Paul Caron
California Department of Transportation
100 S. Main Street
Los Angeles, CA 90012

VIA CERTIFIED MAIL
RETURN RECEIPT REQESTED
No. 7009 2820 0001 6537 7429

SECOND AMENDMENT TO WATER QUALITY CERTIFICATION FOR PROPOSED SCHUYLER HEIM BRIDGE REPLACEMENT PROJECT (Corps' Project No. 2010-186-PHT), DOMINGUEZ CHANNEL, CITY OF LOS ANGELES, LOS ANGELES COUNTY (File No. 10-005)

Dear Mr. Caron:

We are in receipt of your letter dated May 26, 2015 requesting changes to the Clean Water Act Section 401 Water Quality Certification for the subject project issued on July 21, 2010 (Certification).

The California Department of Transportation (Applicant) has updated the project description and is requesting to change information and requirements included in the Certification. In response to your request, the following Items and Conditions are modified.

Deleted text is shown in bold ~~**strike-out**~~, new authorized text is shown in bold **underlined**.

Under Attachment A, Item 2, the Applicant's Agent address shall be:

2. Applicant's Agent: Elaine Silvestro
Alameda Corridor Engineering Team
~~**One Civic Plaza Dr., Ste. 350**~~
3760 Kilroy Airport Way, Ste. 200
~~**Carson, CA 90745**~~
Long Beach, CA 90806
~~**Phone: (310) 816-0460 Fax: (310) 816-0464**~~
Phone: (562) 247-7087 Fax: (562) 247-7090

Under Attachment A, Item 7, Project Description shall be:

7. Project Description: The Project will replace the existing Schuyler Heim Bridge (Bridge) with a fixed-span bridge east of the existing bridge alignment. Currently the Bridge has substandard lane widths, bridge rails, and shoulder widths, or no shoulder. Standard lane

widths can accommodate heavy trucks and larger vehicles, as well as a shoulder in each direction for disabled vehicles.

A fixed-span bridge will replace the existing structure, and will eliminate the raising and lowering that impedes vehicular traffic. The estimated total temporary and permanent disturbance area associated is approximately 92 acres, which includes the permanent disturbance footprint as well as a 250-foot buffer to accommodate temporary structures (trestles, piers, lay down areas, and access and egress routes).

Construction of the Project is expected to take approximately seven to eight years with multiple crews working over the course of a two-shift workday. The construction schedule for replacement of the Schuyler Heim Bridge involves demolition, grading or excavation, foundation and bridge abutment and column construction, and bridge construction.

The proposed fixed-span structure will be approximately 4,800 feet long and with an average width of 120 feet. The proposed bridge is 43 feet wider than the existing lift bridge due to a new southbound auxiliary lane, standard 12-foot wide lanes, and standard Caltrans shoulders. In the northbound direction, the replacement bridge will include three 12-foot wide through traffic lanes, 10-foot shoulders. In the southbound direction, the replacement bridge will include three 12-foot wide traffic lanes, one 12-foot auxiliary lane, and 10-foot shoulders. The proposed alignment for the new fixed-span bridge is located primarily within, and partially east of the existing bridge's right-of-way.

The footprint of the proposed fixed-span bridge is located east of the existing bridge footprint to avoid impacts to the Alameda Corridor Transportation Authority tracks -located on the Badger Bridge immediately west of the existing Schuyler Heim Bridge, and to accommodate construction sequencing and maintain traffic flows during Project construction and demolition activities.

The vertical clearance of the proposed fixed-span bridge will be 47 feet over the Cerritos Channel mean high water line of 4.7 feet. This profile will accommodate a 45-foot fireboat. The width of the navigable channel (distance between bridge-support columns and fenders) will be 180 feet, the same as the existing width. The

bridge replacement will retain access to a southbound off-ramp and northbound on-ramp at New Dock Street on Terminal Island, as well, as a northbound off-ramp and southbound on-ramp at Henry Ford Avenue on the mainland (north) side of the bridge. The New Dock Street southbound off-ramp will be elevated to clear the existing industry tracks that join the Badger Bridge rail alignment from east of State Route (SR)-47. The new alignment of the off ramp will eliminate one of the two at-grade rail crossings at SR-47 and New Dock Street. New Dock Street will be realigned to accommodate the realigned on-ramp and off-ramp.

Construction of the Project will require temporary structures, or "falsework" that will be built to support the new bridge and then be removed once construction is complete. The falsework required to construct the new bridge within the channel will temporarily restrict the available horizontal clearance and the vertical clearance to 13 foot wide openings required for U.S. Coast Guard emergency and security vessels. The Cerritos Channel clearance restrictions are projected for a period of 12 to 24 months during construction of the eastern deck sections of the new bridge, demolition of the existing steel lift bridge and construction of the western deck sections of the new bridge. The channel will be closed completely to large marine vessels for a period of approximately one year to erect the new bridge and remove the mid-span truss of the old lift bridge: With the exception of these periods of restriction and closure, the channel will be open for navigation during bridge construction.

The Project involves utilizing shafts that are cast-in-drilled-hole (CIDH) over land and cast-in-steel-shell (CISS) in the water depending on soil conditions. Most of the shafts will be of CIDH construction, as CIDH shafts can carry vertical and lateral loads through the deep, liquefiable soil layers. Also, the CIDH shafts do not require footings and, therefore, minimize right-of-way takes and utility relocations and have less effect on biological resources compared to the CISS shafts. The CISS shafts which require footings will be constructed where soil conditions require additional support.

The Project will demolish the existing Schuyler Heim Bridge by first removing the lift span and then removing the remaining steel structure. The first phase constructs the easterly portion of the new

fixed-span bridge east of the existing bridge. Once built, traffic from the existing bridge approaches will be routed onto the recently constructed bridge. In the second phase, the existing Schuyler Heim Bridge will be demolished. The final phase constructs the westerly portion of the new fixed-span bridge over the footprint of the recently demolished bridge.

The eastern side of the new fixed-span bridge will be constructed east of the existing lift bridge. The south ends of the new bridge approach will connect to Ocean Boulevard. On the north, the new bridge will connect to the existing SR-I03 and Henry Ford Avenue. The connection to Ocean Boulevard and SR-I03 are expected to occur at night without closing the SR -47 to traffic. Traffic on the existing bridge will be diverted to the eastern side of the new bridge, and the existing bridge will be demolished.

Construction of the portion of the new bridge that is directly over the Cerritos Channel will require access from both sides of the channel. Pier S and Pier A West will serve as local construction staging and materials storage areas. The contractor will employ material delivery and crane work with the use of temporary trestles. A temporary pier ~~would~~**will** be constructed to supply construction materials, falsework, equipment and workers from the Pier S staging area.

A temporary pier composed of individual concrete column footings spaced every 20 feet, timber posts, cross tie beams and a wooden deck ~~would~~**will** be constructed from Pier S. The temporary pier will extend approximately 150 feet beyond the Pier S channel embankment and connect to a temporary trestle. The temporary pier ~~would~~**will** be approximately 40 feet wide to accommodate a haul truck or front loader. The temporary pier ~~would~~**will** also be utilized in constructing the eastern half of the new bridge, demolishing of the existing Schuyler Heim Bridge and constructing the western half of the new bridge. Upon completion of this work, the temporary pier ~~would~~**will** be completely removed from the channel. The pier will have an estimated temporary in-channel impact of 0.0023 acres, based on 26 column footings that are approximately four feet square each.

The contractor will build a temporary trestle bridge to construct the Project. This approach ~~would~~**will** require a timber trestle erected

on concrete column footings, or short steel driven piles spaced every 20 feet to span the entire channel. The temporary structure ~~would~~**will** be placed just east of the eastern half of the new bridge to load and unload construction materials, falsework, equipment and workers from the Pier A and Pier S construction staging areas. The temporary structure ~~would~~**will** be approximately 780 feet long and 40 feet wide. The trestle bridge will have a temporary in-channel impact of 0.0110 acres, based on 120 column footings that are approximately four feet square each.

Openings within the temporary trestle to accommodate U.S. Coast Guard emergency and security vessels will be provided by the contractor. Once the eastern half of the new bridge is completed, the temporary trestle ~~would~~**will** be removed. After demolition of the existing Schuyler Heim Bridge, another temporary trestle ~~would~~**will** be constructed just west of the second half of the new bridge to supply construction materials, falsework, also be approximately 780 feet long and 40 feet wide. Once the western half of the new bridge is completed, the temporary trestle ~~would~~**will** be removed. The trestle bridge will have a temporary in-channel impact of 0.0110 acres, based on 120 column footings that are approximately four square feet each.

The new eastern half of the bridge will require the contractor to install two footings at each of the four bents within the Cerritos Channel for a total of eight CISS piles. After demolition of the existing Schuyler Heim Bridge, the contractor will install the remaining eight piers for a grand total of 16 CISS piles constructed within the Cerritos Channel. All CISS piles within the channel that support the new Schuyler Heim Bridge have a 12-foot diameter. Drilling for the 16 CISS piles will produce 2,513 cubic yards of excavated material to be removed from the channel, and the same volume of concrete and steel reinforcing bars will be placed into the channel to permanently fill the drilled CISS piles.

In order to construct 12 of the 16 CISS piles in the channel, a temporary casing will be installed inside the permanent casing of each. For this to occur, a 12-foot in diameter permanent steel casing will be driven into the bottom of the Cerritos Channel at each of the column locations to about 50 feet below the mud line (on average) and about 6 feet above mean high water line (to elevation of 10 feet based on NAVD '88) for Piers 14 and 15

(inner piers) and to 5 feet below mean high water line (to elevation of -1 feet based on NAVD '88) for Piers 13 and 16 (outer piers). An 11-foot in diameter temporary steel casing will then be oscillated inside the 12-foot casing to the full depth of the CIDH pile (specified tip elevations vary approximately -190 feet NAVD '88).

The sediments and soils inside the temporary steel casing will be removed to specified tip elevation with a clam shell bucket and dumped into a truck positioned on the adjacent timber trestle. All excavated material will be analyzed to identify if it is contaminated, and will either be used for fill in upland areas within Project limits or transported to a legal point of disposal. Once the space is excavated, a 10-foot in diameter rebar cage will then be placed inside the hole. Concrete will be pumped into the hole, immersing the rebar cage. While the concrete is being pumped inside, the temporary 11-foot diameter steel casing will be pulled out as the level of concrete inside rises. Water displaced during this activity will be removed by pumping it first through a filter and then into 21,000 gallon baker tanks stored on-site. It will be analyzed to identify if it is contaminated, classified, and treated if required before it is disposed in an approved manner.

Due to schedule and location, the other 4 of the 16 CISS piles in the channel will be constructed in the same manner as described above; however, will be installed inside two of the temporary coffer dams **or enclosed turbidity curtain** already in place for the removal of the mid-channel piers. **The contractor may elect to use either method to enclose the mid-channel piers in preparation for removal.** The permanent impact to the Cerritos Channel due to the construction of the 16 piles will be 0.017 ha (0.042 ac). Construction materials, equipment, and laborers will be supplied by trestle.[last saved place]

Falsework for the new Schuyler Heim Bridge will require driven steel pipe columns, 23.6 inches in diameter, to be installed at 20 feet center-to-center spacing for additional temporary support. The driven, steel pipe columns will have a temporary impact of 0.127 acres, based on 440 driven steel pipes. Once the steel pipes are in place, wooden timber posts with cross-bracing lumber ties will support structural steel "I" beams to form a temporary heavy timber deck. The temporary deck will be employed for

constructing the cast-in-place and post tensioned girders as well as the final concrete deck between spans. During erection and dismantling of the bridge falsework, marine traffic will not be allowed to pass.

During the anticipated seven to eight year construction period, marine traffic in Cerritos Channel will be limited, as temporary navigation openings will be a maximum 75 feet wide and 43 feet high. In addition, the channel could be closed for periods up to 30 days for falsework erection, girder casting, lift bridge span demolition and falsework dismantling. During periods when the channel will be open, marine traffic ~~would~~**will** be directed through temporary openings.

Bridge construction will occur in phases. The construction schedule balances speed of construction with maintaining traffic on SR-47 and also minimizes bridge closures during construction. During construction, security fencing will be installed; followed by rough grading. Grading will occur on the north and south sides of the Cerritos Channel within the right-of-way to build the access ramps and approaches for the new higher bridge. It is expected that cut and fill will be balanced for this activity. A total linear distance of 560 feet has been estimated, and included approximately 200 linear feet of embankment on Pier A and approximately 360 linear feet of embankment on Pier S. This ~~would~~**will** result in an additional temporary impact of 0.105 ha (0.26 ac). The grading phase is estimated to require approximately one month to complete.

Pile casting will be completed after the column's reinforcing steel bar cages have been installed, the vertical column forms have been erected, and the structural concrete has been poured. Concrete will be brought on site in ready-mix trucks and pumped into the forms. After the specified curing period, the column forms will be removed. The columns will be spaced approximately 154 feet to 246 feet apart to support the fixed-span bridge. Each column will be approximately seven to nine feet in diameter. This phase will require an estimated 24 months to complete for each side.

The existing fender piles (a mooring structure designed to absorb the impact energy of berthing vessels that avoids damage to the vessel or pier structure) in the channel will be pulled out with a

crane. A total of 144 fender piles will be removed, each having a diameter of 1.2 feet for a total area of 0.0013 acres. A pile-driver will be used to install the new fender piles in the channel. The fender piles for this Project will be approximately 24-inches in diameter, and approximately 80 piles will be required. The permanent impact of new fender piles is estimated to be 0.018 acres. Fender piles are likely to be driven with a hydraulic impact hammer, with total energy per strike up to 370,000 foot-pounds of force. During this period, actual striking time is approximately 45 minutes, with a strike occurring between every one to two seconds, excluding adjustments or to check the pile tip elevation. A total of approximately 1,350 to 1,800 strikes or more may be required to drive each pile for duration of approximately two hours. The pile installation will be performed in 2 phases, first on the east side (projected to be completed by May 2014) and then on the west side (projected to be completed by April 2016).

After column installation is complete in the channel, wood forms supported by steel and wood falsework will be erected at each pair of columns. During this phase, warning signs and night lighting will be utilized on the falsework as necessary to alert marine traffic of the presence of construction structures. This phase will require an estimated 17 months to complete. also be performed in 2 phases, each estimated to be about 14 months to complete.

When the falsework for the approach span is completed, installation will begin by constructing the bridge support structure with steel and reinforced concrete. Overhead bridge deck forms will be placed, and concrete will be poured and cured. The forms will be removed as the final step. This phase will require an estimated 13 months to complete for each side.

With a substantial portion of the falsework in place, installation of the main-span superstructure will begin. This will consist of connecting pairs of columns, and subsequently the bridge support structure, overhead forms will be installed around each section of the superstructure, concrete will be poured, cured, and forms will be removed. This phase will complete of the structural section of the main span. This phase will require an estimated 25 months to complete.

The existing bridge superstructure and piers will also need to be

removed. The pile caps will remain, except for a small portion of the existing main-span footing, which will be removed to allow placement of several CISS piles in the channel. The existing pile caps, footings, and piles will be cut two feet below the channel invert (per a 2005 agreement with the U.S. Coast Guard), and the off as follows: the two mid-channel piers (Piers 27 and 28) ~~would~~ **will** be removed to the top of the pile cap foundations approximately -46 feet below mean sea level (MSL) and the two outer piers (Piers 26 and 29) ~~would~~**will** be removed to the top of the existing footings which are at an approximate elevation of -5.8 feet below MSL (-3 feet below mean lower low water [MLLW]) and the hard-bottom substrate will revert back to native earth bottom.

Prior to existing substructure removal, three coffer dams **or enclosed turbidity curtains** will be erected ~~to provide dry workspaces~~. The truss pier on the north shore is enclosed by a bulkhead or a retaining wall and therefore will not require the use of a coffer dam since it is already enclosed by mechanical means. The two coffer dams **or enclosed turbidity curtains** in the center of the channel for the removal of the tower piers will be approximately 140 feet in length and 80 feet in width each and the coffer dam **or enclosed turbidity curtain** for the removal of the truss pier on the south side of the channel will be approximately 140 feet in length and 51 feet in width. The temporary impacts of the three coffer dams **or turbidity curtains** ~~would~~**will** be 0.274 ha (0.678 ac).

If the bridge is not sold for reuse in an alternate location, the port will leave the existing bridge pile caps in place, provided they are cut off and appropriately marked. The superstructure will be sent to a scrap metal exporting terminal. While there is no steel recycling mill operating in the Port of Long Beach (POLB) or Port of Los Angeles (POLA), there are several scrap metal exporting terminals at both ports. Because lead paint is likely to be encountered on the old superstructure, special measures will be employed during demolition to prevent lead contamination. A lead based paint and asbestos survey will be conducted. If lead or asbestos were encountered at levels higher than the mandated thresholds, these materials will be removed from the steel for disposal prior to recycling. This demolition phase will require an estimated 17 months to complete.

Once the approach and main-span decks have been completed, construction of the deck barriers and joints will begin. The deck barriers will consist of forms and reinforced concrete to provide vehicle protection along both the outside portions of the structure and the center divider. Joints will consist of forms and reinforced concrete to tie together each segment of the bridge and expressway structure, and allow for expansion and contraction of the road surface. This phase will require an estimated18 months to complete **for each side**.

At the close of construction, the bridge surface will be striped for the prescribed number of traffic lanes, lighting fixtures and signage will be installed, and a fence will be incorporated on both sides of the new bridge with a height of 14 feet. This phase will require an estimated 12 months to complete.

Two additional design elements have been added to the Project. The first was a Special Condition listed in the Port of Long Beach (POLB) Harbor Development Permit (HDP-10-014). The POLB required Caltrans to handle all storm water runoff from the Project without discharging into the POLB's storm water drainage facilities. Currently, there is an existing POLB pump station on the north side of the Cerritos Channel which accepts the storm water from the Project and adjoining areas and pumps the water through an outfall structure on the north bank of the Cerritos Channel under the existing bridge. Once the storm water has been separated, the existing POLB pump station will manage storm water from POLB owned property and Caltrans will manage storm water from the Caltrans' roadways at Pier A (roadways beginning from northern half of new bridge to ramp and approaches at Pier A).

The combined Caltrans and POLB discharge is equivalent to the previous discharge; there will be no change in the volume of storm water discharged into the channel.

In order to manage its storm water, Caltrans is proposing to construct a new storm water drainage system including a higher capacity replacement storm water pumping plant (UPRR OH Storm Water Pump Plant No. 53-2626W) and a new outfall structure. The proposed new outfall will be located adjacent to the bridge and to the east side of the bridge in the north bank of the

Cerritos Channel. The outfall will be connected to a storm water drainage system via an 18-inch RCP pipe that will run approximately 50 feet under an adjacent access road embankment. The outfall consists of an 18-inch opening in an approximately 15-foot by 39-foot reinforced concrete headwall. The opening is above the water line, at a six-foot elevation (NAVD '88). Existing riprap at the site will be removed to make room for the outfall and restored between the outfall and the channel water.

The scope for construction of the proposed outfall is as follows:

- Remove riprap from construction area.
- Install sheet piling in channel.
- Install concrete headwall, outfall, and grating.
- Restore riprap and remove sheet piling.

This proposed Project modification ~~would~~**will** result in an additional permanent impact of 0.005 ha (0.013 ac).

The California Department of Transportation will comply with the *Statewide Construction Storm Water General Permit,* 2009-0009-DWQ or the stormwater provisions of the *Statewide Storm Water Permit for the State of California Department of Transportation* 2012-0011-DWQ.

Under the proposed schedule, including excavation and the installation of structural components, construction ~~would~~**will** occur between June 2014 and October 2015. This schedule has the construction described above occurring concurrently with the bridge construction. Construction hours ~~would~~**will** be the same as the bridge construction hours, during permitted hours identified in the cities of Los Angeles and Long Beach building codes and in compliance with local noise ordinances.

The second additional design element requested by POLB ~~would~~**will** be to reinforce the bank on the south side of the channel adjacent to Pier 26 with additional rock revetment (riprap) beginning on the floor of the channel, north of the remaining pile cap. The rock ~~would~~**will** range from 2 to 4 feet thick and ~~would~~**will** cover the remaining footing (after the pier is removed) to join the existing embankments on each side of the bridge at an approximate slope of 1 (vertical) to 1.75 (horizontal). The new

rock ~~would~~**will** introduce a new permanent impact to the floor of the channel in the form of an approximately 6 feet wide strip, approximately 204 feet long running adjacent to the limits of existing rip rap. In addition, rock will also be placed on top of the newly exposed footing for Pier 26 after removal of the old bridge piers.

Under the proposed schedule, the rock revetment protection ~~would~~**will** occur following the removal of the truss piers of the current bridge, about February 2015. Construction hours ~~would~~**will** be the same as the bridge construction hours, during permitted hours identified in the cities of Los Angeles and Long Beach building codes and in compliance with local noise ordinances.

Dewatering activities ~~will~~ **may** include coffer dams ~~or similar structures within the Cerritos Channel.~~ **If the contractor elects to use coffer dams for the removal of the old bridge columns,** ~~e~~Equipment mounted vibratory pile drivers will be used to vibrate sheet piles for the coffer dams into the ~~ground~~ **sediments at the bottom of the channel**. The coffer dams ~~will~~ **may** be equipped with pumps for dewatering **if a dry environment is needed or not, if a wet environment is chosen. If a dry environment is needed, w**~~W~~ater that enters the coffer dams will be removed by **a** pump and placed in a baker storage tank for testing and treatment. Pumped water will be allowed to settle in the baker tanks. If foreign material enters the water it will be disposed of according the requirements of the Clean Water Act Section 402 National Pollution Discharge Elimination System Permit, Industrial Water Permit, or taken to a legal point of disposal. Clean water will be returned to the Cerritos Channel.

Sediments from the baker tanks will be ~~placed on a barge and taken to shore for~~ **processeding** ~~or to a legal point of disposal~~ **and disposed of with other spoils**. The coffer dams will be removed using the ~~equipment~~ **excavator** mounted vibratory pile drivers upon completion of construction. **However, the contractor may elect to enclose each of the piers for the removal of the old bridge columns with a turbidity curtain. The turbidity curtain may be attached/anchored to the trestle bridge column footings on the north, south, and east sides. On the west side, anchors may be placed at the bottom of the**

channel to provide additional support for the turbidity curtain. Water will remain flowing during construction around the coffer dams **or through the turbidity curtains** within the Cerritos Channel.

The Project will not disrupt the tidally influenced hydrological regime within the Cerritos Channel. The channel will maintain its tidally-influenced hydrologic regime during Project construction to avoid or minimize adverse impacts to fish or other biological resources and localized water chemistry.

I have determined that the above-proposed amendments do not constitute a significant change in the nature or scope of the activities described for the project in your original application. Therefore, all of the proposed modifications are hereby incorporated into 401 Certification No. 07-131 and no additional action by this agency pursuant to Section 401 of the Clean Water Act is necessary. This determination is limited to the proposed amendments contained in your notification to this Regional Board dated October 8, 2008 and described herein, and does not eliminate the Applicant's responsibility to comply with any other applicable laws, requirements, or permits.

Should you have questions concerning this certification action, please contact Dana Cole, Section 401 Program, at (213) 576-6759.

Sincerely,

Samuel Unger
Samuel Unger
Executive Officer

July 22, 2009
Date

Attached: Distribution List

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