



**The City of San Diego**  
**M E M O R A N D U M**

DATE: August 15, 2019  
TO: James Nagelvoort, Director, Public Works  
FROM: Claudia C. Abarca, Deputy Director, Public Works Contracts *CAbarca*  
SUBJECT: Sole Source Agreement for Emergency Repairs for Cook's Crack Sea Cave Soil Stabilization

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Contractor 1: URETEK USA, Inc.,  
Estimated Amount: \$ 250,000

Contractor 2: Flatiron West, Inc.  
Estimated Amount: \$3,500,000

Dept. Est. Project Total: \$3,750,000

Expiration Date: December 31, 2020

Pursuant to SDMC §22.3108 (a), "Exceptions to Advertisement and Competitive Award of Public Works Contracts", this is to certify that a sole source agreement with the contractor named above is necessary and that strict compliance with a competitive process would be unavailing or would not produce an advantage, and soliciting bids or proposals would be undesirable, impractical or impossible for the following reasons:

**JUSTIFICATION:**

City staff observed that portions of the roadway along Cook's Crack Sea Cave which lies underneath 1210 Coast Boulevard are showing signs of extensive cracking. These signs raised concerns as to the stability of the underlying soil and rock. The City's Transportation & Storm Water Department submitted a memorandum on August 9, 2019 (Attachment 1) which included a Coastal Erosion Assessment and Cave Solution Feasibility Analysis (Attachment 2) of the sea cave conducted by Terra Costa Consulting Group (Terra Costa).

The report concluded there was a high probability of collapse of additional supporting roof rock within the cave. Following the report, Terra Costa submitted a memorandum dated on August 8, 2019 (Attachment 3) indicating a collapse could occur at any time, resulting in a sinkhole into which a vehicle or pedestrian could fall. Based on the assessment conducted, there is an immediate need to structurally stabilize the roadway by filling the cave beneath with concrete slurry.

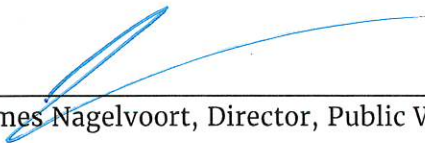
Further information justifying this request can be found in the accompanying attachments.

James Nagelvoort, Director  
August 15, 2019

AGREEMENT VALUE & DURATION:

The total fee for these services shall not exceed the amount noted above and the term of the agreement will be in effect from date of the agreement execution, until the agreement is completed/closed, but will not exceed the above expiration date without issuance of a modification to duration of both the agreement and this sole source.

APPROVED BY:

  
\_\_\_\_\_  
James Nagelvoort, Director, Public Works

Date: 8/15/19

CCA/ss

- Attachments:
1. Memorandum from Kris McFadden to James Nagelvoort, Dated August 9, 2019
  2. Coastal Erosion Assessment and Cave Solution Feasibility Analysis for Coast Boulevard and Cook's Crack Sea Cave, Dated June 17<sup>th</sup>, 2019
  3. Memorandum from Terra Costa Consulting Group, Dated August 8, 2019

cc: Kris McFadden, Director, Transportation & Storm Water Department  
Myrna Dayton, Assistant Director, Public Works Department  
Drew Kleis, Deputy Director, Transportation & Storm Water Department  
Mark Nassar, Deputy Director, Public Works Department  
Luis Schaar, Deputy Director, Public Works Department  
Jong Choi, Senior Civil Engineer, Public Works Department  
Catherine Dungca, Senior Civil Engineer, Public Works Department  
Stephen Samara, Principal Contract Specialist, Public Works Department  
Manuel Gonzalez, Associate Civil Engineer, Public Works Department



THE CITY OF SAN DIEGO

## M E M O R A N D U M

DATE: August 9, 2019

TO: James Nagelvoort, Director, Public Works Department

FROM: Kris McFadden, Director, Transportation & Storm Water (TSW)

SUBJECT: Sole Source Agreement for Emergency Soil Stabilization Services for the Cook's Crack Sea Cave

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Attached is the Coastal Erosion Assessment and Cave Solution Feasibility Analysis from Terra Costa Consulting Group regarding the evaluation of the Cook's Crack Sea Cave that lies underneath 1210 Coast Boulevard (Attachment 1). The report identified a high probability of collapse of additional supporting rock, causing damage to the street and utilities that overlie the sea cave. Furthermore, additional information discussed in the August 8, 2019 memo from Terra Costa Consulting Group (Attachment 2) states that due to groundwater and deposits falling from the roof of the sea cave, a collapse could occur at any time, resulting in a sinkhole into which a vehicle or pedestrian could fall.

TSW has also been working with URETEK, Inc. to acquire an operations and maintenance contract that will stabilize the soil under the street and directly above the sea cave by injecting a high-density expansive polymer which will provide a stronger and improved soil structure that will allow phase two of the repairs to commence.

TSW, in alignment with the guidance provided in the San Diego Municipal Code, formally requests awarding a sole source operations and maintenance contract to URETEK, Inc. for emergency soil stabilization services.

The necessary capital repair is beyond the capabilities of TSW. We request a sole source emergency capital contract to provide emergency stabilization of the roadway and underlying soil to prevent collapse of portions of Coast Boulevard in La Jolla that overlie the sea cave.

Strict compliance with a competitive process would not produce an advantage, and would therefore be undesirable, impractical, or impossible due to the immediate need to address the instability.

**Location of the Emergency**

The roof of the sea cave is located under 1210 Coast Boulevard in La Jolla and extends on both sides of the street.

**Nature of the Emergency**

The City of San Diego noted that portions of the roadway along Coast Boulevard in the area of the sea cave are showing signs of extensive cracking. These signs raised concerns as to the stability of the underlying soil and rock. Terra Costa Consulting Group prepared a Coastal Erosion Assessment and Cave Solution Feasibility Analysis concluding there is a high probability of collapse of additional supporting roof rock, resulting in the formation of voids or sinkholes under Coast Boulevard, causing damage to the street and utilities that overlie the sea cave.

**Description of Work**

The capital solution to prevent the collapse of the sea cave is to infill the cavity with sandy slurry. In the interim the emergency operations and maintenance sole source contract with URETEK, Inc. will stabilize the soil of the sea cave roof and pavement by injecting a high density expansive polymer which will provide a stronger and improved soil structure that will allow us to complete phase two of the repairs.

Should you have any comments or questions, please contact Edgar Puente, Senior Civil Engineer, at (619) 527-7527 or epuente@sandiego.gov.



Kris McFadden  
Director

KM/ep

Attachments: 1. Coastal Erosion Assessment and Cave Solution Feasibility Analysis  
2. August 8, 2019 memo from Terra Costa Consulting Group

cc: Aimee Faucett, Chief of Staff, Office of the Mayor  
Kris Michell, Chief Operating Officer  
Ronald H. Villa, Assistant Chief Operating Officer  
Alia Khouri, Deputy Chief Operating Officer, General Services  
Johnnie Perkins, Deputy Chief Operating Officer, Public Works & Utilities  
Lee Friedman, Infrastructure Policy Manager, Office of the Mayor  
Jessica Lawrence, Director of Finance Policy and Council Affairs, Office of the Mayor  
Craig Gustafson, Director, Communications Department  
Gene Matter, Assistant Director, Transportation & Storm Water Department  
Kristy Reeser, Deputy Director, Transportation & Storm Water Department  
Cassandra Mouglin, Deputy City Attorney, Office of the City Attorney  
Joshua Lahmann, Senior Civil Engineer, Transportation & Storm Water Department  
Edgar Puente, Senior Civil Engineer, Transportation & Storm Water Department  
Marco Lopez, Assistant Engineer-Civil, Transportation & Storm Water Department  
Sonja Olsen, Associate Planner, Transportation & Storm Water Department



COASTAL EROSION ASSESSMENT AND  
CAVE SOLUTION FEASIBILITY ANALYSIS  
**COAST BOULEVARD AND  
COOK'S CRACK SEA CAVE**  
SAN DIEGO, CALIFORNIA

Prepared for  
TETRA TECH  
San Diego, California



Prepared by  
**TERRACOSTA CONSULTING GROUP, INC.**  
San Diego, California

Project No. 2086B  
June 17, 2019



Geotechnical Engineering  
Coastal Engineering  
Maritime Engineering

Project No. 2086B  
June 17, 2019

Mr. Merrill Taylor  
**TETRA TECH, INC.**  
4944 Balboa Avenue, Suite 215  
San Diego, California 92123

**COASTAL EROSION ASSESSMENT AND  
CAVE SOLUTION FEASIBILITY ANALYSIS  
COAST BOULEVARD AND COOK'S CRACK SEA CAVE  
SAN DIEGO, CALIFORNIA**

Dear Mr. Taylor:

TerraCosta Consulting Group, Inc. (TerraCosta) is pleased to present the accompanying report, which provides a summary of our most recent survey of Cook's Crack and our assessment of coastal erosion and alternatives to stabilization of the Cook's Crack Sea Cave extending under Coast Boulevard in the La Jolla area of San Diego, California.

We appreciate the opportunity to work with you on this project and trust this information meets your current needs. If you have any questions or require additional information, please give us a call.

Very truly yours,

TERRACOSTA CONSULTING GROUP, INC.

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Gregory A. Spaulding, Project Geologist  
P.G. 5892, C.E.G. 1863

GAS/WFC/jg  
Attachments



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Walter F. Crampton, Principal Engineer  
R.C.E. 23792, R.G.E. 245, D.CE



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**COASTAL EROSION ASSESSMENT AND  
CAVE SOLUTION FEASIBILITY ANALYSIS  
COAST BOULEVARD AND COOK'S CRACK SEA CAVE  
SAN DIEGO, CALIFORNIA**

**1 INTRODUCTION**

It has been reported that in 1996, City of San Diego geologists first entered the Cook's Crack Sea Cave to evaluate the limits and general stability of the cave. As we understand, at that time, they recommended filling the sea cave with concrete to stabilize it. However, the City elected to not infill the cave due to environmental concerns. In 2002, the City commissioned TerraCosta, in concert with RBF, to complete a comprehensive study to measure the limits of the cave and perform an engineering assessment of the stability of the cave. The results of that assessment are discussed in our report titled, "Coastal Bluff Stability Study, Coast Boulevard Between Prospect Street and South Casa Beach (including La Jolla Cove and Children's Pool Beach), La Jolla, California," dated December 12, 2002.

During a more recent evaluation of the street drainage facilities on Coast Boulevard by City Staff, High Severity Divided Slab Distress of the concrete pavement panels was observed, which raised concern over the stability of the sea cave below. Based on their assessment of the surface conditions and their concerns, the City retained TerraCosta to complete an update geotechnical survey and evaluation of the Cook's Crack Sea Cave. The results of that study are presented in our report titled, "Geotechnical Survey and Evaluation, Cook's Crack Sea Cave, San Diego, California," dated June 28, 2018 (Appendix A).

During the tidal low of -0.5 foot MLLW on March 5, 2019, Messrs. Walter Crampton and Gregory Spaulding with TerraCosta accessed Cook's Crack by boat and swam into the sea cave to conduct a low tide survey. An additional safety swimmer provided survey control. Additional measurements and photographs were taken, and a geophysical survey performed, to attempt to locate proposed construction-period access shaft locations.

This report presents a summary of TerraCosta's March 5, 2019, survey and recent assessment of the coastal erosion and stability of the Cook's Crack Sea Cave located in the La Jolla area of San Diego, California (Figures 1 and 2, Photo 1). The Cook's Crack Sea Cave was formed along a northeast/southwest-trending fault by marine erosion, and ranges from



approximately 3 feet in width near its mouth, to approximately 55 feet at its maximum width, and extends back a distance of approximately 150 feet under Coast Boulevard.

During our 2002, 2018, and 2019 studies, Walter Crampton and Gregory Spaulding from TerraCosta entered the cave to evaluate its condition, take measurements, and make observations and notes of changes that had occurred since our initial study in 2002. In general, both the 2018 and 2019 mapping of the sea cave indicated that additional small block failures have occurred since 2002. In addition, evidence of groundwater seepage along the fault, localized collapse of roof rock, and the apparent migration of sand from the overlying terrace deposits were observed, suggesting the likelihood of lost ground and the reduction of support by the roof rock. Moreover, between the 2018 and 2019 surveys, we noticed the additional accumulation of salts originating from groundwater seepage through the fault, along with the migration of additional sand from the overlying terrace deposits down through the fault.

The March 5, 2019, survey was also intended to better define the geometry and sea floor elevations near the mouth of the cave to help address potential constructability issues for sealing off the mouth of the cave. Figures 3 and 4 indicate the elevations and dimensions recorded during the 2019 survey.

## 2 SCOPE OF WORK

Based on our 2018 study, the City of San Diego requested that TerraCosta, as a subcontractor to Tetra Tech, complete a “Coastal Erosion Assessment and Coastal Cave Solution Feasibility Analysis” for the bluffs around Coast Boulevard and the Cook’s Crack Sea Cave, expanding on our June 2018 report (Appendix A). Our current scope of work included the following:

1. Evaluate current and future impacts of coastal erosion to City infrastructure, expanding on our June 20, 2018, report to determine the current rate of erosion and future impacts due to cave and bluff erosion and sea level rise.
2. Complete a low-tide survey of the cave, addressing the geometry and sea floor elevation at the mouth of the cave.

3. Determine feasibility of proposed solutions (costs, permits, utilities, impacts, etc.) to address the feasibility of both temporary and long-term solutions, including addressing the cost of construction and permitting through the various regulatory agencies. This task was also performed to identify utilities that may be impacted and the feasibility of modifying, replacing, or rerouting utilities to reduce future impacts to those improvements.
4. Preparation of this report summarizing the results of our current study, including conclusions, recommendations, and concept-level design drawings addressing the various alternatives, including methods to prevent or reduce piping of the sandy overlying terrace soils, building a reinforced roadway section, sealing the mouth of the cave opening, and/or infilling the sea cave with an erodible concrete mixture, and address potential impacts on the coastal bluff and bluff-top improvements over the long term.

### 3 GEOTECHNICAL CONDITIONS

Our appended June 2018 report generally describes the changes that have occurred over the last 16+ years. Observations made during that study indicated that while additional block failures had occurred, our engineering analysis revealed that overall stability of the sea cave has not substantially changed and our calculations exhibited factors of safety against collapse ranging from 1.32 to 1.89. However, our 2019 observations indicated that groundwater seepage and widening of the major through-going fracture (fault), localized collapse of a block from the roof (Photos 2 and 3), and the apparent migration of sand from the overlying terrace deposits have occurred, likely resulting in more lost ground supporting the overlying roadway and utilities, as well as the loss of intimate contact between the two primary blocks that support the roof of the cave. Recent construction activities and the related heavy traffic may have contributed to the movement of this block and migration of sand into the fracture.

Although the numerical approach to developing the factor of safety (refer to our 2002 report for details) would still suggest a factor of safety ranging from 1.32 to 1.80, it is the widening of the joint and the downdropped block and associated (and progressive) loss of the overlying terrace deposits that would suggest, at a qualitative level, that the stability of the roof rock is now a concern and we would now discount our previous factor of safety calculations.

### 3.1 Current Rates of Erosion

Based on a comparison of the mapping between our 2002 and 2018 studies, the sea cave has expanded laterally (widened) 5+ feet throughout the base of the cave (Figure 3). While the annualized erosion rate along the coastline within the Point Loma Formation is on the order of 0.2 foot per year, the annualized erosion rate widening the cave appears to be on the order of 0.3 foot per year, possibly because both sides are eroding at or near equal rates. As indicated above, while numerically the small widening of the base of the sea cave does not have a significant impact on the reduction in tensile strength, which holds the roof rock blocks in place, the fact that the major through-going fracture is widening, with an associated apparent increase in lost ground and notably additional block falls within the cave proper, is a more troubling indicator than the annualized rate of erosion and corresponding cave growth. The interior of the sea cave appears less stable and, although subjective, this is a more important indicator than the annualized rate of erosion.

## 4 FUTURE IMPACTS DUE TO SEA LEVEL RISE AND BLUFF EROSION

Any proposed stabilization measures would be reviewed by the California Coastal Commission and the U.S. Army Corps of Engineers, both of whom have jurisdiction within the bottom portion of the sea cave. Moreover, these agencies require an assessment of sea level rise as part of any proposed stabilization effort, and the Coastal Commission Sea Level Rise Policy Guidance Document now also requires incorporation of the State of California's Sea-Level Rise Guidance presented in the Ocean Protection Council's (OPC) 2018 Update. While we have presented future impacts due to sea level rise and bluff erosion in the following paragraphs, it is our opinion that the existing wave environment, even in the absence of any significant sea level rise, has finally destabilized the roof rock within Cook's Crack to the point where immediate stabilization measures should be undertaken as soon as permits allow to avoid the consequences of a larger roof rock collapse, and the associated collapse of the overlying terrace deposits, the results of which would create a linear fissure crossing Coast Boulevard; a fissure that could be large enough for a vehicle to fall into.



#### 4.1 Coastal Environment

The site is located along the northern boundary of the Mission Bay Littoral Cell and the southern boundary of the Oceanside Littoral Cell. The site is characterized by a rocky sea cliff-bounded shoreline with a few small sandy pocket beaches (U.S. Army Corps of Engineers [USACE], 1991). The Mission Bay littoral cell is an area of sand movement along the coast bounded by Point La Jolla to the north and Point Loma to the south, a distance of approximately 13.5 miles. The Oceanside Littoral Cell extends about 52 miles northward to Dana Point. Under natural conditions, a littoral cell is supplied with sediment by rivers and streams that empty into the ocean within its limits. The sandy material brought to the coast by fluvial action is then incorporated into the beach sands and transported south (in most areas) along the coast by wave action. This longshore transport of sand from the Oceanside Littoral Cell is ultimately intercepted by the La Jolla Submarine Canyon, where it is diverted offshore and lost to the nearshore environment. Because this site is located on the margin of these two littoral cells, there is no significant source of sand and the local beaches are comprised primarily of gravel, cobble, and boulder conglomerate.

#### 4.2 Wave Climate

Waves provide nearly all of the energy input that drives shoreline processes along the California coast. As illustrated in Figure 5 (below), incoming waves along the southern California coast fall into three main categories: Longer period northern and southern hemisphere swell, and locally short-period generated seas. North hemisphere swell from the North Pacific Ocean dominate the winter wave conditions off California, while southern hemisphere swell is more important in the summer. Short-period seas are produced by storms sweeping through the area. The offshore islands, shallow banks, submarine canyons and generally complex bathymetry offshore of southern California greatly complicate the wave climate at the coast (Figure 6, below).

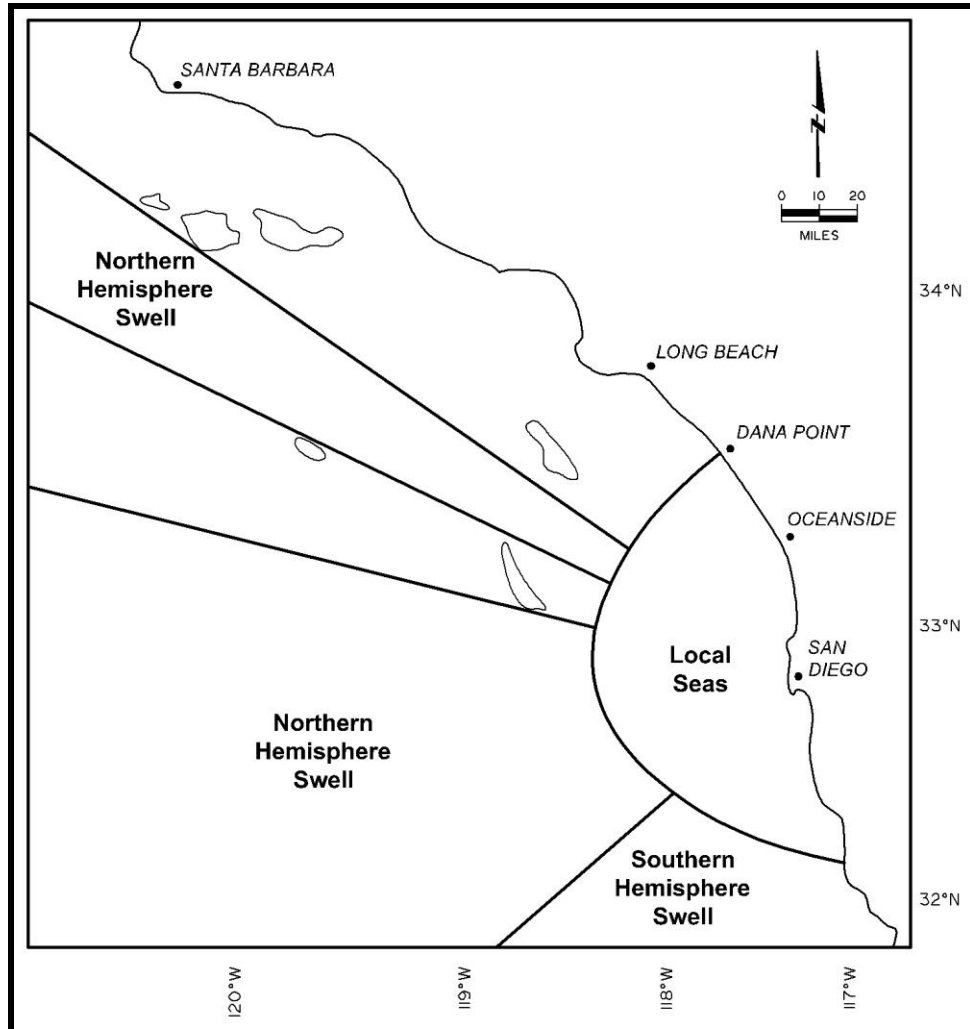
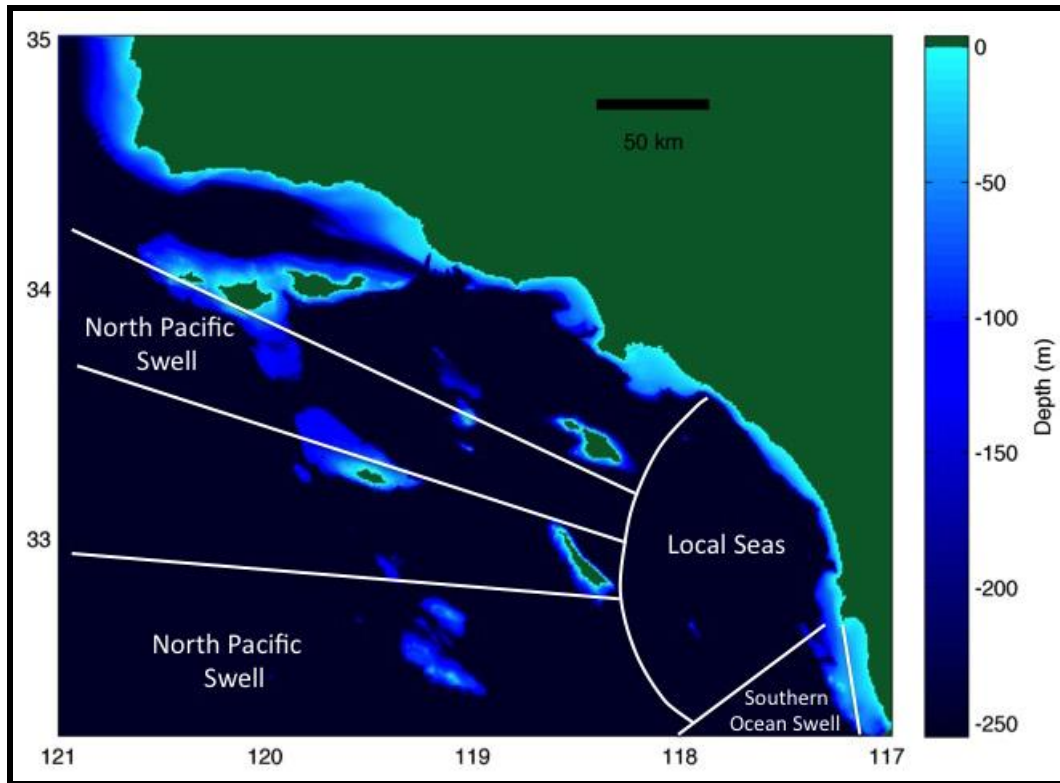


Figure 5. Map Showing Generalized Wave Exposure for Southern California.



**Figure 6. Map Showing Generalized Bathymetry in the Southern California Bight and Wave Exposure Windows at Oceanside.**

Coastal orientation, and the islands and banks greatly influence the swell propagating toward shore by partially sheltering southern California, including La Jolla, especially from directions north of west. Figure 6 (above) shows the approximate directions from which incoming swell is blocked by the islands. The coastline fronting the subject site actually faces to the northeast and is somewhat sheltered from the southern hemisphere swell. Storm originating from the North Pacific and locally generated seas from winds out of the northwest reach the site. However, due to the effects of bathymetry and island shadowing, the wave height at the shoreline is sensitive to relatively small changes in the incoming direction of the deep ocean waves.

While waves along the San Diego County shoreline generally range in height from 2 to 5 feet, deep water waves off the coast have been recorded with deep water significant wave heights approaching 10 meters (33 feet).

### 4.3 Short-Term Sea Level Change

The effect of waves on the coast is highly dependent on the sea level during the wave episode. Large waves at low sea level cause limited erosion, since they break well offshore. When episodes of large waves combine with short-term high sea level from tides and other factors, rapid retreat may occur along vulnerable coastlines.

#### 4.3.1 Tides

Tides are caused by the gravitational pull of astronomical bodies; primarily the moon, sun, and planets. Tides along the San Diego coast have a semi-diurnal inequality. On an annual average basis, the lowest tide is about -2.2 feet MLLW and the highest tide is about +7.8 feet, MLLW.

#### 4.3.2 El Niño

Large-scale, Pacific Ocean-wide warming periods occur episodically and are related to the El Niño phenomenon. These meteorological anomalies are characterized by low atmospheric pressures and persistent onshore winds. During these events, average sea levels in southern California can rise up to 0.5 foot above normal. Tidal data indicates that six episodes (1914, 1930 through 1931, 1941, 1957 through 1959, 1982 through 1983, and 1997 through 1998 - mild El Niño-type conditions were also reported in 1988 and 1992) have occurred since 1905. Further analysis suggests that these events have an average return period of 14 years, with 0.2-foot tidal departures lasting for two to three years.

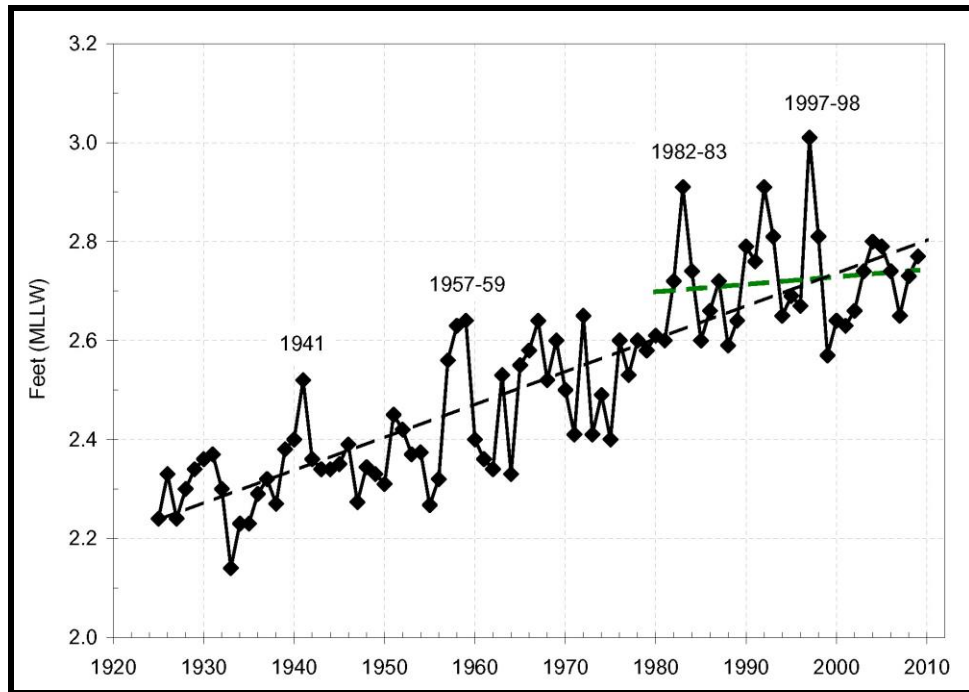
The added probability of experiencing more severe winter storms during El Niño periods increases the likelihood of coincident storm waves and higher storm surge. The record water level of 8.35 feet, MLLW, observed in San Diego Bay in January 1983, includes an estimated 0.8 foot of surge and seasonal level rise (Flick and Cayan, 1984), which set the stage for the wave-induced flooding and erosion that marked that winter season.

### 4.4 Sea Level Rise

Past and possible future changes in mean sea level (MSL) are of interest in design and planning for all coastal cities, as well as for any engineering activities on the coast. Global mean sea level rose at least 300 feet, and perhaps as much as 400 feet, during the past 18,000



years or so (CLIMAP, 1976). Sea level, both globally and along California, rose approximately 0.7 foot over the past century, as shown in Figure 7 (below). Furthermore, evidence suggests that the rate of global mean sea level rise has accelerated since the mid-1800s, or even earlier (Church and White, 2006; Jevrejeva, et al., 2008), and that it has now reached a rate of about 1 foot per century over the past decade or so (Nerem, et al., 2006).



**Figure 7. Annual Average Sea Level History at La Jolla, 1925-2007. Broken Line Shows Linear Trend of 0.7 Feet/Century Rise.**

Figure 7 is a plot of the annual mean sea levels measured at the La Jolla tide gauge starting in 1925. The linear trend indicates the approximate 0.7 foot per century sea level rise. Also noticeable are the enhanced sea levels during the El Niño episodes of 1941, 1957-59, 1982-83, and 1997-98 (respectively labeled).

A notable feature of the sea level history at La Jolla is the leveling-off of sea level rise since about 1980 (Figure 7, above). The green broken line shows a much reduced trend of about 0.15 foot per century between 1980 and 2009, or about 4.5 times smaller than the overall trend of 0.67 foot per century. A similar reduction in the rate of sea level rise has been noted at San Francisco, which has a similar overall appearance as the La Jolla record, but is a much longer record extending back to 1856.

Figure 8 (below) shows the global distribution of the rate of sea level change for the period of 1993-2012 (University of Colorado, 2012). Note that warm colors (yellow-orange-red) show areas of sea level rise (positive rates), while cool colors (green-blue) indicate falling sea level (negative rates) over the record. Inspection of the North Pacific reveals that sea levels in the western Pacific, especially in the lower latitudes, have risen at a rate of 3-9 mm/year (equivalent to 30-90 cm per century, or about 1-3 feet per century). Conversely, sea levels in the eastern Pacific, extending from Central America north to Washington State, have fallen at a rate of 0-3 mm per year (0-30 cm per century, or 0-1 foot per century). This may explain the coastal tide gauge observations (La Jolla sea level history; Figure 7, above) described above.

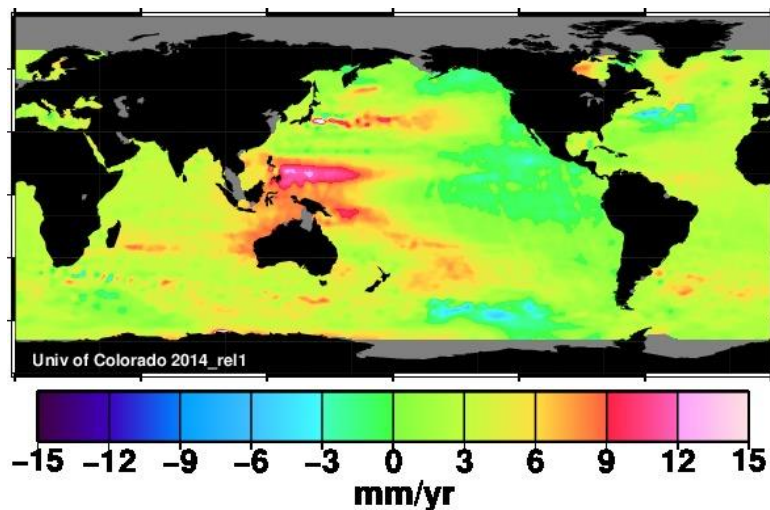


Figure 8. Global Sea Level Change Rates 1993-2012 as derived from satellite altimetry measurements, following University of Colorado (2012).

While the cause of these regional differences undoubtedly lies in the large-scale circulation of the Pacific Ocean and the overlying atmosphere, no detailed explanation is known. However, these observations could be a cause for some concern. If the conditions driving sea level up in the western Pacific and down in the eastern Pacific were to relax or even reverse, sea level along the coast of California could begin to increase at a much higher rate than what has been observed over the past several decades. Future global sea level rise scenarios could further increase the rate of sea level rise.

#### 4.5 Water Levels

Past water elevations are based on the tide gauge data from La Jolla, which has been collected at Scripps Institution of Oceanography (SIO) Pier since 1924. These data are applicable to the San Diego region open-ocean coastline. The tidal and geodetic reference relationships at La Jolla are illustrated in Figure 9 (below).

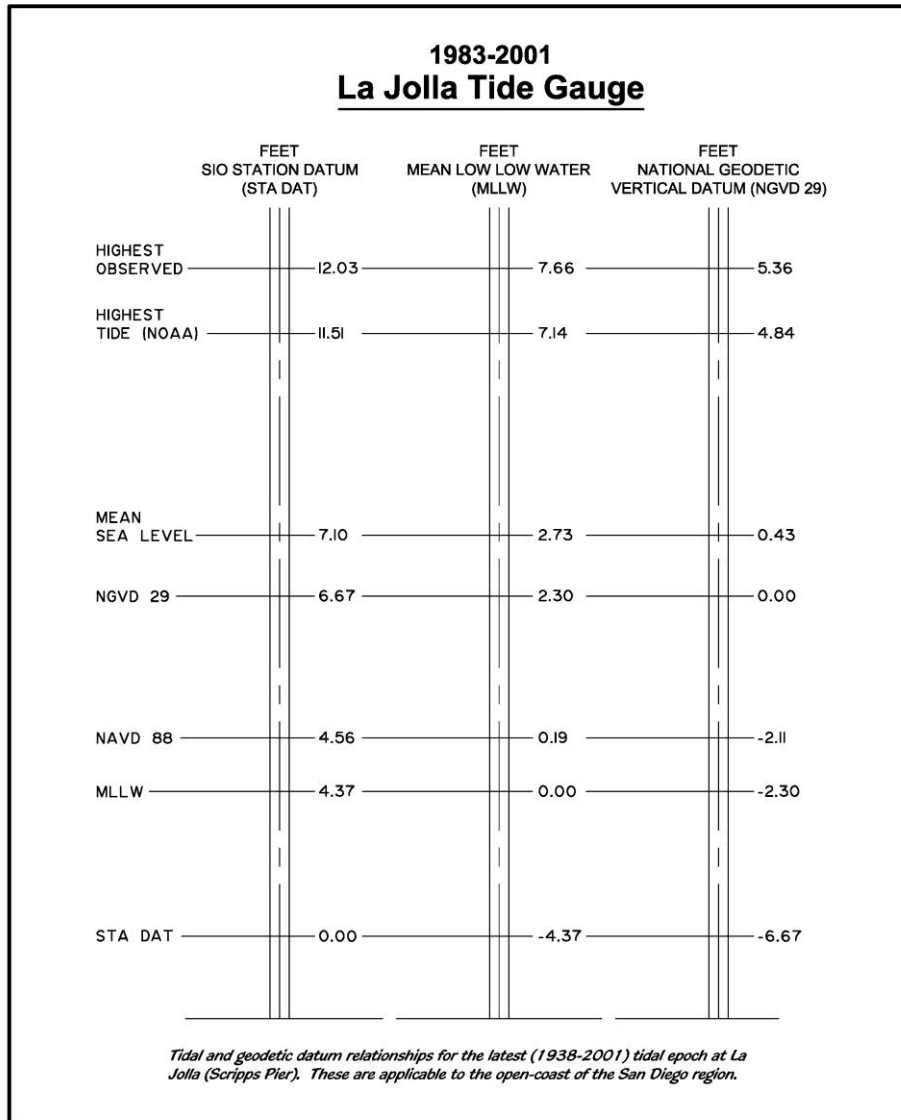


Figure 9. Sea Level Datum.

Tide gauges measure total water level outside the breaker zone, which includes contributions from the tide, as well as storm surges and other factors that raise sea level over the short and long term, including the effects of El Niño. All non-tide sea level influences measured by the tide gauges are termed “non-tide residuals, or “NTR.” Importantly, tide gauges do not include the effects of waves or wave-driven runup. At the shoreline and on beaches, wave-driven runup is a crucial component of the design water elevation and must be determined by means other than tide gauge data. Alternatively, as the back beach becomes flooded during high tide and low beach sand level events, the standard runup formulations may not apply, and other factors, including local shallow-water depth-limited waves, must be considered.

When considering the effects of future sea level rise, the National Academy of Sciences (NAS, 2012) presents a possible global, west-coast, and state-wide future Mean Sea Level Rise (MSLR) for California, Oregon, and Washington (Figure 10, dots) and its range (Figure 10, bars). These are based on the IPCC (2007) mid-range Green House Gas emissions scenarios for the ocean steric (warming) expansion component added to the results of new research projecting the likely contributions of future ice-melt. The resulting projected *global* MSLR relative to 2000 ranged from 0.08-0.23 m (0.26-0.75 ft) by 2030; 0.18-0.48 m (0.59-1.6 ft) by 2050; and 0.50-1.4 m (1.6-4.6 ft) by 2100 (Figure 10, red bars). The global estimates were adjusted for vertical crustal movement (uplift north of Cape Mendocino and down-drop in the south) resulting in the orange bars, also shown in Figure 10 (below). The State of California (2013) used these results of NAS (2012) shown as the updated MSLR guidance in Table 1 (below).



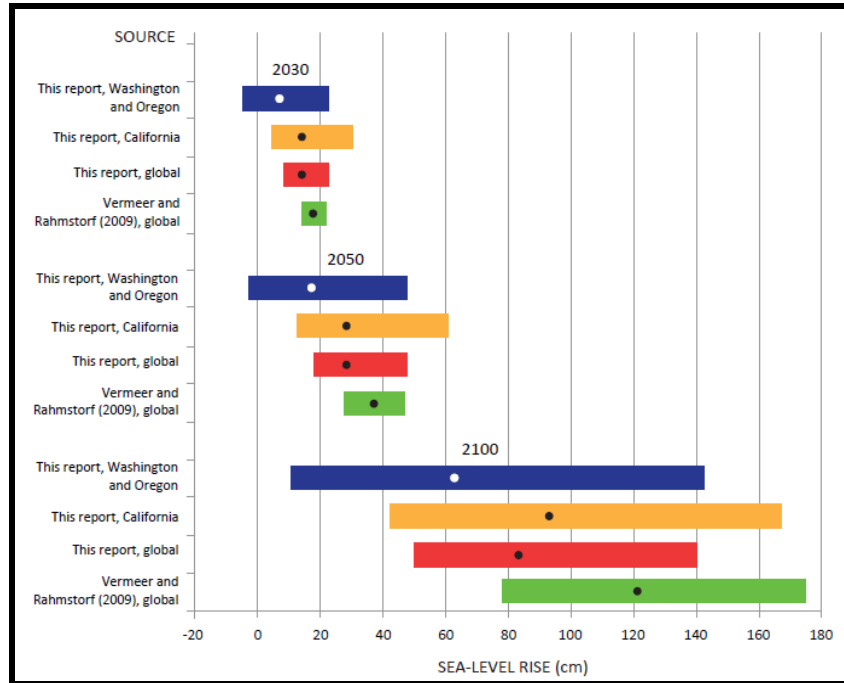


Figure 10. NAS (2012) summary of global, Washington, Oregon, and California (south of Cape Mendocino) MSLR projections for 2030, 2050, and 2100 relative to 2000.

Table 1. Updated MSLR Guidance from State of California (2013)

Time Period	North of Cape Mendocino <sup>3</sup>	South of Cape Mendocino
2000 - 2030	-4 to 23 cm (-0.13 to 0.75 ft)	4 to 30 cm (0.13 to 0.98 ft)
2000 – 2050	-3 to 48 cm (-0.1 to 1.57 ft)	12 to 61 cm (0.39 to 2.0 ft)
2000 – 2100	10 to 143 cm (0.3 to 4.69 ft)	42 to 167 cm (1.38 to 5.48 ft)

## 5 BLUFF EROSION

This section of coastline is characterized by steep coastal bluffs comprised of relatively erosion-resistant Cretaceous-age strata (Point Loma Formation) at the base of the bluff and a less resistant upper bluff (terrace deposits). A cliff section forms the base of the bluff to below sea level along this reach of the coast. The bluff in the project area is located in a medium to high energy wave environment subject to continuous direct wave impact.

### 5.1 Lower Bluff Erosion

Review of historical photographs dating back to the 1970s does not reveal a great deal of long-term lower bluff erosion in the general area of this site. Based on our review of historical photographs, we estimate that on the order of 5 to at most 10 feet of erosion has occurred in the last 45+ years. Younger Eocene-age formations to the north, Solana Beach for example, exhibit erosion rates on the order of 0.4 foot per year. The older Point Loma Formation would be expected to have a lower erosion rate, possibly on the order of 2 to 3 inches (0.17 to 0.25 foot) per year.

### 5.2 Empirical and Analytical Techniques of Erosion Rate Assessment

The scientific community has been actively engaged in developing numerical models to assess rates of shoreline erosion. Numerical models attempt to address both the landward retreat of the sea cliff and the development of the shore platform. In this simplest expression, predictive cliff-erosion models take the following form (Sunamura, 1977):

$$dx/dt \propto \ln\left(\frac{f_w}{f_r}\right)$$

where  $dx/dt$  is the horizontal rate of erosion,  $f_w$  is the wave force, and  $f_r$  is the rock resistance. Similar equations have been developed to describe platform development.

Of particular interest in numerical modeling is the fact that a minimum or critical wave height capable of causing erosion exists, below which, for a given rock lithology, no erosion would occur. Additionally, the rate of erosion increases in logarithmic proportion to increase in wave force, which is substantially less than a linear increase in wave energy. Importantly, however, these numerical models describe the mechanical erosion of intact rock of assumed

uniform lithology, and do not account for the accelerated erosion caused by the hydrodynamic component of wave forces that occurs in fractured rock.

When using the preceding equation, and when comparing the site conditions with San Diego's North County Tertiary cliff-forming sediments, the wave force ( $f_w$ ) is likely lower for the subject site than the open coast along North County San Diego. The erosion resistance of the rock ( $f_r$ ) is also stronger for the older late Cretaceous sediments than for the younger Eocene sediments. This suggests both a more severe storm wave to initiate erosion of the sea cliff, and a corresponding reduction in marine erosion for a given design wave event for the late Cretaceous sediments than from the North County Eocene sediments. Thus, one would again conclude that, in the absence of more data, the annualized average erosion rate for the site would be on the order of 2 to 3 inches (0.17 to 0.25 foot) per year, given the more well-defined erosion rate of the younger Eocene sediments of 4.8 inches (0.4 foot) per year.

### 5.2.1 *SLR Impact on Bluff Erosion*

The OPC's Sea-Level Rise Guidance Update requires that one consider the Medium-High Risk Aversion sea level rise of 7.1 feet by the year 2100, which has a 0.5 percent probability of sea level rise by the year 2100. The OPC further requires that any proposed project also develop adaptive strategies for the H++ scenario with an estimated 10.2 feet of sea level rise by the year 2100.

As indicated in the previous section, the rate of marine erosion is a function of the wave force,  $f_w$ , divided by the rock resistance,  $f_r$ , with any sea level rise increasing the available wave energy, and hence the wave force,  $f_w$ , assailing the coastal bluff. While the increased rate of coastal erosion associated with any sea level rise can be calculated, suffice to say, and in keeping with the OPC's Sea Level Rise Guidance documents, any measurable sea level rise will increase the rate of sea cave growth, imparting more wave energy into the sea cave, further reducing roof rock stability.

While we appreciate the OPC requirements for evaluating future projects, as indicated previously, even in the absence of any sea level rise, the sea cave under Coast Boulevard will eventually collapse with the highest section of roof rock extending across the entire travelway of Coast Boulevard. Any sea level rise only reduces the time until a collapse will occur.

## 6 FEASIBILITY OF PROPOSED SOLUTIONS AND ALTERNATIVES

As part of this study, we have been tasked with addressing the feasibility of both temporary and long-term solutions, addressing the cost of construction and permitting through the various regulatory agencies. This task also includes identifying utilities that may be impacted and the feasibility of modifying, replacing, or rerouting utilities to reduce future impacts to those improvements.

### 6.1 No Project

As we understand, the City is currently in the process of designing and replacing the storm drain system in the vicinity of the Cook's Crack Sea Cave. As previously discussed, it is our opinion that the recent construction activity may have aggravated and potentially accelerated the migration of sand entering the cave through the fracture (fault). As indicated above it is also our opinion that the sea cave roof rock has an unacceptably low current static factor of safety against failure and collapse of the sea cave. Moreover, with the site being located in such close proximity to the Rose Canyon Fault, the probability of a seismically induced collapse is also greatly increased. Due to the high probability of a collapse occurring, whether triggered by a seismic event, water line break, or construction activity, it is our opinion that public safety outweighs the option of doing nothing.

### 6.2 Chemical Grouting of Terrace Deposits

As discussed in our 2018 report, a temporary solution to reduce or prevent the migration of sand into the cave, resulting in lost ground and support for the overlying roadway and utilities, may involve chemically grouting the overlying terrace deposits to strengthen the soils and aid in preventing piping of the sandier terrace deposits. Grouting would be completed on a grid pattern using either a microfine cement or silicate grout, which would solidify the sandier materials within the terrace deposits. This alternative should only be considered as a temporary solution. The cost of chemical grouting is estimated to be on the order of \$200,000 to \$250,000.

This alternative essentially slows the erosion process by creating a more solidified soil mass that is less susceptible to soil piping and lost ground by creating a more stabilized upper terrace section, which comprises the upper 15± feet of the geologic section. However, this alternative cannot provide the assurances of an engineered structure, such as the bridge

alternative described below, and thus the recommendation that this alternative be considered temporary, possibly limited to no more than 10 years.

### 6.3 Construct a Bridge

Constructing a bridge over the sea cave, and allowing the sea cave to continue to erode and collapse over time, would require the construction of an approximately 100-foot-long by 60-foot-wide bridge or substantial structural roadway section to span the sea cave. This alternative would also require relocation and support of the utilities within the bridge's or structural section. We estimate the cost of construction such a bridge to be on the order of \$2 to \$3 million.

### 6.4 Sea Cave Infill

A common solution for mitigating the potential for collapse of a sea cave is to infill the cavity with concrete. This option would require construction of a bulkhead at the entrance to the sea cave, drilling access adits through the top of the cave to allow workers to enter and prep the cave, and pumping a concrete mix into the cave to provide support against collapse. The concrete mix would consist of a non-reinforced lean (sand-cement) mix designed to erode as the face of the bluff erodes in the future. As shown on Figure 2, a new storm drain pipe can be installed in the northerly adit to replace the existing questionable storm drain that currently overlies the Cook's Crack Sea Cave. The total volume of low strength concrete fill is estimated to be approximately 2,500 cubic yards, with a total anticipated construction cost on the order of \$1.5 to \$2 million. In our opinion, the sea cave infill is the only option that positively stabilizes both Coast Boulevard and the numerous utilities in and adjacent to Coast Boulevard.

## 7 ANTICIPATED CONSTRUCTION APPROACH

As indicated on Photo 1, the Cook's Crack Sea Cave is located on a cliffed section of the La Jolla shoreline, with the bathymetry immediately fronting the sea cave, although somewhat variable, around -3 feet MLLW. Photo 4, taken during our survey during a tidal low with the water level at about -0.2 foot MLLW, shows an indentation into the cliffed shore face of about 9 feet prior to actually entering the 4½-foot-wide mouth of the sea cave that is still not visible in Photo 4. The width of this indentation is also about 9 feet, and provides

perspective for the anticipated construction approach, which initially includes placing ten to twelve 4-ton rock within the outer indentation to reduce wave energy and create a safer working environment. Notably, and while Photos 1 and 4 show a rather calm sea state, this area is, much of the time, awash in surf and very dangerous. Moreover, and specific to Photo 4, six hours before this photo was taken, the water surface was 5 feet higher than that shown in Photo 4. Additionally, and when entering the narrow mouth of the sea cave, the floor of the sea cave drops about 2 feet in an environment, absent the temporary rock protection, that is very dangerous and unacceptable for construction crews.

Concurrently with placement of the rock, the contractor would drill two 4-foot-diameter vertical shafts for construction access to the sea cave, with the two ends of the high relief sea cave more or less coinciding with the outer edges of both the northerly and southerly travelways adjacent the Coast Boulevard travelway. The southerly proposed vertical shaft location may conflict with numerous utilities in the area, and it may ultimately be necessary to extend the more southerly construction access shaft slightly into the Coast Boulevard travelway. City Staff and Tetra Tech should weight the options for the best locations of the construction shafts. Notably, and as indicated on Figure 2, the northerly construction shaft also appears to be located atop the 12-inch RCP storm drain that also discharges into the Cook's Crack Sea Cave. However, in discussions with Tetra Tech Staff, it was agreed that this location is likely still viable, recognizing that Tetra Tech will likely make improvements to the discharge pipe of this storm drain.

Prior to advancing the vertical construction shafts, the contractor shall be required to pre-drill the proposed shaft locations with a 4- to 6-inch-diameter test boring, into which the contractor would place a camera, enabling a suitable visual assessment of the exact 4-foot shaft location. The intent is to not intercept the fracture (fault), which would potentially create a less stable condition in the roof rock. Although the central portion of the sea cave is quite large and the roof rock relatively wide, the actual best locations for the construction shafts are somewhat limited in extent, with the exploratory camera survey considered important to optimally locate the two 4-foot-diameter construction access shafts.

Both construction shafts can be easily drilled during night shifts to avoid impacts to vehicular traffic along Coast Boulevard, and the area secured, with most of the actual construction having only limited impacts on vehicular traffic.



Once the shafts are drilled and safe access to the sea cave provided, we anticipate that the contractor would initially set lights into the ceiling to facilitate construction, then plug the mouth of the sea cave.

As indicated on Figure 4, the face of the concrete plug would coincide with the approximate back of the depressed area along the sea cliff, as shown on Photo 4, with the actual completed plug not even visible from the perspective of Photo 2. We propose that the plug be filled utilizing concrete-filled 2 cubic yard geobags, for which we are recommending GT1000MB geobags (product literature provided in Appendix B). The front face of the geobags would be positioned to coalign with the back of the indentation within the coastline, then backfilled with a non-reinforced erodible concrete mix consisting of two sacks of cement with 200 pounds of fly ash per cubic yard of erodible concrete. We have utilized this mix design to fill-in several sea caves, and the mix provides both a pumpable and low strength mix that should roughly approximate the strength of the Point Loma formational shelf rock.

The bottom of the narrow sea cave contains boulders along its floor. As an option, the contractor could attempt to remove some of the boulders, or simply place the non-reinforced concrete geobags and, after placement, attempt to grout some of the voids from the back of the geobag barrier to further reduce the flow of tidal waters through the interstices of the underlying cobbles and boulders. We have arbitrarily set the top of the concrete-filled geobags at +10 feet MSL, which is a little more than 16 feet above the bottom of the narrow cave opening in order to provide additional light and air into the interior of the sea cave.

After the mouth of the sea cave is stabilized, the interior of the sea cave would then need to be prepped. Although we recommend that the entire sea cave be filled with the erodible concrete mix, it is critically important that a sufficient volume of the low strength concrete fill be founded directly on the competent formational bedrock that underlies the transient sands within the sea cave. Minimally, we recommend that 30 percent of the floor of the sea cave be cleaned, exposing the underlying Point Loma formational bedrock. While sand and debris can be locally piled within the cave bottom, the 30 percent bedrock exposure must be uniformly distributed across the bottom of the cave to ensure relatively uniform bearing of the low strength concrete fill. We anticipate that the cleaning of the bottom of the sea cave will require some effort by the contractor. However, this cleaning must be carefully performed in a good workmanlike manner in order to ensure the subsequent intimate contact

of the concrete fill extending up the sloping sidewalls of the cave up to its roof rock, and then ultimately up into the concrete construction access shafts.

We anticipate that the contractor would fill the cave in relatively horizontal lifts, and after the tops of the geobags have been reached, the exposed seaward face of the open jointed roof of the Cook's Crack Sea Cave (see Photo 1) would then be architecturally shaped to blend in with the surrounding formational bedrock to recreate the architectural appearance of the faulted roof rock. Once the cave is filled, the ten to twelve 4-ton rocks could be lifted back out of the mouth of the cave, returning the cliffed section to that shown in Photo 4.

### 7.1 Permitting

The various regulatory agencies that will provide review and oversight for any project requiring construction would likely be the City of San Diego's Environmental Department and the California Coastal Commission. Because the site is located adjacent the La Jolla Marine Sanctuary Underwater Park, and the bottom of the cave is situated below the Mean High Tide Line, the California State Lands Commission, U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and the U.S. Fish & Wildlife would also provide additional input and oversight of the project.

## 8 CONCLUSIONS AND RECOMMENDATIONS

As discussed in our June 2018 report, based on the results of our mapping, observations, and engineering analyses, it is our opinion that within a few years, there is a high probability of collapse of additional supporting roof rock resulting in the formation of voids or sinkholes under Coast Boulevard, causing damage to the street and utilities that overlie the Cook's Crack Sea Cave and/or injury or death due to a vehicle or pedestrian falling into a sinkhole. Based on our studies, the most feasible alternative would be to seal and infill the sea cave.

In addition, prior to infilling the sea cave, we recommend that should a moderate to strong earthquake impact the area, or a waterline break occur, the sea cave be inspected as soon as possible and evaluated for any additional collapse or loss of supporting roof rock.

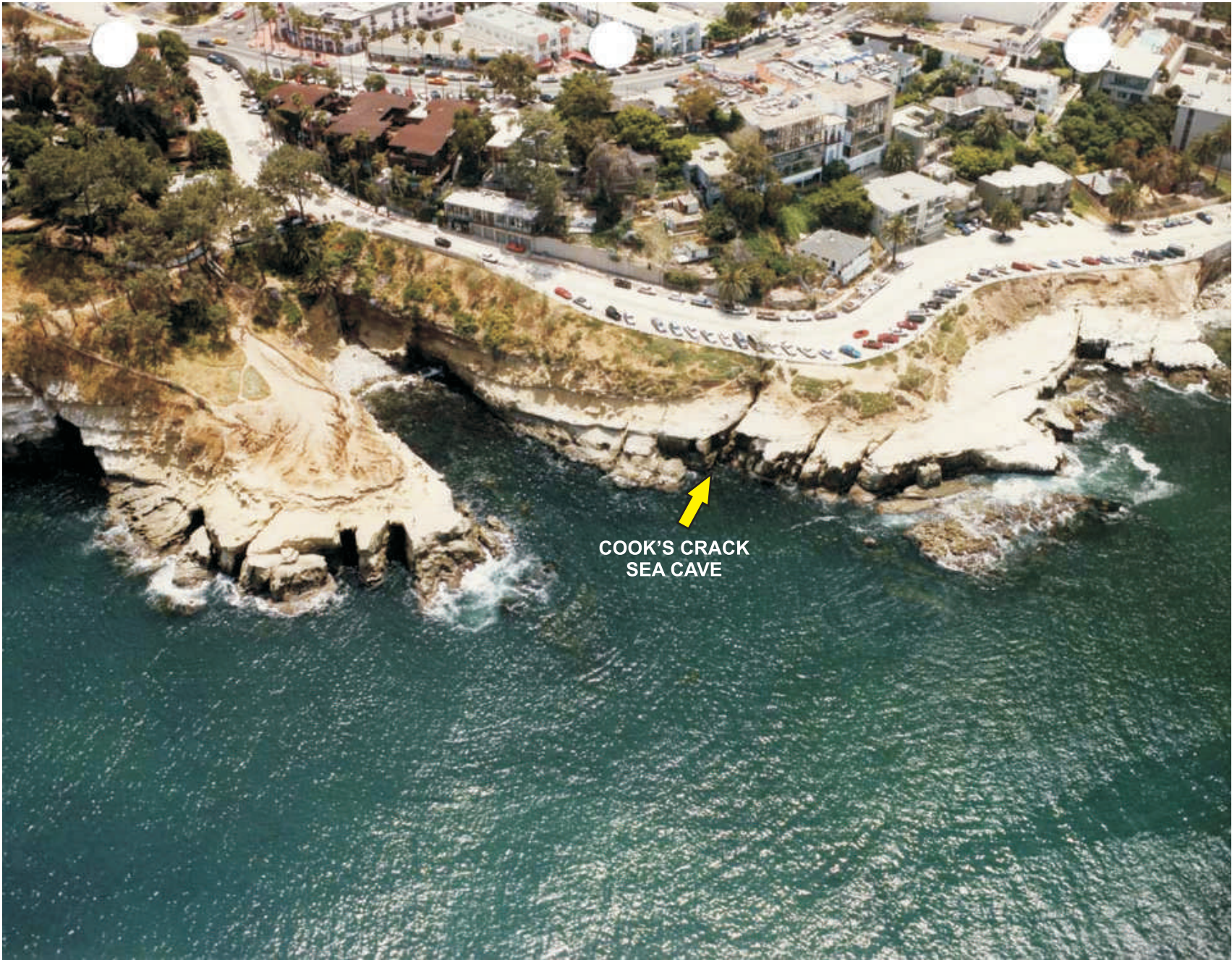
## 9 LIMITATIONS

The data provided in this report were collected from our field observations and mapping of Cook's Crack Sea Cave, previously published reports and maps, and our general knowledge of geologic and geotechnical conditions in the area. No subsurface exploration or laboratory testing were performed for this report. This report was not prepared for any specific repair option. Therefore, it may not satisfy the requirements of regulatory agencies or reviewers if submitted, and additional site-specific investigation may be required. This report is not valid after two years after its issue date.

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**COOK'S CRACK  
SEA CAVE**



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PROJECT NO.:  
**2086B**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**1**





DATE OF PHOTO: MARCH 5, 2019



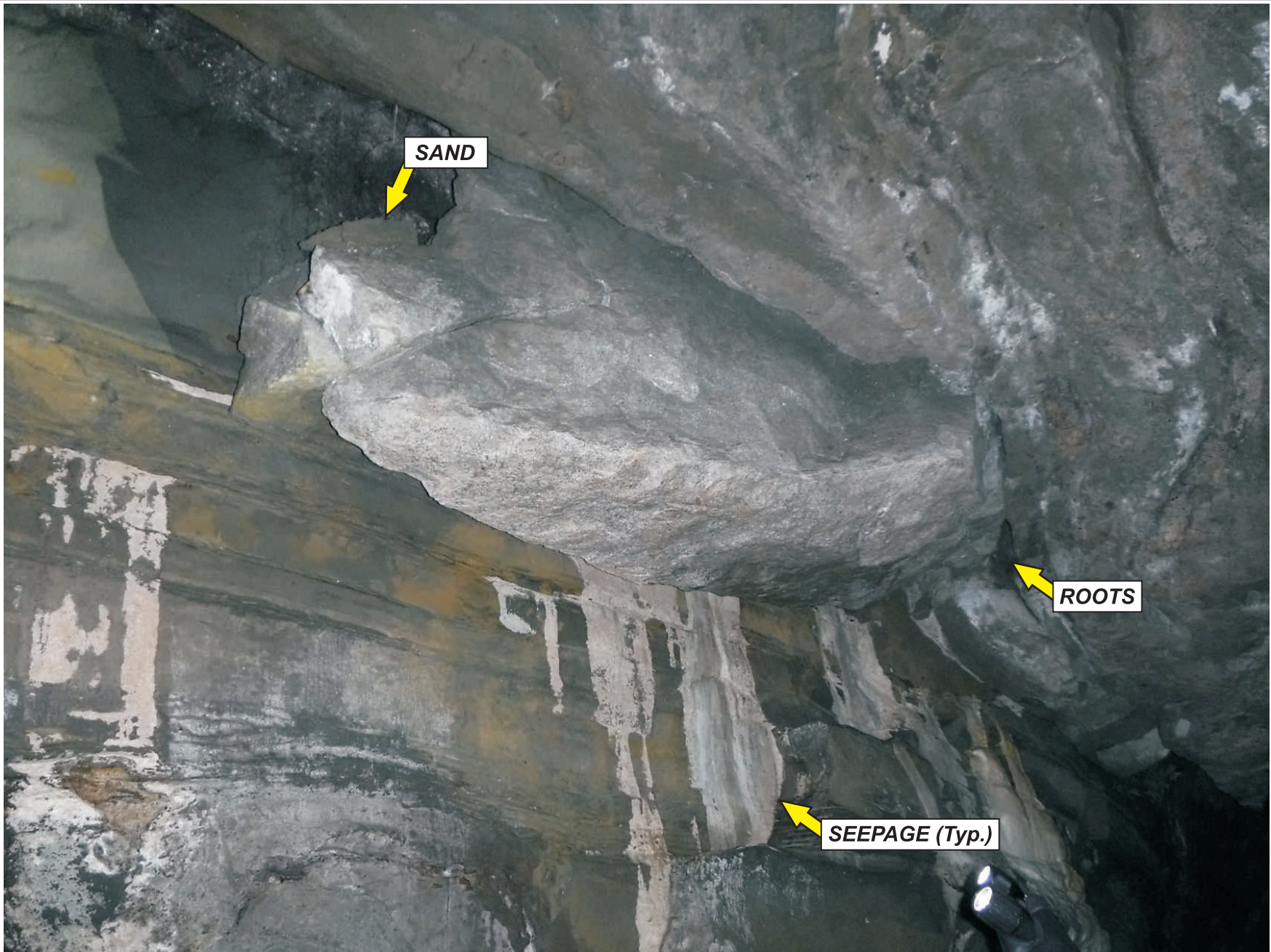
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PROJECT NO.:  
**2086B**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**2**





DATE OF PHOTO: MARCH 5, 2019



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PROJECT NO.:  
**2086B**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**3**





DATE OF PHOTO: MARCH 5, 2019



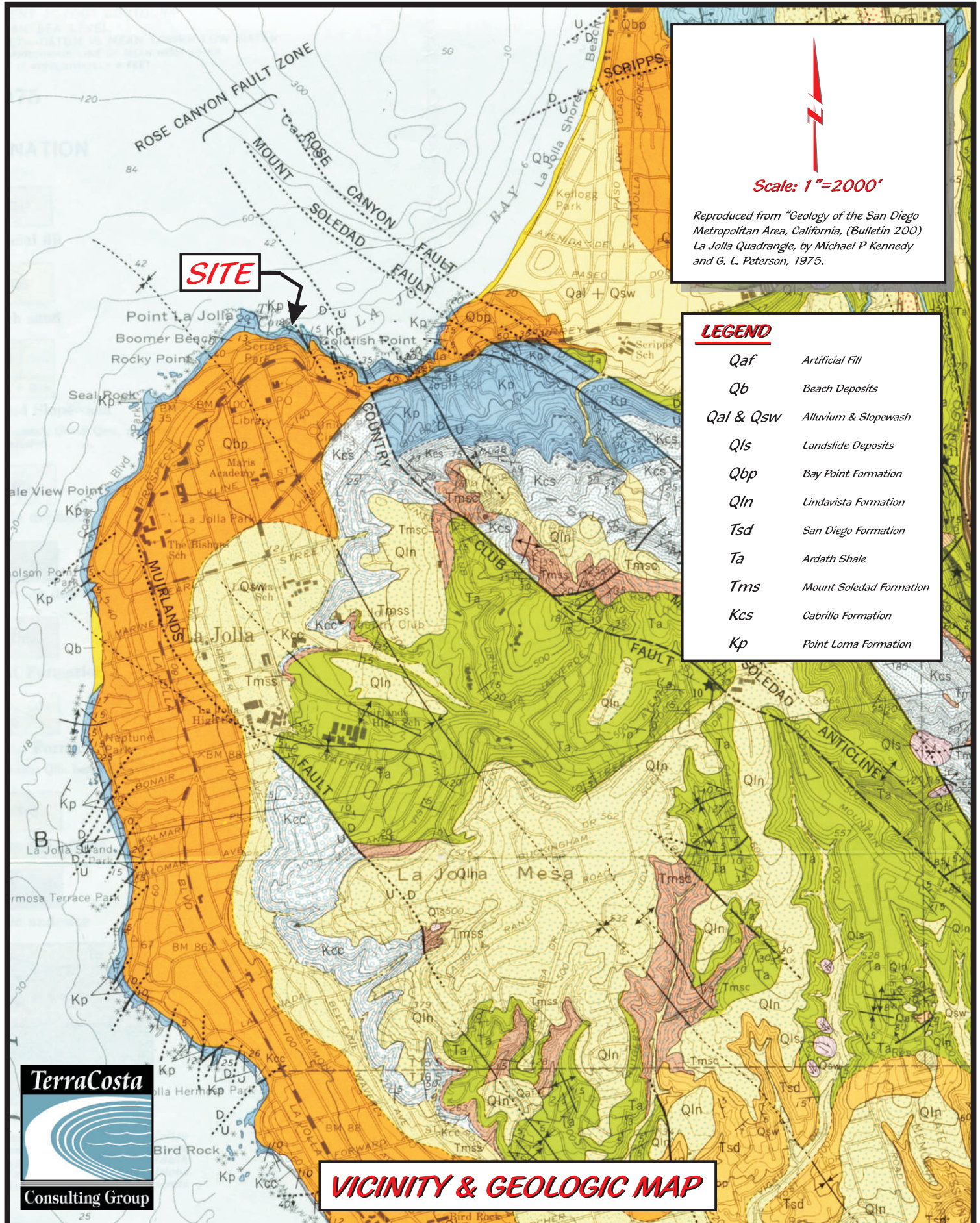
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San Diego, California 92123 (858) 573-6900

PROJECT NO.:  
**2086B**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**4**





**SITE**

Scale: 1"=2000'

Reproduced from "Geology of the San Diego Metropolitan Area, California, (Bulletin 200) La Jolla Quadrangle, by Michael P Kennedy and G. L. Peterson, 1975.

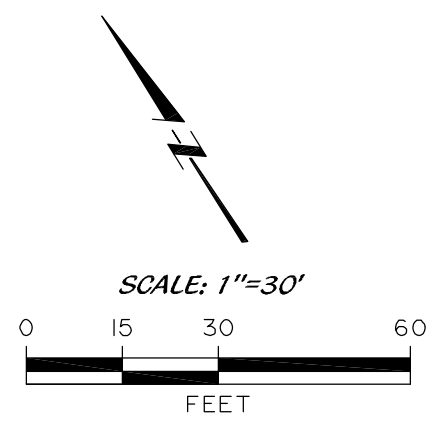
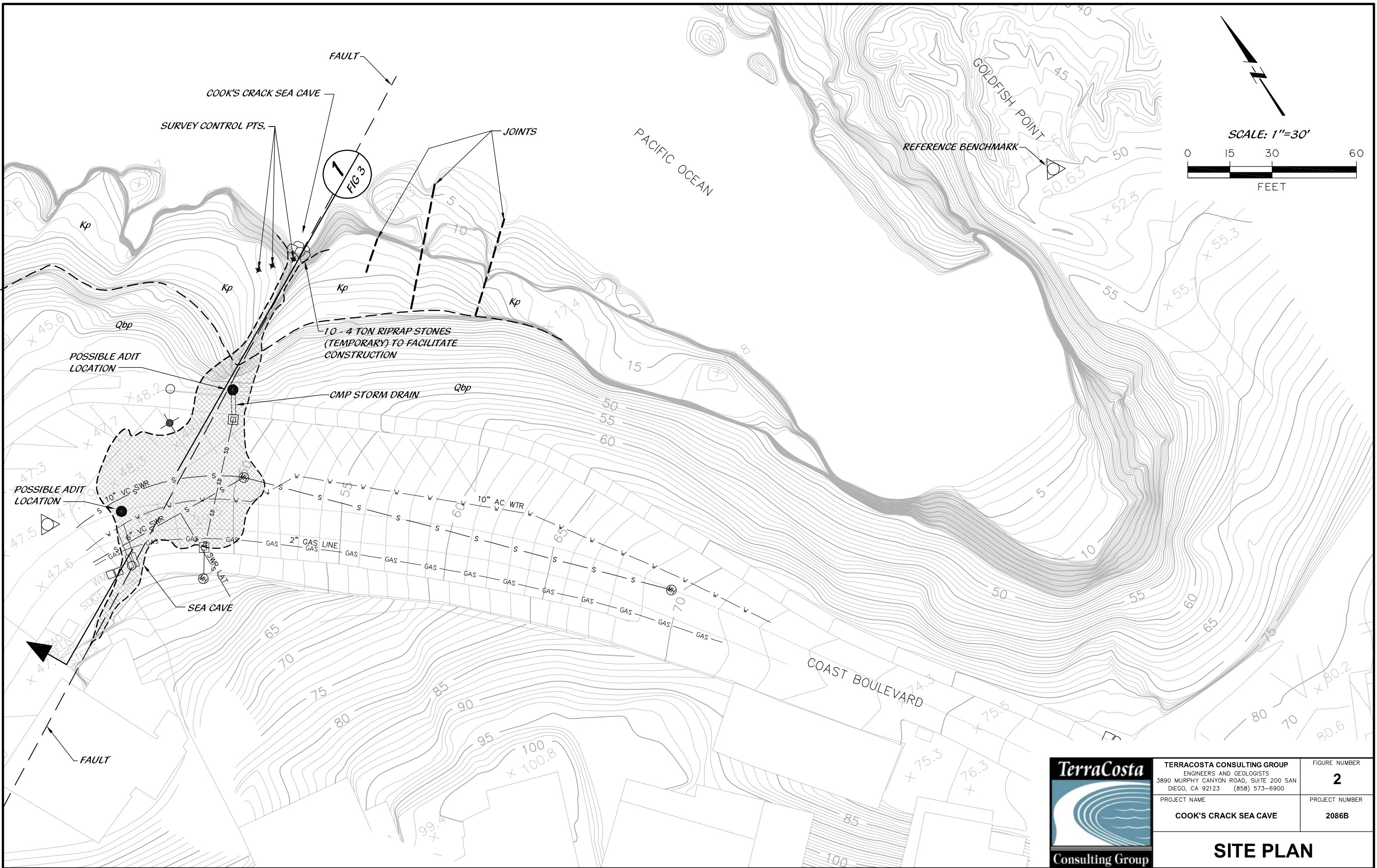
**LEGEND**

- Qaf* Artificial Fill
- Qb* Beach Deposits
- Qal & Qsw* Alluvium & Slopewash
- Qls* Landslide Deposits
- Qbp* Bay Point Formation
- Qln* Lindavista Formation
- Tsd* San Diego Formation
- Ta* Ardath Shale
- Tms* Mount Soledad Formation
- Kcs* Cabrillo Formation
- Kp* Point Loma Formation



**VICINITY & GEOLOGIC MAP**

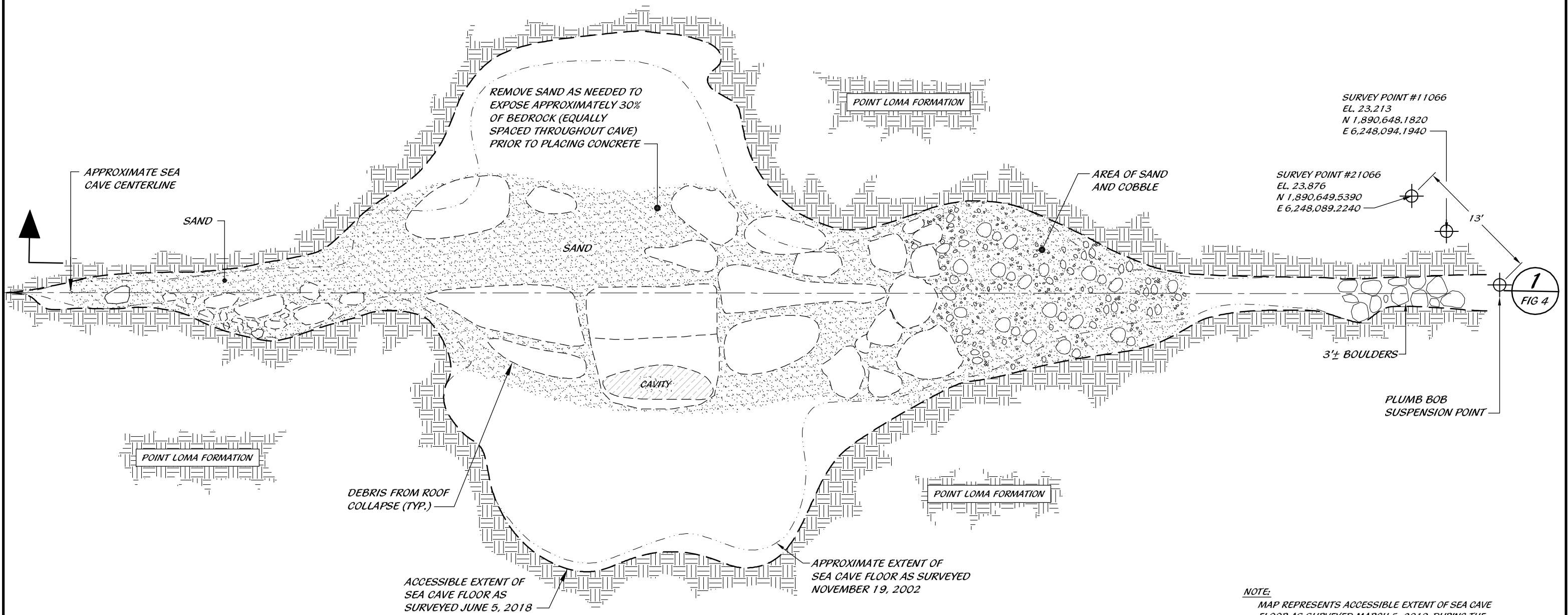




<b>TERRACOSTA CONSULTING GROUP</b> ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 573-6900	FIGURE NUMBER <b>2</b>
PROJECT NAME <b>COOK'S CRACK SEA CAVE</b>	PROJECT NUMBER <b>2086B</b>

**SITE PLAN**

SCALE: 1"=10'



**NOTE:**  
MAP REPRESENTS ACCESSIBLE EXTENT OF SEA CAVE FLOOR AS SURVEYED MARCH 5, 2019, DURING THE TIDAL LOW OF -0.4 MLLW (APPROX. 3:00 p.m.)

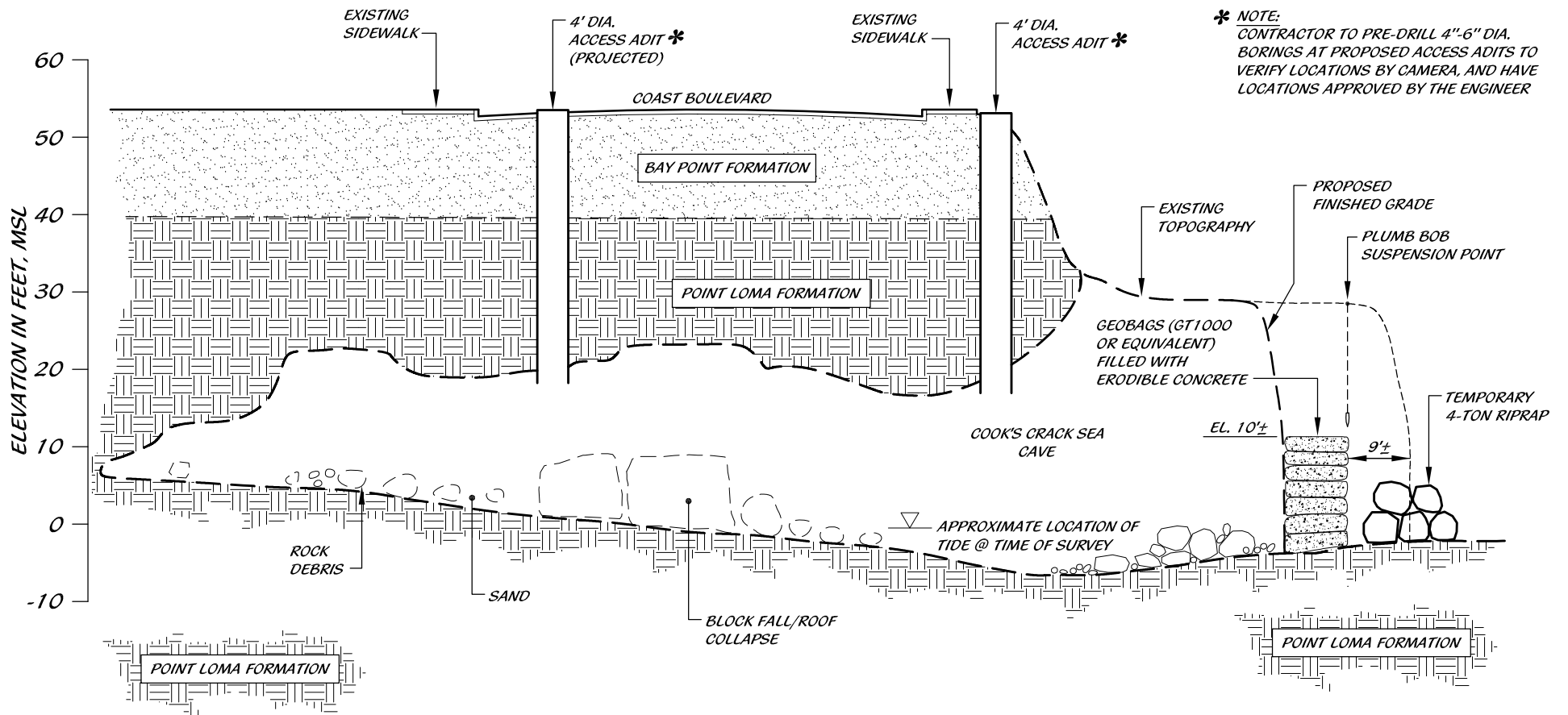
**PLAN VIEW**

SCALE: 1"=10'



TERRACOSTA CONSULTING GROUP ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 573-6900	FIGURE NUMBER <b>3</b>
PROJECT NAME <b>COOK'S CRACK SEA CAVE</b>	PROJECT NUMBER <b>2086B</b>

**PLAN VIEW OF  
SEA CAVE**



# CROSS SECTION

SCALE: 1"=20'

1



<b>TERRACOSTA CONSULTING GROUP</b> ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 573-6900	FIGURE NUMBER
	<b>4</b>
PROJECT NAME	PROJECT NUMBER
<b>COOK'S CRACK SEA CAVE</b>	<b>2086B</b>

# CROSS SECTION



APPENDIX A

GEOTECHNICAL SURVEY AND EVALUATION  
COOK'S CRACK SEA CAVE  
JUNE 28, 2018  
BY TERRACOSTA

GEOTECHNICAL SURVEY & EVALUATION  
**COOK'S CRACK SEA CAVE**  
SAN DIEGO, CALIFORNIA

Prepared for  
CITY OF SAN DIEGO  
San Diego, California



Prepared by  
**TERRACOSTA CONSULTING GROUP, INC.**  
San Diego, California

Project No. 2086A  
June 28, 2018



Project No. 2086A  
June 28, 2018

*Geotechnical Engineering*  
*Coastal Engineering*  
*Maritime Engineering*

Mr. Joshua Lahmann, P.E., Senior Civil Engineer  
**CITY OF SAN DIEGO**  
Transportation & Stormwater Street Division  
2781 Caminito Chollas, M.S. 44  
San Diego, California 92105

**GEOTECHNICAL SURVEY & EVALUATION**  
**COOK'S CRACK SEA CAVE**  
SAN DIEGO, CALIFORNIA


Dear Mr. Lahmann:


TerraCosta Consulting Group, Inc. (TerraCosta) is pleased to present the accompanying report, which provides a summary of our geotechnical survey and mapping of the current limits of the Cook's Crack Sea Cave, and provides the results of our evaluation of stability of the sea cave extending under Coast Boulevard in the La Jolla area of San Diego, California.

We appreciate the opportunity to work with you on this project and trust this information meets your current needs. If you have any questions or require additional information, please give us a call.

Very truly yours,

TERRACOSTA CONSULTING GROUP, INC.

  
\_\_\_\_\_  
Gregory A. Spaulding, Project Geologist  
P.G. 5892, C.E.G. 1863

  
\_\_\_\_\_  
Walter F. Crampton, Principal Engineer  
R.C.E. 23792, R.G.E. 245, D.CE

GAS/WFC/jg  
Attachments

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GEOTECHNICAL SURVEY & EVALUATION  
**COOK'S CRACK SEA CAVE**  
SAN DIEGO, CALIFORNIA

## 1 INTRODUCTION

This report presents a summary of TerraCosta's mapping and engineering analysis of the stability of the Cook's Crack Sea Cave extending under Coast Boulevard in the La Jolla area of San Diego, California (Figures 1 and 2, Photo 1). The City of San Diego has noted that portions of the roadway along South Coast Boulevard in the area of the sea cave are showing signs of extensive cracking, raising concerns as to the stability of the underlying soil and rock. In an earlier study, presented in our report titled, "Coastal Bluff Stability Study, Coast Boulevard Between Prospect Street and South Casa Beach (including La Jolla Cove and Children's Pool Beach), La Jolla, California," dated December 12, 2002, it was determined that although stable under the conditions in 2002, it was reasonable to conclude that at some time in the future, the Cook's Crack Sea Cave would collapse. That collapse mechanism would likely be in the form of a down-dropped block resulting in lost ground and/or settlement. It is important to note that in that study, the stability of the roof rock was based on static conditions with no additional growth of the sea cave. It is also important to note that seismic loading increases both the dead weight of the overhanging block and, depending upon the direction of seismic forces, stability of the roof rock is substantially reduced.

## 2 SCOPE OF WORK

Because of the distress observed in the pavements in the area overlying the Cook's Crack Sea Cave, concerns were raised over the stability of the sea cave and potential for collapse of the roof rock impacting the overlying Coast Boulevard improvements. Based on our understanding of the City of San Diego's current needs, we completed the following scope of work.



## 2.1 Survey Mapping

Survey mapping of the Cook's Crack Sea Cave was completed on June 5, 2018. Work was completed by setting survey control on the bluffs near the mouth of the sea cave (at the locations indicated on Figure 3) to provide a baseline for mapping. Survey mapping was completed by a geotechnical engineer and geologist from TerraCosta, assisted by two swimmers to help maintain survey control. During survey operations, a safety boat was stationed offshore from the sea cave to assist with ingress and egress of the cave.

## 2.2 Engineering Analysis

After mapping of the sea cave and geotechnical site conditions, and collection of data during the mapping process, an analysis of the stability of the sea cave in its current condition was completed, including calculating the factor of safety of overhanging blocks and estimating the thickness of the remaining supportive roof material. The results of our engineering analysis indicated that there has been no significant change in the stability of the principal overhanging blocks. It should be noted that minor block falls have occurred, as discussed below in Section 5.

## 3 SUMMARY OF GEOTECHNICAL CONDITIONS

### 3.1 Geologic Setting

Point La Jolla is a significant promontory formed by northerly movement of the land mass westerly of the Rose Canyon fault. The Rose Canyon Fault is part of the San Andreas fault system, which is the boundary between the Pacific Plate and the North American Plate. The Pacific Plate moves northerly in relation to the North American Plate at a rate of 5 to 6 cm per year. Within Southern California, that rate of movement is spread across numerous strike-slip faults across an approximately 100-mile-wide zone. Locally, it is estimated that the Rose Canyon fault zone is responsible for approximately 2 mm per year of movement within that zone. During the initial formation of the Rose Canyon Fault, a series of minor faults formed as the result of strain within the crust near the Rose Canyon Fault. While these minor faults are considered inactive, they have locally weakened the bedrock, allowing for the increase in erosion and the formation of sea caves and coves, as can be seen along San Diego's coastline. Some of these features can be seen on Photo 1.



### 3.2 Soil and Geologic Units

The two geologic formations present in the general coastal area of Cook's Crack Sea Cave are the 70- to 80-million-year old Point Loma Formation and the approximately 120,000-year-old Quaternary-age Bay Point Formation. Locally, overburden soils consisting of alluvium and colluvium, have also been deposited. The following paragraphs describe these units from oldest to youngest.

*Point Loma Formation (Kp)*: The Cretaceous-age Point Loma Formation is an approximately 900-foot-thick sedimentary rock unit that discontinuously crops out along the coastline between northern Baja California to as far north as Carlsbad (Kennedy, 1975). Along this reach of the coastline, it forms the lower, more resistant parts of the sea cliff. Based on our review of geologic mapping by Kennedy, bedding within the Point Loma Formation dips (locally) approximately 20 degrees to the south within the area of the Cook's Crack Sea Cave. The Point Loma Formation consists of well-indurated marine sediments deposited offshore within a deep-water environment, which are represented by thinly bedded siltstone and fine sandstone. The Point Loma Formation is depicted by a narrow strip of blue along the coastline, and is identified as Kp, on the Geologic Map (Figure 1).

*Bay Point Formation (Qbp)*: The Pleistocene-age Bay Point Formation forms the upper coastal bluff terrace deposits. The Bay Point Formation is restricted in age to between 80,000 and 120,000 years and is deposited on a wave-cut platform formed on the Point Loma Formation during the last interglacial period when worldwide sea level was approximately 20 feet higher. These deposits generally consist of marine and non-marine silty to clayey sandstones and hard sandy clays that form the moderate slopes on the coastal terraces, and are exposed in the bluffs in the project area. Geologic evidence indicates that, since deposition of the Bay Point Formation, Point La Jolla has locally been uplifted upwards of 23 feet near Goldfish Point east of Cook's Crack at a rate of about 0.2 inch per 100 years. The Bay Point Formation is designated in orange and identified as Qbp on Figure 1.

*Alluvial and Colluvial Deposits (not mapped)*: Geologically recent alluvial and colluvial soils and the topsoils developed on them are present over most of the terrace in the area and on the slopes above and to the south and east of the project site.

Typically less than 2 feet in thickness, these soils consist of porous, loose to medium dense, silty to clayey sands with occasional gravel.

*Artificial Fill (not mapped):* Artificial fill soils, consisting predominantly of silty to clayey sands with gravel, commonly exist as the result of the development of numerous bluff-top improvements. These moderately to poorly compacted fills are commonly locally derived and generally range up to a few feet in thickness. Fill also exists as soil backfill of utility trenches.

### 3.3 Geologic Structure

Tectonic forces associated with movement along the Rose Canyon fault zone and strain, which pre-dates the Rose Canyon fault zone (Fischer and Mills, 1991; Greene and Kennedy, 1981), have resulted in the formation of minor faults and joints locally within the Point Loma Formation bedrock. Crustal warping associated with tectonic activity has gently tilted the bedding and shore platform on the order of 20 degrees to the south (locally). These long-continued tectonic stresses have resulted in literally thousands of visible joints, fractures, and shear zones ranging from micro to large scale.

### 3.4 Groundwater

A contributor to the erosion of coastal bluffs is the flow of groundwater along the contact between the relatively pervious, moderately consolidated coastal terrace deposits and the well-indurated, less pervious, Cretaceous formations that form the lower sea cliffs. During our mapping and reconnaissance, localized seepage was observed in both fractures and sea caves. The groundwater typically migrates through the permeable terrace deposits, where it eventually encounters and enters the joints and fractures within the Point Loma Formation where, over time, it partially dissolves the cementing agents within the rock, further weakening the rock along the joint or fracture, thus locally increasing the rock's susceptibility to erosion and aiding in the formation of sea caves.

Generally, the sources of groundwater are natural groundwater migration from highland areas to the east of the project site, and infiltration by rainfall, irrigation water, and leakage of utilities.

#### **4 ANALYSIS OF CAVE STABILITY**

Our current survey indicates that as expected, the sea cave has widened approximately 6 to 8 feet (Figure 3) and continues to advance southerly under the sidewalk on the southerly side of Coast Boulevard, as shown on Figure 2. Figures 2 through 8 illustrate the current limits of the sea cave. Photos 2 through 8 are of the interior of the sea cave. It should also be noted that there is evidence of the widening of the fault, allowing the down-dropping of a smaller block, as illustrated on Figure 8 and discussed below in Section 5.

As discussed above, an analysis of the Cook's Crack Sea Cave was completed in 2002. That study found that, at that time, the sea cave was relatively stable against failure and collapse, with calculations exhibiting factors of safety against collapse ranging from 1.32 to 1.89. Our recent analysis of block and wedge failure of the current conditions revealed that there has been no substantial change in the overall stability of the sea cave.

#### **5 OBSERVATIONS AND SITE CONDITIONS**

Observations made during our current mapping of the sea cave indicated that additional block failures have occurred since 2002, which appear to have locally weakened the roof of the sea cave. In addition, there is evidence that groundwater seepage, widening of a major through-going fracture (fault), localized collapse of a block from the roof, and the apparent migration of sand from the overlying terrace deposits have occurred (Photos 5, 5a, 6, and 6a). Figure 8 illustrates the basic problem with the dropping of the approximately 19-foot-long, 2-foot-wide block by approximately 3 feet, which has resulted in some lost ground and the loss of intimate contact that one time existed between the southeasterly face of the northwesterly overhanging block where it lays against the faulted face of the formation on the left side of the crack. Recent construction activities and related heavy traffic may have contributed to the movement of this block and migration of sand into the fracture.

#### **6 CONCLUSIONS AND RECOMMENDATIONS**

Based on the results of our mapping, observations, and engineering analysis, it is our opinion that within a few years, there is a high probability of collapse of portions of the sea cave and/or the formation of voids under Coast Boulevard by downward migration of Bay Point

Formation soils through widening fractures into the sea cave. This mechanism is exhibited in Figure 8, with sands from the overlying terrace deposits now migrating through this underlying fracture. This lost ground will progressively worsen with time. Based on our recent observations, we recommend that the roadway over the sea cave be closely monitored for signs of settlement, and that the sea cave be inspected again in the next five years. It is also our opinion that a structural solution is necessary to prevent a future catastrophic failure.

Given the increased probability of a collapse and/or voids developing along Coast Boulevard, we recommend that the following solutions be considered.

## 6.1 Stabilization Options

### 6.1.1 *Sea Cave Infill*

A common solution for mitigating the potential for collapse of a sea cave is to infill the cavity with concrete. This would likely entail drilling a series of access holes through the top of the cave roof and pumping a concrete mix into the sea cave to provide support against collapse. The concrete mix should consist of a lean (sand-cement) mix pumped into the outer portion of the cave that will erode as the face of the bluff erodes in the future, with a stronger more fluid mix to completely fill all of the voids within the interior of the cave.

### 6.1.2 *Chemical Grouting of Terrace Deposits*

A temporary solution would involve chemically grouting the terrace deposits to strengthen the soils and aid in preventing the piping of the overlying terrace deposit soils into the developing cracks along the fault trace. Grouting would be completed on a grid pattern and consist of either a micro-fine cement or silicate type grout to solidify the sandier materials within the terrace deposits.

### 6.1.3 *Construct a Bridge*

This option would consist of constructing a bridge over the sea cave, allowing the sea cave to collapse over time. This solution would require relocation of utilities to prevent the loss and interruption of utilities as the sea cave collapses. This solution does not prevent the propagation and advancement of the sea cave, which would eventually affect the properties adjacent to Coast Boulevard.

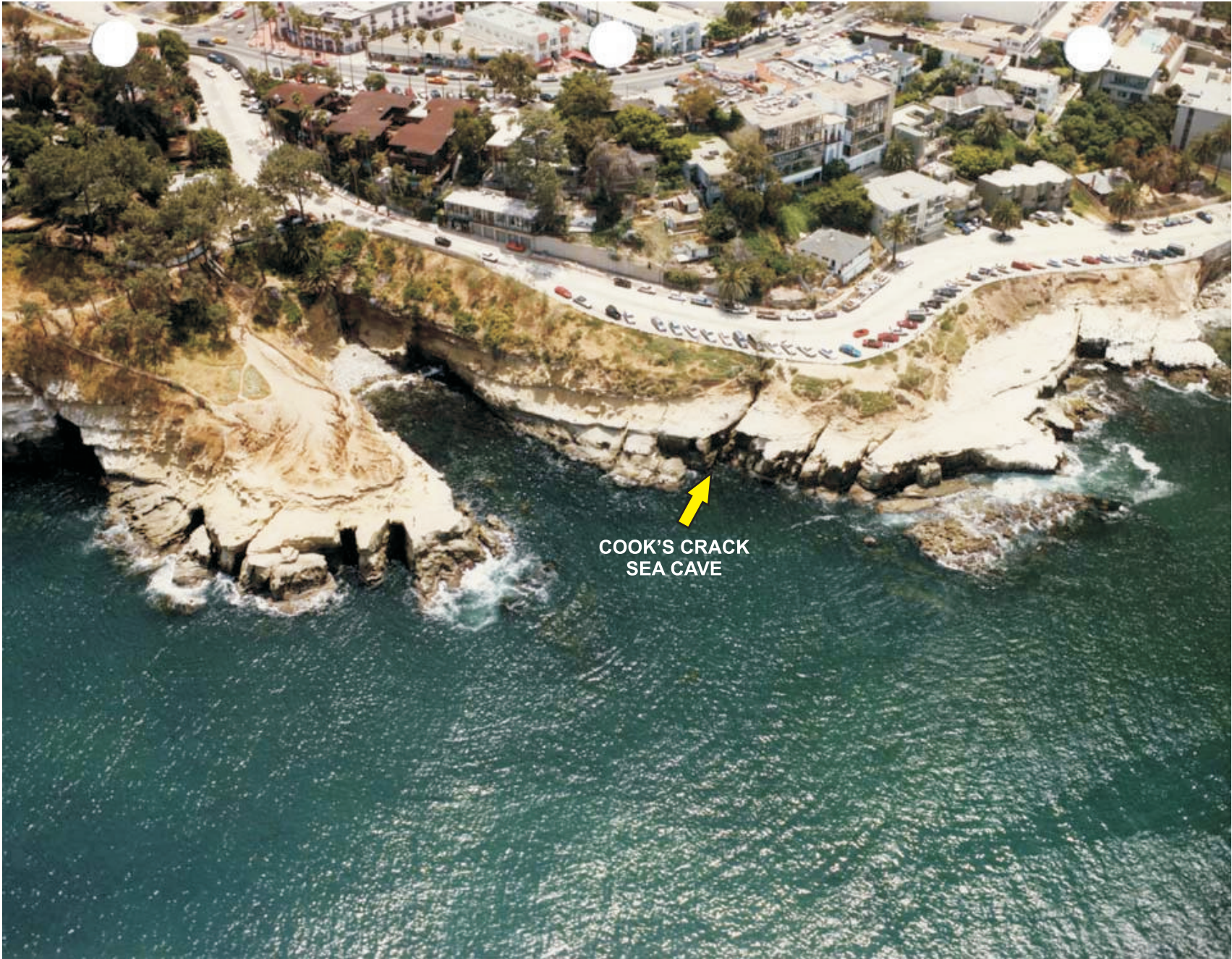
## 7 LIMITATIONS

The data provided in this report were collected from our field observations and mapping of Cook's Crack Sea Cave, previously published reports and maps, and our general knowledge of geologic and geotechnical conditions in the area. No subsurface exploration or laboratory testing were performed for this report. This report was not prepared for any specific repair option. Therefore, it may not satisfy the requirements of regulatory agencies or reviewers if submitted, and additional site-specific investigation may be required. This report is not valid after two years after its issue date.

## REFERENCES

1. Fischer, P.J., and G.I. Mills, 1991, "The Offshore Newport-Inglewood - Rose Canyon Fault Zone, California: Structure, Segmentation and Tectonics," in P.L. Abbott and W.J. Elliott (eds.), Environmental Perils - San Diego Region, published by San Diego Association of Geologists, pp. 17-36.
2. Greene, H.G., and M.P. Kennedy, 1981, Review of Offshore Seismic Reflection Profiles in the Vicinity of the Christianitos Fault, San Onofre, California, unpublished U.S. Geological Survey Document prepared for the Nuclear Regulatory Commission.
3. Kennedy, M.P., 1975, Geology of the San Diego Metropolitan Area, California: Section A - Western San Diego Metropolitan Area (Del Mar, La Jolla, Point Loma 72 minute quadrangles); and Section B - Eastern San Diego Metropolitan Area (La Mesa, Poway, and SW 3 Escondido 72 minute quadrangles), California Department of Conservation, Division of Mines and Geology, Bulletin 200.
4. TerraCosta Consulting Group, Inc., December 12, 2002, Coastal Bluff Stability Study, Coast Boulevard Between Prospect Street and South Casa Beach (including La Jolla Cove and Children's Pool Beach), La Jolla, California.





**COOK'S CRACK  
SEA CAVE**



**TERRACOSTA CONSULTING GROUP**  
3890 Murphy Canyon Road, Suite 200  
San Diego, California 92123 (858) 573-6900

PROJECT NO.:  
**2086A**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**1**





PHOTO 2: NOTE LARGE CONCRETION IS GONE, AND WALLS HAVE ERODED BACK AND WIDENED.

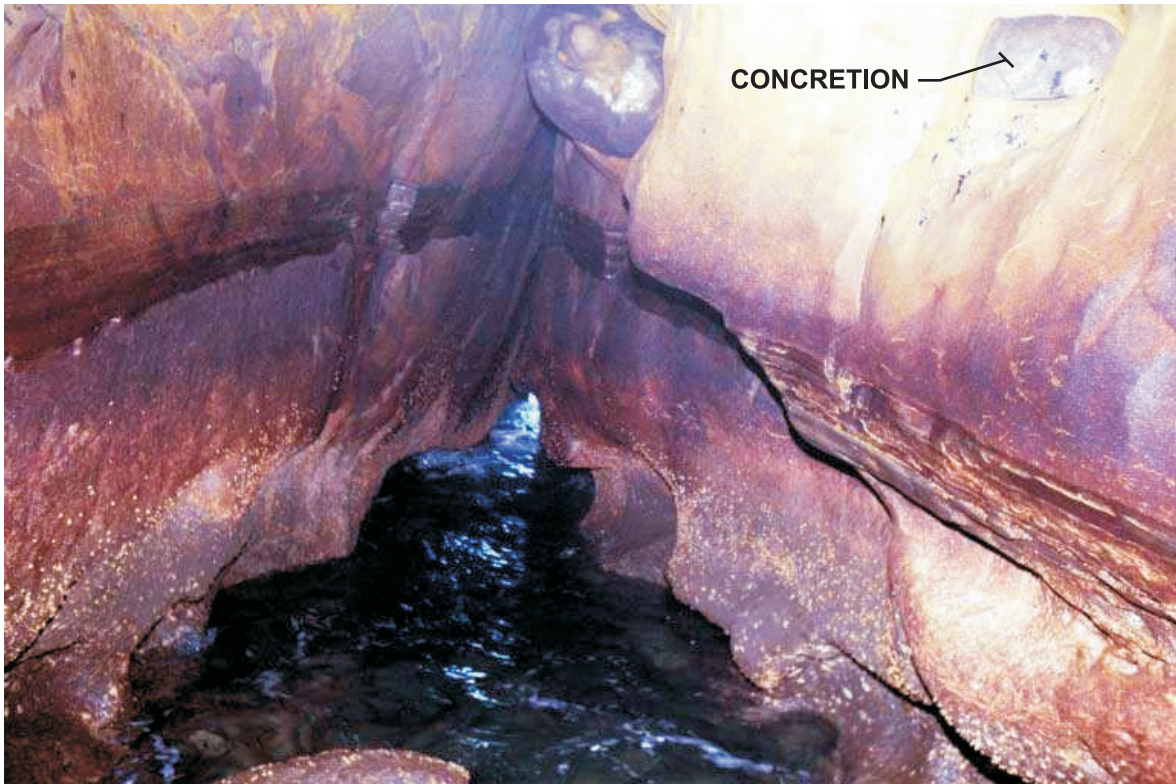


PHOTO 2A: (2002) LOOKING OUT. NOTE EXISTING CONCRETION AT UPPER EDGE OF PHOTO.



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PROJECT NO.:  
**2086A**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NOS.:  
**2 & 2A**





*PHOTO 3: MAIN BLOCK SEEN IN 2002 SURVEY STILL MOSTLY INTACT. A CAVITY HAS DEVELOPED, UNDERMINING THE SOUTHERLY SIDE OF THE BLOCK.*



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**2086A**

PROJECT NAME:  
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PHOTO NO.:  
**3**





PHOTO 4: TAKEN IN 2002.

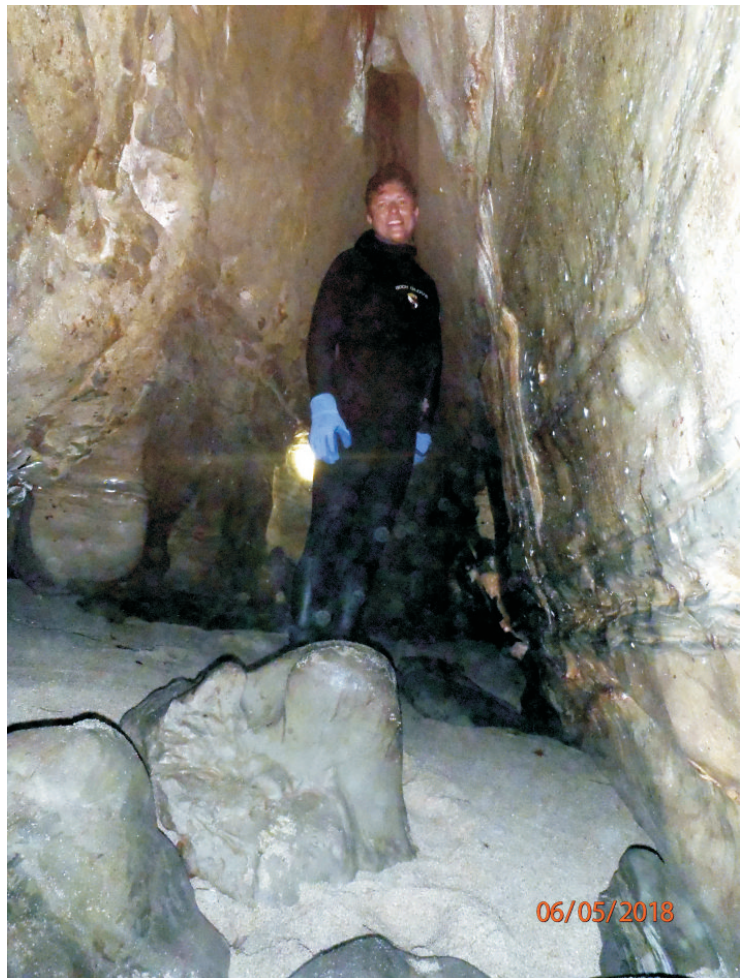


PHOTO 4A:  
NOTE SAND LEVEL HAS DROPPED 1.5 TO 5 FEET.

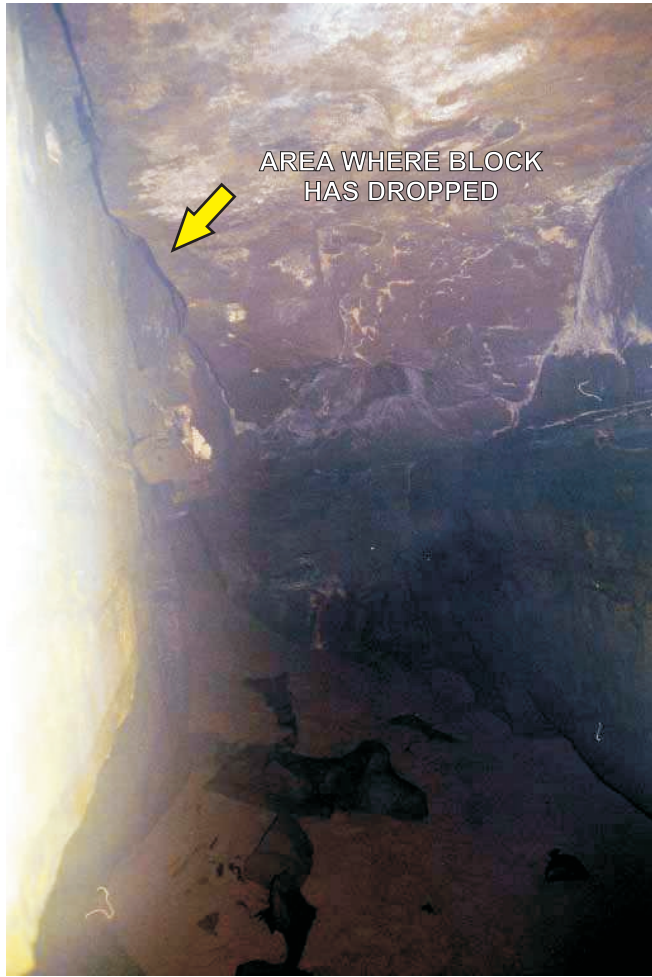


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PROJECT NO.:  
**2086A**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NOS.:  
**4 & 4A**



*PHOTO 5: (2002) NOTE AREA PRIOR TO RECENT ROOF BLOCK FAILURE.*



*PHOTO 5A: NOTE APPARENT RECENT ROCK DEBRIS (ARROW).*



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PHOTO NOS.:  
**5 & 5A**





PHOTO 6: ARROW INDICATES DOWN DROPPED BLOCK. NOTE SAND ON TOP OF BLOCK.



PHOTO 6A: NOTE SAND PIPING FROM OVERLYING TERRACE DEPOSITS (ARROW).



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PHOTO NOS.:  
**6 & 6A**





*PHOTO 7: SOUTHWEST CAVE EXTENSION*



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**2086A**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**7**





*PHOTO 8: NORTHWEST CAVE EXTENSION*



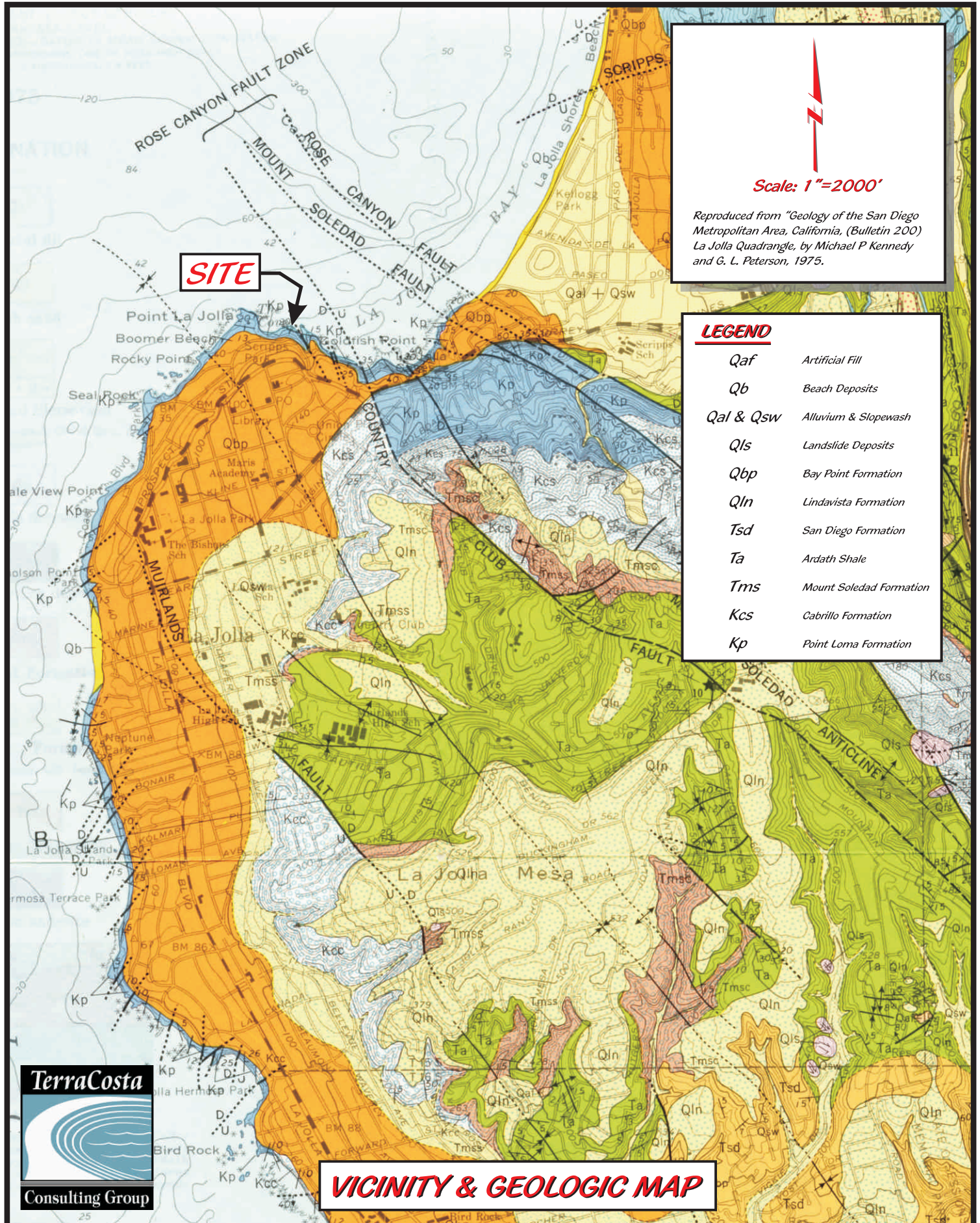
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San Diego, California 92123 (858) 573-6900

PROJECT NO.:  
**2086A**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**8**





**SITE**

Scale: 1"=2000'

Reproduced from "Geology of the San Diego Metropolitan Area, California, (Bulletin 200) La Jolla Quadrangle, by Michael P Kennedy and G. L. Peterson, 1975.

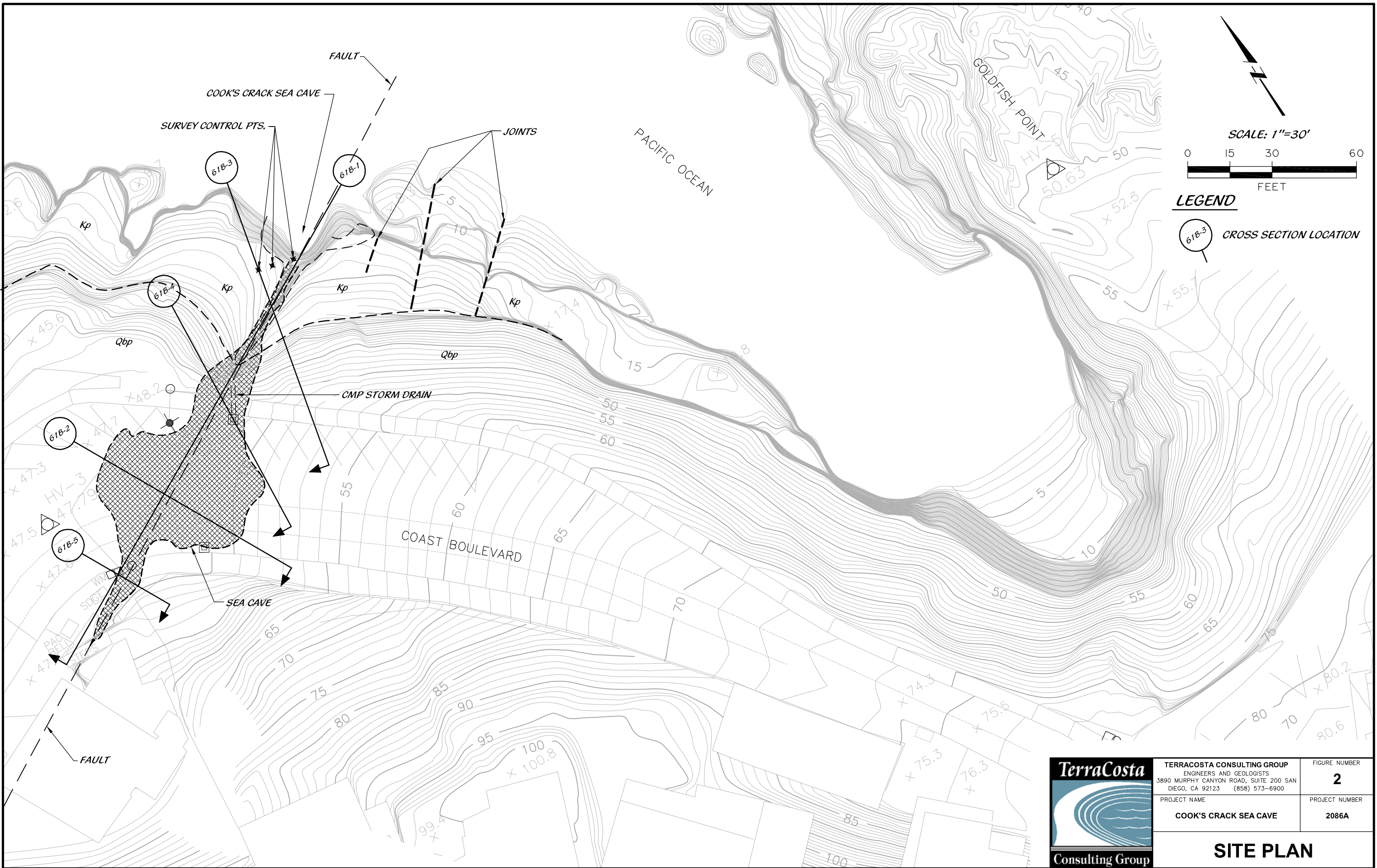
**LEGEND**


- Qaf* Artificial Fill
- Qb* Beach Deposits
- Qal & Qsw* Alluvium & Slopewash
- Qls* Landslide Deposits
- Qbp* Bay Point Formation
- Qln* Lindavista Formation
- Tsd* San Diego Formation
- Ta* Ardath Shale
- Tms* Mount Soledad Formation
- Kcs* Cabrillo Formation
- Kp* Point Loma Formation



**VICINITY & GEOLOGIC MAP**





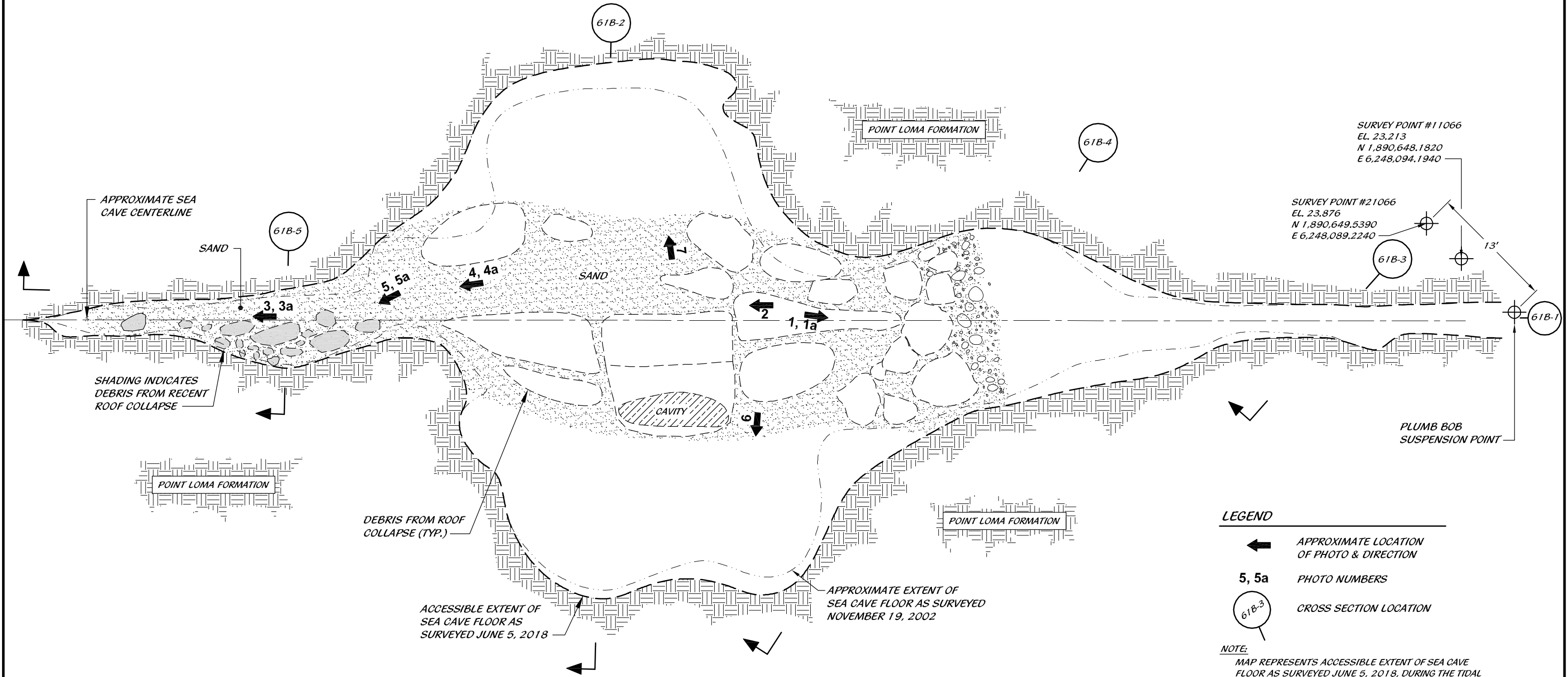
**LEGEND**  
 CROSS SECTION LOCATION



<b>TERRACOSTA CONSULTING GROUP</b> ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 573-6900		FIGURE NUMBER <b>2</b>
PROJECT NAME <b>COOK'S CRACK SEA CAVE</b>		PROJECT NUMBER <b>2086A</b>

**SITE PLAN**

SCALE: 1"=10'



SURVEY POINT #11066  
EL. 23.213  
N 1,890,648.1820  
E 6,248,094.1940

SURVEY POINT #21066  
EL. 23.876  
N 1,890,649.5390  
E 6,248,089.2240

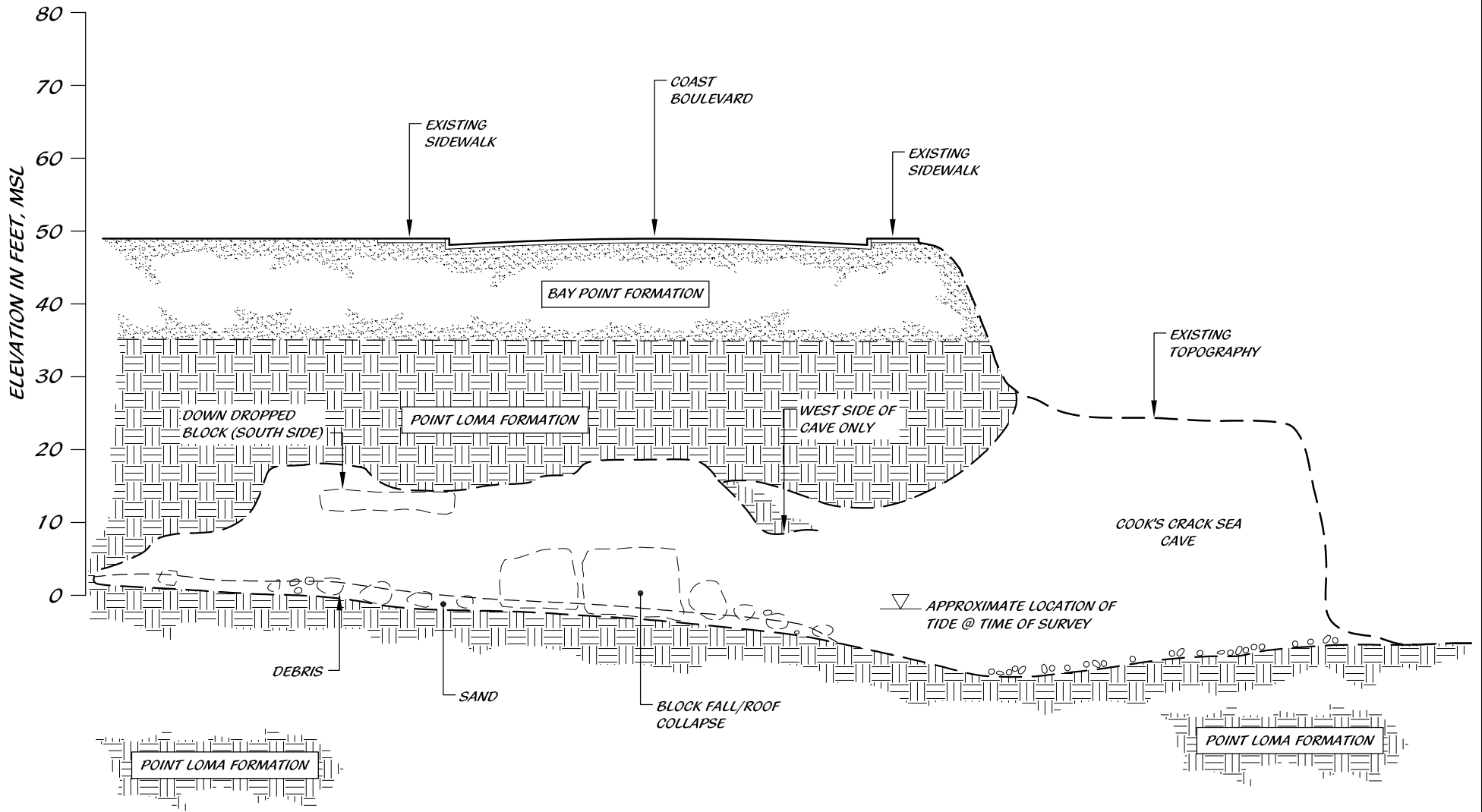
13'

- LEGEND**
- ← APPROXIMATE LOCATION OF PHOTO & DIRECTION
  - 5, 5a PHOTO NUMBERS
  - 61B-3 CROSS SECTION LOCATION

**NOTE:**  
MAP REPRESENTS ACCESSIBLE EXTENT OF SEA CAVE FLOOR AS SURVEYED JUNE 5, 2018, DURING THE TIDAL LOW OF 0.63 MLLW (APPROX. 9:00 a.m.)

**PLAN VIEW**  
SCALE: 1"=10'

	<b>TERRACOSTA CONSULTING GROUP</b> ENGINEERS AND GEOLOGISTS 3890 MURPHY CANYON ROAD, SUITE 200 SAN DIEGO, CA 92123 (858) 573-6900	FIGURE NUMBER <b>3</b>
	PROJECT NAME <b>COOK'S CRACK SEA CAVE</b>	PROJECT NUMBER <b>2086A</b>
<b>PLAN VIEW OF SEA CAVE</b>		



# CROSS SECTION

SCALE: 1"=20'

61B-1



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PROJECT NAME  
**COOK'S CRACK SEA CAVE**

FIGURE NUMBER

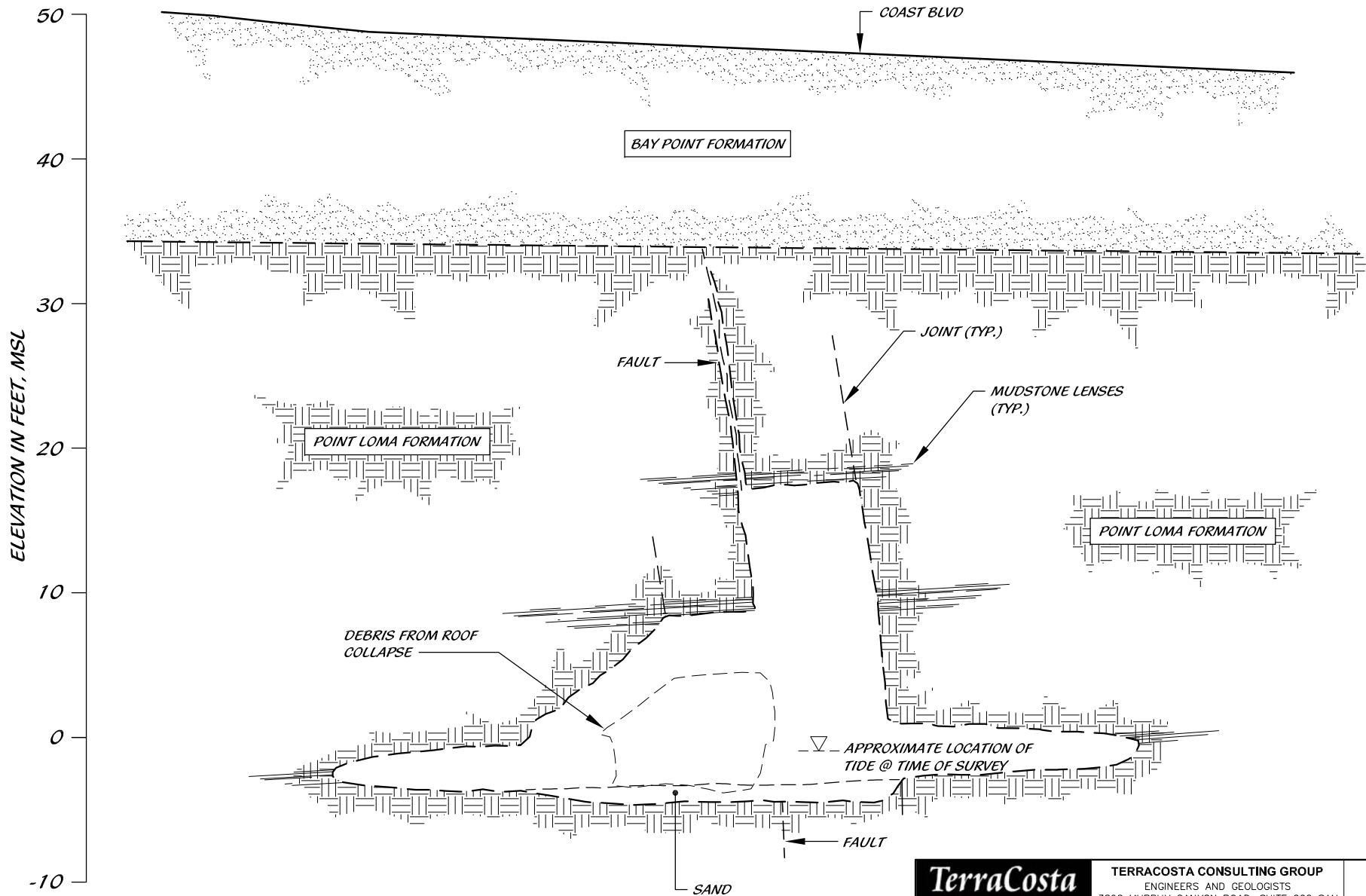
**4**

PROJECT NUMBER

**2086A**

# CROSS SECTION 61B-1





# CROSS SECTION

SCALE: 1"=10'

61B-2



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PROJECT NAME  
**COOK'S CRACK SEA CAVE**

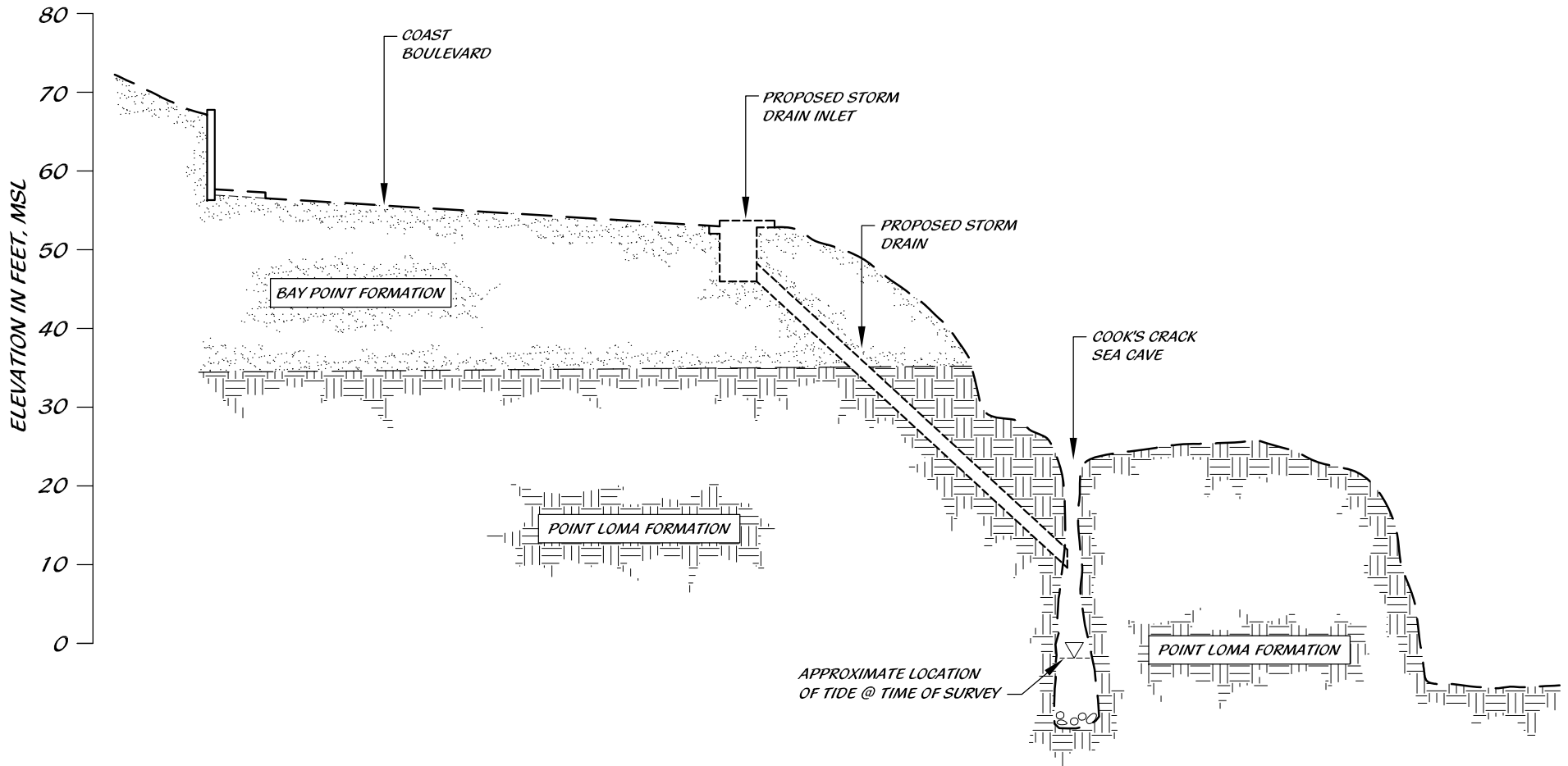
FIGURE NUMBER

**5**

PROJECT NUMBER

**2086A**

# CROSS SECTION 61B-2



# CROSS SECTION

SCALE: 1"=20'

61B-3



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FIGURE NUMBER

**6**

PROJECT NAME

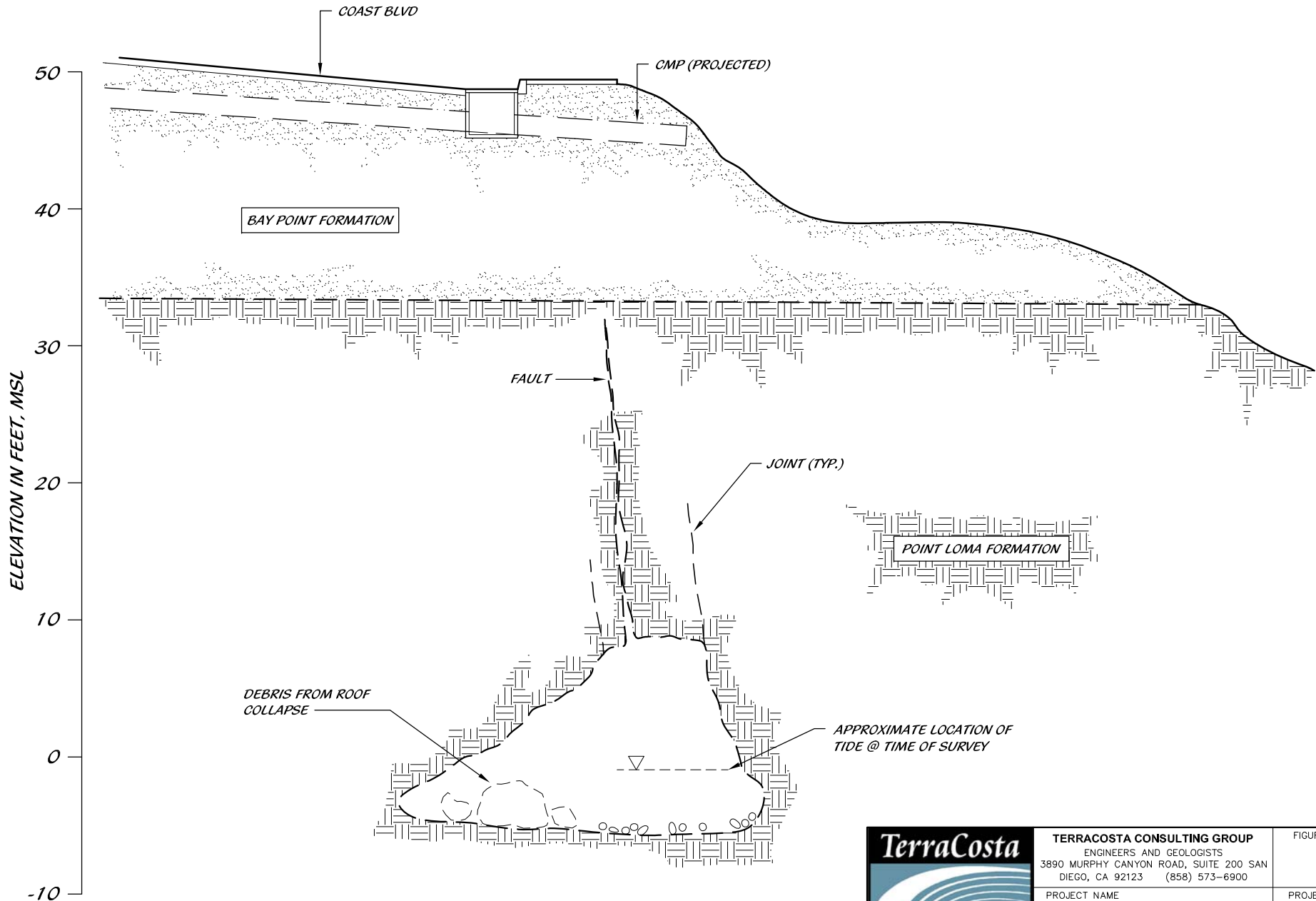
**COOK'S CRACK SEA CAVE**

PROJECT NUMBER

**2086A**

**CROSS SECTION 61B-3**





# CROSS SECTION

SCALE: 1"=10'

61B-4



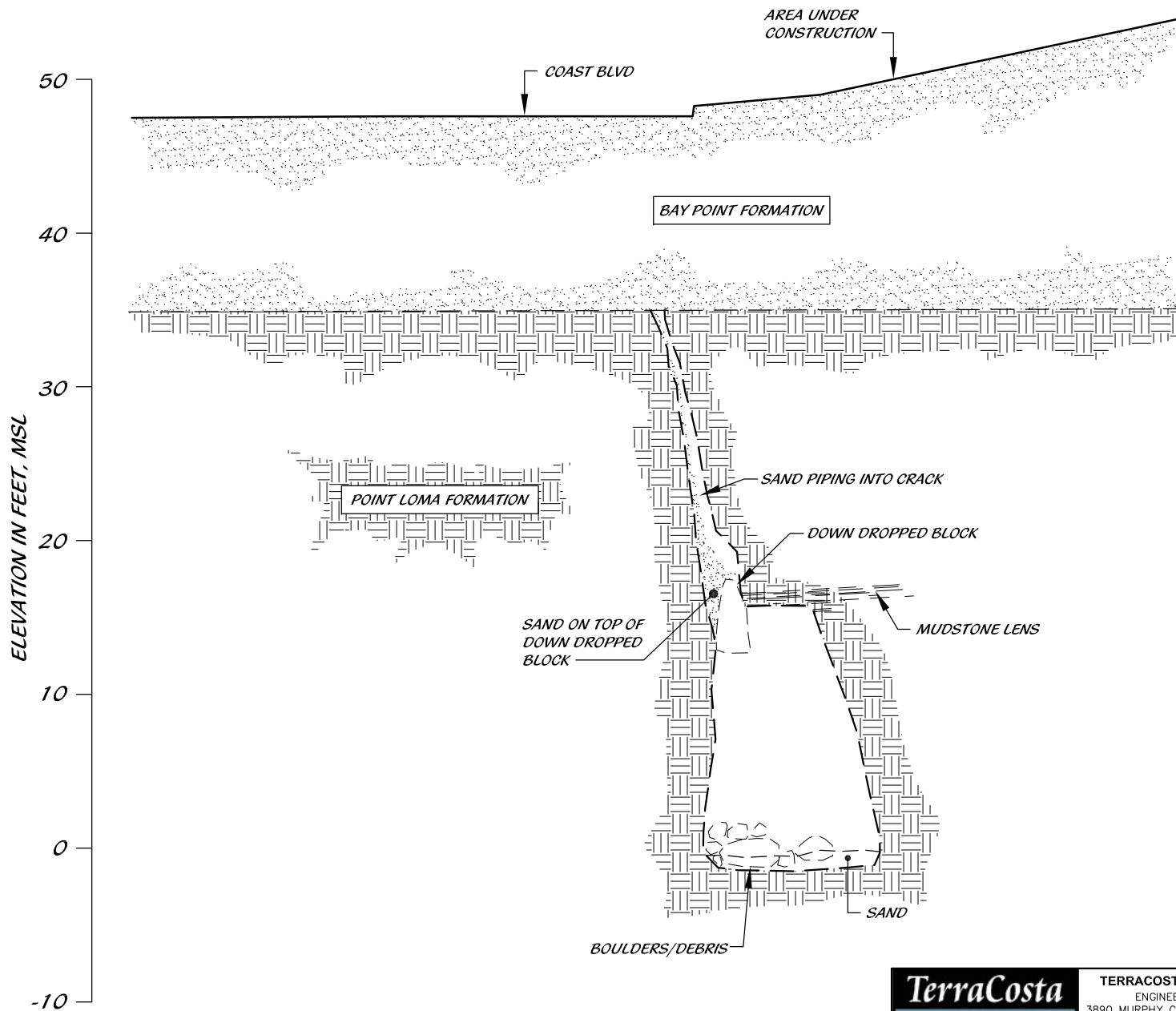
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ENGINEERS AND GEOLOGISTS  
3890 MURPHY CANYON ROAD, SUITE 200 SAN  
DIEGO, CA 92123 (858) 573-6900

PROJECT NAME  
**COOK'S CRACK SEA CAVE**

FIGURE NUMBER  
**7**

PROJECT NUMBER  
**2086A**

# CROSS SECTION 61B-4



# CROSS SECTION

SCALE: 1"=10'

61B-5



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PROJECT NAME  
**COOK'S CRACK SEA CAVE**

FIGURE NUMBER

**8**

PROJECT NUMBER

**2086A**

# CROSS SECTION 61B-5

## APPENDIX B

### GT1000MB PRODUCT LITERATURE



## GT1000MB (Sand-color GT1000 Marine/Beach)

GT1000MB is composed of high-tenacity polypropylene multifilament yarns, which are woven into a stable network such that the yarns retain their relative position. GT1000MB is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids.

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			Machine Direction	Cross Direction
Wide Width Tensile Strength (at ultimate)	ASTM D4595	lbs/in (kN/m)	1026 (180)	1026 (180)
Wide Width Tensile Elongation	ASTM D4595	%	20	10
Factory Seam Strength <sup>1</sup>	ASTM D4884	lbs/in (kN/m)	582 (102)	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve # (mm)	30 (0.60)	
Water Flow Rate	ASTM D4491	gpm/ft <sup>2</sup> (l/min/m <sup>2</sup> )	20 (813)	
Mass/Unit Area <sup>1</sup>	ASTM D5261	oz/yd <sup>2</sup> (g/m <sup>2</sup> )	28 (949)	
UV Resistance (% strength retained after 500 hrs)	ASTM D4355	%	70	

<sup>1</sup>Factory Seam Strength and Mass/Unit Area are Typical Values

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*Geotechnical Engineering*  
*Coastal Engineering*  
*Maritime Engineering*

Project No. 2086  
August 8, 2019

Mr. Gene Matter, Assistant Director  
Transportation & Storm Water Department  
**CITY OF SAN DIEGO**  
2781 Caminito Chollas, Mail Station 44  
San Diego, California 92105

**TEXT CLARIFICATION**  
**COASTAL EROSION ASSESSMENT AND**  
**CAVE SOLUTION FEASIBILITY ANALYSIS**  
**COAST BOULEVARD AND COOK'S CRACK SEA CAVE**  
**SAN DIEGO, CALIFORNIA**

Dear Mr. Matter:

During our meeting with City Staff today specific to the stability of the Cook's Crack Sea Cave, we made a presentation summarizing the results of our June 17, 2019, Coastal Erosion Assessment report for the Cook's Crack sea cave. In the Conclusions section of our report, we stated, "It is our opinion that within a few years, there is a high probability of collapse of additional supporting roof rock resulting in the formation of voids or sinkholes under Coast Boulevard, causing damage to the street and utilities that overlie the Cook's Crack Sea Cave and/or injury or death due to a vehicle or pedestrian falling into a sinkhole. Based on our studies, the most feasible alternative would be to seal and infill the sea cave."

As we discussed today during our presentation, and as shown on Photo 3 of our June 17 report, this possibly 5,000-pound block that has become dislodged within the adjacent fault joints, along with both the groundwater and overlying terrace deposits that are now falling from the roof, creates a very unstable condition, and this block could in fact, collapse at any time. Moreover, any seismic tremor, or even a break of the City's water main that runs over the roof of the sea cave, could cause an imminent and catastrophic collapse. We have attached Photo 3 from our June 17, 2019, report to remind the reader that this overhanging block, although temporarily wedged into the parallel joint sets associated with this fault, could fall out at any time, thereby completely removing support for the overlying loose and friable terrace deposits. The relatively substantial seepage



exposed in the sidewalls of the cave (visible in Photo 3) is an additional cause for concern, as the seepage, along with the failure of the block, could trigger an immediate and catastrophic collapse, resulting in a rather large linear sinkhole into which a vehicle or pedestrian could fall, possibly resulting in serious injury.

The words used in our June 17 report, namely, “within a few years,” was a measured description of the urgency to stabilize the site, and should not have been construed to suggest that there is **not** a very real concern that this collapse could occur at any time, and particularly after a small seismic tremor or waterline break.

If you would like to discuss this issue further, please feel free to give me a call. After normal business hours, I can be reached on my cell phone at (619) 540-9257.

Very truly yours,

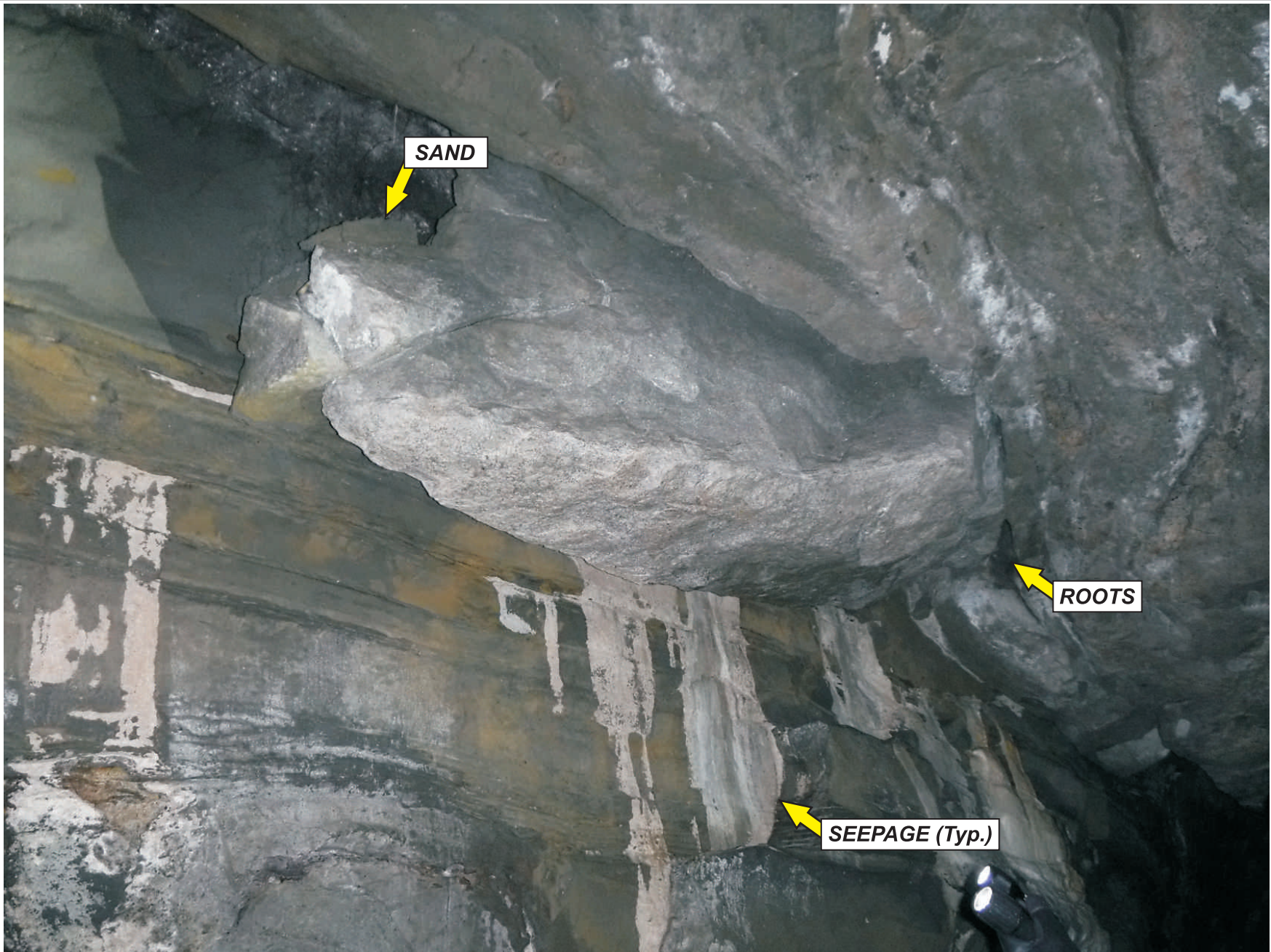
TERRACOSTA CONSULTING GROUP, INC.



Walter F. Crampton, Principal Engineer  
R.C.E. 23792, R.G.E. 245

WFC/jg  
Attachment





DATE OF PHOTO: MARCH 5, 2019



**TERRACOSTA CONSULTING GROUP**  
3890 Murphy Canyon Road, Suite 200  
San Diego, California 92123 (858) 573-6900

PROJECT NO.:  
**2086B**

PROJECT NAME:  
**COOK'S CRACK SEA CAVE**

PHOTO NO.:  
**3**

# City of San Diego

**CONTRACTOR'S NAME:** FLATIRON WEST, INC. \_\_\_\_\_

**ADDRESS:** 16470 WEST BERNARDO DRIVE SUITE 120 SAN DIEGO CA 92127 \_\_\_\_\_

**TELEPHONE NO.:** (760) 916-9100 \_\_\_\_\_ **FAX NO.:** (760) 916-9101 \_\_\_\_\_

**CITY CONTACT:** Taylor Cox, **Contract Specialist**, Email: [TJCox@sandiego.gov](mailto:TJCox@sandiego.gov) \_\_\_\_\_

**Phone No.** (619) 533-3033 \_\_\_\_\_

J. Arcillas / E. Wildberger / M. L. Wenceslao

## CONTRACT DOCUMENTS

**FINAL**



## FOR

**EMERGENCY DESIGN AND CONSTRUCTION SERVICES FOR:  
COAST BLVD SEA CAVE EMERGENCY STABILIZATION PROJECT**

**VOLUME 1 OF 1**

RFQ NO.: \_\_\_\_\_ **K-18-1682-RFQ-3** \_\_\_\_\_

BID NO.: \_\_\_\_\_ **K-20-1894-EMR-3** \_\_\_\_\_

SAP NO. (WBS/IO/CC): \_\_\_\_\_ **B-20040** \_\_\_\_\_

CLIENT DEPARTMENT: \_\_\_\_\_ **2116** \_\_\_\_\_

COUNCIL DISTRICT: \_\_\_\_\_ **1** \_\_\_\_\_

PROJECT TYPE: \_\_\_\_\_ **ID** \_\_\_\_\_

**DEPUTY CITY ENGINEER**

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:



For City Engineer

9/6/19

Date

Seal:





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## CITY OF SAN DIEGO, CALIFORNIA

### GENERAL

#### 1. DESCRIPTION OF WORK:

- 1.1. The Work involves furnishing all labor, materials, equipment, services, and other incidental works and appurtenances for the purpose of designing and constructing this emergency project at the direction of the City Engineer.
- 1.2. The Work consists of repair and reconstruction of Coast Blvd Sea Cave Emergency Stabilization Project. The scope of work includes but not limited to design services such as construction drawing plans, design, As-builts, monitoring survey and geotechnical services. Construction services shall include but not limited to temporary rip-rap installation and removal, geofabric sand piles installation and removal, concrete slurry to fill the existing cave and road repair associated with the emergency project.
- 1.3. This solicitation is for a "Time-and-Materials" contract in accordance with the provisions set forth in 7-3.7, "Agreed Prices" of The WHITEBOOK.
- 1.4. A time-and-materials contract provides for acquiring labor, material, equipment and services that shall be paid for in accordance with 2-8, "EXTRA WORK" of The GREENBOOK and WHITEBOOK and as modified by the Supplementary Special Provisions.
- 1.5. The Design-Builder agrees to provide the required services for the terms and conditions noted in this contract and its exhibits. The agreement and other terms and conditions are included in this Design-Build Contract, The GREENBOOK, The WHITEBOOK, and the Supplementary Special Provisions (SSP).
- 1.6. Any architectural firms, engineering firms, specialty consultants, or individuals retained by the City to assist in drafting the Project's preliminary design may not be eligible to participate in the competition with any Design-Build Entity. It is the responsibility of the Design-Build entity to obtain the required legal advice necessary to resolve such matters.

#### 2. CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:

- 2.1. **Prior** to the Award of the Contract or each Task Order, the Contractor must comply with the following registration requirements:
  - 2.1.1. This project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations (DIR). **Contractor and Subcontractor Registration Requirements** for compliance with those requirements are outlined in paragraph 8.9 of these "General Instructions."

- 2.1.2.** In addition, prior to award of the Contract or each Task Order, the Contractor and its Subcontractors and Suppliers **must** register with Prism®, the City's web-based contract compliance portal at:

<https://pro.prismcompliance.com/default.aspx>.

- 2.1.3.** The City may not award the contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified in the Notice of Intent to Award letter, the City reserves the right to rescind the Notice of Award / Intent to Award and to make the award to the next responsive and responsible bidder / proposer.

- 3. EQUAL OPPORTUNITY:** For the City's Equal Opportunity Program requirements see Part 0 of the City of San Diego 2018 Whitebook and Exhibit I - Forms.

- 3.1.** The Design-Builders are encouraged to take positive steps to diversify and expand their subcontractor solicitation base and to offer contracting opportunities to all eligible certified Subcontractors in accordance with the City's EOCP requirements included in the Contract Documents.

**3.2. Design-Builder's Work Force**

- 3.2.1.** The Design-Builders shall submit with its Proposal a Work Force Report (EOC Form BB05) and prior to award of contract, the successful Design-Builder shall submit to the City's EOCP office an updated Work Force Report or an Equal Employment Opportunity (EEO) Plan.

- 3.2.2.** If under representations are noted in the Work Force Report when compared to County Labor Force Availability data, the Design-Builder shall submit an Equal Opportunity Plan. Any Equal Employment Opportunity Plan submitted shall include the elements as outlined in the EOCP Requirements included in The WHITEBOOK.

- 3.2.3.** The specified Equal Opportunity Contracting Program (EOCP) forms are available for download from the City's web site at:

<http://www.sandiego.gov/eoc/forms>

- 4. CONTRACT TIME:** The Work shall be completed within **120 Working Days** from the date of issuance of the Notice to Proceed.

- 5. CONTRACT PRICE:** The Engineer's Estimate of the Contract Price is **\$3,500,000**. The Contractor shall not perform Work that exceeds the Engineer's Estimate excluding Allowances without prior written notice from the City that sufficient additional funding has been secured.

- 6. LICENSE REQUIREMENT:** To be eligible for award of this contract, Prime contractor must possess the following licensing classification: **A**

**7. PREVAILING WAGE RATES:** Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding \$25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding \$15,000, the Contractor and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below.

**7.1. Compliance with Prevailing Wage Requirements.** Pursuant to sections 1720 through 1861 of the California Labor Code, the Contractor and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.

**7.1.1.** Copies of such prevailing rate of per diem wages are on file at the City and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Contractor and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.

**7.1.2.** The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.

**7.2. Penalties for Violations.** Contractor and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed. This shall be in addition to any other applicable penalties allowed under Labor Code sections 1720 – 1861.

**7.3. Payroll Records.** Contractor and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require its subcontractors to also comply with section 1776.



Contractor and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Contractor is responsible for ensuring its subcontractors submit certified payroll records to the City.

**7.3.1.** Contractor and their subcontractors shall also furnish records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required by Labor Code section 1771.4.

**7.4. Apprentices.** Contractor and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Contractor is held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.

**7.5. Working Hours.** Contractor and their subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on contractors and subcontractors of \$25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections 1810 through 1815.

**7.6. Required Provisions for Subcontracts.** Contractor shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.

**7.7. Labor Code Section 1861 Certification.** Contractor in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Contractor certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."

**7.8. Labor Compliance Program.** The City has its own Labor Compliance Program authorized in August 2011 by the DIR. The City will withhold contract payments when payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has been established after an investigation by the City or other governmental entity that underpayment(s) have occurred. For questions or assistance, please contact the City of San Diego's Equal Opportunity Contracting Department at 619-236-6000.

**7.9. Contractor and Subcontractor Registration Requirements.** This project is subject to compliance monitoring and enforcement by the DIR. A contractor or subcontractor shall not be qualified to bid on, be listed in a bid or proposal, subject to the requirements of section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5. It is not a violation of this section for an unregistered

contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.

**7.9.1.** A Contractor's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

**7.9.2.** By submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Contractor shall provide proof of registration for themselves and all listed subcontractors to the City at the time of bid or proposal due date or upon request.

**7.10. Stop Order.** For Contractor or its subcontractors engaging in the performance of any public work contract without having been registered in violation of Labor Code sections 1725.5 or 1771.1, the Labor Commissioner shall issue and serve a stop order prohibiting the use of the unregistered contractors or unregistered subcontractor(s) on ALL public works until the unregistered contractor or unregistered subcontractor(s) is registered. Failure to observe a stop order is a misdemeanor.

**7.11. List of all Subcontractors.** The Contractor shall provide the list of subcontractors (regardless of tier), along with their DIR registration numbers, utilized on this Contract prior to any work being performed; and the Contractor shall provide a complete list of all subcontractors with each invoice. Additionally, Contractor shall provide the City with a complete list of all subcontractors (regardless of tier) utilized on this contract within ten working days of the completion of the contract, along with their DIR registration numbers. The City shall withhold final payment to Construction Management Professional until at least thirty (30) days after this information is provided to the City.

**7.12. Exemptions for Small Projects.** There are limited exemptions for installation, alteration, demolition, or repair work done on projects of \$25,000 or less. The Contractor shall still comply with Labor Code sections 1720 et. seq. The only recognized exemptions are listed below:

**7.12.1.** Registration. The Contractor will not be required to register with the DIR for small projects. (Labor Code section 1771.1)

**7.12.2.** Certified Payroll Records. The records required in Labor Code section 1776 shall be required to be kept and submitted to the City of San Diego, but will not be required to be submitted online with the DIR directly. The Contractor will need to keep those records for at least three years following the completion of the Contract. (Labor Code section 1771.4).

**7.12.3.** List of all Subcontractors. The Contractor shall not be required to hire only registered subcontractors and is exempt from submitting the list of all subcontractors that is required in section 8.11 above. (Labor code section 1773.3).

**8. REFERENCE STANDARDS:** Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

Title	Edition	Document Number
Standard Specifications for Public Works Construction ("The GREENBOOK") <a href="http://www.greenbookspecs.org/">http://www.greenbookspecs.org/</a>	2018	PWPI010119-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* <a href="https://www.sandiego.gov/publicworks/edocref/greenbook">https://www.sandiego.gov/publicworks/edocref/greenbook</a>	2018	PWPI010119-02
City of San Diego Standard Drawings* <a href="https://www.sandiego.gov/publicworks/edocref/standarddraw">https://www.sandiego.gov/publicworks/edocref/standarddraw</a>	2018	PWPI010119-03
Citywide Computer Aided Design and Drafting (CADD) Standards <a href="https://www.sandiego.gov/publicworks/edocref/drawings">https://www.sandiego.gov/publicworks/edocref/drawings</a>	2018	PWPI010119-04
California Department of Transportation (CALTRANS) Standard Specifications – <a href="http://www.dot.ca.gov/des/oe/construction-contract-standards.html">http://www.dot.ca.gov/des/oe/construction-contract-standards.html</a>	2018	PWPI030119-05
CALTRANS Standard Plans <a href="http://www.dot.ca.gov/des/oe/construction-contract-standards.html">http://www.dot.ca.gov/des/oe/construction-contract-standards.html</a>	2018	PWPI030119-06
California Manual on Uniform Traffic Control Devices Revision 3 (CA MUTCD Rev 3) <a href="http://www.dot.ca.gov/trafficops/camutcd/">http://www.dot.ca.gov/trafficops/camutcd/</a>	2014	PWPI030119-07
<p><b>NOTE:</b> *Available online under Engineering Documents and References at: <a href="http://www.sandiego.gov/publicworks/edocref/index.shtml">http://www.sandiego.gov/publicworks/edocref/index.shtml</a></p> <p>*Electronic updates to the Standard Drawings may also be found in the link above</p>		

**9. INSURANCE REQUIREMENTS:**

**9.1.** All certificates of insurance and endorsements required by the contract are to be provided upon issuance of the City's Notice of Intent to Award letter.

**9.2.** Refer to sections within 5-4, "INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.



## 10. SUBCONTRACTOR INFORMATION:

**10.1. LISTING OF SUBCONTRACTORS.** In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" of the California Public Contract Code, the Bidder shall provide the **NAME** and **ADDRESS** of each Subcontractor who will perform work, labor, render services or who specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also state within the description, whether the subcontractor is a **CONSTRUCTOR, CONSULTANT** or **SUPPLIER**. The Bidder shall state the **DIR REGISTRATION NUMBER** for all subcontractors and shall further state within the description, the **PORZION** of the work which will be performed by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement may result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - Section 3-2, "SELF-PERFORMANCE", which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.

Additionally, pursuant to California Senate Bill 96 and in accordance with the requirements of Labor Code sections 1771.1 and 1725.5, by submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the California Department of Industrial Relations (DIR). **The Bidder shall provide the name, address, license number, DIR registration number of any Subcontractor - regardless of tier** - who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement pursuant to the contract.

**10.2. LISTING OF SUPPLIERS.** Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY), DIR REGISTRATION NUMBER** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer. If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.

**11. SUBMITTAL OF "OR EQUAL" ITEMS:** See 4-6, "TRADE NAMES" in The WHITEBOOK and as amended in the SSP.

- 12. SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to the GREENBOOK and Special Provisions Section 3-2, "SELF-PERFORMANCE" which requires the Contractor to perform not less than the amount therein stipulated with its own forces. Failure to comply with these requirements shall render the Bid non-responsive and ineligible for award.
- 13. PLANS AND SPECIFICATIONS:** When provided by the City, questions about the meaning or intent of the Contract Documents relating to the scope of Work and technical nature shall be directed to the City's Project Manager prior to commencement of work. Interpretations or clarifications considered necessary by the City in response to such questions will be issued in writing. Oral and other interpretations or clarifications will be without legal effect. Any questions related to this proposal shall be addressed to the Public Works Contracts Branch, 525 B Street, Suite 750, San Diego, CA 92101, Telephone No. (619) 533-3450.
- 14. SAN DIEGO BUSINESS TAX CERTIFICATE:** All Contractors, including Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, first floor, before the Contract can be executed.
- 15. PROPOSAL FORMS:** The signature of each person signing may be in longhand or in electronic format as specified by the City. The Contractor shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.

  - 15.1.** The Bidder, by submitting electronically, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this contract are true and correct.
- 16. CITY'S RIGHTS RESERVED:** The City reserves the right to cancel this request for proposal at any time, and further reserves the right to reject submitted proposals, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Contractor as a result of preparing its proposal shall be the sole responsibility of the Contractor.
- 17. AWARD OF CONTRACT OR REJECTION OF PROPSALS:**

  - 17.1.** This contract may be awarded to a contractor selected from the City's as-needed emergency contractors list or may be awarded to another contractor in case the list of available emergency contractors list is exhausted.
  - 17.2.** The City reserves the right to reject the proposal from the emergency list-selected contractor and request a proposal from the next contractor on the list when such rejection is in the best interests of the City.
- 18. THE CONTRACT:** The Contractor shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance documents specified in 1-7.2, "CONTRACT BONDS" and 5-4, "INSURANCE" within **3 Working Days** after receipt by the Contractor of a form of contract for execution unless an extension of time is granted to the Contractor in writing. Bonds shall be in amount of the Contract Price for the Work included in the Bid.

The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder. If the Contractor fails to enter into the contract as herein provided, the award may be annulled. An award may be made to the next contractor on the shortlist or in the case the emergency contractor's list is exhausted to any other responsive contractor on a sole-source basis who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.

- 19. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:** The Contractor shall examine carefully the Project Site, the Plans and Specifications, other materials as described in the Special Provisions, Section 3-9, "TECHNICAL STUDIES AND SUBSURFACE DATA", and the proposal forms. The signing of the Contract shall be conclusive evidence that the Contractor has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, and as to the requirements of the Contract Documents.
  
- 20. CITY STANDARD PROVISIONS.** This contract is subject to the following standard provisions. See The WHITEBOOK for details.
  - 20.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.
  - 20.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.
  - 20.3.** The City of San Diego Municipal Code §22.3004 for Pledge of Compliance.
  - 20.4.** The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.
  - 20.5.** Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.
  - 20.6.** The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).
  - 20.7.** The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.
  
- 21. DESIGN SUBMITTALS:** The City's review of the Design-Builder's Design Submittals shall not relieve the Design-Builder from its responsibilities under the Contract, or be deemed to be an acceptance or waiver by City of any deviation from, or of the Design-Builder's failure to comply with any provision or requirement of the Contract Documents, unless such deviation or failure has been identified as such in writing in the document submitted for acceptance by the Design-Builder and accepted by City. Where approval or acceptance by City is required, it is understood to be general approval only, and does not relieve the Design-Builder of responsibility for complying with all applicable laws and good professional practices as the Design-Builder shall be the Engineer of Record.

**AGREEMENT  
FOR  
EMERGENCY DESIGN AND CONSTRUCTION SERVICES  
BETWEEN  
THE CITY OF SAN DIEGO  
AND  
FLATIRON WEST, INC.**

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This Emergency Design and Construction Services Agreement (Agreement) is made and entered between THE CITY OF SAN DIEGO, herein called "City" and **FLATIRON WEST, INC.** herein called "Contractor", for the purpose of designing (when required) and performing emergency construction services for **Coast Blvd Sea Cave Emergency Stabilization Project**, Bid No. **K-20-1894-EMR-3**, in the amount of **\$3,500,000** at the direction of the City Engineer. The City and the Contractor are referred to herein as the "Parties."

**RECITALS**

- A. The City desires to construct the emergency project identified in Section 1, Description of Work.
- B. The City desires to contract with a single entity for Emergency Construction Services, as set forth in this agreement.
- C. The City had previously issued a Request for Qualifications (RFQ), via **RFQ K-18-1682-RFQ-3**, for on-call emergency construction services.
- D. In accordance with this RFQ, Contractors submitted Statements of Qualifications (SOQ) for these services from which the City established a pre-qualified list of the most highly qualified contractors to perform emergency construction services as directed by the City.
- E. In accordance with said RFQ, the Contractor submitted an SOQ and is prepared to enter into this agreement.
- F. The City has selected the Contractor from the City's list of on-call contractors to perform, either directly or with Subcontracts hereinafter defined, the design, engineering, and construction services set forth in this agreement and the Contract Documents.
- G. The Contractor is ready, willing, and able to perform the emergency design and construction services required as specified in the Scope of Work and Services section of this agreement and in accordance with the terms and conditions of this agreement and under the direction of the Engineer.

In consideration of the above recitals and the mutual covenants and conditions set forth herein, and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby set forth their mutual covenants and understandings as follows:



## **AGREEMENT**

- A. The above referenced recitals are true and correct and are incorporated into this agreement by this reference.
- B. Exhibits referenced in this agreement are incorporated into the Agreement by this reference.
- C. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.
- D. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
- E. This agreement incorporates the Standard Specifications for Public Works Construction (The 2018 GREENBOOK), including those amendments set forth in the City of San Diego Supplement (The 2018 WHITEBOOK). All changes, additions, or both are stated herein and all other provisions remain unchanged.
- F. The Contractor shall comply with City's Equal Opportunity Contracting Program Requirements set forth in the Contract Documents. See The WHITEBOOK Part 0.
- G. The Contractor, including Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, first floor, before the Agreement can be executed.
- H. The Contractor shall ensure that the Subcontractors whose subcontracts are greater than \$50,000 in value complete a Pledge of Compliance attesting under penalty of perjury that they complied with the requirements of this section. The Contractor shall include in each subcontract agreement, language which requires Subcontractors to abide by the provisions of City Municipal Code §22.3004. A sample provision is as follows:
  - 1. "Subcontractor acknowledges that it is familiar with the requirements of San Diego Municipal Code §22.3004 ("Contractor Standards"), and agrees to comply with requirements of that section. The Subcontractor further agrees to complete the Pledge of Compliance, incorporated herein by reference."
- I. The Contractor's attention is directed to the provisions of the State of California Labor Code §1776 (Stats. 1978, Ch. 1249). The Contractor shall be responsible for the compliance with these provisions by Subcontractors.
- J. This contract is effective as of the date the City issued the Contractor a written notice to proceed (NTP), or the date of the last signatory below, whichever occurred first.
- K. The Contractor shall complete the work to be performed under this agreement and shall achieve Acceptance within the allowed number of Working Days from the NTP as specified in the Notice

of Award, unless authorized otherwise by the Engineer. Time is of essence for the completion of the Work and the Project has critical milestones to be met as listed in the Notice of Award.

- L. During the final design process (if any), if the Contractor modifies the Project such that a revision of the environmental document is required, the Contractor shall be responsible for all work required for implementing a revision, including preparation of revised documentation and coordination with City staff. Work shall not proceed on the project until the environmental requirements are met to the satisfaction of the City. There shall be no additional time allowed in the contract for processing and approval of revised permit documents.
  
- M. Prior to NTP or as required by the City, the Contractor shall:
  - 1. File surety bonds with the City to be approved by the City in the amounts and for the purposes noted in the Notice Inviting Bids and
  - 2. Obtain the required insurance in accordance with 5-4, "INSURANCE" and any additional insurance specified in the Supplemental Special Provisions.

**IN WITNESS WHEREOF**, this Agreement is executed by the City of San Diego, acting by and through its Mayor or designee, pursuant to the emergency contract provisions of City Charter §94 authorizing such execution, and by the Contractor.

**THE CITY OF SAN DIEGO**

**APPROVED AS TO FORM**

By 

Mara W. Elliott, City Attorney  
By 

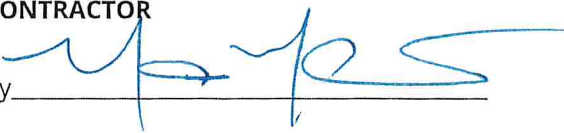
Print Name: Stephen Samara  
Principal Contract Specialist  
Public Works Contracts

Print Name: Cass Moquin  
Deputy City Attorney

Date: 9/30/2019

Date: 9/30/2019

**CONTRACTOR**

By 

Print Name: Mario Martinez

Title: Vice President

Date: September 16, 2019

City of San Diego License No.: 1992002921

State Contractor's License No. : 772589

**AGREEMENT (continued)**  
**PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND**

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**FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:**

Flatiron West, Inc., a corporation, as principal, and Liberty Mutual Insurance Company, a corporation authorized to do business in the State of California, as Surety, hereby obligate themselves, their successors and assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of Three Million Five Hundred Thousand Dollars and Zero Cents (\$3,500,000.00) for the faithful performance of the annexed contract, and in the sum of Three Million Five Hundred Thousand Dollars and Zero Cents (\$3,500,000.00) for the benefit of laborers and materialmen designated below.

**Conditions:**

If the Principal shall faithfully perform the annexed contract **Coast Blvd Sea Cave Emergency Stabilization Project**, Bid No. **K-20-1894-EMR-3**, San Diego, California then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Article 2. Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.



**AGREEMENT (continued)**  
**PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND**

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The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

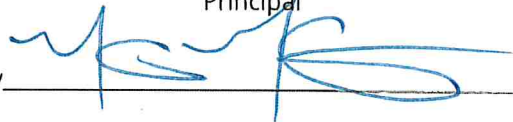
Dated September 12, 2019

Approved as to Form

Flatiron West, Inc.

Principal

By



Mario Martinez, Vice President

Printed Name of Person Signing for Principal

Mara W. Elliott, City Attorney

By

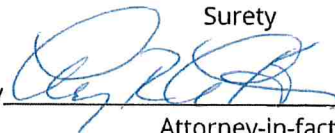
  
Deputy City Attorney

9/30/2019

Liberty Mutual Insurance Company

Surety

By



Attorney-in-fact **Mary R. McKee**

Approved:

By



Stephen Samara  
Principal Contract Specialist  
Public Works Contracts

175 Berkeley Street

Local Address of Surety

Boston, MS 02116

Local Address (City, State) of Surety

212-719-7750

Local Telephone No. of Surety

Premium \$ 22,750.00

Bond No. 015207606

## ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of San Diego)

On September 16, 2019 before me, Veronica Garcia, Notary Public  
(insert name and title of the officer)

personally appeared Mario Martinez,  
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature  (Seal)



**CORPORATE ACKNOWLEDGMENT**

Form 152

STATE OF NEW JERSEY  
COUNTY OF BERGEN

On this 12th day of September, 2019 before me personally came Mary R. McKee to me known, who, being by me duly sworn, did depose and say that she/he resides in Saddle Brook, New Jersey that she/he is the ATTORNEY IN FACT of the LIBERTY MUTUAL INSURANCE COMPANY the corporation described in and which executed the above instrument that she/he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

(SEAL)



**KRISTA A. BURKE**  
NOTARY PUBLIC, STATE OF NEW JERSEY  
MY COMMISSION EXPIRES  
**DECEMBER 07, 2022**



LIBERTY MUTUAL INSURANCE COMPANY  
FINANCIAL STATEMENT — DECEMBER 31, 2018

<b>Assets</b>		<b>Liabilities</b>	
Cash and Bank Deposits .....	\$464,341,712	Unearned Premiums .....	\$7,851,429,449
*Bonds — U.S Government .....	2,259,714,810	Reserve for Claims and Claims Expense .....	20,165,209,300
*Other Bonds .....	11,864,776,740	Funds Held Under Reinsurance Treaties .....	384,795,327
*Stocks .....	16,527,715,226	Reserve for Dividends to Policyholders .....	1,111,529
Real Estate .....	255,809,551	Additional Statutory Reserve .....	62,866,000
Agents' Balances or Uncollected Premiums .....	5,817,927,234	Reserve for Commissions, Taxes and	
Accrued Interest and Rents .....	108,139,840	Other Liabilities .....	3,999,822,802
Other Admitted Assets .....	11,532,139,744	<b>Total .....</b>	<b>\$32,465,234,407</b>
<b>Total Admitted Assets .....</b>	<b><u>\$48,830,564,857</u></b>	Special Surplus Funds .....	\$43,108,583
		Capital Stock .....	10,000,000
		Paid in Surplus .....	10,044,912,727
		Unassigned Surplus .....	6,267,309,139
		<b>Surplus to Policyholders .....</b>	<b>16,365,330,449</b>
		<b>Total Liabilities and Surplus .....</b>	<b><u>\$48,830,564,856</u></b>



\* Bonds are stated at amortized or investment value; Stocks at Association Market Values.  
The foregoing financial information is taken from Liberty Mutual Insurance Company's financial statement filed with the state of Massachusetts Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the foregoing is a true, and correct statement of the Assets and Liabilities of said Corporation, as of December 31, 2018, to the best of my knowledge and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Corporation at Seattle, Washington, this 22<sup>nd</sup> day of March, 2019.

*T. Mikolajewski*

\_\_\_\_\_  
Assistant Secretary





This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: 8200349-974450

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Sherryanne M. DePirro; Mary R. McKee; James Baldassare, Jr.; Krista A. Burke; Vincent C. Misco; Charo J. Rosemond; Lisa M. Scavetta; Maria L. Spadaccini; Nicholas F. Walsh; Elliott W. Wolfe

all of the city of Paramus state of NJ each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 24th day of January, 2019.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company
By: David M. Carey, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY ss

On this 24th day of January, 2019 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 12th day of September, 2019.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

STATE OF CALIFORNIA  
DEPARTMENT OF INSURANCE  
SAN FRANCISCO

AMENDED

Certificate of Authority

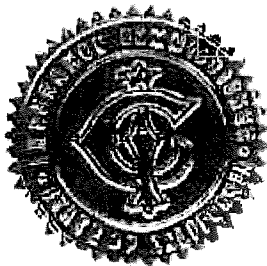
THIS IS TO CERTIFY, That, pursuant to the Insurance Code of the State of California,

LIBERTY MUTUAL INSURANCE COMPANY

of BOSTON, MASSACHUSETTS, organized under the laws of MASSACHUSETTS, subject to its Articles of Incorporation or other fundamental organizational documents, is hereby authorized to transact within this State, subject to all provisions of this Certificate, the following classes of insurance: FIRE, MARINE, SURETY, DISABILITY, PLATE GLASS, LIABILITY, WORKMEN'S COMPENSATION, COMMON CARRIER LIABILITY, BOILER AND MACHINERY, BURGLARY, CREDIT, SPRINKLER, TEAM AND VEHICLE, AUTOMOBILE, AIRCRAFT and MISCELLANEOUS as such classes are now or may hereafter be defined in the Insurance Laws of the State of California.

THIS CERTIFICATE is expressly conditioned upon the holder hereof now and hereafter being in full compliance with all, and not in violation of any, of the applicable laws and lawful requirements made under authority of the laws of the State of California as long as such laws or requirements are in effect and applicable, and as such laws and requirements now are, or may hereafter be changed or amended.

IN WITNESS WHEREOF, effective as of the ... 15TH day of ... NOVEMBER ... 1961, I have hereunto set my hand and caused my official seal to be affixed this 15TH day of ... NOVEMBER ... 1961.



F. BRITTON McDONNELL  
Insurance Commissioner

By

*John H. ...*  
Deputy

**EXHIBIT A**

**DRUG-FREE WORKPLACE CERTIFICATION**

## **CONTRACTOR CERTIFICATION**

---

### **DRUG-FREE WORKPLACE**

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 5-1.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.



**EXHIBIT B**

**AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION**

## CONTRACTOR CERTIFICATION

---

### **AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION**

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the Americans With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 5-1.2, "California Building Code, California Code of Regulations Title 24 and Americans with Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

**EXHIBIT C**

**CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE**

## CONTRACTOR CERTIFICATION

---

### CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 5-1.4, "Contractor Standards and Pledge of Compliance", of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors whose subcontracts are greater than \$50,000 in value has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3004.



**EXHIBIT D**

**EQUAL BENEFITS ORDINANCE CERTIFICATION**

## CONTRACTOR CERTIFICATION

---

### Equal Benefits Ordinance Certification

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance.

**EXHIBIT E**

**AFFIDAVIT OF DISPOSAL**

**AFFIDAVIT OF DISPOSAL**

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

**WHEREAS**, on the \_\_\_\_\_ DAY OF \_\_\_\_\_, \_\_\_\_\_, the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

**Coast Blvd Sea Cave Emergency Stabilization Project**

(Name of Project)

as particularly described in said contract and identified as Bid No. **K-20-1894-EMR-3**; SAP No. (WBS/IO/CC) **B-20040**; and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**NOW, THEREFORE**, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

and that they have been disposed of according to all applicable laws and regulations.

Dated this \_\_\_\_\_ DAY OF \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_ Contractor

by

**ATTEST:**

State of \_\_\_\_\_

County of \_\_\_\_\_

On this \_\_\_\_\_ DAY OF \_\_\_\_\_, 2\_\_\_\_\_, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared \_\_\_\_\_ known to me to be the \_\_\_\_\_ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State



**EXHIBIT F**

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER  
23UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23  
UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

State of California

County of San Diego

The bidder, being first duly sworn, deposes and says that he or she is authorized by the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

**EXHIBIT G**

**CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**

**CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.
- The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/REMEDIAL ACTION TAKEN
PLEASE SEE ATTACHMENT					

Contractor Name: Flatiron West, Inc.

Certified By Mario Martinez Title Vice President

  
 Name  
 Signature

Date September 16, 2019

**USE ADDITIONAL FORMS AS NECESSARY**



Date of Claim	Location	Description of Claim	Litigation Y/N	Status	Resolution/Remedial Action Taken
11/2010	Oakland, CA	Discrimination claim based on gender.	N	Closed	Settled
3/2014	San Francisco, CA	Discrimination claim based on race.	N	Closed	Settled
8/2014	San Francisco, CA	Discrimination claim based on sexual orientation.	N	Closed	Settled
1/2016	San Bernardino, CA	Discrimination claim based on gender.	N	Closed	Settled
2/2016	Seattle, WA	Discrimination claim based on age.	N	Closed	Withdrawn
5/2016	Brawley, CA	Discrimination claim based on race.	N	Closed	Settled
6/2016	Seattle, WA	Discrimination claim based on race.	N	Closed	Settled
2/2017	San Francisco, CA	Discrimination claim based on sexual orientation.	N	Closed	Settled
6/2017	Seattle, WA	Discrimination claim based on details unspecified.	N	Closed	Dismissed

**EXHIBIT H**

**MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM**

**MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM**

**BIDDER/PROPOSER INFORMATION**

Flatiron West, Inc.			
Legal Name		DBA	
16470 West Bernardo Drive	San Diego	CA	92127
Street Address	City	State	Zip
Mario Martinez, Vice President	760.916.9100	760.471.4860	
Contact Person, Title	Phone	Fax	

Provide the name, identity, and precise nature of the interest\* of all persons who are directly or indirectly involved\*\* in this proposed transaction (SDMC § 21.0103).

\* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction,
- the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and
- any philanthropic, scientific, artistic, or property interest in the transaction.

\*\* Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City, or
- directing or supervising the actions of persons engaged in the above activity.

Flatiron Constructors, Inc.	Parent Company
Name	Title/Position
Broomfield, CO	
City and State of Residence	Employer (if different than Bidder/Proposer)
100% Ownership	
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

**\* Use Additional Pages if Necessary \***

Under penalty of perjury under the laws of the State of California, I certify that I am responsible for the completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Mayor or Designee within five (5) business days if, at any time, I learn that any portion of this Mandatory Disclosure of Business Interests Form requires an updated response. Failure to timely provide the Mayor or Designee with written notice is grounds for Contract termination.

Mario Martinez, Vice President  September 16, 2019  
 Print Name, Title Signature Date

**Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Mandatory Disclosure of Business Interests Form is submitted**

**EXHIBIT I**

**FORMS**



## LIST OF SUBCONTRACTORS

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the GREENBOOK and Special Provisions Section 3-2, "SELF-PERFORMANCE", which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	DIR REGISTRATION NUMBER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB <sup>Ⓛ</sup>	WHERE CERTIFIED <sup>Ⓜ</sup>	CHECK IF JOINT VENTURE PARTNERSHIP
Name: <u>American Marine Corporation</u> Address: <u>1500 S. Barracuda St., Berth 270/271</u> City: <u>Los Angeles</u> State: <u>CA</u> Zip: <u>90731</u> Phone: <u>310.547.0919</u> Email: <u>wade@amarinecorp.com</u>	Constructor	1000373060	741383	Underwater Services	\$400,000	N/A		
Name: <u>Hayward Baker, Inc.</u> Address: <u>10303 Channel Road</u> City: <u>Lakeside</u> State: <u>CA</u> Zip: <u>92040</u> Phone: <u>619.956.0850</u> Email: <u>rdmallari@haywardbaker.com</u>	Constructors	1000006388	482246	Grouting	\$82,300	N/A		

<sup>Ⓛ</sup> As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

<sup>Ⓜ</sup> As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC		
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

**The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.**

## LIST OF SUBCONTRACTORS

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the GREENBOOK and Special Provisions Section 3-2, "SELF-PERFORMANCE", which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	DIR REGISTRATION NUMBER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB <sup>ⓐ</sup>	WHERE CERTIFIED <sup>ⓑ</sup>	CHECK IF JOINT VENTURE PARTNERSHIP
Name: <u>Alvarez and Shaw, Inc.</u> Address: <u>P.O. Box 1110</u> City: <u>Lakeside</u> State: <u>CA</u> Zip: <u>92040</u> Phone: <u>619.383.4102</u> Email: <u>rclaudio@alvarezandshaw.com</u>	Constructor	1000052129	986171	Paving	\$100,000	N/A		
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____								

<sup>ⓐ</sup> As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

<sup>ⓑ</sup> As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC		
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

**The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.**

**NAMED EQUIPMENT/MATERIAL SUPPLIER LIST**

NONE

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES <b>(MUST BE FILLED OUT)</b>	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB <sup>①</sup>	WHERE CERTIFIED <sup>②</sup>
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						

- ① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- |   |        |  |         |
|---|--------|--|---------|
| Certified Minority Business Enterprise        | MBE    | Certified Woman Business Enterprise            | WBE     |
| Certified Disadvantaged Business Enterprise   | DBE    | Certified Disabled Veteran Business Enterprise | DVBE    |
| Other Business Enterprise                     | OBE    | Certified Emerging Local Business Enterprise   | ELBE    |
| Certified Small Local Business Enterprise     | SLBE   | Small Disadvantaged Business                   | SDB     |
| Woman-Owned Small Business                    | WoSB   | HUBZone Business                               | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB |  |         |

- ② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:
- |  |        |  |          |
|--|--------|--|----------|
| City of San Diego                                    | CITY   | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission               | CPUC   |  |          |
| State of California's Department of General Services | CADoGS | City of Los Angeles                              | LA       |
| State of California                                  | CA     | U.S. Small Business Administration               | SBA      |

**The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.**

**SUBCONTRACTOR LISTING**

**(OTHER THAN FIRST TIER)**

Pursuant to California Senate Bill 96 and in accordance with the requirements of Labor Code sections 1771.1 and 1725.5, by submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the California Department of Industrial Relations (DIR). **The Bidder is to list below the name, address, license number, DIR registration number of any (known tiered subcontractor) - who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement pursuant to the contract. If none are known at this time, mark the table below with non-applicable (N/A).**

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	DIR REGISTRATION NUMBER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____	NONE			
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____				
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____				
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____				

**\*\* USE ADDITIONAL FORMS AS NECESSARY \*\***



**EQUAL OPPORTUNITY CONTRACTING (EOC)**  
1200 Third Avenue, Suite 200 • San Diego, CA  
92101 Phone: (619) 236-6000 • Fax: (619)  
236-5904

**WORK FORCE REPORT**

The objective of the *Equal Employment Opportunity Outreach Program*, San Diego Municipal Code Sections 22.3501 through 22.3517, is to ensure that contractors doing business with the City, or receiving funds from the City, do not engage in unlawful discriminatory employment practices prohibited by State and Federal law. Such employment practices include, but are not limited to unlawful discrimination in the following: employment, promotion or upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training, including apprenticeship. Contractors are required to provide a completed *Work Force Report (WFR)*.

**NO OTHER FORMS WILL BE ACCEPTED**  
**CONTRACTOR IDENTIFICATION**

Type of Contractor:  Construction  Vendor/Supplier  Financial Institution  Lessee/  
Lessor  Consultant  Grant Recipient  Insurance Company  Other

Name of Company: Flatiron West, Inc.

ADA/DBA: N/A

Address (Corporate Headquarters, where applicable): 16470 West Bernardo Drive City:

San Diego County: San Diego State: CA Zip: 92127

Telephone Number: 760.916.9100 Fax Number: 760.471.4860

Name of Company CEO: John A. DiCiurcio

Address(es), phone and fax number(s) of company facilities located in San Diego County (if different from above):

Address: \_\_\_\_\_ City:

\_\_\_\_\_ County: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_ Email: \_\_\_\_\_

Type of Business: Prime Contractor Type of License: Class The

Company has appointed: Jessica Knight As its

Equal Employment Opportunity Officer (EEOO). The EEOO has been given authority to establish, disseminate and enforce equal employment and affirmative action policies of this company. The EEOO may be contacted at:

Address: 16470 West Bernardo Drive, San Diego, CA 92127

Telephone Number: 760.916.9100 Fax Number: 760.471.4860 Email: jknight@flatironcorp.com

- One San Diego County (or Most Local County) Work Force - Mandatory  
 Branch Work Force \*  
 Managing Office Work Force

*Check the box above that applies to this WFR.*

*\*Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

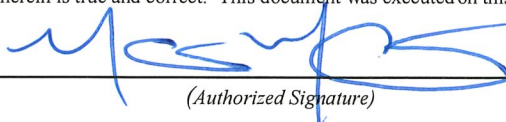
I, the undersigned representative of Flatiron West, Inc.

(Firm Name)

San Diego, CA hereby certify that information provided

(County) (State)

herein is true and correct. This document was executed on this 16th day of September, 2019

  
(Authorized Signature)

Mario Martinez  
(Print Authorized Signature Name)

**WORK FORCE REPORT – Page 2**

NAME OF FIRM: Flatiron West, Inc. DATE: 9/16/2019

OFFICE(S) or BRANCH(ES): San Diego COUNTY: San Diego

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- (1) Black or African-American
- (2) Hispanic or Latino
- (3) Asian
- (4) American Indian or Alaska Native
- (5) Native Hawaiian or Pacific Islander
- (6) White
- (7) Other race/ethnicity; not falling into other groups

Definitions of the race and ethnicity categories can be found on Page 4

ADMINISTRATION OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Management & Financial	2		2			1			1		26	2	3	1
Professional		1	3			1					11	5		2
A&E, Science, Computer														
Technical			3		2						5	1	1	
Sales														
Administrative Support		1		2		2				1	2	9		3
Services														
Crafts			28	1			1				13		4	
Operative Workers			10		1				1		47		6	
Transportation														
Laborers*		1	43	1	1						17	2	9	

\*Construction laborers and other field employees are not to be included on this page

Totals Each Column	2	3	89	4	4	4	1		2	1	121	19	23	6
--------------------	---	---	----	---	---	---	---	--	---	---	-----	----	----	---

Grand Total All Employees 279

Indicate by Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled											1			
----------	--	--	--	--	--	--	--	--	--	--	---	--	--	--

Non-Profit Organizations Only:

Board of Directors														
Volunteers														
Artists														

**WORK FORCE REPORT – Page 3**

NAME OF FIRM: Flatiron West, Inc. DATE: 9/16/2019

OFFICE(S) or BRANCH(ES): San Diego COUNTY: San Diego

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- (1) Black or African-American
- (2) Hispanic or Latino
- (3) Asian
- (4) American Indian or Alaska Native
- (5) Native Hawaiian or Pacific Islander
- (6) White
- (7) Other race/ethnicity; not falling into other groups

Definitions of the race and ethnicity categories can be found on Page 4

TRADE OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Brick, Block or Stone Masons														
Carpenters			21	1			1				16		6	
Carpet, Floor & Tile Installers Finishers														
Cement Masons, Concrete Finishers			10								1			
Construction Laborers		1	43	1	1						18	2	10	
Drywall Installers, Ceiling Tile Inst														
Electricians														
Elevator Installers														
First-Line Supervisors/Managers														
Glaziers														
Helpers; Construction Trade														
Millwrights														
Misc. Const. Equipment Operators			8		1				2		51		5	
Painters, Const. & Maintenance														
Pipelayers, Plumbers, Pipe & Steam Fitters														
Plasterers & Stucco Masons														
Roofers														
Security Guards & Surveillance Officers														
Sheet Metal Workers														
Structural Metal Fabricators & Fitters														
Welding, Soldering & Brazing Workers														
Workers, Extractive Crafts, Miners														

Totals Each Column	1	82	2	2		1		2		86	2	21		
--------------------	---	----	---	---	--	---	--	---	--	----	---	----	--	--

**Grand Total All Employees** 199

Indicate By Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled											1			
----------	--	--	--	--	--	--	--	--	--	--	---	--	--	--

**HISTORY**

The Work Force Report (WFR) is the document that allows the City of San Diego to analyze the work forces of all firms wishing to do business with the City. We are able to compare the firm's work force data to County Labor Force Availability (CLFA) data derived from the United States Census. CLFA data is a compilation of lists of occupations and includes the percentage of each ethnicity we track (American Indian or Alaska Native, Asian, Black or African-American, Native Hawaiian or Pacific Islander, White, and Other) for each occupation. Currently, our CLFA data is taken from the 2010 Census. In order to compare one firm to another, it is important that the data we receive from the consultant firm is accurate and organized in the manner that allows for this fair comparison.

**WORK FORCE & BRANCH WORK FORCE REPORTS**

When submitting a WFR, especially if the WFR is for a specific project or activity, we would like to have information about the firm's work force that is actually participating in the project or activity. That is, if the project is in San Diego and the work force is from San Diego, we want a San Diego County Work Force Report<sup>1</sup>. By the same token, if the project is in San Diego, but the work force is from another county, such as Orange or Riverside County, we want a Work Force Report from that county<sup>2</sup>. If participation in a San Diego project is by work forces from San Diego County and, for example, from Los Angeles County and from Sacramento County, we ask for separate Work Force Reports representing your firm from each of the three counties.

**MANAGING OFFICE WORK FORCE**

Equal Opportunity Contracting may occasionally ask for a Managing Office Work Force (MOWF) Report. This may occur in an instance where the firm involved is a large national or international firm but the San Diego or other local work force is very small. In this case, we may ask for both a local and a MOWF Report<sup>1, 3</sup>. In another case, when work is done

only by the Managing Office, only the MOWF Report may be necessary.<sup>3</sup>

**TYPES OF WORK FORCE REPORTS:**

Please note, throughout the preceding text of this page, the superscript numbers one <sup>1</sup>, two <sup>2</sup> & three <sup>3</sup>. These numbers coincide with the types of work force report required in the example. See below:

- <sup>1</sup> One San Diego County (or Most Local County) Work Force – Mandatory in most cases
- <sup>2</sup> Branch Work Force \*
- <sup>3</sup> Managing Office Work Force

*\*Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.*

**RACE/ETHNICITY CATEGORIES**

**American Indian or Alaska Native** – A person having origins in any of the peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.

**Asian** – A person having origins in any of the peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

**Black or African American** – A person having origins in any of the Black racial groups of Africa.

**Native Hawaiian or Pacific Islander** – A person having origins in any of the peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

**White** – A person having origins in any of the peoples of Europe, the Middle East, or North Africa.

**Hispanic or Latino** – A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin.

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## Exhibit A: Work Force Report Job Categories – Administration

Refer to this table when completing your firm's Work Force Report form(s).

### Management & Financial

Advertising, Marketing, Promotions, Public Relations, and Sales Managers  
Business Operations Specialists  
Financial Specialists  
Operations Specialties Managers  
Other Management Occupations  
Top Executives

### Professional

Art and Design Workers  
Counselors, Social Workers, and Other Community and Social Service Specialists  
Entertainers and Performers, Sports and Related Workers  
Health Diagnosing and Treating Practitioners  
Lawyers, Judges, and Related Workers  
Librarians, Curators, and Archivists  
Life Scientists  
Media and Communication Workers  
Other Teachers and Instructors  
Postsecondary Teachers  
Primary, Secondary, and Special Education School Teachers  
Religious Workers  
Social Scientists and Related Workers

### Architecture & Engineering, Science, Computer

Architects, Surveyors, and Cartographers  
Computer Specialists  
Engineers  
Mathematical Science Occupations  
Physical Scientists

### Technical

Drafters, Engineering, and Mapping Technicians  
Health Technologists and Technicians  
Life, Physical, and Social Science Technicians  
Media and Communication Equipment Workers

### Sales

Other Sales and Related Workers  
Retail Sales Workers  
Sales Representatives, Services  
Sales Representatives, Wholesale and Manufacturing  
Supervisors, Sales Workers

### Administrative Support

Financial Clerks  
Information and Record Clerks  
Legal Support Workers

Material Recording, Scheduling, Dispatching, and Distributing Workers  
Other Education, Training, and Library Occupations  
Other Office and Administrative Support Workers  
Secretaries and Administrative Assistants  
Supervisors, Office and Administrative Support Workers

### Services

Building Cleaning and Pest Control Workers  
Cooks and Food Preparation Workers  
Entertainment Attendants and Related Workers  
Fire Fighting and Prevention Workers  
First-Line Supervisors/Managers, Protective Service Workers  
Food and Beverage Serving Workers  
Funeral Service Workers  
Law Enforcement Workers  
Nursing, Psychiatric, and Home Health Aides  
Occupational and Physical Therapist Assistants and Aides  
Other Food Preparation and Serving Related Workers  
Other Healthcare Support Occupations  
Other Personal Care and Service Workers  
Other Protective Service Workers  
Personal Appearance Workers  
Supervisors, Food Preparation and Serving Workers  
Supervisors, Personal Care and Service Workers  
Transportation, Tourism, and Lodging Attendants

### Crafts

Construction Trades Workers  
Electrical and Electronic Equipment Mechanics, Installers, and Repairers  
Extraction Workers  
Material Moving Workers  
Other Construction and Related Workers  
Other Installation, Maintenance, and Repair Occupations  
Plant and System Operators  
Supervisors of Installation, Maintenance, and Repair Workers  
Supervisors, Construction and Extraction Workers  
Vehicle and Mobile Equipment Mechanics,



Installers, and Repairers  
Woodworkers

**Operative Workers**

Assemblers and Fabricators  
Communications Equipment Operators  
Food Processing Workers  
Metal Workers and Plastic Workers  
Motor Vehicle Operators  
Other Production Occupations  
Printing Workers  
Supervisors, Production Workers  
Textile, Apparel, and Furnishings Workers

**Transportation**

Air Transportation Workers  
Other Transportation Workers  
Rail Transportation Workers  
Supervisors, Transportation and Material  
Moving Workers  
Water Transportation Workers

**Laborers**

Agricultural Workers  
Animal Care and Service Workers  
Fishing and Hunting Workers  
Forest, Conservation, and Logging Workers  
Grounds Maintenance Workers  
Helpers, Construction Trades  
Supervisors, Building and Grounds Cleaning  
and Maintenance Workers  
Supervisors, Farming, Fishing, and Forestry  
Workers

**Exhibit B: Work Force Report Job Categories-Trade**

**Brick, Block or Stone Masons**

Brickmasons and Blockmasons  
Stonemasons

**Carpenters**

**Carpet, floor and Tile Installers and Finishers**

Carpet Installers  
Floor Layers, except Carpet, Wood and Hard  
Tiles  
Floor Sanders and Finishers  
Tile and Marble Setters

**Cement Masons, Concrete Finishers**

Cement Masons and Concrete Finishers  
Terrazzo Workers and Finishers

**Construction Laborers**

**Drywall Installers, Ceiling Tile Inst**

Drywall and Ceiling Tile Installers  
Tapers

**Electricians**

**Elevator Installers and Repairers First-**

**Line Supervisors/Managers**

First-line Supervisors/Managers of  
Construction Trades and Extraction Workers

**Glaziers**

**Helpers, Construction Trade**

Brickmasons, Blockmasons, and Tile and  
Marble Setters  
Carpenters  
Electricians  
Painters, Paperhangers, Plasterers and Stucco  
Pipelayers, Plumbers, Pipefitters and  
Steamfitters  
Roofers  
All other Construction Trades

**Millwrights**

Heating, Air Conditioning and Refrigeration  
Mechanics and Installers  
Mechanical Door Repairers  
Control and Valve Installers and Repairers  
Other Installation, Maintenance and Repair  
Occupations

**Misc. Const. Equipment Operators**

Paving, Surfacing and Tamping Equipment  
Operators  
Pile-Driver Operators  
Operating Engineers and Other Construction  
Equipment Operators

**Painters, Const. Maintenance**

Painters, Construction and Maintenance  
Paperhangers

**Pipelayers and Plumbers**

Pipelayers  
Plumbers, Pipefitters and Steamfitters

**Plasterers and Stucco Masons****Roofers****Security Guards & Surveillance Officers****Sheet Metal Workers****Structural Iron and Steel Workers Welding,****Soldering and Brazing Workers**

Welders, Cutter, Solderers and Brazers  
Welding, Soldering and Brazing Machine  
Setter, Operators and Tenders

**Workers, Extractive Crafts, Miners**

**EXHIBIT J**

**SUPPLEMENTARY SPECIAL PROVISIONS**

## SUPPLEMENTARY SPECIAL PROVISIONS

The following Supplementary Special Provisions (SSP) modifies the following documents:

1. The **2018 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2018 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
  - a) General Provisions (A) for all Construction Contracts.

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### SECTION 1 – GENERAL, TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

**1-2 TERMS AND DEFINITIONS.** To the "WHITEBOOK", items 43, 56, 69, and 102, DELETE in its entirety and SUBSTITUTE with the following:

43. **Field Order** - A Field Order is a written agreement by the Engineer to compensate you for Work items in accordance with 2-8, "EXTRA WORK" or 2-9, "CHANGED CONDITIONS". A Field Order does not change the Contract Price, Contract Time, or the scope intent of the Contract.
56. **Notice of Completion (NOC)** - A document recorded with the County of San Diego to signify that the Contract Work has been completed and accepted by the City.
69. **Punchlist** - A list of items of Work or corrections generated after a Walk-through that is conducted when you consider that the Work and Services are complete, and as verified by the Owner. The Punchlist may be completed in phases if defined in the Contract.
102. **Walk-through** - The procedure the City uses to evaluate the status of the Project or the phase of the Project and to generate a Punchlist prior to Acceptance.

To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are 8:30 AM to 3:30 PM.

To the "WHITEBOOK", ADD the following:

108. **Substantial Completion** – When all Contract Work is deemed complete by the Contractor in writing, and as verified by the Owner. Substantial Completion may be completed in phases if defined in the Contract.

109. **Acceptance of Work** – When all of the Contract work is deemed officially complete, including all Punchlist items, by the Owner.
110. **Occupancy** – When the Owner deems a building is ready for use, the Owner will issue a certificate of Occupancy in writing.

## **SECTION 2 - SCOPE OF THE WORK**

**2-8 EXTRA WORK.** To the “WHITEBOOK”, ADD the following:

2. Compensation for “Time-and-Material” emergency Contracts.
  - a) You will be compensated for staff charges directly associated with the project.
  - b) Any invoiced off site work shall include a summary of work.
  - c) Mark up for off site work shall be the same as on site work.

## **SECTION 3 – CONTROL OF THE WORK**

**3-2 SELF-PERFORMANCE.** To the “GREENBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

1. You shall perform, with your own organization, Contract Work amounting to at least 30% of the Contract Price.

**3-9 TECHNICAL STUDIES AND SUBSURFACE DATA.** To the “WHITEBOOK”, ADD the following:

5. In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests at the Work Site:
  - a) Coastal Erosion Assessment and Cave Solution Feasibility Analysis Coast Boulevard and Cook’s Crack Sea Cave by Tetra Tech
6. The report listed above is available for review at the following link:  
<https://filecloud.sandiego.gov/url/coastblseacavestblz>

**3-13.1 Completion.** To the “GREENBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

1. You shall submit a written assertion that the Work has been completed and is ready for Owner Acceptance. If, in the Engineer's judgment, the Work has been completed in accordance with the Contract Documents, the Engineer will set forth in writing the date the Work was completed. This will be the date that you are relieved from responsibility to protect and maintain the Work and to which liquidated damages will be computed.



**3-13.1.1 Requirements Before Requesting a Walk-through.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**3-13.1.1 Requirements Before Requesting Substantial Completion.**

1. The following items are required prior to requesting a Substantial Completion:
  - a) Remove temporary facilities from the Site.
  - b) Thoroughly cleaning the Site and removing all mark outs and construction staking.
  - c) Provide completed and signed Red-lines in accordance with 3-7.3 "Redlines and Record Documents".
  - d) Provide all material and equipment maintenance and operation instructions and/or manuals.
  - e) Provide all tools which are permanent parts of the equipment installed in the Project.
  - f) Provide and properly identify all keys for construction and all keys for permanent Work.
  - g) Provide all final Special Inspection reports required by the applicable building Code.
  - h) Provide all items specified to be supplied as extra stock. Wrap, seal, or place in a container all items as necessary to allow for storage by the City for future use. Verify the specified quantities.
  - i) Ensure that all specified EOCP and certified wage rate documentations covering the Contract Time have been submitted.
  - j) Provide the spare parts for the proposed irrigation system as specified in the Special Provisions.
  - k) If the Work includes sewer and storm drain installations, the inspection shall include televising in accordance with 306-18, "VIDEO INSPECTION".
  - l) If the Work includes a Plant Establishment Period, Work in accordance with 801-6, "MAINTENANCE AND PLANT ESTABLISHMENT" shall be completed prior to requesting Substantial Completion, unless approved otherwise by the Owner.
  - m) Notify the Engineer to arrange a final inspection of permanent BMPs installed.

**3-13.1.2 Walk-through and Punchlist Procedure.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall notify the Engineer 15 Working Days in advance of date of anticipated Substantial Completion to allow time for Engineer to schedule a Walk-through. After you complete the requirements in 3-13.1.1, "Requirements Before Requesting Substantial Completion" and when you consider that the Work is Substantially Complete, you will notify the Engineer in writing that the Project

is Substantially Complete. The Engineer will review your request and determine if the Project is ready for a Walk-through, by verifying whether you have completed all items as required by 3-13.1.1, "Requirements Before Requesting Substantial Completion". Within 7 Working Days, the City will either reject your request of a Walk-through in writing or schedule a Walk-through inspection. The Engineer shall facilitate the Walk-through.

2. The following documents shall be provided at the time of your Walk-through request: As-Built markup, Plans, specifications, technical data such as submittals and equipment manuals, draft final payment, warranties, material certifications, bonds, guarantees, maintenance service agreements, and maintenance and operating manuals.
3. Written warranties, except manufacturer's standard printed warranties, shall be on a letterhead addressed to you. Warranties shall be submitted in the format described in this section, modified as approved by the City, to suit the conditions pertaining to the warranty. Lack of submitting these items will delay start of Walk-through.
4. The Engineer will provide you with the Punchlist within 15 Working Days after the date of the Walk-through. The City shall not provide a preliminary Punchlist.
5. If the Engineer finds that the Project is not Substantially Complete as defined herein, the Engineer will terminate the Walk-through and notify you in writing.
6. If, at any time during the Engineer's evaluation of the corrective Work required by the Punchlist, the Engineer discovers that additional corrective Work is required, the Engineer may include that corrective Work in the Punchlist.
7. You shall remain solely responsible for the Project Site until the Project is completely operational, all Punchlist items have been corrected, and all operation and maintenance manuals have been accepted by the City.
8. The Engineer shall meet with you until all Punchlist items are corrected. You shall complete the Punchlist within 30 Working Days, and Working Days will continue to be counted until Acceptance of the Project.

**3-13.2 Acceptance.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall provide the completed, signed, and stamped DS-563 to the Engineer prior to Acceptance.
2. You shall deliver the final As-builts and final billing prior to Acceptance.
3. You shall assemble and deliver to the Engineer a Final Summary Report and Affidavit of Disposal prior to Acceptance.
4. Acceptance shall occur after all of the requirements contained in the Contract Documents have been fulfilled. If, in the Engineer's judgment, you have fully performed the Contract, the Engineer will recommend to the City Engineer that your performance of the Contract be accepted. You shall receive notification of Acceptance in writing from the Owner and counting of working days shall cease and Warranty begins.

5. Retention can be released 35 Calendar Days after NOC. Submit your request for retention to the Resident Engineer and they will mail to you a "Release of Claims" form which shall be completed and returned before the retention will be released.

**3-13.3**

**Warranty.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall warranty and repair all defective materials and workmanship for a period of 1 year. This call back warranty period shall start on the date the Work was accepted by the City unless the City has Beneficial Use or takes Occupancy of the project earlier (excluding water, sewer, and storm drain projects).
2. You shall warranty the Work free from all latent defects for 10 years and patent defects for a period of 4 years.
3. The warranty period for specific items covered under manufacturers' or suppliers' warranties shall commence on the date they are placed into service at the direction of the Engineer in writing.
4. All express warranties from Subcontractors, manufacturers', or Suppliers', of any tier, for the materials furnished and Work performed shall be assigned, in writing, to the City, and shall be delivered to the Engineer prior to the Acceptance of your performance of the Contract.
5. Replace or repair defective materials and workmanship in a manner satisfactory to the Engineer after notice to do so from the Engineer and within the time specified in the notice. If you fail to make such replacements or repairs within the time specified in the notice, the City may perform the replacement or repairs at your expense. If you fail to reimburse the City for the actual costs, your Surety shall be liable for the cost
6. Items that shall be warranted free from defective workmanship and materials for a period longer than 1 year are as follows:

<b>Specified Item</b>	<b>Minimum Warranty Period</b>
Detectable Warning Tile Construction	3 Years of Manufacturer's Warranty
All Work Under SECTION 500 - PIPELINE REHABILITATION	3 Years
Fiber Optic Interconnect Cables	2 Years
Luminaires*	10 Years of Manufacturer's Warranty
LED Signal Modules	3 Years of Manufacturer's Warranty
Field Devices Associated with 700-6.3, "Adaptive Control Note"	See 700-6.3.9, "Warranty"

\* Provide documentation verifying that the induction luminaire models being offered for the Project are covered by the 10 year warranty.

7. You shall provide the City and property owner a copy of the manufacturer's warranty for private sewer pumps, including the alarm panel and all other accessories.
  - a) You shall involve the manufacturer in the installation and startup as needed to secure any extended warranty required.
  - b) Nothing in here is intended to limit any manufacturer's warranty which provides the City with greater warranty rights than set forth in this section or the Contract Documents.
  - c) The warranty shall include all components. The form of the warranty shall be approved by the Engineer in accordance with 3-13.3.2, "Warranty Format Requirements".
8. If, during the warranty period, any item of the Work is found to be Defective Work, you shall correct it promptly after receipt of written notice from the City to do so. The warranty period shall be extended with respect to portions of the Work corrected as part of the warranty requirements.

#### **SECTION 4 - CONTROL OF MATERIALS**

**4-3.6 Preapproved Materials.** To the "WHITEBOOK", ADD the following:

3. You shall submit in writing a list of all products to be incorporated in the Work that are on the AML.

**4-6 TRADE NAMES.** To the "WHITEBOOK", ADD the following:

11. You shall submit your list of proposed substitutions for an "equal" item on the City's Product Submittal Form available at:

<http://www.sandiego.gov/publicworks/edocref/index.shtml>

#### **SECTION 5 – LEGAL RELATIONS AND RESPONSIBILITIES**

**5-4 INSURANCE.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

**5-4 INSURANCE.**

1. The insurance provisions herein shall not be construed to limit your indemnity obligations contained in the Contract.

**5-4.1 Policies and Procedures.**

1. You shall procure the insurance described below, at its sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.
2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.

3. You shall maintain this insurance for the duration of this Contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this Contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this Contract.
4. The payment for insurance shall be included in the Contract Price as bid by you. Except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any Work under this Contract until you have provided and the City has approved all required insurance.
5. Policies of insurance shall provide that the City is entitled to 30 Days (10 Days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

**5-4.2 Types of Insurance.**

**5-4.2.1 Commercial General Liability Insurance.**

1. Commercial General Liability Insurance shall be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.
2. The policy shall cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).
3. There shall be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You shall maintain the same or equivalent insurance for at least 10 years following completion of the Work.
4. All costs of defense shall be outside the policy limits. Policy coverage shall be in liability limits of not less than the following:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
Other than Products/Completed Operations	\$2,000,000
Products/Completed Operations Aggregate Limit	\$2,000,000
Personal Injury Limit	\$1,000,000
Each Occurrence	\$1,000,000



**5-4.2.2 Commercial Automobile Liability Insurance.**

1. You shall provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles (“Any Auto”).
2. All costs of defense shall be outside the limits of the policy.

**5-4.3 Rating Requirements.** Except for the State Compensation Insurance Fund, all insurance required by this Contract as described herein shall be carried only by responsible insurance companies with a rating of, or equivalent to, at least “A-, VI” by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

**5-4.3.1 Non-Admitted Carriers.** The City will accept insurance provided by non-admitted, “surplus lines” carriers only if the carrier is authorized to do business in the State and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers shall be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

**5-4.4 Evidence of Insurance.** Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document shall be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

**5-4.5 Policy Endorsements.**

**5-4.5.1 Commercial General Liability Insurance.**

**5-4.5.1.1 Additional Insured.**

1. You shall provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
2. To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
3. The additional insured coverage for projects for which the Engineer’s Estimate is \$1,000,000 or more shall include liability arising out of:
  - a) Ongoing operations performed by you or on your behalf,
  - b) your products,

- c) your Work, e.g., your completed operations performed by you or on your behalf, or
  - d) premises owned, leased, controlled, or used by you.
4. The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 shall include liability arising out of:
- a) Ongoing operations performed by you or on your behalf,
  - b) your products, or
  - c) premises owned, leased, controlled, or used by you.

**5-4.5.1.2 Primary and Non-Contributory Coverage.** The policy shall be endorsed to provide that the coverage with respect to operations, including the completed operations, if appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it shall provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

**5-4.5.1.3 Project General Aggregate Limit.** The policy or policies shall be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work shall reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit shall be in addition to the aggregate limit provided for the products-completed operations hazard.

**5-4.5.2 Commercial Automobile Liability Insurance.**

**5-4.5.2.1 Additional Insured.** Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

**5-4.6 Deductibles and Self-Insured Retentions.** You shall pay for all deductibles and self-insured retentions. You shall disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

**5-4.7 Reservation of Rights.** The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this Contract.

**5-4.8 Notice of Changes to Insurance.** You shall notify the City 30 Days prior to any material change to the policies of insurance provided under this Contract.

**5-4.9 Excess Insurance.** Policies providing excess coverage shall follow the form of the primary policy or policies e.g., all endorsements.

**5-4.10 Architects and Engineers Professional Insurance (Errors and Omissions Insurance).**

1. For Contracts with required engineering services (e.g., Design-Build, preparation of engineered Traffic Control Plans (TCP), and etc.) by you, you shall keep or require all of your employees or Subcontractors, who provide professional engineering services under this contract, Professional Liability coverage with a limit of **\$1,000,000** per claim and **\$2,000,000** annual aggregate in full force and effect.
2. You shall ensure the following:
  - a) The policy retroactive date is on or before the date of commencement of the Project.
  - b) The policy will be maintained in force for a period of 3 years after completion of the Project or termination of this Contract, whichever occurs last. You agree that for the time period specified above, there will be no changes or endorsements to the policy that affect the specified coverage.
3. If professional engineering services are to be provided solely by the Subcontractor, you shall:
  - a) Certify this to the City in writing and
  - b) Agree in writing to require the Subcontractor to procure Professional Liability coverage in accordance with the requirements set forth above.

**5-4.11 Workers' Compensation Insurance and Employers Liability Insurance.**

1. In accordance with the provisions of §3700 of the California Labor Code, you shall provide at your expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.
2. Limits for this insurance shall be not less than the following:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
Bodily Injury by Accident	\$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 each employee
Bodily Injury by Disease	\$1,000,000 policy limit

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you shall comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

**5-4.11.1. Waiver of Subrogation.** The policy or policies shall be endorsed to provide that the insurer will waive all rights of subrogation against the City and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from Work performed by the Named Insured for the City.

**5-4.11.2 Workers' Compensation Insurance for Work In, Over, or Alongside Navigable Waters.** In addition to the Workers' Compensation Insurance required under the General Conditions of this contract, the you shall provide additional insurance coverage for claims brought under the Longshore and Harbor Workers' Compensation Act, the Jones Act, general maritime law, and any other federal or state laws, resulting from the your Work in, over, or alongside navigable waters.

**5-10.2.1 Public Notice by Contractor.** To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

3. Furnish and distribute public notices in the form of door hangers using the City's format to all occupants and/or property owners along streets:
  - a) Where Work is to be performed at least Working 5 Working Days before starting construction or survey activities or impacting the community as approved by the Resident Engineer.
  - b) Within 5 Working Days of the completion of your construction activities where Work was performed, you shall distribute public notices in the form of door hangers, which outlines the anticipated dates of Asphalt Resurfacing or Slurry Seal.
  - c) 72 hours in advance of the scheduled resurfacing.

**5-13 ELECTRONIC COMMUNICATION.** To the "WHITEBOOK", ADD the following:

2. Virtual Project Manager shall be used on this Contract. For more information, refer to the VPM training videos at the location below:

<https://www.sandiego.gov/publicworks/edocref>

## SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK

**6-1.1 Construction Schedule.** To the “WHITEBOOK”, item 1, subsection “s”, DELETE in its entirety and SUBSTITUTE with the following:

- s) Submit an updated cash flow forecast with every pay request (for each Project ID or WBS number provided in the Contract) showing periodic and cumulative construction billing amounts for the duration of the Contract Time. If there has been any Extra Work since the last update, include only the approved amounts.
  - b) Refer to the Sample City Invoice materials in **Exhibit P – Sample City Invoice with Cash Flow Forecast** and use the format shown.
  - c) See also the “Cash Flow Forecast Example” at the location below:  
<https://www.sandiego.gov/publicworks/edocref>

**6-1.5.2 Excusable Non-Compensable Delays.** To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

**6-1.5.2 Excusable Non-Compensable and Concurrent Delays.**

- 1. The City shall only issue an extension of time for Excusable Delays that meet the requirements of 6-4.2, “Extensions of Time” for the following circumstances:
  - a) Delays resulting from Force Majeure.
  - b) Delays caused by weather.
  - c) Delays caused by changes to County, State, or Federal law.
- 2. When a non-excusable delay is concurrent with an Excusable Delay, you shall not be entitled to an extension of Contract Time for the period the non-excusable delay is concurrent with the Excusable Delay.
- 3. When an Excusable Non-Compensable Delay is concurrent with an Excusable Compensable Delay, you shall be entitled to an extension of Contract Time, but shall not be entitled to compensation for the period the Excusable Non-Compensable Delay is concurrent with the Excusable Compensable Delay.

**6-4.2 Extensions of Time.** To the “WHITEBOOK”, DELETE in its entirety and SUBSTITUTE with the following:

- 1. The Contract Time shall not be modified except by Change Order.
- 2. You shall notify the City in writing within **1 Working Day** after the occurrence and discovery of an event that impacts the Project Schedule.
  - a) If you believe this event requires a Change Order, you shall submit a **written Change Order request with a report to** the City that



explains the request for Change Order within **5 Working Days**. The Change Order request must include supporting data, a general description of the discovery, the basis for extension, and the estimated length of extension. The City may grant an extension of time, in writing, for the Change Order request if you require more time to gather and analyze data.

3. The Engineer shall not grant an extension of Contract Time in accordance with 6-1.5, "Excusable Delays" unless you demonstrate, through an analysis of the critical path, the following:
  - a) The event causing the delay impacted the activities along the Project's critical path.
  - b) The increases in the time to perform all or part of the Project beyond the Contract Time arose from unforeseeable causes beyond your control and without your fault or negligence and that all project float has been used.
4. Any modifications to the Contract Time will be incorporated into the weekly document that the Engineer issues that stipulates the Contract Time. If you do not agree with this document, submit to the Engineer for review a written protest supporting your objections to the document within **30 Calendar Days** after receipt of the statement. Your failure to file a timely protest shall constitute your acceptance of the Engineer's weekly document.
  - a) Your protest will be considered a claim for time extension and shall be subject to 2-10.1, "Claims".

**ADD:**

**6-6.1.1 Environmental Document.**

1. The City of San Diego has prepared a **Notice of Exemption** for **Coast Blvd Sea Cave Emergency Stabilization Project, Project No. B-20040.02.06**, as referenced in the Contract Appendix. You shall comply with all requirements of the **Notice of Exemption** as set forth in **Exhibit K**.
2. Compliance with the City's environmental document shall be included in the Contract Price, unless separate bid items have been provided.

**6-6.2.1 Archaeological and Native American Monitoring Program.** To the "WHITEBOOK", ADD the following:

4. You shall retain a qualified archaeologist and Native American Monitor for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the archaeologist and Native American monitor. Notify the Engineer before noon of the Working Day before monitoring is required. See 3-5, "INSPECTION" for details.

**6-6.2.2 Paleontological Monitoring Program.** To the "WHITEBOOK", ADD the following:

3. You shall retain a qualified paleontologist for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the paleontologist monitor. Notify the Engineer before noon of the Working Day before monitoring is required. See 3-5, "INSPECTION" for details.

**6-6.4 Written Notice and Report.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. Your failure to notify the Resident Engineer within **1 Working Day** OR provide a Change Order request within **5 Working Days** after the event, in accordance with 6-4.2, "Extensions of Time", will be considered grounds for refusal by the City to consider such request if your failure to notify prejudices the City in responding to the event.

## SECTION 7 – MEASUREMENT AND PAYMENT

**7-3.9 Field Orders.** To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. If the cumulative total of Field Order items of Work does not exceed the "Field Orders" Bid Item, the City shall pay those Field Orders as shown below:

**TABLE 7-3.9**

**FIELD ORDER LIMITS**

<b>Contract Price</b>	<b>Maximum Field Order Work Amount</b>
Less than \$100,001	\$2,500
\$100,001 to \$1,000,000	\$5,000
\$1,000,001 to \$5,000,000	\$10,000
\$5,000,001 to \$15,000,000	\$20,000
\$15,000,001 to \$30,000,000	\$40,000
Greater than \$30,000,000	\$50,000

2. Field Order items of Work for contracts greater than \$15,000,000 will require additional approvals from the City prior to its approval by the Resident Engineer.
3. The City will issue a Field Order only after the City's acceptance of the cost of the field order amount.
4. Field Orders shall not be used to add scope or to include extensions of time related to changes in work.
5. If in the event there is a change related to the critical path on the project which necessitates an extension of time and the change amount is within the Field Order limits shown on Table 7-3.9, then a Field Order can be issued to compensate you for the approved costs. Any extensions of time associated

with the change shall be included in a subsequent Change Order and no additional compensation shall be granted as part of the change order for the extension of time.

6. The unused portions of Field Orders Bid item shall revert to the City upon Acceptance.

### **SECTION 203 – BITUMINOUS MATERIALS**

**203-6.3.1 General.** To the “WHITEBOOK”, ADD the following:

3. Asphalt concrete for Job Mix Formula (JMF) and Mix Designs shall be Type III and shall not exceed 15% RAP.

### **SECTION 301 – SUBGRADE PREPARATION, TREATED MATERIALS, AND PLACEMENT OF BASE MATERIALS**

**301-1.6 Preparatory Repair Work.** To the “WHITEBOOK”, item 1, DELETE in its entirety and SUBSTITUTE with the following:

1. Prior to the placement of any asphalt concrete or application of slurry, you shall complete all necessary preparation and repair Work and shall obtain approval by the Resident Engineer.

ADD the following:

13. Asphalt concrete shall be Type III and shall not exceed 15% RAP in accordance with 203-6.3.1, “General”.

### **SECTION 302 – ROADWAY SURFACING**

**302-4.5 Scheduling, Public Convenience and Traffic Control.** To the “GREENBOOK”, paragraphs (1) and (2), DELETE in its entirety and SUBSTITUTE with the following:

1. In addition to the requirements of Part 6, you shall comply with the following:
  - a) At least 5 Working Days prior to commencing the Work, you shall submit your proposed Schedule to the Engineer for approval.
  - b) Based upon the approved schedule, you shall notify residents and businesses of the Work and post temporary “No Parking” signs 72 hours in advance.
  - c) Requests for changes in the approved Schedule shall be submitted to the Engineer for approval at least 3 Working Days before the street is scheduled to be sealed.

**302-4.12.1 Application.** To the “WHITEBOOK”, item 1, ADD the following:

- c) RPMS shall only be placed when ambient temperature is 50° F or higher.

## SECTION 402 – UTILITIES

- 402-2**      **PROTECTION.** To the “WHITEBOOK”, item 2, ADD the following:
- g)      Refer to **Exhibit O - Advanced Metering Infrastructure (AMI) Device Protection** for more information on the protection of AMI devices.

## SECTION 601- TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE WORK ZONES

- 601-2.1.4**      **Traffic Control for Resurfacing and Slurry Sealing.** To the “WHITEBOOK”, item 3, subsection “d”, DELETE in its entirety and SUBSTITUTE with the following:

- d)      Place “NO PARKING - TOW-AWAY ZONE” signs 72 hours in advance of the scheduled slurry sealing. Reschedule street block segments which are not completed by the last posted Working Day. If a Work delay of 48 hours or more occurs from the originally scheduled Work date, remove the “NO PARKING - TOW-AWAY ZONE” signs for a minimum of 24 hours, then reset and re-post for the appropriate Work date.

- 601-3.5.1**      **General.** To the “WHITEBOOK”, item 3, DELETE in its entirety and SUBSTITUTE with the following:

- 3.      Temporary “No Parking” and “No Stopping” signs shall be installed 72 hours before enforcement. Temporary “No Parking” and “No Stopping” signs shall be installed and removed as specified in the Special Provisions. Signs shall indicate specific days, dates, and times of restrictions. If violations occur, call Police Dispatch 619-531-2000 to enforce the Tow-Away notice.

## SECTION 802 – NATIVE HABITAT PROTECTION, INSTALLATION, MAINTENANCE, AND MONITORING

- 802-2.1**      **Project Biologist.** To the “WHITEBOOK”, ADD the following:

- 5.      You shall retain a qualified Project Biologist to perform biological monitoring Work for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the Project Biologist.

## SECTION 1001 – CONSTRUCTION BEST MANAGEMENT PRACTICES (BMPs)

- 1001-1**      **GENERAL.** To the “WHITEBOOK”, ADD the following:

- 7.      Based on a preliminary assessment by the City, this Contract is subject to **WPCP**.

- 1001-3.7**      **Payment.** To the “WHITEBOOK”, item 3, subsection “g”, **DELETE** in its entirety and **SUBSTITUTE** with the following:

- g)      BMP Inspection, Maintenance, Repair, and Construction BMP Maintenance Log.

**EXHIBIT K**

**NOTICE OF EXEMPTION**



## NOTICE OF EXEMPTION

(Check one or both)

TO:  Recorder/County Clerk  
P.O. Box 1750, MS A-33  
1600 Pacific Hwy, Room 260  
San Diego, CA 92101-2400

FROM: City of San Diego  
Public Works Department  
525 B Street, Suite 750, MS 908A  
San Diego, CA 92101

Office of Planning and Research  
1400 Tenth Street, Room 121  
Sacramento, CA 95814

**Project No. / WBS No.:** 644723 / B-20040.02.06

**Project Name:** Coast Boulevard Sea Cave  
Emergency Project

**Project Location-Specific:** The project is located near 1210 Coast Boulevard within the Coast Boulevard public right-of-way and adjacent coast bluff and cave opening to the north below Coast Boulevard in the La Jolla Community Planning Area (Council District 1).

**Project Location-City/County:** San Diego/San Diego County

**Description of nature and purpose of the Project:** An existing sea cave void (i.e. Koch's Crack Sea Cave) located under the Coast Blvd public right-of-way is undermining a portion of Coast Boulevard. City staff observed extensive cracking in the roadway raising concerns as to the stability of the underlying soil and rock formation. An assessment of the cave and soil conditions concluded a high probability of collapse of the cave roof at any time. Recent underlying soil and geologic formation failures have created an imminent threat to public health, safety, and welfare. Immediate action is necessary to retain the City's ability to safely provide public access to existing residential and commercial business, in addition to local coastal access.

Work includes chemical grouting of terrace deposit soils between the top of the cave and the roadway and filling the cave with an erodible concrete. The contractor will drill small-diameter holes in the roadway to inject the chemical grouting and to pump concrete mixture into the cave. A temporary barrier would be installed at the entrance to the sea cave in order to stabilize the mouth of the cave (e.g. rip rap, K-rails, sand-filled geo bags). Sand and other debris would be removed from the cave prior to filling the cave cavity with erodible concrete designed to erode as the face of the bluff erodes over time. The temporary barrier materials will be removed after construction is complete. Temporary road closure is required during emergency construction. Staging will occur within the public right-of-way. Access to the cave from Coast Boulevard will occur via a temporary staircase and from the ocean side by boat. The contractor will implement storm water best management practices to prevent illicit construction-related storm water discharges from entering the ocean. Any damages occurring as a result of emergency construction activities will be replaced/repared, including, but not limited to, the roadway, sidewalk, and public utilities.

A subsequent Coastal Development Permit (CDP) is required in accordance with Section 126.0718 of the Land Development Code. The CDP application will include a request for a Site Development Permit for environmentally sensitive lands (i.e. coastal bluffs). The application for the SDP and/or CDP shall be submitted within 180 days of issuance of the emergency permit.

**Name of Public Agency Approving Project:** City of San Diego

**Name of Person or Agency Carrying Out Project:** City of San Diego, Public Works Department  
Contact: Sean Paver  
525 B Street, Suite 750 (MS 908A)  
San Diego, CA 92101  
(619) 533-3629

Exempt Status: (CHECK ONE)

Statutory Exemptions: Emergency Project – Sec. 21080(b)(4); 15269(b)(c)

Reasons why project is exempt: The emergency repairs are required in order to protect public health, safety and property. This determination is supported by the expert opinion of the City Engineer. The City of San Diego conducted an environmental review which determined that the project meets the statutory exemption criteria set forth in CEQA State Guidelines, Section (SEC. 21080(b)(4); 15269 (b)(c)), which allows for actions necessary to prevent or mitigate an emergency.

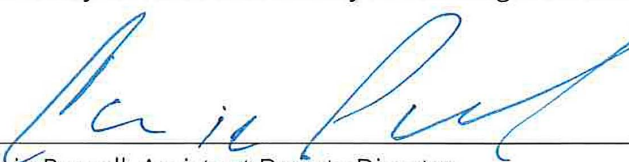
Lead Agency Contact Person: Carrie Purcell

Telephone: (619) 533-5124

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a notice of exemption been filed by the public agency approving the project?  Yes  No

It is hereby certified that the City of San Diego has determined the above activity to be exempt from CEQA

  
\_\_\_\_\_  
Carrie Purcell, Assistant Deputy Director

8/19/19  
Date

Check One:

- Signed By Lead Agency  
 Signed by Applicant

Date Received for Filing with County Clerk or OPR:

**EXHIBIT L**

**CONTRACTOR'S COMPENSATION RATE SCHEDULE**

**EXHIBIT L**

**CONTRACTOR'S COMPENSATION RATE SCHEDULE**

The following Compensation Rate Schedule shall constitute the maximum rates (e.g., labor, direct costs, etc.) for Extra Work, if any, provided by the Contractor during the term of this agreement.

These rates are being specified as the Contractor's standard established rates for calculating labor costs without allowance for overhead and profits. For markup provisions and allowable charges refer to 7-3.7, "Agreed Prices".

City of San Diego Emergency Project Coast Blvd Sea Cave Emergency Stabilization Project			
FLATIRON CONST. COMPENSATION RATE SCHEDULE			
Title/Classification	Standard Rate (\$)/hour	Overtime Rate (\$)/hour	Double-time Rate (\$)/Hour
Superintendent	\$ 125.00	\$ 187.00	\$ 250.00
Foreman	\$ 110.00	\$ 165.00	\$ 220.00
Operator	\$ 103.00	\$ 154.00	\$ 206.00
Grade Checker	\$ 94.00	\$ 141.00	\$ 188.00
Laborer	\$ 81.00	\$ 121.00	\$ 162.00
Carpenter	\$ 86.00	\$ 129.00	\$ 172.00
Mechanic	\$ 91.00	\$ 136.00	\$ 182.00
Project Director	\$ 225.00	N/A	N/A
Engr. (PE) QA/QC	\$ 200.00	N/A	N/A
PM/Design Engineer	\$ 200.00	N/A	N/A
Project Manager	\$ 175.00	N/A	N/A
Superintendent	\$ 110.00	N/A	N/A
Project Eng.	\$ 110.00	N/A	N/A

\* Markup and Overhead per 2018 White Book 7-4.3

\*Equipment Rates per 2018 Caltrans Equipment Rental Rates.

**EXHIBIT M**

**LOCATION MAP**





**EXHIBIT N**

**CONTRACTOR'S NOTES FOR EMERGENCY PROJECTS**

**CONTRACTOR'S NOTES**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL CONTROL BENCHMARKS WHICH ARE DISTURBED OR DESTROYED BY CONSTRUCTION. A LICENSED LAND SURVEYOR OR LICENSED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING IN THE STATE OF CALIFORNIA SHALL FIELD LOCATE, REFERENCE, AND/OR PRESERVE ALL HISTORICAL OR CONTROLLING MONUMENTS PRIOR ANY EARTHWORK, DEMOLITION OR SURFACE IMPROVEMENTS. IF DESTROYED, A LICENSED LAND SURVEYOR SHALL REPLACE SUCH MONUMENT(S) WITH APPROPRIATE MONUMENTS. WHEN SETTING SURVEY MONUMENTS USED FOR RE-ESTABLISHMENT OF THE DISTURBED CONTROLLING SURVEY MONUMENTS AS REQUIRED BY SECTIONS 6730.2 AND 8771 OF THE BUSINESS AND PROFESSIONS CODE OF THE STATE OF CALIFORNIA. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILLED WITH THE COUNTY SURVEYOR. IF ANY VERTICAL CONTROL IS TO BE DISTURBED OR DESTROYED, THE CITY OF SAN DIEGO FIELD SURVEY SECTION SHALL BE NOTIFIED IN WRITING AT LEAST 7 DAYS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPLACING AND VERTICAL CONTROL BENCHMARKS DESTROYED BY THE CONSTRUCTION.
  
2. CONSTRUCTION STORM WATER PROTECTION NOTES
  - a. TOTAL SITE DISTURBANCE AREA: 0.23 (ACRES)
  
  - b. HYDROLOGIC UNIT/WATERSHED: Penasquitos/La Jolla
  
  - c. HYDROLOGIC SUBAREA NAME & NO: Scripps 906.3
  
  - d. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE
    - MWPCP
  
    - WPCP  
THE PROJECT IS SUBJECT TO MUNICIPAL STORM WATER PERMIT NO. R9-2013-0001 AS AMENDED BY R9-2015-0001 AND R9-2015-0100
  
    - WPPP  
THE PROJECT IS SUBJECT TO MUNICIPAL STORM WATER PERMIT NO. R9-2013-0001 AS AMENDED BY R9-2015-0001 AND R9-2015-0100 AND CONSTRUCTION GENERAL PERMIT ORDER 2009-0009-DWQ AS AMENDED BY ORDER 2010-0014-DWQ AND 2012-0006-DWQ  
TRADITIONAL: RISK LEVEL 1  2  3   
LUP: RISK TYPE 1  2  3
  
  - e.  CONSTRUCTION SITE PRIORITY
    - ASBS  HIGH  MEDIUM  LOW

3. ALL ADVANCE METERING INFRASTRUCTURE (AMI) DEVICES ATTACHED TO THE WATER METER OR LOCATED IN OR NEAR WATER METER BOXES, COFFINS, OR VAULTS SHALL BE PROTECTED AT ALL TIMES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. CONTRACTOR TO EXCAVATE AROUND WATER METER BOX (CITY PROPERTY SIDE) TO DETERMINE IN ADVANCE, THE EXACT SIZE OF EACH SERVICE BEFORE TAPPING MAIN.
5. CITY FORCES, WHERE CALLED OUT SHALL MAKE PERMANENT CUTS & PLUGS, CONNECTIONS, ETC. EXISTING MAINS SHALL BE KEPT IN SERVICE IN LIEU OF HIGH-LINING.
6. STORM DRAIN INLETS ARE TO REMAIN FUNCTIONAL/OPERATIONAL AT ALL TIMES DURING CONSTRUCTION.
7. CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER IMMEDIATELY IF A ONE FOOT VERTICAL SEPARATION (FROM OUTSIDE PIPE WALL TO OUTSIDE PIPE WALL) BETWEEN SEWER AND WATER MAINS CANNOT BE MAINTAINED.
8. CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER IMMEDIATELY IF A 6-INCH VERTICAL SEPARATION (FROM OUTSIDE PIPE WALL TO OUTSIDE PIPE WALL) BETWEEN UTILITIES OTHER THAN SEWER AND WATER MAINS CANNOT BE MAINTAINED.
9. CONTRACTOR TO MAINTAIN A MINIMUM 3' OF COVER OVER TOP OF WATER MAIN.
10. CONTRACTOR SHALL RESTORE ALL TRENCHES ON THE PAVEMENT WORKED BY CITY FORCES AFTER FINAL CONNECTION.
11. CONTRACTOR SHALL PROVIDE A 1-FOOT SAND CUSHION OR A MINIMUM 6-INCH SAND CUSHION WITH 1-INCH NEOPRENE PAD FOR ALL CROSSINGS WHERE VERTICAL CLEARANCE BETWEEN CROSSINGS IS 1-FOOT OR LESS.
12. POTHOLE ALL UTILITIES THAT CROSS PROPOSED WATER MAIN BEFORE TRENCHING
13. WHEN APPLICABLE, EXISTING UTILITY CROSSING AS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT EXACT.
14. FOR COORDINATION OF THE SHUTDOWN OF TRANSMISSION MAINS (16 INCHES OR LARGER), CONTACT THE CITY'S SENIOR WATER DISTRIBUTION OPERATIONS SUPERVISOR AT (616) 524-7438. FOR COORDINATION OF THE SHUTDOWN OF DISTRIBUTION MAINS (LESS THAN 16 INCHES), CONTACT THE CITY'S WATER OPERATIONS DISTRICT MANAGER AT (619) 527-3945.

**EXHIBIT O**

**ADVANCED METERING INFRASTRUCTURE (AMI) DEVICE PROTECTION**



## Protecting AMI Devices in Meter Boxes and on Street Lights

The Public Utilities Department (PUD) has begun the installation of the Advanced Metering Infrastructure (AMI) technology as a new tool to enhance water meter reading accuracy and efficiency, customer service and billing, and to be used by individual accounts to better manage the efficient use of water. **All AMI devices shall be protected per Section 5-2, "Protection", of the 2015 Whitebook.**

AMI technology allows water meters to be read electronically rather than through direct visual inspection by PUD field staff. This will assist PUD staff and customers in managing unusual consumption patterns which could indicate leaks or meter tampering on a customer's property.

Three of the main components of an AMI system are the:

- A. Endpoints, see Photo 1:

**Photo 1**



B. AMI Antenna attached to Endpoint (antenna not always required), see Photo 2:

**Photo 2**



Network Devices, see Photo 3:

**Photo 3**



AMI endpoints transmit meter information to the AMI system and will soon be on the vast majority of meters in San Diego. These AMI devices provide interval consumption data to the PUD's Customer Support Division. If these devices are damaged or communication is interrupted, this Division will be alerted of the situation. The endpoints are installed in water meter boxes, coffins, and vaults adjacent to the meter. A separate flat round antenna may also be installed through the meter box lid. This antenna is connected to the endpoint via cable. The following proper installation shall be implemented when removing the lid to avoid damaging the antenna, cable, and/or endpoint. Photo 4 below demonstrates a diagram of the connection:

**Photo 4**



The AMI device ERT/Endpoint/Transmitter shall be positioned and installed as discussed in this Appendix. If the ERT/Endpoint/Transmitter is disturbed, it shall be re-installed and returned to its original installation with the end points pointed upwards as shown below in Photo 5.

**The PUD's code compliance staff will issue citations and invoices to you for any damaged AMI devices that are not re-installed as discussed in the Contract Document**

Photo 5 below shows a typical installation of an AMI endpoint on a water meter.

**Photo 5**

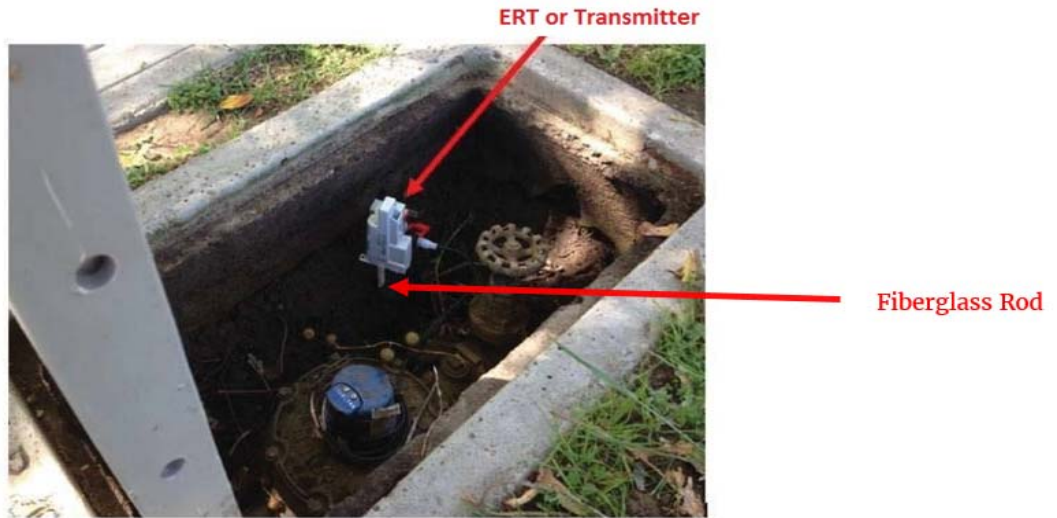


Photo 6 below is an example of disturbance that shall be avoided:

**Photo 6**





**You are responsible when working in and around meter boxes.** If you encounter these endpoints, use proper care and do not disconnect them from the registers on top of the water meter. If the lid has an antenna drilled through, do not change or tamper with the lid and inform the Resident Engineer immediately about the location of that lid. Refer to Photo 7 below:

**Photo 7**



Another component of the AMI system are the Network Devices. The Network Devices are strategically placed units (mainly on street light poles) that collect interval meter reading data from multiple meters for transmission to the Department Control Computer. **If you come across any of these devices on street lights that will be removed or replaced (refer to Photos 8 and 9 below), notify AMI Project Manager Arwa Sayed at (619) 362-0121 immediately.**

Photo 8 shows an installed network device on a street light. On the back of each Network Device is a sticker with contact information. See Photo 9. **Call PUD Water Emergency Repairs at 619-515-3525 if your work will impact these street lights.** These are assets that belong to the City of San Diego and you shall be responsible for any costs of disruption of this network.



**Photo 8**



**Network Device**

**Photo 9**



**If you encounter any bad installations, disconnected/broken/buried endpoints, or inadvertently damage any AMI devices or cables, notify the Resident Engineer immediately. The Resident Engineer will then immediately contact the AMI Project Manager, Arwa Sayed, at (619) 362-0121.**

**EXHIBIT P**

**SAMPLE CITY INVOICE WITH CASH FLOW FORECAST**



WBS #:	B18108
Date Submitted:	10/10/2018
NTP Date:	3/23/2018
Final Statement of WD Date:	5/23/2020
Contract #:	K-XX-XXXX-XXX-X
Contract Amount:	\$5,617,000

Construction Cash Flow Forecast  
 "Sewer and Water Group Job 965 (W)"

Year	January	February	March	April	May	June	July	August	September	October	November	December
2018				15,000	25,000	52,000	52,000	100,000	10,000	100,000	100,000	100,000
2019	10,000	10,000	85,000	58,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000
2020	100,000	100,000	100,000	1,000,000	1,000,000							
2021												
2022												
2023												
2024												
2025												

SAMPLE REFERENCE