: \$25,200,000													
1	Progress Schedules	Lump Sum	1	100,000.00	100,000.00	0%	-	-	-	-	100%	100%	100,000.00
2	Site Specific Safety Plan	Lump Sum	1	150,000.00	150,000.00	0%	-	-	-	-	100%	100%	150,000.00
3	Furnish and Place Temporary K-Rail and Chain Link Fence	Lump Sum	1	1,400,000.00	1,400,000.00	0%	-	-	-	-	100%	100%	1,400,000.00
4	Mobilization/Demobilization	Lump Sum	1	1,200,000.00	1,200,000.00	0%	-	-	-	-	100%	100%	1,200,000.00
5	Interim Demobilization/Remobilization	Unit Price	15	9,000.00	135,000.00	0%	-	-	-	-	100%	100%	135,000.00
6	Shore Water Pollution Prevention Plan(s) (SPP) Development and Compliance	Lump Sum	1	300,000.00	300,000.00	0%	-	-	-	-	100%	100%	300,000.00
7	City Ordinance Construction Waste Separation and	Lump Sum	1	10,000.00	10,000.00	0%	-	-	-	-	100%	100%	10,000.00
8	Soil Handling and Disposal, Non-Hazardous Waste	Unit Price	8,400	12.00	100,800.00	-	-	-	-	-	100%	100%	100,800.00
9	Shoring for Excavations	Lump Sum	1	150,000.00	150,000.00	0%	-	-	-	-	100%	100%	150,000.00
10	Import Soil	Unit Price	9,810	26.00	177,060.00	-	-	-	-	-	100%	100%	177,060.00
11	3/4-inch Crushed Rock	Unit Price	2,500	25.00	62,500.00	-	-	-	-	-	100%	100%	62,500.00
12	Disposal of Non-Hazardous Waste	Unit Price	13,400	10.00	134,000.00	-	-	-	-	-	100%	100%	134,000.00
13	Crushed Miscellaneous Base from Port Channel Site	Unit Price	5,680	40.00	227,200.00	-	-	-	-	-	100%	100%	227,200.00
14	Furnish and Place Pavement Striping	Unit Price	6000	2.00	12,000.00	-	-	-	-	-	100%	100%	12,000.00
15	Furnish and Place Pavement Markings	Unit Price	6000	6.00	36,000.00	-	-	-	-	-	100%	100%	36,000.00
16	Furnish and Place Chain Link Fence and Gates	Lump Sum	1	60,000.00	60,000.00	0%	-	-	-	-	100%	100%	60,000.00
17	Steel Guard Posts	Unit Price	95	1,400.00	133,000.00	-	-	-	-	-	100%	100%	133,000.00
18	Shore Power Outlet Vaults for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	400,000.00	400,000.00	0%	-	-	-	-	100%	100%	400,000.00
19	Shore Power Outlet Vaults for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	500,000.00	500,000.00	0%	-	-	-	-	100%	100%	500,000.00
20	Shore Power Outlet Vaults for Berth J256 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	550,000.00	550,000.00	0%	-	-	-	-	100%	100%	550,000.00
21	Shore Power Outlet Vaults for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	550,000.00	550,000.00	0%	-	-	-	-	100%	100%	550,000.00
22	Transformer(s) for Berth J246 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	600,000.00	600,000.00	0%	-	-	-	-	100%	100%	600,000.00
23	Transformer(s) for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	600,000.00	600,000.00	0%	-	-	-	-	100%	100%	600,000.00



Progress Payment No. 27

Period Ending: 1/15/2015

PAYMENT DUE: 5/6/15

Specification: HD-S241 - Shore to Ship Power Retrofit at Pier J, Berths J245-J247 and J265 - J270.

Contractor: Helix Electric, Inc.

LBHD Contract No: HD-7972

Original Bid Amt: \$25,200,000

Item No.	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	J245 \$ Amount This Month	J247 \$ Amount This Month	J265 \$ Amount This Month	J270 \$ Amount This Month	Previous Qty or %	Total % of Item Comp	\$ TOTAL Amount to Date
24	Transformer(s) for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	800,000.00	800,000.00	0%	N/A	N/A	-	N/A	100%	100%	800,000.00
25	Transformers for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	800,000.00	800,000.00	0%	N/A	N/A	N/A	-	100%	100%	800,000.00
26	Switchgear Assembly(s) for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	1,112,440.00	1,112,440.00	0%	-	N/A	N/A	N/A	100%	100%	1,112,440.00
27	Switchgear Assembly(s) for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	1,000,000.00	1,000,000.00	0%	N/A	-	N/A	N/A	100%	100%	1,000,000.00
28	Switchgear Assembly(s) for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	2,000,000.00	2,000,000.00	0%	N/A	N/A	-	N/A	100%	100%	2,000,000.00
29	Switchgear Assembly(s) for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	2,200,000.00	2,200,000.00	0%	N/A	N/A	N/A	-	100%	100%	2,200,000.00
30	Ductbank and Raceways for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	1,500,000.00	1,500,000.00	0%	-	N/A	N/A	N/A	100%	100%	1,500,000.00
31	Ductbank and Raceways for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	1,500,000.00	1,500,000.00	0%	N/A	-	N/A	N/A	100%	100%	1,500,000.00
32	Ductbank and Raceways for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	2,000,000.00	2,000,000.00	0%	N/A	N/A	-	N/A	100%	100%	2,000,000.00
33	Ductbank and Raceways for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	1,500,000.00	1,500,000.00	0%	N/A	N/A	N/A	-	100%	100%	1,500,000.00
34	Conductors for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	400,000.00	400,000.00	0%	-	N/A	N/A	N/A	100%	100%	400,000.00
35	Conductors for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	200,000.00	200,000.00	0%	N/A	-	N/A	N/A	100%	100%	200,000.00
36	Conductors for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	500,000.00	500,000.00	0%	N/A	N/A	-	N/A	100%	100%	500,000.00
37	Conductors for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	400,000.00	400,000.00	0%	N/A	N/A	-	N/A	100%	100%	400,000.00
38	SPO Assemblies for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	150,000.00	150,000.00	0%	-	N/A	N/A	-	100%	100%	150,000.00
39	SPO Assemblies for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	100,000.00	100,000.00	0%	N/A	-	N/A	N/A	100%	100%	100,000.00
40	SPO Assemblies for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	170,000.00	170,000.00	0%	N/A	N/A	-	N/A	100%	100%	170,000.00
41	SPO Assemblies for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	150,000.00	150,000.00	0%	N/A	N/A	-	N/A	100%	100%	150,000.00
42	All Other Electrical Work for Berth J245 (SPO 1, SPO 2, SPO 3, SPO 4, SPO 5)	Lump Sum	1	150,000.00	150,000.00	0%	-	N/A	N/A	-	100%	100%	150,000.00
43	All Other Electrical Work for Berth J247 (SPO 6, SPO 7, SPO 8, SPO 9)	Lump Sum	1	150,000.00	150,000.00	0%	N/A	-	N/A	N/A	100%	100%	150,000.00
44	All Other Electrical Work for Berth J265 (SPO 10, SPO 11, SPO 12, SPO 13, SPO 14, SPO 15)	Lump Sum	1	150,000.00	150,000.00	0%	N/A	N/A	-	N/A	100%	100%	150,000.00
45	All Other Electrical Work for Berth J270 (SPO 16, SPO 17, SPO 18, SPO 19, SPO 20)	Lump Sum	1	150,000.00	150,000.00	0%	N/A	N/A	N/A	-	100%	100%	150,000.00



Progress Payment No. 27  
 Period Ending: 1/15/2015  
 PAYMENT DUE: 5/6/15  
 Specification: HD-S2341 - Shores to Ship Power Retrofit at Pier J, Berths J245-J247 and J266 - J270.  
 Contractor: Halix Electric, Inc.

LBHD Contract No: HD-7972													
Original Bid Amt: \$25,200,000													
Item	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	J245 \$ Amount This Month	J247 \$ Amount This Month	J266 \$ Amount This Month	J270 \$ Amount This Month	Previous Qty or %	Total % of Item Comp	\$ TOTAL Amount to Date
46	All Other Work	Lump Sum	1	200,000.00	200,000.00	0%	-	-	-	-	100%	100%	200,000.00
47	Extended Contractor Overhead	Unit Price	60	1,000.00	60,000.00	-	-	-	-	-	100%	100%	60,000.00
48	Standby Time	Unit Price	4000	50.00	240,000.00	-	-	-	-	-	100%	100%	240,000.00
49	Commissioning for Berths J245-J247	Unit Price	1000	200.00	200,000.00	-	88,850.00	88,850.00	N/A	N/A	100%	100%	200,000.00
50	Commissioning for Berths J266-J270	Unit Price	1000	200.00	200,000.00	843	N/A	N/A	84,300.00	84,300.00	100%	100%	200,000.00
	CHANGE ORDER #1 - TIME EXT												
	CHANGE ORDER #2- R14A - ACCELERATION	Lump Sum	1	80,000.00		0%	-	-	-	-	100%	100%	80,000.00
	CHANGE ORDER #2 - SCE GROUNDING	Lump Sum	1	10,427.00		0%	-	-	-	-	100%	100%	10,427.00
	CHANGE ORDER #3	Lump Sum	1	61,497.00		0%	-	-	-	-	100%	100%	61,497.00
	CHANGE ORDER #4	Lump Sum	1	1,371,884.00		0%	-	-	-	-	100%	100%	1,371,884.00
	CHANGE ORDER #5	Lump Sum	1	(11,053.00)		0%	-	-	-	-	100%	100%	(11,053.00)
	CHANGE ORDER #6	Lump Sum	1	75,000.00		0%	-	-	-	-	100%	100%	75,000.00
	CHANGE ORDER #7	Lump Sum	1	86,932.00		0%	-	-	-	-	100%	100%	86,932.00
	CHANGE ORDER #8	Lump Sum	1	55,730.00		0%	-	-	-	-	100%	100%	55,730.00
	CHANGE ORDER #9	Lump Sum	1	55,147.00		0%	-	-	-	-	100%	100%	55,147.00
	CHANGE ORDER #10	Lump Sum	1	57,179.00		0%	-	-	-	-	100%	100%	57,179.00
	CHANGE ORDER #11	Lump Sum	1	24,752.00		0%	-	-	-	-	100%	100%	24,752.00
	CHANGE ORDER #12	Lump Sum	1	1,821,113.00		5%	-	-	40,185.73	40,185.73	95%	100%	1,821,113.05
	CHANGE ORDER #13	Lump Sum	1	(38,959.29)		0%	-	-	-	-	100%	100%	(38,959.29)
	CHANGE ORDER #14	Lump Sum	1	(332,872.00)		100%	(80,853.00)	(80,853.00)	(80,853.00)	(80,853.00)	100%	100%	(332,872.00)



# Project & Grant Revenue/Expenditure Financial Summary

Criteria: As Of = 3/21/2019 (47% of Year Elapsed)

Vendor	Title	Month-To-Date Actual Activity	Quarter-To-Date Actual Activity	ITD Actual	ITD Encl Pre-Encl	Adjusted Budget - Actuals	ITD % Actuals to Adjusted Budget
1B2341 -- 1B2341/ENV PLANNING/SHORE TO SHIP PWR	(None)	755.27	0.00	239.31	0.00	515.96	31.7%
V046804	SOUTH COAST AIR QUALITY MANAGEMENT	0.00	0.00	515.96	0.00	(515.96)	0.0%
Total Project Detail 1B2341/ENV PLANNING/SHORE TO SHIP PWR		755.27	0.00	755.27	0.00	0.00	100.0%
1C2341 -- 1C2341/DESIGN/SHORE TO SHIP POWER	(None)	5,780,229.59	0.00	597,829.78	0.00	5,182,399.81	10.3%
V051095	AMERICAN REPROGRAPHICS COMPANY	0.00	0.00	4,141.89	0.00	(4,141.89)	0.0%
V054954	BIGGS CARDOSA ASSOCIATES INC	0.00	0.00	50,735.00	0.00	(50,735.00)	0.0%
V054863	C BELOW INC	0.00	0.00	5,500.00	0.00	(5,500.00)	0.0%
V05746	CADSTAR INC	0.00	0.00	6,820.00	0.00	(6,820.00)	0.0%
V047448	EASTERN GROUP PUBLICATION INC	0.00	0.00	1,168.50	0.00	(1,168.50)	0.0%
V046782	JOHNSON-FRANK & ASSOC INC	0.00	0.00	28,604.56	0.00	(28,604.56)	0.0%
V041706	KPFF CONSULTING ENGINEERS	0.00	0.00	97,429.59	0.00	(97,429.59)	0.0%
V021514	LONG BEACH PUBLISHING COMPANY	0.00	0.00	2,945.70	0.00	(2,945.70)	0.0%
V002113	LONG BEACH TIMES NEWSPAPER INC	0.00	0.00	4,286.08	0.00	(4,286.08)	0.0%
V030466	OUR WEEKLY LLC	0.00	0.00	1,000.00	0.00	(1,000.00)	0.0%
V023229	P2S INC	0.00	0.00	4,306,690.08	0.00	(4,306,690.08)	0.0%
V012651	PIRNE, MALCOLM INC	0.00	0.00	72,104.52	0.00	(72,104.52)	0.0%
V025943	SAF-R-DIG UTILITY SURVEYS, INC	0.00	0.00	37,823.08	0.00	(37,823.08)	0.0%
V043271	TMAD TAYLOR & GAINES ENGINEERS	0.00	0.00	106,154.00	0.00	(106,154.00)	0.0%
V043513	URS CORPORATION	0.00	0.00	461,953.91	0.00	(461,953.91)	0.0%
Total Project Detail 1C2341/DESIGN/SHORE TO SHIP POWER		5,780,229.59	0.00	5,783,186.69	0.00	(2,957.10)	100.1%
1H2341 -- FUNDING FOR S.C.E.	(None)	43,829,507.55	0.00	1,788,774.28	0.00	42,160,733.28	4.0%
V051085	AMERICAN REPROGRAPHICS COMPANY	0.00	0.00	23,325.95	0.00	(23,325.95)	0.0%
V035098	ARCADIS US INC	0.00	0.00	1,015.00	0.00	(1,015.00)	0.0%
V054954	BIGGS CARDOSA ASSOCIATES INC	0.00	0.00	7,000.00	0.00	(7,000.00)	0.0%
V046257	BUBALO, STEVE CONSTRUCTION COMPANY	0.00	0.00	77,220.84	0.00	(77,220.84)	0.0%
V050028	COMPUTER 1 PRODUCTS OF AMERICA INC	0.00	0.00	4,087.90	0.00	(4,087.90)	0.0%
V060763	CRISP ENTERPRISES	0.00	0.00	81.75	0.00	(81.75)	0.0%
V042936	CUTTING EDGE CONCRETE SERVICES INC	0.00	0.00	1,598.94	0.00	(1,598.94)	0.0%
V037752	D WOOLLEY & ASSOCIATES INC	0.00	0.00	9,577.50	0.00	(9,577.50)	0.0%
V044431	EDISON ESI	0.00	0.00	7,490,000.00	0.00	(7,490,000.00)	0.0%
V024035	GRIFFITH COMPANY	0.00	0.00	6,516,058.52	0.00	(6,516,058.52)	0.0%
V060703	HELI ELECTRIC INC	0.00	0.00	28,303,766.78	0.00	(28,303,766.78)	0.0%
V062479	IMPREST - HA ADMIN OKG ACCT	0.00	0.00	138.84	0.00	(138.84)	0.0%
V025942	KGEI CONSTRUCTION INC	0.00	0.00	90,000.00	0.00	(90,000.00)	0.0%
V053486	KOURY ENGINEERING & TESTING INC	0.00	0.00	180,342.50	0.00	(180,342.50)	0.0%
V025229	LOVCO CONSTRUCTION INC	0.00	0.00	227.69	0.00	(227.69)	0.0%
V039001	NETWORK INTEGRATION COMPANY PARTNERS	0.00	0.00	372.14	0.00	(372.14)	0.0%
	P2S INC	0.00	0.00	1,061,424.53	0.00	(1,061,424.53)	0.0%
	PACIFIC EH&S SERVICES INC	0.00	0.00	30,293.78	0.00	(30,293.78)	0.0%

Criteria: Revenue/Expenditure = E; Project = HA1316; Project Detail = 90



## Project &amp; Grant Revenue/Expenditure Financial Summary

Criteria: As Of = 3/21/2019 (47% of Year Elapsed)

Vendor	Title	Month-To-Date Actual Activity	Quarter-To-Date Actual Activity	ITD Actual	ITD Encumbrance Incl Pre-Encumb	Adjusted Budget - Actuals	ITD % Actuals to Adjusted Budget
Project HA1316 - CLOSED- NCK-PIER J 249-270 SHORE TO SHIP							
112341 - FUNDING FOR S.C.E.							
V053798	PACIFIC PRODUCTS & SERVICES INC	0.00	0.00	1,075.06	0.00	(1,075.06)	0.0%
V048468	PC SPECIALISTS INC	0.00	0.00	4,804.59	0.00	(4,804.59)	0.0%
V021557	SHI INTERNATIONAL CORPORATION	0.00	0.00	222.08	0.00	(222.08)	0.0%
V026541	SIMPLUS MANAGEMENT COMPANY, LLC	0.00	0.00	52,852.80	0.00	(52,852.80)	0.0%
V044553	SMITH EMERY CORP	0.00	0.00	1,923.40	0.00	(1,923.40)	0.0%
V046804	SOUTH COAST AIR QUALITY MANAGEMENT	0.00	0.00	1,059.94	0.00	(1,059.94)	0.0%
V044555	SOUTHERN CALIFORNIA EDISON COMPANY	0.00	0.00	1,500,000.00	0.00	(1,500,000.00)	0.0%
V045074	TWINING INC	0.00	0.00	5,527.50	0.00	(5,527.50)	0.0%
V043513	URS CORPORATION	0.00	0.00	4,893.75	0.00	(4,893.75)	0.0%
V047884	VANIR CONSTRUCTION MANAGEMENT INC	0.00	0.00	2,788,885.09	0.00	(2,788,885.09)	0.0%
V012285	WSP USA INC	0.00	0.00	3,062.50	0.00	(3,062.50)	0.0%
Total Project Detail FUNDING FOR S.C.E.		43,929,507.56	0.00	43,929,612.75	0.00	(105.19)	100.0%
Total Project HA1316		49,710,492.42	0.00	49,713,554.71	0.00	(3,062.29)	100.0%
Total		49,710,492.42	0.00	49,713,554.71	0.00	(3,062.29)	100.0%

Criteria: Revenue/Expenditure = E; Project = HA1316; Project Detail = 190

Run: 3/21/2019 11:26 AM Includes transactions posted through: 3/20/2019





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company		Minako dba Minco Construction		Vallutini Corp dba Royal Electric		KDC, Inc. dba Dynalectric		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 1 - Mobilization and Demobilization: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform mobilization and demobilization, as shown and specified (including, but... for the lump sum price of -	Lump Sum	1,161,050.43	1,161,050.43	70,000.00	70,000.00	320,000.00	320,000.00	600,000.00	600,000.00	663,864.00	663,864.00
ITEM NO. 2 - Excavation Support Systems: Per Section 6707 of the California Labor Code, furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide bracing... for the lump sum price of (not less than \$10,000)	Lump Sum	18,240.49	18,240.49	15,000.00	15,000.00	52,000.00	52,000.00	11,000.00	11,000.00	106,001.00	106,001.00
ITEM NO. 3 - SWPPP Development and Compliance: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to develop the Stormwater Pollution Prevention Plan and... for the lump sum price of (not less than \$10,000)	Lump Sum	16,772.86	16,772.86	50,000.00	50,000.00	68,000.00	68,000.00	60,000.00	60,000.00	12,878.00	12,878.00
ITEM NO. 4 - Demolition of Chain Link Fence and Gates, Bollards, and Paving: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to remove existing 8-foot chain link fence and... for the lump sum price of -	Lump Sum	33,632.23	33,632.23	177,000.00	177,000.00	66,000.00	66,000.00	187,000.00	187,000.00	179,589.00	179,589.00
ITEM NO. 5 - Soil Handling and Disposal, Non-Hazardous Waste: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to handle and dispose of approximately the estimated... for the unit price per ton of -	Unit Price	40.26	106,085.10	50.00	131,750.00	48.00	126,480.00	83.61	220,312.35	28.60	75,361.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774898/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR:** Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Minako dba Minco Construction 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Velluti Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		KDC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2384		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9600 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 6 - Soil Handling and Reuse, Fill Material: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to handle and dispose as backfill approximately the... for the unit price per cubic yard of -	Unit Price	22.36	136,843.20	50.00	306,000.00	44.00	289,280.00	45.66	279,439.20	45.20	276,624.00
ITEM NO. 7 - Import Material: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to load, haul, place and compact as backfill approximately the estimated quantity of import... for the unit price per ton of -	Unit Price	15.66	9,396.00	20.00	12,000.00	29.00	17,400.00	38.51	23,106.00	39.16	23,496.00
ITEM NO. 8 - 8-Foot Chain Link Fence with Barbed Wire: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to furnish and install approximately the estimated quantity of... for unit price per linear foot of -	Unit Price	44.73	33,547.50	100.00	75,000.00	50.00	37,500.00	55.01	41,257.50	49.20	36,900.00
ITEM NO. 9 - Chain Link Single Gate with Barbed Wire: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of chain... for the unit price per each of -	Unit Price	670.32	7,390.12	1,000.00	11,000.00	930.00	10,230.00	990.16	10,891.98	1,455.00	16,005.00
ITEM NO. 10 - Chain Link Double Gates with Barbed Wire: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of chain... for the unit price per each of -	Unit Price	1,677.29	6,709.16	1,000.00	4,000.00	2,130.00	8,520.00	2,750.50	11,002.00	2,909.00	11,636.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS

## CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR:** Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company		Minako dba Minco Construction		Vellutini Corp dba Royal Electric		KDC, Inc. dba Dynalectric		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 11 - Pipe Bollards, 12-Inch: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of 12-inch diameter pipe... for the unit price per each of -	Unit Price	1,341.83	183,830.71	1,770.00	242,490.00	1,570.00	215,090.00	2,090.31	286,372.47	2,338.00	320,306.00
ITEM NO. 12 - Removable Pipe Bollards, 12-Inch: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of 12-inch... for the unit price per each of -	Unit Price	1,877.29	41,932.25	3,700.00	92,500.00	1,410.00	35,250.00	3,502.52	87,563.00	3,435.00	85,875.00
ITEM NO. 13 - Shallow Pipe Bollards, 12-Inch: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of 12-Inch... for the unit price per each of -	Unit Price	1,341.83	42,938.56	1,770.00	56,640.00	1,570.00	50,240.00	3,190.47	102,095.04	3,172.00	101,504.00
ITEM NO. 14 - New Pavement Striping and Markings: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to install new paint striping and markings, complete as shown and specified and... for the lump sum price of -	Lump Sum	8,386.43	8,386.43	7,000.00	7,000.00	6,600.00	6,600.00	14,000.00	14,000.00	9,133.00	3,133.00
ITEM NO. 15 - Replacement of Existing Pavement Striping: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to replace approximately the estimated quantity of existing... for the unit price per linear foot of -	Unit Price	0.95	3,325.00	1.00	3,500.00	0.85	2,975.00	1.10	3,850.00	0.73	2,555.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Shore to Ship Power Project**  
**at Pier T, Berths T132-T140**

**NO. HD-S2348**

**DATE OPENED: February 14, 2012**

ITEM	ESTIMATED QUANTITIES	The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Minako dba Minco Construction 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Vellutini Corp dba Royal Electric 9481 Caribee Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2190		KDC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2384		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9600 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 16 - Removal of Existing Pavement Striping: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to replace and remove approximately the estimated quantity of... for the unit price per linear foot of -	Unit Price	9.51	1,141.20	10.00	1,200.00	8.90	1,068.00	55.01	6,801.20	16.80	2,016.00
ITEM NO. 17 - Relocation of Water Lines and Power/Telephone/Water ("PTW") Vaults: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to relocate water lines and PTW vaults... for the lump sum price of -	Lump Sum	26,836.58	26,836.58	70,000.00	70,000.00	76,000.00	76,000.00	48,000.00	48,000.00	81,692.00	81,692.00
ITEM NO. 18 - Transformers (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1) medium... for the lump sum price of -	Lump Sum	709,593.23	709,593.23	677,000.00	677,000.00	680,000.00	680,000.00	694,000.00	694,000.00	728,653.00	728,653.00
ITEM NO. 19 - Transformers (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1) medium... for the lump sum price of -	Lump Sum	709,593.23	709,593.23	677,000.00	677,000.00	680,000.00	680,000.00	694,000.00	694,000.00	728,653.00	728,653.00
ITEM NO. 20 - Transformers (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1) medium... for the lump sum price of -	Lump Sum	709,593.23	709,593.23	677,000.00	677,000.00	680,000.00	680,000.00	694,000.00	694,000.00	728,653.00	728,653.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**The Ryan Company**  
**LOWEST RESPONSIBLE BIDDER**

**774698/Exp. 02/28/2014**  
**LICENSE NUMBER**

**\$20,559,112.22**  
**AMOUNT**

**AUTHORIZED SIGNATURE**





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Minako dba Minco Construction 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Vellutini Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		KDC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2384		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9600 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 21 - Transformers (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1)... for the lump sum price of -	Lump Sum	709,593.23	709,593.23	677,000.00	677,000.00	680,000.00	680,000.00	694,000.00	694,000.00	728,653.00	728,653.00
ITEM NO. 22 - Switchgear Assembly(s) (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect two (2)... for the lump sum price of -	Lump Sum	3,939,255.79	3,939,255.79	3,777,000.00	3,777,000.00	4,125,000.00	4,125,000.00	3,876,000.00	3,876,000.00	3,975,075.00	3,975,075.00
ITEM NO. 23 - Switchgear Assembly(s) (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1)... for the lump sum price of -	Lump Sum	1,921,221.76	1,921,221.76	2,077,700.00	2,077,700.00	1,830,000.00	1,830,000.00	1,890,000.00	1,890,000.00	2,019,779.00	2,019,779.00
ITEM NO. 24 - Switchgear Assembly(s) (for Berth 135 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1)... for the lump sum price of -	Lump Sum	1,779,834.87	1,779,834.87	1,777,000.00	1,777,000.00	1,894,000.00	1,894,000.00	1,750,000.00	1,750,000.00	1,851,000.00	1,851,000.00
ITEM NO. 25 - Switchgear Assembly(s) (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one... for the lump sum price of -	Lump Sum	2,105,417.86	2,105,417.86	2,100,000.00	2,100,000.00	2,007,000.00	2,007,000.00	2,073,220.00	2,073,220.00	2,202,840.00	2,202,840.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

DATE OPENED: February 14, 2012

NO. HD-S2348

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

ITEM	ESTIMATED QUANTITIES	The Ryan Company		Minako dba Minco Construction		Velluti Corp dba Royal Electric		KDC, Inc. dba Dynalectric		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 26 - Ductbanks and Raceways (for Berth 140 as noted in Special Condition SC-25); Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and functioning... for the lump sum price of -	Lump Sum	349,501.65	349,501.65	717,000.00	717,000.00	645,000.00	645,000.00	621,000.00	621,000.00	497,569.00	497,569.00
ITEM NO. 27 - Ductbanks and Raceways (for Berth 138 as noted in Special Condition SC-25); Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and functioning... for the lump sum price of -	Lump Sum	599,461.62	599,461.62	337,000.00	337,000.00	710,000.00	710,000.00	590,000.00	590,000.00	707,185.00	707,185.00
ITEM NO. 28 - Ductbanks and Raceways (for Berth 136 as noted in Special Condition SC-25); Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and functioning... for the lump sum price of -	Lump Sum	394,105.50	394,105.50	437,000.00	437,000.00	492,000.00	492,000.00	471,000.00	471,000.00	532,209.00	532,209.00
ITEM NO. 29 - Ductbanks and Raceways (for Berth 132-134 as noted in Special Condition SC-25); Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and... for the lump sum price of -	Lump Sum	765,573.51	765,573.51	737,000.00	737,000.00	833,000.00	833,000.00	845,621.00	845,621.00	999,980.00	999,980.00
ITEM NO. 30 - Conductors (for Berth 140 as noted in Special Condition SC-25); Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors and... for the lump sum price of -	Lump Sum	413,138.96	413,138.96	277,000.00	277,000.00	1,312,000.00	1,312,000.00	1,045,000.00	1,045,000.00	769,437.00	769,437.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company 15 Commerce Way Norton, MA 02786 Phone: (508) 742-2500 Fax: (508) 742-2540		Minako dba Minco Construction 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Vellutini Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		KDC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2384		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-8600 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 31 - Conductors (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors and... for the lump sum price of -	Lump Sum	518,338.89	518,338.89	777,000.00	777,000.00	324,000.00	324,000.00	450,000.00	450,000.00	378,954.00	378,954.00
ITEM NO. 32 - Conductors (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors and... for the lump sum price of -	Lump Sum	471,591.80	471,591.80	277,000.00	277,000.00	247,000.00	247,000.00	300,000.00	300,000.00	555,850.00	555,850.00
ITEM NO. 33 - Conductors (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors... for the lump sum price of -	Lump Sum	692,948.22	692,948.22	277,000.00	277,000.00	507,000.00	507,000.00	610,000.00	610,000.00	708,920.00	708,920.00
ITEM NO. 34 - SPO Receptacles (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of two... for the lump sum price of -	Lump Sum	226,959.75	226,959.75	477,000.00	477,000.00	238,000.00	238,000.00	300,000.00	300,000.00	191,099.00	191,099.00
ITEM NO. 35 - SPO Receptacles (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of three... for the lump sum price of -	Lump Sum	340,439.63	340,439.63	637,000.00	637,000.00	355,000.00	355,000.00	475,000.00	475,000.00	317,068.00	317,068.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR:** Shore to Ship Power Project at Pier T, Berths T132-T140

**NO. HD-S2348**

**DATE OPENED:** February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Minako dba Minco Construction 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Vellutini Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		KDC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2384		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9500 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 36 - SPO Receptacles (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of two... for the lump sum price of -	Lump Sum	226,959.75	226,959.75	477,000.00	477,000.00	238,000.00	238,000.00	300,000.00	300,000.00	191,099.00	191,099.00
ITEM NO. 37 - SPO Receptacles (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of... for the lump sum price of -	Lump Sum	453,919.50	453,919.50	877,000.00	877,000.00	475,000.00	475,000.00	550,000.00	550,000.00	443,087.00	443,087.00
ITEM NO. 38 - All Other Electrical Work (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	86,714.11	86,714.11	177,000.00	177,000.00	313,000.00	313,000.00	200,000.00	200,000.00	100,715.00	100,715.00
ITEM NO. 39 - All Other Electrical Work (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	81,156.80	81,156.80	77,000.00	77,000.00	76,000.00	76,000.00	102,002.00	102,002.00	50,865.00	50,865.00
ITEM NO. 40 - All Other Electrical Work (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	79,665.13	79,665.13	77,000.00	77,000.00	77,000.00	77,000.00	95,000.00	95,000.00	48,770.00	48,770.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

**774698/Exp. 02/28/2014**  
LICENSE NUMBER

**\$20,559,112.22**  
AMOUNT

\_\_\_\_\_  
AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR:** Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company 15 Commerce Way Norton, MA 02765 Phone: (508) 742-2500 Fax: (508) 742-2540		Minako dba Minco Construction 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Vellutini Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		KOC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2384		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9600 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 41 - All Other Electrical Work (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	89,190.97	89,190.97	137,000.00	137,000.00	82,000.00	92,000.00	130,000.00	130,000.00	45,652.00	45,652.00
ITEM NO. 42 - Paving at Switchgear MTS4 and MTS5 and at SSP Substations: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct paving at the Switchgear MTS4 and MTS5... for the lump sum price of -	Lump Sum	135,862.43	135,862.43	177,000.00	177,000.00	94,000.00	94,000.00	135,000.00	135,000.00	201,168.00	201,168.00
ITEM NO. 43 - Standby Time: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide approximately the estimated hours of standby time for crew, land-based equipment and... for the unit price per hour of -	Unit Price	377.42	37,742.00	250.00	25,000.00	1,400.00	140,000.00	750.00	75,000.00	1,334.00	133,400.00
ITEM NO. 44 - Scheduling: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to develop and update all schedules, complete as specified and as directed... for the lump sum price of (not less than \$20,000) -	Lump Sum	22,363.82	22,363.82	77,000.00	77,000.00	166,000.00	166,000.00	35,000.00	35,000.00	20,923.00	20,923.00
ITEM NO. 45 - Ship Commissioning: Furnish all labor, materials, equipment, tools, transportation and personnel necessary to provide approximately the estimated crew hours for ship commissioning for work in all phases... for the unit price per crew hour of -	Unit Price	767.63	101,327.16	250.00	33,000.00	235.00	31,020.00	227.27	29,999.64	722.00	95,304.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE



## ANALYSIS OF BIDS

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	The Ryan Company		Mirako dba Minco Construction		Vellutini Corp dba Royal Electric		KDC, Inc. dba Dynalectric		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 46 - Power for Acceptance Testing: Reimburse the Tenant for the cost of all electrical power used by the Contractor for all specified acceptance testing -	Allowance	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00
<b>TOTAL:</b>		\$20,559,112.22		\$20,898,780.00		\$21,144,553.00		\$21,767,333.38		\$21,995,975.00	
<b>CERTIFIED CHECK OR BOND:</b>		10% Bond		10% Bond		10% Bond		10% Bond		10% Bond	

**AUTHORIZED SIGNATURE**





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140**

**NO. HD-S2348**

**DATE OPENED: February 14, 2012**

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company 8201 Edgewater Drive #202 Oakland, CA 94612 Phone: (949) 333-1500 Fax: (949) 333-1510		Helix Electric 8260 Camino Santa Fe #A San Diego, CA 92121 Phone: (858) 535-0505 Fax: (858) 535-0738		Griffith/Comet JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 929-1128 Fax: (562) 864-7938			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 1 - Mobilization and Demobilization: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform mobilization and demobilization, as shown and specified (including, but... for the lump sum price of -	Lump Sum	300,000.00	300,000.00	1,253,000.00	1,253,000.00	1,068,000.00	1,068,000.00		
ITEM NO. 2 - Excavation Support Systems: Per Section 6707 of the California Labor Code, furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide bracing... for the lump sum price of (not less than \$10,000)	Lump Sum	150,000.00	150,000.00	70,000.00	70,000.00	350,000.00	350,000.00		
ITEM NO. 3 - SWPPP Development and Compliance: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to develop the Stormwater Pollution Prevention Plan and... for the lump sum price of (not less than \$10,000)	Lump Sum	10,000.00	10,000.00	50,000.00	50,000.00	12,000.00	12,000.00		
ITEM NO. 4 - Demolition of Chain Link Fence and Gates, Bollards, and Paving: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to remove existing 8-foot chain link fence and... for the lump sum price of -	Lump Sum	100,000.00	100,000.00	150,000.00	150,000.00	112,000.00	112,000.00		
ITEM NO. 5 - Soil Handling and Disposal, Non-Hazardous Waste: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to handle and dispose of approximately the estimated... for the unit price per ton of -	Unit Price	50.00	131,750.00	42.00	110,670.00	75.00	197,625.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

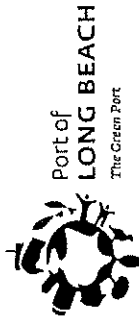
**The Ryan Company  
LOWEST RESPONSIBLE BIDDER**

**774698/Exp. 02/28/2014  
LICENSE NUMBER**

**\$20,559,112.22  
AMOUNT**

**AUTHORIZED SIGNATURE**





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

DATE OPENED: February 14, 2012

NO. HD-S2348

**SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140**

ITEM	ESTIMATED QUANTITIES	Shimick Construction Company 8201 Edgewater Drive #202 Oakland, CA 94612 Phone: (949) 333-1500 Fax: (949) 333-1510		Helix Electric 8260 Camino Santa Fe #A San Diego, CA 92121 Phone: (658) 535-0505 Fax: (658) 535-0738		Griffith/Comet JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 929-1128 Fax: (562) 864-7938			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 6 - Soil Handling and Reuse, Fill Material: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to handle and dispose as backfill approximately the... for the unit price per cubic yard of -	Unit Price	35.00	214,200.00	5.00	30,600.00	25.00	153,000.00		
ITEM NO. 7 - Import Material: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to load, haul, place and compact as backfill approximately the estimated quantity of import... for the unit price per ton of -	Unit Price	35.00	21,000.00	48.00	28,800.00	35.00	21,000.00		
ITEM NO. 8 - 8-Foot Chain Link Fence with Barbed Wire: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to furnish and install approximately the estimated quantity of... for unit price per linear foot of -	Unit Price	50.00	37,500.00	55.00	41,250.00	56.00	42,000.00		
ITEM NO. 9 - Chain Link Single Gate with Barbed Wire: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of chain... for the unit price per each of -	Unit Price	1,000.00	11,000.00	1,050.00	11,550.00	1,300.00	14,300.00		
ITEM NO. 10 - Chain Link Double Gates with Barbed Wire: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of chain... for the unit price per each of -	Unit Price	2,500.00	10,000.00	2,300.00	9,200.00	2,300.00	9,200.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





Port of  
LONG BEACH  
The Green Port

# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shimick Construction Company		Helix Electric		Griffith/Comet JV			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 11 - Pipe Bollards, 12-inch: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of 12-inch diameter pipe... for the unit price per each of -	Unit Price	2,500.00	342,500.00	1,900.00	260,300.00	2,200.00	301,400.00		
ITEM NO. 12 - Removable Pipe Bollards, 12-inch: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of 12-inch... for the unit price per each of -	Unit Price	4,000.00	100,000.00	2,800.00	70,000.00	3,250.00	81,250.00		
ITEM NO. 13 - Shallow Pipe Bollards, 12-inch: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide and install approximately the estimated quantity of 12-inch... for the unit price per each of -	Unit Price	2,500.00	80,000.00	3,000.00	96,000.00	3,560.00	117,120.00		
ITEM NO. 14 - New Pavement Striping and Markings: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to install new paint striping and markings, complete as shown and specified and... for the lump sum price of -	Lump Sum	6,500.00	6,500.00	7,000.00	7,000.00	5,230.00	5,230.00		
ITEM NO. 15 - Replacement of Existing Pavement Striping: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to replace approximately the estimated quantity of existing... for the unit price per linear foot of -	Unit Price	1.00	3,500.00	2.00	7,000.00	1.10	3,850.00		
TOTAL:									
CERTIFIED CHECK OR BOND:									

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Shore to Ship Power Project**  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company		Helix Electric		Griffith/Comet JV			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 16 - Removal of Existing Pavement Striping: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to replace and remove approximately the estimated quantity of... for the unit price per linear foot of -	Unit Price	10.00	1,200.00	14.00	1,680.00	35.00	4,200.00		
ITEM NO. 17 - Relocation of Water Lines and Power/Telephone/Water ("PTW") Vaults: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to relocate water lines and PTW vaults... for the lump sum price of -	Lump Sum	100,000.00	100,000.00	100,000.00	100,000.00	300,000.00	300,000.00		
ITEM NO. 18 - Transformers for Berth 140 as noted in Special Condition SC-25: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1) medium... for the lump sum price of -	Lump Sum	625,000.00	625,000.00	640,000.00	640,000.00	715,585.00	715,585.00		
ITEM NO. 19 - Transformers for Berth 138 as noted in Special Condition SC-25: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1) medium... for the lump sum price of -	Lump Sum	625,000.00	625,000.00	640,000.00	640,000.00	715,585.00	715,585.00		
ITEM NO. 20 - Transformers for Berth 136 as noted in Special Condition SC-25: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1) medium... for the lump sum price of -	Lump Sum	625,000.00	625,000.00	640,000.00	640,000.00	715,585.00	715,585.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





Port of  
LONG BEACH  
The Green Port

# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shimlick Construction Company 8201 Edgewater Drive #202 Oakland, CA 94612 Phone: (949) 333-1500 Fax: (949) 333-1510		Helix Electric 8250 Camino Santa Fe #A San Diego, CA 92121 Phone: (858) 535-0505 Fax: (858) 535-0738		Griffith/Comet JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 929-1128 Fax: (562) 864-7938			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 21 - Transformers (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1)... for the lump sum price of -	Lump Sum	625,000.00	625,000.00	640,000.00	640,000.00	715,585.00	715,585.00		
ITEM NO. 22 - Switchgear Assembly(s) (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect two (2)... for the lump sum price of -	Lump Sum	3,250,000.00	3,250,000.00	3,800,000.00	3,800,000.00	4,038,100.00	4,038,100.00		
ITEM NO. 23 - Switchgear Assembly(s) (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1)... for the lump sum price of -	Lump Sum	1,750,000.00	1,750,000.00	1,800,000.00	1,800,000.00	1,938,685.00	1,938,685.00		
ITEM NO. 24 - Switchgear Assembly(s) (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one (1)... for the lump sum price of -	Lump Sum	1,650,000.00	1,650,000.00	1,700,000.00	1,700,000.00	1,783,458.00	1,783,458.00		
ITEM NO. 25 - Switchgear Assembly(s) (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect one... for the lump sum price of -	Lump Sum	1,950,000.00	1,950,000.00	1,900,000.00	1,900,000.00	2,130,242.00	2,130,242.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

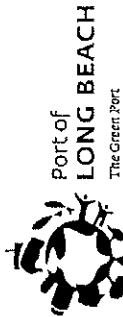
The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

DATE OPENED: February 14, 2012

NO. HD-S2348

**SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140**

ITEM	ESTIMATED QUANTITIES	Shimick Construction Company			Helix Electric			Griffith/Comet JV					
		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 26 - Ductbanks and Raceways (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and functioning... for the lump sum price of -	Lump Sum	700,000.00	700,000.00		847,000.00	847,000.00		750,000.00	750,000.00				
ITEM NO. 27 - Ductbanks and Raceways (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and functioning... for the lump sum price of -	Lump Sum	700,000.00	700,000.00		1,346,000.00	1,346,000.00		890,000.00	890,000.00				
ITEM NO. 28 - Ductbanks and Raceways (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and functioning... for the lump sum price of -	Lump Sum	600,000.00	600,000.00		1,195,000.00	1,195,000.00		550,000.00	550,000.00				
ITEM NO. 29 - Ductbanks and Raceways (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct a complete and... for the lump sum price of -	Lump Sum	1,050,000.00	1,050,000.00		2,092,000.00	2,092,000.00		1,165,000.00	1,165,000.00				
ITEM NO. 30 - Conductors (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors and... for the lump sum price of -	Lump Sum	600,000.00	600,000.00		300,000.00	300,000.00		1,286,952.00	1,286,952.00				
<b>TOTAL:</b>													
<b>CERTIFIED CHECK OR BOND:</b>													

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

**774698/Exp. 02/28/2014**  
LICENSE NUMBER

**\$20,559,112.22**  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140**

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company 8201 Edgewater Drive #202 Oakland, CA 94612 Phone: (949) 333-1500 Fax: (949) 333-1510		Helix Electric 8260 Camino Santa Fe #A San Diego, CA 92121 Phone: (858) 535-0505 Fax: (858) 535-0738		Griffith/Comet JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 928-1128 Fax: (562) 864-7938			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 31 - Conductors (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors and... for the lump sum price of -	Lump Sum	650,000.00	650,000.00	400,000.00	400,000.00	449,167.00	449,167.00		
ITEM NO. 32 - Conductors (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors and... for the lump sum price of -	Lump Sum	400,000.00	400,000.00	300,000.00	300,000.00	369,902.00	369,902.00		
ITEM NO. 33 - Conductors (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide, install and connect all conductors... for the lump sum price of -	Lump Sum	1,025,000.00	1,025,000.00	500,000.00	500,000.00	790,446.00	790,446.00		
ITEM NO. 34 - SPO Receptacles (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of two... for the lump sum price of -	Lump Sum	350,000.00	350,000.00	180,000.00	180,000.00	320,714.00	320,714.00		
ITEM NO. 35 - SPO Receptacles (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of three... for the lump sum price of -	Lump Sum	450,000.00	450,000.00	270,000.00	270,000.00	489,653.00	489,653.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS

## CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140**

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shimrick Construction Company		Helix Electric		Griffith/Comet JV			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 36 - SPO Receptacles (for Berth 136 as noted in Special Conditions SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of two... for the lump sum price of -	Lump Sum	350,000.00	350,000.00	180,000.00	180,000.00	322,894.00	322,894.00		
ITEM NO. 37 - SPO Receptacles (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to perform demolition and construction of... for the lump sum price of -	Lump Sum	525,000.00	525,000.00	360,000.00	360,000.00	646,189.00	646,189.00		
ITEM NO. 38 - All Other Electrical Work (for Berth 140 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	400,000.00	400,000.00	300,000.00	300,000.00	80,000.00	80,000.00		
ITEM NO. 39 - All Other Electrical Work (for Berth 138 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	350,000.00	350,000.00	333,000.00	333,000.00	50,000.00	50,000.00		
ITEM NO. 40 - All Other Electrical Work (for Berth 136 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	350,000.00	350,000.00	328,000.00	328,000.00	52,000.00	52,000.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

**The Ryan Company**  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shumlick Construction Company		Helix Electric		Griffith/Comet JV			
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 41 - All Other Electrical Work (for Berth 132-134 as noted in Special Condition SC-25): Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct reinforced concrete... for the lump sum price of -	Lump Sum	600,000.00	600,000.00	396,000.00	396,000.00	80,000.00	80,000.00		
ITEM NO. 42 - Paving at Switchgear MTS4 and MTS5 and at SSP Substations: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to construct paving at the Switchgear MTS4 and MTS5... for the lump sum price of -	Lump Sum	100,000.00	100,000.00	20,000.00	20,000.00	250,000.00	250,000.00		
ITEM NO. 43 - Standby Time: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to provide approximately the estimated hours of standby time for crew, land-based equipment and... for the unit price per hour of -	Unit Price	350.00	35,000.00	500.00	50,000.00	200.00	20,000.00		
ITEM NO. 44 - Scheduling: Furnish all labor, materials, power, equipment, tools, transportation and supervision necessary to develop and update all schedules, complete as specified and as directed... for the lump sum price of (not less than \$20,000) -	Lump Sum	20,000.00	20,000.00	40,000.00	40,000.00	20,000.00	20,000.00		
ITEM NO. 45 - Ship Commissioning: Furnish all labor, materials, equipment, tools, transportation and personnel necessary to provide approximately the estimated crew hours for ship commissioning for work in all phases... for the unit price per crew hour of -	Unit Price	315.00	41,580.00	900.00	118,800.00	272.50	35,970.00		
<b>TOTAL:</b>									
<b>CERTIFIED CHECK OR BOND:</b>									

The Ryan Company  
LOWEST RESPONSIBLE BIDDER

774698/Exp. 02/28/2014  
LICENSE NUMBER

\$20,559,112.22  
AMOUNT

AUTHORIZED SIGNATURE





**ANALYSIS OF BIDS**  
**CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Shore to Ship Power Project  
at Pier T, Berths T132-T140**

NO. HD-S2348

DATE OPENED: February 14, 2012

ITEM	ESTIMATED QUANTITIES	Shinnick Construction Company 8201 Edgewater Drive #202 Oakland, CA 94612 Phone: (949) 333-1500 Fax: (949) 333-1510		Helix Electric 8260 Camino Santa Fe #A San Diego, CA 92121 Phone: (858) 535-0505 Fax: (858) 535-0738		Griffith/Comet JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 929-1128 Fax: (562) 864-7938					
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 46 - Power for Acceptance Testing: Reimburse the Tenant for the cost of all electrical power used by the Contractor for all specified acceptance testing -	Allowance	50,000.00	50,000.00		50,000.00	50,000.00	50,000.00				
TOTAL:		\$22,055,730.00		\$23,460,850.00		\$24,213,887.00					
CERTIFIED CHECK OR BOND:		10% Bond		10% Bond		10% Bond					

**The Ryan Company**  
**LOWEST RESPONSIBLE BIDDER**

774698/Exp. 02/28/2014  
LICENSE NUMBER

AMOUNT
\$20,559,112.22

**AUTHORIZED SIGNATURE**



Progress Payment No. 19  
Period Ending : 11/30/14  
PAYMENT DUE: 3/3/2015  
Specification: HD-S2348 Shore to Ship Power Project at Pier T, Berths 132-140  
Contractor: The Ryan Company

LBHD Contract No: HD-7928  
Original Bid Amt:

\$20,559,112.22

Item No.	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	T140 \$ Amount This Month	T138 \$ Amount This Month	T136 \$ Amount This Month	T132 \$ Amount This Month	Previous Qty or %	Total % of Item Comp	TOTAL \$ Amount to Date
1	Mobilization and Demobilization	Lump Sum	1	1,161,050.43	1,161,050.43	-	-	-	-	-	100%	100%	1,161,050.43
2	Excavation Support Systems	Lump Sum	1	18,240.49	18,240.49	0%	-	0	0	0	100%	100%	18,240.49
3	SWPPP Development and Compliance	Lump Sum	1	16,772.86	16,772.86	-	0	0	0	0	100%	100%	16,772.86
4	Demolition of Chain Link Fence and Gates, Bollards, and Paving	Lump Sum	1	33,632.23	33,632.23	0.00%	-	-	-	-	100%	100%	33,632.23
5	Soil Handling and Disposal, Non-Hazardous Waste	Unit Price	2,635	40.26	106,085.10	-	-	-	-	-	6,430.43	244%	258,889.12
6	Soil Handling and Reuse, Fill Material	Unit Price	6,120	22.36	136,843.20	-	-	-	-	-	2,265.00	37%	50,845.40
7	Import Material	Unit Price	600	15.66	9,396.00	-	-	-	-	-	0%	0%	-
8	8-Foot Chain Link Fence with Barbed Wire	Unit Price	750	44.73	33,547.50	-	-	-	-	-	100%	100%	33,547.50
9	Chain Link Single Gate with Barbed Wire	Unit Price	11	670.92	7,380.12	-	0	0	0	-	100%	100%	7,380.12
10	Chain Link Double Gates with Barbed Wire	Unit Price	4	1,677.29	6,709.16	-	0	0	0	-	100%	100%	6,709.16
11	Pipe Bollards, 12-Inch	Unit Price	137	1,341.83	183,830.71	-	-	-	-	-	100%	100%	183,830.71
12	Removable Pipe Bollards, 12-Inch	Unit Price	25	1,677.29	41,932.25	-	-	-	-	-	100%	100%	41,932.25
13	Shallow Pipe Bollards, 12-Inch	Unit Price	32	1,341.83	42,938.56	-	-	-	-	-	100%	100%	42,938.56
14	New Pavement Striping and Markings	Lump Sum	1	8,386.43	8,386.43	0%	0	0	0	0	100%	20%	8,386.43
15	Replacement of Existing Pavement Striping	Unit Price	3,500	0.95	3,325.00	-	-	-	-	-	7,665.00	219%	7,281.75
16	Removal of Existing Pavement Striping	Unit Price	120	9.51	1,141.20	-	-	-	-	-	-	-	-
17	Relocation of Water Lines and Power/Telephone/Water ("PTW") Vaults	Lump Sum	1	26,836.58	26,836.58	0.00%	0	-	0	-	100%	100%	26,836.58
18	Transformers (for Berth 140 as noted in Special Condition SC-25)	Lump Sum	1	709,593.23	709,593.23	-	-	N/A	N/A	N/A	100%	100%	709,593.23
19	Transformers (for Berth 138 as noted in Special Condition SC-25)	Lump Sum	1	709,593.23	709,593.23	0%	N/A	-	N/A	N/A	100%	100%	709,593.23
20	Transformers (for Berth 136 as noted in Special Condition SC-25)	Lump Sum	1	709,593.23	709,593.23	0%	N/A	N/A	N/A	N/A	100%	100%	709,593.23
21	Transformers (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	709,593.23	709,593.23	0%	N/A	N/A	N/A	N/A	100%	100%	709,593.23
22	Switchgear Assembly(s) (for Berth 140 as noted in Special Condition SC-25)	Lump Sum	1	3,939,255.79	3,939,255.79	-	-	N/A	N/A	N/A	100%	100%	3,939,255.79
23	Switchgear Assembly(s) (for Berth 138 as noted in Special Condition SC-25)	Lump Sum	1	1,921,221.76	1,921,221.76	-	N/A	-	N/A	N/A	100%	100%	1,921,221.76
24	Switchgear Assembly(s) (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	1,779,834.87	1,779,834.87	0%	N/A	N/A	N/A	N/A	100%	100%	1,779,834.87
25	Switchgear Assembly(s) (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	2,105,417.86	2,105,417.86	0%	N/A	N/A	N/A	N/A	100%	100%	2,105,417.86
26	Dredbanks and Raceways (for Berth 140 as noted in Special Condition SC-25)	Lump Sum	1	349,501.65	349,501.65	0%	-	N/A	N/A	N/A	100%	100%	349,501.65



Progress Payment No. 19

Period Ending : 11/30/14

PAYMENT DUE: 3/3/2015

Specification: HD-S2348 Shore to Ship Power Project at Pier T, Berths 132-140

Contractor: The Ryan Company

LBHD Contract No: HD-7928

Original Bid Amt: \$20,559,112.22

Item No.	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	T140 \$ Amount This Month	T138 \$ Amount This Month	T136 \$ Amount This Month	T132 \$ Amount This Month	Previous Qty or %	Total % of Item Comp	TOTAL \$ Amount to Date
27	Ductbanks and Raceways (for Berth 138 as noted in Special Condition SC-25)	Lump Sum	1	599,461.62	599,461.62	0%	N/A	-	N/A	N/A	100%	100%	599,461.62
28	Ductbanks and Raceways (for Berth 136 as noted in Special Condition SC-25)	Lump Sum	1	394,105.50	394,105.50	0%	N/A	N/A	-	N/A	100%	100%	394,105.50
29	Ductbanks and Raceways (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	765,573.51	765,573.51	0%	N/A	N/A	N/A	-	100%	100%	765,573.51
30	Conductors (for Berth 140 as noted in Special Condition SC-25)	Lump Sum	1	413,138.96	413,138.96	0%	-	N/A	N/A	N/A	100%	100%	413,138.96
31	Conductors (for Berth 138 as noted in Special Condition SC-25)	Lump Sum	1	518,338.89	518,338.89	0%	N/A	-	N/A	N/A	100%	100%	518,338.89
32	Conductors (for Berth 136 as noted in Special Condition SC-25)	Lump Sum	1	471,591.80	471,591.80	0%	N/A	N/A	-	N/A	100%	100%	471,591.80
33	Conductors (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	692,948.22	692,948.22	0%	-	N/A	N/A	-	100%	100%	692,948.22
34	SPO Receptacles (for Berth 140 as noted in Special Condition SC-25)	Lump Sum	1	226,959.75	226,959.75	0%	-	N/A	N/A	N/A	100%	100%	226,959.75
35	SPO Receptacles (for Berth 138 as noted in Special Condition SC-25)	Lump Sum	1	340,439.63	340,439.63	0%	N/A	-	N/A	N/A	100%	100%	340,439.63
36	SPO Receptacles (for Berth 136 as noted in Special Condition SC-25)	Lump Sum	1	226,959.75	226,959.75	0%	N/A	-	N/A	N/A	100%	100%	226,959.75
37	SPO Receptacles (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	453,919.50	453,919.50	0%	-	N/A	N/A	-	100%	100%	453,919.50
38	All Other Electrical Work (for Berth 140 as noted in Special Condition SC-25)	Lump Sum	1	86,714.11	86,714.11	0%	-	N/A	N/A	N/A	100%	100%	86,714.11
39	All Other Electrical Work (for Berth 138 as noted in Special Condition SC-25)	Lump Sum	1	81,156.80	81,156.80	0%	N/A	-	N/A	N/A	100%	100%	81,156.80
40	All Other Electrical Work (for Berth 136 as noted in Special Condition SC-25)	Lump Sum	1	79,665.13	79,665.13	0%	N/A	-	N/A	-	100%	100%	79,665.13
41	All Other Electrical Work (for Berth 132-134 as noted in Special Condition SC-25)	Lump Sum	1	89,190.97	89,190.97	0%	-	N/A	N/A	-	100%	100%	89,190.97
42	Paving at Switchgear MTS4 and MTS5 and at SSP Substations	Lump Sum	1	135,862.43	135,862.43	0%	-	0	N/A	-	100%	100%	135,862.43
43	Standby Time	Unit Price	100	377.42	37,742.00	48.34	-	9,123.10	9,123.10	-	48%	96%	36,362.37
44	Scheduling	Lump Sum	1	22,363.82	22,363.82	0%	-	-	-	-	100%	100%	22,363.82
45	Ship Commissioning	Unit Price	132	767.63	101,327.16	-	-	-	-	16143.63	25%	41%	41,475.42
46	Power for Acceptance Testing	Allowance	1	50,000.00	50,000.00	0%	-	-	-	-	18.00%	18%	9,000.00
CO 1	CHANGE ORDER #1	Lump Sum	1	2,160,000.00	-	0%	-	-	-	-	100%	100%	2,160,000.00
CO 2	CHANGE ORDER #2	Lump Sum	1	38,008.63	-	-	-	-	-	-	100%	100%	38,008.63
CO 3	CHANGE ORDER #3	Lump Sum	1	(2,155.00)	-	-	-	-	-	-	100%	100%	(2,155.00)
CO 4	CHANGE ORDER #4	Lump Sum	1	26,737.00	-	-	-	-	-	-	100%	100%	26,737.00
CO 5	CHANGE ORDER #5	Lump Sum	1	2,290,790.00	-	38%	767,776.70	53,400.33	57,235.47	-	61.65%	100%	2,290,790.00
CO 6	CHANGE ORDER #6	Lump Sum	1	4,949.00	-	0%	-	-	-	-	100.00%	100%	4,949.00



Progress Payment No. 19  
 Period Ending : 11/30/14  
**PAYMENT DUE: 3/3/2015**

Specification: HD-S2348 Shore to Ship Power Project at Pier T, Berths 132-140

Contractor: The Ryan Company

LBHD Contract No: HD-7928

Original Bid Amt: \$20,559,112.22

Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	T140 \$ Amount This Month	T138 \$ Amount This Month	T136 \$ Amount This Month	T132 \$ Amount This Month	Total % of Item Comp	TOTAL \$ Amount to Date
CHANGE ORDER #7	Lump Sum	1	70,000.00		100%	17,500.00	17,500.00	17,500.00	17,500.00	100%	70,000.00
			4,588,329.63								
				20,559,112.22	4%	\$ 785,276.70	\$ 80,023.43	\$ 83,859.58	\$ 33,643.63	96%	\$ 25,105,236.25
NEW CONTRACT AMOUNT				25,147,441.85							

**SIGN  
HERE**

**TOTAL \$**

**SIGN  
HERE**

**SIGN  
HERE**

CM initials *George Gordon*  
 George Gordon  
 Project Manager  
 Date *for 2/24/15*

Suzanne C. Plezia, P.E.  
 Director of Construction  
 Date

Gross Earnings:	\$ 25,105,236.25
Previous Payments:	\$ 23,906,498.34
Previous Retention:	\$ (72,220.53)
STOP NOTICE HARDY & HARPER INC. \$23,750 + 25%	\$ (29,687.50)
STOP NOTICE HAMPTON TEDDER TECHNICAL SERVICES, INC. \$91,221.02 + 25%	\$ (114,027.51)
Earned This Period:	\$ 982,802.35
Less Retention: ESCROW #2	\$ (49,140.12)
STOP NOTICE ROBERTSON'S \$1,885.99 + 25%	\$ (2,357.49)
STOP NOTICE ABC RESOURCES INC \$8,000.00 + 25%	\$ (10,000.00)
AMOUNT DUE THIS ESTIMATE:	\$ 921,304.75

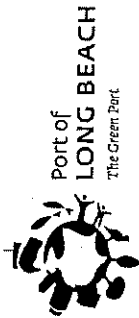
BPO No.	INDEX CODE	PROJ	PROJ DET	Subobject Code
BPHA12000127	HACDCMCN	HA1317	1H2348	210009



**Project & Grant Revenue/Expenditure Financial Summary**  
Criteria: As Of = 3/26/2019 (48% of Year Elapsed)

Project Detail	Title	ITD Adjusted Budget	Month-To-Date Actual Activity	Quarter-To-Date Actual Activity	ITD Actual	ITD Encumbrance incl Pre-Encumb	ITD Adjusted Budget - Actuals	% Actuals to Adjusted Budget
<b>Revenue</b>								
Project HA1314 - CLOSED-PIER A SHORE TO SHP PWR RETROFIT								
1H2342	CONSTRUCTION, PROGRAM-WIDE	0.00	0.00	0.00	6,207,535.72		(6,207,535.72)	0.0%
Total Project HA1314		0.00	0.00	0.00	6,207,535.72		(6,207,535.72)	0.0%
Project HA1317 - CLS-PIER T,T132-T140 SHORE TO SHIP POWER								
1H2348	1H2348/CONST/ELECTRICAL INFRA	0.00	0.00	0.00	10,000,000.00		(10,000,000.00)	0.0%
Total Project HA1317		0.00	0.00	0.00	10,000,000.00		(10,000,000.00)	0.0%
Total		0.00	0.00	0.00	16,207,535.72		(16,207,535.72)	0.0%
Total Revenue		0.00	0.00	0.00	16,207,535.72		(16,207,535.72)	0.0%
<b>Expenditures</b>								
Project HA1314 - CLOSED-PIER A SHORE TO SHP PWR RETROFIT								
1B2342	ENVIRONMENTAL, PROGRAM-WIDE	76,955.40	0.00	0.00	76,955.40		0.00	100.0%
1C2342	DESIGN, PROGRAM-WIDE	2,313,600.40	0.00	0.00	2,313,600.40		0.00	100.0%
1H2342	CONSTRUCTION, PROGRAM-WIDE	18,162,985.63	0.00	0.00	16,163,251.75		(266.12)	100.0%
Total Project HA1314		18,553,541.43	0.00	0.00	18,553,807.55		(266.12)	100.0%
Project HA1317 - CLS-PIER T,T132-T140 SHORE TO SHIP POWER								
1B2348	1B2348/PERMITTING/ELECT INFRASTRUCTURE	291,851.12	0.00	0.00	291,851.12		0.00	100.0%
1C2348	1C2348/DESIGN/ELECTRICAL INFRASTRUCTURE	4,709,456.06	0.00	0.00	4,709,456.06		0.00	100.0%
1H2348	1H2348/CONST/ELECTRICAL INFRA	29,415,926.69	0.00	0.00	29,416,228.51		(301.82)	100.0%
Total Project HA1317		34,417,233.87	0.00	0.00	34,417,535.69		(301.82)	100.0%
Total		52,970,775.30	0.00	0.00	52,971,343.24		(567.94)	100.0%
Total Expenditures		52,970,775.30	0.00	0.00	52,971,343.24		(567.94)	100.0%





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM NO.	ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 1 - Mobilization and Demobilization: Furnish all labor, materials, tools, equipment, incidentals and supervision necessary to perform... as specified and shown for the lump sum price of which only 50% may be applied to mobilization) of -												
ITEM NO. 2 - Site Specific Safety Plan: Provide and implement an approved Site Specific Safety Plan for the lump sum price of -												
ITEM NO. 3 - Asphalt Concrete Pavement Demolition: Provide all labor, equipment, materials and incidentals necessary to perform demolition, removal and disposal of existing asphalt pavement and... as shown and specified for the lump sum price of -												
ITEM NO. 4 - Soil Handling and Disposal of Surplus Soil: Provide all labor, equipment, materials and incidentals necessary to stockpile... approximately one thousand and one hundred (1,100) tons... as specified and shown for the unit price per ton of -												
ITEM NO. 5 - Soil Handling and Disposal of Non-Hazardous Waste: Provide all labor, equipment, materials and incidentals necessary to... approximately six hundred fifty (650) tons of Non-Hazardous... as specified and shown for the unit price per ton of -												
TOTAL:												
CERTIFIED CHECK OR BOND:												
			Shimmick Construction Company		594575/Exp. 05/31/2012		\$11,513,850.00		AUTHORIZED SIGNATURE			
			LOWEST RESPONSIBLE BIDDER		LICENSE NUMBER		AMOUNT					





# ANALYSIS OF BIDS

## CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company		KDC, Inc. dba Dynatec		Griffith/Neubauer JV		Minako America Corporation		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 6 - Port Furnished Crushed Miscellaneous Base: Provide all labor, equipment, materials and incidentals necessary to mix, load... approximately two thousand six hundred fifty (2,650) tons... as specified and shown for the unit price per ton of -	Unit Price	15.00	39,750.00	42.00	111,300.00	40.00	106,000.00	40.38	107,007.00	34.14	90,471.00
ITEM NO. 7 - Asphalt Concrete Pavement: Provide all labor, equipment, materials and incidentals necessary to construct approximately two thousand five hundred fifty (2,550) tons of asphalt... as specified and shown for the unit price per ton of -	Unit Price	85.00	226,950.00	213.00	543,150.00	108.00	275,400.00	108.63	277,006.50	118.60	302,430.00
ITEM NO. 8 - 8-Foot Chain Link Fence with Barbed Wire: Provide all labor, material, equipment and incidentals... approx four hundred eighty (480) linear feet of 8-foot chain link... as specified and shown for the unit price per linear foot of -	Unit Price	40.00	19,200.00	71.00	34,080.00	41.00	19,680.00	77.09	37,003.20	44.70	21,456.00
ITEM NO. 9 - Chain Link Gates: Provide all labor, material, equipment and incidentals necessary to furnish and install all chain link gates as specified and shown for the lump sum price of -	Lump Sum	15,000.00	15,000.00	10,000.00	10,000.00	14,200.00	14,200.00	17,000.00	17,000.00	10,301.00	10,301.00
ITEM NO. 10 - Pipe Bollards, 12-inch: Provide all labor, equipment, materials and incidentals necessary to furnish, install, and coat fifty seven (57) 12-inch diameter pipe bollards, as specified and shown for the unit price per each of -	Unit Price	1,200.00	68,400.00	1,700.00	96,900.00	1,320.00	75,240.00	1,877.20	107,000.40	1,707.00	97,299.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,950.00  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

**NO. HD-S2342A**

**DATE OPENED: January 31, 2012**

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company		KDC, Inc. dba Dynalectric		Griffith/Neubauer JV		Minako America Corporation		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 11 - Bid Item Removed: Bid Item removed per Addendum No. 1 issued January 4, 2012.											
ITEM NO. 12 - Repair of Existing Striping: Provide all labor, equipment, materials and incidentals necessary to repair approximately three thousand eight hundred (3,800) linear feet of... as specified and required for the unit price per linear foot of -	Lump Sum	0	0	0	0	0	0	0	0	0	0
ITEM NO. 13 - Repair of Existing Pavement Markings: Provide all labor, equipment, materials and incidentals necessary to repair approximately one hundred fifty five (155) existing markings, as specified and required for the unit price per each of -	Unit Price	1.00	3,800.00	2.50	9,500.00	1.15	4,370.00	1.85	7,030.00	1.12	4,266.00
ITEM NO. 14 - Shore Power Outlet Vaults for Berth 90 (SPO 7, SPO 8 & SPO 9): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Unit Price	50.00	7,750.00	142.00	22,010.00	46.00	7,130.00	109.68	17,000.40	45.00	6,975.00
ITEM NO. 15 - Shore Power Outlet Vaults for Berth 82 (SPO 4, SPO 5 & SPO 6): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Lump Sum	250,000.00	250,000.00	365,000.00	365,000.00	340,000.00	340,000.00	377,000.00	377,000.00	343,615.00	343,615.00
<b>TOTAL:</b>	Lump Sum	250,000.00	250,000.00	365,000.00	365,000.00	340,000.00	340,000.00	377,000.00	377,000.00	343,615.00	343,615.00
<b>CERTIFIED CHECK OR BOND:</b>											

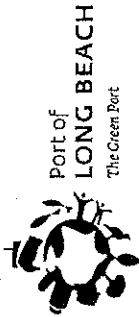
**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

**594575/Exp. 05/31/2012**  
LICENSE NUMBER

**\$11,513,850.00**  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

**NO. HD-S2342A**

**DATE OPENED: January 31, 2012**

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company		KDC, Inc. dba Dynalectric		Griffith/Neubauer JV		Minako America Corporation		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 16 - Shore Power Outlet Vaults for Berth 94 (SPO 1, SPO 2 & SPO 3): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Lump Sum	250,000.00	250,000.00	365,000.00	365,000.00	340,000.00	340,000.00	377,000.00	377,000.00	343,615.00	343,615.00
ITEM NO. 17 - Cut-Off Wall Plug/Penetrations: Provide all labor, material, equipment and incidentals necessary to perform demolition, cutting and construction of four (4) cut-off wall plug... as specified and shown for the unit price per each of -	Unit Price	7,000.00	28,000.00	6,000.00	24,000.00	5,400.00	21,600.00	4,250.00	17,000.00	9,300.00	37,200.00
ITEM NO. 18 - SPO "Dry Run" Cable Connection Support: Provide all labor, materials, tools, equipment and incidentals necessary to support approximately four (4) ship-side "dry... as specified and directed by the Engineer for the unit price per each of -	Unit Price	3,000.00	12,000.00	1,500.00	6,000.00	2,160.00	8,720.00	1,750.00	7,000.00	2,122.00	8,488.00
ITEM NO. 19 - Ship Testing and Commissioning: Provide all labor, materials, tools, equipment and incidentals necessary to support approximately four (4) ship-side commissioning... as specified and directed by the Engineer for the unit price per each of -	Unit Price	15,000.00	60,000.00	17,500.00	70,000.00	20,437.50	81,750.00	17,500.00	70,000.00	18,392.00	73,568.00
ITEM NO. 20 - Transformer for Berth 90: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	650,000.00	650,000.00	600,000.00	600,000.00	854,000.00	654,000.00	477,000.00	477,000.00	599,962.00	599,962.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

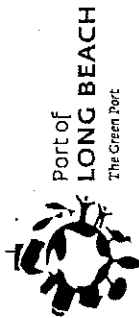
**Shimmick Construction Company**  
**LOWEST RESPONSIBLE BIDDER**

**594575/Exp. 05/31/2012**  
**LICENSE NUMBER**

**\$11,513,850.00**  
**AMOUNT**

**AUTHORIZED SIGNATURE**





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

**NO. HD-S2342A**

**DATE OPENED: January 31, 2012**

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company		KDC, Inc. dba Dynalectric		Griffith/Neubauer JV		Minako America Corporation		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 21 - Transformer for Berth 92: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	650,000.00	650,000.00	600,000.00	600,000.00	654,000.00	654,000.00	477,000.00	477,000.00	599,982.00	599,982.00
ITEM NO. 22 - Transformer for Berth 94: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	650,000.00	650,000.00	600,000.00	600,000.00	654,000.00	654,000.00	477,000.00	477,000.00	599,982.00	599,982.00
ITEM NO. 23 - Switchgear Assembly for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,750,000.00	1,750,000.00	1,690,000.00	1,690,000.00	1,744,000.00	1,744,000.00	1,777,000.00	1,777,000.00	1,582,989.00	1,582,989.00
ITEM NO. 24 - Switchgear Assembly for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,475,000.00	1,475,000.00	1,510,000.00	1,510,000.00	1,417,000.00	1,417,000.00	1,777,000.00	1,777,000.00	1,448,485.00	1,448,485.00
ITEM NO. 25 - Switchgear Assembly for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,500,000.00	1,500,000.00	1,600,000.00	1,600,000.00	1,471,500.00	1,471,500.00	1,377,000.00	1,377,000.00	1,489,022.00	1,489,022.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
**LOWEST RESPONSIBLE BIDDER**

**594575/Exp. 05/31/2012**  
**LICENSE NUMBER**

**\$11,513,850.00**  
**AMOUNT**

**AUTHORIZED SIGNATURE**





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

DATE OPENED: January 31, 2012

NO. HD-S2342A

SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company		KDC, Inc. dba Dynalectric		Griffith/Neubauer JV		Minako America Corporation		Sully-Miller Contracting Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 26 - Ductbanks and Raceways for Berth 90: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	500,000.00	500,000.00	581,000.00	581,000.00	435,000.00	435,000.00	577,000.00	577,000.00	384,754.00	384,754.00
ITEM NO. 27 - Ductbanks and Raceways for Berth 92: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	450,000.00	450,000.00	537,000.00	537,000.00	435,000.00	435,000.00	577,000.00	577,000.00	374,855.00	374,855.00
ITEM NO. 28 - Ductbanks and Raceways for Berth 94: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	325,000.00	325,000.00	436,000.00	436,000.00	355,000.00	355,000.00	477,000.00	477,000.00	342,606.00	342,606.00
ITEM NO. 29 - Conductors for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	300,000.00	300,000.00	250,000.00	250,000.00	332,450.00	332,450.00	377,000.00	377,000.00	331,972.00	331,972.00
ITEM NO. 30 - Conductors for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	300,000.00	300,000.00	260,000.00	260,000.00	332,450.00	332,450.00	277,000.00	277,000.00	345,359.00	345,359.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

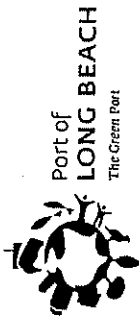
Shimmick Construction Company  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 31 - Conductors for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	325,000.00	325,000.00	180,000.00	180,000.00	332,450.00	332,450.00	377,000.00	377,000.00	400,643.00	400,643.00		
ITEM NO. 32 - SPO Receptacles for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	100,000.00	100,000.00	110,000.00	110,000.00	88,000.00	88,000.00	177,000.00	177,000.00	108,398.00	108,398.00		
ITEM NO. 33 - SPO Receptacles for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	100,000.00	100,000.00	110,000.00	110,000.00	88,000.00	88,000.00	177,000.00	177,000.00	108,158.00	108,158.00		
ITEM NO. 34 - SPO Receptacles for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	100,000.00	100,000.00	110,000.00	110,000.00	88,000.00	88,000.00	177,000.00	177,000.00	108,158.00	108,158.00		
ITEM NO. 35 - All Other Electrical Work for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 90 ... as specified and shown for the lump sum price of -	Lump Sum	475,000.00	475,000.00	230,750.00	230,750.00	456,000.00	456,000.00	177,000.00	177,000.00	433,504.00	433,504.00		
TOTAL:													
CERTIFIED CHECK OR BOND:													

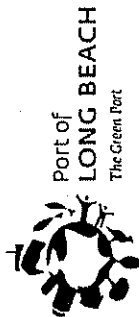
Shimmick Construction Company  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

**NO. HD-S2342A**

**DATE OPENED: January 31, 2012**

ITEM	ESTIMATED QUANTITIES	Shimmick Construction Company 3201 Edgewater Drive #202 Oakland, Ca 94612 Phone: (949) 333-1500 Fax: (949) 333-1510		KDC, Inc. dba Dynalectric 4462 Corporate Center Drive Los Alamitos, CA 90720 Phone: (714) 828-7000 Fax: (714) 484-2385		Griffith/Neubauer JV 12200 Bloomfield Avenue Santa Fe Springs, CA 90670 Phone: (562) 929-1128 Fax: (562) 864-7938		Minako America Corporation 522 E. Airline Way Gardena, CA 90248 Phone: (310) 516-8100 Fax: (310) 516-7404		Sully-Miller Contracting Company 135 S. State College Blvd #400 Brea, CA 92821 Phone: (714) 578-9600 Fax: (714) 449-8775	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 36 - All Other Electrical Work for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 92 ... as specified and shown for the lump sum price of -	Lump Sum	70,000.00	70,000.00	100,000.00	100,000.00	107,000.00	107,000.00	177,000.00	177,000.00	47,341.00	47,341.00
ITEM NO. 37 - All Other Electrical Work for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 94 ... as specified and shown for the lump sum price of -	Lump Sum	105,000.00	105,000.00	150,000.00	150,000.00	128,000.00	128,000.00	177,000.00	177,000.00	50,750.00	50,750.00
ITEM NO. 38 - Allowance for Load Bank Test Energy Usage: Provide all labor, materials, tools, equipment and incidentals necessary to reimburse the Tenant for energy... The limits and use of the Allowance shall be solely as directed by the Engineer -	Allowance	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00
ITEM NO. 39 - Stand-by Time: Provide all labor, equipment, materials and incidentals necessary to provide approximately twenty-five (25) hours of stand-by time for personnel and equipment, including, but not limited to... for the unit price per hour of -	Unit Price	1,000.00	25,000.00	720.00	18,000.00	2,100.00	52,500.00	680.00	17,000.00	1,268.00	31,700.00
ITEM NO. 40 - Environmental Protection Plan (E.P.P.) Compliance: Provide all labor, equipment, materials and incidentals necessary to develop Environmental Protection Plan, including SWPPP (see Appendix... as specified and shown for the lump sum price of -	Lump Sum	20,000.00	20,000.00	72,000.00	72,000.00	34,500.00	34,500.00	77,000.00	77,000.00	22,106.00	22,106.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

**594575/Exp. 05/31/2012**  
LICENSE NUMBER

**\$11,513,850.00**  
AMOUNT

AUTHORIZED SIGNATURE





DATE OPENED: January 31, 2012

**Shimmick Construction Company**  
**LOWEST RESPONSIBLE BIDDER**

594575/Exp. 05/31/2012  
LICENSE NUMBER

AMOUNT
\$11,513,850.00

**AUTHORIZED SIGNATURE**





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc.		Vellutini Corp dba Royal Electric		Cornel Electric		The Ryan Company		Marathon Construction Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 1 - Mobilization and Demobilization: Furnish all labor, materials, tools, equipment, incidentals and supervision necessary to perform... as specified and shown for the lump sum price (of which only 50% may be applied to mobilization) of -	Lump Sum	150,000.00	150,000.00	150,000.00	150,000.00	651,217.00	651,217.00	1,472,000.00	1,472,000.00	511,322.00	511,322.00
ITEM NO. 2 - Site Specific Safety Plan: Provide and implement an approved Site Specific Safety Plan for the lump sum price of -	Lump Sum	60,000.00	60,000.00	50,000.00	50,000.00	175,982.00	175,982.00	12,000.00	12,000.00	15,000.00	15,000.00
ITEM NO. 3 - Asphalt Concrete Pavement Demolition: Provide all labor, equipment, materials and incidentals necessary to perform demolition, removal and disposal of existing asphalt pavement and... as shown and specified for the lump sum price of -	Lump Sum	113,156.00	113,156.00	101,000.00	101,000.00	351,965.00	351,965.00	54,000.00	54,000.00	215,000.00	215,000.00
ITEM NO. 4 - Soil Handling and Disposal of Surplus Soil: Provide all labor, equipment, materials and incidentals necessary to stockpile... approximately one thousand one hundred (1,100) tons... as specified and shown for the unit price per ton of -	Unit Price	34.91	38,401.00	20.10	22,110.00	44.00	48,400.00	66.30	72,930.00	40.00	44,000.00
ITEM NO. 5 - Soil Handling and Disposal of Non-Hazardous Waste: Provide all labor, equipment, materials and incidentals necessary to... approximately six hundred fifty (650) tons of Non-Hazardous... as specified and shown for the unit price per ton of -	Unit Price	53.00	34,450.00	110.00	71,500.00	57.00	37,050.00	42.20	27,430.00	75.00	48,750.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc.		Veitutti Corp dba Royal Electric		Comet Electric		The Ryan Company		Marathon Construction Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 6 - Port Furnished Crushed Miscellaneous Base: Provide all labor, equipment, materials and incidentals necessary to mix, load... approximately two thousand six hundred fifty (2,650) tons... as specified and shown for the unit price per ton of -	Unit Price	42.00	111,300.00	42.00	111,300.00	42.00	111,300.00	36.15	95,797.50	40.00	106,000.00
ITEM NO. 7 - Asphalt Concrete Pavement: Provide all labor, equipment, materials and incidentals necessary to construct approximately two thousand five hundred fifty (2,550) tons of asphalt... as specified and shown for the unit price per ton of -	Unit Price	204.50	521,475.00	124.00	316,200.00	106.00	279,300.00	112.00	285,600.00	130.00	331,500.00
ITEM NO. 8 - 8-Foot Chain Link Fence with Barbed Wire: Provide all labor, material, equipment and incidentals... approx four hundred eighty (480) linear feet of 8-foot chain link... as specified and shown for the unit price per linear foot of -	Unit Price	77.00	36,960.00	42.00	20,160.00	36.00	17,280.00	41.00	19,680.00	50.00	24,000.00
ITEM NO. 9 - Chain Link Gates: Provide all labor, material, equipment and incidentals necessary to furnish and install all chain link gates as specified and shown for the lump sum price of -	Lump Sum	11,436.00	11,436.00	14,600.00	14,600.00	12,318.00	12,318.00	3,455.00	3,455.00	15,000.00	15,000.00
ITEM NO. 10 - Pipe Bollards, 12-inch: Provide all labor, equipment, materials and incidentals necessary to furnish, install, and coat fifty seven (57) 12-inch diameter pipe bollards, as specified and shown for the unit price per each of -	Unit Price	1,800.00	102,600.00	1,350.00	77,520.00	1,161.00	66,177.00	1,579.00	90,003.00	2,000.00	114,000.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

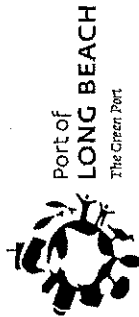
**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc.		Valluzzi Corp dba Royal Electric		Comet Electric		The Ryan Company		Marathon Construction Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 11 - Bid Item Removed: Bid Item removed per Addendum No. 1 issued January 4, 2012.											
ITEM NO. 12 - Repair of Existing Striping: Provide all labor, equipment, materials and incidentals necessary to repair approximately three thousand eight hundred (3,800) linear feet of... as specified and required for the unit price per linear foot of -	Lump Sum	0	0	0	0	0	0	0	0	0	0
ITEM NO. 13 - Repair of Existing Pavement Markings: Provide all labor, equipment, materials and incidentals necessary to repair approximately one hundred fifty five (155) existing markings, as specified and required for the unit price per each of -	Unit Price	2.40	9,120.00	3.40	12,920.00	2.25	8,550.00	3.65	13,870.00	2.00	7,600.00
ITEM NO. 14 - Shore Power Outlet Vaults for Berth 90 (SPO 7, SPO 8 & SPO 9): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Unit Price	120.00	18,600.00	90.00	13,950.00	315.00	48,825.00	18.10	2,805.50	71.00	11,005.00
ITEM NO. 15 - Shore Power Outlet Vaults for Berth 92 (SPO 4, SPO 5 & SPO 6): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Lump Sum	463,458.00	463,458.00	353,666.00	353,666.00	389,124.00	389,124.00	232,000.00	232,000.00	600,000.00	600,000.00
<b>TOTAL:</b>	Lump Sum	463,458.00	463,458.00	353,666.00	353,666.00	389,124.00	389,124.00	142,000.00	142,000.00	600,000.00	600,000.00
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





Port of  
**LONG BEACH**  
The Green Port

## ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

Page 13 of 27

**SPECIFICATIONS FOR: Pier A, Berths A85-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc. 1132 N. Seventh Street San Jose, CA 95112 Phone: (562) 641-2400 Fax: (562) 946-9988		Vellutini Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		Comet Electric 7760 Deering Avenue Canoga Park, CA 91304 Phone: (818) 340-0965 Fax: (818) 340-4033		The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Marathon Construction Company 10108 Riverford Road Lakeside, CA 92040 Phone: (619) 276-4401 Fax: (619) 276-0717	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 16 - Shore Power Outlet Vaults for Berth 94 (SPO 1, SPO 2 & SPO 3): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Lump Sum	463,458.00	463,458.00	353,666.00	353,666.00	389,124.00	389,124.00	142,000.00	142,000.00	600,000.00	600,000.00
ITEM NO. 17 - Cut-Off Wall Plug/Penetrations: Provide all labor, material, equipment and incidentals necessary to perform demolition, coring and construction of four (4) cut-off wall plug... as specified and shown for the unit price per each of -	Unit Price	7,223.00	28,892.00	5,200.00	24,800.00	4,180.00	16,720.00	14,500.00	58,000.00	12,000.00	48,000.00
ITEM NO. 18 - SPO "Dry Run" Cable Connection Support: Provide all labor, materials, tools, equipment and incidentals necessary to support approximately four (4) ship-side "dry..." as specified and directed by the Engineer for the unit price per each of -	Unit Price	621.00	2,484.00	640.00	2,560.00	519.00	2,076.00	775.00	3,100.00	1,400.00	5,600.00
ITEM NO. 19 - Ship Testing and Commissioning: Provide all labor, materials, tools, equipment and incidentals necessary to support approximately four (4) ship-side commissioning... as specified and directed by the Engineer for the unit price per each of -	Unit Price	17,915.00	71,660.00	14,000.00	56,000.00	3,754.00	15,016.00	61,400.00	245,600.00	20,000.00	80,000.00
ITEM NO. 20 - Transformer for Berth 90: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	625,700.00	625,700.00	609,000.00	609,000.00	1,208,972.00	1,208,972.00	662,000.00	662,000.00	740,000.00	740,000.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc.		Velluti Corp dba Royal Electric		Comet Electric		The Ryan Company		Marathon Construction Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 21 - Transformer for Berth 92: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	625,700.00	625,700.00	609,000.00	609,000.00	1,211,997.00	1,211,997.00	662,000.00	662,000.00	665,000.00	665,000.00
ITEM NO. 22 - Transformer for Berth 94: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	625,700.00	625,700.00	609,000.00	609,000.00	1,215,296.00	1,215,296.00	662,000.00	662,000.00	710,000.00	710,000.00
ITEM NO. 23 - Switchgear Assembly for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,648,325.00	1,648,325.00	1,655,000.00	1,655,000.00	1,232,346.00	1,232,346.00	2,008,000.00	2,008,000.00	1,790,000.00	1,790,000.00
ITEM NO. 24 - Switchgear Assembly for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,384,637.00	1,384,637.00	1,396,000.00	1,396,000.00	1,232,346.00	1,232,346.00	1,475,000.00	1,475,000.00	1,600,000.00	1,600,000.00
ITEM NO. 25 - Switchgear Assembly for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,418,089.00	1,418,089.00	1,439,000.00	1,439,000.00	1,237,462.00	1,237,462.00	1,507,000.00	1,507,000.00	1,635,000.00	1,635,000.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc.		Vellutini Corp dba Royal Electric		Comet Electric		The Ryan Company		Marathon Construction Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 26 - Ductbanks and Raceways for Berth 90: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	762,806.00	762,806.00	750,000.00	750,000.00	507,835.00	507,835.00	578,000.00	578,000.00	745,000.00	745,000.00
ITEM NO. 27 - Ductbanks and Raceways for Berth 92: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	678,099.00	678,099.00	576,000.00	576,000.00	505,492.00	505,492.00	449,000.00	449,000.00	660,000.00	660,000.00
ITEM NO. 28 - Ductbanks and Raceways for Berth 94: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	559,890.00	559,890.00	443,000.00	443,000.00	473,340.00	473,340.00	353,000.00	353,000.00	540,000.00	540,000.00
ITEM NO. 29 - Conductors for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	376,811.00	376,811.00	372,000.00	372,000.00	318,573.00	318,573.00	374,000.00	374,000.00	340,000.00	340,000.00
ITEM NO. 30 - Conductors for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	381,578.00	381,578.00	369,000.00	369,000.00	304,540.00	304,540.00	425,000.00	425,000.00	310,000.00	310,000.00
TOTAL:											
CERTIFIED CHECK OR BOND:											

Shimmick Construction Company  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc. 1132 N. Seventh Street San Jose, CA 95112 Phone: (562) 641-2400 Fax: (562) 946-9988		Vellutini Corp dba Royal Electric 8481 Caribide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		Comet Electric 7760 Deering Avenue Canoga Park, CA 91304 Phone: (818) 340-0955 Fax: (818) 340-4033		The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Marathon Construction Company 10108 Riverford Road Lakeside, CA 92040 Phone: (619) 276-4401 Fax: (619) 276-0717	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 31 - Conductors for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	385,757.00	385,757.00	431,000.00	431,000.00	359,649.00	359,649.00	336,000.00	336,000.00	340,000.00	340,000.00
ITEM NO. 32 - SPO Receptacles for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	114,664.00	114,664.00	102,000.00	102,000.00	243,810.00	243,810.00	257,000.00	257,000.00	160,000.00	160,000.00
ITEM NO. 33 - SPO Receptacles for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	114,664.00	114,664.00	102,000.00	102,000.00	259,943.00	259,943.00	257,000.00	257,000.00	160,000.00	160,000.00
ITEM NO. 34 - SPO Receptacles for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	117,737.00	117,737.00	102,000.00	102,000.00	243,880.00	243,880.00	257,000.00	257,000.00	160,000.00	160,000.00
ITEM NO. 35 - All Other Electrical Work for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 90 as specified and shown for the lump sum price of -	Lump Sum	204,842.00	204,842.00	883,000.00	883,000.00	128,770.00	128,770.00	510,000.00	510,000.00	525,000.00	525,000.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

**NO. HD-S2342A**

**DATE OPENED: January 31, 2012**

ITEM	ESTIMATED QUANTITIES	Cupertino Electric, Inc. 1132 N. Seventh Street San Jose, CA 95112 Phone: (562) 841-2400 Fax: (562) 946-9988		Vellufini Corp dba Royal Electric 8481 Carbide Ct Sacramento, CA 95828 Phone: (916) 226-2100 Fax: (916) 226-2150		Comet Electric 7760 Deering Avenue Canoga Park, CA 91304 Phone: (818) 340-0985 Fax: (818) 340-4033		The Ryan Company 15 Commerce Way Norton, MA 02766 Phone: (508) 742-2500 Fax: (508) 742-2540		Marathon Construction Company 10108 Riverford Road Lakeside, CA 92040 Phone: (619) 276-4401 Fax: (619) 276-0717	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 36 - All Other Electrical Work for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 92 ... as specified and shown for the lump sum price of -	Lump Sum	108,225.00	108,225.00	91,000.00	91,000.00	51,957.00	51,957.00	272,000.00	272,000.00	68,000.00	68,000.00
ITEM NO. 37 - All Other Electrical Work for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 94 ... as specified and shown for the lump sum price of -	Lump Sum	130,900.00	130,900.00	64,000.00	64,000.00	59,268.00	59,268.00	155,000.00	155,000.00	100,000.00	100,000.00
ITEM NO. 38 - Allowance for Load Bank Test Energy Usage: Provide all labor, materials, tools, equipment and incidentals necessary to reimburse the Tenant for energy... The limits and use of the Allowance shall be solely as directed by the Engineer -	Allowance	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00
ITEM NO. 39 - Stand-by Time: Provide all labor, equipment, materials and incidentals necessary to provide approximately twenty-five (25) hours of stand-by time for personnel and equipment, including, but not limited to... for the unit price per hour of -	Unit Price	725.00	16,125.00	1,350.00	33,750.00	855.00	21,375.00	760.00	19,000.00	1,000.00	25,000.00
ITEM NO. 40 - Environmental Protection Plan (E.P.P.) Compliance: Provide all labor, equipment, materials and incidentals necessary to develop Environmental Protection Plan, including SWPPP (see Appendix... as specified and shown for the lump sum price of -	Lump Sum	77,042.00	77,042.00	53,000.00	53,000.00	70,394.00	70,394.00	25,000.00	25,000.00	50,000.00	50,000.00
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

**594575/Exp. 05/31/2012**  
LICENSE NUMBER

**\$11,513,850.00**  
AMOUNT

AUTHORIZED SIGNATURE



## ANALYSIS OF BIDS

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	Cupeertino Electric, Inc.		Vellutini Corp dba Royal Electric		Comet Electric		The Ryan Company		Marathon Construction Company	
		RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 41 - Schedule: Provide all labor, equipment, materials and incidentals necessary to develop and update all schedules complete as specified for the lump sum price of -											
	Lump Sum	50,000.00	50,000.00	163,000.00	163,000.00	35,196.00	35,196.00	80,000.00	80,000.00	250,000.00	250,000.00
TOTAL:		\$13,159,999.00		\$13,007,366.00		\$13,982,989.00		\$14,345,271.00		\$14,999,777.00	
CERTIFIED CHECK OR BOND:		10% Bond		10% Bond		10% Bond		10% Bond		10% Bond	

AMOUNT
\$11,513,850.00

**AUTHORIZED SIGNATURE**





# **ANALYSIS OF BIDS** **CITY OF LONG BEACH, HARBOR DEPARTMENT**

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

		Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612		NON-RESPONSIVE											
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 1 - Mobilization and Demobilization: Furnish all labor, materials, tools, equipment, incidentals and supervision necessary to perform... as specified and shown for the lump sum price (of which only 50% may be applied to mobilization) of -	Lump Sum	300,000.00	300,000.00												
ITEM NO. 2 - Site Specific Safety Plan: Provide and implement an approved Site Specific Safety Plan for the lump sum price of -	Lump Sum	10,000.00	10,000.00												
ITEM NO. 3 - Asphalt Concrete Pavement Demolition: Provide all labor, equipment, materials and incidentals necessary to perform demolition, removal and disposal of existing asphalt pavement and... as shown and specified for the lump sum price of -	Lump Sum	126,206.00	126,206.00												
ITEM NO. 4 - Soil Handling and Disposal of Surplus Soil: Provide all labor, equipment, materials and incidentals necessary to stockpile... approximately one thousand one hundred (1,100) tons... as specified and shown for the unit price per ton of -	Unit Price	38.94	42,834.00												
ITEM NO. 5 - Soil Handling and Disposal of Non-Hazardous Waste: Provide all labor, equipment, materials and incidentals necessary to... approximately six hundred fifty (650) tons of Non-Hazardous... as specified and shown for the unit price per ton of -	Unit Price	59.08	36,402.00												
<b>TOTAL:</b>															
<b>CERTIFIED CHECK OR BOND:</b>															

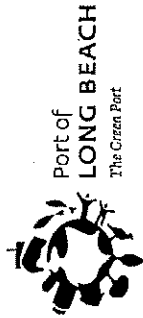
**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

		Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612													
		NON-RESPONSIVE													
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 6 - Port Furnished Crushed Miscellaneous Base: Provide all labor, equipment, materials and incidentals necessary to mix, load... approximately two thousand six hundred fifty (2,650) tons... as specified and shown for the unit price per ton of -	Unit Price	47.00	124,550.00												
ITEM NO. 7 - Asphalt Concrete Pavement: Provide all labor, equipment, materials and incidentals necessary to construct approximately two thousand five hundred fifty (2,550) tons of asphalt... as specified and shown for the unit price per ton of -	Unit Price	230.00	586,500.00												
ITEM NO. 8 - 8-Foot Chain Link Fence with Barbed Wire: Provide all labor, material, equipment and incidentals... approx four hundred eighty (480) linear feet of 8-foot chain link... as specified and shown for the unit price per linear foot of -	Unit Price	86.00	41,280.00												
ITEM NO. 9 - Chain Link Gates: Provide all labor, material, equipment and incidentals necessary to furnish and install all chain link gates as specified and shown for the lump sum price of -	Lump Sum	12,754.00	12,754.00												
ITEM NO. 10 - Pipe Bollards, 12-inch: Provide all labor, equipment, materials and incidentals necessary to furnish, install, and coat fifty seven (57) 12-inch diameter pipe bollards, as specified and shown for the unit price per each of -	Unit Price	2,014.00	114,798.00												
<b>TOTAL:</b>															
<b>CERTIFIED CHECK OR BOND:</b>															

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal

NO. HD-S2342A

DATE OPENED: January 31, 2012

Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612		NON-RESPONSIVE													
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 11 - Bid Item Removed: Bid item removed per Addendum No. 1 Issued January 4, 2012.															
ITEM NO. 12 - Repair of Existing Shipping: Provide all labor, equipment, materials and incidentals necessary to repair approximately three thousand eight hundred (3,800) linear feet of... as specified and required for the unit price per linear foot of -	Lump Sum	0	0												
ITEM NO. 13 - Repair of Existing Pavement Markings: Provide all labor, equipment, materials and incidentals necessary to repair approximately one hundred fifty five (155) existing markings, as specified and required for the unit price per each of -	Unit Price	269.00	1,022,200.00												
ITEM NO. 14 - Shore Power Outlet Vaults for Berth 90 (SPO 7, SPO 8 & SPO 9): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Unit Price	134.25	20,808.75												
ITEM NO. 15 - Shore Power Outlet Vaults for Berth 92 (SPO 4, SPO 5 & SPO 6): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Lump Sum	516,911.00	516,911.00												
TOTAL:	Lump Sum	516,911.00	516,911.00												
CERTIFIED CHECK OR BOND:															

Shimmick Construction Company  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS

## CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0512		NON-RESPONSIVE											
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 16 - Shore Power Outlet Vaults for Berth 94 (SPO 1, SPO 2 & SPO 3): Provide all labor, material, equipment and incidentals necessary to perform demolition and construction of shore to ship... as specified and shown for the lump sum price of -	Lump Sum	516,911.00	516,911.00										
ITEM NO. 17 - Cut-Off Wall Plug/Penetrations: Provide all labor, material, equipment and incidentals necessary to perform demolition, coring and construction of four (4) cut-off wall plug... as specified and shown for the unit price per each of -	Unit Price	8,055.05	32,220.20										
ITEM NO. 18 - SPO "Dry Run" Cable Connection Support: Provide all labor, materials, tools, equipment and incidentals necessary to support approximately four (4) ship-side "dry..." as specified and directed by the Engineer for the unit price per each of -	Unit Price	1,250.00	5,000.00										
ITEM NO. 19 - Ship Testing and Commissioning: Provide all labor, materials, tools, equipment and incidentals necessary to support approximately four (4) ship-side commissioning... as specified and directed by the Engineer for the unit price per each of -	Unit Price	17,796.05	71,184.20										
ITEM NO. 20 - Transformer for Berth 90: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	707,440.00	707,440.00										
<b>TOTAL:</b>													
<b>CERTIFIED CHECK OR BOND:</b>													

**Shinnick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

<b>Steery and Company</b> 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612											
<b>NON-RESPONSIVE</b>											
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 21 - Transformer for Berth 92: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	707,440.00	707,440.00								
ITEM NO. 22 - Transformer for Berth 94: Provide all labor, material, equipment, and incidentals required to furnish, install, test and commission the transformer(s) as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	707,440.00	707,440.00								
ITEM NO. 23 - Switchgear Assembly for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,781,839.00	1,781,839.00								
ITEM NO. 24 - Switchgear Assembly for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,465,896.00	1,465,896.00								
ITEM NO. 25 - Switchgear Assembly for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the switchgear assembly as part of a complete... as specified and shown for the lump sum price of -	Lump Sum	1,501,827.00	1,501,827.00								
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM	ESTIMATED QUANTITIES	NON-RESPONSIVE			Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612								
		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT		RATE	AMOUNT	
ITEM NO. 26 - Ductbanks and Raceways for Berth 90: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	727,666.00	727,666.00										
ITEM NO. 27 - Ductbanks and Raceways for Berth 92: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	777,400.00	777,400.00										
ITEM NO. 28 - Ductbanks and Raceways for Berth 94: Provide all labor, material, equipment and incidentals required to furnish and install the ductbanks and raceways as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	569,505.00	569,505.00										
ITEM NO. 29 - Conductors for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	407,685.00	407,685.00										
ITEM NO. 30 - Conductors for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -	Lump Sum	570,934.00	570,934.00										
<b>TOTAL:</b>													
<b>CERTIFIED CHECK OR BOND:</b>													

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal

NO. HD-S2342A

DATE OPENED: January 31, 2012

ITEM		ESTIMATED QUANTITIES		NON-RESPONSIVE		RATE		AMOUNT		RATE		AMOUNT		RATE		AMOUNT	
ITEM NO. 31 - Conductors for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install and test the conductors as part of a complete system as specified and shown for the lump sum price of -		Lump Sum		347,513.00		347,513.00		347,513.00									
ITEM NO. 32 - SPO Receptacles for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -		Lump Sum		259,726.00		259,726.00		259,726.00									
ITEM NO. 33 - SPO Receptacles for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -		Lump Sum		259,726.00		259,726.00		259,726.00									
ITEM NO. 34 - SPO Receptacles for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission the SPO receptacles as part of a complete system as specified and shown for the lump sum price of -		Lump Sum		259,726.00		259,726.00		259,726.00									
ITEM NO. 35 - All Other Electrical Work for Berth 90: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 90 ... as specified and shown for the lump sum price of -		Lump Sum		660,975.00		660,975.00		660,975.00									
TOTAL:																	
CERTIFIED CHECK OR BOND:																	

Shimmick Construction Company  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

		Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612									
		<b>NON-RESPONSIVE</b>									
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT
ITEM NO. 36 - All Other Electrical Work for Berth 92: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 92 ... as specified and shown for the lump sum price of -	Lump Sum	153,354.00	153,354.00								
ITEM NO. 37 - All Other Electrical Work for Berth 94: Provide all labor, material, equipment and incidentals required to furnish, install, test and commission all other electrical work for Berth 94 ... as specified and shown for the lump sum price of -	Lump Sum	223,576.00	223,576.00								
ITEM NO. 38 - Allowance for Load Bank Test Energy Usage: Provide all labor, materials, tools, equipment and incidentals necessary to reimburse the Tenant for energy... The limits and use of the Allowance shall be solely as directed by the Engineer -	Allowance	50,000.00	50,000.00								
ITEM NO. 39 - Stand-by Time: Provide all labor, equipment, materials and incidentals necessary to provide approximately twenty-five (25) hours of stand-by time for personnel and equipment, including, but not limited to... for the unit price per hour of -	Unit Price	805.52	20,138.00								
ITEM NO. 40 - Environmental Protection Plan (E.P.P.) Compliance: Provide all labor, equipment, materials and incidentals necessary to develop Environmental Protection Plan, including SWPPP (see Appendix... as specified and shown for the lump sum price of -	Lump Sum	75,928.00	75,928.00								
<b>TOTAL:</b>											
<b>CERTIFIED CHECK OR BOND:</b>											

**Shimmick Construction Company**  
LOWEST RESPONSIBLE BIDDER

594575/Exp. 05/31/2012  
LICENSE NUMBER

\$11,513,850.00  
AMOUNT

AUTHORIZED SIGNATURE





# ANALYSIS OF BIDS CITY OF LONG BEACH, HARBOR DEPARTMENT

**SPECIFICATIONS FOR: Pier A, Berths A88-A96, Shore to Ship Power Retrofit  
at Pier A Container Terminal**

NO. HD-S2342A

DATE OPENED: January 31, 2012

		Steiny and Company 221 N. Ardmore Ave Los Angeles, CA 90004 Phone: (213) 341-2149 Fax: (213) 382-0612	NON-RESPONSIVE																	
ITEM	ESTIMATED QUANTITIES	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	RATE	AMOUNT	
ITEM NO. 41 - Schedule: Provide all labor, equipment, materials and incidentals necessary to develop and update all schedules complete as specified for the lump sum price of -	Lump Sum	20,000.00	20,000.00																	
TOTAL:		\$16,355,204.15																		
CERTIFIED CHECK OR BOND:		10% Bond																		



Progress Payment No. 15

Period Ending: OCTOBER 1 THRU NOVEMBER 13, 2014

**PAYMENT DUE : 12-14-14**

Specification: HD-S2342A Shore to Ship Retrofit at Pier A, Berths A88-A96

Contractor: Shimmick Construction Company

LBHD Contract No: HD-7912

Original Bid Amt:

\$11,513,850

Item No.	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	A90 \$ Amount This Month	A92 \$ Amount This Month	A94 \$ Amount This Month	Previous Qty or %	% of Item Comp	TOTAL \$ Amount to Date
1	Mobilization and Demobilization	Lump Sum	1	130,000.00	130,000.00	0%	-	-	-	100%	100%	130,000.00
2	Site Specific Safety Plan	Lump Sum	1	15,000.00	15,000.00	0%	-	-	-	100%	100%	15,000.00
3	Asphalt Concrete Pavement Demolition	Lump Sum	1	150,000.00	150,000.00	0%	-	-	-	100%	100%	150,000.00
4	Soil Handling and Disposal of Surplus Soil	Tons	1100	10.00	11,000.00	-	-	-	-	862.43	78%	8,624.30
5	Soil Handling and Disposal of Non-Hazardous Waste	Tons	650	80.00	52,000.00	-	-	-	-	2,000.56	308%	160,044.64
6	Port Furnished Crushed Miscellaneous Base	Tons	2,650	15.00	39,750.00	-	-	-	-	2,137.65	81%	32,064.75
7	Asphalt Concrete Pavement	Tons	2,550	89.00	226,950.00	-	-	-	-	2,291.07	90%	203,905.23
8	8-Foot Chain Link Fence with Barbed Wire	LF	480	40.00	19,200.00	-	-	-	-	480.00	100%	19,200.00
9	Chain Link Gates	Lump Sum	1	15,000.00	15,000.00	0%	-	-	-	100%	100%	15,000.00
10	Pipe Bollards, 12-inch	Each	57	1,200.00	68,400.00	-	-	-	-	60.00	105%	72,000.00
11	Bid Item Removed	-	1	-	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Repair of Existing Striping	LF	3,800	1.00	3,800.00	-	-	-	-	5,747.00	151%	5,747.00
13	Repair of Existing Pavement Markings	Each	155	50.00	7,750.00	-	-	-	-	148.00	95%	7,400.00
14	Shore Power Outlet Vaults for Berth 90 (SPO 7, SPO 8 & SPO 9)	Lump Sum	1	250,000.00	250,000.00	0%	-	N/A	N/A	100%	100%	250,000.00
15	Shore Power Outlet Vaults for Berth 92 (SPO 4, SPO 5 & SPO 6)	Lump Sum	1	250,000.00	250,000.00	0%	N/A	-	N/A	100%	100%	250,000.00
16	Shore Power Outlet Vaults for Berth 94 (SPO 1, SPO 2 & SPO 3)	Lump Sum	1	250,000.00	250,000.00	0%	N/A	N/A	-	100%	100%	250,000.00
17	Cut-Off Wall Plug/Penetrations	Each	4	7,000.00	28,000.00	-	-	-	-	4.00	100%	28,000.00
18	SPO "Dry Run" Cable Connection Support	Each	4	3,000.00	12,000.00	-	-	-	-	2.00	50%	6,000.00
19	Ship Testing and Commissioning	Each	4	15,000.00	60,000.00	-	-	-	-	3.00	75%	45,000.00
20	Transformer for Berth 90	Lump Sum	1	650,000.00	650,000.00	0.00%	-	N/A	N/A	100%	100%	650,000.00
21	Transformer for Berth 92	Lump Sum	1	650,000.00	650,000.00	0.00%	-	-	N/A	100%	100%	650,000.00
22	Transformer for Berth 94	Lump Sum	1	650,000.00	650,000.00	0.00%	-	N/A	-	100%	100%	650,000.00
23	Switchgear Assembly for Berth 90	Lump Sum	1	1,750,000.00	1,750,000.00	0.00%	-	N/A	N/A	100%	100%	1,750,000.00
24	Switchgear Assembly for Berth 92	Lump Sum	1	1,475,000.00	1,475,000.00	0.00%	N/A	-	N/A	100%	100%	1,475,000.00
25	Switchgear Assembly for Berth 94	Lump Sum	1	1,500,000.00	1,500,000.00	0.00%	N/A	N/A	-	100%	100%	1,500,000.00
26	Ductbanks and Raceways for Berth 90	Lump Sum	1	500,000.00	500,000.00	0%	-	N/A	N/A	100%	100%	500,022.00







Progress Payment No. 15

Period Ending: OCTOBER 1 THRU NOVEMBER 13, 2014

**PAYMENT DUE : 12-14-14**

Specification: HD-S2342A Shore to Ship Retrofit at Pier A, Berths A88-A96

Contractor: Shimmick Construction Company

LBHD Contract No: HD-7912  
Original Bid Amt: \$11,513,850

Item No.	Item	Unit	Est. Qty.	Unit Price	Bid Amount	Qty This Month	A90 \$ Amount This Month	A92 \$ Amount This Month	A94 \$ Amount This Month	Previous Qty or %	% of Item Comp	TOTAL Amount to Date
----------	------	------	-----------	------------	------------	----------------	--------------------------------	--------------------------------	--------------------------------	-------------------	----------------	-------------------------

  
CM Initials



Victor Sagredo  
Project Manager

Date

12/4/14



**SIGN  
HERE**

Suzanne C. Plezia P.E.  
Director of Construction Management

Date



**SIGN  
HERE**

Gross Earnings:	\$ 11,992,257.57
Previous Payments:	\$ 11,670,247.87
Previous Retention:	\$ (70,096.32)
Earned This Period:	\$ 251,913.40
STOP NOTICE R J NOBLE \$13,310.88+25%	\$ (16,638.60)
Less Retention: E	\$ -
RELEASE STOP NOTICE R J NOBLE \$13,310.88+25%	\$ 16,638.60
AMOUNT DUE THIS ESTIMATE:	\$ 251,913.40

BPO No.	INDEX CODE	PROJ	PROJ DET	Subobject Code
BPFA12000126	HACDCMCN	HA1314	1H2342A	210009



**ATTACHMENT B**  
**Prop 1B Shore Power Infrastructure Costs**



Costs Accrued Per Berth - Pier A

Contract Cost Category Description	Contract Cost Category No.	Corresponding Bid Item No.	Progress Payment No.													TOTAL TO DATE
			1	2	3	4	5	6	7	8	9	10	11	12	13	
Contract Cost Category Description	1	1	\$21,666.00													\$21,666.00
Mobilization and Demobilization	2	8, 9	\$43,333.33													\$43,333.33
Chain-Link Fence and Gates	3	10	\$22,800.00													\$22,800.00
Payment (including drilling)	4	3, 7, 12, 13	\$79,500.00													\$79,500.00
Relocation of utilities	5	n/a	\$0.00													\$0.00
Transformers	6	22	\$650,000.00													\$650,000.00
Switchgear assembly(s)	7	25	\$1,500,000.00													\$1,500,000.00
Ductbanks and raceways	8	28	\$325,000.00													\$325,000.00
Conductors	9	31	\$100,000.00													\$100,000.00
SPO Vaults	10	34	\$250,000.00													\$250,000.00
All other electrical work	11	16	\$105,000.00													\$105,000.00
Commissioning and testing	12	37, 38	\$20,000.00													\$20,000.00
Demolition	13	n/a	\$0.00													\$0.00
Soil, excavation, fill and waste handling	14	4, 5, 6	\$34,250.00													\$34,250.00
Other costs*	15	2, 3, 4, 10, 41, 17, 18	\$51,666.67													\$51,666.67
Change Order #1																
Change Order #2																
Change Order #3																
Total Berth Cost			\$4,337,950	\$46,763.10	\$33,745.24	\$219,403.23	\$385,647.32	\$697,706.50	\$372,716.57	\$1,459,418.11	\$43,548.11	\$39,018.11	\$194,171.11	\$547,848.11	\$126,680.30	\$4,337,950.00

Contract Cost Category Description	Contract Cost Category No.	Corresponding Bid Item No.	Progress Payment No.													TOTAL TO DATE
			1	2	3	4	5	6	7	8	9	10	11	12	13	
Contract Cost Category Description	1	1	\$21,666.00													\$21,666.00
Mobilization and Demobilization	2	8, 9	\$43,333.33													\$43,333.33
Chain-Link Fence and Gates	3	10	\$22,800.00													\$22,800.00
Payment (including drilling)	4	3, 7, 12, 13	\$79,500.00													\$79,500.00
Relocation of utilities	5	n/a	\$0.00													\$0.00
Transformers	6	22	\$650,000.00													\$650,000.00
Switchgear assembly(s)	7	25	\$1,500,000.00													\$1,500,000.00
Ductbanks and raceways	8	28	\$325,000.00													\$325,000.00
Conductors	9	31	\$100,000.00													\$100,000.00
SPO Vaults	10	34	\$250,000.00													\$250,000.00
All other electrical work	11	16	\$105,000.00													\$105,000.00
Commissioning and testing	12	37, 38	\$20,000.00													\$20,000.00
Demolition	13	n/a	\$0.00													\$0.00
Soil, excavation, fill and waste handling	14	4, 5, 6	\$34,250.00													\$34,250.00
Other costs*	15	2, 3, 4, 10, 41, 17, 18	\$51,666.67													\$51,666.67
Change Order #1																
Change Order #2																
Change Order #3																
Total Berth Cost			\$4,337,950	\$46,763.10	\$33,745.24	\$219,403.23	\$385,647.32	\$697,706.50	\$372,716.57	\$1,459,418.11	\$43,548.11	\$39,018.11	\$194,171.11	\$547,848.11	\$126,680.30	\$4,337,950.00

Contract Cost Category Description	Contract Cost Category No.	Corresponding Bid Item No.	Progress Payment No.													TOTAL TO DATE
			1	2	3	4	5	6	7	8	9	10	11	12	13	
Contract Cost Category Description	1	1	\$21,666.00													\$21,666.00
Mobilization and Demobilization	2	8, 9	\$43,333.33													\$43,333.33
Chain-Link Fence and Gates	3	10	\$22,800.00													\$22,800.00
Payment (including drilling)	4	3, 7, 12, 13	\$79,500.00													\$79,500.00
Relocation of utilities	5	n/a	\$0.00													\$0.00
Transformers	6	22	\$650,000.00													\$650,000.00
Switchgear assembly(s)	7	25	\$1,500,000.00													\$1,500,000.00
Ductbanks and raceways	8	28	\$325,000.00													\$325,000.00
Conductors	9	31	\$100,000.00													\$100,000.00
SPO Vaults	10	34	\$250,000.00													\$250,000.00
All other electrical work	11	16	\$105,000.00													\$105,000.00
Commissioning and testing	12	37, 38	\$20,000.00													\$20,000.00
Demolition	13	n/a	\$0.00													\$0.00
Soil, excavation, fill and waste handling	14	4, 5, 6	\$34,250.00													\$34,250.00
Other costs*	15	2, 3, 4, 10, 41, 17, 18	\$51,666.67													\$51,666.67
Change Order #1																
Change Order #2																
Change Order #3																
Total Berth Cost			\$4,337,950	\$46,763.10	\$33,745.24	\$219,403.23	\$385,647.32	\$697,706.50	\$372,716.57	\$1,459,418.11	\$43,548.11	\$39,018.11	\$194,171.11	\$547,848.11	\$126,680.30	\$4,337,950.00







Contract Category	Contract Category Description	Corresponding Bid Item No.	Progress Payment No.													TOTAL		
			1	2	3	4	5	6	7	8	9	10	11	12	13			
G235	Mobilization and Demobilization	4, 5	\$ 350,000.00	\$ 169,986.00	\$ 3,000.04	\$ 6,000.07	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 3,000.04	\$ 61,670.72	\$ 323,599.84	
	Chain-Link Fence and Gates	3, 16, 17	\$ 260,000.00	\$ 102,442.86	\$ -	\$ 40,000.00	\$ -	\$ 33,571.43	\$ -	\$ 29,285.71	\$ -	\$ -	\$ 20,000.00	\$ 7,283.13	\$ 416.67	\$ -	\$ 260,000.00	
	Pipe Bollards	n/a	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,950.00	\$ 4,950.00	\$ -	\$ 5,100.00	\$ -	\$ -	\$ -	\$ 15,000.00	
	Pavement (including original)	15	\$ 15,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	Relocation of utilities	n/a	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	Transformers	6, 19	\$ 650,000.00	\$ -	\$ -	\$ -	\$ 615,000.00	\$ -	\$ -	\$ -	\$ 7,500.00	\$ 7,500.00	\$ -	\$ -	\$ -	\$ -	\$ 650,000.00	
	Switchgear assembly(s)	7, 20, 24	\$ 3,195,000.00	\$ -	\$ -	\$ 1,517,500.00	\$ 321,998.30	\$ 146,854.96	\$ -	\$ 45,245.90	\$ 844,525.00	\$ 844,525.00	\$ 90,000.00	\$ 3,600.00	\$ 76,000.00	\$ -	\$ 3,530,000.00	
	Ductbanks and raceways	21	\$ 1,300,000.00	\$ 50,500.00	\$ 76,913.46	\$ 170,315.01	\$ 201,817.70	\$ 171,272.91	\$ 259,571.60	\$ 195,170.07	\$ 145,693.03	\$ 28,290.19	\$ 331,000.00	\$ 87,000.00	\$ 87,000.00	\$ -	\$ 1,299,999.97	
	Conductors	9, 22	\$ 600,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 18,000.00	\$ 18,000.00	\$ -	\$ 600,000.00	
	SPO Recreates	10, 23	\$ 350,000.00	\$ -	\$ 272,000.00	\$ 20,000.00	\$ 10,000.00	\$ -	\$ -	\$ 20,000.00	\$ 10,000.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 350,000.00	
	SPO Vaults	11, 18	\$ 500,000.00	\$ -	\$ 204,983.33	\$ 84,916.67	\$ -	\$ -	\$ 118,750.00	\$ 64,750.00	\$ 21,000.00	\$ -	\$ 10,859.29	\$ 10,859.29	\$ 27,577.88	\$ -	\$ 500,000.00	
	All other electrical work	12, 25	\$ 535,000.00	\$ 47,968.88	\$ 10,659.27	\$ 21,715.59	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 10,859.29	\$ 42,335.65	\$ 599,999.94	
	Commissioning and Testing	23, 26	\$ 187,500.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 187,500.00	
	Demolition	n/a	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
	Soil excavation, fill and waste handling	8, 9, 10, 11, 12, 14, 16, 17, 18, 27	\$ 295,400.00	\$ -	\$ 16,588.00	\$ 24,112.54	\$ 34,496.13	\$ 48,600.25	\$ 22,650.74	\$ 47,287.37	\$ 33,652.58	\$ 29,356.37	\$ -	\$ 100.00	\$ 123,109.00	\$ -	\$ 244,734.98	
	Other costs*	28, 29	\$ 310,000.00	\$ 34,815.80	\$ 7,870.31	\$ 43,064.50	\$ 9,193.84	\$ 7,870.31	\$ 7,870.31	\$ 20,370.31	\$ 12,870.31	\$ 7,870.31	\$ 7,870.31	\$ 12,664.65	\$ 21,280.50	\$ 3,406.86	\$ 197,018.31	
	Change Order 1															\$ -	\$ -	
	Change Order 2															\$ 24,775.42	\$ -	
	Change Order 3															\$ -	\$ -	
	Change Order 4															\$ 201,182.44	\$ 201,182.44	
	Total Birth Cost		\$ 8,547,900.00	\$ 405,425.54	\$ 393,231.08	\$ 2,047,294.04	\$ 422,484.19	\$ 427,652.98	\$ 445,518.69	\$ 1,114,238.68	\$ 766,852.04	\$ 471,029.63	\$ 143,492.96	\$ 207,596.75	\$ 70,327.58	\$ 8,257,552.55		
	G236	Mobilization and Demobilization	Cost Breakdown															
			Labor (S)	\$ 7,272,759	\$ 12,827.76	\$ 75,593.95	\$ 94,544.61	\$ 556,838.11	\$ 82,869.64	\$ 78,928.94	\$ 141,743.04	\$ 88,905.63	\$ 42,885.98	\$ 68,206.99	\$ 33,322.71	\$ 16,527.70	\$ 800,327.65	
			Labor (man-hour)	99.00	275.75	1,513.50	1,673.00	996.00	950.70	1,430.50	2,511.00	1,572.00	826.00	1,181.50	589.00	282.50	13,900.45	
Materials			\$ 60,181.54	\$ 298,375.31	\$ 1,561,028.21	\$ 738,870.99	\$ 216,777.90	\$ 123,909.37	\$ 110,219.21	\$ 572,256.82	\$ 243,134.87	\$ 259,784.60	\$ 111,883.30	\$ 151,748.49	\$ 462.31	\$ 4,446,678.12		
Equipment			\$ 55,456.46	\$ 14,875.66	\$ 56,642.23	\$ 2,607.32	\$ 16,544.75	\$ 8,254.51	\$ 10,908.59	\$ 56,213.98	\$ 56,213.98	\$ 51,356.88	\$ 10,206.64	\$ 3,400.48	\$ 1,001.60	\$ 89,893.74		
Other			\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	

Port Payments

Payment 1 (October 2012)	Payment 2 (January 2013)	Payment 3 (January 2013)	Payment 4 (12/31/2013)	Payment 5 (1/31/2013)	Payment 6 (2/28/2013)	Payment 7 (3/31/2013)	Payment 8 (4/30/2013)	Payment 9 (5/31/2013)	Payment 10 (6/30/2013)	Payment 11 (7/31/2013)	Payment 12 (8/31/2013)	Payment 13 (9/30/2013)
Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
\$495,016.54	\$393,231.08	\$2,047,294.04	\$ 1,316,007.78	\$427,484.19	\$427,652.98	\$445,518.69	\$1,114,238.68	\$766,852.04	\$471,029.63	\$143,492.96	\$207,596.75	\$76,327.58
Contractor Invoice Amount (less retentions)	\$385,155.21	\$373,659.52	\$1,844,979.34	\$390,859.98	\$416,770.33	\$419,622.76	\$1,062,526.75	\$777,709.44	\$419,278.15	\$130,418.31	\$214,616.91	\$75,657.97
Port Payment to Contractor	\$385,155.21	\$373,659.52	\$1,844,979.34	\$390,859.98	\$416,770.33	\$419,622.76	\$1,062,526.75	\$777,709.44	\$419,278.15	\$130,418.31	\$214,616.91	\$75,657.97
Port Set Aside for Retention	\$20,771.33	\$19,661.56	\$102,864.70	\$66,600.39	\$21,372.65	\$22,295.93	\$55,711.93	\$38,342.60	\$23,551.48	\$17,174.65	\$10,379.84	\$7,853.23
Check Totals	\$495,016.54	\$393,231.08	\$2,047,294.04	\$1,316,007.78	\$427,484.19	\$427,652.98	\$445,518.69	\$766,852.04	\$471,029.63	\$143,492.96	\$207,596.75	\$76,327.58

\$8,247,236.56



[illegible][illegible][illegible]



Itemization	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495	1496	1497	1498	1499	1500	1501	1502	1503	1504
-------------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------











**ATTACHMENT C**  
**Maps of Container Terminal Shore Power Infrastructure**



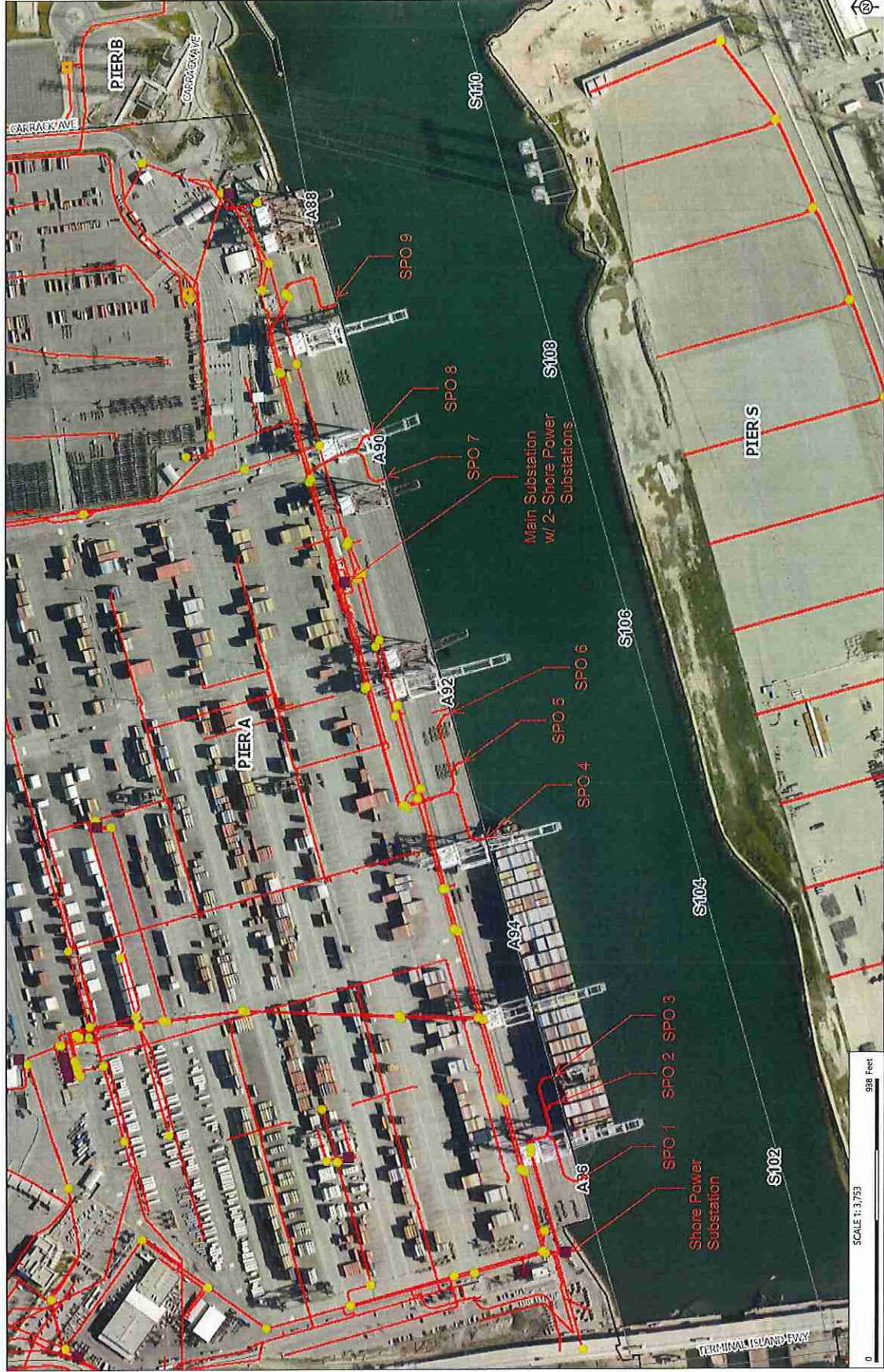
# Port of Long Beach

## Port ATLAS

Port of Long Beach  
The Green Port

### Legend

- Electric Junction
- Maintenance Hole
- Substation
- Transformer
- Electric Meter
- Active Electric Line
- Abandoned Electric Line
- POLB Roads
- Railroad Track
- Pierhead Line
- Piers



Author / Notes:

**Disclaimer:**  
All information contained and referenced herein is for reference only. It is compiled from data provided from various sources and as such the relative location and size of topological features is only representative of the time the data was recorded. The Long Beach Harbor Department does not assume any responsibility for its accuracy or completeness. Field verification is recommended.

03/27/2019



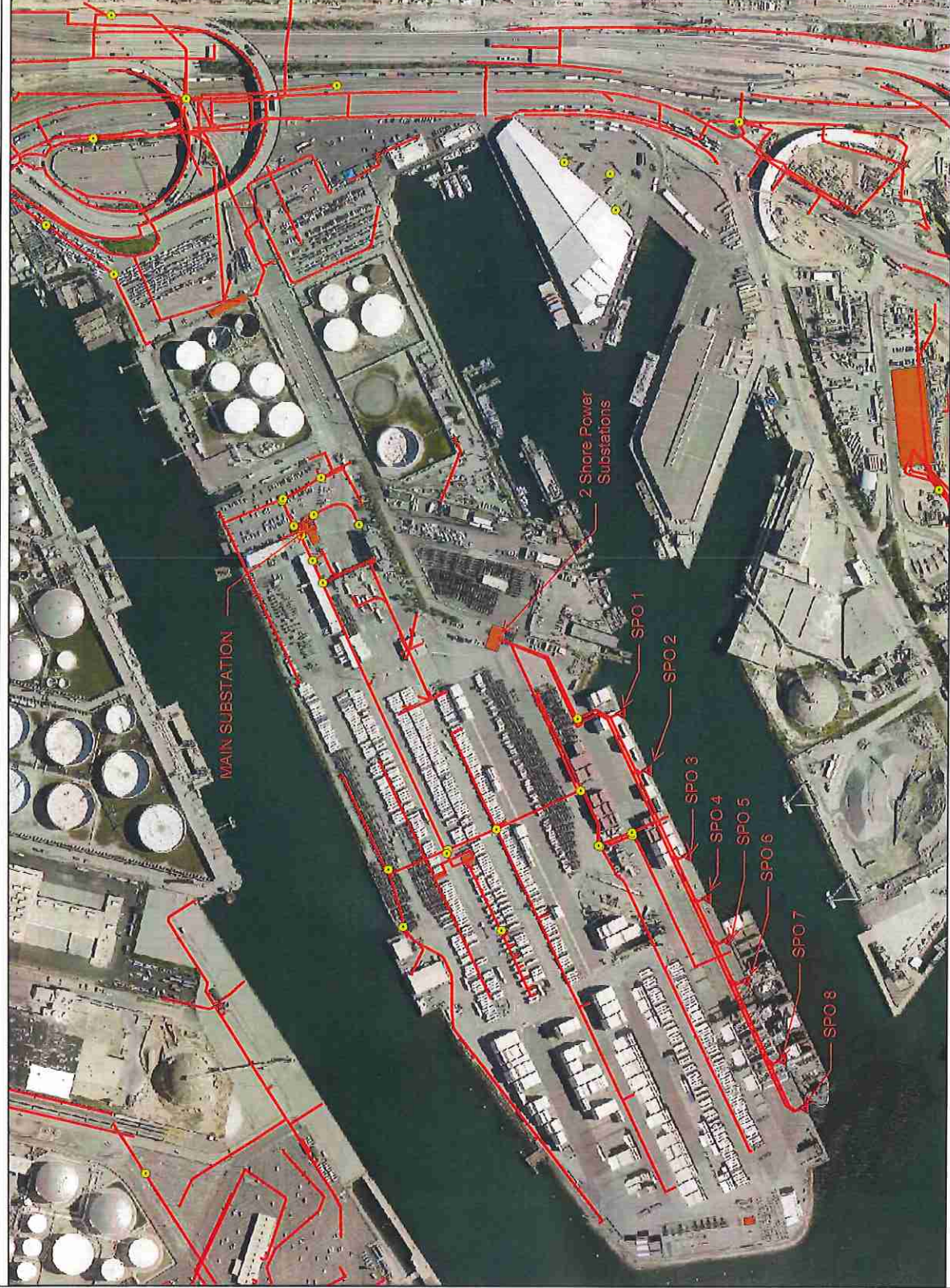
# PORT OF LONG BEACH PIER C



- Maintenance Hole
- ▲ Shore Power Outlet
- ★ Transformer
- Active Electric Line
- Substation

Disclaimer: All information contained and referenced herein is for reference only. It is compiled from data provided from various sources and as such the relative location and size of topological features is only representative of the time the data was recorded. The Long Beach Harbor Department does not assume any responsibility for its accuracy or completeness. Field verification is recommended.

Aerial Photo: This is a proprietary dataset provided courtesy of the Los Angeles Region Imagery Acquisition Consortium (LAR-IAC), Eagle View Technologies, Inc. Use other than what is allowable under license or by written permission from Eagle View Technologies, Inc. will be considered unauthorized and may be punishable by law. Permission for external use may be given with written permission from Eagle View Technologies, Inc.





# Port of Long Beach

Port ATLAS

Port of LONG BEACH  
The Green Port

## Legend

- Electric Junction
- Maintenance Hole
- Substation
- Transformer
- Electric Meter
- Active Electric Line
- Abandoned Electric Line
- POLB Roads
- Railroad Track
- Pierhead Line
- Piers



### Disclaimer:

All information contained and referenced herein is for reference only. It is compiled from data provided from various sources and as such the relative location and size of topological features is only representative of the time the data was recorded. The Long Beach Harbor Department does not assume any responsibility for its accuracy or completeness. Field verification is recommended.

### Author / Notes:

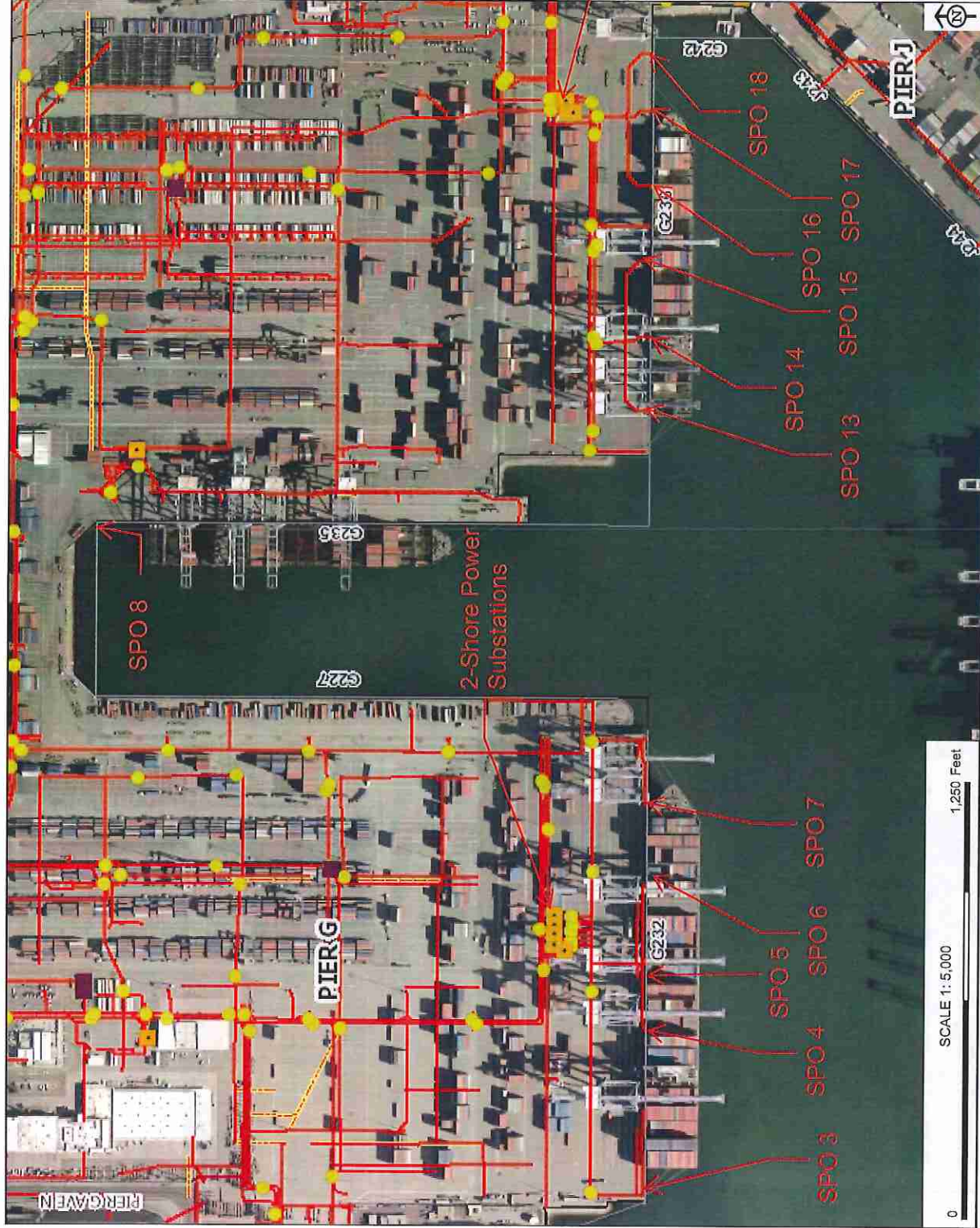
SPOs 11 thru 15 on  
Phase 3 not complete

04/04/2019



### Legend

- Electric Junction
- Maintenance Hole
- Substation
- Transformer
- Electric Meter
- Active Electric Line
- Abandoned Electric Line
- POLB Roads
- Railroad Track
- Pierhead Line
- Piers



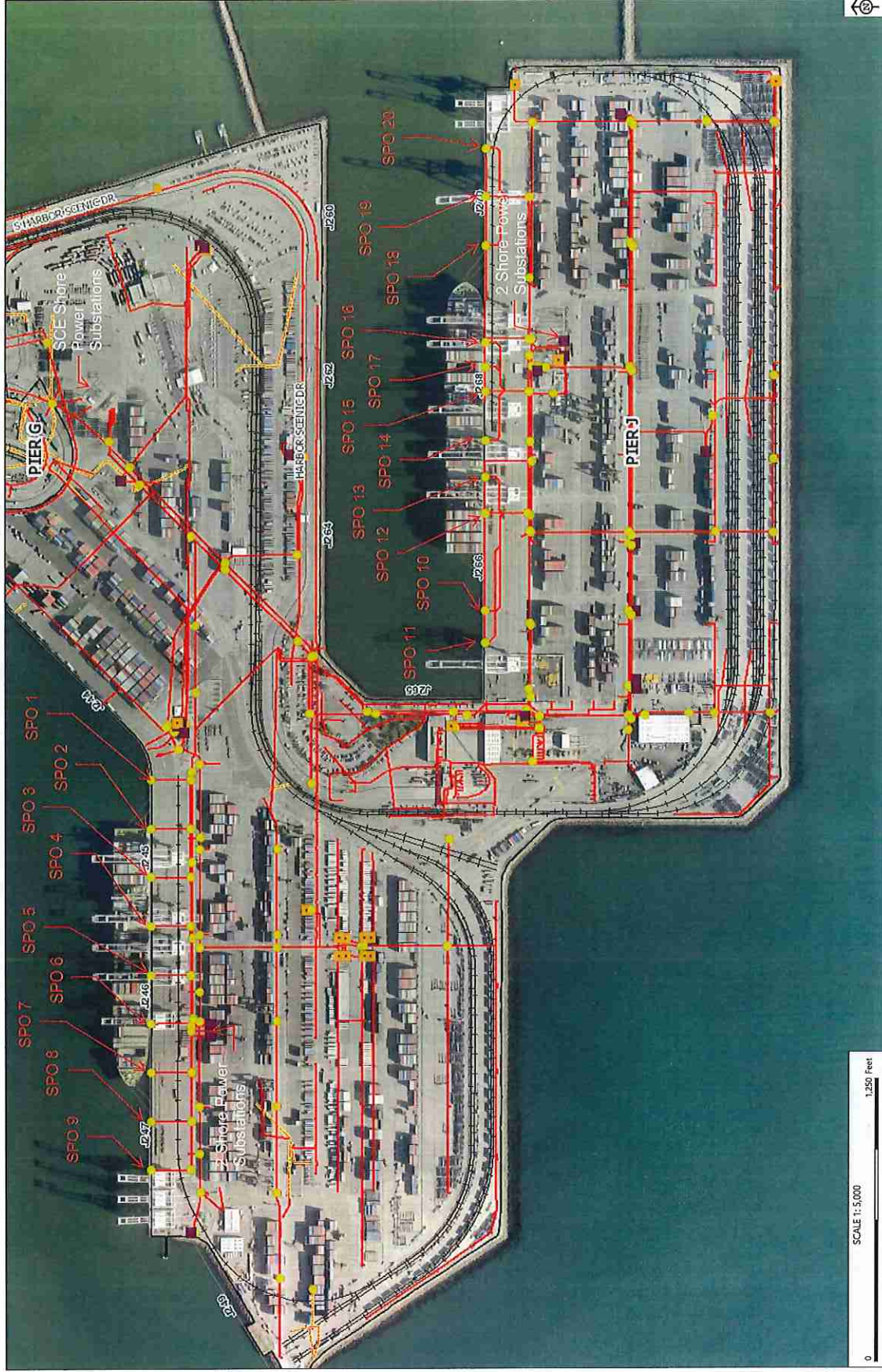
Author / Notes:

**Disclaimer:**  
All information contained and referenced herein is for reference only. It is compiled from data provided from various sources and as such the relative location and size of topological features is only representative of the time the data was recorded. The Long Beach Harbor Department does not assume any responsibility for its accuracy or completeness. Field verification is recommended.



# Port of Long Beach

- Legend**
- Electric Junction
  - Maintenance Hole
  - Substation
  - Transformer
  - Electric Meter
  - Active Electric Line
  - Abandoned Electric Line
  - POLB Roads
  - Railroad Track
  - Pierhead Line
  - Piers



Author / Notes:












**Disclaimer:**  
All information contained and referenced herein is for reference only. It is compiled from data provided from various sources and as such the relative location and size of topological features is only representative of the time the data was recorded. The Long Beach Harbor Department does not assume any responsibility for its accuracy or completeness. Field verification is recommended.



## Port ATLAS



Port of LONG BEACH  
*The Green Port*

<b>Electric Junction</b>		<b>Maintenance Hole</b>	
<b>Substation</b>		<b>Transformer</b>	
<b>Electric Meter</b>		<b>Active Electric Line</b>	
<b>Abandoned Electric Line</b>		<b>POLB Roads</b>	
<b>Railroad Track</b>		<b>Pierhead Line</b>	
<b>Piers</b>			



Author / Notes:

**Disclaimer:** All information contained and referenced herein is for reference only. It is compiled from data provided from various sources and as such the relative location and size of topological features is only representative of the time the data was recorded. The Long Beach Harbor Department does not assume any responsibility for its accuracy or completeness. Field verification is recommended.

04/04/2019



**ATTACHMENT D**  
**Port of Long Beach Vessel Visits by Berth**



### Container Vessel Visits Subject to the New At-Berth and At Anchor Regulation

[illegible]



RoRo Vessel Visits Subject to the New At-Berth and At Anchor Regulation			
Toyota Logistics		SSA-Crescent	
Berth	Visits	Berth	Visits
B83	104	F204	3
Total Visits	104	F205	44
		F207	60
		Total Visits	104



Tanker Vessel Visits Subject to the New At-Berth and At Anchor Regulation					
Tesoro Pier B		Tesoro Pier T		Chemoil	
Berth	Visits	Berth	Visits	Berth	Visits
B77	6	T121	204	F209	65
B78	65	<b>Total Visits</b>	<b>204</b>	<b>Total Visits</b>	<b>65</b>
B84	4				
B84A	76				
B86	49				
<b>Total Visits</b>	<b>200</b>				



# SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

July 1, 2019

Bonnie Soriano  
Chief, Freight Activity Branch  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

**SUBJECT: PORT OF LOS ANGELES AND PORT OF LONG BEACH COMMENTS ON MAY 14 & 16, 2019 WORKSHOPS FOR THE "CONTROL MEASURE FOR OCEAN-GOING VESSELS OPERATING AT BERTH AND AT ANCHOR"**

Dear Ms. Soriano:

The ports of Los Angeles and Port of Long Beach (Ports) appreciate this opportunity to provide comments on the concepts and draft regulation language presented at the California Air Resources Board's (CARB) May 14 and 16, 2019 workshops regarding the "Control Measure for Ocean-Going Vessels Operating At Berth and At Anchor."

We want to thank CARB for continuing to work with the Ports and our tenants during this regulatory development process to obtain the best available data and to craft a regulation that achieves significant public health benefits. The Ports continue to appreciate the open dialog with CARB staff to discuss the regulatory concepts and share our comments and concerns.

The purpose of this comment letter is to respond to the May 8, 2019 version of the Draft Regulation Order provided at the May workshops. In Appendix A, CARB will find specific information relative to Port of Los Angeles.

The following summarizes the Ports' comments regarding the regulatory concepts presented at the May 2019 workshops:

- **The Proposed Implementation Timelines Are Still Too Aggressive** – In the May 8, 2019 draft regulation, container terminals are still required to control ship emissions for every



Port of Long Beach | Environmental Planning  
4801 Airport Plaza Drive | Long Beach, CA 90815  
562.283.7100



Port of Los Angeles | Environmental Management  
425 S. Palos Verdes Street | San Pedro, CA 90731  
310.732.3675



visit by 2021, with 10% flexibility split evenly between Terminal Incident Exception (TIEs) and Vessel Incident Exception (VIEs), by 2021, with further reduction to 6% flexibility split between TIEs and VIEs for 2022 and beyond. This timeline is unreasonable. While the TIEs and VIEs provide some flexibility for terminals and vessels to avoid compliance action for a limited number of unforeseen circumstances that result in a vessel not being able to plug in, that flexibility does not avoid the need for infrastructure to be installed to allow for access to shore power for 100% of all calls. Given the anticipated schedule for finalization of the proposed regulation, there will be less than a year from adoption to when this implementation requirement comes into effect, which does not allow for any of the necessary shore power improvements to be constructed.

If CARB hopes terminals and fleets will opt for shore power, a greenhouse gas reduction strategy, to meet their increased compliance requirements rather than the alternative emission control devices, which are known to increase greenhouse gases, this timeline does not allow for that compliance path to materialize for at least several years. The Ports have provided documentation in their previous letter dated May 20, 2019 that shore power projects take 5 years on average to complete. In addition, there are still considerable feasibility concerns regarding the ability of terminal operators, and/or third party vendors to develop and deploy alternative emission control devices on a stringent time line of one year.

The Ports are encouraged that CARB plans to have an interim evaluation in 2023 for tankers and Ro-Ros, but this evaluation should not replace a technical feasibility assessment to better inform this regulation, as described below. We also believe more than one evaluation maybe necessary. We ask that a feasibility assessment be updated in 2025 and beyond to evaluate the state of the technology and industry's ability to comply with the regulation. The Port of Los Angeles has specific concerns for tanker terminals as detailed in Appendix A.

- **A Technology Feasibility Assessment Process Is Needed** – The Ports continue to urge CARB to develop a technology feasibility assessment of the alternative At Berth technologies, which would look at the state of technological development and their readiness to be deployed in the marketplace to support efforts to achieve public health benefits. The berth analysis developed by CARB should not be misconstrued as a technical document at the level of detail upon which regulation should be formed. It is an aggregation of terminal operator and harbor pilot opinions (no data), and Google Maps research, and is not founded upon any engineering assessment of the infrastructure required at the terminals. Further, there are challenges associated with the technologies upon which this regulation depends which, by all appearances, are too costly, technologically and operationally infeasible in some cases, and/or unsafe to use.



In addition, this necessary feasibility assessment should include an evaluation of: (i) state of technology and deployment readiness for both shore power and alternative emission control devices; (ii) the requisite timeline to design, build, test, and deploy shore power and alternative control technologies for each California port to achieve at minimum 95% compliance, and identification of any associated constraints such as wharf space; (iii) safety and navigation of harbor waters space due to applications of new technologies for unregulated vessel types; (iv) number and types of alternative control technologies, which would be needed at each California port; (v) the cost of the various types of technologies and availability of incentives to encourage early demonstration of such technologies; and importantly, (vi) the appropriate remediation fee to encourage investment in ship- and shore-side infrastructure and alternative emission control devices, while not driving business out of California.

- **All Terminals Should Be Required to Submit Terminal Plans** – The proposed regulation language allows terminals to have the ports submit plans on their behalf. The Ports should not be responsible for the submission of each terminal's plans on their terminal operators' behalf. All terminals should submit their own terminal plans. Ports do not have control over the financial and operational decisions terminals will have to make in order to comply with the regulation, and Ports cannot be liable for terminal infrastructure deployment under the new rule. In addition, if the terminal operator intends to install the shore power infrastructure themselves, they should be required to provide the elements outlined in the proposed port plan requirements rather than the Port.

In the past, the Ports have supported shore power deployment by providing the design, bid, build, and services. In some cases, the investment was recouped through terminal leases. This was a service to our terminals, particularly for the initial installations under the original 2007 shore power regulation, but is not necessarily the path forward given the Ports' current capital project commitments and the extensive electrical infrastructure required to achieve the zero emission goals of the Clean Air Action Plan (CAAP) at the terminals.

If the Ports are still required to submit port plans in the proposed regulation update, then the terminal plan deadlines must be set at least six months prior to port plan deadlines to allow the Ports sufficient time to review the submitted terminal plans, negotiate lease terms with their terminals, and compile the necessary information CARB has requested for the Ports to submit port plans. There is no guarantee that agreements will be reached in time to meet the timeline for this part of the proposed regulation. Many of these leases have several years remaining and terminals may be reluctant to renegotiate lease terms, especially for strategies that have no CARB certification.

If terminals determine they need to construct more infrastructure, project initiation will not commence until the proposed At Berth Regulation goes into effect. It is unrealistic to



expect terminals or the ports to have design or schedules for equipment installation completed by June 2020. The earliest date according to CARB's timeline for project initiation is January 2020, assuming terminals do not use the first six months to evaluate their best compliance option. Given that project initiation, consultant selection for design, preliminary design, CEQA approval, and final design can take 23-30 months, it does not make sense to anticipate a schedule and estimation of the electrical infrastructure required at a terminal in just six months. If the terminals/Ports submitted plans solely based on preliminary design, which is a vastly premature estimate of project scope and timeline, it would take 11-15 months. This challenge once again points to the impossibility of meeting the 2021 timeline with shore power, the most mature, emission-efficient, technological solution.

- **Exceptions to Delays in Port Plan Schedules** – If ports are still required to submit port plans, then CARB should provide exceptions to any possible enforcement action if port plan schedules are not met. The port plans can only provide an estimated schedule of installing equipment and/or necessary construction projects. Delays can and will happen outside of the control of the Ports. For example, delays due to permitting, equipment acquisition, environmental assessment, and other events that may cause schedules to not be met should be given exemptions to enforcement action in this regulation. It is unfair to hold the Ports liable for mobile source operators' actions and emissions outside of our direct control.
- **Specifics on Remediation Fund** – The Ports request that CARB revise the fees for payment into the remediation fund for longer-term outages due to construction projects or repairs. CARB has set remediation fee costs as shown below in Table XVIII of the "Control Measure for Ocean-Going Vessels At Berth Cost Analysis Inputs and Assumptions for Standardized Regulatory Impact Assessment."

**Table XVIII. Remediation Fee Costs**

Data Input	Value			Basis
Hourly remediation fee for terminal and for vessel, for each vessel type	Vessel Type	Vessel Hourly Fee	Terminal Hourly Fee	Staff analysis using Carl Moyer formula to calculate average emissions in tons per hour by vessel category. Product and crude tanker values were averaged for cost estimation purposes, however the fee would be dependent on the vessel type. Note that these values are estimates based on current Staff analyses at the time this document was prepared, and do not necessarily represent the exact fees that would apply.
	Container/ Reefer	\$2,395	\$2,395	
	Cruise	\$12,879	\$12,879	
	Auto/Ro-Ro	\$1,515	\$1,515	
	Product Tankers	\$1,783	\$1,783	
	Crude Tankers	\$9,873	\$9,873	
Which terminals would offer the remediation fee as an option?	All (100%)			Staff assumes that all terminals would offer the remediation fee as an option.

CARB has set the remediation fee cost at an unreasonable level for long term construction projects. Appendix A gives an example of how the remediation fees using Table XVIII would have more than doubled the cost of a recent Port of Los Angeles construction project,



which increased shore power capabilities, by upgrading electrical infrastructure at their World Cruise Center. If terminals decide that their strategy to meet this regulation is to install more shore power infrastructure, then similar situations are likely.

The Ports are also concerned that unforeseen repairs that may take several months or more could occur. In these types of prolonged incidences, the remediation fund fees set per hour will become so prohibitively high that terminals may have to shut down or turn away vessels during the repair. Ports again encourage CARB to conduct a feasibility study that would help set the rates for the remediation fund and determine the state of alternative emission control technology.

There are currently a total of two certified alternative emissions control systems in use at this time, and those systems are only certified for use on container vessels. The Ports are uncertain in how many, if any, additional systems will be deployed in the next few years. This limited number of options makes it difficult for terminals or shipping lines to secure exclusive service of these systems, which would mean most construction or repairs would cause the payment of large fines pursuant to the remediation fee fund.

The Ports encourage CARB staff to set up the remediation funds for use specifically in technology research, development, demonstration, and deployment of emissions reduction technologies specific to ocean going vessels rather than for general emission reduction use. As stated in our previous letters, in order to accelerate the development and deployment of shore power and alternative control options, including infrastructure for non-container terminals and vessels, the Ports request that CARB prioritize funding as they did for the currently regulated fleet through Proposition 1B in 2006. The remediation fund can be better utilized to accelerate emission reductions from this under-represented category.

- **Compliance May Hinder CAAP Efforts** – Lastly, the Ports remain concerned that the cost to comply with CARB's proposed Rule will affect our ability to meet the goals under the 2017 CAAP Update given the significant upfront costs of an At Berth Infrastructure Program. The costs shown in the May presentation were annualized, but much of the costs will be upfront rather than spread over the ten years. CARB staff has also assumed that minimal infrastructure changes will be needed to meet the regulation. Our joint letters to CARB have included cost estimates that we feel are representative of the infrastructure costs that would be necessary to meet compliance and fulfill the Ports' obligations as currently written in this draft regulation. CARB has not included any of these costs in their revisions, even with the provision of invoices and information directly from the Port of Long Beach financial system.

In addition, Port staff resources are limited. The staff that are currently designing the zero-emission terminal infrastructure for technology demonstration projects, and future full-scale deployments are the same staff members who would be responsible for designing the




infrastructure to support the new At Berth Regulation. This underscores the need for prioritizing programs and funding, as described above and in previous letters, in order to determine how to most effectively allocate our resources to participate in the development and implementation of CARB's regulatory program.

The Ports thank CARB staff for hosting additional workshops, engaging with us directly, and their consideration of the comments contained in this letter as well as in the attached Appendix.

We look forward to continuing to meet with CARB staff in the future to further discuss the proposed amendments to the At Berth Regulation. Please feel free contact us with any questions or concerns regarding this letter.

Sincerely,



CHRISTOPHER CANNON  
Director of Environmental Management  
Port of Los Angeles



MATTHEW ARMS  
Acting Director of Environmental Affairs  
and Planning  
Port of Long Beach

Attachment

cc: CARB, Cynthia Marvin ([Cynthia.Marvin@arb.ca.gov](mailto:Cynthia.Marvin@arb.ca.gov))  
CARB, Angela Csondes ([Angela.Csondes@arb.ca.gov](mailto:Angela.Csondes@arb.ca.gov))  
CARB, Nicole Light ([Nicole.Light@arb.ca.gov](mailto:Nicole.Light@arb.ca.gov))  
CARB: Kaylin Huang ([Kaylin.Huang@arb.ca.gov](mailto:Kaylin.Huang@arb.ca.gov))





425 S. Palos Verdes Street Post Office Box 151 San Pedro, CA 90733-0151 TEL/TDD 310 SEA-PORT www.portoflosangeles.org

Eric Garcetti

*Mayor, City of Los Angeles*

Board of Harbor  
Commissioners

Jaime L. Lee  
*President*

Diane L. Middleton  
*Commissioner*

Lucia Moreno-Linares  
*Commissioner*

Anthony Pirozzi, Jr.  
*Commissioner*

Edward R. Renwick  
*Commissioner*

Eugene D. Seroka

*Executive Director*

## **APPENDIX A**

### **Port of Los Angeles**

### **Response to CARB At Berth Regulation Berth Draft Regulation**

### **(version May 8, 2019)**

The Port of Los Angeles (POLA or Port) appreciates this opportunity to provide more detailed comments on the California Air Resources Board (CARB) draft regulation "Control Measure for Ocean-going Vessels At Berth" (version May 8, 2019). The Port has some concerns regarding tankers and the remediation fees.

### **Tankers**

POLA had provided specific information about our tanker terminals in our previous joint letter with Port of Long Beach on May 20, 2019. Many of our tanker terminals are being redesigned to meet California State Lands Commission (CSLC) Chapter 31.F 2016 California Building Code, Title 24, Part 2, Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) requirement. MOTEMS is a comprehensive set of codes and standards for analysis, design, inspection/maintenance, and operation of existing and new marine oil terminals in the State of California. MOTEMS requirements will ensure better resistance to earthquakes, protect the public and the environment, and reduce the potential of an oil spill, while maintaining the operation and viability of the marine oil facility.

The new terminal designs will limit the number of emission control strategies that our tanker terminals will be able to utilize. A majority of the new designs do not leave any space for a land-side alternative emission control technology strategy. There is also no shore power infrastructure in the design drawings at this time, nor have there been any discussion from our tanker terminals to install shore power. Finally, as stated in POLA's appendix in the joint letter to CARB on May 20, 2019, there are various areas throughout the Port where navigation of the waterways would preclude the use of a barge-based system.

Two of our terminals have completed their environmental document and design (Shell and PBF). Construction will soon begin at these terminals and is unlikely to be halted due to this regulation to redesign the terminals. CSLC would be averse to any delays to these construction projects as they are meant to protect the public and the environment. Other terminals currently working on their environmental documents and designs are also unlikely to redesign their terminals for CARB's At Berth regulation as there is currently no CARB certified emission control technology for tankers. The terminals would not be able



to wait for the technology to become available in order to design their terminals as they already need to meet MOTEM standards.

The Port stresses the need for CARB to conduct a feasibility assessment to better inform this regulation, especially for tankers due the many variables and restrictions associated with this industry.

### Remediation Fund

CARB has set remediation fees in Table XVIII of the “Control Measure for Ocean-Going Vessels At Berth Cost Analysis Inputs and Assumptions for Standardized Regulatory Impact Assessment,” that would be used for construction and repair projects.

**Table XVIII. Remediation Fee Costs**

Data Input	Value			Basis
	Vessel Type	Vessel Hourly Fee	Terminal Hourly Fee	
Hourly remediation fee for terminal and for vessel, for each vessel type	Container/ Reefer	\$2,395	\$2,395	Staff analysis using Carl Moyer formula to calculate average emissions in tons per hour by vessel category. Product and crude tanker values were averaged for cost estimation purposes, however the fee would be dependent on the vessel type. Note that these values are estimates based on current Staff analyses at the time this document was prepared, and do not necessarily represent the exact fees that would apply.
	Cruise	\$12,879	\$12,879	
	Auto/Ro-Ro	\$1,515	\$1,515	
	Product Tankers	\$1,783	\$1,783	
	Crude Tankers	\$9,873	\$9,873	
Which terminals would offer the remediation fee as an option?	All (100%)			Staff assumes that all terminals would offer the remediation fee as an option.

POLA owns and maintains shore power infrastructure at our terminals. Construction and repairs to shore power infrastructure are conducted through the Port. We are concerned that the mechanism used to determine the amount paid to the remediation fund is unreasonable for long construction or repair projects. There are instances where unforeseen repairs may take longer than a few months due to the need to order equipment, coordinate times for terminal shutdown during repairs, or other issues that may come up. The current scheme for calculating payment to the remediation fund is based on an hourly basis per a call. For extended periods where shore power will not be accessible, the cost will be extraordinarily high for industry or the Port as shown in the example provided below.

The Port recently upgraded our World Cruise Center to allow for 11 kV and 6.6 kV shore power connections for cruise vessels. This construction required a new transformer at the Cruise Center. The goal of the construction was to provide enough power for the large cruise ships to plug into shore power at POLA. The construction occurred from June 30, 2017 through April 23, 2018, and during the electrical upgrade no visiting cruise vessels were able connect to shore power. Alternative shore power was not an option either since there are no CARB-certified alternative emission control technologies for cruise vessels. The total number of hours for cruise vessels berthed at the World Cruise Center during the construction was 1,056.55 hours. Based on the hourly fee for cruise in Table XVIII, the hypothetical remediation fee for this construction project would have cost \$13,607,307 (1,056.55 hour x \$12,879/hour). The total cost of the electrical upgrade itself



was about \$11 million. This hypothetical remediation fee would have more than doubled the cost of this construction project that took less than a year to complete.

Since there are currently only two CARB-certified alternative emission control systems available at the Ports of Los Angeles and Long Beach, for long periods of construction or repair, there is uncertainty with respect to the availability of these systems in the future. In cases where a system cannot be secured, the remediation fee compliance mechanism would have to be utilized. As shown in our example above, the fee could increase to amounts that are not sustainable to industry or the Port. In our previous and current comment letters, the Ports request that CARB conduct a feasibility assessment. This will help determine the rate for the remediation fund as the current remediation fee costs will be too high for these prolonged instances of shore power construction or repair.





December 3, 2019

Richard Corey  
California Air Resources Board  
Clerks' Office  
1001 I Street  
Sacramento, CA 95814

Dear Mr. Corey:

**SUBJECT: PORT OF LOS ANGELES AND PORT OF LONG BEACH COMMENTS  
ON THE PROPOSED REGULATION ORDER, "AIRBORNE TOXIC  
CONTROL MEASURE FOR AUXILIARY DIESEL ENGINES OPERATED  
ON OCEAN-GOING VESSELS AT-BERTH IN A CALIFORNIA PORT"**

The Port of Long Beach and Port of Los Angeles (Ports) appreciate this opportunity to provide comments on the California Air Resources Board (CARB) proposed regulation order, "Airborne Toxic Control Measure for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port" released in the Initial Statement of Reasons (ISOR) on October 15, 2019. The Ports also appreciate you and your staff's willingness to meet with us throughout the rulemaking process. We found those meetings productive and helpful, and we hope to continue this cooperative relationship going forward.

The Ports support the changes incorporated into the latest regulatory proposal, specifically:

- The new rule would go into effect in 2021, but additional emission reduction requirements of the regulated fleet would be delayed until January 1, 2025.
- Bifurcating the cruise vessels into two categories, one for vessels which carry less than 1,500 combined passengers and crew, and one for vessels which carry more than 1,500 combined passengers and crew, and providing different hourly remediation fees for each.
- Tier III ships would have lower remediation fees than other Tier 0 to Tier II ships.

The Ports remain concerned with the following key elements of the proposed regulation:

- Future compliance with the timelines remains too difficult for the Roll-on/roll-off (RoRo) vessels and tanker vessels, which are currently proposed to comply with a



90% control requirement in 2025 and 2027, respectively. Given the technology to control emissions from RoRos and tanker vessels does not exist today, and the significant safety concerns associated with tanker vessels, we request at a minimum two additional years with each category. RoRos should be required to comply in 2027 at the earliest, and tankers at the San Pedro Bay Port should be required to comply in 2029 at the earliest.

- The industry has raised significant concerns regarding the potential alternative emission capture and control technologies upon which this regulation depends, including cost, operational viability, safety, and the reality that utilizing these technologies will increase greenhouse gas emissions. The technology for controlling at-berth emissions for RoRo vessels or tanker vessels has never been demonstrated and a prototype does not exist. The technology feasibility assessment proposed for 2023 should require CARB staff assess the state of technology, the readiness to deploy it at each port, safety considerations, and cost-effectiveness. The rule should specifically call out these elements as required components of the feasibility assessment. In addition, there should be a mechanism for staff, without returning to the CARB Board for approval, to make the necessary changes to the implementation timeline should the feasibility assessment demonstrate the technology is not feasible or the costs too great per ton of emissions reduction.
- CARB previously provided funding on the scale of hundreds of millions of dollars through Prop 1B to support shorepower investment for the currently regulated fleet. The ISOR estimates compliance under the proposed regulation will cost the shipping industry \$2.2 billion. To reduce the likelihood of cargo diversion, which could result in greater emissions overall, and to support the development and deployment of the requisite alternative emission capture and control technologies for tanker and RoRo vessels, the Ports request CARB allocate at least \$200 million for tanker and RoRo emission capture and control technology or shore power statewide.
- The Ports support including Alternative Compliance Plans for the currently unregulated fleet including Tankers and RoRos in the regulation.
- Lastly, the Ports recommend that the Air Districts maintain responsibility for implementation of the remediation fund. Our local air district, the South Coast Air Quality Management District, has the greatest local experience in evaluating technology, developing solicitations, and building air quality programs.

This regulation sets an important precedent not only for California, but also for ports worldwide. Success will be dependent upon reasonable timelines, feasible technology, and public and private funds, which drive technology commercialization. The Ports appreciate the opportunity to work with CARB on this important effort to develop an effective regulation to reduce air emissions from vessels and public health impacts in our communities.



Please feel free to reach out to Teresa Pisano, Port of Los Angeles Marine Environmental Supervisor at (310) 732-3057 or via email at [teresa.pisano@portla.org](mailto:teresa.pisano@portla.org), or Morgan Caswell, Port of Long Beach Manager of Air Quality Practices at (562) 283-7138 or via email at [morgan.caswell@polb.com](mailto:morgan.caswell@polb.com) with any specific questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'E. Seroka', with a stylized flourish at the end.

EUGENE SEROKA  
Executive Director  
Port of Los Angeles

A handwritten signature in black ink, appearing to read 'Mario Cordero', with a stylized flourish at the end.

MARIO CORDERO  
Executive Director  
Port of Long Beach

cc: Bonnie Soriano, CARB (via email [Bonnie.Soriano@arb.ca.gov](mailto:Bonnie.Soriano@arb.ca.gov))  
Angela Csondes, CARB (via email [Angela.Csondes@arb.ca.gov](mailto:Angela.Csondes@arb.ca.gov))  
Nicole Light, CARB (via email [Nicole.Light@arb.ca.gov](mailto:Nicole.Light@arb.ca.gov))



# *CARB At-Berth Regulation Cost Effectiveness Analysis for Auto Carriers and RoRo Ships at Port of Long Beach & Port of Los Angeles*



*December 2019*







## **CARB AT-BERTH REGULATION COST EFFECTIVENESS ANALYSIS FOR AUTO CARRIERS AND RoRo SHIPS AT PORT OF LONG BEACH & PORT OF LOS ANGELES**

Starcrest developed an emission reduction evaluation for CARB's proposed amendments to the at-berth regulation for Auto Carrier and RoRo ships at the Port of Long Beach (POLB) and the Port of Los Angeles (POLA), also referred to as the San Pedro Bay Ports (SPBP). Using this evaluation, Starcrest developed an Excel calculation tool (the Auto/RoRo Tool) to assess the emission reductions and cost-effectiveness of the proposed amendments for these vessels based on the SPBP 2018 Annual Emissions Inventories and Carl Moyer Program methodology. Based on this assessment, the cost of the proposed amendments as they relate to Auto Carrier and RoRo ships at the SPBPs is significant compared to other emission-reduction projects with similar benefits, and alternative more cost-effective emission reduction approaches should be explored.

The Auto/RoRo Tool currently utilizes the SPBP 2018 Annual Emissions Inventories for the emissions reduction analysis and the cost assumptions/information provided in Standardized Regulatory Impact Assessment (SRIA) for CARB's Proposed Control Measure for Ocean-Going Vessels at Berth released on August 20, 2019, for the cost effectiveness analysis. This tool was designed with flexibility to allow input modifications to explore alternative cost inputs. Two financing approaches are included in the tool: (1) hourly rental of barge-based emission capture and control (C&C) systems, and (2) capital investment of four barge-based C&C systems dedicated to treat Auto Carrier and RoRo ships. The need for four (4) barge-based systems to control 100 percent of calls was established by an evaluation of 2018 calls from these vessel types. This evaluation is included as a worksheet in the Auto/RoRo Tool.

### **Project Goals**

- Estimate emission reductions that may be achieved by barge-based C&C systems applied to the auto carrier and RoRo vessels calling at the SPBP.
- Assess cost effectiveness (CE) for barge-based treatment options to meet the requirements of the proposed amendments.
- Estimate the portion of auto carrier/RoRo at-berth emissions to all at-berth emissions in both mass and percent.
- Estimate the portion of auto carrier/RoRo at-berth emissions to all OGV emissions in both mass and percent.

### **Key Assumptions**

- This review assumes that 100 percent of calls are treated by a barge-based C&C system (based on an evaluation of 2018 calls from these vessel types in the SPBP).
- Barge-based emission C&C systems will control 80% of NO<sub>x</sub>, ROG and DPM emissions.



## Key Findings

Reduction of PM (including PM<sub>10</sub>, PM<sub>2.5</sub>, and DPM) and NO<sub>x</sub> emissions in the 36%-40% range could be achieved from auto carrier and RoRo vessel control, but emissions of other pollutants (CO<sub>2e</sub>, SO<sub>x</sub> and CO) are estimated to increase in the range of 28% to 151% due to emissions from increased bunkering activities at anchorage and supporting activities such as tugs and generators needed to operate barge-based C&C systems. A summary of the proposed regulation's emission reduction benefits, based on the auto carrier and RoRo calls made at SPBP in 2018, is provided in Table A1 (tons per year (tpy)) and Table A2 (tons per day (tpd)). Negative numbers indicate increased emissions.

**Table A1: Reductions from Barge-Based at-Berth Capture and Control, tpy**

Port	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy	DPM tpy	NO <sub>x</sub> tpy	SO <sub>x</sub> tpy	HC tpy	CO tpy	CO <sub>2e</sub> mt/yr
<b>Emission Reductions (or increases)</b>								
POLB	0.40	0.38	0.38	19.61	-0.66	-0.73	-5.04	-1,615
POLA	0.22	0.20	0.18	8.98	-0.37	-0.43	-3.30	-1,005
<b>Total</b>	<b>0.62</b>	<b>0.58</b>	<b>0.56</b>	<b>28.59</b>	<b>-1.03</b>	<b>-1.15</b>	<b>-8.33</b>	<b>-2,620</b>
<b>Percent Reduction (or increase)</b>								
POLB	36%	36%	38%	40%	-28%	-44%	-113%	-49%
POLA	39%	38%	39%	40%	-35%	-52%	-151%	-53%
<b>Total</b>	<b>37%</b>	<b>37%</b>	<b>38%</b>	<b>40%</b>	<b>-30%</b>	<b>-47%</b>	<b>-125%</b>	<b>-50%</b>

**Table A2: Reductions from Barge-Based at-Berth Capture and Control, tpd**

Port	PM10 tpd	PM2.5 tpd	DPM tpd	NOx tpd	SOx tpd	HC tpd	CO tpd	CO2e mt/yr
<b>Emission Reductions (or increases)</b>								
POLB	0.0011	0.0010	0.0010	0.0537	-0.0018	-0.0020	-0.0138	-4.4
POLA	0.0006	0.0006	0.0005	0.0246	-0.0010	-0.0012	-0.0090	-2.8
<b>Total</b>	<b>0.0017</b>	<b>0.0016</b>	<b>0.0015</b>	<b>0.0783</b>	<b>-0.0028</b>	<b>-0.0032</b>	<b>-0.0228</b>	<b>-7.2</b>
<b>Percent Reduction (or increase)</b>								
POLB	36%	36%	38%	40%	-28%	-44%	-113%	-49%
POLA	39%	38%	39%	40%	-35%	-52%	-151%	-53%
<b>Total</b>	<b>37%</b>	<b>37%</b>	<b>38%</b>	<b>40%</b>	<b>-30%</b>	<b>-47%</b>	<b>-125%</b>	<b>-50%</b>



To place these reductions in context, Tables B1 (tpy) and B2 (tpd) summarize the 2018 SPBP auto carrier and RoRo emissions at berth, all OGVs at berth, and all OGVs in all modes (at berth, maneuvering, transit). The tables also show the percentages that the auto carrier and RoRo emissions make up of all OGV emissions at berth and of the entire 2018 OGV inventory. **Overall, auto carrier and RoRo at berth emissions made up approximately one percent (1%) of all OGV emissions in the SPBP's 2018 inventory or between 2% to 4.5 % of all at-berth emissions.**

**Table B1: Auto Carriers and RoRo At-berth Emissions Contribution in CY 2018, tpy**

Port	Vessel Type	PM	PM2.5	DPM	NOx	SOx	HC	CO	CO2e
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	mt/y
SPBP	Auto and RoRo at Berth	1.7	1.6	1.4	69.9	3.4	2.4	6.5	5,001
SPBP	All vessels at Berth	60.1	56.3	31.4	1894.8	169.7	72.7	188.7	264,414
SPBP	All vessels	142.0	133.0	106.1	7078.5	323.3	270.9	590.3	503,286
SPBP	Percent of all OGV at Berth	2.8%	2.8%	4.5%	3.7%	2.0%	3.3%	3.5%	1.9%
SPBP	Percent of all OGV	1.2%	1.2%	1.3%	1.0%	1.0%	0.9%	1.1%	1.0%

**Table B2: Auto Carriers and RoRo At-berth Emissions Contribution in CY 2018, tpd**

Port	Vessel Type	PM10	PM2.5	DPM	NOx	SOx	HC	CO	CO2e
		tpd	tpd	tpd	tpd	tpd	tpd	tpd	mt/d
SPBP	Auto and RoRo at Berth	0.0045	0.0043	0.0039	0.1916	0.0092	0.0066	0.0179	14
SPBP	All vessels at Berth	0.1648	0.1543	0.0861	5.1914	0.4649	0.1993	0.5170	724
SPBP	All vessels	0.3891	0.3642	0.2907	19.3931	0.8857	0.7421	1.6172	1,379
SPBP	Percent of all OGV at Berth	2.8%	2.8%	4.5%	3.7%	2.0%	3.3%	3.5%	1.9%
SPBP	Percent of all OGV	1.2%	1.2%	1.3%	1.0%	1.0%	0.9%	1.1%	1.0%

A utilization analysis evaluated how many auto carrier or RoRo vessels were at berth in one of the ports during each day of 2018. A maximum of four concurrent calls took place on five days during the year, and three concurrent calls took place on 12 days. This indicates that four barge-based C&C systems would have been needed to accommodate all SPBP auto carrier and RoRo calls in 2018 and would be needed going forward assuming 2018 was representative of future call frequency at these two ports. Because three or four concurrent calls occur so infrequently, the C&C barge fleet would be utilized about 19 percent of the time.

Cost effectiveness (CE) calculations, discussed below, result in cost effectiveness between \$115k and \$200k for the barge rental scenario (varies based on effective hourly rate) and \$54,987 for the scenario that includes the purchase of four barge-based C&C systems to serve 100% of calls made to SPBP. **Both scenarios are far less cost effective than CARB's Carl Moyer Program (CMP), which has an upper CE limit of \$30,000 per weighted ton of emissions reduced.**

It should be noted that the CMP also allows for a second tier CE limit for the higher cost of advanced/emerging technology projects; this second tier CE limit is \$100k per weighted ton. The \$100k/ton limit is only applied to the small increment between today's technology and the advanced technology level, which in practice is zero-emission or near-zero emission (i.e., 90% cleaner than current technology). Since barge-based C&C systems are not using technology that is 90% cleaner than today's clean-up technology, these systems should be evaluated at the \$30k/weighted ton CE limit.



## Emissions Assessment

The key elements and the sources of information included in the emissions reduction evaluation include:

- OGV at-berth emissions for auxiliary and boiler engines are based on auto carrier and RoRo vessels that visited POLA and POLB in 2018 and are consistent with both Ports' 2018 annual emissions inventory. The average at-berth hours and emissions (in grams per hour) by port, by terminal and by anchorage are shown in Tables 1 and 2 of the Auto/RoRo Tool under the tab "2018 Data Summary".
- The frequency of auto carrier and RoRo calls per day in 2018 was analyzed and it was determined that four dedicated barges would be required to treat emissions for the entire auto carrier and RoRo fleet arriving at SPBP. Importantly, four barges would have been needed to ensure ALL calls were serviced in 2018, but for a large percentage of the year, most of the barges would have been idle because four (4) vessels were in port simultaneously on only five days. In addition, more than four vessels may call simultaneously in future years so having four barges available would not guarantee full coverage. This analysis is provided in the Auto/RoRo Tool on the "Utilization" tab.
- The emissions analysis scenario assumes that the use of a barge system would require additional emission-producing activities that would reduce the overall effectiveness of the system. These activities include the following:
  - **Additional trips from harbor craft (HC)** as follows:
    1. HC home base to barge home base
    2. Barge home base to terminal
    3. HC home base
    4. HC home base to terminal
    5. Terminal to barge home base
    6. Barge home base to HC home base
  - **Harbor craft idling time** during this process. The average emissions in g/hr for assist tugs and the average time per trip are shown in Tables 3 and 5 of the Auto/RoRo Tool under tab "2018 Data Summary." These values are based on SPBP 2018 EI data.
  - **Two small generator sets** to provide electrical power to the system. It was assumed that the generator sets will be similar to those used by the Alternative Maritime Emission Control System (AMECS) barge currently being operated at the SPBP ports. Table 4 of the Auto/RoRo Tool under tab "2018 Data Summary" shows the emission factors in g/hr for these generators.
  - **Additional time at anchorages for bunkering.** Currently most of the auto carrier and RoRo ships bunker while operating at berth. If C&C barges are utilized during at-berth operations, bunkering will most likely take place at anchorage resulting in increases in emissions at anchorage.

Control efficiencies of 80% for PM/DPM and NO<sub>x</sub> were assumed, based on CARB's SRIA. It was assumed that barge system will treat auxiliary as well boiler engines exhaust.



## Cost Effectiveness Assessment

The CE assessment is based on CARB's CMP methodology. This methodology combines the annual emission reductions in terms of "weighted emission reductions," or WER, in tons per year (tpy) as follows:

$$\text{WER} = \text{NO}_x + \text{ROG}^1 + (20 * \text{PM}_{2.5}^2)$$

The WER is applied to the project cost, which is annualized by multiplying by the capital recovery factor (CRF), which is based on a discount rate and the project life. Cost-effectiveness is calculated under the CMP as follows:

$$\text{CE (tpy)} = \text{Project Cost (\$)} * \text{CRF} / \text{WER (tpy)}$$

Below is a summary of the two scenarios included in the Auto/RoRo tool, based on CARB's SRIA:

- **Hourly Rental:** As determined in the "Emissions Summary" worksheet of the Auto/RoRo tool and based on 2018 SPBP EI data, a total of 4,934 hours per year of RoRo operation would need to be treated by the rented barge-based C&C systems to fully comply with the proposed regulation.

In the Auto/RoRo tool, hourly rate is a variable to determine CE at different hourly rates for the estimated emissions reductions. Attachment A provides excerpts of four actual C&C service transactions that demonstrate the effective hourly rate is greater than CARB's assumption of \$900 an hour. Two invoices in attachment A show that the vendor required a 24-hour minimum usage time, which effectively raises the hourly rate if the barge system is used for anything less. The CE at each of the four hourly rates documented in Attachment A, as well as both CARB's \$900 assumption and our application of the 24-hour minimum to the lowest hourly rate that we could document, \$1,100, is provided below in Table C.

**Table C: Cost Effectiveness at Different Hourly Rates**

Hourly Rate	Cost-Effectiveness (\$/weighted ton)	Rate Source (assumes/indicated all inclusive)
\$900	\$115,707	CARB SRIA Excel - "Cost Input Tab"
\$1,100	\$141,419	Receipt #2, Attachment A
\$1,208	\$155,304	Receipt #1, Attachment A
	\$163,275	\$900/hr for 17 hr call (avg.), includes 24-hr min. charge (Receipt #4)
\$1,270		
\$1,422	\$182,816	Receipt #3
\$1,552	\$199,530	\$1,100/hr for 17 hr call (avg.), includes 24-hr min. charge

<sup>1</sup> CMP uses ROG for CE evaluation. Since EI tracks HC, not ROG, HC is converted to ROG using this formula:  
ROG = HC \* 1.26639, per 2017 CMP Guidelines, CARB

<sup>2</sup> PM<sub>2.5</sub> is used in this CE evaluation to be consistent with CARB's methodology.



Using CARB's assumption of a \$900/hr rental rate, the CE to reduce the estimated 38.76 weighted tons per year (discount rate of 1%, project life of 1 year), is estimated as \$115,707 per weighted ton. Note that at the rate of \$900 per hour for 4,934 hours/year, a total annual investment of \$4.4M would be required to reduce 38.76 weighted tons of emissions (as calculated by CMP as WER) per year from Auto carrier/RoRo vessels (based on 2018 data).

As shown in Table C, the CE of the hourly rental scenario is highly sensitive to the effective hourly rental rate, which fluctuates for each transaction based on how the billing is structured for each client. For each \$100 over the estimated rental rate of \$900/hr, the project CE increases by \$12,856/weighted ton. For an average 17-hour call serviced at a rate of \$1,100/hr, the effective rate is \$1,552/hr to account for the 24-hour minimum charge, which results in a CE of nearly \$200,000 per weighted ton.

As documented in Attachment A, C&C system pricing depends on a key factor that drives the hourly cost higher. The vendor requirement to apply a 24-hour minimum charge skews costs higher than those based on CARB's assumed hourly rate (\$900/hr) for all vessels with calls less than 24 hours. Note that the average call length in 2018 across Auto carrier/RoRo vessels is approximately 17 hours – the need to pay for these additional hours that were not used will drive the hourly rental service costs higher than projected by CARB.

- **Purchase and Operate:** As determined by the Utilization analysis (see Utilization tab), for the 2018 calls by RoRo/Auto carriers, a total of four (4) barge-based C&C systems would be required to cover all SPBP calls. There are limited data on the capital cost to purchase and operate barge-based C&C systems.
  - In the SRIA, CARB assumes<sup>3</sup> the capital cost to purchase a barge-based system is \$4.9 million. While not provided for barge-based C&C systems, CARB estimates the land-based C&C system operating costs as follows: annual maintenance cost of \$17,500 and an hourly operating rate of \$100. No additional terminal labor costs were included, an assumption that merits further review. Using these values over a 20-year project life and a 5% discount rate (CARB's assumptions) the CE of purchasing and operating four units is estimated as \$54,987 per ton, nearly double CARB's CMP limit of \$30k per ton.
  - However, the only publicly available documentation of a barge-based C&C system is the Bay Area Air Quality Management District (BAAQMD) contract with Advanced Environmental Group, LLC for a project to design, build and operate a barge-based C&C system in Benicia. The total project cost is \$8.844M. At this total project cost, assuming that this cost includes operation pursuant to contract requirements, the CE exceeds \$73,012 per ton, well beyond the CMP limit of \$30k per ton.

---

<sup>3</sup> CARB SRIA, page 80, <https://ww3.arb.ca.gov/regact/2019/ogvatberth2019/appc-1.pdf>



**Discussion Based on Data and Assumptions Currently Included in the Auto/RoRo tool**

- CARB uses the CMP cost effectiveness methodology to evaluate the CE of the proposed amendment. While this methodology accounts for the increase in hydrocarbon (and therefore ROG) emissions, it does not take into consideration the increase in CO<sub>2</sub>e, SO<sub>x</sub> and CO. The regulatory amendment should address associated increases in other pollutants.
- CARB estimates that just nine C&C systems would be needed statewide (seven of them barge-based), but 2018 call frequency analysis indicates four of these systems would need to be assigned to the Ports of Los Angeles and Long Beach to assure full compliance.
- Based on SPBP EI 2018 EI data, and a conservative estimate of 80% reduction in NO<sub>x</sub> and DPM emissions from Barge based C&C, it is estimated that 100% compliance with CARB's proposed amendments to the at-berth regulation would result in the reduction of approximately 38.76 weighted tpy.
- These reductions come at a very significant cost. As discussed above, the CE of the proposed amendments far exceeds the CMP CE limit of \$30k/weighted ton. Under the CMP, emission reductions are achieved at far better CE levels. For example, repowering harbor craft such as tug, work and crew+supply boats (from Tier 2 to Tier 3) is far more cost-effective than including auto carriers and RoRo vessels under this proposed regulatory amendment. Specifically, at a one-time cost of about \$800k-\$900k, a tugboat repower will reduce from 4 to 15 weighted tpy of emissions<sup>4</sup> at a 10-year CE that ranges from \$9k - \$25k per weighted ton. This investment is well below the CMP CE limit of \$30k/ton.

---

<sup>4</sup> This range is a function of engine horsepower, annual hours of operation, vessel type etc.









**Attachment A**

**Receipt Excerpt #1:**

AMECS Emission Control Services Invoice			
Bill To		Invoice#	
		Invoice Date	
		Amount \$	<b>145,519.00</b>
Wire To	Advanced Environmental Group LLC 230-234 East C Street Wilmington, CA 90744		
Visit Summary			
Record#		Visit Date	
Company		Vessel	
Location		IMO/Call Sign	
Visit Data			
Vessel First Line (estimate)			
Barge Arrival			
Barge First Line			
Connection Time (start control)			
Actual Disconnect Time (stop control)			
Barge Last Line			
Barge Secured at Home Berth			
Mobilization Start			
Mobilization End			
Service Hours			120.42
<b>SubTotal</b>			<b>120.42</b>
			-
Total Hours Billed			120.42
Hourly Rate		\$	1,100.00
<b>Emission Control Services Total (120.42 * 1100)</b>		\$	<b>132,462.00</b>
Other: HOLIDAY RATE -	330.00 * 24	\$	7,920.00
Other: System connection delays - hourly rate applies per contract			
Other:	= 4.67 hours	\$	5,137.00
<b>Total Additional Charges/Credits</b>		\$	<b>13,057.00</b>
<b>Total Amount Due</b>		\$	<b>145,519.00</b>
Terms	NET 15: Due By		
	Interest on past due amounts will be charged at a rate of 1.5% per month.		
		<div style="border: 1px solid black; padding: 5px;"> <b>Effective Rate:</b>                      Total Cost/Vessel Stay                      =\$145,519/120.42                      =\$1,208/hour                 </div>	
Generated:			




Receipt Excerpt #2:

AMECS Emission Control Services Invoice			
Bill To		Invoice#	
		Invoice Date	
		Amount \$	87,450.00
Wire To	Advanced Environmental Group LLC 230-234 East C Street Wilmington, CA 90744		
Visit Summary			
Record#		Visit Date	
Company		Vessel	
Location		IMO/Call Sign	
Visit Data			
Vessel First Line (estimate)			
Barge Arrival			
Barge First Line			
Connection Time (start control)			
Actual Disconnect Time (stop control)			
Barge Last Line			
Barge Secured at Home Berth			
Mobilization Start			
Mobilization End			
Service Hours		79.50	
<b>SubTotal</b>		<b>79.50</b>	
Total Hours Billed		79.50	
Hourly Rate		\$ 1,100.00	
<b>Emission Control Services Total (79.5 * 1100)</b>		<b>\$ 87,450.00</b>	
		\$ -	
Other:		\$ -	
Other:		\$ -	
<b>Total Additional Charges/Credits</b>		<b>\$ -</b>	
<b>Total Amount Due</b>		<b>\$ 87,450.00</b>	
Terms	NET 15, Due By [REDACTED] Interest on past due amounts will be charged at a rate of 1.5% per month.		
		<b>Effective Rate:</b> Total Cost/Vessel Stay = \$87,450 / 79.50 = \$1,100/hour	
Generated:	[REDACTED]		



Receipt Excerpt #3:

AMECS Emission Control Services Invoice			
Bill To: [REDACTED]		Invoice# [REDACTED]	
		Invoice Date: [REDACTED] 2019	
		Amount: \$ 19,200.00	
Wire To: Advanced Environmental Group LLC 230-234 East C Street Wilmington, CA 90744		Chase Bank - Bank Contact [REDACTED]	
Visit Summary			
Record# [REDACTED]		Visit Date: [REDACTED] 2019	
Company: [REDACTED]		Vessel: [REDACTED]	
Location: [REDACTED]		IMO/Call Sign: [REDACTED]	
Visit Data			
Vessel First Line (estimate)		[REDACTED] /2019 14:30	
Barge Arrival		[REDACTED] 2019 17:50	
Barge First Line		[REDACTED] /2019 18:15	
Connection Time (start control)		[REDACTED] 2019 19:01	
Actual Disconnect Time (stop control)		[REDACTED] 2019 03:01	
Barge Last Line		[REDACTED] 2019 03:16	
Barge Secured at Home Berth		[REDACTED] 2019 04:55	
Mobilization Start		[REDACTED] /2019 15:30	
Mobilization End		[REDACTED] /2019 05:00	
Mobilization/Demobilization Hours		4.00	
Service Hours: [REDACTED] 19 15:30 [REDACTED] 19 05:00		13.50	
SubTotal		17.50	
Total Hours Billed		17.50	
Hourly Rate		\$ 800.00	
Emission Control Services Total (17.5 * 800)		\$ 14,000.00	
Note: Minimum Charge of 24 hours: 800 * 6.5		\$ 5,200.00	
Other:		\$ -	
Total Additional Charges/Credits		\$ 5,200.00	
Total Amount Due		\$ 19,200.00	
Terms: NET 15. Due By [REDACTED] /2019 <span style="float: right;">Interest on past due amounts will be charged at a rate of 1.5% per month.</span>			
		HRLY Charge <u>\$1422</u>	
Generated: [REDACTED]			

NOTE: Short Stay Vsl.  
 VSL STAY: 13.5 HRS  
 Tug Assist: 4.0 HRS  
 Min charge: 24 HRS  
 Effective Hourly Charge \$19,200 / 13.5 hrs = \$1422.22



Receipt Excerpt #4:

HOURLY CHARGE	\$900 USD per hour. The Hourly Charge is inclusive of all tug services and/or other 3rd party services required for mobilizing, de-mobilizing, and positioning System to Customer's vessel. Notwithstanding the above, any and all charges for "Spacer Barges," "Fenders" and/or supplemental 3rd party crew boats are not included in the Hourly Charge and will be passed through to Customer at the actual cost to Operator + 20%. Additional charges may only be added upon written authorization by Customer. In the event Terminal may require a Spacer Barge between the <b>VENDOR</b> and Vessel.
EMISSION CONTROL SERVICE CHARGES	Service hours will be charged from the beginning of <b>VENDOR</b> mobilization to the end of <b>VENDOR</b> demobilization. Customer understands that Operator has a minimum charge of twenty-four (24) hours per vessel.

At an hourly rate of \$900, applied across the minimum 24 hour billing requirement, the total cost is  $24 \times \$900$  / 17 hours (avg. call time) = \$1,270 effective hourly rate.