Agenda Item No. (4)

To: Building and Operating Committee/Committee of the Whole
Meeting of December 15, 2016

From: Denis J. Mulligan, General Manager

Subject: **ACTIONS RELATIVE TO CONTRACT NO. 2016-B-1, *GOLDEN GATE BRIDGE PHYSICAL SUICIDE DETERRENT SYSTEM AND WIND RETROFIT***

Recommendation

It is recommended that the Building and Operating Committee take the following actions relative to Contract No. 2016-B-1, *Golden Gate Bridge Physical Suicide Deterrent System and Wind Retrofit* (Project):

A. Review the bid protest of American Bridge Company (ABC), including presentations by the bidders at the Committee's meeting on December 15, 2016, and after consideration, recommend its disposition to the Board of Directors;

B. If the Committee determines to reject ABC's bid protest, Staff recommends that the Board award Contract No. 2016-B-1 to Shimmick Construction Company, Inc./Danny's Construction Company LLC, a Joint Venture, of Oakland, California (SCC/DCC) as the lowest responsible bidder, in the amount of $142,051,868, and the establishment of a $27,578,969 construction contract contingency. The award and execution of the construction contract shall be subject to the satisfaction of the following conditions: (1) Board approval of the revised funding plan for the Project, as detailed in the staff report to the Building and Operating Committee, and the Finance-Auditing Committee; (2) MTC and Caltrans approvals for the additional funding from state and federal sources for the Project as described in the revised funding plan; and, (3) FHWA concurrence in the contract award; or

   In the alternative, if the Committee believes that there is merit to ABC's bid protest, Staff recommends that the Committee recommend to the Board that it reject all bids, as there is not adequate funding to award the Contract No. 2016-B-1 to ABC.

This matter will be presented to the Board of Directors at its December 16, 2016, meeting for appropriate action.

Summary

Contract No.2016-B-1, *Golden Gate Bridge Physical Suicide Deterrent System and Wind Retrofit* involves construction of a horizontal stainless steel net supported by cantilevered steel brackets along the west and east sides of four Golden Gate Bridge structures: the South Approach Viaduct, the Fort Point Arch, the Suspension Bridge, and the North Approach Viaduct; construction of a tall vertical railing at the North Anchorage Housing; replacement of the Suspension Bridge maintenance travelers with new travelers; and construction of the Suspension Bridge Wind Retrofit along the west side of the Main Span.

Contract No. 2016-B-1 was advertised for bids on October 13, 2015. On July 12, 2016, the following two bids were received for this Contract, opened and publicly read:

	COMPANY	AMOUNT
1.	Shimmick Construction Company, Inc./Danny's Construction Company LLC, a Joint Venture Oakland, CA	$142,051,868
2.	American Bridge Company Coraopolis, PA	$174,420,000

Both bids substantially exceed the funding secured for the project. The low bid of $142,051,868 is $32,368,132 less than the bid submitted by the second bidder. The bids originally were valid for ninety days after the date of bid opening, i.e., October 10, 2016. To allow additional time for the development of a revised funding plan, the District requested and both bidders agreed to a ninety day extension of the bids, i.e., until January 9, 2017.

Evaluation of the Bids

The District's enabling legislation requires that construction contracts exceeding $5,000 must be formally advertised and awarded to the lowest responsible bidder. The apparent lowest monetary bidder is Shimmick Construction Company, Inc./Danny's Construction Company LLC, a Joint Venture (SCC/DCC). SCC/DCC completed all required bid forms. This included information concerning the proposed system control vendor for the maintenance traveler system and the qualifications of the professional engineers proposed for the design and detailing of the traveler mechanical system and traveler control system.

SCC/DCC's proposal indicates DBE participation of 4.92%, which is slightly below the DBE contract goal of 5%. The District's DBE Program Analyst reviewed the bidder's good faith efforts to achieve the DBE goal and found them to be adequate and compliant with federal DBE program regulations.

SCC and DCC have previously completed construction projects on the Golden Gate Bridge. Shimmick Construction Company, Inc./Obayashi Corporation, a Joint Venture, was the prime contractor for Phase II, South Approach Structures, of the Golden Gate Bridge Seismic Retrofit Project. Shimmick Construction Company, Inc./Obayashi Corporation, a Joint Venture, also was the prime contractor for Phase IIIA, North Anchorage Housing/North Pylon. Danny's

Construction Company LLC was a subcontractor to Shimmick/Obayashi for the steel erection on the Seismic Retrofit Phase II project.

Based on a review of the bids, on November 30, 2016, a notice of intent to award Contract No. 2016-B-1 to the apparent low monetary bidder, SCC/DCC, was issued. That notice also provided a deadline for lodging a protest.

Bid Protest by American Bridge Company

The District's protest procedures require that the protest must specify in writing the grounds and evidence on which the protest is based. If the protestor later raises new grounds or new evidence not previously set forth in written submissions that reasonably could have been raised earlier, the District will not consider such new grounds or evidence in the determination on the protest.

On December 2, 2016, American Bridge Company (ABC) lodged a timely protest, which is attached. The Secretary of the District notified SCC/DCC of the protest, and requested a written response to the protest within two business days. SCC/DCC submitted its response on December 6, 2016, which is also attached, and was shared with ABC. Subsequently on December 12, 2016, ABC provided a response to SCC/DCC's response which is attached

ABC's protest refers to SCC/DCC's Statement of Qualifications, Section I, paragraph 12 and Section II, paragraphs 17 and 21, so these are attached. Also, SCC/DCC's entire bid proposal is available online at: http://goldengate.org/board/2016/agendas/bo12.15.16a.php

The issues presented by the bid protest are the following:

1. Whether Shimmick's bid is nonresponsive by virtue of the following claimed deficiencies or whether these claimed deficiencies may be waived as minor irregularities:

    (a) Failure to substantiate in its bid that its System Control Vendor for the Maintenance Traveler System has the minimum qualifications and experience required by Proposal Form Section II, paragraph 21.a.

    (b) Failure to substantiate in its bid that the Engineer in charge of design and detailing the Traveler Mechanical System and Traveler Control System has the minimum qualifications and experience required by Proposal Form Section II, paragraph 21.b.

    (c) Failure to substantiate in its bid that during the past 10 years each of the companies named has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members as required by Proposal Form Section II, paragraph 17.

    (d) Failure to comply with bid requirements regarding a non-disclosure agreement as to its proposed engineers.

(e) Failure to submit its safety record and related information with its bid as required by the District's bid documents.

2. Whether Shimmick is a non-responsible bidder, for the same reasons as cited above in the area of bid responsiveness:

(a) Failure to have a qualified and experienced Systems Control Vendor.

(b) Failure to have a qualified and experienced engineer in responsible charge of the design and furnishing and installation of the Maintenance Traveler Control System.

(c) Failure to have a qualified and experienced engineer in charge of the design and furnishing and installation of the Maintenance Traveler Mechanical System.

(d) Failure to have a qualified and experienced Structural Steel erector.

(e) Failure to furnish with its bid its safety history and information.

SCC/DCC's Response to ABC's Bid Protest

On December 6, 2016, SCC/DCC provided a timely written response to the ABC bid protest. In its response, SCC/DCC disputes each of ABC's allegations of SCC/DCC's bid deficiencies. With regard to the responsiveness of its bid, SCC/DCC states that its bid is in fact responsive, promises to do what is required by the bidding instructions, and does not materially deviate from the contract requirements. Further, with regard to its responsibility, SCC/DCC states that the information provided in its bid demonstrates that it is a responsible bidder, having the fitness, capacity, and experience to satisfactorily perform the work, and that its qualifications are substantially equivalent to the specification's minimum qualifications.

Bid Protest Proceedings

In accordance with the District's bid protest procedures, ABC may appear before the Committee and make a presentation in support of its written protest. SCC/DCC too may address the Committee. After full consideration of the ABC's bid protest, the low bidder's response, and any other relevant information adduced at the Committee meeting, the Committee may make a recommendation to the Board of Directors to grant or deny the protest, together with a recommendation regarding contract award.

In the alternative, after hearing presentations by ABC and SCC/DCC and considering any other information provided at the Committee meeting, the Committee may take the matter under advisement and direct staff to develop a recommendation to grant or deny the protest in light of all the information received for its consideration at a subsequent special meeting of the Committee, together with a recommendation regarding contract award.

Fiscal Impact

Staff has developed a revised funding plan for the Golden Gate Bridge Physical Suicide Deterrent System and Wind Retrofit Project that is presented separately under agenda item No. 3 and is summarized in the table below.

Sources of Funds	*Most Recent Budget As of 10/8/15*	*Recommended Budget Adjustment*	*Revised Budget*
Physical Suicide Deterrent System (SDS) Project			
MTC-STP Funds	$27,000,000	$40,000,000	$67,000,000
Caltrans HBP Funds	$22,000,000	$36,140,000	$58,140,000
GGBHTD District	$19,644,818	$40,330,314	$59,975,132
MHSOAC	$7,000,000	-	$7,000,000
Cell Site Revenues	$194,868	-	$194,868
Aster Family Fund of MCF	-	$25,000	$25,000
SUBTOTAL SDS	**$75,839,686**	**$116,495,314**	**$192,335,000**
Seismic Retrofit, Wind Retrofit (WR) Project			
Caltrans HBP Funds	**$8,000,000**	**$3,860,000**	**$11,860,000**
TOTAL (SDS+WR)	**$83,839,686**	**$120,355,314**	**$204,195,000**

Award of this contract is subject to Board approval of the revised funding plan, to the Metropolitan Transportation Commission and Caltrans taking the requisite actions for the additional funding described in the revised funding plan, and it is subject to FHWA concurrence with the contract award.

If a decision is made to award the contract to SCC/DCC, the detailed budget is as follows:

Physical Suicide Deterrent System (SDS) Project:	**Budget**
Construction Contract	$132,563,830
Construction Contract Contingency	$26,630,213 (20.09% of construction contract)
Construction Engineering (District staff and consultant services for construction management support, environmental compliance monitoring, and engineering support services by the design consultant)	$33,140,957 (25% of construction contract; Caltrans approval pending as part of E-76 request)
Sub-Total SDS	**192,335,000**

Wind Retrofit (WR) Project:	**Budget**
Construction Contract	$9,488,038
Construction Contract Contingency	$948,756 (10% of construction contract)
Construction Engineering (District staff and consultant services for environmental compliance monitoring and engineering support services by the design consultant)	$1,423,206 (15% of construction contract)
Sub-Total WR	**11,860,000**
TOTAL (SDS/WR)	**204,195,000**

Attachments: American Bridge Company, protest
Shimmick Construction Company, Inc./Danny's Construction Company LLC, response
American Bridge Company, response
Shimmick Construction Company, Inc./Danny's Construction Company LLC Statement of Qualifications, Section I, paragraph 12 and Section II, paragraphs 17 and 21

American Bridge

1390 Willow Pass Road
Suite 330
Concord, CA 94520
T: 510.808.4600
F: 510.808.4601
www.americanbridge.net

December 2, 2016

Board of Directors
Golden Gate Bridge Highway & Transportation District
P.O. Box 9000
Presidio Station
San Francisco, CA 94129-0601

Subject: Golden Gate Bridge Construction Contract No. 2016-B-1 Bridge Physical Suicide Deterrent System and Wind Retrofit Project
Protest Based Upon Contract Award

Ladies and Gentlemen:

American Bridge Company protests award of the above contract to Shimmick Construction Company, Inc./Danny's Construction Company, LLC, a Joint Venture ("Shimmick/Danny's JV") on the basis[1] that the bid of Shimmick/Danny's JV is non-responsive, and the irregularities are not minor and cannot be waived, and therefore its bid must be rejected. In addition Shimmick/Danny's JV's bid must be rejected because Shimmick/Danny's JV is non-responsible in regards to this contract.

Summary

As discussed in detail below, Shimmick/Danny's JV submitted a non-responsive bid because its listed (1) Traveler System Control Vendor and its listed, (2) Engineer in Charge of Design and Detailing of the Traveler Mechanical System and the Traveler Control System Engineer, (3) one of the companies listed to perform Structural Steel Erection did not have the qualifications and experience required by the bid solicitation, and (4) the Engineer in Charge of Design and Detailing of the Traveler Mechanical System and the Traveler Control System Engineer did not provide a non-disclosure agreement.

The law prohibits public entities from awarding contracts to a non-responsive bidder. (*Konica Business Machines U.S.A., Inc. v. The Regents of the University of California* (1988) 206 Cal.App.3d 449, 454.) The exception to this rule is that a public entity may waive minor deviations, defined as a deviation which "is so inconsequential that it **could not affect** the amount of the bid." (*Ibid.*, emphasis added) or is not likely to affect the response of potential bidders (*Ghilotti Construction Co. v. City of Richmond* (1996) 45 Cal.App.4th 897, 908).

Shimmick/Danny's JV's bid deviations are not inconsequential and so cannot be waived.

[1] The District declined to provide to American Bridge the District's staff recommendation; American Bridge reserves the right to supplement this protest and to protest on different grounds when the staff recommendations are provided. In addition, District staff involved in this bid appear to have been having drinks and dinner with Shimmick personnel during the bid period, and the effect of such improper conduct on the staff recommendation is not yet known; American Bridge reserves the right to supplement this protest or make a new protest when the facts regarding this conduct become known.

American Bridge

First, the requisite experience requirements could have affected the bid prices of bidders submitting bids. It is common knowledge that those with greater experience tend to charge more for their services than those with less experience. This is particularly true with professional trades such as engineers, with those with greater experience able to charge more. Suppliers and engineers with greater experience also are less numerous than those who have less expertise. The fundamental law of supply and demand tells that the more scarce experienced vendors and engineers are, the more expensive, which, in turn, could be reflected in bidders' prices to the owner.

Second, Shimmick/Danny's JV's deviations not only could have provided it with a competitive advantage, they *did* provide Shimmick/Danny's JV with a huge competitive advantage. Had American Bridge been allowed to deviate from the bid experience requirements, it could have retained the same inexperienced vendor, Panatrol Corporation, as Shimmick/Danny's JV. This could have lowered American Bridge's bid price by some $35 million. Shimmick/Danny's JV's deviation gave it a clear competitive advantage by being able submit a lower monetary bid by using an inexperienced and less expensive vendor, which the bid solicitation did not allow.

Third, the specified experience requirements precluded inexperienced bidders from submitting bids. This reduced competition makes the failure to comply with this specification material and non-waivable. (*Ghilotti Construction Co. v. City of Richmond* (1996) 45 Cal.App.4th 897, 908.) At a minimum, if the District actually believes, in light of the life/safety issues at stake in this project, that the specified minimum experience is a minor issue, it can only reject all bids and re-solicit bids removing this requirement so more bidders may participate in the bidding process and lower bid prices obtained from such increased competition. It would be unfair to the public and contrary to law to have a requirement which reduces the number of potential bidders, and then not hold each bidder to those requirements.[2]

For each of these reasons, Shimmick/Danny's JV's bid is not responsive, its deviations may not be waived, its bid must be rejected and the contract awarded to American Bridge Company or not awarded at all.

For these same reasons, Shimmick/Danny's JV is non-responsible as to this contract and its bid must be rejected.

American Bridge has been constructing bridges for over 100 years, and has constructed numerous maintenance traveler systems for bridges. Its bid complied with the bid District's requirements including its very experienced System Controls Vendor and Engineer.

---

[2] The Board's experience requirement was wise, not only because experienced vendors and engineers would perform more efficiently resulting in less mistakes, more timely performance and less claims, but also because a lack of experience may result in mistakes which could result in the contractor's design of the Maintenance Traveler System failing to meet the extensive requirements in the Technical Specifications.

American Bridge

A. Protest Ground No. 1

Shimmick/Danny's JV's bid is non-responsive because it fails to substantiate in is bid that its System Control Vendor for the Maintenance Traveler System has the minimum qualifications and experience required by Proposal Form Section II, paragraph 21.a.

1. **Bid Requirements**

"In its answers to items 17 through 21, [the bidder] must substantiate that its possesses the following minimum qualifications and experience for each qualifications and experience category listed below, or the substantial equivalent, either as an individual company or in combination with the subcontractors, consultants and suppliers performing specific work. Each of the work qualifications and experience categories below is essential to the successful performance of the work for this project. ***Failure to demonstrate that it possesses this minimum qualifications and experience, including the required certifications, will bear directly on both your responsibility and responsiveness.***

. . .

21. For the Maintenance Traveler System,

a. Provide the name of a company within your Organization that will be your System Control Vendor under this Contract. ***Provide information substantiating that, during the past ten (10) years, your System Control Vendor designed, furnished and installed a minimum of three Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract.*** To substantiate the required experience, at a minimum, provide
   i. names, sizes and locations of projects with relevant experience,
   ii. brief descriptions of the projects,
   iii. the company role in each project (a prime contractor or a subcontractor) and description of work performed by the company on the project, including description and organization of control methodology used for the work, and
   iv. names and phone numbers of owners' representatives."

(District Proposal Form, Section II, pages P-34 & 35 emphasis added.)

2. **Shimmick/Danny's JV Bid Proposal for 21.a shows it did not meet the bid requirements**

Shimmick/Danny's JV's proposal shows a failure to meet the minimum qualifications and experience for the System Control Vendor for the Maintenance Traveler System. Shimmick/Danny's JV is not even close; there is an utter lack of any qualifications and experience in designing, furnishing and installing Traveler Control Systems for Maintenance Travelers. Its proposal shows that its Vendor has not designed or furnished or installed

American Bridge

(much less all three) any Traveler Control Systems for a Maintenance Traveler System, much less the minimum three similar to the Traveler Control System shown and specified in the Contract.

Shimmick/Danny's JV listed Panatrol Corporation as its System Control Vendor for the Maintenance Traveler. (Shimmick/Danny's JV Bid Proposal Exhibit A, Item 21.a.)

Shimmick/Danny's JV provided information on three projects that purportedly substantiated that Panatrol met the minimum qualifications and experience that it "***designed, furnished and installed a minimum of three Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract*** (Exhibit A - emphasis added).

The below summary of information in Shimmick/Danny's JV's bid on Panatrol's three projects shows Panatrol does not meet minimum qualifications and experience required by the District's bid documents. It shows Panatrol has not designed or furnished or installed any Traveler Systems, much less three that are similar to the ones specified in this Contract:

Panatrol Project 1

- Project Name: Traverser Controls
- Project Location: Newark Airport in NJ
- Company Role in Project: Subcontractor
- Project Size: $43,980 for controls & drives
- Project Elements:
  ~Similar to Traveler Control System
- Owner's Representative:
  Name: Upon Request
  Title:
  Phone Number:
- Brief Project Description: Synchronization of two motors moving monorail switching track
- Description of work performed by the company on the project: **Design and build of the drive cabinet's circuitry and the interface to the overall control system.** (Emphasis added.)
- Control Methodology Description: Utilizing the drive's internal programming capability the drives either synchronize the motion based on comparison of the encoder information from each motor. One drive is a master and the other is a follower. For skew correction the drives can be taken out of Master-Follower mode and either drive can be jogged in either direction to eliminate the skew. Synchronization of two motors moving monorail switching track.

Panatrol Project 2

- Project Name: Burlington Bridge
- Project Location: Hamilton, Canada

American Bridge

- Company Role in Project: Subcontractor
- Project Size: $850,000 for controls & drive
- Project Elements:
  ~Similar to Traveler Control System
- Owner's Representative
  Name: Upon Request
  Title:
  Phone Number:
- Brief Project Description: This system is a tower driven vertical lift bridge with motors and drives in each tower. Skew control is integral to the system design since any skew can cause the span to be wedged between the towers.
- Description of work performed by the company on the project: **Design and build of various control cabinets and a control console. Programming of the PLC, HMI, and drive systems.** (Emphasis added.)
- Control Methodology Description: The skew control on this project is very similar to the skew control for the traveler systems writ large. A drive on each side of the span follows a speed reference sent to the drive via Profinet. The drives control speed based on an encoder directly connected to each drive. The PLC monitors the relative positions of the two sides of the span with the 2nd output from each encoder. The PLC utilizes PID control to trim the speed of the leading side. Should a skew condition manifest the system is stopped and individual jog capability is used to equalize the relative positions.

Panatrol Project 3

- Project Name: The Gut Bridge
- Project Location: South Bristol, Maine
- Company Role in Project: Subcontractor
- Project Size: $ 282,175 for controls & drive
- Project Elements:
  ~Similar to Traveler Control System
- Owner's Representative:
  Name: Upon Request
  Title:
  Phone Number:
- Brief Project Description: This system is a single leaf bascule bridge with a transverse weight profile that is not symmetrical. As such the normal technique of load sharing the motors on each side will not work; due to the uneven weight distribution the two sides will have unequal loads. The solution is real time synchronization based on the encoders that the drives also use for closed loop speed control.
- Description of work performed by the company on the project: **Design and build of various control cabinets and a control console. Programming of the PLC, HMI, and drive systems**. (Emphasis added.)
- Control Methodology Description: The master drive receives the speed reference via Profinet. The drive controls its speed based on the encoder feedback. The master encoder is also fed to the follower drive. This drive

American Bridge

controls the speed of its motor, monitored by encoder, to match the speed of the master motor. Should the bridge skew it can be lowered with one drive and be reset once it is seated.

3. **None of the three Panatrol projects meet the bid requirements.**

    1. All three Panatrol projects **lack any similarity** or relevance to the Maintenance Traveler System specified in the Contract for the Golden Gate Bridge. None of the Panatrol Projects are for Traveler Systems, much less ones that are similar to the ones specified for this Contract. In addition there is no substantiation that Panatrol has designed furnished and installed any Traveler System.

        a. Panatrol Project No. 1 is for "Traverser Control" at the Newark, NJ Airport and **not for a Traveler System much less a Maintenance Traveler System**. Further, a project in the amount of $43,980.00 fails to be of relevant value to the Project's Maintenance Traveler System.

        Panatrol Project No. 1 does not show Panatrol designed, furnished and installed a Traveler Control System. No mention is made of design of such a system, and no mention is made of installation of anything. Panatrol is basically a supplier and no other entity's experience is provided for installation.

        Panatrol Project No. 1 does not meet the bid document requirements.

        b. Panatrol Project No. 2 is for the drives of the vertical lift system on the Burlington Bridge and **not for a Traveler System much less a Maintenance Traveler System.** Based on American Bridge's significant experience with vertical lift bridges and maintenance traveler systems, we can affirmatively state that the two are not similar, not close.

        Panatrol Project No. 2 does not show Panatrol designed, furnished and installed a Traveler Control System. No mention is made of design of such a system, and no mention is made of installation of anything. Panatrol is basically a supplier and no other entity's experience is provided for installation.

        Panatrol Project No. 2 does not meet the bid document requirements.

        c. Panatrol Project No. 3 is for the single leaf bascule controls of the Gut Bridge and **not for a Traveler System much less a Maintenance Traveler System**. Based upon American Bridge's significant experience with single leaf bascule bridges and maintenance traveler systems, we can affirmatively state that the two are not similar, not close.

American Bridge

Panatrol Project No. 3 does not show Panatrol designed, furnished and installed a Traveler Control System. No mention is made of design of such a system, and no mention is made of installation of anything. Panatrol is basically a supplier and no other entity's experience is provided for installation.

Panatrol Project No. 3 does not meet the bid document requirements.

2. Shimmick/Danny's JV fails to substantiate in its bid that, during the past 10 years, its System Control Vendor-Panatrol designed, furnished and installed a minimum of three Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract.

3. Shimmick/Danny's JV bid is non-responsive and must be rejected.

B. <u>Protest Ground No. 2</u>

Shimmick/Danny's JV's bid is non-responsive because it fails to substantiate in its bid that the Engineer in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System has the minimum qualifications and experience required by Proposal Form Section II, paragraph 21.b.

1. **Bid Requirements**

"In its answers to items 17 through 21, [the bidder] must substantiate that its possesses the following minimum qualifications and experience for each qualifications and experience category listed below, or the substantial equivalent, either as an individual company or in combination with the subcontractors, consultants and suppliers performing specific work. Each of the work qualifications and experience categories below is essential to the successful performance of the work for this project. ***Failure to demonstrate that it possesses this minimum qualifications and experience, including the required certifications, will bear directly on both your responsibility and responsiveness.***

. . .

21. For the Maintenance Traveler System,

. . .

b. Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of Qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. ***Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified under this Contract.*** To substantiate the required experience, at a minimum, provide:

American Bridge

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects,
iii. the role in each project, and
iv. names and phone numbers of owners' representatives."

(District Proposal Form, Section II, pages P-34 & 35 emphasis added.)

2. **Shimmick/Danny's JV Bid Proposal for 21.b shows it did not meet the Bid Requirements**

Shimmick/Danny's JV's proposal shows a complete failure to meet the minimum qualifications and experience for the professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and engineers to design the Traveler Control System. Its bio is non-responsive.

There are two experience requirements in paragraph 21.b. The design engineer for the Traveler Mechanical System must have ten years of experience as engineer in charge of the design of mechanical systems for applications similar to the operational traveler system specified in the Bid document. In addition, paragraph 21.b requires that engineer who is to design the Traveler Control System have ten (10) years of experience as engineer in charge of the design of control systems for application similar to the operation traveler system specified in the contract.

Shimmick/Danny's JV fails to substantiate its engineers have any experience, much less ten years of experience, being in responsible charge of the design of mechanical systems for Maintenance Traveler Systems similar to the one specified in this Contract for the Golden Gate Bridge. It also fails to substantiate its design engineer has any experience, much less ten years of experience, as responsible in charge of design of control systems for applications similar to the operational traveler system specified for this contract.

Shimmick/Danny's JV identified John Williams of Stafford Bandlow Engineering, Inc. as the "professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System". (Shimmick/Danny's JV Exhibit A, item 21.b.)

Shimmick/Danny's JV fails to substantiate in its bid any, much less, ten years of experience for Williams/Stafford Bandlow, and instead merely list four projects, without dates, that purportedly show the experience. They do not:

Williams/Stafford Bandlow Project 1

- Project Name: Bayonne Bridge Traveler (Gantry)
- Project Location: Bridge connecting Bayonne, NJ and Staten Island New York
- Company Role in Project: Subcontractor
- Project Size: $3,000,000

American Bridge

- Owner's Representative Name: Peter Potvin
- Title: Project Manager
- Phone Number: 201-832-0912
- Project Elements: Mechanical components of a traveler system
  Similar Traveler Control System
- Brief Project Description: Mr. Williams was Project Manager and Senior Mechanical Engineer responsible for a design review of the traveler drive system. The traveler is a component of a gantry crane system used to set precast concrete bridge segments. Duties included preparation and review of all relevant calculations and a report documenting the findings of the ***peer review.*** (Emphasis added.)

Williams/Stafford Bandlow Project 2

- Project Name: Sir Ambrose Shea Vertical Lift Bridge Replacement (Placentia Lift Bridge)
- Project Location: Placentia, Newfoundland, Canada
- Company Role in Project: Subcontractor
- Project Size: $42,000,000 CAD$
- Owner's Representative Name: Doug Power
- Title: Chief Bridge Engineer
- Other Phone Number: 709-729-6508
- Project Elements: Span drive machinery for a vertical lift bridge
- Brief Project Description: Mr. Williams was Project Manager and Mechanical Engineer of Record responsible for the design of span drive machinery, span lock machinery and span support machinery for this new tower drive lift bridge. Duties included preparation and review of all relevant calculations and preparation of design drawings, specifications and cost estimates during the design phase of the project. During the construction phase, Mr. Williams was responsible for the review of Contractor's shop drawings and procedures for conformance to Contract requirements, disposition of nonconformance reports (NCR's) and responding to requests for information or changes from the Contractor.

Williams/Stafford Bandlow Project 3

- Project Name: Governor's Island Ferry Slip
- Project Location: Manhattan, NY
- Company Role in Project: Subcontractor
- Project Size: $2,000,000
- Owner's Representative: John Meade
- Title: Project Manager
- Other Phone Number: 203-268-5007
- Project Elements: Drive machinery for a slip terminal operated utilizing wire ropes.
- Brief Project Description: Mr. Williams served as Project Manager and Senior Mechanical Engineer for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island. This project began with an in-depth inspection of the mechanical and electrical systems of the slips with recommendations for

American Bridge

rehabilitation to keep the structure operational for 50 years. Scope of the rehabilitation included replacement of all mechanical machinery including operating winches, the main counterweight system which balances the dead load of the ferry slip, the mooring devices and live load counterweights which secure the slip to the vessel while berthed. Mr. Williams' responsibilities included leading the inspection field team, development of the bridge design report and quality assurance of design calculations, plans, specifications and construction cost estimates during the design phase of the project.

Williams/Stafford Bandlow Project 4

- Project Name: Mystic Bridge Rehabilitation
- Project Location: Mystic, CT
- Company Role in Project: Subcontractor/Engineer of Record
- Project Size: $ 10,000,000
- Owner's Representative: Richard Van Allen
- Title: Manager of Bridge Operations
- Phone Number: 860-594-2634
- Project Elements: Span drive machinery for a bascule bridge
- Brief Project Description: Mr. Williams was Project Manager and Senior Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated "Brown" bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. During the inspection a misalignment of the span drive machinery was identified and a survey of the bridge was recommended. Mr. Williams participated in a precision optical survey which identified significant differential pier settlement as the cause of the misalignment problems. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. A custom vehicular safety barrier gate was designed to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Mr. Williams' responsibilities included design and back checking of design calculations plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.

3. **The four Williams/Stafford Bandlow projects show it does not meet the bid requirements.**

    1. All four Williams/Stafford Bandlow projects **lack any similarity** or relevance to the mechanical design or control system for the Maintenance Traveler System for the Golden Gate Bridge.

        a. Project No. 1 is for a temporary precast segmental launching gantry on the Bayonne Bridge and **NOT for a Maintenance Traveler System**.

American Bridge

b. Project No. 2 is for the drives of the vertical lift system on the Placentia Lift Bridge and **NOT for a Maintenance Traveler System**.

c. Project No. 3 is for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island and **NOT for a Maintenance Traveler System**.

d. Project No. 4 is for the rehabilitation of the Mystic Bridge which is a single leaf bascule bridge and **NOT for a Maintenance Traveler System**.

2. In addition to lacking relevance to a Maintenance Traveler System, Williams/Stafford Bandlow Project No. 1 and 3 ***fail to demonstrate*** that Mr. Williams was in "**responsible charge of the design of mechanical systems or control systems . . . for applications similar to the operational control system specified in this Contract**":

   a. Williams/Stafford Bandlow Project No. 1 services referenced for Mr. Williams are for a "**peer review**" and not for "responsible charge of the design of mechanical systems or control systems".

   b. Williams/Stafford Bandlow Project No. 3 information states that "Mr. Williams' responsibilities included leading the inspection field team, development of the bridge design report and quality assurance of design calculations, plans, specifications and construction cost estimates during the design phase of the project." Based upon this, it appears that Mr. Williams was not in "responsible charge of the design of mechanical systems or control systems".

3. All four projects ***fail to provide*** information substantiating that Williams/Stafford Bandlow have a minimum of 10 years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified under this Contract.

4. Shimmick/Danny's JV has ***failed to demonstrate*** that its engineers possess the minimum qualifications and experience to be in charge of design and detailing of the Traveler Mechanical System **and** the Traveler Control System and therefore its bid is non-responsive and must be rejected.

American Bridge

C. Protest Ground No. 3

Shimmick/Danny's JV's bid is non-responsive because it fails to substantiate in its bid that during the past 10 years each of the companies named has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members as required by District Proposal Form Section II, paragraph 17.

1. Bid Requirements

"In its answers to items 17 through 21, [the bidder] must substantiate that its possesses the following minimum qualifications and experience for each qualifications and experience category listed below, or the substantial equivalent, either as an individual company or in combination with the subcontractors, consultants and suppliers performing specific work. Each of the work qualifications and experience categories below is essential to the successful performance of the work for this project. ***Failure to demonstrate that it possesses this minimum qualifications and experience, including the required certifications, will bear directly on both your responsibility and responsiveness.***

. . .

17. For the Structural Steel Erection,

Provide names of companies within your Organization that will perform structural steel erection under this Contract. Provide information substantiating that during the past 10 years each of these companies has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members. To substantiate the required experience, at minimum, for each of the companies, provide:

i. names, sizes and locations of projects with relevant experience;
ii. brief descriptions of the projects;
iii. a company role in a project (a prime contractor or a subcontractor) and description of work performed by the company on the project; and
iv. names and phone numbers of owners' representatives."

2. Shimmick/Danny's JV Bid Proposal for 17 shows it did not meet the Bid Requirements

Shimmick/Danny's JV's proposal shows a complete failure to meet the minimum bid qualifications and experience that during the past 10 years **each** of these companies named has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal,

American Bridge

new fastener installation, and removal and replacement of existing structural steel members. Proposal Form Section II, paragraph 17.

Shimmick/Danny's JV, identified Danny's Construction Company, LLC as one of the two companies that will perform structural steel erection. Per Paragraph 17 then Danny's Construction Company, LLC must meet the minimum qualifications and experience that during the past 10 years it has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members. It does not meet these minimum requirements and therefore Shimmick/Danny's JV's bid is non-responsive and must be rejected.

Shimmick/Danny's JV provided the following experience for Danny's Construction Company, LLC:

Danny's Project No. 1
BNSF Lift Bridge #204.66 in Burlington, Iowa. The description given for the Danny's Construction Company, LLC (Danny's) work experience were that they were a Subcontractor that performed all the structural steel erection of a 360' double track through truss span which was erected on 4 barges on the Mississippi River and then floated into place and connected during a weekend railroad outage to replace an existing swing span. The float in was accomplished in Winter Conditions battling ice and changing water elevations on the river and working closely with coast guard and other navigation authorities and accomplished on time to reinstate railroad traffic on a major line.

Scope also included the erection of the support towers, sheaves, and rough setting all operating equipment.

Danny's was also contracted to replace 3 bays of damaged floor framing that was damaged by others during pier removal below the bridge. Replacement included temporarily supporting of the trusses while 3 bays of floor framing were jacked down to barges and new floor framing jacked up in to place during a continuous rail outage.

Danny's Project No. 1 does not show Danny's worked on the retrofit of a multi-span steel bridge.

Danny's Project No. 1 does not meet the bid document requirements.

Danny's Project No. 2
Oakland Bay Bridge Temporary By-Pass Structure and East Tie-In in San Francisco, California. The description given for the Danny's work experience consisted of construction of erection of a temporary bridge span which was erected on falsework towers and then launched into place over a weekend bridge outage of the Oakland Bay Bridge. The existing

American Bridge

span of the bridge was cut out and removed as part of the launch. American Bridge was a subcontractor to the prime contractor C. C. Myers, Inc. for this project. Additional scope included work on the East-tie in and approach area which was retrofit to accommodate the new bridge.

Danny's Project No. 2 does not show Danny's worked on the retrofit of a multi-span steel bridge involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members.

Danny's Project No. 2 does not meet the bid document requirements. Therefore Shimmick/Danny's JV's bid is non-responsive and must be rejected.

D. Protest Ground No. 4

Shimmick/Danny's JV failed to comply with bid requirements regarding a non-disclosure agreement as to its proposed engineers.

1. **Bid Requirement**

Notice to Contractors, states on Page N-2:

"Any company (e.g., prime contractor, subcontractor, supplier, or consultant) intending to participate in the bidding process and wishing to obtain the Plans, Volumes 1, 2, 3, 4, and 5 of the Contract Documents and other Reference Documents for Contract No. 2016-B-1, must sign a Non-Disclosure Agreement for Release of Security Sensitive Information for Bidding Purposes (Agreement) with the District and must deposit with the Office of the District Engineer a bank issued certified or cashier's check posted by a United States bank satisfactory to the District in the amount of five thousand dollars ($5,000) payable to GGBHTD. The Agreement may be obtained from the Office of the District Engineer by submitting a written response, in the form of Exhibit 1 attached to this Notice, by email to bidquestions@goldengate.org."

2. **Basis of Protest for Ground No. 4**

Mr. Williams and Stafford Bandlow do not appear on any Plan Holders Lists provided by the District. (Exhibit B)

1. By not being indicated on any of the District-provided List of Plan Holders neither Mr. Williams nor Stafford Bandlow have complied with the requirements of the Bid Documents through their apparent failure to "…sign a Non-Disclosure Agreement for Release of Security Sensitive Information for Bidding Purposes (Agreement) with the District and providing a deposit with the Office of the District Engineer a bank issued certified or cashier's check posted by a United States bank satisfactory to

American Bridge

the District in the amount of five thousand dollars ($5,000) payable to GGBHTD".

Thus Shimmick/Danny's JV submitted a Bid Proposal, and included information for a "key" component as the Maintenance Traveler System, from engineers that either did not look at the bid documents or did not comply with the requirements of the Bid Documents as to a Non-Disclosure Agreement.

E. Protest Ground No. 5

Shimmick/Danny's JV failed to submit its safety record and related information with its bid as required by the District's Bid Documents.

The District has made clear that safety is very important to it, with which American Bridge agrees. However, Shimmick/Danny's JV has failed to provide with its bid the important safety information about Shimmick/Danny's JV making is bid non-responsive. This demonstration of lack of concern for the bid requirements and for safety also shows the lack of responsibility of Shimmick/Danny's JV.

F. Shimmick/Danny's JV non-responsiveness cannot be waived.

The non-responsiveness of Shimmick/Danny's JV as to Grounds 1, 2, 3 and 5 cannot be waived as minor irregularities by the District.

As discussed above, the law prohibits public entities from awarding contracts to a non-responsive bidder. (*Konica Business Machines U.S.A., Inc. v. The Regents of the University of California* (1988) 206 Cal.App.3d 449, 454.) The exception to this rule is that a public entity may waive minor deviations, defined as a deviation which "is so inconsequential that it **could not affect** the amount of the bid." (*Ibid.*, emphasis added) or is not likely to affect the response of potential bidders (*Ghilotti Construction Co. v. City of Richmond* (1996) 45 Cal.App.4th 897, 908).

First, the requisite experience requirements could have affected the bid prices of bidders submitting bids. It is common knowledge that those with greater experience tend to charge more for their services than those with less experience. This is particularly true with professional trades such as engineers, with those with greater experience able to charge more. Suppliers and engineers with greater experience also are less numerous than those who have less expertise. The fundamental law of supply and demand tells that the more scarce experienced vendors and engineers are, the more expensive, which, in turn, could be reflected in bidders' prices to the owner.

Second, Shimmick/Danny's JV's deviations not only could have provided it with a competitive advantage, they *did* provide Shimmick/Danny's JV with a huge competitive advantage. Had American Bridge been allowed to deviate from the bid experience requirements, it could have retained the same inexperienced vendor, Panatrol Corporation, as Shimmick/Danny's JV. This could have lowered American Bridge's bid price by some $35 million. Shimmick/Danny's JV's deviation gave it a

American Bridge

clear competitive advantage by being able submit a lower monetary bid by using an inexperienced and less expensive vendor, which the bid solicitation did not allow.

Third, the specified experience requirements precluded inexperienced bidders from submitting bids. This reduced competition, making the failure to comply with this specification material and non-waivable. (*Ghilotti Construction Co. v. City of Richmond* (1996) 45 Cal.App.4th 897, 908.) At a minimum, if the District actually believes, in light of the life/safety issues at stake in this project, that the specified minimum experience is a minor issue, it can only reject all bids and re-solicit bids removing this requirement so more bidders may participate in the bidding process and lower bid prices obtained from such increased competition. It would be unfair to the public and contrary to law to have a requirement which reduces the number of potential bidders, and then not hold each bidder to those requirements.

G. Protest Ground No. 6

Shimmick/Danny's JV is non-responsible for this Contract, and cannot be awarded the Contract.

A basic requirement is that a bidder must be a responsible bidder to be awarded a contract. This is the law, and is also reflected in the District's bid documents. The District's bid documents point out that the bidder must be responsible and carefully and clearly advise that that its bid may be rejected if it fails to possess the many experience requirement set forth in Section II of the Statement. (District Bid Documents, section 2-1.33E.)

Shimmick/Danny's JV's non-responsibility as to this Contract is demonstrated by, among other things:

a. Shimmick/Danny's JV's failure to have a qualified and experienced Systems Control Vendor;
b. Shimmick/Danny's JV's failure to have a qualified and experienced engineer in responsible charge of the design and furnishing and installation of the Maintenance Traveler Control System;
c. Shimmick/Danny's JV's failure to have a qualified and experienced engineer in charge of the design and furnishing and installation of the Maintenance Traveler Mechanical System;
d. Shimmick/Danny's JV's failure to have a qualified and experienced Structural Steel erector; and
e. Shimmick/Danny's JV's failure to furnish with its bid its safety history and information.

While each of these is a basis to find Shimmick/Danny's JV non-responsible for this Contract, together these serious failures by Shimmick/Danny's JV compels a finding of non-responsibility for this Contract.

American Bridge

CONCLUSION:

Shimmick/Danny's JV's Bid is non-responsive and must be rejected:

a. ***Failed to substantiate in its bid*** its Systems Control Vendor has the specified minimum qualifications and experience required by the District's Bid Documents.

b. ***Failed to substantiate in its bid*** that, during the past 10 years, its System Control Vendor designed, furnished and installed any, much less a minimum of three, Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract, as required by the District's Bid Documents.

c. ***Failed to substantiate in its bid*** will install the Traveler Control System, and failed to provide information substantiating the installer of the Traveler Control System has installed a minimum of three Traveler Control Systems which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract as required by the District's Bid Documents,.

d. ***Failed to substantiate in its bid*** its proposed engineer(s) that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System possess the minimum qualifications and experience required by the District's Bid Documents.

e. ***Failed to substantiate in its bid*** its design engineers for the Traveler Mechanical System have a minimum of 10 years of responsible charge of the design of mechanical systems for the applications similar to the operational traveler system specified under this Contract as required by the District's Bid Documents.

f. ***Failed to substantiate in its bid*** its design engineers for the Traveler Control System have a minimum of 10 years of responsible charge of the design of control systems for the applications similar to the operational traveler system specified under this Contract, as required by the District's Bid Documents.

g. ***Failed to substantiate in its bid*** that during the past 10 years one of the companies named to perform the Structural Steel Erection work, Danny's Construction Company, LLC, has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members, as required by the District's Bid Documents.

h. ***Failed to provide with its bid*** its safety history and information as required by the District's Bid documents.

i. ***Failed to have*** its proposed key design engineers for the Maintenance Traveler System and the Traveler Control System comply with the Non-Disclosure requirements of the District's Bid Documents, or the alternative these engineers never reviewed the bid documents.

American Bridge

Shimmick/Danny's JV is non-responsible for this Contract and its bid must be rejected for this reason.

American Bridge respectfully requests the District reject Shimmick/Danny's JV Bid and award Golden Gate Bridge Construction Contract No. 2016-B-1 Bridge Physical Suicide Deterrent System and Wind Retrofit Project to American Bridge Company, or not at all.

Very truly yours,

AMERICAN BRIDGE COMPANY

Brian A. Petersen
Vice President

Exhibit A: Shimmick/Danny's JV Bid Proposal (307 pages)
Exhibit B: District-Provided List of Plan Holders (58 pages)

cc: Robert L. Leslie

December 6, 2016

Board of Directors
Golden Gate Bridge Highway & Transportation District
P.O. Box 9000
Presidio Station
San Francisco, CA 94129

Subject: Shimmick / Danny's JV's Response to American Bridge Company's protest (December 2, 2016)

Ladies and Gentlemen,

Shimmick Construction Company, Inc. / Danny's Construction Company, LLC, a Joint Venture ("Shimmick/Danny's"), the responsible and responsive low bidder for the Golden Gate Bridge Construction Contract No. 2016-B-1 Bridge Physical Suicide Deterrent System and Wind Retrofit Project ("Project") welcomes this opportunity to reply to the protest of contract award lodged by American Bridge Company ("ABC") on December 2, 2016.

Summary of Reply

ABC, the disappointed second bidder, asks the District to reject Shimmick/Danny's bid and to either award the contract to ABC (at a price which is roughly $30,000,000 higher than Shimmick/Danny's responsive bid) or to go through the delay, cost and uncertainty of a re-bid. But ABC's protest does not establish that this outcome is required, and there is no reason for the District to exercise its discretion and do so.

Shimmick/Danny's bid is responsive: as required by law and the contract, the bid promises to do what is required by the bidding instructions and does not materially deviate from the contract requirements. Particularly, as to Shimmick/Danny's Statement of Qualifications ("SOQ"), which is the focus of ABC's protest, the bid of Shimmick/Danny's provides information substantiating that it possesses the requisite qualifications and experience. No question in the SOQ is left unanswered and there is no irregularity in the answers.

ABC's protest, though couched in terms of "responsiveness", really questions Shimmick/Danny's "responsibility", as it suggests responses to the SOQ do not show that Shimmick/Danny's can perform the contract as promised. But, the information provided in response to the SOQ, as explained below,

demonstrates that Shimmick/Danny's is responsible: it has the fitness, capacity and experience to satisfactorily perform the work and the qualifications it enumerates in its response to the SOQ meet the minimum qualifications or are substantially equivalent to them.

Because the bid is responsive and Shimmick/Danny's is a responsible bidder as defined by law and the bidding documents, the District should award it the contract.

Relevant Legal Provisions and Contractual Principles

As observed in the General Provisions of the Contract the Golden Gate Bridge is a national landmark and is one of the greatest suspension span structures ever built, meaning that the work for this Project requires a high degree of skill, management, expertise and commitment to meet the challenges of the Project. (Vol. 1, General Provisions, §2-1.-01.)

Recognition of the Bridge's important and unique status is no doubt why the District, in the SOQ, made clear that it wished latitude in assessing the fitness, capacity and expertise of bidders, and why it provided that bidders demonstrate minimum qualifications and experience "substantially equivalent" to standards enumerated in the SOQ. (Vol. 5, Attachment N, Instructions for Bidder's Statement of Qualifications and Business References, p. P-28.) Put another way, if this were a common road paving project, there would be no need for an owner like the District to explore whether a bidder had performed projects which were "substantially equivalent".

This is also likely why the District has "sole discretion" to reject any bidder for lack of requisite responsibility or for non-responsiveness where the bidder cannot demonstrate it possesses the mandatory minimum qualifications and experience "or the substantial equivalent experience and qualifications." (SOQ, p. P-28.) Indeed, the District clarified to all bidders that SOQ responses would assist the District in determining a bidder's responsibility (defined as trustworthiness and the quality, fitness, capacity and experience to satisfactorily perform the work) and that the District would also review "other information obtained about [bidders] in making its determination regarding a [b]idder's overall responsibility." (Vol. 1, General Provisions, §2-1.33E, p. 2-9.)

Thus it is clear that the thrust of the information bidders were to provide in response to the SOQ questions had to do with bidders' responsibility --- their experience and fitness and capacity --- and it is equally clear that the District recognized that to assess responsibility it was necessary to look at the body of the bidders' work which was "substantially equivalent", especially given the unique features of the Bridge and the work to be performed.

Regarding the question of "responsiveness", or a bidder's compliance with bidding instructions, as is customary the District reserved to itself the right to waive any irregularities and informalities in a bid, reject bids which were nonresponsive, and to reject any and all bids. (Vol. 1, General Provisions, §2-1.46, p. 2-19.)

In its protest ABC states the general legal principle when it comes to bids which may or may not be "non-responsive": bids which substantially conform to a call for bids but which are not strictly responsive may be accepted if the variance cannot affect the amount of the bid or give a bidder an advantage not allowed other bidders (an "inconsequential variance"). (*Ghilotti Const. Co. v. City of Richmond* (1996) 45 Cal.App.4th 897, 904.)

But the fault in ABC's logic, and thus its protest, is that there is no variance in Shimmick/Danny's bid. A non-responsive bid is one which doesn't promise to do what the bidding instructions require. (*MCM Const., Inc. v. City and Co. of San Francisco* (1998) 66 Cal.App.4th 359, 368.) Generally, responsiveness can be determined from the face of the bid itself. (*Taylor Bus Serv., Inc. v. San Diego Bd. of Ed.* (1987) 195 Cal.App.3d 1331, 1341 – 1342.) The responses by Shimmick/Danny's to the SOQ questions are complete: questions are answered, information is provided and evidence of qualifications and experience is set out. Simply stated, there is no variance from bidding requirements in the SOQ responses, or in any other part of the bid Shimmick/Danny's made. And, without a variance there is no need to inquire if 'a variance is inconsequential', nor do grounds exist to conclude the bid is not responsive.

It appears instead that ABC's protest --- intentionally or otherwise --- confuses the concept of "responsiveness" with the concept of "responsibility."

"Responsibility" concerns a bidder's ability to perform; its quality, fitness, capacity and experience. (*Cal. Public Contract Cd.* §1103; *MCM Const.,* 66 Cal.App.4th at p. 368.) Determination of a bidder's responsibility is often more complex than simply deciding if its bid is responsive, and may depend on information received from outside the bidding process and the "application of subtle judgment." (*Taylor Bus*, 195 Cal.App.3d at 1341 – 1342.)

The District it appears contemplated applying its judgment to matters of a bidder's qualifications, experience and fitness. The SOQ plainly informs bidders the District will rely on information the bidders provide "and information about [bidders] from other sources." (Vol. V, SOQ, p. P-28.) And the District appears to recognize the importance of applying its judgment to such determinations: in assessing a bidder's body of work it gives itself the discretion to examine experience which is "substantially equivalent" to the minimum qualifications and experience enumerated in many of the 22 SOQ inquiries. (Vol. V, Attachment N, SOQ, prelude to categories 17 – 21.)

In its "Protest Grounds" 1, 2 and 3 American seeks to substitute its judgment for the District's as to what constitutes experience and qualifications which are "substantially equivalent" to enumerated qualifications, and does so without knowing the District's thought processes and, as important, the District's investigation and assessment of information from all sources. In so doing ABC seeks to deny the District the discretion to conduct the complex examinations and reach subtle judgments which the law and the contract specifically empower the District to pursue.

In fact, as elaborated on below, the bid of Shimmick/Danny's demonstrates that its qualifications and experience meet the minimum requirements and are substantially equivalent to those stated in the SOQ, meaning the District acted well within its discretion when it concluded Shimmick/Danny's was a responsible bidder.

Protest Ground No. 1

In ABC's protest, it states that "*Shimmick / Danny's JV's bid is non-responsive because it fails to substantiate in is [sic] bid that its System Control Vendor for the Maintenance Traveler System has the minimum qualifications and experience*" required by the Proposal. Section II question 21 part a reads:

> *"Provide the name of a company within your Organization that will be your System Control Vendor under this Contract. Provide information substantiating that, during the past ten (10) years, your System Control Vendor designed, furnished and installed a minimum of three Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract."*

Panatrol Automation and Controls is a well-established systems vendor with more than 35 years' experience in the field of automation and control. Panatrol have manufactured supplied and commissioned more than 250 heavy movable structures with substantially equivalent attributes to the Golden Gate Bridge maintenance travelers.

Any purported expert would recognize that Panatrol exceeds the minimum qualifications and experience required by this section. Panatrol's over 35 years of substantially equivalent experience which was described in our proposal substantiates that experience. This experience has included providing systems for the electrical systems of many heavy movable structures with similar operating systems as this project's maintenance travelers. Panatrol was responsible for designed and furnished system controls for two heavy duty traversers for the Newark airport monorail, a several thousand ton lift span, and a thousand ton single leaf bascule bridge. Each of these projects (as detailed in the descriptions provided in the SOQ) have the minimum qualifications for similar or substantially equivalent experience. These Control Systems, as described in our statement of qualifications have included relevant technologies such as:

a. Metal structures with Variable Frequency Drive (VFD) controller driven
b. Electrical feed for travelers using power rails and power collector systems.
c. Programmable Logic Controller (PLC) electronic control systems.
d. Constant torque variable frequency drives for powering traveler drive motors.
e. Drive synchronization and automatic skew control between drive motors.
f. Design and fabrication of precision control consoles and all cabinetry

Panatrol's experience exceeds the minimum qualifications requirements and is an industry leader in System Control Vendors.

Protest Ground No. 2

ABC contends that Shimmick / Danny's failed to substantiate Stafford Bandlow contains the requisite minimum qualifications to be the Principal Engineer in Charge for either the Mechanical or System Control designer.

The experience requirements (or their substantial equivalents) which are being challenged are found in paragraph 21.b.

> *"Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of Qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified under this Contract."*

Furthermore, the District asked the Contractor to provide the following:

> *"To substantiate the required experience, at a minimum, provide*
> *i. Names, sizes and locations of projects with relevant experience,*
> *ii. Brief descriptions of the projects,*
> *iii. The role in each project, and*
> *iv. Names and phone numbers of owners' representatives"*

The Joint Venture was responsive in all regards.

Although ABC's protest draws attention to Mr. Williams' qualifications alone, SBE and Shimmick/Danny's proposed to utilize a team of four designers, all exceed the minimum qualification requirements, or substantial equivalents, of 21.b. The four, Mr. Rees, Mr. Kanagy, Mr. Williams, and Mr. Zheng, are identified and resumes and qualifications are provided for all. As clearly illustrated in the submitted information, **Mr. Williams exceeds the minimum requirements of the Traveler Mechanical System Designer** in charge with 20 years of substantially equivalent experience, and **Mr. Rees exceeds the minimum requirements of the Traveler Control System Designer** in charge with 40 years of substantially equivalent experience.

As it regards Mr. Williams' experience, it is substantiated in two sources which are part of Shimmick / Danny's SOQ: the resume provided and information provided for the four projects. In particular:

1. Mr. Williams has 20 years' experience as a Mechanical Engineer including 17 years working as a design engineer in the heavy movable structures industry which clearly exceeds the minimum requirement of 10 years of experience.
2. Mr. Williams is recognized as a heavy movable structures specialist. Mr. Williams' involvement and standing in the heavy movable structures community are substantiated (as noted on the resume) by his election to the board of Directors of Heavy Movable Structures, Inc. (HMS) and membership on AREMA, Committee 15: Steel Structures, Sub-Committee 4: Moveable Bridges.

3. Mr. Williams' qualifications (further described below) exceed those required for the Traveler Mechanical System designer. As part of the SBE Team, they easily exceed the requirements of Section II.

As the senior supervising lead on our highly qualified and well-supported team for the design and detailing of the Traveler Mechanical and Control System exceeds the minimum qualifications and experience requested in Proposal Form Section II, paragraph 21.b. Mr. Rees, P.E has over 40 years of relevant experience which was described in our proposal. This experience has included providing Engineer-of-Record services for the Control systems of many heavy movable structures with substantially equivalent operating systems as modern bridge travelers. These systems, as described in our statement of qualifications have included relevant technologies such as:

- Metal structures with Variable Frequency Drive (VFD) controller driven
- Programmable Logic Controller (PLC) electronic control systems.
- Traveler's mechanical and control systems using power rails and power collector systems.
- PLC control systems with HMI interfaces.
- Constant torque variable frequency drives for powering traveler drive motors.
- Drive synchronization and automatic skew control between drive motors.
- Design and detailing for electric motors, shafts, couplings, keys, gears, gear reducers, brakes, bearings, rollers and wheels

Mr. Rees and his team understand the criticality of applying these technologies for the safe and reliable operation of travelers in exactly the same way they were applied to the projects identified in our proposal as being relevant and of a similar nature with similar design features and similar challenges and safeguards to the proposed travelers:

- Tamiami Canal Bridge Replacement: As described in our proposal, Mr. Rees is the Control Systems Engineer for this swing span bridge. He is representing the Contractor and was responsible for the detailed design and integration of the Bridge Mechanical and Control System (bridge power and control systems). These systems are very similar to those for the mechanical and control of traveler's and include similar power distribution, PLC control systems and constant torque variable frequency drives as are required for the travelers.
- The Newark Airport Monorail Traversers: This project, which forms part of Mr. Rees's experience, is particularly relevant to Golden Gate Travelers. It consisted of replacing the existing mechanical and control system for two traversers that are used to carry the monorail revenue vehicles from the operating system to storage and maintenance tracks within the maintenance facility. The project consisted of new power distribution, PLC and HMI controls, VFD drives and a sophisticated synchronizing system for the two drives to maintain level operation. The form of power pick up, logic and drive control as well as synchronization are all of similar requirements for modern travelers and all are relevant for this project. Mr. Rees is the EOR for this project.
- The Bayonne Bridge Traveler (Gantry) Project (listed for Mr. Williams, and Mr. Zheng (resume)): This project was included as part of Mr. Rees's experience as it consists of a material handling machinery system that although much larger than the Golden Gate Travelers, does contain similar mechanical and control operating systems.

The system is used to haul and install the 70-ton concrete segments that make up the roadways. The constructed unit is some 500 feet long and 1 million pounds in weight. It has been designed to work with finesse and precision, moving the roadway segments into precise location for craft workers to bind them with steel, epoxy and more concrete. As indicated in our proposal, we consider this project as relevant to the traveler project by virtue of the same challenges we were confronted with in controlling speed and synchronization of drive motors as are present with the traveler.

- Sir Ambrose Shea Tower Drive Vertical Lift Bridge (listed for Mr. Williams) : Mr. Rees is the EOR for the Control System for this relevant project. Our proposal describes the similarity of the technologies used to power and control tower drive lift bridges with those of travelers. The design issues and design philosophy for this vertical lift bridge are similar to those for the travelers; sophisticated state-of-the-art control with back up, synchronization of drive motors and automatic skew control.
- Governor's Island Ferry (listed for Mr. Williams, Mr. Zheng (resume), and Mr. Kanagy): This project has all the minimum qualifications and is substantially equivalent to the Maintenance Traveler Mechanical and Control System of this Project.
- Quogue Bridge (listed for Mr. Zheng (resume), and Mr. Kanagy): This project has all the minimum qualifications and is substantially equivalent to the Maintenance Traveler Mechanical and Control System of this Project.
- Mystic Bridge Rehabilitation (listed for Mr. Williams, Mr. Zheng (resume), and Mr. Kanagy): This project has all the minimum qualifications and is substantially equivalent to the Maintenance Traveler Mechanical and Control System of this Project.
- Angoon Ferry Terminal (listed for Mr. Kanagy): This project has all the minimum qualifications and is substantially equivalent to the Maintenance Traveler Mechanical and Control System of this Project.

American Bridge states that *"Shimmick/Danny's JV fails to substantiate its engineers have any experience, much less ten years of experience, being in responsible charge of the design of Mechanical systems for Maintenance Traveler Systems similar to the one specified in this Contract for the Golden Gate Bridge. It also fails to substantiate its design engineer has any experience, much less ten years of experience, as responsible in charge of design of control system specified for this contract."*

But, ABC misstates what is required. Question 21b does not require design experience with "*mechanical systems for Maintenance Traveler Systems similar to the one specified in this Contract for the Golden Gate Bridge."* Rather, the experience that is required is for the design of mechanical systems for applications "*similar to the operational traveler system specified under this Contract."* The distinction is obviously important since no two systems will be identical and so it is more important that the designer have the depth of experience in similar applications so that they can competently discharge the requirements of this Contract.

In all, the engineers in charge and the design team as a whole meets the minimum qualifications, or their substantial equivalents, for the design of mechanical systems or control systems for applications similar to the operations systems under the District's contract.

Protest Ground No. 3

ABC's Protest dated December 2, 2016 Page 12 Item C states "Shimmick / Danny's JV bid is non-responsive because it fails to substantiate in its bid that it met the requirements of Section II Question 17. This requests:

> *"Provide names of companies within your Organization that will perform structural steel erection under this Contract. Provide information substantiating that during the past 10 years each of these companies has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members."*

Danny's Project No. 1

Danny's retrofit work consisted of replacing an existing swing span with a new lift span, retrofitting of jump spans between the old and new segments of the bridge, and connecting all components together during a shut-down of limited hours. The bridge was then re-opened for immediate use.

The work consisted of:

- Retrofitting a vertical lift span in the place of a swing span in a multi-span bridge across the Mississippi River.
- Retrofit of the members and joints on the spans on either side of the replaced span.
- Cutting out and assisting in floating out of the old component – the swing span (including structural reinforcement to the old swing span for removal)
- Floating in and installation of the new component - the lift span
- Cable installation and testing for the new lift components
- Retrofit/Replacement of 3 bays of damaged floor framing (damaged by others) during pier removal below the bridge including temporarily supporting of the trusses while 3 bays of floor framing were jacked down to barges and new floor framing jacked up into place during a continuous rail outage

The submittal of the BNSF Lift Bridge is responsive, and shows that Danny's worked on the retrofit of a multi-span steel bridge, and meets the bid requirements.

Danny's Project No. 2

The Oakland Bay Bridge Temporary By-pass structure and East Tie-In project (a double-deck steel truss consisting of five double deck spans) accomplished the shifting of traffic onto a temporary detour structure. It was a new part/component added to the existing Oakland Bay Bridge to accomplish the purpose of re-routing traffic during the construction of the new Oakland Bay Bridge.

The work consisted of:

- Building of the new component span supported by temporary falsework until ready for launching into place and connection to existing bridge spans.
- Special scaffolding was used for access and protection against overhead work throughout the project including retrofit locations.
- Shutting down traffic during a time constrained bridge outage.
- Cutting out and assisting in launching out of the old component span.
- Retrofit of the expansion joints at each deck level in order to receive the new bridge spans.
- Retrofit of the existing bridge span to be rolled-out to accommodate construction loading and removal sequencing.
- Retrofit of the existing bridge in adjacent span to allow for the roll-out of the existing bridge span with the use of tension high strength rods.
- Retrofit of the existing bridge at pier E1 to install new bridge barrier rail across new deck joints and tie-in existing barrier rail to new barrier rail on new component span.
- Connecting the new component span to the existing structure for immediate use.

Lead plans were necessary in order to remove rivets as well as other components, such as barrier rails, in the removal of the existing bridge span and in the connection of the new component span.

Limited access was encountered in detaching the existing bridge spans which were cut out and moved in order to add the bypass structure, building and holding the new structure in place next to the existing bridge until time for switching of the spans, working over and adjacent to the US Coast Guard Base on Yerba Buena Island. In addition, access was restricted to limited work hours during a Labor Day weekend shut-down of bridge traffic.

Special and unique falsework was built in order to hold the new structure in place until tie-in, as well as to receive the old structure when it was launched out of place. Additionally, due to the location of the work, special scaffolding was required to access work areas up to 180 feet above ground.

Challenging environmental conditions included wildlife (bird nesting) considerations, seismic concerns, wind and corrosion considerations, similar to the Golden Gate Bridge.

Rivet and fastener removal was required in order to remove the old spans and replace with new spans.

Removal and replacement of existing structural steel members was one of the primary elements of the East Tie-In and Roll-out/Roll-in portions of the project.

The submittal of the Oakland Bay Bridge Temporary Bypass structure is responsive, and demonstrates that Danny's worked on the retrofit of a multi-span steel bridge involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members and meets the bid requirements.

Also included in our SOQ were references to Oregon DOT for both Questions #6 and #9. Danny's work on the Megler-Astoria Bridge retrofit provides additional illustration of its experience pertaining to minimum qualifications.

And finally, as the Golden Gate Bridge District is aware, Danny's Construction has already successfully demonstrated its experience and ability to perform based on its past performance of retrofit work on the Golden Gate Bridge, working as a subcontractor to Shimmick for the steel erection on the Phase IIA Retrofit Project which is listed as Project #2 on the Shimmick responses to Item #17 Structural Steel Erection.

Protest Ground No. 4

ABC contends that because Mr. Williams and Stafford Bandlow do not appear on any Plan Holders Lists they did not comply with the requirement that they sign Non-Disclosure Agreements.

Assuming this is the case, and assuming this is a variance from bidding requirements, it is certainly inconsequential and waivable. American makes no contention that Shimmick/Danny's obtained an unfair advantage from this circumstance, or that its bid price was affected.

Beyond this obvious conclusion is the fact that in response to a potential bidder's question, the District indicted it would accept bids from bidders which list subcontractors, suppliers and consultants who were not plan holders at the time of bid. The final paragraph of the District's response to Bidder Inquiry #246 reads as follows:

See the District's response to Bidder Question Nos. 25 and 27. The District will accept bids from bidders which list subcontractors or suppliers which are not current plan holders at the time of bid. As stated in the response to question 25, the pre-bid meeting is not mandatory for subcontractors. As stated in the response to question 27, if a bidder chooses to list a subcontractor or enter into a subcontract with a subcontractor, consultant or supplier that has not reviewed the Contract Documents, because the bidder has made the decision that such subcontractor does not need to access the Contract Documents to provide the bidder with a bid, the bidder will be solely responsible for any and all cost and time impacts related to such subcontracted work. The District will consider any party participating in a bid proposal that has not executed the Non-Disclosure Agreement for Bidding Purposes with the District and fulfilled all other related conditions as not having had access to the Contract Documents to review them.

Therefore, if Mr. Williams and Stafford Bandlow do not appear on any Plan Holders List this does not make the bid non-responsive.

Protest Ground No. 5

ABC asserts Shimmick/Danny's failed to submit its safety record. ABC provides no evidence to back up this assertion.

In response to the SOQ, question 12, Shimmick/Danny's provided information regarding the safety record of each member of the joint venture. Shimmick/Danny's therefore did what the bidding documents required; its bid was responsive.

Protest Ground No. 6

ABC's Protest Ground No. 6 mainly reiterates arguments it made as to other Protest Grounds, except that it correctly, if summarily, addresses the concept of "responsibility." However, as discussed above, Shimmick/Danny's is a responsible bidder and has demonstrated it has the experience and qualifications at least equal to those enumerated in the SOQ. As important, Protest Ground No. 6 offers no evidence compelling the District to exercise its judgment and discretion in a way which would cause it, or any reasonable evaluator, to decide Shimmick/Danny's is irresponsible.

Conclusion

The bid of Shimmick/Danny's is regular, and ABC has not shown otherwise. Shimmick/Danny's is a responsible bidder, and ABC has not presented any reason or evidence to suggest the District abused its discretion or arbitrarily exercised its judgment when evaluating the experience and qualifications of Shimmick/Danny's.

The District owes it to the taxpayers to award the contract for the Project to Shimmick/Danny's, the lowest responsible and responsive bidder.

Regards,

Christian Fassari

Christian Fassari
Executive Vice President
Shimmick Construction
(Attorney in Fact for Shimmick / Danny's JV)

American Bridge

1390 Willow Pass Road
Suite 330
Concord, CA 94520
T: 510.808.4600
F: 510.808.4601
www.americanbridge.net

December 12, 2016 (Via email to DistrictSecretary@goldengate.org and Via FedEx)

Board of Directors
Golden Gate Bridge Highway & Transportation District
P.O. Box 9000
Presidio Station
San Francisco, CA 94129-0601

Subject: Golden Gate Bridge Construction Contract No. 2016-B-1 Bridge Physical Suicide Deterrent System and Wind Retrofit Project
Protest Based Upon Contract Award
Reply to Shimmick/Danny's JV letter of December 6, 2016

Ladies and Gentlemen:

American Bridge Company replies to Shimmick/Danny's letter dated December 6, 2016 with respect to American Bridge's protest of award of the above contract to Shimmick/Danny's. We received the letter late Friday, December 9, 2016.

Shimmick/Danny's admits its bid was non-responsive, confuses non-responsiveness with non-responsibility, and tacitly admits its non-responsiveness is not so inconsequential that it could not affect the amount of the bid. Its bid must be rejected.

A. Shimmick/Danny's bid is non-responsive.

The "basic rule of competitive bidding is that bids must conform to specifications, and that if a bid does not so conform, it may not be accepted." (*Konica Business Machines U.S.A., Inc. v. The Regents of the University of California* (1988) 206 Cal.App.3d 449, 454.) To be responsive, Shimmick/Danny's bid had to promise to do everything the District's Bid Documents required. Responsiveness is determined from the face of the bid. (*Great West Contractors Inc. v Irvine Unified School District* (2010) 187 Cal.App.4th 1425, 1452-1454.) Shimmick/Danny's bid did not promise to do everything the District Bid Documents required, in fact it promised to violate those requirements with companies and engineers that did not meet the specified minimum qualifications and experience requirements. This makes Shimmick/Danny's bid non-responsive.

Because this, or any other information in the bid, may also be used by the District in assessing responsibility of the bidder does not affect whether the bid was responsive. Shimmick/Danny's suggestion that it is responsible and therefore is responsive is not a correct analysis. A bid must be responsive **and** the bidder responsible to receive a contract award by a public entity in California.

B. Shimmick/Danny's admits its bid is non-responsive.

Shimmick/Danny's admits its bid is non-responsive by saying its bid "does not materially deviate from the contract requirement". (Shimmick/Danny's letter p. 1.) Any deviation, "material" or not, makes the bid non-responsive. If the bid is non-responsive it must be rejected unless the deviation "is so inconsequential that it **could not affect** the amount of the bid." (*Konica, supra*, emphasis added) or is not likely to

American Bridge

affect the response of potential bidders (*Ghilotti Construction Co. v. City of Richmond* (1996) 45 Cal.App.4th 897, 908). Here the deviation is not so inconsequential it could not affect the amount of the bid and was likely to affect the response of other potential bidders, and for both reasons cannot be waived by the District.

Shimmick/Danny's also admits its bid is non-responsive by saying its Systems Control Vendor, Panatrol, has "substantially equivalent attributes" (Shimmick/Danny's letter p. 4). Because the District's Bid Documents do not allow for "substantially equivalent attributes" for the System Control Vendor, but rather mandate specific experience; experience that Panatrol does not have according to Shimmick/Danny's bid.

Shimmick/Danny's also admits its bid is non-responsive by saying its bid engineers for the Traveler Mechanical System and for the Traveler Control System have "substantial equivalents" (Shimmick/Danny's letter p. 5). The District's Bid Documents mandate "ten years of responsible charge of the design of mechanical or control systems, as applicable, for the applications similar to the operational traveler system specified under this Contract".

C. Shimmick/Danny's bid is non-responsive as to the Systems Control Vendor.

The District's Bid Documents required bidders to "provide information substantiating, that during the past ten years, the System Control Vendor designed, furnished and installed a minimum of three Traveler Control Systems similar to the Traveler Control System shown and specified in this Contract". (District Proposal Form, paragraph 21.a.)

Shimmick/Danny's failed to do this, instead promising to have an unqualified and inexperienced Vendor design and furnish the Traveler Controls System, and never identifying any vendor to install, much less a Vendor that had installed three Traveler Control Systems in the past ten years.

The Bid Documents did not allow for "equivalent attributes" as Shimmick/Danny's tries to foist off on the District, and this assertion by Shimmick/Danny's is an admission that its bid is non-responsive. Shimmick/Danny's bid promises to use a vendor that has never designed and never furnished and never installed any Traveler Control System, much less three "similar to the Traveler Control System shown and specified for this Contract". Shimmick/Danny's bid is non-responsive.

There is no contract provision for "so called equivalent attributes" as asserted by Shimmick/Danny's. It would be hard to find a clearer cut case of non-responsiveness.

Shimmick/Danny's fails to identify the installer for the Traveler Control System, much less a vendor that has installed a minimum of three Traveler Control Systems in the past ten years. Shimmick/Danny's bid is non-responsive.

American Bridge

Shimmick/Danny's promising in its bid to use a vendor not in compliance with the District's Bid Document requirements to design and furnish the Traveler Control System, and by not identifying the installer of the Traveler Control System, allowed it a huge bid advantage, some $35 million, meaning that the non-responsiveness is not inconsequential and cannot be waived by the District as a matter of law.

D. Shimmick/Danny's bid is non-responsive as to the engineer in charge of design of the Traveler Mechanical System.

The District's Bid Documents required bidders to provide substantiation that the professional engineers in charge of the design and detailing of the Traveler Mechanical System have a "minimum of ten years of responsible charge of the design of mechanical systems for applications similar to the operational traveler system specified under this Contract." (District Proposal Form, paragraph 21.b.)

Shimmick/Danny's failed to do this in its bid and cannot now, in an after the fact letter, add to or modify the information in its bid because responsiveness is determined from the face of the bid (*Great West Contractors, supra*).

The engineers in Shimmick/Danny's bid do not have any, much less ten years of, experience as responsible charge of design for applications similar to the operational traveler system specified under this contract. Shimmick/Danny's admits as much by saying they have "substantial equivalents". The Bid Documents did not allow "substantial equivalents" but require "applications similar to the operational traveler system". Shimmick/Danny's does not point to where its engineers have any, much less ten years, of experience "applications similar to the operational traveler system" specified here.

Shimmick/Danny's bid is non-responsive and, as pointed out above and in our earlier letter, the non-responsiveness is not inconsequential and cannot be waived by the District as a matter of law.

E. Shimmick/Danny's bid is non-responsive as to the engineer in charge of design of the Traveler Control System.

The District's Bid Documents required bidders to provide substantiation that the professional engineers in charge of the design and detailing of the Traveler Mechanical System have a minimum of ten years of responsible charge of "design of control systems for applications similar to the operational traveler system specified under this Contract". (District Proposal Form, paragraph 21.b.)

Shimmick/Danny's failed to do this in its bid and cannot now, in an after the fact letter, add to or modify the information in its bid because responsiveness is determined from the face of the bid (*Great West Contractors, supra*).

The engineers in Shimmick/Danny's bid do not have any, much less ten years of, experience of responsible in charge for design for applications similar to the operational traveler system specified under this contract. Shimmick/Danny's admits as much by saying they have "substantial equivalents". The Bid Documents did not

American Bridge

allow "substantial equivalents" but require "applications similar to the operational traveler system". Shimmick/Danny's does not point to where its engineers have any, much less ten years, of experience "applications similar to the operational traveler system" specified here.

Shimmick/Danny's bid is non-responsive and as pointed out above and in our earlier letter, the non-responsiveness is not inconsequential and cannot be waived by the District as a matter of law.

F. Shimmick/Danny's bid is no-responsive as to the engineer in charge of design of the Traveler Control System.

The District's Bid Documents required bidders to provide substantiation that each of the companies performing structural steel erection have, during the past 10 years, worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members. (District Proposal Form, paragraph 17.)

Shimmick/Danny's failed to do this in its bid and cannot now, in an after the fact letter, add to or modify the information in its bid because responsiveness is determined from the face of the bid (*Great West Contractors, supra*).

Shimmick/Danny's bid is non-responsive and, as pointed out above and in our earlier letter, the non-responsiveness is not inconsequential and cannot be waived by the District as a matter of law.

G. Shimmick/Danny's failed to submit its safety and related information with its bid.

Shimmick/Danny's JV failed to submit its safety record and related information with its bid as required by the District's Bid Documents for its proposed Project Manager.

Shimmick/Danny's admits it did not submit this information with its bid, making its bid non-responsive.

H. Shimmick/Danny's JV non-responsiveness cannot be waived.

Shimmick/Danny's does not dispute that its non-responsiveness in promising to use a non-contract compliant, unqualified and inexperienced Traveler System Vendor, Traveler Mechanical System design engineer, and Traveler Control System design engineer, allowed it a huge bid advantage. Therefore as a matter of law the District cannot waive the non-responsibility.

American Bridge

CONCLUSION

The District, like all entities and person, must follow the law. California embraced public contracting statutes to avoid the pitfalls of favoritism in the award of public contracts. (Cal. Pub. Con. Code § 100.) The public policy of protecting the integrity of the bidding process is so strong that bidding rules apply even where there is no evidence of impropriety. (*Konica, supra* at 456.)

Here Shimmick/Danny's bid is non-responsive, and the law prohibits public entities from awarding contracts to a non-responsive bidder. (*Konica, supra* at 454.)

The one exception to this rule is that a public entity may waive minor deviations, defined as a deviation which "is so inconsequential that it **could not affect** the amount of the bid." (*Ibid.*, emphasis added) or is not likely to affect the response of potential bidders (*Ghilotti Construction, supra* at 908).

Shimmick/Danny's fails to show its deviations were so inconsequential that they **could not affect** the amount of the bid (*Konica, supra*). Not only could Shimmick/Danny's non-responsiveness affect the amount of the bid, it did affect the amount of the bid, by over $35 million.

Shimmick/Danny's failed to substantiate in its bid that it met the qualifications and experience requirements for the Traveler System Vendor, the design engineer for the Traveler Mechanical System, the design engineer for the Traveler Control System and the Structural Steel Erector, indeed its bid showed that it did not meet any of these District Bid Document requirements. These were rather burdensome, but important requirements, that American Bridge as some considerable effort met, and these requirements likely deterred other bidders from bidding. (*See Baldwin-Lima-Hamilton Corp. v. Superior Court* (1962) 208 Cal.App.2d 803, 822.)

For each of these reasons, Shimmick/Danny's deviations cannot be shown to be so inconsequential that they could not affect the amount of the bid. Therefore, Shimmick/Danny's non-responsiveness cannot be waived by the District.

Shimmick/Danny's arguments that its non-responsive bid appears to save money is not a factor that can be considered in determining whether the bid is non-responsive or whether the irregularity is waivable. Because Shimmick/Danny's bid is non-responsive and the irregularities cannot be waived by the District, any award of the contract to Shimmick/Danny's would be void and unenforceable as being in excess of the agency's powers. (*Miller v. McKinnon* (1942) 20 Cal.2d 83, 87-89.)

The law gives the District two choices, award to American Bridge or reject all bids.

American Bridge respectfully requests the District reject Shimmick/Danny's JV's Bid and award Golden Gate Bridge Construction Contract No. 2016-B-1 Bridge Physical Suicide Deterrent System and Wind Retrofit Project to American Bridge Company, or not at all.

American Bridge

Very truly yours,

AMERICAN BRIDGE COMPANY

Brian A. Petersen
Vice President

cc: Robert L. Leslie

11. Has your organization experienced any losses greater than $1,000,000 in the last five years under a (i) builder's risk insurance policy; (ii) general commercial liability insurance policy; or (iii) automobile liability insurance policy?

☐ Yes ☒ No

If yes, please explain the nature of each such claim, amount, and current status on separate pages.

12. Has your organization or personnel who will be assigned to the project been cited by any governmental entity for safety violations within the last five (5) years?

☒ Yes ☐ No

If yes, describe the citation(s) and its ultimate disposition on separate pages.

13. Has your organization ever been convicted, by a court of competent jurisdiction, of any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of any public works construction contract (as defined in Public Contract Code section 1101) with any public entity, including the Regents of the University of California or the Trustees of the California State University.

☐ Yes ☒ No

If "Yes," on separate pages, provide all of the following details: name and location of the project, date of construction, court, charge, penalty/sentence, underlying facts of conviction, the public agency for whom the work was performed, and contact for the agency.

14. In the last ten (10) years has your organization been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?

☐ Yes ☒ No

If "yes," on separate pages, explain each incident on a separate executed page. Identify the year of the event, the owner, the project and the basis for the finding by the public agency for each incident.

15. Has your organization been subject to a court judgment within last 10 years, which precluded your organization from bidding on a construction project, either public or private, for any period of time?

☐ Yes ☒ No

If "yes," on separate pages, identify the date of the judgment, the court in which the judgment was entered, the public agency involved (if any), the period of time for which you were precluded from bidding, the reasons for being precluded from bidding, and enclose a copy of the judgment with your bid.

16. Has your organization been subject to a settlement within last 10 years, with any state or local public agency which precluded your organization from bidding on any construction project, either public or private, for any period of time?

☐ Yes ☒ No

If "yes," on separate pages, identify the date of the settlement, the public agency involved (if any), the period of time for which you were precluded from bidding, the reasons for being precluded, and enclose a copy of the settlement agreement with this information.

SHIMMICK CONSTRUCTION

General Engineering Contractor
State License No. 594575

July 1, 2016

RE: OSHA Citations

On August 7, 2014 Shimmick Construction Co. Inc. (SCCI) received notification from the Division of Occupational Safety and Health that SCCI was being cited for one general citation with two regulatory line items and 2 serious citations. The project was the Transbay Center Project in San Francisco, California, which included multiple crane activities.

General Regulatory Citation Item #1- Cal/OSHA alleged that SCCI failed to ensure that a crane was provided with a descriptive booklet to be available on and in the cab at all times. (T8CCR 1616).

General Regulatory Citation Item #2- Cal/OSHA alleged that SCCI failed to ensure that a certificate was issued indicating that the required test and/or examinations have been performed was available with the crane or at the project site. (T8CCR 5025).

Serious Citation #1 - Cal/OSHA alleged that SCCI failed to maintain or conduct inspections of the swivel assembly within the headache ball of a crane according to the manufacturer's procedures (T8CCR 3328 (b).

Serious Citation #2- Cal/OSHA alleged that SCCI failed to inspect and maintain the crane headache ball swivel and its internal components as recommended by the manufacturer. (T8CCR 1613.4(a).

The citations listed were discussed with Cal/OSHA prior to the hearing and were found not to have merit. During the course of the cranes activity work, the headache ball separated at the swivel causing the ball to fall to the ground. As the headache ball was falling, it hit a section of scaffold resulting in an employee being injured. Cal/OSHA agreed that this unfortunate incident was not due to any SCCI negligence and after a Judge ordered conference on the day of the hearing, Cal/OSHA agreed to settle the citations by dismissing serious citation #2, reclassifying serious citation #1 to a regulatory citation with a $2,000 penalty, and reducing the penalties on the two regulatory citations to $350.00 each. The end result was three regulatory citations, totaling $2,700.00.

Since the aforementioned incident, SCCI has reiterated to all project management the need to maintain all required documentation in the cab of every crane at all times. In addition, as a proactive approach, SCCI inspected every headache ball on every crane it owns for compliance with the manufacturer's recommendations. This incident was shared with the entire SCCI workforce and SCCI is confident that the probability of re-occurrence is nonexistent.

Shimmick Construction considers itself to be a leader in safety throughout the construction industry and we take seriously the responsibility to provide a safe work environment for our employees.

Sincerely,

Ike Riser
Shimmick Construction Co., Inc. / Safety Director
8201 Edgewater Dr. Ste 202, Oakland, CA 94621
Office 510.777.5029 | Mobile 415.760.2384| Fax 510.777.5099

11. Has your organization experienced any losses greater than $1,000,000 in the last five years under a (i) builder's risk insurance policy; (ii) general commercial liability insurance policy; or (iii) automobile liability insurance policy?

☐ Yes ☒ No

If yes, please explain the nature of each such claim, amount, and current status on separate pages.

12. Has your organization or personnel who will be assigned to the project been cited by any governmental entity for safety violations within the last five (5) years?

☒ Yes ☐ No

If yes, describe the citation(s) and its ultimate disposition on separate pages.

13. Has your organization ever been convicted, by a court of competent jurisdiction, of any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of, or performance of any public works construction contract (as defined in Public Contract Code section 1101) with any public entity, including the Regents of the University of California or the Trustees of the California State University.

☐ Yes ☒ No

If "Yes," on separate pages, provide all of the following details: name and location of the project, date of construction, court, charge, penalty/sentence, underlying facts of conviction, the public agency for whom the work was performed, and contact for the agency.

14. In the last ten (10) years has your organization been denied an award of a public works contract based on a finding by a public agency that your company was not a responsible bidder?

☐ Yes ☒ No

If "yes," on separate pages, explain each incident on a separate executed page. Identify the year of the event, the owner, the project and the basis for the finding by the public agency for each incident.

15. Has your organization been subject to a court judgment within last 10 years, which precluded your organization from bidding on a construction project, either public or private, for any period of time?

☐ Yes ☒ No

If "yes," on separate pages, identify the date of the judgment, the court in which the judgment was entered, the public agency involved (if any), the period of time for which you were precluded from bidding, the reasons for being precluded from bidding, and enclose a copy of the judgment with your bid.

16. Has your organization been subject to a settlement within last 10 years, with any state or local public agency which precluded your organization from bidding on any construction project, either public or private, for any period of time?

☐ Yes ☒ No

If "yes," on separate pages, identify the date of the settlement, the public agency involved (if any), the period of time for which you were precluded from bidding, the reasons for being precluded, and enclose a copy of the settlement agreement with this information.

Bidder's Statement of Qualifications
and Business References
for
GGBHTD Contract No. 2016-B-1

12. Has your organization or personnel who will be assigned to the project been cited by any governmental entity for safety violations within the last five (5) years?

☒ YES ☐ NO

1. *Danny's Construction Company, LLC, received an OSHA citation in South Dakota on April 16, 2015. Employee used incorrect size bolts in a connection in spite of the bolts being provided, and readily available, and supervisor's instruction regarding correct bolts. This violation incurred a $7,000 fine. #1055969.015*

2. *Danny's Construction Company, LLC was cited for an electrical cord/fire prevention issue. This violation incurred a fine of $300. #317775682*

Section II: Minimum Qualifications and Experience for Bidder's Organization and Project Management Team

ATTENTION For qualifications and experience categories of items 17-21 below, the term "Bidder's Organization" refers to the Bidder and all subcontractors, consultants and suppliers to be employed by you for work under this Contract unless noted otherwise.

In its answers to items 17 through 21, **you must substantiate that it possesses the following minimum qualifications and experience for each qualifications and experience category listed below, or the substantial equivalent**, either as an individual company or in combination with the subcontractors, consultants and suppliers performing specific work. Each of the work qualifications and experience categories below is essential to the successful performance of the work for this project. Failure to demonstrate that it possesses this minimum qualifications and experience, including the required certifications, will bear directly on both your responsibility and responsiveness.

17. Provide names of companies within your Organization that will perform structural steel erection under this Contract. Provide information substantiating that during the past 10 years each of these companies has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members. To substantiate the required experience, at minimum, for each of the companies, provide:

    i. names, sizes and locations of projects with relevant experience;
    ii. brief descriptions of the projects;
    iii. a company role in a project (a prime contractor or a subcontractor) and description of work performed by the company on the project; and
    iv. names and phone numbers of owners' representatives.

18. Provide the name of a company within your Organization that will perform the lead abatement and the cleaning and painting of structural steel activities under this Contract. Provide documentation of SSPC QP certification, and information substantiating that, during the past 5 years, this company has performed work on similar projects, in similar work environments, and under quality control provisions similar to the quality control required by this Contract. To substantiate the required experience, at minimum, for each of the companies, provide:

    i. names, sizes and locations of projects with relevant experience,
    ii. brief descriptions of the projects,
    iii. a company role in a project (a prime contractor or a subcontractor) and description of work performed by the company on the project, and
    iv. names and phone numbers of owners' representatives

19. Provide the following documentation for the product you will use for the Suicide Deterrent Net System (SDNS): ~~name of a company within your Organization that will perform the fabrication of the Suicide Deterrent Net System under this Contract. Provide information substantiating that, during the past 5 years, this company fabricated nets similar to the Suicide Deterrent Net System required by this Contract and under quality control similar to the quality control required by this Contract. To substantiate the required experience, at a minimum, provide~~

    ~~i. names, sizes and locations of projects with relevant experience,~~
    ~~ii. brief descriptions of the projects,~~
    ~~iii. the company role in each project (a prime contractor or a subcontractor) and description of work performed by the company on the project, including description and organization of a prefabrication yard, quality control methodology used for the work, and~~
    ~~iv. names and phone numbers of owners' representatives.~~

17. Structural Steel Erection

Provide names of companies within your Organization that will perform structural steel erection under this Contract. Provide information substantiating that during the past 10 years each of these companies has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members. To substantiate the required experience, at minimum, for each of the companies, provide:

i. names, sizes and locations of projects with relevant experience;
ii. brief descriptions of the projects;
iii. a company role in a project (a prime contractor or a subcontractor) and description of work performed by the company on the project; and
iv. names and phone numbers of owners' representatives.

Name of Company
Shimmick Construction Company, Inc.

Add additional sheets as necessary.

Project 1

Project Name: Golden Gate Bridge Seismic Retrofit – Phase II, Completed February 2007		
Project Location: San Francisco, California		
Company Role in Project: ☒ Prime Contractor (JV Partner – Shimmick/Obayashi, JV) ☐ Subcontractor	Project Size: $154,474,832	Owner's Representative Name: John Eberle Title: Deputy District Engineer Phone Number: 415-923-2200

Project Elements:		
☒Lead Contamination	☒Limited Access	☒Unique or Special Scaffolding
☒Challenging Environmental Conditions	☒Rivet and Fastener Removal	☒New Fastener Installation
☒Removal and Replacement of Existing Structural Steel Members		

Brief Project Description:
Seismic retrofit of the South Approach Structures of the Golden Gate Bridge, including the 700' long South Viaduct, two 200' tall South Pylons, the South Anchorage House and the 300' long Ft. Point Arch. All work was performed on an historically significant, world-renowned structure while facing extreme access, staging, security and environmental challenges. The retrofit included strengthening the existing Bridge steel superstructures with 2,500 tons of new steel, jacking the Bridge under live traffic loading to completely replace 3 Viaduct steel support towers, covering 200,000 SF of Pylon surface area with 1" thick steel reinforcing plating and then covering the steel plating with 4" of board finish concrete to replicate the historic concrete surface, anchoring the existing Pylon foundations into bedrock with sixty 1,000 ton tie down anchors and removing and replacing the entire west wall, approx. 100' long by 100' tall, of the Anchorage House while temporarily supporting the House roof about the main Bridge suspension cables. The scope of the Project was increased significantly when the Owner added finish painting of the majority of the South Approach steel structures by change order to the contract. All road deck work was done, including the replacement and modification of the South Approach deck joints, without closing the Bridge completely to traffic and during severely limited road deck night work windows. SOJV was never late opening lanes to commuter traffic in the morning. SOJV's ability to skillfully balancing the exacting requirements of working on an historic structure, with stringent environmental restrictions, the Bridge District's revenue operations and the expectations of more than 100,000 annual visitors, were key to the success of this unique Project. The Project was awarded the 2007 Outstanding Civil Engineering Achievement Award (OCEA) by the American Society of Civil Engineers.

Project 2

Project Name:		
Golden Gate Bridge Retrofit Phase IIIA, Completed March 2014		
Project Location:		
San Francisco, CA		
Company Role in Project: ☒ **Prime Contractor (JV Partner – Shimmick/Obayashi, JV)** ☐ **Subcontractor**	Project Size: **$90,115,000**	Owner's Representative **Name: John Eberle** **Title: Deputy District Engineer** **Phone Number: 415-923-2200**

Project Elements:		
☒**Lead Contamination**	☒**Limited Access**	☒**Unique or Special Scaffolding**
☒**Challenging Environmental Conditions**	☒**Rivet and Fastener Removal**	☒**New Fastener Installation**
☒**Removal and Replacement of Existing Structural Steel Members**		

Brief Project Description:
The project was Part A of the third and final phase of the seismic and wind retrofit of the Golden Gate Bridge. The project has four primary elements of work:

1. Lead and hazardous material remediation
2. North Pylon and Transverse Cable Guide strengthening
3. North Anchorage Housing strengthening
4. Existing roadway and sidewalk decks replacement at the Anchorage Housing

The contract work presented unique challenges due to access restraints and the historical significance of the bridge. The project also required extensive coordination of the existing structure with new construction. With the exception of the sidewalk and bridge deck replacement, the contract work was not visible to the public.

The most publicly visible portion of contract work was the complete replacement of the existing roadway, sidewalks and curbs within the limits of the North Anchorage Housing without impacting the 100,000 cars that use the bridge each day. Prior to the replacement of the roadway deck, a temporary support structure was erected beneath the roadway to support construction loads on the existing deck and the edges of the deck during its removal. After the complete installation of all new precast deck units, an asphalt concrete overlay was placed over the entire deck, and a new maintenance scaffolding system was installed underneath the deck inside the anchorage house.

17. Structural Steel Erection

Provide names of companies within your Organization that will perform structural steel erection under this Contract. Provide information substantiating that during the past 10 years each of these companies has worked on the retrofit of at least two multi-span steel bridges involving lead contamination, limited access, unique or special scaffolding, challenging environmental conditions, rivet and fastener removal, new fastener installation, and removal and replacement of existing structural steel members. To substantiate the required experience, at minimum, for each of the companies, provide:

i. names, sizes and locations of projects with relevant experience;
ii. brief descriptions of the projects;
iii. a company role in a project (a prime contractor or a subcontractor) and description of work performed by the company on the project; and
iv. names and phone numbers of owners' representatives.

Name of Company
Danny's Construction Company, LLC

Add additional sheets as necessary.

Project 1

Project Name:		
BNSF Lift Bridge #204.66		
Project Location:		
Burlington, IA		
Company Role in Project:	Project Size:	Owner's Representative
☐ Prime Contractor	$10,880,000	Name: Ron G. Berry
☒ Subcontractor		Title: Project Engineer
		Phone Number: (913) 551-4164
Project Elements:		
☒Lead Contamination	☒Limited Access	☒Unique or Special Scaffolding
☒Challenging Environmental Conditions	☒Rivet and Fastener Removal	☒New Fastener Installation
☒Removal and Replacement of Existing Structural Steel Members		
Brief Project Description:		
As a subcontractor, Danny's Construction Company performed all the structural steel erection of a 360' double track through truss span which was erected on 4 barges on the Mississippi River and then floated into place and connected during a weekend railroad outage to replace an existing swing span. The float in was accomplished in Winter Conditions battling ice and changing water elevations on the river and working		

closely with coast guard and other navigation authorities and accomplished on time to reinstate railroad traffic on a major line.

Scope also included the erection of the support towers, sheaves, and rough setting all operating equipment.

DCCI was also contracted to replace 3 bays of damaged floor framing that was damaged by others during pier removal below the bridge. Replacement included temporarily supporting of the trusses while 3 bays of floor framing were jacked down to barges and new floor framing jacked up in to place during a continuous rail outage.

Project 2

Project Name: **Oakland Bay Bridge Temporary By-Pass Structure and East Tie-In**		
Project Location: **Yerba Buena Island, California and Oakland, CA**		
Company Role in Project: ☐ **Prime Contractor** ☒ **Subcontractor**	Project Size: **$23,000,000**	Owner's Representative **Name: Brian Maroney** **Title: Resident Engineer** **Phone Number: 510-385-7648**
Project Elements:		
☒**Lead Contamination** ☒**Challenging Environmental Conditions** ☒**Removal and Replacement of Existing Structural Steel Members**	☒**Limited Access** ☐**Rivet and Fastener Removal**	☒**Unique or Special Scaffolding** ☒**New Fastener Installation**
Brief Project Description: This project consisted construction of erection of a temporary bridge span which was erected on falsework towers and then launched into place over a weekend bridge outage of the Oakland Bay Bridge. The existing span of the bridge was cut out and removed as part of the launch. We were a subcontractor to CC Myers for this project. Additional scope included work on the East-tie in and approach area which was retrofit to accommodate the new bridge.		

i. Manufacturer's Name, product literature, and specifications
ii. Product data sheets, including list and descriptions of all SDNS components
iii. Certification signed by the selected Manufacturer that the product, all its components and materials will conform to Section 60-1.
iv. Warranty term and conditions, including inspection and maintenance frequency, that comply with Sections 6-3.06 and 60-1.
v. Inspection and maintenance procedures, including pressure washing.
vi. Certification signed by the selected Manufacturer that all components and materials of the product will comply with the Buy America requirements in Section 6-2.05.
vii. Name and statement of qualifications of the Manufacturer's Representative(s) demonstrating compliance with the minimum qualifications and experience as follows:
   (a) Five (5) years of experience in net system fabrication and installation of a net system similar in construction to the SDNS.
   (b) Experience in geometry and tension control procedures required to fabricate and install a net system similar in construction to the SDNS to precise tolerances.
   (c) Proficient in timely and accurate record keeping and preparation of reports.

20. For each fabricator performing work governed by Section 55, Steel Structures, which includes but is not limited to fabrication of the struts and frames of the net supports and the maintenance traveler structural system, enclose a copy of its certification under AISC certified as Certified Bridge Fabricator – Intermediate (IBR) or as Certified Bridge Fabricator – Advanced (ABR), and a substantiation of a minimum of five (5) years of experience in successful fabrication of structural steel for highway bridges in accordance with the AWS D1.5 Bridge Welding Code. To substantiate the required experience, at minimum, for each fabricator provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects,
iii. a fabricator's role in each project (a prime contractor or a subcontractor) and description of work performed by the fabricator on each project, and
iv. names and phone numbers of owners' representatives.

21. For the Maintenance Traveler System,

a. Provide the name of ~~companies~~ a company within your Organization that will ~~perform~~ be your System Control Vendor under this Contract. Provide information substantiating that, during the past ~~5~~ ten (10) years, your System Control Vendor designed, furnished and installed a minimum of three Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract ~~these companies fabricated Travelers and a Traveler Drive System similar to the one required by this Contract and under quality control similar to the quality control required by this Contract~~. To substantiate the required experience, at a minimum, provide

   i. names, sizes and locations of projects with relevant experience,
   ii. brief descriptions of the projects,
   iii. the company role in each project (a prime contractor or a subcontractor) and description of work performed by the company on the project, including description and organization of ~~a prefabrication yard, quality~~ control methodology used for the work, and
   iv. names and phone numbers of owners' representatives.

b. Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of Qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the

applications similar to the operational traveler system specified under this Contract. To substantiate the required experience, at a minimum, provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects,
iii. the role in each project, and
iv. names and phone numbers of owners' representatives.

22. Submit the name, company name, business telephone number and driver's license number, and a Statement of Qualifications for each individual assigned by you as a "Key Member" of the your Project Management Team, as specified in Section 2-1.36, Contractor's Project Management Team. The statements must substantiate that each individual to be conducting work of the specific Key Member position on your Project Management Team possesses the minimum qualifications and experience for the position indicated in Section 2-1.36 or the substantial equivalent. To substantiate the required qualifications and experience, at a minimum, for each listed individual provide all relevant experience, education, training and professional licenses, if any, and references. Please note that the District reserves the right to undertake security and background checks on the proposed Key Members of the your Project Management Team to verify whether they would be cleared for access to Security Sensitive Information and Restricted Areas as defined in the Non-Disclosure Agreement for Release of Security Sensitive Information for Bidding Purposes.

The undersigned Bidder represents and warrants that the information provided in response to this Statement of Qualifications and Business References is true and accurate to the best of its knowledge, and that the undersigned intends that the Golden Gate Bridge, Highway and Transportation District rely thereon in awarding the subject Contract. Moreover, the undersigned Bidder understands that a material false statement or omission in this Statement is sufficient cause for disqualifying its bid or cancellation of the Contract at the sole discretion of the District.

SIGNATURES

Name of Bidder: Shimmick/Danny's Joint Venture

Business Address: 8201 Edgewater Drive, Suite 202, Oakland, CA 94621

The undersigned certify that they sign this Proposal with full and proper authorization to do so.

By Christian P. Fassari Title Executive Vice President of Shimmick Construction

By Title President of Danny's Construction Company, LLC

21. Maintenance Traveler

a. Company

Provide the name of a company within your Organization that will be your System Control Vendor under this Contract. Provide information substantiating that, during the past ten (10) years, your System Control Vendor designed, furnished and installed a minimum of three Traveler Control Systems, which operation record can be verified, similar to the Traveler Control System shown and specified for this Contract. To substantiate the required experience, at a minimum, provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects,
iii. the company role in each project (a prime contractor or a subcontractor) and description of work performed by the company on the project, including description and organization of control methodology used for the work, and
iv. names and phone numbers of owners' representatives.

Name of Company **Panatrol Corporation**
☒ System Control Vendor

Add additional sheets as necessary.

Project 1

Project Name: **Traverser Controls**		
Project Location: **Newark Airport in NJ**		
Company Role in Project: ☐ **Prime Contractor** ☒ **Subcontractor**	Project Size: **$ 43,980 for controls & drives**	Owner's Representative **Name: Upon Request** **Title:** **Phone Number:**
Project Elements:		
☒**Similar to Traveler Control System**		
Brief Project Description: **Synchronization of two motors moving monorail switching track**		

Description of work performed by the company on the project: **Design and build of the drive cabinet's circuitry and the interface to the overall control system.**
Control Methodology Description: Utilizing the drive's internal programming capability the drives either synchronize the motion based on comparison of the encoder information from each motor. One drive is a master and the other is a follower. For skew correction the drives can be taken out of Master-Follower mode and either drive can be jogged in either direction to eliminate the skew.

Project 2

Project Name: **Burlington Bridge**		
Project Location: **Hamilton, Canada**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor	Project Size: $850,000 for controls & drives	Owner's Representative Name: Upon Request Title: Phone Number:
Project Elements:		
☒Similar to Traveler Control System		
Brief Project Description: **This system is a tower driven vertical lift bridge with motors and drives in each tower. Skew control is integral to the system design since any skew can cause the span to be wedged between the towers.**		
Description of work performed by the company on the project: **Design and build of various control cabinets and a control console.** **Programming of the PLC, HMI, and drive systems.**		

Control Methodology Description: The skew control on this project is very similar to the skew control for the traveler systems writ large. A drive on each side of the span follows a speed reference sent to the drive via Profinet. The drives control speed based on an encoder directly connected to each drive. The PLC monitors the relative positions of the two sides of the span with the 2nd output from each encoder. The PLC utilizes PID control to trim the speed of the leading side. Should a skew condition manifest the system is stopped and individual jog capability is used to equalize the relative positions.

Project 3

Project Name: **The Gut Bridge**		
Project Location: **South Bristol, Maine**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor	Project Size: $ 282,175 for controls & drives	Owner's Representative Name: Upon Request Title: Phone Number:
Project Elements: ☒Similar to Traveler Control System		
Brief Project Description: **This system is a single leaf bascule bridge with a transverse weight profile that is not symmetrical. As such the normal technique of load sharing the motors on each side will not work; due to the uneven weight distribution the two sides will have unequal loads.** **The solution is real time synchronization based on the encoders that the drives also use for closed loop speed control.**		
Description of work performed by the company on the project: **Design and build of various control cabinets and a control console.** **Programming of the PLC, HMI, and drive systems.**		
Control Methodology Description: The master drive receives the speed reference via Profinet. The drive controls its speed based on the encoder feedback. The master encoder is also fed to the follower drive. This drive controls the speed of its motor, monitored by encoder, to match the speed of the master motor. Should the bridge skew it can be lowered with one drive and be reset once it is seated.		

21. Maintenance Traveler

b. Responsible Professional Engineer

Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified tinder this Contract. To substantiate the required experience, at a minimum, provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects.
iii. the role in each project, and
iv. names and phone numbers of owners' representatives.

Name of Individual **John Williams**	
Stafford Bandlow Engineering, Inc.	
Business Telephone Number: 215-340-5830	Driver's License Number: PA 23 091 800
Please complete for each individual engineer who will be in charge of design and detailing of the Traveler Mechanical System	

Project 1

Project Name: **Bayonne Bridge Traveler (Gantry)**		
Project Location: **Bridge connecting Bayonne, NJ and Staten Island New York**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $3,000,000	Owner's Representative Name: Peter Potvin Title: Project Manager Phone Number: 201-832-0912
Project Elements: Mechanical components of a traveler system		
☒Similar Traveler Control System		
Brief Project Description: Mr. Williams was Project Manager and Senior Mechanical Engineer responsible for a design review of the traveler drive system. The traveler is a component of a gantry crane system used to set precast concrete bridge segments. Duties included preparation and review of all relevant calculations and a report documenting the findings of the peer review.		

Project 2

Project Name: **Sir Ambrose Shea Vertical Lift Bridge Replacement (Placentia Lift Bridge)**		
Project Location: **Placentia, Newfoundland, Canada**		
Company Role in Project: ☐ Prime Contractor ☐ Subcontractor ☒ Other Engineer of Record	Project Size: $42,000,000 CAD $	Owner's Representative Name: Doug Power Title: Chief Bridge Engineer Phone Number: 709-729-6508
Project Elements: Span drive machinery for a vertical lift bridge		
☐Similar Traveler Control System		
Brief Project Description: Mr. Williams was Project Manager and Mechanical Engineer of Record responsible for the design of span drive machinery, span lock machinery and span support machinery for this new tower drive lift bridge. Duties included preparation and review of all relevant calculations and preparation of design drawings, specifications and cost estimates during the design phase of the project. During the construction phase, Mr. Williams was responsible for the review of Contractor's shop drawings and procedures for conformance to Contract requirements, disposition of non-conformance reports (NCR's) and responding to requests for information or changes from the Contractor.		

Project 3

Project Name: **Governor's Island Ferry Slip**		
Project Location: **Manhattan, NY**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $ 2,000,000	Owner's Representative Name: John Meade Title: Project Manager Phone Number: 203-268-5007
Project Elements: Drive machinery for a slip terminal operated utilizing wire ropes		
☐Similar Traveler Control System		
Brief Project Description: Mr. Williams served as Project Manager and Senior Mechanical Engineer for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island. This project began with an in-depth inspection of the mechanical and electrical systems of the slips with recommendations for rehabilitation to keep the structure operational for 50 years. Scope of the rehabilitation included replacement of all mechanical machinery including operating winches, the main counterweight system which balances the dead load of the ferry slip, the mooring devices and live load counterweights which secure the slip to the vessel while berthed. Mr. Williams' responsibilities included leading the inspection field team, development of the		

bridge design report and quality assurance of design calculations, plans, specifications and construction cost estimates during the design phase of the project.

Project 4

Project Name: **Mystic Bridge Rehabilitation**		
Project Location: **Mystic, CT**		
Company Role in Project: ☐ Prime Contractor ☐ Subcontractor ☒ Other Engineer of Record	Project Size: $ 10,000,000	Owner's Representative **Name: Richard Van Allen** **Title: Manager of Bridge Operations** **Phone Number: 860-594-2634**
Project Elements: Span drive machinery for a bascule bridge		
☐Similar Traveler Control System		
Brief Project Description: Mr. Williams was Project Manager and Senior Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated "Brown" bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. During the inspection a misalignment of the span drive machinery was identified and a survey of the bridge was recommended. Mr. Williams participated in a precision optical survey which identified significant differential pier settlement as the cause of the misalignment problems. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. A custom vehicular safety barrier gate was designed to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Mr. Williams' responsibilities included design and back checking of design calculations plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.		

JOHN R. WILLIAMS, P.E.

EDUCATION:
- BS, Engineering Science, The Pennsylvania State University, 1996

REGISTRATIONS:
- E.I.T., PA, 1999
- P.E., NJ, 2002
- P.E., FL 2006
- P.E., WA 2009
- P.E., CA 2009
- P.E., IL 2014
- P.E., VA 2016
- P. Eng. NL 2011
- P. Eng. ON 2011
- P. Eng. NS 2015

YEARS IN PRACTICE:
- 17 with this firm
- 3 with other firms

MEMBERSHIPS:
- Heavy Movable Structures, Inc. (HMS) – Currently serving as a member of the Board of Directors
- American Society Of Mechanical Engineers
- AREMA, Committee 15 : Steel Structures, Sub-Committee4: Moveable Bridges

PROFESSIONAL PAPERS:
- Digital Data Acquisition for Dynamic Strain Gage Bridge Balancing, *presented at the 2000 HMS Symposium.*
- Machinery Rehabilitation for Main Street Bridge, Daytona Beach, FL, *presented at the 2002 HMS Symposium.*
- Reducer Failure Investigation for Evergreen Point Floating Bridge, *presented at the 2006 HMS Symposium.*
- Rehabilitation of the Fremont Bridge in Seattle, Washington, *presented at the 2008 HMS Symposium.*
- Mystic Bascule Bridge Rehabilitation – Balance Truss Re-Alignment, *presented at the 2012 HMS Symposium.*
- Construction Challenges During Heel Trunnion Replacement for an Historic Strauss Bascule, *presented at the 2014 HMS Symposium.*

EXPERIENCE SUMMARY:

Mr. Williams has 20 years experience as a Mechanical Engineer. He is presently a Senior Mechanical Engineer and recognized as a heavy movable structures specialist. His heavy movable structures experience includes new design, design for rehabilitation, calculations, field and source inspection of machinery, strain gage bridge balancing, and CAD management. Currently Mr. Williams' work is related exclusively to mechanical machinery systems on heavy movable structures. The following projects are examples of Mr. Williams' work:

PROJECT EXPERIENCE:

GOVERNORS ISLAND FERRY SLIP REHABILITATION, MANHATTAN, NY

Mr. Williams served as Project Manager and Senior Mechanical Engineer for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island. This project began with an in-depth inspection of the mechanical and electrical systems of the slips with recommendations for rehabilitation to keep the structure operational for 50 years. Scope of the rehabilitation included replacement of all mechanical machinery including operating winches, the main counterweight system which balances the dead load of the ferry slip, the mooring devices and live load counterweights which secure the slip to the vessel while berthed. Mr. Williams' responsibilities included leading the inspection field team, development of the bridge design report and quality assurance of design calculations, plans, specifications and construction cost estimates during the design phase of the project.

SIR AMBROSE SHEA LIFT BRIDGE REPLACEMENT, PLACENTIA, NL

Mr. Williams was Project Manager and Mechanical Engineer of Record responsible for the design of span drive machinery, span lock machinery and span support machinery for this new tower drive lift bridge. Duties included preparation and review of all relevant calculations and preparation of design drawings, specifications and cost estimates during the design phase of the project. During the construction phase, Mr. Williams was responsible for the review of Contractor's shop drawings and procedures for conformance to Contract requirements, disposition of non-conformance reports (NCR's) and responding to requests for information or changes from the Contractor.

SR699 OVER JOHN'S PASS BRIDGE, MADEIRA BEACH, FLORIDA DOT DISTRICT 7

Mr. Williams was Project Manager and Senior Mechanical Engineer responsible for the design of span drive machinery, span lock machinery and span support machinery for this new twin double leaf bascule bridge. Duties included preparation and review of all relevant calculations (sized motor, gear tooth strength calculations, sized brakes, shaft calculations for moment and torsion, sized couplings, designed machinery base plates, sized span lock bars, sized span lock hydraulic cylinder and power unit, performed fatigue analysis of trunnion shaft and sized trunnion bearings), and preparation of design drawings, specifications and cost estimates during the design phase of the project. During the construction phase, Mr. Williams was responsible for the review of Contractor's shop drawings and procedures for conformance to Contract requirements, disposition of non-conformance reports (NCR's) and responding to requests for information or changes from the Contractor.

BAYONNE BRIDGE NAVIGATIONAL CLEARANCE PROGRAM – TRAVELER DESIGN REVIEW

Mr. Williams was Project Manager and Senior Mechanical Engineer responsible for a design review of the traveler drive system. The traveler is a component of a gantry crane system used to set precast concrete bridge segments. Duties included preparation and review of all relevant calculations and a report documenting the findings of the peer review.

MYSTIC BRIDGE REHABILITATION, GROTON, CONNECTICUT DOT
Mr. Williams was Project Manager and Senior Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated "Brown" bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. During the inspection a misalignment of the span drive machinery was identified and a survey of the bridge was recommended. Mr. Williams participated in a precision optical survey which identified significant differential pier settlement as the cause of the misalignment problems. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. A custom vehicular safety barrier gate was designed to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Mr. Williams' responsibilities included design and backchecking of design calculations plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.

ORTEGA RIVER BRIDGE REHABILITATION, JACKSONVILLE, FLORIDA DOT DISTRICT 2
Mr. Williams was Project Manager and Senior Mechanical Engineer for the rehabilitation of this historic double leaf mechanically operated rolling lift bascule bridge. This project began with an inspection of the mechanical and electrical systems of the bridge, a precision survey utilizing laser tracker coordinate measuring equipment, forensic analysis of tread plate pintle failures to isolate cause of the failures and complete load rating of all mechanical machinery with recommendations for modifications and rehabilitation to keep the structure operational for 20 years. The mechanical design included upgrades to the span drive and span lock machinery and replacement of span support machinery components as needed to meet all AASHTO requirements and eliminate failure of tread plate pintles. Mr. Williams' responsibilities included design and backchecking of design calculations plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.

MURRAY MORGAN REHABILITATION, TACOMA, WA
Mr. Williams served as the Owners' Mechanical Engineer for the design-build rehabilitation of an historic span drive vertical lift bridge. As part of the Owners engineering team, Mr. Williams developed complete technical special provisions for mechanical rehabilitation and performed a reviewed all calculations and design Plans for conformance to AASHTO requirements and for constructability. In addition, Mr. Williams participated in a Value Engineering study, performed shop inspection of the new machinery for the rehabilitated lift span and provided field oversight of the machinery installation work, balance testing and commissioning of the rehabilitated bridge.

HERON STREET BRIDGE, ABERDEEN, WASHINGTON DEPARTMENT OF TRANSPORTATION
Mr. Williams served as Project Manager and Senior Mechanical Engineer for the design of the rehabilitation of this center bearing swing bridge with hydraulic cylinder operating machinery. This project began with an in-depth inspection of the mechanical and electrical systems of the bridge with recommendations for rehabilitation to keep the structure operational for 20 years. Scope of the rehabilitation included replacement of the spherical roller center bearing, replacement of the span lock machinery, replacement of the end jack and end wedge hydraulic cylinders and replacement of the existing center wedge machinery with passive live load support rollers. Mr. Williams' responsibilities included design and backchecking of design calculations plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates during the design phase of the project. During the construction phase Mr. Williams' responsibilities included coordination of a team of mechanical and electrical engineers and inspectors to provide complete shop and field inspection of all mechanical/electrical aspects of the rehabilitation project. Mr. Williams performed yellow line checks of the contractors shop drawings, reviewed contractor's procedures for feasibility and/or conformance to design specifications, performed shop inspection of machinery, and inspection of field work during installation, alignment and start up the new and rehabilitated machinery. The team of mechanical/electrical inspectors provided 24/7 coverage throughout a critical 10-day bridge closure to ensure close coordination of all field and shop issues to avoid delays. The bridge was re-opened to marine and vehicular traffic on schedule at the end of the closure period.

STRAIN GAGE BALANCE TESTING
Mr. Williams has participated in strain gage balancing of more than fifty movable bridges of all types including more than fifteen vertical lift bridges and over forty bascule bridges. This work included derivation of the fundamental balance equations for the spans, recording of strain data, analysis of strain data, balance calculations and report preparation.

21. Maintenance Traveler

b. Responsible Professional Engineer

Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified tinder this Contract. To substantiate the required experience, at a minimum, provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects.
iii. the role in each project, and
iv. names and phone numbers of owners' representatives.

Name of Individual **John Williams**	
Stafford Bandlow Engineering, Inc.	
Business Telephone Number: 215-340-5830	Driver's License Number: PA 23 091 800
Please complete for each individual engineer who will be in charge of design and detailing of the Traveler Mechanical System	

Project 1

Project Name: **Bayonne Bridge Traveler (Gantry)**		
Project Location: **Bridge connecting Bayonne, NJ and Staten Island New York**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $3,000,000	Owner's Representative Name: Peter Potvin Title: Project Manager Phone Number: 201-832-0912
Project Elements: Mechanical components of a traveler system		
☒Similar Traveler Control System		
Brief Project Description: Mr. Williams was Project Manager and Senior Mechanical Engineer responsible for a design review of the traveler drive system. The traveler is a component of a gantry crane system used to set precast concrete bridge segments. Duties included preparation and review of all relevant calculations and a report documenting the findings of the peer review.		

Project 2

Project Name: **Sir Ambrose Shea Vertical Lift Bridge Replacement (Placentia Lift Bridge)**		
Project Location: **Placentia, Newfoundland, Canada**		
Company Role in Project: ☐ Prime Contractor ☐ Subcontractor ☒ Other Engineer of Record	Project Size: $42,000,000 CAD $	Owner's Representative Name: Doug Power Title: Chief Bridge Engineer Phone Number: 709-729-6508
Project Elements: Span drive machinery for a vertical lift bridge		
☐Similar Traveler Control System		
Brief Project Description: Mr. Williams was Project Manager and Mechanical Engineer of Record responsible for the design of span drive machinery, span lock machinery and span support machinery for this new tower drive lift bridge. Duties included preparation and review of all relevant calculations and preparation of design drawings, specifications and cost estimates during the design phase of the project. During the construction phase, Mr. Williams was responsible for the review of Contractor's shop drawings and procedures for conformance to Contract requirements, disposition of non-conformance reports (NCR's) and responding to requests for information or changes from the Contractor.		

Project 3

Project Name: **Governor's Island Ferry Slip**		
Project Location: **Manhattan, NY**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $ 2,000,000	Owner's Representative Name: John Meade Title: Project Manager Phone Number: 203-268-5007
Project Elements: Drive machinery for a slip terminal operated utilizing wire ropes		
☐Similar Traveler Control System		
Brief Project Description: Mr. Williams served as Project Manager and Senior Mechanical Engineer for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island. This project began with an in-depth inspection of the mechanical and electrical systems of the slips with recommendations for rehabilitation to keep the structure operational for 50 years. Scope of the rehabilitation included replacement of all mechanical machinery including operating winches, the main counterweight system which balances the dead load of the ferry slip, the mooring devices and live load counterweights which secure the slip to the vessel while berthed. Mr. Williams' responsibilities included leading the inspection field team, development of the		

bridge design report and quality assurance of design calculations, plans, specifications and construction cost estimates during the design phase of the project.

Project 4

Project Name: **Mystic Bridge Rehabilitation**		
Project Location: **Mystic, CT**		
Company Role in Project: ☐ **Prime Contractor** ☐ **Subcontractor** ☒ **Other** **Engineer of Record**	Project Size: **$ 10,000,000**	Owner's Representative **Name: Richard Van Allen** **Title: Manager of Bridge Operations** **Phone Number: 860-594-2634**
Project Elements: Span drive machinery for a bascule bridge		
☐**Similar Traveler Control System**		
Brief Project Description: Mr. Williams was Project Manager and Senior Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated "Brown" bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. During the inspection a misalignment of the span drive machinery was identified and a survey of the bridge was recommended. Mr. Williams participated in a precision optical survey which identified significant differential pier settlement as the cause of the misalignment problems. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. A custom vehicular safety barrier gate was designed to rise out of the roadway to protect errant vehicles from entering the waterway with the bridge raised yet remain visually unobtrusive with the bridge seated and open to vehicular traffic. Mr. Williams' responsibilities included design and back checking of design calculations plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates.		

YANG FENG ZHENG, P.E.

EDUCATION:

- BS, Electrical and Computer Engineering, Lafayette College, 2006
- BS, Physics, Lafayette College, 2006
- MS, Electrical Engineering, Polytechnic Institute of NYU, 2009

REGISTRATION:

- P.E., CA, 2011
- P.E., CT, 2011
- P.E., OH, 2012
- P.E., NY, 2013
- P.E., MD, 2014
- P.E., TX, 2015

YEARS IN PRACTICE:

- 9 Years

MEMBERSHIPS:

- Institute of Electrical and Electronic Engineers (IEEE)

EXPERIENCE SUMMARY:

Mr. Zheng is an electrical engineer with 9 years of experience. His experience includes applying electrical engineering principles and communications technology to the design and construction for movable bridge and public, railroad infrastructure projects. Mr. Zheng is an experienced engineer with electrical power (both low and medium voltage) and control, communications and security system design, construction, system deployment/integration experience. His areas of expertise include movable bridge electrical systems design, electrical inspections, field survey, and power quality testing, and troubleshooting. His experience also includes substation design, power distribution design and construction, control systems, programmable logic controllers, advanced security systems, CCTV, access control design, fire/life safety and fiber optic communication transmission systems design. He has represented clients and contractors as part of the installation process of electrical power and control systems and acted as quality assurance engineer for the installation of electrical systems for movable bridges.

The following projects are examples of Mr. Zheng's work experience:

PROJECT EXPERIENCE:

GOVERNORS ISLAND FERRY SLIPS, NEW YORK, NY

As an Electrical Engineer, Mr. Zheng was responsible for the inspection and assessment of the existing electrical power and control system and the scoping of required rehabilitation work. He developed design documentation for the rehabilitation of the electrical systems associated with the ferry slips including a new motor control center, operators control station and the associated ferry slip operating logic. The work included the integration of this control system into the existing operating system and the specifying of a motor control center with protective relaying local control and control station interface. The design also included replacing the existing wound-rotor motors and control panel with squirrel cage induction motors with VFD control.

BAYONNE BRIDGE NAVIGATIONAL CLEARANCE PROGRAM – TRAVELER DESIGN REVIEW

Mr. Zheng was the Electrical Engineer responsible for a design review of the traveler drive control system. The traveler is a component of a gantry crane system used to set precast concrete bridge segments. The gantry utilizes 8 drive motors with associated drive controllers, PLC control with an HMI interface. The contractor, Kiewit retained the services of Gareth Rees (SBE) to validate the capability of the traveling gantry to safely and accurately control the precast road sections. Following this initial assessment, Mr. Zheng was retained to assist with design changes and commission the system.

QUOGUE BRIDGE, QUOGUE, NY

Mr. Zheng served as an Electrical Engineer performing power quality testing and analysis to determine the cause of low voltage and poor power factor conditions that occurs on the electric service to the bridge. The work included surveying the existing incoming utility service, performing power quality data acquisition testing on a continuous basis for a period of one week, analyzing the recorded data, and developing a solution to alleviate the low voltage and poor power factor condition. The work also included preparation of a formal report including field findings for both long term and short term solutions to eliminate the low voltage condition during seasonal load changes.

JOHNSON STREET BRIDGE, VICTORIA, BC, CANADA

Mr. Zheng was the Assistant Electrical Engineer for the design of a replacement single leaf bascule bridge in Victoria, Canada. The uniqueness of this bridge was its large span and width and desire to make the appearance of the bridge aesthetically pleasing. Numerous traffic gate products were investigated to satisfy the design criteria of being an aesthetically pleasing gate installation whilst at the same time providing adequate

safety and reliability for the bridge operation. CCTV system was also included in the design to enhance bridge tender's vision of vehicular and pedestrian traffic to ensure safe operation of the traffic control equipment and bridge. The traffic control design also included integration into and preemption of the City traffic signal control system.

PLACENTIA LIFT BRIDGE, FOR GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Mr. Zheng was the Assistant Electrical Engineer for the design of a replacement vertical lift bridge in Placentia Newfoundland, Canada. Mr. Zheng provided electrical engineering design services for the electrical power and control systems associated with the new tower drive lift bridge. The design also included pedestrian, vehicular and marine traffic control. All traffic control equipment was designed to ensure reliable operation of the bridge and minimize the down time in the event of failure. All traffic control equipment was designed in accordance with MUTCDC, AASHTO, Coast Guard requirements, and Safety codes. The work included the production of bidding documents and specifications.

PORT SEVERN BRIDGE, ONTARIO CANADA

As an Assistant Electrical Engineer, Mr. Zheng provided electrical engineering design services to rehabilitate the electrical power and control systems associated with this swing bridge over an existing operating canal. The work included the production of bidding documents and specifications as well as providing shop drawing, inspection and testing services during construction.

COURT STREET BRIDGE, HACKENSACK, NJ

Mr. Zheng provided electrical engineering design services and construction service support for the rehabilitation and reconfiguration of the electrical systems for this swing span bridge. The design encompasses the electric service, squirrel cage induction motor controlled by variable frequency drive, and traffic control. A key feature of the traffic control design is the utilization of wireless communication between the between the near and the far traffic control equipment to ensure proper safe operation. Mr. Zheng responsibilities included assisting in the development of the bidding documents and specifications as well as shop drawing review, inspection and testing services during construction.

METRO NORTH RAILROAD, HARLEM RIVER LIFT BRIDGE, NEW YORK, NY

As a Project Engineer, Mr. Zheng was responsible for the engineering design for the rehabilitation of this vertical lift railroad bridge in New York. The work involved replacing existing Amplidyne/motor-generator (Ward Leonard) system and controller with modern MCC and DC drive controllers. The work included designing new control systems, and coordinating cable routing for the electrical system. Mr. Zheng performed field surveys, attended meetings, produced design documents including necessary design drawings, specifications, cost estimate and preparation of staging plan.

LASALLE CAUSEWAY BASCULE BRIDGE, ONTARIO

Mr. Zheng served as a Lead Electrical Inspector and conducted an in depth electrical inspection of this single leaf bascule span. His work included inspecting and reviewing all safety and reliability aspects of the electrical system associated with the bridge. The work also included the inspection of vehicular and marine traffic control equipment and their operation. The bridge electrical systems were visually inspected and operated to ensure their operability and compliance with AASHTO and other related codes/standards. Mr. Zheng prepared a formal report including field findings and recommendations for improvement in both the short and long term to improve safety, reliability and life expectancy of the bridge. Cost estimates for recommended work was also included in the final inspection report.

21. Maintenance Traveler

b. Responsible Professional Engineer

Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified tinder this Contract. To substantiate the required experience, at a minimum, provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects.
iii. the role in each project, and
iv. names and phone numbers of owners' representatives.

Name of Individual **Ryan Kanagy**	
Stafford Bandlow Engineering, Inc.	
Business Telephone Number: 215-340-5830	Driver's License Number: PA 23 654 850
Please complete for each individual engineer who will be in charge of design and detailing of the Traveler Mechanical System	

Project 1

Project Name: **Governor's Island Ferry Slip**		
Project Location: **Manhattan, NY**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $ 2,000,000	Owner's Representative Name: John Meade Title: Project Manager Phone Number: 203-268-5007
Project Elements: Drive machinery for a slip terminal operated utilizing wire ropes		
☐Similar Traveler Control System		
Brief Project Description: Mr. Kanagy served as Mechanical Engineer for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island. This project began with an in-depth inspection of the mechanical and electrical systems of the slips with recommendations for rehabilitation to keep the structure operational for 50 years. The scope of the rehabilitation included replacement of all mechanical machinery including operating winches, the main counterweight system which balances the dead load of the ferry slip, the mooring devices and live load counterweights which secure the slip to the vessel while berthed. Mr. Kanagy's responsibilities included design, back-checking of design calculations, plans preparation and detailing, and preparation		

of Contract Specifications and construction cost estimates during the design phase of the project. During the construction phase Mr. Kanagy's responsibilities included yellow line checks of the contractor's shop drawings, review of contractor's procedures for feasibility and/or conformance to design specifications, shop inspection of machinery, inspection of field work during installation, and review of alignment and start up the machinery installations.

Project 2

Project Name: **Angoon Ferry Terminal**		
Project Location: **Angoon, Alaska**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $ 250,000	Owner's Representative Name: Michael Bock Title: Design Engineer Phone Number: 412-835-5744
Project Elements: Machinery for ferry slip lift		
☐Similar Traveler Control System		
Brief Project Description: Mr. Kanagy served as Project Manager for an in-depth review of the ferry lift electro-mechanical cylinders. All of the major cylinder internal components that support the ramp loads were evaluated in accordance with AASHTO LRFD Bridge Design Specifications. Mr. Kanagy provided detailed calculations and provided a summary and integration of a structural analysis of the components by the structural engineer.		

Project 3

Project Name: **Mystic Bridge Rehabilitation**		
Project Location: **Mystic, CT**		
Company Role in Project: ☐ Prime Contractor ☐ Subcontractor ☒ Other Engineer of Record	Project Size: $ 10,000,000	Owner's Representative Name: Richard Van Allen Title: Manager of Bridge Operations Phone Number: 860-594-2634
Project Elements: Span drive machinery for a bascule bridge		
☐Similar Traveler Control System		

Brief Project Description: Mr. Kanagy served as Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated "Brown" bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. The alignment of the span drive and span support machinery was corrected to compensate for noted pier settlement. Mr. Kanagy's responsibilities included inspection, strain gage balance services and calculations. During the construction phase Mr. Kanagy's responsibilities included yellow line checks of the contrator's shop drawings, and review of procedures and other submittals.

Project 4

Project Name: **Quogue Bridge**		
Project Location: **Suffolk County, New York**		
Company Role in Project: ☐ **Prime Contractor** ☐ **Subcontractor** ☒ **Other** **Engineer of Record**	Project Size: **$ 1,600,000**	Owner's Representative **Name: Robert H. Whelan** **Title: Principal Civil Engineer, Director of Bridges, Structures & Waterways** **Phone Number: 631-852-4078**
Project Elements: Span drive machinery and span lock machinery for a bascule bridge		
☐**Similar Traveler Control System**		
Brief Project Description: systems at this double leaf trunnion bascule bridge. The scope of work included a replacement of the span drive motors and drive systems, and a complete replacement of the span lock machinery. Mr. Kanagy's responsibilities included inspection, mechanical design, and plans preparation and detailing. During the construction phase, Mr. Kanagy's responsibilities included yellow line checks of contractor's shop drawings and field inspection for compliance with the Contract Documents.		

RYAN T. KANAGY, P.E.

EDUCATION:
- BS, Engineering Science, The Pennsylvania State University, 1997

REGISTRATION:
- P.E., NJ 2005
- P.E., FL 2011
- P.E., KY 2015
- P.E., WA 2015

YEARS IN PRACTICE:
- 12 with firm
- 5 with other firms

MEMBERSHIPS:
- Heavy Movable Structures, Inc.

EXPERIENCE SUMMARY:

Mr. Kanagy has over 17 years of experience as a Mechanical Engineer including 12 years providing engineering services for heavy movable structures projects. Experience includes design of machinery for heavy movable structures, inspection of machinery systems, in-field engineering support, calculations, strain gage balance testing, wire rope tensioning, and CAD management.

PROJECT EXPERIENCE:

GOVERNORS ISLAND FERRY SLIP REHABILITATION

Mr. Kanagy served as Mechanical Engineer for the rehabilitation of four ferry slips at the Battery Maritime Building in Manhattan and the Soissons Dock on Governors Island. This project began with an in-depth inspection of the mechanical and electrical systems of the slips with recommendations for rehabilitation to keep the structure operational for 50 years. The scope of the rehabilitation included replacement of all mechanical machinery including operating winches, the main counterweight system which balances the dead load of the ferry slip, the mooring devices and live load counterweights which secure the slip to the vessel while berthed. Mr. Kanagy's responsibilities included design, back-checking of design calculations, plans preparation and detailing, and preparation of Contract Specifications and construction cost estimates during the design phase of the project. During the construction phase Mr. Kanagy's responsibilities included yellow line checks of the contractor's shop drawings, review of contractor's procedures for feasibility and/or conformance to design specifications, shop inspection of machinery, inspection of field work during installation, and review of alignment and start up the machinery installations.

ANGOON FERRY TERMINAL, ANGOON, ALASKA

Mr. Kanagy served as Project Manager for an in-depth review of the ferry lift electro-mechanical cylinders. All of the major cylinder internal components that support the ramp loads were evaluated in accordance with AASHTO LRFD Bridge Design Specifications. Mr. Kanagy provided detailed calculations and provided a summary and integration of a structural analysis of the components by the structural engineer.

ELEVENTH AVE BASCULE BRIDGE OVER HYLEBOS WATERWAY, TACOMA, WASHINGTON

Mr. Kanagy served as Mechanical Engineer for the complete replacement of all machinery on this double leaf trunnion bascule bridge. The project included a scoping inspection, development of a bridge design report, preparation of plans, specifications and construction cost estimates.

MYSTIC BRIDGE REHABILITATION, GROTON, CONNECTICUT DOT

Mr. Kanagy served as Mechanical Engineer for the rehabilitation of this historic single leaf, mechanically operated "Brown" bascule bridge. This project began with in-depth inspection of the mechanical and electrical systems of the bridge and a complete load rating of all mechanical machinery to establish recommendations for modifications and rehabilitation to keep the structure operational for 20 years. The mechanical design included upgrades to the capacity of the span drive machinery as needed to meet all AASHTO requirements. The alignment of the span drive and span support machinery was corrected to compensate for noted pier settlement. Mr. Kanagy's responsibilities included inspection, strain gage balance services and calculations. During the construction phase Mr. Kanagy's responsibilities included yellow line checks of the contrator's shop drawings, and review of procedures and other submittals.

DEREK S. HINES MEMORIAL BRIDGE, AMESBURY, MA

Mr. Kanagy served as Mechanical Engineer in a support role to the prime contractor for this new center bearing swing bridge. Mr. Kanagy's responsibilities included review and direction for span drive gear alignment, balance testing, and strain gage troubleshooting as part of an optimization of load sharing between two independent electro-mechanical drives.

QUOGUE BRIDGE, SUFFOLK COUNTY, NY

Mr. Kanagy served as Mechanical Engineer and Project Manager for the rehabilitation of the span drive and span lock systems at this double leaf trunnion bascule bridge. The scope of work included a replacement of the span drive motors and drive systems, and a complete replacement of the span lock machinery. Mr. Kanagy's responsibilities included inspection, mechanical design, and plans preparation and detailing. During the construction phase, Mr. Kanagy's responsibilities included yellow line checks of contractor's shop drawings and field inspection for compliance with the Contract Documents.

MEMORIAL VERTICAL LIFT BRIDGE, PORTSMOUTH, NH

Mr. Kanagy served as Mechanical Engineer in a support role to the prime contractor for this new span drive vertical lift bridge. Mr. Kanagy's responsibilities included a review of the mechanical drawings and specifications and substantial field work and coordination. Mr. Kanagy provided detailed procedures to direct field work, on site strain gage services to determine imbalance, balance monitoring and tracking during construction, measurement of counterweight and operating rope tensions, and adjustment recommendations for rope tensioning and machinery alignment (span locks, gears, bearings, and couplings), and review and support for other technical issues.

PRETORIA LIFT BRIDGE, OTTAWA, ON

Mr. Kanagy was Mechanical Engineer for the replacement of the counterweight sheaves, ropes, and trunnions for this vertical lift bridge. Responsibilities included design and back-checking of design calculations, and plans preparation and detailing. During the construction phase, Mr. Kanagy's responsibilities included field inspection for compliance to design requirements, rope tension measurements, strain gage testing, and direction of weight changes to balance the bridge.

BRIDGE OF LIONS, ST. AUGUSTINE, FLORIDA DOT DISTRICT 2

Mr. Kanagy served as Mechanical Engineer for the design of the new movable span machinery for the superstructure replacement of an historic double leaf rolling bascule. Mr. Kanagy's responsibilities included design and back-checking of design calculations for numerous mechanical systems, including the bascule span drive machinery and tail lock machinery. Mr. Kanagy also assisted with plans preparation and detailing and preparation of Contract Specifications during the design phase of the project.

UNION PACIFIC FREEPORT VERTICAL LIFT BRIDGE FIELD SUPPORT

Mr. Kanagy served as Mechanical Engineer for onsite field support for a replacement of the main counterweight and operating ropes of this span drive vertical lift bridge in Freeport, Texas. Mr. Kanagy developed procedures to jack a main counterweight, replace the main counterweight wire ropes, and to replace operating ropes. Mr. Kanagy provided on-site field support throughout the work including emergency engineering and CAD to facilitate the procurement of new parts to replace an existing uphaul take-up assembly that was found to be damaged.

WRECK LEAD BRIDGE, LONG ISLAND, NY

Mr. Kanagy was Mechanical Engineer for the rehabilitation of the mechanical system for this rolling lift railroad bascule bridge on Long Island. Mr. Kanagy's responsibilities included in-depth inspection of span drive machinery, span lock machinery, and support components, an evaluation of the machinery for compliance with industry standards, plans preparation and detailing, and creation of Contract Specifications. During the construction phase Mr. Kanagy's responsibilities included yellow line checks of contractor's shop drawings, shop inspection of machinery, inspection of field work during installation, and balance testing services.

MOVABLE BRIDGE MACHINERY INSPECTIONS

Mr. Kanagy has led and participated in over fifty inspections of machinery for movable bridge machinery including trunnion bascules, rolling lift bascules, swing bridges, and vertical lift bridges. The scope of the inspections included overall evaluation of condition of machinery for near and long term use, component wear measurements, and reports documenting the findings. Inspections include, among others, bridges owned by the Florida DOT, Massachusetts DOT, Connecticut DOT, New Jersey DOT, the Norfolk Southern Railroad, and others.

MOVABLE BRIDGE BALANCE TESTING

In addition to the above listed projects, Mr. Kanagy has participated in strain gage balancing of over thirty movable bridges of all types including more than ten vertical lift bridges and over twenty bascule bridges. This work included, installation of strain gages or pressure transducers, derivation of the fundamental balance equations for the spans, recording of strain data, analysis of strain data, balance calculations and report preparation.

b. Responsible Professional Engineer

Submit the names, company names, business telephone numbers and driver's license numbers, and a Statement of qualifications for professional engineers that will be in charge of design and detailing of the Traveler Mechanical System and the Traveler Control System under this Contract. Provide substantiation of minimum of ten (10) years of responsible charge of the design of mechanical systems or control systems, as applicable, for the applications similar to the operational traveler system specified tinder this Contract. To substantiate the required experience, at a minimum, provide

i. names, sizes and locations of projects with relevant experience,
ii. brief descriptions of the projects.
iii. the role in each project, and
iv. names and phone numbers of owners' representatives.

Name of Individual Gareth T. Rees	
Stafford Bandlow Engineering. Inc.	
Business Telephone Number: 215-340-5830	Driver's License Number: R2194 27383 09454 New Jersey
Please complete for each individual engineer who will be in charge of design and detailing of the Traveler Mechanical System	

Project 1

Project Name: Tamiami Canal Bridge Replacement, Florida DOT District 6		
Project Location: Miami, Florida		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $33,000,000	Owner's Representative Name: Dhaval Gandhi Title: Project Manager Phone Number: (786) 804-6254
Project Elements: Control system for a swing bridge		
☐Similar Traveler Control System		
Brief Project Description: Mr. Rees is the Control Systems Engineer for this swing bridge rehabilitation project. In his role as Control Systems Engineer Mr. Rees is responsible for detail design, development, coordination and testing of the electrical control and power system including MCC, control console and all interfaces with the mechanical machinery drive system. The work includes validating the accuracy of the existing electrical system drawings by field inspection and working with the contractor and systems vendor to develop and review detail control logic schematics, power requirements and comprehensive installation drawings. In addition, the work includes testing and commissioning of the bridge operating electrical equipment, review and approval of all electrical test data, shop drawings and operations and maintenance manual.		

Project 2

Project Name: **Newark Monorail Traverser**		
Project Location: **Newark Airport, Newark, NJ**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $200,000	Owner's Representative Name: Victor Caratenuto Title: Project Manager Phone Number: (973) 624-9300
Project Elements: Control System		
☒Similar Traveler Control System		
Brief Project Description: Mr. Rees is the Project Manager for the engineering and construction of a replacement control system for two monorail carrying traversers for the Newark Airport monorail maintenance facility. The traversers are load carrying travelers, where the load consists of the monorail vehicle. The control system consists of two independent drive motors powered by VFD's and synchronized to control skew and maintain the wo drives in a state of synchronism. The work involved the design of the new system, procurement of the new drive system as well as a new PLC traverser control system.		

Project 3

Project Name: **Bayonne Bridge Traveler (Gantry)**		
Project Location: **Bayonne, New Jersey**		
Company Role in Project: ☐ Prime Contractor ☒ Subcontractor ☐ Other _____	Project Size: $3,000,000	Owner's Representative Name: Peter Potvin Title: Project Manager Phone Number: 201-832-0912
Project Elements: Control system for a gantry traveler		
☒Similar Traveler Control System		
Brief Project Description: The Bayonne Bridge in New Jersey is presently undergoing major modifications to raise it to enable Mega Panama Canal Ships to pass beneath the bridge. This project necessitates the replacement of the bridge deck and approach roadway. To accelerate the process, the new roadway is being installed using precast road sections. These sections are being installed using a gantry traveler arrangement. This unit utilizes 8 drive motors with associated drive controllers, PLC control with an HMI interface. The contractor, Kiewit retained the services of Gareth Rees (SBE) to validate the capability of the traveling gantry to safely and accurately control the precast road sections. Following this initial assessment, SBE was retained to assist with design changes and commission the system.		

Project 4

Project Name: **Sir Ambrose Shea Vertical Lift Bridge Replacement (Placentia Lift Bridge)**		
Project Location: **Placentia, Newfoundland, Canada**		
Company Role in Project: ☐ Prime Contractor ☐ Subcontractor ☒ Other Engineer of Record	Project Size: $42,000,000 CAD $	Owner's Representative Name: Doug Power Title: Chief Bridge Engineer Phone Number: 709-729-6508
Project Elements: Control system for a new vertical lift bridge		
☐Similar Traveler Control System		
Brief Project Description: Mr. Rees was the Lead Electrical Engineer for the design of a replacement vertical lift bridge in Newfoundland Canada. The bridge is a tower drive vertical lift bridge with two duty motors and brakes in each tower and two sets of span locks. The bridge operator's control house is designed to be located at roadway level and remote from the bridge with CCTV surveillance and fiber optic communications to the towers. The control system design was PLC based with "Hot" standby redundant PLC's, a human machine interface (HMI) and control console and a redundant fiber optic communications transmission backbone. One of the challenges was to design a system to eliminate skew and at the same time share the load between the two drive motors in each of the towers. This challenge was resolved by configuring motor flux vector drives in each tower for "Master"/"Slave" operation, providing load sharing between drives in each tower and integrating the drive control with PLC bridge control. The bridge design included electric utility service as the primary source of power with an automatic diesel driven standby generator as backup. The incoming electric utility service and standby generator are housed in an acoustic housing in close proximity to the operator's control house. The electric services are distributed to state-of-the-art intelligent MCC's located in each of the bridge towers. The MCC's have internal communications capabilities and interface directly with the bridge control system PLC for bridge operation, drive monitoring and data acquisition.		

GARETH T. REES, P.E.

EDUCATION:
- College Associateship, Electrical Engineering, Electrical Eng. Polytechnic of Wales, Glamorgan, UK, 1968

REGISTRATION:
- Chartered Engineer, UK, 1974
- P.E., CO, 2009
- P.E., CT, 2011
- P.E., FL, 2003
- P.E., MD, 2006
- P.E., NJ, 1990
- P.E., NY, 2005
- P.E., OR, 2005
- P.E., PA, 2009
- P.E., WA, 2005
- P. Eng., Ontario, 2011
- P. Eng., Newfoundland & Labrador, 2011

YEARS IN PRACTICE:
- 44

MEMBERSHIPS:
- Society of Professional Engineers
- Institution of Professional Engineers
- Member Railway and Maintenance-of-Way Association

EXPERIENCE SUMMARY:

Mr. Rees is fully versed in all aspects of electrical engineering. His experience includes movable bridges, heavy industry, electrical utility generation transmission and distribution and municipal installations. He is fully conversant with switchgear development, power generation and distribution analysis and design, control system design including PLC's and distributed control systems, electrical and instrumentation project engineering, communications engineering, contract management, construction supervision, commissioning and plant start up. His movable bridge experience includes inspections ranging from cursory to in-depth inspections, failure analysis, trouble shooting, design for rehabilitation of existing bridges and design for new installations. His experience enables him to bring a movable bridge project from the conceptual stage through the completion of construction.

The following is a partial list of movable bridge projects with which Mr. Rees is associated.

PROJECT EXPERIENCE:

BAYONNE BRIDGE NAVIGATIONAL CLEARANCE PROGRAM – TRAVELER DESIGN REVIEW

Mr. Rees was the Senior Electrical Engineer responsible for a design review of the traveler drive control system. The traveler is a component of a gantry crane system used to set precast concrete bridge segments. The gantry utilizes 8 drive motors with associated drive controllers, PLC control with an HMI interface. The contractor, Kiewit retained the services of Gareth Rees (SBE) to validate the capability of the traveling gantry to safely and accurately control the precast road sections. Following this initial assessment, Mr. Rees was retained to assist with design changes and commission the system.

PORT SEVERN SWING BRIDGE 60 PORT SEVERN, ONTARIO CN

Mr. Rees conducted a bridge inspection, condition survey engineering analysis and preparation of plans specifications and cost estimates. He provided electrical engineering services that included visual and dynamic inspection of the operating structure, analysing field gathered data and test results and preparing an electrical condition survey report complete with recommendations and cost estimates. He prepared the design (plans, specifications and cost estimates) for rehabilitation of all reported electrical deficiencies and required upgrades to the electrical system.

MURRAY MORGAN LIFT BRIDGE - TACOMA, WA

As Lead Electrical Engineer, Mr. Rees was responsible for developing Design/Build documents for this vertical lift bridge. The bridge was originally constructed in the early 1900s and its electrical system had far exceeded its useful life. The rehabilitation work included replacing the entire electrical installation with a proven modern electrical power and control system. As Engineer to the City of Tacoma for this project, Mr. Rees was responsible for conceptual and preliminary engineering of the proposed rehabilitation and for the development of an RFP for solicitation from qualified contractors for the work. He was responsible for analysing the submitted proposals and assisting the client with proposal evaluation and award of the contract. During contract execution, he was responsible for final design and shop drawing review, factory and field testing, inspection of the installation and acceptance testing of the completed bridge electrical systems.

PLACENTIA LIFT BRIDGE, FOR GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Mr. Rees was the Lead Electrical Engineer for the design of a replacement vertical lift bridge in Newfoundland Canada. The bridge is a tower drive vertical lift bridge with two duty motors and brakes in each tower and two sets of span locks. The bridge operator's control house is designed to be located at roadway level and remote from the bridge with CCTV surveillance and fiber optic communications to the towers. The control system design was PLC based with "Hot" standby redundant PLC's, a human

machine interface (HMI) and control console and a redundant fiber optic communications transmission backbone. One of the challenges was to design a system to eliminate skew and at the same time share the load between the two drive motors in each of the towers. This challenge was resolved by configuring motor flux vector drives in each tower for "Master"/"Slave" operation, providing load sharing between drives in each tower and integrating the drive control with PLC bridge control. The bridge design included electric utility service as the primary source of power with an automatic diesel driven standby generator as backup. The incoming electric utility service and standby generator are housed in an acoustic housing in close proximity to the operator's control house. The electric services are distributed to state-of-the-art intelligent MCC's located in each of the bridge towers. The MCC's have internal communications capabilities and interface directly with the bridge control system PLC for bridge operation, drive monitoring and data acquisition.

NORFOLK SOUTHERN BRIDGE NO.5 - NORFOLK, VA
As Senior Electrical Engineer, Mr. Rees was responsible for the engineering and design for the rehabilitation of this single leaf bascule railroad bridge. The work involved the design of a replacement control system for the existing DC drives, modifications to the PLC control system and the addition of brakes to the existing bridge machinery. The work was complicated by having to install the modified systems while the bridge was under traffic and operational, and necessitated the development of construction staging plans and the design of a temporary installation.

BRIDGE OF LIONS NEW BASCULE BRIDGE, ST. AUGUSTINE, FL
During the final stages of construction of this double leaf bascule bridge Mr. Rees was called upon to analyze and resolve a number of issues associated with this newly constructed bridge. He was instrumental in determining the source of insufficient dynamic braking torque while the bridge was under overhauling loads which had previously resulted in an uncontrolled dropping of the bridge during start up and commissioning of the bridge. Mr. Rees conducted a detailed analysis of the auxiliary generator system that had been provided and determined that under certain operating scenarios the generator was under sized. He developed a low cost solution that eliminated the need to replace the generator and yet utilize it to operate the bridge under electric utility failure.

BURLINGTON CANAL LIFT BRIDGE, HAMILTON, CN
Mr. Rees performed an in-depth electrical inspection of the Burlington vertical lift bridge in Ontario Canada. The inspection consisted of a visual inspection of the complete electrical installation including the electric utility service to the bridge, the main distribution switchgear and motor control equipment, aerial cables strung between the bridge towers, tower and span lock electrical drives, traffic control systems, marine navigation lighting and the bridge control system. The inspection included insulation resistance testing of all motors and feeder cables as well as electrical load testing of main drive auxiliary motors and span lock motors. The conclusion of the inspection consisted of analyzing the observation and electrical test results, and preparing an inspection report that included all findings and recommendations for safe and reliable operation of the bridge in both short and long term.

PRETORIA LIFT BRIDGE OTTAWA, ONTARIO CN
Bridge inspection, condition survey engineering analysis and preparation of plans specifications and cost estimates. Provided electrical engineering services that included visual and dynamic inspection of the operating structure. Measurements and recording load currents of all operating motors and brakes, determining the system voltage profile over its operating cycle and performing electrical insulation resistance tests on power and control cabling, MCC and motor winding insulation. Analysing field gathered data and test results and preparing an electrical condition survey report complete with recommendations and cost estimates. Prepared design (plans, specifications and cost estimates) for rehabilitation of all reported electrical deficiencies and required upgrades to the electrical system.

Fore River Bridge, Quincy, MA
Massachusetts Department of Transportation initiated a project to rehabilitate the existing four lane vehicular twin double leaf bascule span on Route 3A over Fore River between Weymouth and Quincy. Initially the intent was to rehabilitate the existing bridge in kind and Gareth Rees was responsible for the electrical engineering of the rehabilitation. The work included creating a power and control system for each of the four leaves, integrating their operation with a microprocessor based control system, installing an operating control console and necessary security, surveillance and communications to assure the safe and reliable operation of the integrated four leaf bridge. The design included the resolution of issues such as provision of power and control cabling across the navigable channel, sizing and locating of standby power sources, developing construction staging plans including maintenance and protection of traffic, constructability of the electrical systems given the constraints of the existing bridge structure, negotiating new electric service for the rehabilitated bridge and providing an operating system that satisfied the performance criteria defined by the DOT.