

I-5 North Coast Corridor
Phase 1 CMGC
Contract No. 11-2T21CM
Statement of Qualifications
July 15, 2014



Thank you for your consideration.



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GRANITE • SUNDT
A Joint Venture
North Coast Corridor
Partners Improving the Environment for the Future

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Our Message...

Granite Construction Company and Sundt Construction, Inc. have specifically joint-ventured to deliver this Project. **No other team wants to be your CMGC more than we do.** The I-5 North Coast Corridor Phase 1 CMGC Project gives us the opportunity to bring you our CMGC expertise, Caltrans experience, enhanced rail and lagoon capabilities and community and environmental focus together on one project. Our passion to build goes far beyond building highways or railroads – **our passion is about building better communities.**

Our **successful CMGC culture thrives on our PROJECT FIRST** philosophy that rewards actions and decisions made in the best interests of the Project. This behavior, coupled with the best practices we are developing together on Caltrans' first CMGC pilot project (SR99), allows us to truly focus on what's most important to the overall NCC Program – providing cost certain solutions that enhance the quality of life for residents and commuters along the corridor through a balanced transportation system while protecting the coastal communities and the environment.

Throughout our SOQ, you will notice this particular icon. **It personifies the public stakeholders whose quality of life we will work every day to improve.** We call her SanDi – She is San Diego...(without our ego).

When you see this icon, it represents a particular approach, potential solution or past experience that we, as your CMGC, can bring to the NCC Phase 1 Project in support of this Program goal.

In reality, we all work for SanDi and her satisfaction will be the true measure of our success.



GRANITE • SUNDT
A Joint Venture

North Coast Corridor

Partners Improving the Environment for the Future



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Form A
TRANSMITTAL LETTER

SOQ Date: July 15, 2014

California Department of Transportation, District 11 Office
Division of Project / Program Management
4050 Taylor Street
San Diego, CA 92127
Attn: Arturo Jacobo, Project Manager

The undersigned Granite-Sundt, A Joint Venture (“Proposer”) submits this proposal and statement of qualification submittal (this “SOQ”) in response to that certain Request for Qualifications dated as of July 15, 2014 (as amended, the “RFQ”), issued by California Department of Transportation (“Department”) to provide preconstruction services and construct the related facilities within the State Route Interstate 5 (SD-05-PM 37.4/51.2) as described in the RFQ.

Enclosed, and by this reference incorporated herein and made a part of this SOQ, are the following:

- Transmittal Letter (this Form A)
- Form G, Proposer’s SOQ Certification
- Section 1: Legal Structure
- Section 2: Financial Capacity
- Section 3: Safety Program
- Section 4: Firm Experience and Past Performance
- Section 5: Proposer Organization and Key Personnel
- Section 6: Project Understanding and Approach
- Appendices A & B (Resumes and Legal Documents)

Proposer acknowledges receipt, understanding, and full consideration of all materials posted on the BidSync website (<http://www.BidSync.com>) as set forth in Section 1.3, and the following addenda and sets of questions and answers to the RFQ:

Acknowledgement of Addenda to this RFQ: None

Acknowledgement of questions and answers: 1-15 (no answer to Q13 was posted)

Proposer represents and warrants that it has read the RFQ and agrees to abide by the contents and terms of the RFQ and the SOQ. If the Proposer consists of more than one entity, all members of the Proposer entity agree to accept joint and several liability for performance under the Contract. Proposer understands that Department is not bound to award a contract and may reject each SOQ Department may receive. Proposer further understands that all costs and expenses incurred by it in preparing this SOQ and participating in the Project procurement process will be borne solely by the Proposer.

Proposer agrees that Department will not be responsible for any errors, omissions, inaccuracies, or incomplete statements in this SOQ. This SOQ shall be governed by and construed in all respects according to the laws of the State of California.

Proposer's business address:

585 W. Beach Street
 (No.) (Street) (Floor or Suite)
Watsonville, CA 95076 USA
 (City) (State or Province) (ZIP or Postal Code) (Country)

State or Country of Incorporation/Formation/Organization: California

1. Signature block for partnership or joint venture:

Granite-Sundt, A Joint Venture

By: *Granite Construction Company*
 By: *Michael F. Donnino*
 Print Name: Michael F. Donnino
 Title: Senior Vice President

[Add signatures of additional general partners or equity members as appropriate]

TEXAS ALL PURPOSE ACKNOWLEDGMENT

State of Texas

County of Denton *Samantha Nance Notary Public*

On 7.8.14 before me, (here insert name and title of the officer), personally appeared *Michael Donnino* who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public Signature

Signature

Notary Public Seal



Signature block for partnership or joint venture:

Granite-Sundt, A Joint Venture

By: *Sundt Construction, Inc.*

By: _____

Print Name: G. Michael Hoover

Title: Executive Vice President & COO

[Add signatures of additional general partners or equity members as appropriate]

ARIZONA ALL PURPOSE ACKNOWLEDGMENT

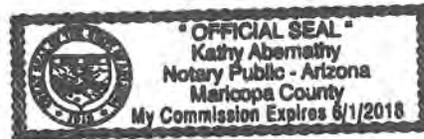
State of Arizona

County of Maricopa

On July 15, 2014 before me, a Notary Public in and for the County and State aforesaid, personally appeared G. Michael Hoover, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Kathy Abernathy
Notary Public Signature



Notary Public Seal

Granite-Sundt, A Joint Venture

By: Michael F. Donnino

Print Name: Michael F. Donnino

Title: Attorney-in-Fact

TEXAS ALL PURPOSE ACKNOWLEDGMENT

State of Texas

County of Denton

On 7.8.14 before me, (here insert name and title of the officer), personally appeared Samantha D. Nance Michael Donnino who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to within the instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public Signature

[Handwritten Signature]

Notary Public Seal



Form G
PROPOSER SOQ CERTIFICATION

Name of Proposer: Granite-Sundt, A Joint Venture

A COPY OF THIS CERTIFICATION MUST BE COMPLETED AND SIGNED BY PROPOSER AND, IF A PROPOSER IS A PARTNERSHIP, LIMITED PARTNERSHIP, JOINT VENTURE OR OTHER ASSOCIATION, THEN A SEPARATE CERTIFICATION MUST BE SIGNED BY AN AUTHORIZED REPRESENTATIVE OF EACH MEMBER AND SUBMITTED WITH THE STATEMENT OF QUALIFICATIONS.

DECLARATION

STATE OF Texas)
)SS:

COUNTY OF Denton)

I, (printed name) Michael F. Donnino, being first duly sworn, state that I am the (title) Senior Vice President of Granite Construction Company, a Joint Venture Partner of Granite-Sundt, A Joint Venture, Proposer.

I certify that I have read and understood the information contained in the Request for Qualifications issued by the California Department of Transportation for the I-5 North Coast Corridor Phase 1 CMGC Project and the attached Statement of Qualifications (SOQ), and that to the best of my knowledge and belief all information contained herein and submitted concurrently or in supplemental documents with this SOQ is complete, current, and true. I further acknowledge that any false, deceptive, or fraudulent statements in the SOQ will result in denial of pre-qualification status.

Michael F. Donnino
(Signature)

Michael F. Donnino, Senior Vice President, Granite Construction Company
(Name Printed)

ACKNOWLEDGMENT

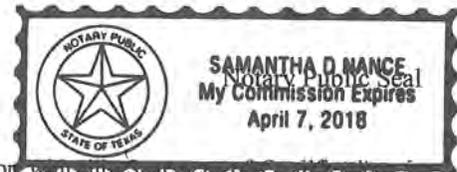
State of TEXAS
County of Denton

On 7.8.14 before me, Samantha Nance Notary Public [here insert name and title of the officer] personally appeared, Michael F. Donnino, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.

Notary Public Signature Samantha Nance



NOTICE TO APPLICANTS:

A material false statement, omission, or fraudulent inducement made in connection with this Statement of Qualifications is sufficient cause for denial of the application. In addition, such false submission may subject the person or entity making the false statement to criminal charges. (Title 18 USC 1001, false statements; California Penal Code section 132, offering altered or antedated or forged documents or records; and section 134, preparing false documentary evidence).

Form G
PROPOSER SOQ CERTIFICATION

Name of Proposer: Granite-Sundt, A Joint Venture

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DECLARATION

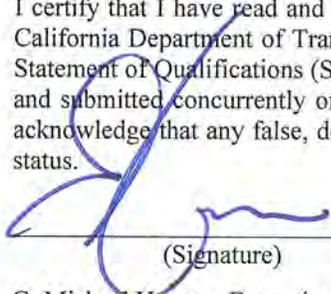
STATE OF Arizona)

)SS:

COUNTY OF Maricopa)

I, (printed name) G. Michael Hoover, being first duly sworn, state that I am the (title) Executive Vice President and COO of Sundt Construction, Inc., a Joint Venture Partner of Granite-Sundt, A Joint Venture, Proposer.

I certify that I have read and understood the information contained in the Request for Qualifications issued by the California Department of Transportation for the I-5 North Coast Corridor Phase 1 CMGC Project and the attached Statement of Qualifications (SOQ), and that to the best of my knowledge and belief all information contained herein and submitted concurrently or in supplemental documents with this SOQ is complete, current, and true. I further acknowledge that any false, deceptive, or fraudulent statements in the SOQ will result in denial of pre-qualification status.



(Signature)

G. Michael Hoover, Executive Vice President and COO, Sundt Construction, Inc.
(Name Printed)

ACKNOWLEDGMENT

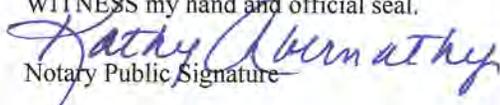
State of Arizona

County of Maricopa

On July 15, 2014 before me, a Notary Public in and for the County and State aforesaid, personally appeared, G. Michael Hoover, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

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

WITNESS my hand and official seal.


Notary Public Signature



Public Seal

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A material false statement, omission, or fraudulent inducement made in connection with this Statement of Qualifications is sufficient cause for denial of the application. In addition, such false submission may subject the person or entity making the false statement to criminal charges. (Title 18 USC 1001, false statements; California Penal Code section 132, offering altered or antedated or forged documents or records; and section 134, preparing false documentary evidence).





We appreciate the beautiful bridge and improving the safety of our highway.

Caltrans - I-15 Widening Rainbow Bridge Project, San Diego, CA



1 | LEGAL STRUCTURE



Partners Improving the Environment for the Future



STRENGTHS & BENEFITS

- **CMGC Expertise**
Established leaders in transportation-focused CMGC/Alternative Delivery ensure a stable, viable and effective partnership with Caltrans.
- **Caltrans Experience**
Over 92 years of California construction experience ensures an in depth understanding of Caltrans standards, Agency regulations and local requirements.
- **Rail and Lagoon Capabilities**
An experienced, full-service project organization provides Owner confidence in our ability to carry out all project responsibilities.
- **Community and Environmental Sensitivity**
Proven internal DBE/UDBE program and processes assuring subcontractors are given beneficial opportunities and project goals are consistently exceeded.
- **Cost Certainty**
Reputation for successfully delivering CMGC projects on time and within budget provides confidence in our Guaranteed Maximum Price (GMP).

Granite Construction Company (Granite) and Sundt Construction, Inc. (Sundt) have again joined forces to provide the California Department of Transportation, District 11 (Caltrans) and their project stakeholders a joint venture team capable of delivering the Interstate 5 North Coast Corridor Phase 1 CMGC Project (I-5 NCC Phase 1 Project) above expectations. As **Granite | Sundt, a Joint Venture** (Granite | Sundt), we have the legal capability to carry out all project responsibilities and agree to be held fully, jointly and severally liable for the performance of this contract. Our organization and legal structure as referenced in Form A is shown below in Exhibit 1.1.

Major Participants

Founded in 1922, **Granite** is one of the nation's largest, heavy civil contractors and construction materials producers with a demonstrated annual bonding capacity of \$5B. Headquartered in Watsonville, California for over 92 years, we operate under the second oldest Contractor's license in the State. We have executed over \$2.6B in transportation infrastructure contracts with the California Department of Transportation within the past decade, and consider Caltrans to be our highest priority client.

Exhibit 1.1

MAJOR PARTICIPANTS

Company	Equity Share	Equity Role	Contact
Granite Construction Company	60%	Managing JV Partner	Brad Williams, 760.391.6224 brad.williams@gcinc.com
Sundt Construction, Inc.	40%	JV Partner	Jeff Williamson, 602.531.4255 jjwilliamson@Sundt.com



Founded in 1890, **Sundt** is one of the oldest and largest construction companies in the United States. Licensed in the State of California since 1972, Sundt excels at constructing complex highway, rail and in-water work with goals of safety, quality, mobility, environmental compliance, and achieving challenging project milestones while working with multiple stakeholders.

A proven joint-venture partnership, our success dates back to 1998, when we teamed to deliver the \$86M I-17 Thomas to Peoria Design-Build for the Arizona Department of Transportation. Since that time, we have joint-ventured on two additional projects; the \$163M US 70 Design-Build in New Mexico and the \$196M US 60 Superstition Freeway Design-Build in Arizona.

Subcontractors

Granite | Sundt has invited three California-based subcontractors to join our preconstruction team based on their relevant qualifications, expertise in rail construction and lagoon restoration, history with Caltrans and the other project stakeholders and their innovative collaborative cultures.

- J.L. Patterson & Associates, Inc. (JLP)**
Founded in 1990 and licensed in the State of California, **JLP provides rail and transit design, environmental, and construction management services including specific expertise within the LOSSAN Corridor.** JLP is a Disadvantaged Business Enterprise (DBE) and an Underutilized Disadvantaged Business Enterprise (UDBE), certified by the Los Angeles County Metropolitan Transportation Authority (Metro) #88 and the California Unified Certification Program (CUCP) #7770 under NAICS Codes #237990 Other Heavy & Civil Engineering Construction (Construction Management).
- WRA, Inc. (WRA)**
Formed in 1981, WRA is a certified small business enterprise (OSBCR ref. #13333) with over 60 professionals providing professional consulting services in **environmental permit compliance and construction monitoring.** They have a wide range of project experience throughout California in a variety of region-specific, coastal habitats including the **Batiquitos and San Dieguito lagoons.** WRA is especially considered a leader in the application of federal and state

wetland and endangered species permit regulations.

- Vortex Marine Construction, Inc. (Vortex)**
Vortex is a privately held California Corporation incorporated in 1992. Vortex holds a current California Class A Contractors license (No. 649452). **They are experts in “precision dredging” capable of operating in shallow lagoon conditions.** Vortex equipment resources are Cal EPA compliant and certified to meet all local standards.

Legal Statements

Granite | Sundt has the legal capability to carry out the Project responsibilities as demonstrated by the materials provided herein and in Appendix B.

Both Granite and Sundt agree to be fully and jointly and severally liable for performance under the Contract as reflected in the executed Transmittal Letter, Form A.

Granite | Sundt understands that Caltrans has established a preconstruction services UDBE/DBE goal of 5.1% DBE participation for the I-5 Highway and Lagoon segments (FHWA funded) and a UDBE goal of 5.1% for the LOSSAN Rail segment (FTA funded) based on the total Contract value for the Preconstruction Services Contract. We commit to exceeding these contract goals for the complete scope of work.

Granite | Sundt declares that the information disclosed in the SOQ (including Forms D and E) does not materially adversely affect our ability to carry out the Project responsibilities.



CONFIDENCE

Our “Project First” philosophy has driven our Teams’ successful history working for Caltrans and other I-5 NCC Project stakeholders. This focus, combined with our previous JV experience, demonstrates our commitment and ability to remain stable and viable for the duration of the North Coast Corridor contract(s).

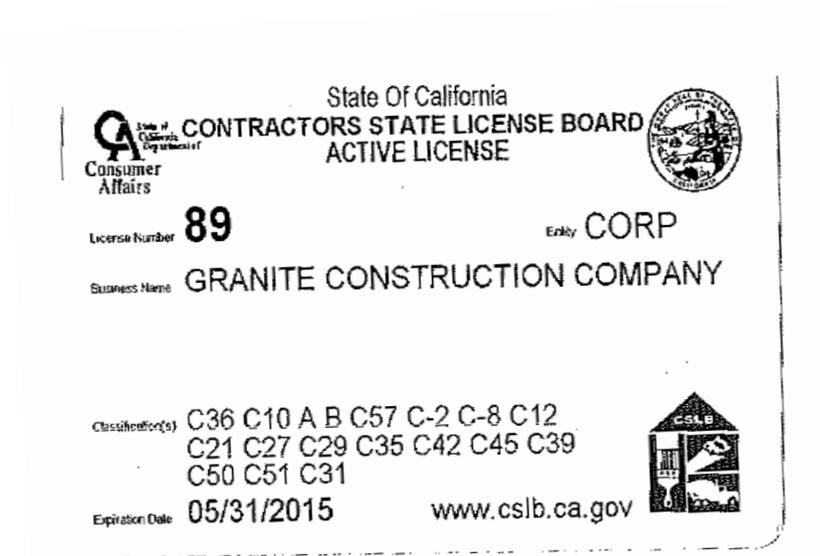
Instilling this confidence from the start shows SANDI our desire to meet her needs and sets the foundation for a positive project relationship.

Both individually, and as Granite | Sundt, a Joint Venture, we are properly licensed in accordance with the laws of the State of California as demonstrated in Exhibit 1.2.

Enclosed herein are Form E, Proposer's Organization Information; and Form F, Proposer's DBE/UDBE Project Goal Declaration Affidavit. Referenced organizational documents are included in Appendix B.

Exhibit 1.2

CONTRACTORS LICENSE





Carpinteria Salt Marsh Lagoon, Carpinteria, CA



Thank you for enhancing our local wetlands in this scenic and environmentally protected coastline.



2 | FINANCIAL CAPACITY



Partners Improving the Environment for the Future

STRENGTHS & BENEFITS



- **CMGC Expertise**
Proven financial capacity and organizational stability, demonstrated by the successful delivery of over \$6.8B in transportation-focused CMGC projects.
- **Caltrans Experience**
California based operations with resources throughout the State, including San Diego.
- **Rail and Lagoon Capabilities**
Established JV Partners capable of obtaining specialized insurance; including Pollution and Railroad Protection.
- **Community and Environmental Sensitivity**
Ability to prequalify and financially assist DBE/UDBE Subcontractors as appropriate to ensure participation.
- **Cost Certainty**
With large fleets of well-maintained construction equipment and aggregate sources we can better control the construction schedule and provide cost certainty.

The Granite | Sundt JV possesses the financial capacity to enter into a contract with the Department and the resources to successfully complete the I-5 NCC Phase 1 Project by the end of 2020. **As a joint-venture we maintain an overall bonding capacity of \$3.8B for a single project.**

Our significant public sector contract experience is derived from successfully completing over \$35B in projects in the last 15 years, ranging from smaller \$100K bid-build projects to large alternate delivery projects such as CMGC, Design-Build, and Public Private Partnerships. The Granite | Sundt combined contract backlog over the next five years of the I-5 NCC Phase 1 Project contract duration is approximately 25%.

Our established financial capacity also enables us to support DBE/UDBE businesses when required. We understand that cash flow is critical to the viability of these businesses and we have worked individually with DBE/UDBE owners to help remove financial barriers to their participation in state and federally funded contracts.

Granite and Sundt’s fundamental objective is to utilize our strong balance sheets to enhance competitiveness and achieve cost certainty through increased construction assets such as construction materials and equipment. **Granite, in particular, owns aggregate reserves as well as aggregate and asphalt processing plants strategically located to support the I-5 NCC Phase 1 Project.** By ensuring availability of these resources and providing quality products through our local plants, Granite | Sundt has the unique ability to provide schedule and cost certainty that other contractor’s simply cannot.



Enclosed herein is a Surety Letter verifying our ability to secure the required Performance and Payment Bonds as well as written evidence indicating our ability to obtain the following types

of insurance: Commercial General Liability, Auto Liability, Workers' Compensation/Employers Liability, Pollution Liability and Railroad Protection Insurance.

COST CERTAINTY

With strong balance sheets that allow us to produce construction materials and own large fleets of heavy construction equipment we can better control our construction schedules, which is one of the major factors in the ability to provide cost certainty.

This means the project stakeholders receive a high-quality multi-modal facility – built on time, within budget and by a financially stable team she has come to trust and rely on.





We appreciate your “Project First” approach providing our community with a smooth commute during construction.

Caltrans - 92/880 Interchange Project, Hayward, CA



3 | SAFETY PROGRAM



Partners Improving the Environment for the Future

STRENGTHS & BENEFITS

- **CMGC Expertise**
Safety is carefully considered and designed into the Project during preconstruction and well-executed during construction.
- **Caltrans Experience**
Recognized award-winning California safety programs focused on employee, subcontractor, state worker and public protection.
- **Rail and Lagoon Capabilities**
Construction safety expertise on active freight and passenger rail maintaining multi-modal coastal access.
- **Community and Environmental Sensitivity**
Employee and subcontractor training programs including safety procedures while working in local traffic areas.
- **Cost Certainty**
Our safety program provides pre-planning that also results in certainty during construction.

Our team safety culture is based on the belief that every working person is entitled to a safe and healthy place to work. The responsibility for the health and safety of our employees goes far beyond compliance with federal and state regulatory requirements. We recognize that the protection of our employees, Caltrans' employees, property, subcontractors, the public and the environment are essential to the efficient and successful completion of every project we undertake.

Our commitment to the health and the safety of our work force is demonstrated by our respective companies' better than industry standard safety statistics as shown in Exhibit 3.1.

As the Proposer, The Granite | Sundt JV is party to collective bargaining agreements that provide for alternative dispute resolution for matters relating to employment as provided for in Labor Code Sec. 3201.5.

GRANITE

SUNDT

Exhibit 3.1

JV SAFETY RECORD

	2013	2012	2011	2013	2012	2011
Experience Modification Rate/Worker's Compensation History	.65	.71	.73	.58	.63	.55
OSHA Recordable Incident Rate	1.9	1.5	1.7	1.1	1.7	2.5
Average Lost Work Rate	0.5	0.5	0.5	0.3	0.5	0.2
Total Man-Hours Worked (millions)	7.4	6.4	5.0	3.2	3.5	3.4

As the Proposer, The Granite | Sundt JV has not had any serious, willful or repeat violations on Cal-OSHA or FOSHA in the last five years.

Granite | Sundt Worker Safety Program Summary

Our safety goal for the Project is zero injuries, while simultaneously preventing equipment and third party property damage or environmental incidents. For work performed by subcontractors we employ a rigorous selection process based on qualification, capabilities, and most importantly their culture with respect to safety and quality. When subcontractors are utilized, Granite | Sundt considers these specialists as "our own" and we hold them to our high quality, performance, and safety standards.

As the Managing JV Partner, Granite will utilize its comprehensive Accident Prevention Program (APP) as the foundation of the Granite | Sundt Safety Plan. The APP is continually revised and updated to meet our goals, rigorous regulatory requirements and to incorporate the practices and procedures that improve employee safety and health. The primary function of our APP is to provide a ready reference for our frontline managers, supervisors, and subcontractors. Using our program this way ensures more than just regulatory compliance, it helps us prevent accidents and successfully complete our work leading to winning numerous safety awards across all areas of our industry, as shown in Exhibit 3.2.

Our APP specifically addresses the following areas:

- Subcontractor Safety Prequalification
- New Hire Orientations
- Site and Activity Specific Employee Training and Induction
- Pre-Operational Inspections
- Position & Activity Hazard Analysis (PHA & AHA)
- Daily Jobsite Inspections



Exhibit 3.2

SAFETY RECOGNITION

Both Granite and Sundt make safety a priority on every Project. This focus has been well recognized within our industry. Select awards include:

GRANITE CONSTRUCTION COMPANY

- 2014 Associated General Contractors of America (AGC), Winner in Highway Division over One Million Man-Hours
- 2014 Associated General Contractors of America (AGC), Achievement of Safety Excellence Award - Platinum Award for Incident Rate 25% Below National Average
- 2013 American Road and Transportation Builders Association (ARTBA), Outstanding Worker Safety Program
- 2013 Associated General Contractors of America (AGC), 2nd Place Winner in Highway Division over One Million Man-Hours
- 2012 American Road & Transportation Builders Association (ARTBA), Safety Excellence Working Over One Million Hours
- 2012 California Highway Patrol (CHP), Certificate of Achievement for Satisfactory Terminal Inspections

SUNDT CONSTRUCTION, INC.

- 2013 Associated General Contractors of America (AGC)/Willis Construction Safety Excellence, First Place Award Highway & Transportation Over One Million Man-Hours
- 2012 Associated General Contractors of American (AGC) San Diego Chapter, Construction Safety Excellence, First Place Award 450K-650K Category
- 2011 NAVFAC SW ROICC Camp Pendleton, STAR Contractor Safety Award
- 2010 National Safety Council, Occupational Excellence Achievement Award
- 2010 Associated General Contractors of America (AGC)/Willis Construction Safety Excellence, First Place Award Highway & Transportation Over One Million Man-Hours
- 2006 Associated General Contractors of America (AGC)/Willis Construction Safety Excellence, Grand Award





Safety During Preconstruction Services

Creating and executing an incident-free project starts long before the ground breaking. The CMGC process allows the design team to collaborate with the contractor to identify safety concerns and incorporate into the specific Project Specific Safety Plan (PSSP). To execute an effective safety program, Granite | Sundt will work with Caltrans during the preconstruction phase to ensure that safety is considered in the design and specific highway, rail and lagoon work plans. Reviews will include the following as examples: traffic control; staging; anticipated shoring techniques for footings and utility trenching; size, location, and swing path of cranes; hoisting patterns; material delivery and storage; incorporating K-rail or other positive barriers between work and travel zones; and access to and work in NCTD ROW.

Project Specific Safety Plan (PSSP)



While the APP may define our safety culture, its execution is the key to our success. **It specifically describes how we will provide protection to prevent damage, injury, or loss to our project employees, Caltrans workers, subconsultants, subcontractors, the travelling public and any other persons who are on the project.** Our mission is to complete the Project with zero accidents or injuries. To accomplish this, our Safety Compliance Officer, Rodney Oliver, CHST will assist our project management team and frontline supervisors in the daily administration of the Granite | Sundt PSSP.

Rodney brings over 36 years in safety/health/environment management positions in the construction industry. He will work with the Project Team to create a Project Specific Safety Plan for the I-5 NCC Phase 1 Project.

Specific attention will be given to:

- Traffic Handling – Traffic Control
- Pedestrian/Bike Access
- Working near/above Active Rail Lines
- Working in Environmentally Sensitive Areas
- Demolition Activities
- Crane Operation
- Rigging
- Material Delivery, Handling, and Storage
- Shoring-Support of Excavation
- Trenching/Underground
- Utility Protection

- Hazardous Material Abatement
- Fall Protection
- Third Party Training
- Site Security
- Noise Generating Activities

The execution of our safety efforts on the I-5 NCC Phase 1 Project will be compliant with both Granite | Sundt's fundamental safety goals and the requirements of Caltrans. In addition to administering the PSSP, Rodney will direct, lead and train our supervisory staff to use the following activities to ensure safety is our highest priority.

- **STOP Training:** We use our effective Safety Training Observation Program (STOP) to help supervisors improve their observation and communication skills. The STOP process uses a preprinted checklist to remind supervisors of the areas of interest that should be observed during their daily inspection for Granite | Sundt and subcontractors.
- **Tailgate Safety Meetings:** Crews will start every week with a Tailgate Safety Meeting. These meetings are an in-depth discussion between crew members and subcontractors regarding specific safety topics applicable to that week's work. The focus of these meetings is to build awareness and prevent future events that may occur due to working around or in unsafe conditions.
- **Daily 'Take-Five':** Granite | Sundt crews and subcontractors will start each shift with a Take Five meeting to discuss that day's work, any associated safety hazards, and the expected productions for the day. During the Take Five, each crew member will participate in a brief Stretch-and-Flex series of exercises aimed at preventing strain injuries by warming up muscles and joints to achieve flexibility.
- **Activity Hazard Analysis:** A specific safety tool used to evaluate work and prevent accidents through careful planning and education of employees. Working together, our managers, superintendents, foremen, engineers, and safety manager perform a detailed analysis of every work activity. This process breaks down the work tasks to be performed, identifies the hazards associated with the task, and develops a plan to mitigate the identified hazards allowing safe execution of the work. The Activity Hazard Analysis is shared with all



crews and subcontractors during Tailgate Safety Meetings and Take Five Meetings.

- **Daily Jobsite Inspections:** Supervisors perform inspections of areas of responsibility daily to identify and correct unsafe conditions or work practices as well as ensure compliance with the work plans established during that day's Take Five. These inspections also include close monitoring of all subcontracted work. Exhibit 3.3 on the following page is an example of Granite | Sundt's Concrete and Structures Work Area Inspection Form. This form will be filled out daily at the location for every structural component on the I-5 NCC Phase 1 Project including retaining walls, soundwalls, and bridge structures.

In addition to these structured events, Granite | Sundt emphasizes personal responsibility for all workers and subcontractors. All craft employees are trained on the specifics of the Safety Plan and held accountable for doing the right thing; looking out for their fellow employees, subcontractor teams, company equipment, and adjacent public or private property. Granite | Sundt monitors industry safety trends and incidents in order to ensure the appropriate use of Personal Protection Equipment (PPE) and activities to mitigate exposure as necessary. When we see an increase in eye, hand or muscle-strain incidents, we immediately check for root causes including the compliance with safety PPE and take measures to proactively prevent incidents.

Environmental Safety

Granite | Sundt is committed to protecting the environment. We will plan our environmental requirements and commitments into our daily work plans. We will ensure all workers on the jobsite receive proper training to identify and abide by all environmental conditions placed on the work. We will instill an environmental culture that promotes “doing the right thing” before being asked to do so. As part of their daily planning, employees will give special attention to; Environmentally Significant Areas (ESA) boundaries; proper use of Best Management Practices (BMPs) during every stage of the work; recognition of need for and implementation of dust control; and the proper handling of hazardous materials and use of secondary containment. Additionally, Granite | Sundt will make housekeeping a top priority and will keep waste storage areas clean and clear of unnecessary debris.

Rail Safety



A safe environment for the traveling public, Caltrans and the Granite | Sundt team along with minimizing impacts to the public, commuter rail and freight rail operations is our focus throughout our operations. Our Safety Compliance Officer will oversee the Rail Safety Manager to assure that all personnel are trained in compliance with the FRA, CFR 49 Subpart C, 214.345 “Roadway Workers Protection Training” (RWP) and NCTD policies and requirements. Don Deford from J.L. Patterson & Associates, Inc. will lead the Rail Safety efforts as our Rail Safety Manager. He is particularly experienced in working around live tracks on the Los-Angeles-San Diego-San Luis Obispo Subdivision (LOSSAN) and the NCTD coastal (San Diego Subdivision) rail corridors and the necessary rail safety rules and regulations required on Class 4 and Class 5 track environments.

All personnel scheduled to work on or near railroad Right of Way (ROW) will attend daily job briefings led by the Employee In Charge (EIC) to review the day's limits of construction activities, safety restrictions and required safety precautions. The Rail Safety Manager will be responsible for coordinating all flagging requests with NCTD and Transit America Rail Services, Inc. (TASI) and will liaise with them to schedule all protection personnel required for the team's work within the NCTD, ROW.

A great deal of the work within the NCTD ROW can be accomplished with the use of Form B protection along with watchmen, track and time, and Absolute Work Windows (AWW). The team will comply with NCTD's Policy No. 23 on Railroad Construction Scheduling and Management to cover construction activities involving slow orders, partial shutdowns, and/or full shutdowns in coordination with NCTD. Exhibit 3.4 is an example of a Form B used by NCTD.





Exhibit 3.3

SAFETY INSPECTION FORM

GRANITE • SUNDT <small>A Joint Venture</small>		Form																																																																																									
Safety		Appendix F-7 - Concrete and Structures Work Area Inspection																																																																																									
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		Page 1 of 2 Version No.: 1																																																																																									

Exhibit 3.4

ACTIVE RAIL LINE SAFETY

Upon arrival at a specific bridge or track job site, the first order of business will be to conduct a job safety briefing with the NCTD flag person. The form of protection will be established, track and time may be obtained, or Form B will be in effect, if necessary.

TRACK BULLETIN FORM B									
NO. 2178		SAN DIEGO SUBDIVISION					Jun-26-2014		
FORM B IN EFFECT ON Jun-27-2014									
LINE VOID	LINE ITEM	LIMITS MP TO MP		FROM TIME	UNTIL TIME	TRACK	FLAGS AT MP	FOREMAN	COMMENTS
	1	211.8	218.0	0630	1600	ALL TRACKS		VINCENT	
	2	247.7	249.9	0630	1700	ALL TRACKS		LOPEZ	
NUMBER OF LINES: 2					OK 16:24				
NUMBER OF COMMENTS: 0					DISPATCHER: RRK				

The Rail Safety Manager will ensure that each individual is wearing all required personal protective equipment (e.g. hardhat, reflectorized vest, steel-toed boots, safety glasses and ear protection, when required) before beginning any activity.



In Summary

We know that it takes much more than just management commitment to have successful safety outcomes. Our senior managers provide safety leadership by being actively involved in our safety systems. This involvement starts at the top with our JV Executives, and flows through every level of the project organization. Active involvement and safety leadership are so important to us that we have established measurable safety expectations (participation in safety meetings, conducting safety meetings, etc.) for all of our managers.

Granite and Sundt's accident prevention efforts contribute to the value of our work because they are successful. Over the years we have reduced both the frequency and severity of accidents. **We firmly believe, and communicate to our employees, that the goal of Zero Accidents is achievable.** Safety is a primary driver in all that we do. We plan each of our operations to be safe and count safety as one of the measures of our success, understanding that ultimately it's not about the numbers, but rather, it's about the people being able to go home safely to their families each and every day.





Caltrain - Commuter Rail Grade Separation, San Bruno, CA



*Thank you for the improved rail service
for our safe and efficient commuting.*



4 | FIRM EXPERIENCE and PAST PERFORMANCE



Partners Improving the Environment for the Future

STRENGTHS & BENEFITS



CMGC Expertise

A balanced, integrated approach derived from the successful delivery of more than 45 transportation CMGC projects totaling over \$6.8B.

Caltrans Experience

The managing JV partner is the largest California-based Contractor and brings extensive knowledge and experience working with Caltrans and specifically, District 11.

Rail and Lagoon Capabilities

Additional local rail and lagoon restoration construction expertise ensures stakeholder focus.

Community and Environmental Sensitivity

An Environmental Management System and ISO-14001 protocols provides a reliable framework for managing environmental responsibilities.

Cost Certainty

A 100% GMP negotiation record ensures Caltrans receives best value and our committed participation from design through construction.

Granite Construction Company (Granite) and Sundt Construction, Inc. (Sundt) are two of the largest and most respected CMGC/Alternative Delivery transportation solution providers in the nation. We have again joined forces as **Granite | Sundt, a Joint Venture** (Granite | Sundt) to provide Caltrans and their project stakeholders a trusted CMGC partner capable of delivering the high-profile Interstate 5 North Coast Corridor Phase 1 CMGC Project (I-5 NCC Phase 1 Project) above expectations. Our success as joint venture partners dates back to 1998, when we teamed to deliver the \$86M I-17 Thomas to Peoria Design-Build for the Arizona Department of Transportation. Since that time, we have joint-ventured on two additional projects; the \$163M US 70 Hondo Design-Build in New Mexico and the \$196M US 60 Superstition Freeway Design-Build in Arizona. **Our success is based on our “Project First” philosophy that promotes the project and stakeholder interests above all other interests.**

Exhibit 4.1 illustrates our comprehensive past experience managing projects of similar size and complexity to the I-5 NCC Phase 1 Project – on time, within budget and exceeding project goals.

Joining our team are three firms considered experts in their fields of **rail construction; lagoon restoration and environmental permitting; and precision shallow dredging.** We specifically chose J.L. Patterson & Associates, WRA, Inc. and Vortex Marine for their **experience, professionalism and their staffs’ ability to put their company identities behind them and focus on the “Project First”.** Their respective Firm information is provided in this section.

PROVEN JV PARTNERSHIP

US 60 Superstition Freeway Design-Build, ADOT

“The Granite/Sundt Team’s performance in the outstanding integration and cooperation of the planning, design, and construction processes represents a compelling endorsement for the Design-Build concept.”

– Robert E. Hollis, FHWA Division Administrator





SUCCESSFUL | COMPLEX, HIGH-PROFILE INFRASTRUCTURE PROJECTS

Exhibit 4.1

Granite | Sundt has extensive experience in delivering high-profile, multi-component CMGC/Alternative Delivery construction projects similar in size, scope and complexity to the I-5 NCC Phase 1 CMGC Project. We offer valuable systems, processes and tools from lessons learned on many of the prior projects shown below. Projects in bold text are highlighted on the Form B's at the end of this section.

Past Experience		I-5 North Coast Corridor Project Goals / Key Project Elements															
Relevant Projects	Company/Contract Role	Delivery Method		Budget		Safety/Mobility			Quality			Environmental		Stakeholder Satisfaction		DBE/UDBE	
		Contract Type	Preconstruction Services	Contract Size	On Budget	Complicated staging and traffic handling	Work around active rail line	Highway and Bridge Construction	Rail Construction	Large Mitigation/Lagoon Restoration	Soundwall Construction	Innovation/CRIPS Value Engineering	Environmental Compliance	SWPP	Coordination with Local Agencies	High Profile Projects	Met Goal
Houston Light Rail, TX	Granite / JV Partner	CMGC	●	\$1.2B	●	●	●	●	●	●	●	●	●	●	●	●	●
Maryland Inter-County Connector, MD	Granite / JV Mng Partner	DB	●	\$400M	●	●	●	●	●	●	●	●	●	●	●	●	●
I-64 Reconstruction, MO	Granite / JV Mng Partner	DB	●	\$420M	●	●	●	●	●	●	●	●	●	●	●	●	●
Tri-Rail Commuter Double Track, Segment 5, FL	Granite / JV Partner	DB	●	\$278M	●	●	●	●	●	●	●	●	●	●	●	●	●
US60 Superstition Freeway HOV Design-Build, AZ	Granite / Sundt JV	DB	●	\$196M	●	●	●	●	●	●	●	●	●	●	●	●	●
SR202L Widening Design Build, AZ	Sundt / JV Partner	DB	●	\$191M	●	●	●	●	●	●	●	●	●	●	●	●	●
Fourth Street Railroad Crossing Phase II CMGC, AZ	Sundt / Prime	CMGC	●	\$12M	●	●	●	●	●	●	●	●	●	●	●	●	●
SR101L HOV Design Build, AZ	Sundt / JV Partner	DB	●	\$99M	●	●	●	●	●	●	●	●	●	●	●	●	●
I-17 Thomas to Peoria Design-Build,, AZ	Granite/Sundt JV	DB	●	\$86M	●	●	●	●	●	●	●	●	●	●	●	●	●
Carpinteria Salt Marsh Lagoon, CA	Granite / Prime	BB	●	\$3M	●	●	●	●	●	●	●	●	●	●	●	●	●
Mountain View Corridor, UT	Granite / JV Mng Partner	CMGC	●	\$260M	●	●	●	●	●	●	●	●	●	●	●	●	●
Railroad Relocation for East/West Freeway, TX	Granite / Prime	CMGC	●	\$18M	●	●	●	●	●	●	●	●	●	●	●	●	●
Ironwood Road	Sundt / Prime	CMGC	●	\$64M	●	●	●	●	●	●	●	●	●	●	●	●	●
Cordes Junction Traffic Interchange Improvements CMGC, AZ	Sundt/Mng JV Partner	CMGC	●	\$53M	●	●	●	●	●	●	●	●	●	●	●	●	●
Western Wake, NC	Granite / JV Mng Partner	DB	●	\$400M	●	●	●	●	●	●	●	●	●	●	●	●	●
US90 Bay St. Louis Bridge Replacement, MS	Granite / JV	DB	●	\$284M	●	●	●	●	●	●	●	●	●	●	●	●	●
Blue Line Extension, WMATA, DC	Granite/JV Partner	DB	●	\$217M	●	●	●	●	●	●	●	●	●	●	●	●	●
San Bruno Grade Separation, CA	Granite / Prime	BB	●	\$91M	●	●	●	●	●	●	●	●	●	●	●	●	●
SR 22 Garden Grove HOV Freeway Design-Build	Granite/JV Mng Partner	DB	●	\$390M	●	●	●	●	●	●	●	●	●	●	●	●	●
Hondo Valley Design Build, NM	Granite/Sundt JV	DB	●	\$163M	●	●	●	●	●	●	●	●	●	●	●	●	●
I-10 Widening 29 th St. to Prince, AZ	Sundt / JV Partner	BB	●	\$212M	●	●	●	●	●	●	●	●	●	●	●	●	●

Caltrans Projects	I-5 North Coast Corridor Project Elements					
	HOV	PCCP	Inside / Outside Widen	DAR	Aesthetics	Park & Ride
SR22 HOV Design-Build	●	●	●		●	
Hwy 50 HOV Design-Sequence	●		●		●	
SR91 Express Lanes Public-Private-Partnership	●	●	●			
SR99 Madera Design-Build		●	●			
I-80/Madison Interchange & HOV	●		●		●	●
SR73 San Joaquin Hill Toll Road Design-Build		●	●		●	
Hwy 101 Mussel Shoals	●	●	●		●	
I-15 Direct Access Ramp (DAR)	●			●		●
I-805 Chula Vista HOV	●	●	●		●	
I-805/Palomar Street Direct Access Ramp (DAR)	●	●	●	●	●	●

Railroad Projects	I-5 North Coast Corridor Project Elements					
	Complicated Staging / Traffic Handling	Form B and/or Absolute Work Windows	Work performed on a Class 4 or Class 5	Structures designed to AREMA guidelines	Railway signaling systems	CFR 234 and CFR 236
Tri-Rail Commuter Rail Design-Build	●	●	●	●	●	●
Mid-Harlem Third Track Commuter	●	●		●		
reTRAC Rail Access Corridor	●	●		●	●	●
Blue Line Commuter Rail Design-Build	●	●	●	●	●	●
Utah UTA LRT	●	●		●	●	●
Rail Relocation for East/West Freeway	●	●	●	●	●	●
UPRR Second Mainline	●	●	●	●	●	●

California Environmental Projects	I-5 North Coast Corridor Project Elements				
	CA Coastal Commission Jurisdiction	Beach or Wetlands	Environmental Compliance	Site Specific Health & Safety Plan	HAZWOPER Training
Guadalupe Beach Restoration	●	●	●	●	●
Avila Beach Restoration	●	●	●	●	●
Carpinteria Salt Marsh Enhancement	●	●	●	●	●
Sand City (Monterey) Restoration	●	●	●	●	●
Santa Barbara Tidal Zone Restoration	●	●	●	●	●
CA IWMB Redding			●	●	●
CA IWMB Monterey	●	●	●	●	●
CA IWMB Milpitas			●	●	●
San Clemente Dam Removal	●	●	●	●	●

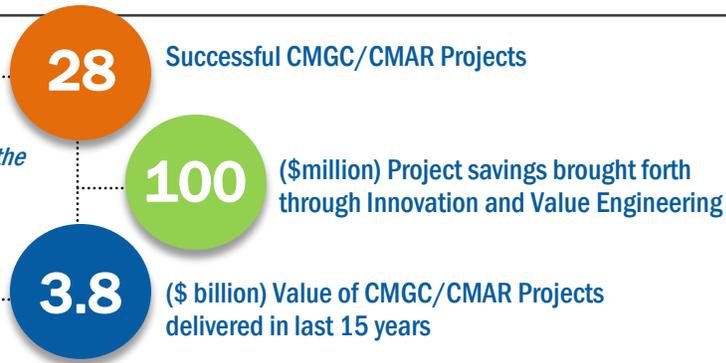


GRANITE



Granite's project management capabilities, including their focus on safety, are outstanding. Granite always strives to go the extra mile to provide the best project possible. This is a contractor we would wish to work with again.

- Julie Martinez, US Army Corps of Engineers



Since 1922, Granite has been constructing California roads and highways, railroads and environmental projects. Recognized as a leading provider of CMGC and Alternative Delivery services, we pride ourselves on our reputation for being a “trusted partner”, see Exhibit 4.2 below. Our technical and management experience on projects of similar scope as the I-5 NCC Phase 1 Project is derived from having **successfully completed \$25B in public projects in the last 15 years, including over \$3.8B in CMGC contracts.** As one of the nation's largest heavy civil contractors, we focus almost exclusively on transportation infrastructure improvements; earning a particularly high reputation for delivering complex urban construction projects ranging in size from \$20M to \$1.25B on time and within budget.

As a trusted partner, we have delivered over 28 CMGC/CMAR projects from preconstruction through construction, including the \$247M Mountain View Corridor in Utah; the \$140M, SE Connector in Nevada and the \$1.2B, Houston Metro LRT in Texas. Granite offers experienced large project personnel and proven systems and processes that promote collaboration, innovation and optimization. Areas of expertise include:

- High Profile Highway/Rail Construction
- Environmentally Sensitive Construction Methods
- Complex Staging and Traffic Control
- Staged and Accelerated Bridge Construction
- Design Optimization Development
- Risk Identification and Management
- Cost Certainty/Accurate GMP Development
- Stakeholder/Community Coordination

In addition to large CMGC projects, select rail experience includes, design-build and bid-build of track and signal projects including the Dulles Metrorail Phase 2 Project; the single to double track

conversion for the Tri-Rail Double Track in Palm Beach, Florida; the UPRR second mainline construction in Deming, New Mexico and a 13-mile mainline relocation for Rail America in Lubbock, Texas.

Granite excels at constructing in and around environmentally sensitive areas. Our ISO-14001 compliant Environmental Management System provides consistency and a reliable framework for managing environmental responsibilities. Specific California lagoon, wetland and coastal experience includes the Carpinteria Salt Marsh Lagoon Restoration Project, the Guadalupe Beach Restoration, the Avila Beach Restoration, the Sand City (Monterey) Beach Restoration and currently the San Clemente Dam Removal which will remove the 106-foot high antiquated dam and implement a watershed restoration process to bring the Carmel River back to life.

Our strong California presence dates back over 90 years and accounts for approximately 30% of the company’s workload in any given year. In the past 10 years alone, we have completed thousands of rail, highway, infrastructure, and mass transit projects **totaling \$8B in California.** Granite operates a Large Projects Group out of Sacramento that focuses on Alternative Delivery projects and leverages the resources of its 12 branch and construction material facilities in Southern California.

The combined experience of our California/Caltrans knowledge with our successful CMGC experience ensures Caltrans has a partner that is focused on exceeding the project goals and **achieving maximum value for the Department, project stakeholders and the public.**

Exhibit 4.2 Trusted Partner - 2010 . 2011 . 2012 . 2013 . 2014

ETHICS . INTEGRITY . REPUTATION

Granite is proud to have been named one of the *world's most ethical companies* for the 5th year in a row. Caltrans can trust that they will be working with a company that places our highest priority on the best interests of the project.



SUNDT



“Throughout the GMP process, Sundt has proven that they are a team member and hold high the values of the stakeholders. We are confident that Sundt will meet the expectations of a Construction Manager and will bring to the project team – commitment, professionalism and integrity”

– Randy Whitaker, Sr. Project Manager
4th Street Railroad Crossing Phase II CMGC Project



For over 120 years Sundt has been delivering innovative ideas and solutions to its clients. As a leader in the construction of roads, highways, bridges over sensitive areas and railroad work throughout the Western United States, our projects are often challenging to design, coordinate and build – which is why clients turn to Sundt.

Our extensive CMGC project experience with civil and transportation construction includes seven successful CMGC “Pilot” projects, see Exhibit 4.3 below. This, combined with our expertise in design-build and traditional bid-build contracting methods, means Sundt brings a wide-ranging breadth of expertise to alternative delivery method projects. **Our emphasis is on integrating the design and construction phases through detailed plan review, feasibility, and value engineering to achieve project goals such as cost and schedule certainty, safety, quality, mobility and environmental compliance while coordinating with multiple stakeholders.** This experience complements the unique project features of the I-5 NCC Phase 1 Project.

Completing our first CMGC transportation contract in 2000, Sundt has developed processes and tools that have contributed to the **success of more than \$3B of transportation and infrastructure related projects**, including our implementation of Parametric 3D Estimating during preconstruction. This tool utilizes software systems that tie project design information to the estimating software allowing the Preconstruction Team to produce real time cost estimates that are based on large scale project design decisions. The

benefit to Caltrans is the ability to make **balanced, best value decisions, based on real time visual information, in order to maximize the funds** available for the I-5 NCC Phase 1 Project.

Our CMGC experience has shown that early contractor involvement in the design process contributes to a more efficient design effort often reducing the amount of design iteration and revisions. By successfully integrating with our clients and engineering partners, Sundt has **developed and delivered over \$115M in project savings** through innovative solutions on large transportation infrastructure projects.

Most recently Sundt brought experience with CMGC projects to a complex bridge reconstruction project in Portland, Oregon. Much like the I-5 NCC Phase 1 Project, the \$215M Sellwood Bridge Project required extensive phasing and value analysis in the design phase in order to develop a strategy that best served the project goal of maintaining its level of service during construction.

The strategy included moving the existing Sellwood Bridge onto newly constructed pier foundations, in order to utilize it as a detour while constructing the new bridge. This innovative idea allowed Multnomah County to maintain maximum access while the new bridge improvements were constructed. The I-5 NCC Phase 1 Project will require similar analysis and innovative ideas to maintain north and south commuter traffic during the staged bridge construction on the I-5 Lagoon bridges at San Elijo and Batiquitos Lagoons.

Exhibit 4.3 CMGC Pilot Program Experts



COLLABORATION . INNOVATION

Selected on qualifications, Sundt has successfully partnered with seven public owners to deliver their first CMGC “pilot” projects.

- San Diego Regional Airport Authority
- Arizona Department of Transportation/FHWA
- Pinal County Department of Transportation, AZ
- City of Flagstaff, AZ
- Multnomah County, Oregon
- Valley Metro Rail, AZ
- City of Tucson, AZ

J.L. Patterson & Associates, Inc. (JLP) brings a wealth of local knowledge and experience to the LOSSAN Corridor. Their understanding of train systems and rail safety controls will be invaluable to the project. More specifically, John Eschenbach’s 38 years of experience in rail construction and maintenance will provide the expertise needed for in-depth constructability reviews as well as thorough and effective construction oversight. JLP will provide the safety and quality protocols necessary for the successful completion of construction activities NCTD’s rail corridor.

JLP has extensive railroad engineering and construction management experience within the LOSSAN corridor as shown on Exhibit 4.4 below. In addition, JLP works with several transportation agencies and Class 1 railroads on Class 4 and Class 5 track through “On-Call” contracts, including the California Department of Transportation Division of Rail’s Administration and Management Representative for Railroad Projects (2010 to Present), SANDAG for Construction Management (2009 to Present), LA Metro to provide Construction Management and Design Engineering and Third-Party Coordination, the Southern County Regional Rail Authority (SCRRA)/ Metrolink for their On-Call Engineering and Construction Management Program and for Flagging, and with BNSF for On-Call Engineering and Construction Management.

Exhibit 4.5 on the following page demonstrates their unique qualifications and value to the I-5 NCC Phase 1 Project, from their specific

experience on the Amtrak Carlsbad Double Track project.

JLP is a Disadvantaged Business Enterprise (DBE) and an Underutilized Disadvantaged Business Enterprise (UDBE), certified by the Los Angeles County Metropolitan Transportation Authority (Metro) #88 and the California Unified Certification Program (CUCP) #7770.

JLP has several key employees who have been employed by Amtrak, BNSF and other railroads in the past. They routinely interface with the FRA, FTA, Caltrans and other federal, state and local authorities. In particular, JLP offers **John Eschenbach’s extensive rail experience and expertise within the LOSSAN Corridor to this project as the Rail Project Construction Manager**. He has 38-years of railroad construction, operations and safety experience and past experience with Amtrak. On this project, he will manage conformance with CFR 49 Part 237 in design, planning and construction and with NCTD Board Policy #23. He will coordinate all planned closures, Absolute Work Windows (AWWs), and/or shutdowns, and obtain approvals well in advance of the shutdown.

JLP is particularly experienced in working around live tracks on the LOSSAN and NCTD coastal rail corridors and understands rail safety rules, regulations and requirements. JLP is also the only consultant authorized by the Burlington Northern Santa Fe Corporation (BNSF) to provide system-wide watchman/lookout services. Granite|Sundt and JLP will ensure that our team fully understands the rules and regulations governing work in this environment.

Exhibit 4.4 **J.L. PATTERSON & ASSOCIATES, INC. | ON TRACK.**

SELECT PROJECT EXPERIENCE

San Onofre to Pulgas Double Track, Stage 1 Design Phase, NCTD Railroad LOSSAN Rail Corridor

JLP is providing support to the CM team in all disciplines of construction during the 4.5-mile double track construction project. Coordinated utility relocation within R/R ROW. Also provided constructability reviews during the design phase.

NCTD Bridge Management Program NCTD LOSSAN Corridor, Bridge 208.6 (Green Beach)

JLP provided Bridge Supervision to the US Dept. of Navy for replacement of south timber trestle spans with steel bridge structure to increase underpass clearances.

Oceanside Transit Center, Third Track Project, SANDAG

JLP provided design review comments at 60% and 90% of PS&E pertaining to track, signal, civil and construction phasing for trackwork.





Exhibit 4.5

RENOWNED | RAIL DESIGN AND CONSTRUCTION MANAGEMENT

Key Personnel | John Eschenbach

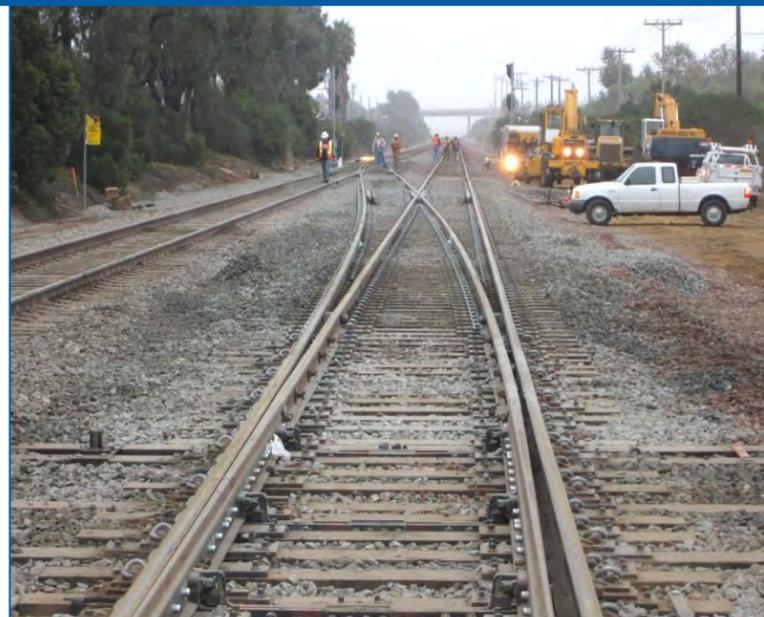


CARLSBAD DOUBLE TRACK AND BRIDGE PROJECT

As a companion to I-5, the Rail System plays a critical role in the movement of people and goods in the San Diego region, as well as between San Diego, Los Angeles, and points further north. NCTD's COASTER commuter rail service, Amtrak's Pacific Surfliner inter-city service, and BNSF Railway freight service all rely upon the tracks to serve their customers.

The purpose of the Carlsbad Double Track and Bridge Project was to improve the capacity and reliability of on-time passenger train service along the Carlsbad portion of the LOSSAN corridor. However, the problematic bottleneck was the single main train track on each end of Carlsbad Poinsettia Station. The solution was to create two main tracks, each 5.1 miles long, by extending an existing second main track 1.9 miles.

JLP provided design and construction management services for the Project, which included a second main track, new concrete railroad bridge, universal cross-overs and two new control points.



Maintaining Existing Train Service

The design of the train track itself was an ordinary fare. The challenge was developing a new track alignment while maintaining existing train service. The alignment had to accommodate a second main track, a second main bridge, and a universal crossover control point that allows trains to switch tracks when traveling in either direction.

JLP's universal crossover solution does not make use of the existing turnout or switch, relying instead on four newly installed turnouts. Therefore, train service could continue on the existing turnout.

Safety

The railroad at Carlsbad operates according to the General Code of Operating Rules (GCOR), a compilation of operating rules for some railroads in the United States. The GCOR allows crews to perform track work that passing trains would otherwise disrupt as long as certain conditions are met. JLP secured Form B protection, which allowed construction to occur between trains with the use of flags for protection. Form B protection proved to be the most cost-effective method for the majority of work.

J.L. PATTERSON & ASSOCIATES, INC. | ON TRACK.

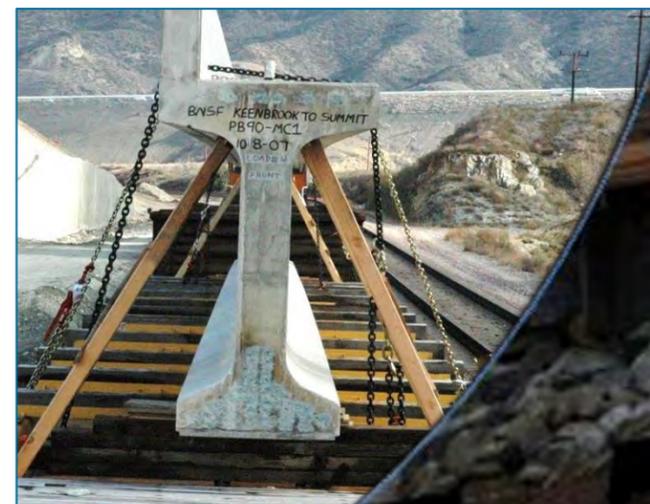


Considering the Total System

The new track passes over three existing grade crossings: Tamarack Avenue, Cannon Road, and a private power plant grade crossing. They all required new crossing warning devices. JLP designed and installed new control point signals, intermediate signals, and switch machines to satisfy the universal crossover requirements.

Results

The Carlsbad Double Track and Bridge Project had a specific performance purpose, which has been achieved. **As Project Manager, John Eschenbach delivered the project under budget and ahead of schedule.**



SAFETY

The Carlsbad Double Track and Bridge Project had no injuries or accidents. The Team was dedicated and committed to the project, and safety was a concept they recognized and emphasized. Safety is an aspect of effective project and construction management.

WRA, Inc. has a staff of experts who are professional scientists, specializing in aquatic ecology, botany, wetlands, and wildlife. With over 30 years of biological and natural resource consulting experience, they are well-versed in the biological regulatory issues likely to affect the project. **Their wetland expertise, experience, and resources are unparalleled in the industry. Mike Josselyn is internationally recognized as an expert in wetland ecology and restoration.** His lagoon knowledge and expertise will instill confidence in the project stakeholders and will be invaluable to the successful completion of the San Elijo Lagoon Restoration. This knowledge and expertise will carry over to the design of the project’s upland storm water collection and treatment thus insuring the health of the lagoons after the ultimate build out of the NCC corridor.

As an **exclusive subconsultant** to the Granite|Sundt Team, WRA brings a **wide range of project experience throughout California in a variety of region-specific habitats, most notably in lagoons and other coastal habitats** as shown on Exhibit 4.6 below and Exhibit 4.7 on the following page.

WRA’s strength in Wetland Restoration, Mitigation and Permit Compliance and Monitoring is important to the I-5 NCC Phase 1 Project. Areas of expertise include:

- Aquatic resources permitting (wetlands, streams, riparian, marine resources)
- California Coastal Zone biological surveys and permitting
- CEQA/NEPA Analysis
- Conservation/mitigation bank planning/design
- Rare and endangered plant and wildlife surveys and permitting
- Wetland and endangered species construction and post-construction monitoring

WRA has provided environmental and permit management for complex projects as large as \$1.5B in construction value. Their work on the Sunrise Powerlink Project for SDG&E included permitting and managing the 120-mile transmission line’s Section 404, 401, and Fish and Game Code 1600 compliance documents. **These documents were then translated into practical, constructable approaches to distribute to the field personnel in the construction phase.** Expertise in the permit application process, making sure the work is constructable within the permit constraints and transferring that knowledge to the field personnel considering the different requirements within the highway, rail and lagoon (Wetland) scopes of work will be essential on the I-5 NCC Phase 1 Project.

An example of the wide breadth of experience that WRA brings from the Sunrise Powerlink Project is the aquatic resource permit strategy suggested and implemented by WRA. This strategy included obtaining 135+ Nationwide Permits from the Army Corps for the placement of towers with a nexus to water resources. **This strategy significantly reduced the time and expense associated with permitting, and allowed the project to stay on schedule.** They also prepared Habitat Mitigation and Monitoring Plans covering five mitigation sites for impacts to wetlands and waters, **including detailed construction documents for mitigation.** WRA provides highly engaged project wide permit compliance monitoring during construction with various permit conditions. Experienced Biologists coordinate the required mitigation construction and management of mitigation properties. WRA will utilize in-house biologists as well as DBE/UDBE subcontractors experienced with water quality, and specifically the coastal regions within San Diego County for the Construction Monitoring.



Exhibit 4.6

SELECT PROJECT EXPERIENCE

Project Name	Lagoon/Wetland Restoration	Permit Compliance	Construction Monitoring	Active Rail
San Joaquin Marsh Restoration		•	•	
Ballona Wetlands Mitigation	•	•	•	
Batiquitos Lagoon Restoration	•	•	•	•
San Dieguito Lagoon Restoration	•	•	•	•
Otay River and Salt Pond Restoration		•	•	
Sunrise Powerlink Permitting		•		





EXPERTS | ENVIRONMENTAL PERMIT & LAGOON RESTORATION

Exhibit 4.7

Key Personnel | Mike Josselyn



SAN DIEGUITO WETLAND RESTORATION PROJECT



The project was designed and constructed to provide adequate tidal flushing and circulation, as well as the habitats necessary to support a diversity of biological resources within the wetland ecosystem.

WRA staff members are experts in the application and construction oversight of federal and state wetland and endangered species regulations as well as permit compliance for transportation infrastructure projects.



BATIQUITOS LAGOON RESTORATION AND MANAGEMENT PLAN

GOALS

- To meet federal and state mitigation requirements for operation of San Onofre Nuclear Power Plant
- To establish a functioning coastal wetland habitat for fish and wildlife.

WRA was responsible for preparation of conceptual and final designs for a 450 acre wetland and lagoon restoration plan in Del Mar, CA. The restoration was required as a part of the SONGS mitigation to replace impacts to coastal fisheries. They were the lead design firm for the preparation of specific restoration alternatives reflecting a range of engineering, dredging, and habitat possibilities that met the requirements of the project objectives. Mike and his staff conducted field studies of the vegetative communities and assisted in the development of GIS map products for the project area. **Mike Josselyn worked closely with federal and state agencies and the project team to design habitats for special status plants and wildlife, to provide support to permitting actions for the project.**

COORDINATION

One element of the work conducted at both Batiquitos and San Dieguito has been coordination with an active rail corridor and trestle system. Construction of the inlets at both lagoons necessitated working in close proximity of the rail line. Mike Josselyn was responsible for assuring biological compliance with the permits which also necessitated monitoring and mitigation within the rail corridor.



GOALS

- Habitat restoration to meet mitigation requirements for port development.
- Reestablish marine resources in the 655-acre lagoon through the restoration of tidal flushing.



As consultant to the Port of Los Angeles and the City of Carlsbad, WRA provided expert wetland consulting services in evaluating the design of the project, reviewing portions of the EIR/EIS, and development of draft revegetation plans for coastal wetland vegetation and eelgrass. They also prepared a complete wetland delineation for 404 jurisdiction around the perimeter of the 655-acre lagoon. Specifically, Mike Josselyn prepared the specifications for the California Least Tern/Western Snowy Plover nesting areas, wrote detailed specifications for planting of cordgrass, pickleweed, and eelgrass in the lagoon, and development the environmental monitoring plan for construction monitoring and post-construction long-term management. He also participated in the submittal and subsequent approval of permits with the Corps of Engineers and California Coastal Commission. **WRA was the environmental monitor for the construction of the lagoon restoration project to assure compliance with the federal and state permits for the project.**





Vortex Marine Construction, Inc.

(Vortex), is a California based General Marine Contractor owning and operating one of the largest fleets of floating construction equipment in the Western United States. **As an exclusive subcontractor, Vortex brings environmentally sensitive dredging capabilities to the I-5 NCC Phase 1 Project.**

Vortex has the knowledge, expertise, and equipment necessary to perform the sensitive dredging necessary for the San Elijo Lagoon Restoration. **Blaise Fettig will serve as the project's Dredging/Marine Specialist** during the preconstruction and construction phase. Blaise brings a solid understanding of the marine environment and provides unique approaches to solving complex marine construction issues.

Vortex's equipment is capable of performing the required precision dredging while also being able handling the large volumes of dredge material on this project. Vortex is able to provide real-time grade controls while operating in the shallow lagoon conditions (less than 2-1/2 feet). Their experience in handling dredge spoils with proven methods of sediment control will enhance the team abilities in protecting the lagoon habitat.

Vortex is a strong proponent of the environment and considers itself a leader in environmental stewardship. They are well versed in the environmental issues to be confronted in a wetland habitat and will take all necessary action to ensure the protection of the environment throughout this Project. Their diversified fleet of marine construction equipment is Cal EPA compliant, certified to meet all local standards and capable of

meeting the demands of the most challenging project.

Vortex understands the requirements of water quality monitoring and reporting during dredging and has worked with the many agencies that have jurisdiction over dredging and dredge spoils disposal. These agencies include:

- Regional Water Quality Board (RWQB)
- California Department of Fish and Game
- National Marine Fisheries Service
- United States Fish and Wildlife Service
- United States Army Corps of Engineers
- State Lands Commission

Vortex's past experience as shown on Exhibit 4.8 below and Exhibit 4.9 on the following page includes the restoration of sand dunes in the sensitive **Antioch Dunes National Wildlife Refuge** in Antioch, California. This highly visible project consisted of using dredge spoils to create new habitat for the endangered **Lange's Metalmark Butterfly**, which is on the brink of extinction. The project required the use of highly experienced operators and low ground pressure equipment to place material to create this natural habitat in a sensitive wetland environment.

An example of past success in innovation includes the Walter F. George Dam project in Alabama and Georgia. On this project, they successfully completed a VE proposal to use an alternate method of in-water disposal of dredge and drill spoils through the use of a silt curtain containment system during construction of an apron and concrete cap at the dam. **The innovation saved \$2M in construction costs while maintaining zero impact to the adjacent National Wildlife Refuge.**

Exhibit 4.8

SELECT PROJECT EXPERIENCE

San Francisco Waterfront Partners, LLP
Rehabilitation and Construction of Piers 1.5, 3 and 5 and Waterfront facilities

USACE Sacramento District
IDIQ Task Order - Maintenance dredging, Sacramento and Stockton Deep Water Ship Channels

USACE San Francisco District
Suisun Bay Channel and New York Slough Maintenance Dredging

WORKING IN COASTAL LAGOON AREA Antioch Dunes National Wildlife Refuge

One of the most recent and high visibility projects in a sensitive wetland environment was in 2013 when Vortex Marine placed approximately 27,000 cubic yards of material in the Antioch Dunes National Wildlife Refuge. This project consisted of using dredge spoils to create new habitat for the Lange's Metalmark butterfly, two endangered plants and other native plants and animals. The scope of work called for the use of highly experienced operators and low ground pressure equipment to place the material and create a natural looking habitat.





Exhibit 4.9

MASTERS | MARINE AND DREDGING CONSTRUCTION

Key Personnel | Blaise Fettig



SACRAMENTO AND STOCKTON DEEP WATER SHIP CHANNEL MAINTENANCE US Army Corps of Engineers



Vortex is contracted to provide annual maintenance of dredging of the Sacramento and Stockton Deep Water Ship Channel. The combined total length of the channel is approximately 80 miles. Due to endangered species, the fisheries window for maintenance dredging is August 1st through November 30th. Vortex dredges approximately 200,000 cubic yards per year (2012 and 2013) from both channels. Dredge materials are disposed of through pipelines with placement into several upland disposal sites including the Antioch Dunes Natural Wildlife Refuge.

CONTRA COSTA TIMES: San Joaquin River Dredging Benefit Endangered Antioch Butterflies

As part of the dunes restoration, the project used dredge spoils to create new habitat for endangered plants and insects. Most notably, this project created critical habitat for the Lange's Metalmark Butterfly which is on the brink of extinction.



WALTER F. GEORGE DAM APRON AND CONCRETE CAP CONSTRUCTION

INNOVATION: In-water Disposal of Dredge and Drill Spoils through the use of a Jet Sled and Silt Curtain Containment

Reconstruction of the San Elijo Lagoon presents several unique challenges including; the disposal of dredge spoils to borrow sites, limited access, protection of environmentally sensitive areas and habitat, protection of the public near equipment and pipelines and, protection of existing infrastructure. Vortex faced similar challenges at the Walter F George Dam project. To mitigate these risks, they proposed an alternate method of trenching that also, through the use of silt curtain skirts eliminated onshore disposal of dredge and drill spoils. This provided significant benefits to the Owner including:

- Zero impact to shoreline
- Significantly decreased dive time
- Increased quality control of trenching operation
- Reduced dredge spoils in water column at dam
- Less conflict with other operations

Vortex monitored all pipelines continuously for leakage prior to entry into silt curtain skirt. Lake surrounding silt curtain skirt is tested at regular intervals for turbidity, temperature, and dissolved oxygen content. Depth measurements were taken within skirt to ensure even placement of material during construction and hydrographic surveying validated final material placement

Note: This technology along with their capabilities to dredge in shallow conditions is discussed more in our Risk Register in Section 6.D.



RESULTS

Value Engineering Change Proposals - \$2,086,000
Zero impact to shoreline and wildlife refuge.



FORM B: Project Descriptions



The "New" I-64
Design-Build
GRANITE



US60 Superstition Freeway
Design-Build
SUNDT
*Granite | Sundt,
a Joint Venture*



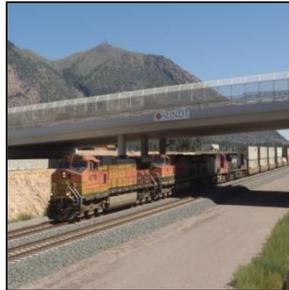
I-17 Thomas to Peoria
Design-Build
SUNDT
*Granite | Sundt,
a Joint Venture*



SR101 HOV
Design-Build
SUNDT



Houston Metro Light Rail
CMGC
GRANITE



Fourth Street Railroad Crossing
CMGC
SUNDT



Tri-Rail Double Track
Design-Build
GRANITE



Carpinteria Salt Marsh Lagoon
Enhancement
GRANITE



SR202L Widening
Design-Build
SUNDT



InterCounty Connector
Design-Build
GRANITE

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite | Sundt, a Joint Venture**

Name of Firm: **Granite Construction Company**

Project Role: **Managing JV Partner**

Principal Participant: **Granite Construction Company** Designer: **Parsons Transportation Group**

Years of Experience (provide length of activity as it relates to the following three elements):
Roads/Streets: **92 years** Bridges/Structures: **92 years** Utility Relocations: **92 years**

Project Name, Location, and Nature of Work for Which Company Was Responsible:

The "New" I-64 Design-Build, Missouri

Granite led Joint Venture was responsible for delivering the \$438M, award winning, design-build (DB) services for urban highway reconstruction.



- Highlights/Scoring Criteria**
- Similar size, scope and complexity to I-5 NCC Project
 - Completed within budget
 - Substantial completion achieved ahead of schedule
 - No claims on the Project
 - Co-located integration with Owner and design team
 - Accelerated bridge construction and innovative retaining walls
 - Compliant with environmental regulations and permits

Provide Project Description and Describe Site Conditions:

- Key Project Elements Similar to I-5 NCC Project:
- | | |
|--|---------------------------------------|
| ✓ Preconstruction Services | ✓ Environmental Permit Compliance |
| ✓ Extensive Maintenance of Traffic | ✓ PCC Paving |
| ✓ Highway Construction | ✓ Extensive Phased Construction |
| ✓ Bridge over Live Traffic or Rail lines | ✓ Aesthetics |
| ✓ Sound Wall Construction | ✓ Landscape Restoration |
| ✓ Utility Coordination | ✓ Direct Access Ramps |
| ✓ Community and Stakeholder Outreach | ✓ Coordination with Multiple Agencies |
| ✓ Right-of-Way Coordination | ✓ Exceeded DBE goals |

Construction of projects of similar size, scope, and complexity

This \$438 Million, nine-mile full reconstruction of I-64 in urban St Louis consisted of 34 bridges, 2 pedestrian tunnels, 1 pedestrian overpass, 414,000 sf of MSE wall, 781,000 sf of soundwall, nearly a 1,000,000 sy of concrete paving, and 99,000 lf of new drainage. I-64 contained many of the design discipline and scopes of work that are contemplated for the I-5 NCC Phase 1 Project.

Preconstruction Services: The Granite led team co-located with the design team, Parsons Transportation Group (PTG) and the Missouri Department of Transportation (MoDOT). Granite practiced "hands on preconstruction services" by fully integrating Granite staff with the design team.



One of the keys to the success of this project was the partnership nurtured by Granite to include key stakeholders that included municipalities, utilities, public groups, and permitting agencies throughout the design and construction of the project. Granite utilized 3-D modeling for conflict identification, design, and constructability reviews. The Team developed tools to quickly evaluate engineering and construction decisions to assess risk, determine construction and life cycle cost, as well as evaluate stakeholder commitments to ensure that the best value was achieved for MoDOT and the stakeholders.

Construction Services: Granite managed construction services, including demolition and removal of old pavements, re-paving, construction of new traffic lanes, 34 bridge structures, retaining and sound walls, new lighting, signalization, signing, striping, landscaping, aesthetics, and traffic management systems. The Team self-performed over 70% of the work and managed several specialty subcontractors to maintain the accelerated project schedule. Granite also managed all aspects of Quality on the project. The team also managed all of the public information during construction of this critical urban freeway.

Granite used formal and informal partnering and team building at the beginning of the project to focus on the common goals of the stakeholders. The message of "Best for Project" decisions was echoed by all parties involved in the project. The result was a project that met or beat every construction milestone and won over fifteen national awards specifically for quality and production. **The project also exceeded the 16% goal for DBE participation.**

Alternative project delivery method

The “New I-64” project was the first design-build project for MoDOT. Granite brought to the project a host of preconstruction service tools to work with the designer, Owner and stakeholders to optimize the design and reduce project risk. Within days of the contract award, Granite’s team had our 40,000 sq. ft. project office up and running. **With 200 design, contractor, and MoDOT employees co-located within this office, we had early work packages released for construction within four months.** This allowed our team to construct critical new direct-connector bridges and ramps and have them open to traffic in less than 12 months. Using processes developed and proven throughout our extensive history of alternative delivery work, we completed all major design in less than 12 months. Our task force teams included designers, contractors, quality, and MoDOT personnel grouped by functional discipline working closely together to achieve optimum schedule, quality, and constructability goals.

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;



The Granite led team coordinated daily with MoDOT Traffic Operations for daily and extended traffic restrictions, shifts and detours. The project was in the heart of St. Louis and coordination with adjacent projects and local cities was performed on a continuous basis.

Of the 34 major structures on the project, over 17 were constructed in stages, over live traffic, or rail lines. The Team evaluated each structure during preconstruction services optimizing the design and construction work plan to fit the project’s schedule, labor, equipment and material availability. Design packages were reviewed and approved by the railway and once construction started, coordination with rail owners was a daily responsibility of the project team.

Implementation of complicated staging and traffic handling on rail and highway right of way;

This urban freeway system carried more than 150,000 vehicles per day and required innovative solutions for maintaining this traffic during reconstruction. The Granite team provided a regional approach by making off-corridor improvements and using an intensive public outreach effort that facilitated limited closures and an accelerated project schedule that reduced cumulative traffic delays. **The result was a huge success, with surveys conducted following project completion showed 94.6% of residents being satisfied or very satisfied.**

Granite employed a full time staff of maintenance of traffic engineers/specialists to help design and implement the hundreds of traffic control plans on the project. During construction, special efforts were taken to minimize and mitigate construction impacts to the commuters through optimized construction staging.



Granite developed significant detour routes complete with capacity improvements to assure mobility in this critical corridor. The project involved not only complicated staging and detour routes but also addressed the mobility of emergency services. When the pre-planning and execution were combined with a very effective Public Information campaign, the impact to traveling public on this major artery of St Louis were not only minimized in terms of travel time delays but also nearly incident free. The successful staging and traffic handling culminated with nearly 40,000 people attending the project opening ceremony on December 7th, 2009.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The New I-64 project included reconstruction directly through the environmentally sensitive Forest Park – the jewel of St. Louis’ urban greenspace – and also bordered the St. Louis Zoo. With thousands of visitors seeking pristine environments within the city, construction through these areas required attention to detail and the best environmental management practices.

The design & construction also included mitigation for water resources issues including perennial stream crossings, floodplain impacts, wetlands, and ponds. This environmental work required close coordination with MoDOT, FHWA, FEMA and the USACE. The team utilized their experience and expertise to apply for and obtain a Section 402 NPDES permit and a Flood Plain Development Permit from SEMA. Additionally, the team managed the site and consultants to meet the obligations in the Section 404 Clean Water Act permit.

Constructed through a historic, urban city, the environmental impacts to cultural and archeological resources was critical to the project’s success. Design was coordinated with multiple agencies including MoDOT, Missouri State Historic Preservation Office, FHWA, and the St. Louis Advisory Council on Historic Preservation. During construction, our crews discovered remnants of a historically significant subway tunnel and we immediately coordinated efforts to preserve and protect the structure.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

Due to development adjacent to the highway, the local residents were extremely sensitive to increased noise levels resulting from expansion of the freeway. Our team conducted extensive noise modeling and facilitated public meetings for the selection of 780,000 square feet of noise walls that were designed and constructed for noise mitigation while aesthetically acceptable to the public. Continual coordination with both MoDOT and FHWA throughout the design, and construction, coupled with public meetings resulted in successfully mitigating the environmental impacts due to noise.

The full closure of the freeway for effectively 2 years placed a burden on the local infrastructure in the surrounding areas. Both residents and public officials were very concerned about the potential impact to the community. The project spanned two (2) counties and directly crossed six (6) cities and multiple county and DOT maintenance districts. Numerous workshops were held to plan for the closure and implement the improvements to the surrounding infrastructure ahead of the closures. Once the freeway was closed, those same agencies continued to participate in monthly workshops hosted at the project office to discuss the impacts and strategies to improve the flow of traffic.

Public Information: The NEW I-64 Design-Build Project won awards from the AASHTO Public Affairs Committee, as well as the Public Relations Society of America, for outstanding public outreach and communications. Granite’s comprehensive public information program included nearly every facet of messaging imaginable: public open houses, one-on-one meetings with residents and business owners, online discussions with the public, live TV and radio interviews and reports, a 24-hour hotline, email correspondence, a project website, project tours, and presentations to schools and community organizations.





Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

The project’s pace was extremely demanding, and it required every discipline be examined to develop solutions that optimized schedule, quality, function, or maintenance. Through these examinations the Team developed 1) walls that could be constructed in one-fifth of the amount of time compared to other systems 2) Repeatable formwork bridge abutment designs and the incorporation of precast elements 3) hybrid retaining walls that were a combination of precast and slip-formed elements 4) alternative backfill materials that were not moisture or frost sensitive 5) securing FHWA approval for a barrier design on MSE walls that did not require moment slabs 6) 9-inch concrete pavement overlays 7) sustainability efforts resulting in the recycling of more than 450,000 tons of concrete and asphalt pavement.

Some of the most notable innovations on the project related to retaining walls, sound barrier, and geotechnical designs. Granite developed a wall system that was derived from a Caltrans C60 barrier.

The wall system could be slip-formed from 36" to over 9 feet and was infinitely variable between the heights. This system eliminated over 300,000 sf of MSE wall. This innovation allowed the placement 15,000 sf of wall per day per crew, complete with a crash-tested barrier for protection.

List Any Awards, Citations, and/or Commendations Received for the Project:

- 2011 - Achieve Technologies Platinum Award for Community Relations
- 2010 - DBIA Project of the Year
- 2010 - APWA Project of the Year
- 2010 - ACPA National Project of the Year Best Portland Concrete
- 2010 - ACPA Excellence in Paving
- 2010 - AASHTO Miss. Valley America's Transportation Award
- 2009 - ACPA MO/KS Concrete Award-Large Project
- 2008 - Missouri Governor Award for Quality and Productivity
- 2008 - AASHTO Presidents Award for Quality

Name of Client (Owner/Agency, Contractor, etc.): **Missouri Department of Transportation**
Owner’s Project or Contract No.: **C-3-0663**

Address: **1590 Woodlake Drive, Chesterfield, MO 63017**

Contact Name:
Ron Morris

Telephone: **314-565-4293**
E-Mail: **ronald.morris@modot.mo.gov**

Initial Construction Bid Price: **\$420 million**

Final Construction Contract Price: **\$437.8 million**

Construction Contract Change Order Summary: **Changes requested by the owner for additional scope**

Percent of Total Work Performed by the JV: **70%**

Percent of Total Work Subcontracted: **30%**

Dates of Construction

Start Date:
January 2007

Planned Completion:
October 2010

Actual Completion:
August 2010

Warranty Period:
Standard 12 month

Number and Dollar Amount of Claims: **Zero**

Any Litigation? Yes ___ No **X**___

Claim Summary: **None**

DRB Summary: **No DRB was used on this Project**

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite | Sundt, a Joint Venture**

Name of Firm: Granite/Sundt JV		
Project Role: Design-Builder		
Principal Participant: Granite Construction Company/Sundt Construction Inc. Designer: URS Corporation		
Years of Experience (provide length of activity as it relates to the following three elements): Roads/Streets: 124 years Bridges/Structures: 124 years Utility Relocations: 124 years		
Project Name, Location, and Nature of Work for Which Company Was Responsible:		
US 60 Superstition Freeway Design-Build, Arizona		
Granite Construction Company and Sundt Construction Inc. formed a Joint Venture to deliver this \$196M Design Build Contract that included 13 miles of Urban Freeway Widening located in Phoenix, Tempe and Mesa AZ.		
	Highlights/Scoring Criteria <ul style="list-style-type: none"> • Design-Build contracting method • Delivered with zero delays and zero claims • 13 miles of urban freeway widening and center HOV construction with complicated staging and traffic handling • Zero water quality and environmental permit infractions • Highly sensitive public project that impacted 3 major Cities, 180K vehicles per day • Innovative Alternative Bridge Construction 	
	Provide Project Description and Describe Site Conditions: Key Project Elements Similar to I-5 NCC Project: <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ✓ HOV Center Lane Construction ✓ Portland Cement Concrete Pavement ✓ MOT / Staged Construction ✓ Outside widening ✓ Right-of-Way Coordination ✓ Utility Coordination </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> ✓ Preconstruction Services ✓ Aesthetics ✓ Bridges over traffic ✓ Bridge over UPRR Rail ✓ Sound wall construction ✓ Landscape Restoration ✓ Stakeholder and Community Outreach </td> </tr> </table>	<ul style="list-style-type: none"> ✓ HOV Center Lane Construction ✓ Portland Cement Concrete Pavement ✓ MOT / Staged Construction ✓ Outside widening ✓ Right-of-Way Coordination ✓ Utility Coordination
<ul style="list-style-type: none"> ✓ HOV Center Lane Construction ✓ Portland Cement Concrete Pavement ✓ MOT / Staged Construction ✓ Outside widening ✓ Right-of-Way Coordination ✓ Utility Coordination 	<ul style="list-style-type: none"> ✓ Preconstruction Services ✓ Aesthetics ✓ Bridges over traffic ✓ Bridge over UPRR Rail ✓ Sound wall construction ✓ Landscape Restoration ✓ Stakeholder and Community Outreach 	
Construction of projects of similar size, scope, and complexity		
The US60 Project was designed and built by The Granite Sundt Joint Venture, which substantiates the successful history of our Team’s ability to deliver complex urban freeway construction with Center HOV Lanes multiple bridge widenings in a high profile public setting, maintaining mobility with over 180K vehicles per day utilizing innovative construction methods.		



The Granite | Sundt Joint Venture Team was awarded the single largest highway construction contract in state history. At \$184M Granite | Sundt provided Design-Build Services to widen 13 miles of Urban Freeway on US 60 which included Center HOV lanes, Portland Cement Concrete Pavement, 12 bridge widenings, Sound Walls, Retaining Walls, Lighting and Overhead Message Boards. This complex project required the Design Build Contractor to maintain at least six lanes of traffic open during the day and limit restrictions to nights and weekends. The scope of the US60 Superstition Freeway Design Build Project contains the exact items of Urban Freeway work associated with the I-5 NCC Phase 1 CMGC Project.

Design Phase Services: During the final Design phase, the Granite | Sundt Team eliminated hauling off 1.2 million CY of waste material originally included in the Design Concept Report. This was accomplished by selecting areas within the right-of-way that had ample room to incorporate the roadway excavation as fill by mounding the earth to act as sound barriers. This eliminated the need for sound walls, and disposal costs of the roadway excavation. Additional value engineering included utilizing soil nail retaining walls in lieu of conventional cast-in-place walls. These walls were more efficient to construct, less cost, and still provided the architectural treatments on the exposed face. The Team modified the sequence of construction which reduced the number of times Interstate 10 needed to be closed. The team developed an enhanced median light pole barrier form and utilized a stepped masonry pilaster to strengthen and heighten existing masonry walls. These design alternatives were developed within the technical proposal phase which provided millions of dollars of savings compared to the departments original cost estimate.

Construction Phase Services: The Granite/Sundt JV Team completed constructed the following items:

- 550,000 SY of PCCP
 - 260,000 SF of Concrete Retaining Walls
 - 135,000 LF of Concrete Barrier
 - 30,000 SF of MSE Walls
 - 32,500 LF Drainage Pipe
- The JV Team's winning proposal was \$55 M below the Department's original cost estimate. Project Savings were generated during the technical proposal and price phase and during the final design and construction phase. The JV Team completed the construction phase 30 days early.

In 2001 Eric Weston, Project Construction Manager (Highway) for the NCC Phase 1 Project, worked on this Design Build Project. Eric coordinated the Maintenance of Traffic and partnered with the Department along with Granite | Sundt's Senior Leadership Steering Committee. This committee established ground rules and assisted in the training process that ultimately set the pattern for successful partnering throughout the life of the project. From the Department's perspective, ***"(The Granite | Sundt JV Team) did what some people felt was impossible, and made it look like routine. The outstanding success achieved on this project was directly related to the successful partnership established between ADOT and the JV Team."***

- Floyd Roehrich, P.E. - ADOT Director of Policy

Alternative project delivery method

The US60 Superstition Freeway Design-Build project was delivered utilizing an alternative delivery method. The Design-Build delivery method enabled the Granit|Sundt Joint Venture Team to widen 13 miles of Urban Freeway, widen 12 bridges, construct center HOV lanes and all other associated improvements in a 26 month schedule. The Department's original planned program was forecasted over a 6 year period. This alternative delivery method was executed almost 4 years ahead of schedule. The Granite | Sundt JV Team also co-located with the ADOT Team during final design and construction. This methodology and integration is a key component to success on a project as large as this, especially considering the compressed schedule. A similar methodology of co-location and integration will be utilized on the NCC Phase 1 Project.

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

12 bridges were widened along the 13 mile corridor. The Granite | Sundt Team selected a "cast high and lower" (CHL) bridge construction method at the Lindsay Road over crossing in order to maintain a high level of service. This method was staged to allow for constant flow of traffic during construction beneath the elevated false work of a post-tensioned box girder bridge. The minimum clearance was maintained by raising the false work three feet above finish grade and then lowered into place. This method minimized the amount of time that Lindsay Road needed to be restricted. Depending upon the final design of the NCC Phase 1 Project, a similar method could be considered at the MacKinnon Avenue Overcrossing.



In areas where noise walls were adjacent to residential properties the Granite | Sundt Team worked closely with the city and the property owners to shift walls to mutually acceptable locations. The Team raised the height of existing walls at the Price Freeway TI and replaced portions of existing walls that the Department determined to have structural problems.

Implementation of complicated staging and traffic handling on rail and highway right of way;

With some of the highest daily traffic counts in the nation, 180,000 vehicles passed through this project each day in 2001. The project team which included Eric Weston (proposed as the Project Construction Manager (Highway) for the NCC Phase 1 Project) maximized the available work hours during low traveling periods by working at night. This enhanced the crew's abilities to perform given the extreme temperatures of 100* - 118* for six months out of the year.

The team also worked together to sequence the work in order to minimize the required number of closures on I-10 associated with the HOV ramp direct connector ramps at the US 60 interchange. This interchange was phased and constructed under some of the largest daily traffic volumes in the United States. The Granite | Sundt Team was challenged with constructing fly-over cast-in-place box girder bridges to connect the center HOV lanes from US 60 to I-10. This construction needed to be staged in order to maintain a level of service on I-10 while bridge construction progressed. A counter-flow staged construction sequence was utilized which allowed overhead work to proceed without closing I-10. Shifting the eastbound and westbound traffic to one side of the freeway provided for enough room to build the fly-over bridges in stages. This method optimized the available construction room, while balancing the level of service for traffic flow on I-10.

The project's success was apparent to the public with 88% expressing satisfaction with the US 60 work, the highest mark ever achieved in public opinion polling on an Arizona highway project. Another example of the project team ensuring that traffic flow was maintained through the life of the project is the fact that 48 ramps were reconstructed and only four had to be closed to traffic for short periods of time. The Granite | Sundt Team developed phasing plans that provided access on the majority of on and off ramps throughout the construction phase. This information was provided to the ADOT Communications Team to help facilitate the Public Relations Plan. Stakeholder satisfaction was an important goal on the project considering the 13 mile corridor traveled through three major cities; Phoenix, Tempe and Mesa. This same approach will be utilized to support Caltrans and the Project Team to provide updated information to third party stakeholders involved in the project such as utility companies, railroads and the general public on the NCC Phase 1 Project.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

The Project Team approached public relations proactively. Prior to the proposal submittal, the Granite | Sundt Team held meetings with major business owners and city officials from all three cities to establish communications and form a good working relationship. Upon award of the project, The Team supported ADOT Communications to ensure the same steps were taken with the citizens including, weekly e-mails, quarterly informational flyers, an A.M. radio station, a phone hotline and a website. All of these media options were updated weekly.

The Granite / Sundt JV team utilized creativity and ingenuity in scheduling and staging the enormous amount of work involved in a manner which truly minimized the disruption and inconvenience to the public. Eric Weston, (proposed Project Construction Manager (Highway) for the NCC Phase 1 Project) led the Maintenance of Traffic (MOT) effort. The Team received considerable praise from both the news media and the general public. The fast-track construction program was instrumental in unprecedented public acceptance of the work and overwhelmingly favorable media coverage. The rapid schedule and well thought out construction implementation plan caused minimal traffic impacts, while an effective and responsive public information program was put into action that also helped to minimize complaints from the public. Eric will lead the Highway portion of the NCC Phase 1 Project utilizing this same integrated approach.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

Specific examples of innovative designs occurred in the Technical Proposal Phase of this Design Build Project. Cost Reduction Incentive Proposals were not utilized with this delivery method, however, ADOT benefitted from the value engineering that the Granite | Sundt Team performed in this delivery method as



there was a \$55M difference between the Department’s project cost estimate and Granite|Sundt’s winning proposal.

Examples of the innovative ideas included; utilizing a soil nail slope stabilization method in lieu of conventional structural excavation limits which reduced the quantity and required work area for construction of cast-in-place retaining walls. Other methods included engineering earth berms in lieu of cast-in-place concrete sound walls in areas where fill generated from roadway excavation could be placed in berms in lieu of being hauled off-site and disposed of as waste material. Continuous monitoring of productions and re-sequencing the work based on actual output enabled the project team to condense the already aggressive schedule and complete the work 30 days ahead of time. Another innovation utilized on the project was a cast high and lower bridge construction method which allowed for traffic to pass underneath temporary bridge forms which met the required vertical clearances. The Lindsay Road superstructure widening was constructed 3-feet above its ultimate position and then jacked down into place. The Project Team also developed an enhanced median light pole barrier form that provided for a high quality finish product when transitioning from machine placed barrier wall to hand placed sections of concrete barrier wall integrated with center light pole foundations. These innovations provided for cost savings and schedule efficiencies. Eric Weston and the Granite|Sundt Team will develop similar innovations on the NCC Phase 1 Project.

List Any Awards, Citations, and/or Commendations Received for the Project:

- 2003 Southwest Contractor Magazine – Best of 2003 Design Build Project
- 2003 Associated General Contractors (AGC) Marvin M. Black Excellence in Partnering Award
- 2003 American Council of Engineering Companies Award for Engineering Excellence
- 2003 American Association of State Highway and Transportation Officials Trailblazer Award
- 2003 National Engineering Magazine’s Outstanding Engineering Award

Name of Client (Owner/Agency, Contractor, etc.): **Arizona Department of Transportation (ADOT)**
Owner’s Project or Contract No.: **060 MA 172 H537001**

Address: 4395 S Price Rd, Tempe, AZ 85282

Contact Name:
Floyd Roehrich P.E.

Telephone: **602-712-7550**
E-Mail: **froehrich@AzDOT.gov**

Initial Construction Bid Price: **\$184M**

Final Construction Contract Price: **\$196M**

Construction Contract Change Order Summary: **34 changes orders totaling \$11.8 million consisted of additional scope that was added to the project which was approved by ADOT. Although nearly 6.5% of the original contract amount was added to the contract, Granite | Sundt worked with ADOT to incorporate and complete the work within the original contract duration. This provided schedule certainty, supporting ADOT’s Public Communications and minimized impacts to the traveling public.**

Percent of Total Work Performed by the JV: **80%**

Percent of Total Work Subcontracted: **20%**

Dates of Construction

Start Date:
May 2001

Planned Completion:
June 2003

Actual Completion:
June 2003

Warranty Period:
None

Number and Dollar Amount of Claims: **Zero**

Any Litigation? Yes ___ No **X**

Claim Summary: **N/A**

DRB Summary: **DRB process was not utilized on this project**

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: Granite/Sundt JV	
Project Role: Design-Builder	
Principal Participant: Granite Construction Company/Sundt Construction Inc. Designer: URS Corporation	
Years of Experience (provide length of activity as it relates to the following three elements): Roads/Streets: 124 years Bridges/Structures: 124 years Utility Relocations: 124 years	
Project Name, Location, and Nature of Work for Which Company Was Responsible:	
I-17 Thomas Rd. to Peoria Ave. Design-Build, Arizona	
Granite Construction Company and Sundt Construction Inc. formed a Joint Venture to deliver this \$86.4M Design-Build which included widening of seven urban miles of Interstate 17 from Thomas Rd. to Peoria Ave for the addition of High Occupancy Vehicle (HOV) lanes and auxiliary lanes, reconstruction of Camelback Rd. and Glendale Ave bridges, retaining walls & lighting.	
	Highlights/Scoring Criteria
	<ul style="list-style-type: none"> • Design-Build Contracting Methods Delivered with zero delays and zero claims • Entire Freeway corridor was located within a depressed area requiring strict water quality control measures • 7 miles of Urban freeway widening with complicated staging and traffic handling • Zero Environmental Permit violations • Innovative roadway barrier and retaining wall combination
	<p>Provide Project Description and Describe Site Conditions:</p> <p>Key Project Elements Similar to I-5 NCC Project:</p> <ul style="list-style-type: none"> ✓ Pre-Construction (Design Phase) Services ✓ HOV lane construction ✓ PCC Paving ✓ Right-of-Way Coordination ✓ Utility Coordination ✓ MOT / Staged construction ✓ Noise/Sound Walls ✓ Inside and outside widening ✓ Aesthetics ✓ Bridges over traffic ✓ Landscape restoration ✓ Stakeholder and Community Outreach



Construction of projects of similar size, scope, and complexity

The I-17 Design-Build project highlights The Granite Sundt JV Team's experience in Designing and Constructing HOV lanes on an active Urban Freeways. This project included modifying north and southbound lanes to provide HOV and auxiliary lanes. Two Post Tensioned Cast-in-place Box Girder Bridges were removed and reconstructed at Camelback Road and Glendale Ave. Additional work included 165,000 cubic yards of excavation, 63,000 cubic yards of Portland Cement Concrete Paving (PCCP), 250,000 square feet of sound and retaining walls. **This is the exact same scope that is planned for the freeway component of the I-5 NCC Phase 1 CMGC Project.** This project also highlights the Granite|Sundt JV Team's experience working together to provide coordination with adjacent cities and agencies. Constant support to ADOT's extensive Public Outreach and Community Relations plan was provided to ADOT in order to maintain a level of service through this highly traveled corridor.

Alternative project delivery method

This Design-Build project offered ADOT their first opportunity to build an urban freeway improvement project utilizing an alternative delivery method. All parties agreed that a true partnering experience would only be achieved by having all major team players under one roof (co-location). ADOT, Granite|Sundt, designers, public relations, and construction subcontractors made the commitment to have their representatives assigned 100% of the time to this project and work out of a single building. This co-location, which ADOT had not done before, fostered an integrated environment where immediate decisions and innovative concepts resulted and proved to be critical to the success of the project. When the design teams completed a package of drawings, all team members were assembled for the review in the project office. The integration of Construction personnel, Designers, as well as those from ADOT design oversight and ADOT management crafted innovative ideas that were beneficial to the project. Preparation of the project plans with input from the construction team was a true team effort. This integration contributed to the success of an extremely fast paced project.

One of the major reasons to utilize the Design-Build delivery method is to accelerate the overall project schedule. The goal of an efficient project schedule was made apparent by ADOT offering early completion incentives which minimized inconvenience to the general public and commercial business owners. **Through close partnering efforts the \$86 million I-17 project was completed in 603 days, which included \$6 million in additional work requested by the Owner. A major contributing factor of the team's ability to complete this vast amount of work in the small amount of time was the commitment of all the team members working together as an integrated team in the Design-Build process.**

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

Two main bridge structures had to be removed and replaced within the project limits. Camelback Road and Glendale Ave were existing post tensioned concrete box girder bridges that were demolished under a temporary closure, and then reconstructed while maintaining traffic. This staged bridge construction is very similar to the two bridges that are proposed to be replaced at the San Elijo and Batiquitos Lagoons along the I-5 on the NCC Phase 1 Project. **On the I-17 DB Project, Granite|Sundt staged and sequenced the bridge construction in order to maintain the high volumes of daily traffic in the Phoenix Metropolitan area.** Complex MOT was coordinated with the Department and the Communications liaison between the adjacent City, Neighborhoods and Businesses. Alternative routes and access detour information was provided to the general public through information provided by the Design Builder and the Public Relations Team.

Roadway barrier cast in front of the sound wall: Typically a sound wall would be constructed and then in a separate operation, a roadway barrier would be slip formed adjacent to the wall. The JV Team developed a new method to change the traditional shape of the barrier so that it could be formed and poured into the wall itself, thus eliminating one step in construction. ADOT's concern was the functionality, safety, and footprint of the wall. The design team had to make it work technically, and the Granite-Sundt Design Build Team provided constructability review. As a result, a wall was developed that had a constant slope barrier on one side of the wall that eliminated the need for a slip form barrier operation; it fit in the footprint and minimized the size of forms that had to be made. A single 2-hour coordination meeting addressed this issue. Everyone worked together at the session and it paid huge dividends in making the wall construction efficient and allowing the project to be completed ahead of schedule.



Implementation of complicated staging and traffic handling on rail and highway right of way;

Seven miles of urban freeway was under construction during this intense Design-Build project. A complex MOT plan was coordinated with the Department and the Communications liaison between the adjacent Cities, Neighborhoods and Businesses. When access restrictions to cross streets was required due to reconstruction of structures and or ramps, alternative routes and detour information was provided to the general public through information provided by the Design Builder and the Public Relations Team. Our JV Team supported ADOT's Communications team and provided real time updates to the construction sequencing so the traveling public was kept up to date. This same level of involvement will be necessary working with Caltrans and the adjacent Cities through the North Coast Corridor along the I-5 on this project.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The entire project is located within a depressed area. This type of project required Best Management Practices to manage the Storm Water Run-off and mitigate the infiltration of construction debris into the drainage system. The Granite-Sundt JV team worked with the Department and the Arizona Department of Environmental Quality to develop the appropriate Storm Water Pollution Prevention Plan and maintained the BMP's throughout the entire life of the project. Each day preventive measures were taken in the event of rain. This included standard construction erosion control measures, especially protection of storm drain inlets. The JV Team also complied with noise ordinance permits based on local City regulations. Long-term noise impacts were mitigated by constructing noise barriers early in the construction phase so the adjacent Stakeholders gained a benefit during the construction process. The Granite|Sundt team will use these same effective BMPs to mitigate potential storm water runoff from being contaminated within the I-5 corridor. Mike Josselyn, Environmental Permit Manager will establish the necessary water quality permit measures and the team will monitor these throughout construction. Understanding the sensitive nature of all water quality within the coastal region is a critical component of the NCC Phase 1 Project.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

ADOT had originally programmed this seven mile stretch in freeway improvements into multiple construction contracts and phases that would have span nearly eight years. **The potential impact to the traveling public throughout this corridor carried a very negative connotation. The Department decided to procure the entire program as a single Design-Build project. Granite|Sundt's winning design-build proposal, compressed eight years of construction work into less than two years.** Constant coordination with adjacent cities and regional agencies provided the foundation of this successful project. The Granite|Sundt Team defined how a Design-Builder should interact with an owner and adjacent stakeholders. Daily interaction with the owner and key stakeholders produced context sensitive solutions that put the public and project first and foremost. The early completion substantially reduced the impact and inconvenience to the traveling public. The Granite|Sundt Team will take this same approach, considering the specific goals of the I-5 NCC Phase 1 Project.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

The center HOV construction required demolition and reconstruction. The work area was 16' wide and the design concept report called for 4" of base course with 11" of Portland Cement Concrete pavement. The Granite|Sundt Team proposed to increase the PCCP by 1" and eliminate the 4" of base course material. **This proposed section provided the same structural integrity and increased construction production which contributed to the overall project being completed ahead of schedule.** A similar situation is required on the I-5 where Center HOV Lane construction is proposed. The Granite|Sundt Team will provide alternative pavement sections with parametric model estimates to the Caltrans Team. Different options can be considered in order to maximize the value of the ultimate scope within the I-5 NCC Phase 1 Project.



List Any Awards, Citations, and/or Commendations Received for the Project:			
<ul style="list-style-type: none"> 2001 National Partnership for Highway Quality - Gold Level Award 2001 Associated General Contractors of America - Marvin M. Black Excellence in Partnering Award 2001 Associated General Contractors of America - AON Build America Award 			
Name of Client (Owner/Agency, Contractor, etc.): Arizona Department of Transportation (ADOT) Owner's Project or Contract No.: AC-CM-NH-IM-17-1(3334)			
Address: 1651 W. Jackson St. MD 121F Phoenix, AZ 85007			
Contact Name: John Akin (formerly ADOT, now with Tri-Star Engineering)		Telephone: 602-568-4661 E-Mail: jakin@tristar-az.com	
Initial Construction Bid Price: \$77.2M		Final Construction Contract Price: \$86.4M	
Construction Contract Change Order Summary: Contract Change Order amounts included \$3M of incentives for: Opening crossroads to traffic, Placing auxiliary lanes into operation, Placing final freeway lighting into operation, Operating superior public relations program, Superior quality management performance, Smoothness of Pavement and Strength of PCCP. Additional scope items were added to the contract by ADOT which accounted for approximately \$6.1M of the remaining contract additions. The Granite Sundt JV Team was able to work all of the additional scope items into the original contract duration, eliminating additional overhead and general conditions cost that would typically be associated with additional work. Meeting the original schedule date also mitigated potential impacts to the traveling public.			
Percent of Total Work Performed by the JV: 80%		Percent of Total Work Subcontracted: 20%	
Dates of Construction			
Start Date: January 1999	Planned Completion: September 2000	Actual Completion: September 2000	Warranty Period: None
Number and Dollar Amount of Claims: Zero		Any Litigation? Yes ___ No __X__	
Claim Summary: N/A		DRB Summary: DRB Process was not utilized on this project	

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: Sundt Construction, Inc.	
Project Role: Design-Builder	
Principal Participant: Sundt Construction Inc. Designer: URS Corporation	
Years of Experience (provide length of activity as it relates to the following three elements): Roads/Streets: 124 years Bridges/Structures: 124 years Utility Relocations: 124 years	
Project Name, Location, and Nature of Work for Which Company Was Responsible:	
SR101L HOV Design-Build – I-10 to Tatum Blvd., Arizona	
Sundt, as a 30% Joint Venture partner was responsible for the Final Design Phase and Construction of this \$98M, 30 Mile Center HOV Lane Urban Freeway Design Build Project	
	Highlights/Scoring Criteria <ul style="list-style-type: none"> Design-Build contracting method Delivered on time, no claims 30 mile HOV addition on an Urban Freeway with complicated staging and traffic handling Highly sensitive public project spanning three major cities, hosting major events Innovative Wireless PCCP paving technique
Provide Project Description and Describe Site Conditions:	
Key Project Elements Similar to I-5 NCC Project:	
<ul style="list-style-type: none"> ✓ HOV Center Lane Construction ✓ Portland Cement Concrete Pavement (PCCP) ✓ MOT Staged Construction ✓ Inside and Outside Widening 	<ul style="list-style-type: none"> ✓ Aesthetics ✓ Bridge Construction over traffic ✓ Sound wall construction ✓ Landscape Restoration ✓ Multiple Cities, Agencies and Stakeholders were involved
Construction of projects of similar size, scope, and complexity	
<p>This \$98M Design Build Project included 30 miles of Center HOV lanes and multiple auxiliary lanes, widening five bridges, reconstructing eight ramps, Portland Cement Concrete Paving (PCCP), sound walls, retaining walls and median barrier. The Urban Freeway Improvement scope of the I-5 NCC Phase 1 Project contains the exact same proposed improvements that were successfully Designed and Built by Sundt as a Joint Venture Team member on the SR101L HOV DB. Sundt will bring these same innovative alternative delivery methods that allowed for 1 mile of HOV lane to be Designed and Constructed every 8.5 days within the overall contract duration.</p> <p>Designed to relieve traffic congestion, this highly traveled 30-mile transportation corridor passes through three cities and links three major freeways, Interstates 10, 17 and State Route 51. The JV team delivered the entire project to the Arizona Department of Transportation 406 days faster than ADOT's original schedule and \$15.5M under the agency's estimate.</p>	



Preconstruction Phase Services:

The design and construction team co-located with ADOT, design engineers and construction staff. This gave the JV team the adeptness to make decisions and adjustments quickly. **Different than the traditional design package submittal, review and comment process, the integrated team was able to make design decisions on the fly and produce ready for construction documents together, the first time. Similar integration will be a key component to the I-5 NCC Phase 1 Project to “Design Once” ensuring efficiencies to the Caltrans Design Team and outside design consultants.**

Construction Phase Services:

As a Joint Venture Partner, Sundt was responsible for 30% of the Design-Build Project. A critical component in completing the project 13.5 months ahead of the owner's original schedule was Sundt's ability to self-perform the Portland Cement Concrete Paving, drainage structures, grading and other construction activities. This, and detailed planning in order to meet the specified AR-ACFC paving windows, made it possible to place the rubberized asphalt in a time frame that supported the project's 257-day schedule. This meant that each member of the team had to design and construct one mile of road widening every eight and a half days, starting from the first day of the project. At peak construction activities, there was approximately 650 staff involved on the project each day. Providing a boost to the local economy. The magnitude of the SR101L HOV Design-Build Project is similar in size, scope and complexity as the NCC Phase 1 Project’s HOV Center Lane construction on the I-5. The Granite | Sundt Team’s self-performing capabilities will be an asset to the project providing the same abilities to compress the overall schedule.

Alternative project delivery method

Sundt's approach in the design phase of the SR101L HOV Design-Build Project was to co-locate the JV team with ADOT in order to integrate the design and construction teams with the owner. A similar approach will be utilized on the I-5 NCC Phase 1 Project Team. Sundt's proven processes in both design-build and CMGC delivery methods are to work together with the Project Team in order to solve design challenges early the first time to eliminate unnecessary design phases that can delay the construction phase. A great example of this successful integration on the SR101L HOV Design-Build Project was when unsuitable subgrade was discovered during the early construction phase. This condition had the potential of severely impacting the project’s schedule. The JV team worked closely with ADOT to minimize the potential cost and schedule delay by utilizing multiple remediation processes. Sundt helped the Project Team develop intelligent compaction processes to ensure the subgrade was remediated quickly and to the specifications developed by the project team

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

Staged Bridge Construction:

The JV Team designed and constructed five (5) bridge widenings throughout the 30 mile corridor while maintaining traffic. **The bridge construction was staged in order to maintain the same level of service for the traveling public while completing the construction of the bridge widenings ahead of schedule.** This was made possible by having construction staff involved throughout design development. When the construction staff is engaged in the design phase, it creates a better understanding of the environment and constraints that the field team will have to deal with in the construction phase. Cost and Schedule certainty are realized in the design phase, and this is translated to an executed plan in the field that satisfied the conditions of the project without delaying the schedule. The JV Team was able to complete the five bridge widenings without any unauthorized closures, and maintained a level of service specified by ADOT throughout the construction phase.

Soundwalls:

Sundt partnered with ADOT's Project Design Team (PDT), in order to ensure the local themes throughout the 30 mile corridor were maintained. Unique features such as custom form liner on specific retaining and sound walls were utilized to produce an aesthetically pleasing product that was economically viable and satisfied the design intent without creating maintenance issues. This same level of interaction in the preconstruction phase of the NCC Phase 1 Project with our construction team will be necessary to insure a well-balanced aesthetic design is achieved considering appearance and constructability.



Implementation of complicated staging and traffic handling on rail and highway right of way;

The JV Team co-located with ADOT during the design and construction phase which further enhanced the ability for the entire team to review the complicated staging and proposed traffic handling associated with the center HOV widening, multiple bridge widenings and access ramp construction. The JV Team made sure impacts to the traveling public were minimized not just during major events but for everyday commuters, this effort required intensive coordination.

In order to design and construct the proposed improvements in an accelerated manner while still providing a high level of service for the traveling public, the JV team divided the project into two segments. The segments were further divided into sub segments to allow congested areas of freeway to be completed first. This allowed the public to immediately benefit from the addition of HOV lanes in the portions of the freeway that most urgently needed relief. Both minor and major freeway closures were planned in advance and the team always took into account the multitude of events that took place during the nine month duration. Maintenance of traffic was also a daily discussion to make sure the corridor remained as accessible as possible for the traveling public. Our proven processes working with multiple stakeholders will be a valuable asset on the NCC Phase 1 Project.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The SR 101LHOV Design-Build Project had several environmental considerations and permit requirements. A Categorical Exclusion was developed for the project that defined the issues and responsibilities among the stakeholders. In addition, regulatory permit requirements of the Clean Water Act (CWA) of 1972, including a Section 402 Storm water Pollution Prevention Plan (SWPPP), was closely followed throughout construction. The air quality within the project limits complied with Maricopa County Air Quality Department regulations and permit requirements. The project was built in full compliance with the pertinent environmental requirements. An Environmental Compliance Manager, Dust Control Management Supervisor and a SWPPP Supervisor were employed to manage compliance in the respective categories. This commitment to managing regulatory compliance was emphasized to all levels of the JV Team employees, not just the responsibility of a few individuals. **A project specific environmental training program was instituted prior to any employee beginning work on the project. The SR 101L HOV Design-Build Project was completed with zero environmental violations.**

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

The entire team focused its efforts on exceeding the expectations of the project stakeholders and general public. **With a project length of 30 miles that passed through the cities of Phoenix, Peoria and Glendale, touching multiple communities and interacting with major events and entertainment districts-such as the University of Phoenix Stadium, Jobing.com Arena, Luke Air Force Base, multiple Major League Based Ball Spring Training complexes, the Barrett Jackson Auto Auction, The PGA's Phoenix Open and the Phoenix International Raceway-client service was our number one priority.** Multiple utility owners such as the Western Area Power Administration, Salt River Project Power and Water, Southwest Gas, and Private Water and Irrigation Districts owned facilities throughout the corridor. Agency coordination during final design and construction was accomplished by integrating the appropriate personnel during the final design phase. This practice will be continued during the Preconstruction Phase of the NCC Phase 1 Project including the LOSSAN corridor San Elijo Lagoon and Batiquitos Lagoon Conservancy and Foundation. A well balanced team with Highway, Rail and Lagoon expertise will be a benefit on this CMGC project.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

The SR101L HOV Design-Build Project did not utilize a formal CRIP process. The innovations and value engineering ideas were incorporated in the Technical Proposal Phase through Alternative Technical Concepts and the Final Design. One of the major elements common to the NCC Phase 1 Project was the 30 miles of Center HOV Widening. Sundt instituted a wireless paving method that reduced the physical survey effort, providing a more efficient construction schedule. To further accelerate the PCCP placement, the team pooled resources to nearly 650 onsite employees at the peak of construction and completed the center HOV widening project ahead of schedule.



Self-performing crews and qualified subcontractors designed and constructed 1.5 Lane Miles per week, placed 1,600 Tons of Aggregate base per day, finished 11,000 Square Yards of subgrade and/or base per day, placed 2,200 Cubic Yards of Concrete per day and placed 1,600 Linear Feet of Median barrier per day. The ability to manage a project of this magnitude and staff it, strategically led to accelerating the construction of these major elements completing the project 13.5 months earlier than the department's original schedule. The overall schedule compression between the design and construction phases was the major cost benefit to the Arizona Department of Transportation. The Department received 100% of this savings.

List Any Awards, Citations, and/or Commendations Received for the Project:

- 2012 - Design-build Institute of America (DBIA) - National Design Build Honor Award - Transportation
- 2013 -AGC - Build America Merit Award - Design-Build Highway and Transportation category
- 2012 - Engineering News Record (Southwest Region) Transportation Award of Merit - Best Project

Name of Client (Owner/Agency, Contractor, etc.): **Arizona Department of Transportation (ADOT)**
Owner's Project or Contract No.: **101 MA 001 H745601C**

Address: **1221 S. 2nd Ave MD T100 Tucson, AZ 85713**

Contact Name:
Steve Mishler, P.E

Telephone: **520-429-4993**
E-Mail: **smishler@azdot.gov**

Initial Construction Bid Price: **\$89.9M**

Final Construction Contract Price: **\$98.9M**

Construction Contract Change Order Summary: **Contract value increased based on Owner requested scope additions including: replace existing AR-ACFC pavement, restripe I-17 and ramps, widen Glendale and Tatum ramps, additional auxiliary lanes, extension of Camelback Road O/P embankment stabilization, increase project widening limits and other miscellaneous items. Sundt was instrumental with proactively completing the additional scope that ADOT brought to the project team. Field personnel developed work plans that accounted for the additional quantities and were able to complete the work within the original time frame of the contract schedule. The integrated project team worked hard to incorporate the additional scope items into the existing phasing plans to reduce the impact to the traveling public and maintain mobility.**

Percent of Total Work Performed by the JV: **80%**

Percent of Total Work Subcontracted: **20%**

Dates of Construction

Start Date:
December 2010

Planned Completion:
September 2011

Actual Completion:
October 2011

Warranty Period:
1 year

Number and Dollar Amount of Claims: **Zero**

Any Litigation? Yes ___ No **__X__**

Claim Summary: **N/A**

DRB Summary: **DRB Process was not utilized on this project**

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: Granite Construction Company		
Project Role: CMGC Managing JV Partner		
Principal Participant: Granite Construction Company Designer: Parsons Transportation Group		
Years of Experience (provide length of activity as it relates to the following three elements): Roads/Streets: 92 years Bridges/Structures: 92 years Utility Relocations: 92 years		
Project Name, Location, and Nature of Work for Which Company Was Responsible:		
Houston Metro Light Rail, CMGC (Phase 1 & 2) – Texas		
Granite, as the JV major participant, was responsible for preconstruction services and construction delivery of this \$1.2 Billion, award-winning 15-mile light rail project.		
	Highlights/Scoring Criteria <ul style="list-style-type: none"> • CMGC Contracting Method • 15 miles of double rail track • Managed complex staging and traffic handling • Design and construction of highly visible - publicly sensitive project • Design innovation and cost savings • Exceptional environmental compliance • On budget and schedule 	
	Provide Project Description and Describe Site Conditions: Key Project Elements Similar to I-5 NCC Project: <table border="0"> <tr> <td> <ul style="list-style-type: none"> ✓ First CMGC contract by Owner ✓ Preconstruction services ✓ Complex traffic control (MOT) ✓ 15 miles of double track rail installation ✓ Multiple stakeholder coordination –Utility & ROW ✓ Early work packages ✓ Significant public outreach </td> <td> <ul style="list-style-type: none"> ✓ Long linear project ✓ Staged construction ✓ Design and construct nine (9) rail bridges ✓ 44 lane miles of PCC Pavement ✓ Rail systems including, electrification, systems, and communication elements, testing, commissioning, and integration with existing systems </td> </tr> </table>	<ul style="list-style-type: none"> ✓ First CMGC contract by Owner ✓ Preconstruction services ✓ Complex traffic control (MOT) ✓ 15 miles of double track rail installation ✓ Multiple stakeholder coordination –Utility & ROW ✓ Early work packages ✓ Significant public outreach
<ul style="list-style-type: none"> ✓ First CMGC contract by Owner ✓ Preconstruction services ✓ Complex traffic control (MOT) ✓ 15 miles of double track rail installation ✓ Multiple stakeholder coordination –Utility & ROW ✓ Early work packages ✓ Significant public outreach 	<ul style="list-style-type: none"> ✓ Long linear project ✓ Staged construction ✓ Design and construct nine (9) rail bridges ✓ 44 lane miles of PCC Pavement ✓ Rail systems including, electrification, systems, and communication elements, testing, commissioning, and integration with existing systems 	
Construction of projects of similar size, scope, and complexity		
<p>This \$1.2 Billion project was the Metropolitan Transit Authority’s (METRO) first CMGC project, constructing approximately 15 miles of light rail systems across four corridors and two storage/inspection facilities. Many of the Houston light rail project scope elements are similar to the I-5 NCC Phase 1 Project. Spread over 4 segments, the project runs through sensitive areas and garners significant public attention.</p> <p>Construction services included substantial trackwork, rail bridges MOT, utility relocations, multiple roadway reconstructions, sound wall, landscaping, station platforms, light rail transit (LRT) traction power, signal, and communication systems, storage and inspection facilities and a major renovation to the existing Rail Operations Center. This project consists of both new construction and construction on existing light rail systems. Work was completed with an ISO 9001 compliant Quality Control Program.</p>		



Alternative project delivery method

The Houston Metro Light Rail project had an extended procurement period including components of P3 delivery, design-build and CMGC delivery. Granite’s preconstruction services work included validation of design, optimization of elements through constructability reviews, risk mitigation, coordination of geotechnical investigation, developing construction staging and sequencing plans, generated detailed P6 resource loaded schedule, coordination with private utility companies, pricing scenarios for design options, provide rough order of magnitude (ROM) estimates, traffic control plans, DBE utilization plan, permitting plan, identify & build potential early work packages, stakeholder and community outreach. Granite contributed +/-40 professional staff during this period.

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

Similar to the I-5 NCC Phase 1 Project, this long linear project benefitted from staged construction. Granite worked with the design team to incorporate innovative solutions to staged bridge construction featuring complicating traffic handling in controversial and sensitive public areas. Rail bridge construction required coordination with local and regional agencies, UPRR, BNSF, as well as residential properties.

For the Main St. Bridge, the challenge was to reconstruct the structure while maintaining traffic in an urban environment, protecting an existing historical structure while meeting aesthetic guideline commitments by matching the appearance and shape of the historical structure. The Granite project team and our design partners created a plan to split the existing bridge lengthwise and only reconstruct in stages what was needed to support trains and widen the bridge for light-rail transit.

Staged bridge construction was also implemented in spanning the Brazos Bayou with precast girders while removing only the superstructure and leaving the original substructure in place, we avoided removing piles and foundations shared with an adjacent bridge in the historical and environmentally sensitive waterway.

Significant sound walls were constructed to mitigate noise and vibration along the corridor.

Implementation of complicated staging and traffic handling on rail and highway right of way;

The Houston Metro Light Rail project required extensive road reconstruction over the 15 miles corridor guideway. The project team coordinated detours, closures and staged construction to allow for efficient construction while minimizing impacts to local residents and business. Construction progressed in 3-5 block segments and work is done on one side of the road at a time, allowing space for two-way traffic. The team collaborated with local agencies frequently to create and execution a strategy for road closures during construction that reduced overall cost, improved public perception, and created community goodwill.

The City of Houston and community-approved MOT plan featured a vehicular traffic detour around the area and accommodate University of Houston students who needed access to and from parking lots and classroom buildings that were bisected by the project alignment. Limited right of way and extensive road work required detailed planning and coordination with the local agencies and the general public. This was done with dedicated JV staff of traffic engineers and field staff for each segment.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The project corridor contains environmentally sensitive areas including historic sites and building. As with the I-5 NCC Phase 1 Project there were significant efforts to incorporate environmental and community enhancements into the design.

Aesthetic features and tree/landscaping protection is a large part of the environmental effort. On the East End line, the JV worked in conjunction with the Greater East End Management District (GEEMD) to plant over 250 crepe myrtles trees to complement new sidewalks and sidewalk ramps. Additional work included Granite and our designers worked to minimize R.O.W. use and impact to existing landscaping. Design included a variety of aesthetic features including soundwalls, streetscapes and textured concrete features, decorative pavers to beautify intersections and installation cast-stone street-name markers.

An example of mitigating environmental issues was the handling of soils on the project. Environmental concerns for encountering petroleum impacted soils during excavation were addressed through environmental site assessments and research of METRO’s extensive environmental database to identify additional concerns and develop mitigation plans.



Working around an active rail line;

The rail project demanded close collaboration with the Railway owner and regular coordination with the active rail lines. The project included several crossings of the UPRR and BNSF and their rail yards, one major overcrossing included coordination of future station and intermodal facility. The team worked in the UPRR and BNSF R.O.W. and handled all permitting, plan and specification review, workplan/safety plan, and coordination of flaggers with the active rail owner to minimize the shut downs for girder placements and overhead construction.

The Granite project team utilized a comprehensive Project Safety Plans and Goals for protecting project personnel while working around the active rail right of way. Each corridor Safety Manager responsible for implementing and ensuring compliance with this strict program that includes Activity Hazard Analyses, Daily safety meetings, training and substance testing. Daily safety briefings were a collaboration between the Granite field team and the railroad.

Constructing trackwork, structures, and railroad signalization including but not limited to:

The work was adjacent to a crossed a joint use corridor with passenger and freight trains. It included several types of track installation including ballasted, concrete guideway, direct fixation and special trackwork. The entire design (including retaining walls, piling and bridge structures) used elements of AREMA design guidelines, Houston Metropolitan Transit Authority and UPRR design guidelines and was **optimized to limit closures and impact to operations**. Significant elements in and around the UPRR R.O.W./rail yard were compliant with rules and regulations of 49 CFR 234 (crossings) and 49 CFR 236 (wayside signaling). Construction of cross tracks, switches and special trackwork in the middle of downtown Houston while tying into existing Main Street Line that was in operation. These tie-ins were performed in multiple weekend shut-downs to minimize disruption to operations during the week days.

The Team coordinated closely with UPRR and the work was done under Form “B” protection and Absolute Work Windows.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

This project is the biggest public works initiative in Houston history and required a superior level of collaboration with all stakeholders including the DOT, City, Universities, downtown business owners, and resident.

The Granite project team performed design and relocation of 21 public and private utilities from the existing ROWs (water, storm and sanitary sewers, gas/electric, and nine telecommunication companies). Working with the Utilities the Team was able to maintain utility service, minimization of impacts to roadways and sidewalks, and the public

Similar to the I-5 NCC Phase 1 Project the Houston Light rail project connects locals and recreational visitors to the area. The JV Team has planned a series of “quality of life” improvements for the communities that touch each new rail line. Much of the current 350 mile network of bike lanes, bike routes, shared lanes, bayou trails and other multi-use paths will be connected and interwoven with the new rail lines, allowing pedestrians and cyclists unprecedented access to everything our city has to offer. These improvements include displays of public art and streetscape beautification.

The Team also implemented a proactive program for educating and protecting the public during construction, including a “Play it safe while construction goes on” pamphlet, available on the project website and distributed along the corridor, consisting of 8 guidelines to stay safe around construction. This effort generated so much positive feedback that it was expanded to two similar programs, a “Don’t mess with Texas rail” guide to safety in proximity to operating trains and “Teach kids the rules of rail” educational program (English and Spanish) aimed at increasing the safety awareness of children. Similar outreach can be implemented on the I-5 NCC Phase 1 project.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

Working with METRO, the JV developed numerous innovations to add value and create cost savings. Innovations in design of the embedded trackwork system allowed us to reduce the thickness of the concrete guideway by 15% by using a different base/subbase design. Numerous innovations in addition to these allowed the overall system to meet strict FTA cost-benefit guidelines.



Reconstruction of the Main Street Bridge (historic) on the North Corridor is another example of innovation and cost savings. It is also an example of maintaining traffic in an urban environment, protecting an existing historical structure during construction, meeting aesthetic guideline commitments as we matched the appearance and shape of the historical structure while providing a stronger and more durable modern bridge structure. The existing bridge had been cast in place with boards used as forming material, however matching this appeared to preclude the use of pre-cast concrete girders or steel beams. The team matched the remaining historical portion by casting most of the new, upgraded structure in-place as it had been done originally. **This resulted in a \$6M savings to the project**

The Granite led team redesigned the stations to produce an aesthetically pleasing concept that reduced the overall steel by over 20%, saving more than \$3 million. These designs utilized commercially available steel shapes that were stronger, more rigid, and exceeded project design criteria.

Innovation in project management included schedule management with a segmentation approach. To achieve the scheduled completion deadlines, the team worked closely with METRO to advance critical portions of both the design and construction work prior to full notice-to-proceed all while working within the constraints of limited, partial funding. This approach necessitated detailed critical path method scheduling across all disciplines with constant coordination between the team, the owner and an extensive array of governmental/community stakeholders affected by the work.

List Any Awards, Citations, and/or Commendations Received for the Project:

- The American Public Transportation Association (APTA) recognized Houston METRO with three AdWheel Awards related to this comprehensive community outreach program.
- The American Advertising Federation–Houston (AAF-H) lauded the project’s community outreach program with six 2014 ADDY awards

Name of Client (Owner/Agency, Contractor, etc.): **Metropolitan Transit Authority – Houston TX**
Owner’s Project or Contract No.: **RA0800021**

Address: **1900 Main St Houston, TX 77002**

Contact Name: Roberto Trevino, Vice President	Telephone: 713- 739-6062 E-Mail: Roberto.trevino@ridemetro.org
Initial Construction Bid Price: \$1.3 Billion	Final Construction Contract Price: \$ 1.23 Billion

Construction Contract Change Order Summary: **The location of the project and the numerous stakeholders affected created a variety of change orders as the project progressed. Throughout the project Granite worked closely with METRO on owner-generated change order requests to provide ROM estimates early in the process to determine a scope within METRO and/or the stakeholder’s budget. Once the scope was determined Granite worked hand in hand with the designers to provide value engineering and constructability reviews to minimize the costs and finalize the change order.**

Percent of Total Work Performed by the JV: 70%	Percent of Total Work Subcontracted: 30%
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Dates of Construction

Start Date: March 2008	Planned Completion: November 2013	Actual Completion: November 2013	Warranty Period: 12 Months for roadway, 60 months for LRT Facilities
Number and Dollar Amount of Claims: Zero		Any Litigation? Yes ___ No X	
Claim Summary: None		DRB Summary: A DRB has not been used to date.	

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: **Sundt Construction, Inc.**

Project Role: **Construction Manager / General Contractor (CMGC)**

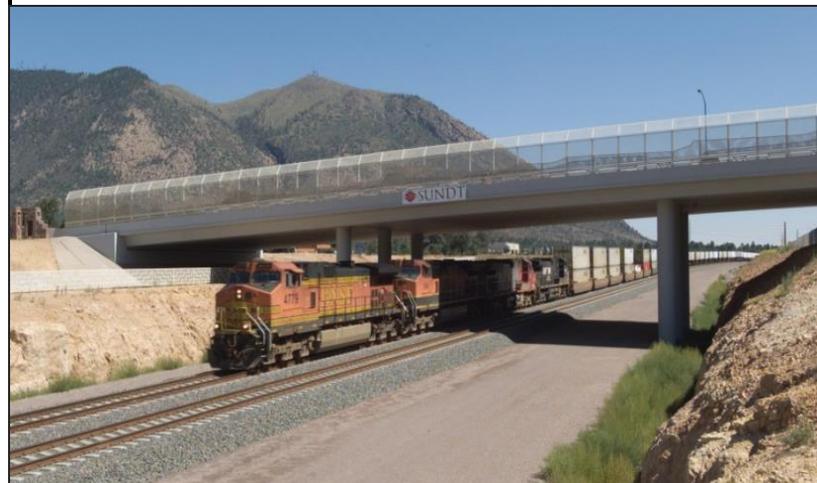
Principal Participant: **Sundt Construction Inc.** Designer: **Kimley Horn & Associates**

Years of Experience (provide length of activity as it relates to the following three elements):
Roads/Streets: **124 years** Bridges/Structures: **124 years** Utility Relocations: **124 years**

Project Name, Location, and Nature of Work for Which Company Was Responsible:

Fourth Street Railroad Crossing Phase II CMGC, Arizona

CMGC Preconstruction Phase and Construction Phase services for the Construction of Fourth Street Bridge, relocation of railroad alignment and connection of Fourth Street to Route 66 in Flagstaff, AZ.



- Highlights/Scoring Criteria**
- CMGC contracting method
 - Delivered with zero delays and zero claims
 - Bridge construction over active BNSF rail road & adjacent to National Forest.
 - Staged construction maintaining access to Route 66, and BNSF operations 100% of the time
 - Zero Environmental Violations
 - Active rail line construction grade and sub-ballast for BNSF, coordinated installation of track work
 - Innovative Soffit fill bridge construction

Provide Project Description and Describe Site Conditions:

- Key Project Elements Similar to I-5 NCC Project:
- | | |
|---|--|
| <ul style="list-style-type: none"> ✓ CMGC Contract ✓ Pre-Construction Services ✓ MOT / Staged Construction ✓ Coordination with multiple agencies ✓ Right-Of-Way Coordination ✓ Aesthetics | <ul style="list-style-type: none"> ✓ Municipal, DOT & BNSF coordination ✓ Environmental permit compliance ✓ Landscape Restoration ✓ Utility Coordination ✓ Community and Stakeholder Outreach |
|---|--|

Construction of projects of similar size, scope, and complexity

Sundt selected The Fourth Street Railroad Crossing Phase II Project to validate **Sundt’s Rail experience**, along with **Eric Weston’s CMGC experience**. Additional similarities include; Flagstaff’s first Transportation CMGC Project, **Interrelated Stakeholders (City of Flagstaff, ADOT, BNSF)**, and maintaining active Passenger and Freight Rail service during construction.

The Project included a 230’ x 90’ vehicle & pedestrian bridge over the BNSF railroad tracks. The traffic interchange at the intersection of Fourth Street and Route 66 had to be reconstructed along with approximately 3,000 LF of the highway. **Relocation of 6,610 L.F. of BNSF Doubletrack Heavy Railroad on the south side of US Highway 66.**



Additional scope that is similar to the NCC Phase 1 Project included improvements to the Flagstaff Urban Trail System (FUTS), paralleling the project on the west side. Similar to the pedestrian and bike paths programmed in the NCC Phase 1 Project, the FUTS improvements required a partnership between Sundt and the City of Flagstaff Parks and Recreation Division.

The complexity of the Fourth Street Railroad Crossing Phase II CMGC project lies in the staged bridge construction and coordination with the BNSF Railroad. Although this project is smaller in total contract value compared to the I-5 NCC Phase 1 Project, the staged bridge construction and Heavy Rail reconstruction and coordination scope required with the BNSF is similar to the double track and staged bridge construction within the San Elijo and Batiquitos Double Track work on the I-5 NCC Phase 1 Project. Eric Weston led Sundt's Preconstruction and Construction Team, and was committed to working closely with BNSF in order to construct the bridge over their railroad facilities. This experience will be a valuable asset to the Granite | Sundt Team, overcoming the challenges presented within the Highway, Rail and Lagoon work on the I-5 NCC Phase 1 Project.

Alternative project delivery method

The City of Flagstaff selected the CMGC delivery method to deliver this project considering the coordination involved between the highway and railroad scope. Eric Weston, Project Manager for the Fourth Street Overpass CMGC project, integrated with the City of Flagstaff, Parsons Brinkerhoff and the BNSF during the constructability reviews to ensure that the proposed design incorporated the operational requirements of the BNSF. This ensured BNSF's operations would remain unaffected throughout the construction phase. Eric is proposed as the Project Construction Manager (Highway), a Key Personnel Position on the NCC Phase 1 Project. His experience in the Preconstruction Phase and Construction Phase integrating with the owner, design team and stakeholder on the Fourth Street Overpass CMGC project will be a benefit to Caltrans, SANDAG the NCTD and all other Stakeholders. Integrating the Highway, Rail and Lagoon scope throughout all of the design and constructability reviews will be essential for the success on the NCC Phase 1 Project.

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

Sundt's CMGC team and developed a soffit fill method to construct the bridge over the new alignment of the BNSF Railroad. This staged method provided for project savings by eliminating typical false work associated with a conventional form system. The Bridge was cast-in-place and the soffit fill was removed all within the original schedule. **The completion of this work was critical to the schedule in order to begin the sub ballast work for the new BNSF track alignment. All of this work was performed directly adjacent to the Coconino National Forest.** Environmental permit requirements included site specific details to filter potential water runoff from the construction zone. Although no soundwalls were included in the scope of this project, coordination between the City of Flagstaff, Arizona Department of Transportation and the BNSF Railroad was required during the Preconstruction and Construction phases.

Implementation of complicated staging and traffic handling on rail and highway right of way;

Sundt coordinated the reconstruction of 6,610 LF of BNSF double track mainline south of Route 66 in Flagstaff, AZ. Sundt was responsible for construction of the Subgrade for the new double track alignment and provided close coordination with the BNSF who self-performed the track work. **The staged bridge construction on the vehicle and pedestrian overcrossing was completed without interrupting the BNSF operations.** Integration with the Freight and Passenger Rail companies on the LOSSAN Corridor to ensure work plans do not disrupt Rail operations will be a critical component.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The Spruce Avenue Wash is adjacent to the Fourth Street Railroad Crossing project. It crossed the existing BNSF alignment as well as the proposed realignment. Spruce Avenue Wash is a minor tributary in Flagstaff which feeds into the Rio de Flag downstream of the Fourth Street project. This is an area of environmental concern as the Rio de Flag is a tributary of the San Francisco Wash, which eventually feeds into the Little Colorado River. The southern end of Rio de Flag is a riparian habitat, protected by the U.S. Army Corps of Engineers and Arizona Department of Environmental Quality. Deer inhabit this area and wildlife flock to the wetland area at the Flagstaff Urban Trail System (FUTS) terminus. Similar conditions exist throughout the NCC Phase 1 Project especially at the San Elijo Lagoon and Batiquitos Lagoon.



Sundt restricted the construction traffic through the Spruce Avenue Wash and Best Management Practices were implemented during the dirt haul periods when drainage excavation and structural excavation was performed for the concrete box culverts, inlets and outlets. A specific haul road was designed and delineated to minimize impact to the wash. This experience working in environmentally sensitive areas with strict permit regulations will be valuable when abiding by the Coastal Commission Permit requirements throughout the NCC Phase 1 Project.

Working around an active rail line;

Sundt was the Construction Manager/General Contractor responsible for constructing a City of Flagstaff Roadway and Bridge Structure that spanned over the BNSF Right-Of-Way. Additional scope included reconstructing a double track segment of the BNSF Passenger and Joint Freight use rail line. **All safety and operating procedures required by the BNSF had to be implemented in the design and planning phase of the contract work.** Eric and his team integrated with the City and the BNSF to ensure all project requirements were satisfied and the work was scheduled to accommodate the Rail Line service.

Constructing trackwork, structures, and railroad signalization

Sundt was responsible for constructing new alignment, and sub-ballast for the BNSF crews to install the track and signal work. The Doubletrack Railroad was designed for Class 4 passenger track with joint freight use. Sundt's crews worked alongside the active corridor with passenger and freight trains operating simultaneously. All work performed within this corridor was subject to the rules and regulations set forth by the BNSF.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

In the Preconstruction Phase of the CMGC Project, it was discovered that hard digging and rock conditions existed in areas where underground utilities and storm drain systems were designed to be installed. The conventional method to remove fracture and remove rock in hard digging scenarios is blasting. This type of rock removal produces vibrations that can affect adjacent properties and stakeholders. Flagstaff is the hub of W.L. Gore's medical-products division, which develop and manufacture implantable medical devices. W.L. Gore's facility is adjacent to the project site. The high-tech manufacturing and measuring equipment is sensitive enough to be susceptible to vibration. Considering the potential effects of the adjacent stakeholder, Eric and his team met with representatives of W.L. Gore during the preconstruction phase in order to gain a better understanding of the impact that drilling and shooting may have on their facility and product.

The team decided to eliminate the blasting alternative, and evaluate a rock saw trenching technique. This method mitigated the possibility of ground vibration which could potentially damage W.L. Gore's sensitive equipment. This experience working with project stakeholders in the Preconstruction Phase and developing a cost model utilizing the preferred methods of construction provided for cost certainty before the construction phase. This same methodology will be utilized in the Design Phase of the NCC Phase 1 Project providing cost certainty to Caltrans.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

Although an official Cost Reduction Incentive Proposal was not submitted on this CMGC Project, Eric Weston worked with the City of Flagstaff, ADOT, BNSF and local businesses to ensure the most efficient and cost effective phasing plan was developed. During the Preconstruction Phase, Eric and his team reviewed the proposed detour that was designed to provide access for the traveling public during the construction of the grade separated crossing. Eric's team analyzed the proposed design and found a more efficient and budget-minded method to construct the bridge. The Soffit fill option minimized the inconvenience of the residences and made for safer and efficient drive times. City residents utilized this corridor to gain access to US Highway 66 (Route 66). One of the largest employers within the City of Flagstaff, W.L. Gore, also had a concern with the potential restrictions to their facility. During the Preconstruction Phase Sundt developed a detour route which saved time and money while providing access for the residences to the highway and W.L. Gore.



This coordination in the Preconstruction Phase created a solution that ultimately improved the budget and schedule. The direct cost and time efficiencies gained with this innovation translated to a lower Guaranteed Maximum Price. The City of Flagstaff was able to capitalize on 100% of this Cost Reduction. This example of innovative traffic handling techniques will be a valuable asset when coordinating the Maintenance of Traffic and developing the best phasing plan in the Preconstruction Phase for the construction of the I-5 Bridges at Manchester Ave and the Batiquitos Lagoon on the NCC Phase 1 Project.

List Any Awards, Citations, and/or Commendations Received for the Project:

- 2006 – American Public Works Association (AZ Chapter) – Public Works Project of the Year

Name of Client (Owner/Agency, Contractor, etc.): **City of Flagstaff**
Owner’s Project or Contract No.: **353000**

Address: **100 W. Birch Ave, Flagstaff, AZ 86001**

Contact Name:
Randy Whitaker P.E.

Telephone: **928-213-2681**
E-Mail: **rwhitaker@flagstaffaz.gov**

Initial Construction Bid Price: **\$11.7M**

Final Construction Contract Price: **\$12.3M**

Construction Contract Change Order Summary: **The City of Flagstaff requested additional work to include a building pad and a bus pullout to be constructed adjacent to the site. An additional retaining wall was also added to the contract. Eric Weston’s experience with the CMGC delivery method enabled him to work with the City of Flagstaff to incorporate the additional scope utilizing the resources within Sundt’s self-performing crews and eliminating additional overhead costs.**

Percent of Total Work Performed by the JV: **80%**

Percent of Total Work Subcontracted: **20%**

Dates of Construction

Start Date:
October 2004

Planned Completion:
December 2006

Actual Completion:
December 2006

Warranty Period:
1 year

Number and Dollar Amount of Claims: **Zero**

Any Litigation? Yes ___ No **X**

Claim Summary: **N/A**

DRB Summary: **DRB Process was not utilized on this project**

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: Granite Construction Company												
Project Role: Design-Build Contractor												
Principal Participant: Granite Construction Company Designer: K&S/Washington												
Years of Experience (provide length of activity as it relates to the following three elements): Roads/Streets: 92 years Bridges/Structures: 92 years Utility Relocations: 92 years												
Project Name, Location, and Nature of Work for Which Company Was Responsible:												
Tri-Rail Double Tracking Segment 5 Design-Build, Florida												
Granite was a JV partner responsible for design and construction delivery of this \$278M, heavy rail project.												
	Highlights/Scoring Criteria <ul style="list-style-type: none"> • Heavy Commuter Rail Construction • Construction along Active Rail - 44 miles of active track • Innovation in design and Construction • Alternate delivery project -Design-Build • Working in sensitive area -multiple stream crossings • Project completed on time - accelerated scheduling 											
	Provide Project Description and Describe Site Conditions: Key Project Elements Similar to I-5 NCC Project: <table border="0"> <tr> <td>✓ Heavy Rail Construction</td> <td>✓ Coordination with Active Rail</td> </tr> <tr> <td>✓ 26 Rail Bridge Structures</td> <td>✓ Heavy Rail Systems</td> </tr> <tr> <td>✓ Rail Embankment ballast & Trackwork</td> <td>✓ Coordination with Multiple Stakeholders</td> </tr> <tr> <td>✓ Dewatering</td> <td>✓ Structural Concrete work</td> </tr> <tr> <td>✓ Signals/Systems installation and integration</td> <td>✓ Support of excavation</td> </tr> <tr> <td></td> <td>✓ Noise wall construction</td> </tr> </table>	✓ Heavy Rail Construction	✓ Coordination with Active Rail	✓ 26 Rail Bridge Structures	✓ Heavy Rail Systems	✓ Rail Embankment ballast & Trackwork	✓ Coordination with Multiple Stakeholders	✓ Dewatering	✓ Structural Concrete work	✓ Signals/Systems installation and integration	✓ Support of excavation	
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✓ Dewatering	✓ Structural Concrete work											
✓ Signals/Systems installation and integration	✓ Support of excavation											
	✓ Noise wall construction											
Construction of projects of similar size, scope, and complexity												
This joint venture design-build contract was for the reconstruction of a heavy rail line in south Florida awarded by the South Florida Regional Transit Authority (SFRTA). Scope of work for Tri-County Rail Contractors (TCRC) included upgrading from single lane track to double track on an existing rail line for a total of 44 miles from Palm Beach County, through Broward County and into Dade County along the southeastern Florida coast. Work included 26 bridges: 12 new, 6 replacements and 8 rehabilitations; 10 stations: 1 new, 9 modifications, and 1 demolition; 72 road crossings and signals; and rehabilitation of the existing tracks. Major Items of work included: <table border="0"> <tr> <td>• 1 million cubic yards excavation and fill</td> <td>• 46.6 miles of rail line</td> </tr> <tr> <td>• 350,000 tons railroad stone ballast</td> <td>• 26 bridges (12 new, 6 replace, 8 rehabilitation)</td> </tr> <tr> <td>• 42 major railroad switches</td> <td>• 10 stations (1 new, 9 modifications)</td> </tr> <tr> <td>• 13 miles siding track removed and relocated</td> <td>• 72 road crossings and signals.</td> </tr> </table>		• 1 million cubic yards excavation and fill	• 46.6 miles of rail line	• 350,000 tons railroad stone ballast	• 26 bridges (12 new, 6 replace, 8 rehabilitation)	• 42 major railroad switches	• 10 stations (1 new, 9 modifications)	• 13 miles siding track removed and relocated	• 72 road crossings and signals.			
• 1 million cubic yards excavation and fill	• 46.6 miles of rail line											
• 350,000 tons railroad stone ballast	• 26 bridges (12 new, 6 replace, 8 rehabilitation)											
• 42 major railroad switches	• 10 stations (1 new, 9 modifications)											
• 13 miles siding track removed and relocated	• 72 road crossings and signals.											



Alternative project delivery method

This was a Design-Build project with design build coordination performed by Granite personnel.

Design support services: Granite participated in preconstruction services, coordinating the inputs of a range of stakeholder contributors and integrating their ideas into the final project design. Granite’s preconstruction services team coordinated value engineering and other critical design reviews on which the quality manager performed a predetermined series of quality reviews to ensure compliance with contract specifications. Preconstruction services included design validation, bridge type selection, input on design package timing and scope, constructability reviews, feasibility studies, staging/phasing analysis, cost estimating design alternatives and developing schedules to optimize resources.

Construction Services: As the general contractor, Granite and the our JV partner self-performed 70% of the scope of work and managed more than a dozen first-tier subcontractors. Self-performed construction work included, demolition, earthwork, support of excavation, substructure/foundation installation, drainage, bridge work, noise wall, track work, maintenance of traffic. Project controls maintained a constant monitoring of performance value, including checking budget expenditures and scheduling monthly project maintenance. The JV was responsible for worker and public safety, public information distribution, and 100% environmental compliance and they exceeded DBE goals on the project.

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

In order to optimize the project schedule and minimize impacts on existing rail operation, many of the 26 railway bridges were constructed in a staged methodology. Bridge construction was coordinated with track construction and upgrades at road crossings. Rail traffic was switched to the new alignment, allowing the next phase of the project to progress. The construction sequencing allowed for efficient use of labor force, critical equipment and QA/QC personnel.

Staged bridge construction allowed continuous use of the rail, access to sidings and integration of signals and control systems.

Noise walls (up to 20’ high, precast post and panel) along the rail right of way were added to the scope of work during the project. Design and installation dealt with limited right of way and coordination with property owners, utility companies, and public buildings. Similar to the I-5 NCC phase 1 project this noise wall work was performed in tight working space up and down the alignment.



Implementation of complicated staging and traffic handling on rail and highway right of way;

The 44 mile of rail installation required the coordination of traffic control for local street crossing. The project team coordinated 72 separate crossings during construction. The project team used a combination of detours, temporary closures and lane closures to accommodate traffic flow. Local schools, businesses and emergency services were all kept informed with up to date information on lane availability.

The project ran parallel with I-95, and road crossings affected all east-west roads along the corridor. Utility adjustments were also performed, along with the pavement reconstruction. All road-crossing work required significant coordination with local governments, utility companies and FDOT. TCRC completed the crossings ahead of schedule.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The rail bridges crossed environmentally sensitive waterways requiring extensive erosion control measures (including permanent rip-rap slope protection) be installed and maintained. Water sampling and analysis was performed. In addition, the rail corridor ran between developed properties. This required careful control and treatment of dewatering discharge from areas requiring excavation, or the installation of drainage facilities or underground utilities.



Working around an active rail line;

Coordination with CSX - CSX dispatched rail traffic through the corridor. Extensive interaction with CSX personnel was required to coordinate work at the multiple work locations, and to minimize the stand down time due to rail traffic. At the peak of the project more than 40 rail flaggers were required to maintain safety along the corridor. Granite and CSX provided continuous safety training to the project team.

Rail traffic along the 44-mile corridor was comprised of CSX, Amtrak and Tri-Rail trains. TCRC worked very closely with CSX train dispatchers to schedule work during work windows. As train schedules and traffic demand changed, TCRC worked with SFRTA to re-sequence work operations so that the double-track operating system could still be delivered on schedule. Steps taken to achieve this goal included delaying rehabilitation work of the existing track until the end of the project.



Constructing trackwork, structures, and railroad signalization including but not limited to:

The Tri-Rail Project included the following elements:

- Design and installation of Track, ties, ballast, subballast and special trackwork
- Work under Form “B” protection and or Absolute Work Windows. This rail corridor is used for freight, commuter rail and Amtrak. All tie-ins to the existing track required coordinated work windows. TCRC mobilized additional track crews so we could work in multiple locations during work windows.
- Project design and construction was on a joint use facility with passenger and freight trains operating simultaneously
- Scope included retaining walls, piling and bridge structures (steel and precast concrete) designed to AREMA design guidelines
- Substantial design and construction, installation, integration and testing of railway signaling systems
- Work was subject to the rules and regulations of 49 CFR 234 (crossings) and 49 CFR 236 (wayside signaling)



Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

Reconstruction of the 72 road crossings required extensive coordination with local agencies, law enforcement, emergency services, schools, utilities and local transit agencies along the alignment. Minimizing the duration of road and lane closures at the crossing locations was a project priority.

Access to certain work locations along the alignment was through residential neighborhoods which required close collaboration with neighborhood associations and local municipalities. By employing excellent communication, and with consideration for private property and residential traffic, we were able to avoid conflicts when using these means of access.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

TCRC developed an innovative schedule by re-sequencing our planned work on the project. By delaying the start of the rehabilitation on the existing rail until after completion of all double track work, we were able to complete the double track scope of work within the original contract time, minimizing impacts to rail traffic and the planned expansion of Tri-Rail services. This re-sequencing of work also allowed TCRC to significantly reduce overhead costs during the contract time extension caused by changes to the work windows, saving the Owner money.

Name of Client (Owner/Agency, Contractor, etc.): **South Florida Regional Transit Authority**
Owner's Project or Contract No.: **No. 00-834**

Address: **800 Northwest 33rd Street
Pompano Beach, FL 33064**

Contact Name:
Dan Mazza

Telephone: **954-788-7893**
E-Mail: **mazzad@tri-rail.com**

Initial Construction Bid Price: **\$231M**

Final Construction Contract Price: **\$278M**

Construction Contract Change Order Summary: **Changes requested by the owner for additional scope. To mitigate CCO scope and cost, Granite re-sequenced work and additional crews were mobilized or subcontractors were brought in to minimize schedule delays.**

Percent of Total Work Performed by the JV: **70%**

Percent of Total Work Subcontracted: **30%**

Dates of Construction

Start Date:
September 2001

Planned Completion:
June 2006

Actual Completion:
June 2006

Warranty Period:
Standard 12 month warranty.

Number and Dollar Amount of Claims: **1, \$29M**

Any Litigation? Yes ___ No **X**

Claim Summary: ***Differing site condition and schedule impact issues were rolled into a single claim. The joint venture and Owner mutually agreed to an acceptable settlement without arbitration, mediation or litigation.**

DRB Summary: **No DRB was used on this project**

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: Granite Construction Company				
Project Role: General Contractor				
Principal Participant: Granite Construction Company Designer: Parsons Transportation Group				
Years of Experience (provide length of activity as it relates to the following three elements): Roads/Streets: 92 years Bridges/Structures: 92 years Utility Relocations: 92 years				
Project Name, Location, and Nature of Work for Which Company Was Responsible:				
Carpinteria Salt Marsh Enhancement, California				
Granite was responsible for the construction and delivery of this \$2.7 Million Salt Marsh project				
	Highlights/Scoring Criteria <ul style="list-style-type: none"> • Effective management of environmentally sensitive project in compliance with all regulations • Highly sensitive public project • Completed on time with zero claims • Successful coordination with Multiple regulatory agencies - State and Federal regulators 			
	Provide Project Description and Describe Site Conditions: Key Project Elements Similar to I-5 NCC Project: <table border="0" style="width: 100%;"> <tr> <td>✓ Excavation and grading in wetlands environment</td> <td>✓ Environmental regulation compliance</td> </tr> <tr> <td>✓ Salt Marsh /Tidal area</td> <td>✓ Protection of native habitat</td> </tr> </table>	✓ Excavation and grading in wetlands environment	✓ Environmental regulation compliance	✓ Salt Marsh /Tidal area
✓ Excavation and grading in wetlands environment	✓ Environmental regulation compliance			
✓ Salt Marsh /Tidal area	✓ Protection of native habitat			
Construction of projects of similar size, scope, and complexity				
This salt marsh enhancement project was located in Santa Barbara County in the City of Carpinteria, CA. General scope included a combination of flood control, restoration, and enhancement of the existing salt marsh. The work consisted of providing water pollution control, clearing and grubbing, construction of an earthen berm, excavation and grading for channels in a wetlands environment, constructing new drainage improvements including rock scour beds, drain pipes and slope protection, construction of a concrete pedestrian walkway, and installing a HDPE sheet pile flood wall topped with redwood fencing.				
The channel grading work involved excavating approximately 3,500 LF of new meandering channels and exporting the spoils. The channels ranged in width from 10' to 20' at the top and 3' to 7' in depth with side slopes varying from 1/2:1 to 2:1. The entire area was environmentally sensitive and work was strictly prohibited outside of the limits of the new channels.				



The project objectives of the Carpinteria Salt Marsh Wetland Enhancement Plan are similar to the lagoon restoration option for the I-5 NCC Phase 1 project and included:

1. Restore and/or enhance degraded historic wetlands including restoring tidal circulation;
2. Restore and/or enhance degraded transitional and upland areas;
3. Remove non-native vegetation;
4. Establish public access opportunities
5. Coordinate improvements with future flood control improvements

Construction of large mitigation sites/lagoon restorations including dredging;

The Carpinteria Marsh project site was part of the 36-acre marsh area in the coastal plain of Carpinteria, located at the foot of the Santa Ynez Mountain Range. The area is coastal salt marsh within a geologic syncline, separated from the ocean by a barrier sand spit and connected to the sea by a narrow tidal inlet. The entire marsh is 230 acres in area, with the 36-acre project site consisting of 24 acres in Basin 1, 9 acres in South Marsh and 3 acres within the Carpinteria Salt Marsh Nature Park.

Minimizing access requirements and using low impact construction techniques was critical in this sensitive site. Earthwork/excavation was done with land based equipment: low ground pressure dozers and long reach excavators. Work was performed off of Dura-base mats and access for all equipment was tightly controlled to limit impact on native habitat. The mats added stability on the saturated ground while providing a barrier against contamination. Our team delivered a restored salt marsh with excellent views, well maintained trails, wildlife watching with interpretative signs along the trails.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

As with the I-5 NCC Phase 1 Project, the Carpinteria project required a “Clean Water Act Section 401 Water Quality Certification for Discharge of Dredged and/or Fill Materials” from the California Regional Water Control Board. All conditions and mitigation measures required by this certification were achieved on the project. Requirements including discharge control, sediment control, fuel/lube best practices, access, staging areas housekeeping, stream diversion and tidal connection criteria, protection, preservation and maintenance of native vegetation, handling of excavated sediment, etc.

The project discharges directly into Carpinteria Marsh, a water body listed as impaired due to sedimentation/siltation pursuant to Clean Water Act, Section 303(d), and has the potential to discharge storm water containing sediment. Granite prepared a project SWPPP and work plan that contained a Sampling and Analysis Plan (SAP) describing the sampling and analysis strategy and schedule to be implemented on the project for monitoring Carpinteria Marsh. The project was required comply with the **NPDES Stormwater Program's General Construction Permit.**

Granite complied with conditional water quality certification with the California Regional Water Quality Control Board in protection of the following possible species: Steelhead, arroyo chub, brown pelican, long horned lark, loggerhead shrike, yellow warbler, tricolored blackbird, falcon, harrier, sharp-shinned and Cooler’s hawks, whitetail kite, Foster’s tiger beetle, and monarch butterfly. Granite fully complied with the District’s coordination of the biological surveys. Prior to construction of the work the District conducted biological surveys for many biological species including the light-footed clapper rail, Western snowy plover, and Belding’s savannah sparrow, which are also a sensitive species on the I-5 NCC Phase 1 project.

Granite complied with Department of Fish and Game’s Streambed Alteration Agreement and U.S Army Corps of Engineer’s 404 permits.





Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

Granite’s work in California is often in and around coastal settings, environmentally sensitive areas and regularly involves close coordination with environmental agencies. The Carpinteria Salt Marsh Project required coordinating work with the Corps of Engineers, Ca Department of Fish and Game, County of Santa Barbara Flood Control District; The Land Trust for Santa Barbara County, University of California Natural Reserve Systems, California Environmental Protection Agency; and the California Regional Water Quality Control Board.

Granite worked with the City of Carpinteria to utilize the excavated spoils on an adjacent recreational enhancement project. The high-salinity material was incorporated into a permanent bike path embankment in the coastal area.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

Granite used HDPE sheet pile to construct walls built along the high profile beach front homes to provide protection against the tidal zone and to separate the Marsh from the homes.

To minimize intrusion and reduce our environmental footprint we used a Dura-Base composite mat system which is specially formulated from high performance thermoplastic to provide a strong durable, uniform surface for heavy equipment access. This allowed Granite to use smaller equipment and avoid large crane with clam shell type excavation equipment. Dura-base is a safe, all weather surface that could also be incorporated into the I-5 NCC phase 1 construction.

Cofferdams were used to control the water flow during the rerouting of the current canal system. The elevation of the project was 4’ and required constant attention to maintaining water quality during operations in and around the tidal zone.

Construction techniques working in this marsh environment will be very similar to those on the I-5 NCC Phase 1 Project. Focus was kept on low impact equipment and minimizing the foot print of construction. Along with specialized equipment including low ground pressure and long reach equipment, scheduling of the work with tidal flows was critical for efficient construction and low impact on the marsh environment.

Name of Client (Owner/Agency, Contractor, etc.): **County of Santa Barbara, Flood Control and Water Conservation District**

Owner’s Project or Contract No.: **SC8012**

Address: **123 East Anapamu Street, Santa Barbara, CA 93101**

Contact Name:
Jon Frye, Resident Engineer

Telephone: **805-568-3444**
E-Mail: **jfrye@cosbpw.net**

Initial Construction Bid Price: **\$2.75M**

Final Construction Contract Price: **\$2.61M**

Construction Contract Change Order Summary: **Owner generated scope reductions, project quantity under-runs.**

Percent of Total Work Performed by the JV: **65%**

Percent of Total Work Subcontracted: **35%**

Dates of Construction

Start Date:
October 2004

Planned Completion:
February 2005

Actual Completion:
April 2005

Warranty Period:
Standard 12 month

Number and Dollar Amount of Claims: **Zero**

Any Litigation? Yes ___ No **__X__**

Claim Summary: **None**

DRB Summary: **No DRB was used on this Project**

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: **Sundt Construction, Inc.**

Project Role: **Design-Builder**

Principal Participant: **Sundt Construction Inc.** Designer: **URS Corporation**

Years of Experience (provide length of activity as it relates to the following three elements):
 Roads/Streets: **124 years** Bridges/Structures: **124 years** Utility Relocations: **124 years**

Project Name, Location, and Nature of Work for Which Company Was Responsible:

SR 202L Widening Design-Build, Arizona

Sundt, a 30% Joint Venture partner was responsible for the Design and Construction of this \$190.7M, Urban Freeway Widening Design Build Project



- Highlights/Scoring Criteria**
- Design-Build contracting method
 - Zero delays and claims
 - Mile long bridge widening over Salt River
 - 10 miles of urban freeway widening requiring complicated staging and traffic handling
 - Successful environmental compliance and construction in the Salt River area
 - Cast High and Lower Bridge Construction Innovation

Provide Project Description and Describe Site Conditions:

- Key Project Elements Similar to I-5 NCC Project:
- | | |
|---|--------------------------------------|
| ✓ Pre-Construction Services | ✓ Aesthetics |
| ✓ Right-of-Way Coordination | ✓ Bridges over Traffic |
| ✓ Utility Coordination | ✓ Bridges over water |
| ✓ HOV Center lane construction on Urban Freeway | ✓ Sound walls |
| ✓ Portland Cement Concrete Pavement | ✓ Landscape Restoration |
| ✓ MOT / Staged Construction | ✓ Stakeholder and Community Outreach |
| ✓ Outside Widening | |

Construction of projects of similar size, scope, and complexity

The SR202L Design Build Project is similar to the I-5 NCC Phase 1 Project because it is a Large Urban Freeway Improvement Project, with an environmentally sensitive component that required intense Preconstruction/Design Phase planning to execute the best approach during the Salt River Bridge construction. The Project included widening 10 miles of the heavily-congested SR202L urban freeway through Phoenix and Tempe, adding general purpose and auxiliary lanes. Portions of the project spanned over protected wetlands, Tempe Town Lake and the Salt River. The scope included widening 22 bridges and reconstructing 18 access ramps. All of this work was completed while maintaining traffic on one of the busiest freeway sections in Metropolitan Phoenix. Multiple Agencies and Cities were involved and the JV team coordinated closely with them through the ADOT Communications Team in order to inform the public and stakeholders throughout the project.



Preconstruction Phase Services:

Due to the high-profile nature of the project, ADOT and the JV team committed to co-locating during the final design and construction of the project. This provided for constant interaction to solve project issues early and develop the most constructible design the first time. This process was an extreme benefit making the final design and construction phase more efficient.

Construction Phase Services:

During the construction process the JV team found ways to speed up construction in highly congested areas. This was a financial and public relations benefit to the Department (ADOT). Self-performing Grading, Drainage, Utility Relocation, PCCP, Bridge Widening, Sound Wall and Retaining Wall construction enhanced the JV team's ability to control the schedule. Sundt provided innovative construction solutions in order to maintain a level of service for the traveling public by utilizing a Cast-High and Lower bridge construction method at Scottsdale Rd. which enabled the cross streets to remain open for the majority of the construction phase. Freeway Management System improvements were also completed within the corridor. All of the construction was completed within 600 calendar days. All Team members between Design and Construction worked together constantly throughout the entire project in order to meet the extremely accelerated schedule.

Alternative project delivery method

Because this was a Design-Build project, Sundt took advantage of the opportunity to collaborate with the owner. Our Team collocated with ADOT during the Design and Construction Phases. **This environment fostered constant communication which accelerated the typical design process, and helped build a cohesive team for the construction phase. This environment also allowed the team to perform as if the members were not partners from different firms, but from a single entity.** Over-the-shoulder design reviews helped with constructability input during the design phase, and constant monitoring of potential issues during the construction phase provided for timely resolution at the lowest possible level. The JV Team and ADOT worked well in this environment integrating all levels from design through construction. A similar approach will be taken by the Granite|Sundt Team on the I-5 NCC Phase 1 Project.

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

Staged bridge construction was utilized on the 22 bridge widenings throughout the corridor. Hybrid designs utilized "drop-in" precast concrete members on the sections that spanned over live traffic and cast-in-place end sections that were not over traffic. The best construction method was designed-into the project considering the physical constraints of the active traffic that needed to be maintained. The Scottsdale Rd bridge widening had restricted vertical clearances over existing traffic. A "cast high and lower"(CHL) construction method was used. This method allowed these cast-in-place bridges to be built using more cost-effective false work techniques elevated above finish grade, to provide the necessary overhead clearances for the traveling public. Neither of these concepts had been performed for the Department in Arizona prior to this project and there was a level of nervousness within ADOT's Bridge Group to move ahead with these concepts. **Effective partnering was critical in turning these innovative concepts into reality. The JV team and AODT's project team worked together in addressing the Bridge Group's concerns and achieved approval to design and construct these innovative structures.**

The retaining and sound walls within the project incorporated many of the same aesthetic features and vertical rustication patterns to match the existing freeway's Hohokam-inspired theme. Limits of the new paint were extended to portions of the existing bridges and walls in order to give the impression that the widened structures or additional walls were designed and constructed with one continuous theme. A similar approach will be taken to ensure the various themes through the different cities within the I-5 NCC Phase 1 Project are maintained.

Construction of large mitigation sites/lagoon restorations including dredging;

The widening of the existing bridge over the Salt River required construction activities in a habitat that included an area where several protected bird species reside. Several innovative measures were implemented that kept the wildlife at a safe distance from construction operations. A full-time biologist was also assigned to monitor the construction operations and bird activities during the nesting season. As part of this monitoring, the JV Team's biologist completed a study that compared the nesting activities within the project limits to nesting activities that were not within the vicinity of the project.



This comparison data indicated that there was little to no impacts due to the staged construction of the bridges on the birds' nesting activities. The monitoring data was then sent to ADOT and the State wildlife department for their use. Many of the measures developed and implemented on the project along with our findings, have been incorporated by ADOT on subsequent projects. A similar approach to monitoring the potential impacts of the bridge construction within the San Elijo and Batiquitos Lagoons on the NCC Phase 1 Project will be performed.

Implementation of complicated staging and traffic handling on rail and highway right of way;

During construction, the JV Team worked closely with the Department and developed staging plans for the access ramp reconstruction. **Ramp closures were minimized and sequenced to provide nearby alternative access routes. The JV Team communicated with local businesses and agencies to develop a custom construction sequence plan to ensure the surrounding stakeholders would not be negatively impacted by specific ramp closures.** This provided the surrounding cities with the confidence throughout the project that the traveling public could continue to access the freeway during construction with minimal inconvenience. A similar approach will be utilized by the Granite|Sundt Team with Caltrans and the surrounding Stakeholders on the NCC Phase 1 Project.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

The widening of the existing bridge over the Salt River required temporary fill to be placed across the channel and adjacent to protected wetlands. This is similar to the proposed bridge construction in relation to the San Elijo Lagoon and Conditional Work planned for the Restoration Project. On the SR202L Widening Design/Build Project, the JV Team developed a floating turbidity curtain to comply with federal clean water act standards. The turbidity curtain was installed across the river to capture sediment generated from construction before it could flow downstream. This was the first time this curtain had been used in Arizona, and its effectiveness was proven when daily measurements showed that turbidity levels stayed below the specified maximum levels during the entire project. Similar water quality monitoring will be required throughout the NCC Phase 1 Project corridor.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

At the beginning of the design phase, all agencies, municipalities and major stakeholders attended an initial partnering workshop where the team captured everyone's immediate issues and concerns. An example of the subject matter discussed at this partnering meeting was the special events scheduled at Arizona State University or Tempe Town Lake, practically every weekend during the course of the project. The JV team listened to the stakeholders and incorporated these events into the DB construction schedule in order to provide an acceptable level of service during construction. The project was successfully completed to the satisfaction of all the stakeholders involved:

"The reopening of all the on-and off-ramps a full six months ahead of schedule was unprecedented and deeply appreciated by the communities served by this improved facility."

- Rob Samour, ADOT Deputy State Engineer.

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

Since this project was delivered utilizing the Design/Build delivery method, a formal Cost reduction Incentive Proposal (CRIP) Program was not utilized. 100% of the project's savings formulated through Design or Construction innovations were realized in the Technical Proposal and Final Design Phases.

Sundt played a key role on the JV Team developing innovative bridge design based on the existing physical conditions. Project phasing plans were developed which increased the required construction and design resources. Integrating the proposed construction methods to the proposed design provided opportunities for the design-build team to develop big picture project design changes that maximized the department's value of the overall project budget. An example of this was the jointly developed value engineering concept that eliminated the need to reconstruct portions of the existing freeway. **By optimizing the existing freeway structure, and only widening the portions necessary, translated into approximately \$2.1M of savings and reduced the original schedule by 255 calendar days.**



List Any Awards, Citations, and/or Commendations Received for the Project:			
<ul style="list-style-type: none"> 2011-American Public Works Assn (APWA)-Project of the Year Award (Transportation: More than \$75M) 2011-American Council of Engineering Companies (ACEC)-Engineering Excellence Award-Design Build 2010-AGC of America (AGC) AZ Chapter-Marvin M. Black Excellence in Partnering Award 			
Name of Client (Owner/Agency, Contractor, etc.): Arizona Department of Transportation (ADOT) Owner's Project or Contract No.: 202 MA 000H687101			
Address: 2409 N. Country Club Dr. #E749, Mesa, AZ 85203			
Contact Name: Julie Gadsby		Telephone: 602-712-8937 E-Mail: jgadsby@azdot.gov	
Initial Construction Bid Price: \$188.9M		Final Construction Contract Price: \$190.7M	
Construction Contract Change Order Summary: The change order amount included additional scope requested and authorized by ADOT. The scope included replacing deck joints and seals, maintenance access, modified cross-street sidewalk ramps to meet ADA requirements, gore restriping, FMS system upgrades, additional noise walls and other miscellaneous items. Sundt delivered the additional scope items within the confines of the original construction schedule. Proactive integration with the Department and Maintenance personnel was essential to provide the requested items within the original time frame, eliminating the potential cost associated with extended overhead and general conditions.			
Percent of Total Work Performed by the JV: 80%		Percent of Total Work Subcontracted: 20%	
Dates of Construction			
Start Date: December 2008	Planned Completion: September 2010	Actual Completion: September 2010	Warranty Period: N/A
Number and Dollar Amount of Claims: Zero		Any Litigation? Yes ___ No <u>X</u>	
Claim Summary: N/A		DRB Summary: DRB Process was not utilized on this project	

Form B: PROJECT DESCRIPTION

Name of Proposer: **Granite|Sundt, a Joint Venture**

Name of Firm: **Granite Construction Company**

Project Role: **Design-Build Managing JV Partner**

Principal Participant: **Granite Construction Company** Designer: **Parsons Transportation Group**

Years of Experience (provide length of activity as it relates to the following three elements):
 Roads/Streets: **92 years** Bridges/Structures: **92 years** Utility Relocations: **92 years**

Project Name, Location, and Nature of Work for Which Company Was Responsible:

InterCounty Connector Contract A Design-Build, Maryland

The Granite led JV was responsible for delivering the high-profile, \$478M InterCounty Connector (ICC) project.



- Highlights/Scoring Criteria**
- Alternative Project Delivery
 - Innovative design/construction solutions - Major interchange savings
 - Exceptional environmental compliance - FHWA Environmental Award
 - Construction of high profile public project
 - Multiple staging and complex traffic handling - 18 bridges
 - Bridge and highway work through environmental sensitive habitat - 13 stream crossings

Provide Project Description and Describe Site Conditions:

- Key Project Elements Similar to I-5 NCC Project:
- | | |
|--|---|
| <ul style="list-style-type: none"> ✓ Alternative delivery procurement ✓ Significant environmental mitigation work ✓ Highway paving ✓ Environmentally sensitive project site ✓ Highway - Rail coordination | <ul style="list-style-type: none"> ✓ Multiple bridge structures (18) ✓ Soundwall construction ✓ High profile, large complex project with multiple stakeholders |
|--|---|

Construction of projects of similar size, scope, and complexity

The \$478M Intercounty Connector Contract A consisted of 7.2 miles controlled-access tri-lane divided highway including relocation of five local roadways, construction/reconstruction of three interchanges, seven dual bridges, 11 single bridges, and four bridge widenings. The work consisted of mainline highway, interchanges, ramps and cross roads pavement, AC Paving (500K tons), Earthwork (2.4M CY), local road relocations, utility relocations, bridges, retaining walls (52k sf), MSE walls (130k sf), noise walls (400k sf), earth berms, drainage facilities, landscaping, signing, signals, lighting, pavement markings, tolling infrastructure, maintenance of traffic, intelligent transportation devices, public relations support, and environmental compliance and community outreach.



Alternative project delivery method

The project was completed using the “Design-Build” delivery method. Granite worked during the preconstruction phase with our designer, Parsons Transportation Group. **Granite collaborated with our designer during preconstruction services to ensure constructability, mitigate risk, optimize design, and create staging and traffic handling plans.**

Highway and bridge construction, including staged bridge construction (highway and rail) over sensitive areas and coordination/ construction of soundwalls both on residential property and within the state highway right of way;

ICC-A included 18 bridges with six construction styles: dual span, steel girder and H-pile foundation bridges. There was extensive maintenance of traffic, utility relocation and earthwork coordination associated with the bridge construction. Aesthetics features included using form-liner for the abutments and piers, detailed parapet design, and wall finishes.

The staged bridge construction necessitated working and maintaining traffic on major thoroughfares and working over heavily-traveled roadways, such as the six-lane road MD 355 and in extremely sensitive neighborhoods. Temporary roads/walkways were constructed to provide access for pedestrian and vehicle traffic through the construction area. Three structures spanned highly-sensitive streams where extensive erosion and sediment controls were installed and maintained with site-specific construction techniques to protect the environment. Similar to the work on the I-5 NCC Phase 1 project, the abutments were designed to minimize impact in the stream channels.

The bridge carrying the Intercounty Connector over Rock Creek presented construction, safety and environmental challenges. The project team worked with EFCO to craft a self-supporting form system to build the four 170’ arches designed to prominently display the cornerstone bridge.

Construction of large mitigation sites/lagoon restorations including dredging;

The project is located in the Chesapeake Bay Watershed, specifically Rock Creek stream valley, which is a tributary to the Potomac River, and eventually flows into the Chesapeake Bay. Permit conditions and project commitments were especially stringent in the Sensitive Resource Protection Area defined around the North Pain Branch stream valley. In addition, the contract required strict access requirements with regard to Limits of Disturbance and Rights-of-Way.

Stream Restorations: Granite provided environmental design oversight and then construction for each of the 13 stream crossings with mitigation to minimize impacts within the ROW and opportunities were evaluated for aquatic and mammal passage, as well as maintaining water quality, of the affected stream reach. Stream relocation or restoration was required for each of the 13 crossings. Formal/informal reviews of technical analysis, plans, and special provisions were conducted to accomplish the in-water work.

Implementation of complicated staging and traffic handling on rail and highway right of way;

The ICC was constructed through the Washington, D.C. metropolitan area – one of the nation’s 10-largest metropolitan areas with a population over 5.5 million. There were significant maintenance-of-traffic challenges relating to business and residential access and cross-corridor routes that were successfully managed by the design-build team.

Environmental compliance and construction in and around environmentally sensitive areas including but not limited to the coastal lagoon or similar environment;

Maryland’s stringent regulations and environmental standards were a top priority. Approximately 15% of the overall program’s cost was earmarked for environmental initiatives, including restoring seven miles of stream, creating 52 acres of wetlands, constructing 1,500 LF of fish passages, improving water quality at 21 sites, and setting aside over 775 acres of new park land. **The project team delivered on the environmental goal resulting in the award of the 2011 FHWA Award for Exceptional Environmental Stewardship.**

The environmental sensitivity of this project is unprecedented in Maryland as it traverses through Rock Creek Regional Park, protected wetlands and watersheds, specimen forests, streams and cultural. The project team developed environmental strategies to reduce impacts, which were incorporated into written management plans, and included a fish relocation program, box turtle management, water quality monitoring/reporting, air quality monitoring/reporting, forest compliance, SPCC/SWPPP, hazmat management, noise monitoring, vibration monitoring and vernal pool monitoring.



With requirements and major incentives to avoid and minimize impacts to forest, wetlands, and waterways, over 35 acres of forest, over 1,000 lf of stream, five acres of parkland were saved and a great deal of stream channel and wetlands were restored. Animal crossing were designed and incorporated into the project. Box culverts, up to 16' x 40', were installed for deer and other large animals to safely pass under the highway.

The project finished with a 92% “A” rating for environmental compliance, which is the highest overall rating of the three ICC projects to date (Nov. 2011). Highest erosion & sediment control average (91.17%). The project averaged an “A” Ratings for erosion & sediment control.

Environmental elements used on the ICC project that can be considered for the I-5 NCC Phase 1 project include: lengthening bridge spans to avoid floodplain impacts, early construction of noise walls and perimeter fencing to prevent wildlife encroachment, lined concrete washout pits, rock / fabric blankets to convey seeps and maintain wetland hydrology, and creating vernal pools or floodplain wetlands under bridges.

Working around an active rail line;

A three-phase interior and exterior substructure and superstructure widening of an existing steel girder bridge on I-370 was constructed over a CSX heavy rail track. Traffic was shifted for the bridge to remain open during construction and an access road was constructed along the railroad to access the bridge construction. There was on-site coordination with CSX flagman for construction, along with design submissions for review/ approval from CSX and their consultant.

Constructing controversial or highly sensitive public projects; including experience in coordination with local and regional agencies on similar sized projects;

The Team supported the client in media relations and outreach to approximately 10,000 residents surrounding the corridor. Over 100 community meetings and public outreach hearings were held and included sound barrier meetings, general construction updates, and special information outreach tailored to specific communities and individual residents. The JV Team partnered with the local community to assist and volunteer time to local high school booster club fund raisers, little league teams, Cub Scout groups and environmental centers. The community liaison’s primary responsibilities were to involve/inform communities of design and construction and to lead the outreach and issue resolution efforts by coordinating with appropriate parties.

The ICC team actively worked with the client to deal with questions, concerns, and suggestions from the regulatory agencies, local jurisdictions and the general public. Efforts included holding and attending discipline task force meetings during the design phase, participating in the Interagency Working Group Meetings (IAWG) to present critical information or innovative approaches, and meeting with key environmental staff for the other two contracts to share information on lessons learned.

Aesthetic of the Design --The ICC project required specific attention to the aesthetics and architectural design elements of the highway corridor which traverses through residential areas, urban, open landscape, parkland, and riparian buffer/stream valleys, and recreational gateways. The aesthetic design goals included creating a sense of ownership with the surrounding communities and adding lasting value to the communities and environment. **On a functional level, the project protected and enhanced natural and cultural resources, considered long term programmatic design features, matched aesthetics with various land uses, and provided the owner with a low maintenance design. Aesthetic design was coordinated with local and regional agencies and adjacent Home Owner’s associations.**

Successful implementation of innovative ideas on prior projects of similar size, complexity, and type. Include experience with Cost Reduction Incentive Proposals (CRIPs) and innovative ideas implemented on projects even if not implemented as part of a CRIP.

Because this was one of the first large, design-build projects in Maryland, many new ideas were implemented in design and construction. These included special roadway embankment provisions, utilizing self-consolidating concrete in more than 329 concrete beams, and using CMP pipe, caisson supported bridges, and large-diameter bottomless culverts unique to Maryland.

The JV team re-designed the Metro Access Rail (MAR) Interchange from a three-level to a two-level eliminating retaining walls and saving the Owner millions of dollars long-term. The original design concept required nearly 700,000 cy of embankment, high-level complex bridges, many retaining



walls, and complicated traffic management. The Granite proposed alternative concept eliminated 300,000 cy of embankment, eliminated four bridges, eliminated retaining walls, simplified MOT, and improved constructability. In addition it had the environmental effect of saving 300 lf of stream impacts, specimen trees and 0.22 acres of direct wetland impacts, and 0.46 acres of buffer wetland impacts.

The JV team led innovative efforts and elevated industry standards. One major success for environmental management was developing a stormwater runoff treatment using citosan flocculant to let the clay soils remain suspended and solids in stormwater runoff indefinitely. The Maryland Department of the Environment set an NTU discharge limit of a 50 NTU monthly average, and a 150 NTU daily maximum for this project. It would not have been possible to achieve these levels without this sort of water treatment.

Unique design features included: Intelligent Transportation System facilities; Electronic Toll collection facilities; the signature bridge featuring a 300' span and quadruple arch; a 615' deck-over cut/cover tunnel; culverts with animal passage/lighting requirements; and environmental commitments for water and air quality monitoring.

List Any Awards, Citations, and/or Commendations Received for the Project:

- 2012 Construction Mgmt. Assoc. of America (CMAA) Baltimore Chapter Project Achievement Award
- 2012 AASHTO America's Transportation Awards Top 10 Finalist
- 2012 FHWA Exemplary Environment Initiatives Award
- 2012 DBIA National Design-Build Award
- 2012 ARTBA Globe Environmental Award -Major Highway \$100 Million or Greater (2nd Place)
- 2012 Northern Virginia Transportation Alliance (NVTA) Award for the entire ICC Project
- 2012 AGC of America Alliant Build America Award- Design-Build Highway & Transportation
- 2011 AASHTO President's Award for Highways
- 2011 FHWA Award for Exceptional Environmental Stewardship
- 2011 ENR Best Project 2011 - Transportation (NE Division)
- 2010 EFCO Safety Award

Name of Client (Owner/Agency, Contractor, etc.): **Maryland State Highway Administration (MSHA)**
Owner's Project or Contract No.: **Contract A**

Address: **11710 Beltsville Drive
Beltsville, Maryland 20705**

Contact Name:
Mark Coblentz, Project Director

Telephone: **301-586-9267**
E-Mail: **mcoblentz@sha.state.md.us**

Initial Construction Bid Price: **\$463,885,499**

Final Construction Contract Price: **\$483,409,033**

Construction Contract Change Order Summary: **Owner generated scope additions and environmental compliance incentives. Granite mitigated claims by early recognition and rescheduling of work.**

Percent of Total Work Performed by the JV: **40%**

Percent of Total Work Subcontracted: **60%**

Dates of Construction

Start Date:
September 2007

Planned Completion:
August 2010

Actual Completion:
February 2011

Warranty Period:
Standard 12 Months

Number and Dollar Amount of Claims: **Zero**

Any Litigation? Yes ___ No **__X__**

Claim Summary: **None**

DRB Summary: **No DRB was used on this project**



Thank you for protecting our
San Luis Rey River habitat.

Caltrans - SR 76 Widening Project, San Diego, CA



5 | PROPOSER ORGANIZATION and KEY PERSONNEL



Partners Improving the Environment for the Future

STRENGTHS & BENEFITS



- **CMGC Expertise**
Experienced Key Personnel and an integrated and responsive “Project First” organizational approach focused on collaboration and problem-solving.
- **Caltrans Experience**
An in depth understanding of California standards, Agency stakeholders and local regulations.
- **Rail and Lagoon Capabilities**
Local, industry-recognized rail and lagoon professionals dedicated for the life of the Project.
- **Community and Environmental Sensitivity**
Key Personnel focused on mitigating project risk and adding value to all the stakeholders.
- **Cost Certainty**
Experienced Caltrans and large project estimating resources dedicated to an “open book” process to encourage transparency and achieve best value.

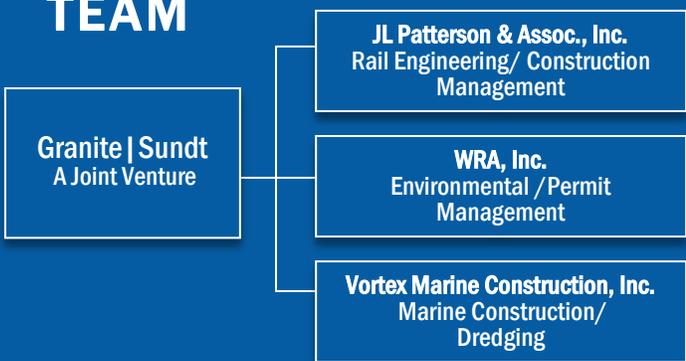
The Granite | Sundt Team is an integrated organization comprised of companies, and their specific key personnel, who have extensive experience in delivering complex California highway, rail and lagoon restoration projects, see Exhibit 5.1 below. Our CMGC resume is significant as we have worked with some of the most progressive owners in the nation, including Caltrans on the current SR99 Realignment CMGC.

Granite | Sundt Organizational Structure

A successful CMGC project delivery approach integrates people, systems, structures and practices into a process that collaboratively harnesses the talents and insights of all participants to optimize project results. Granite | Sundt brings a distinct understanding of the CMGC process, and Caltrans’ expectations for the Project. Our goal is to increase value, reduce risk, and maximize efficiency through all phases of design and construction. As our JV is truly integrated, we are able to share roles and responsibilities across the organizations and assign the most qualified staff to the key positions.

Exhibit 5.1

GRANITE | SUNDT TEAM



Granite | Sundt’s organization has clearly defined roles, responsibilities, accountability, and authority. Our approach and structure focuses on continuous collaboration and daily interaction with the Caltrans Team, and affected stakeholders to provide integration among all disciplines and organizations, throughout design and construction. Additionally, our experience has shown that because preconstruction and construction have different purposes they deserve unique organizational approaches yet maintain continuity between the phases as shown in Exhibit 5.2 on the following page.



Exhibit 5.2 Two Organizational Structures that Achieve Specific Results

MATRIX

Preconstruction

- Resources can be used efficiently, since experts and systems can be shared across project components
- Information flows both across and up through the organization
- Accommodates project changes rapidly and with excellent integration

FUNCTIONAL

Construction

- Performs at a high level of efficiency
- Best for coordination, supervision and task activities
- Provides for hierarchal responsibility and accountability
- Staff is managed by a person with experience in their same specialty who can adequately understand and review their work

Preconstruction Phase Organization

During preconstruction, a matrix organization allows communication and information to flow freely through the organizational structure enhancing interaction and the decision-making process. Our key personnel are integrated within the Caltrans Highway, Rail and Lagoon Teams with access to all the inter-related project information and can quickly manage and accommodate project changes as they occur. This facilitates completion of the work and ensures our estimators have the information necessary throughout OPCC milestones and GMP development.

Construction Phase Organization

As we transition to the Construction Phase, our structure will shift to a more traditional functional organization. This structure is more appropriate for the roles, responsibilities and activities encountered during construction. A hierarchal structure provides for singular management responsibility and accountability. It facilitates completion of work by forming efficient operating teams focused on specific work element completion.

Key Personnel are dedicated to the project through both the preconstruction and construction phases.

CMGC Advisor – Ken Kubacki

Granite | Sundt’s extensive CMGC experience allows us to tap into in-house “Experts” to enhance the process and provide feedback to the entire project team. Ken Kubacki has over 15 years of Alternative Delivery (AD) experience; including the pursuit, estimating, preconstruction and construction management of the \$247M Mountain View Corridor CMGC project in UT. He is the Chairman of the Contracting Forum for AGC National Highway & Transportation Division, a member of the FHWA CMGC Steering Group and a member of multiple Joint Steering Groups on CMGC and AD.

Specific to the I-5 NCC Phase 1 Project, he will advise our team on:

- Accelerating team integration with Caltrans
- Fixed price variable scope processes that maximize value
- Risk management mitigation innovations

Teaming Arrangements

Our organization is aligned with the Caltrans Team and designed to achieve a collaborative, continuous and cost-effective partnership. Granite and Sundt have entered into a joint venture partnership specifically to deliver this high profile project. We have enhanced our rail, lagoon and marine construction capabilities by including California “experts” to the team. Each company has signed a Subconsultant Agreement for both the preconstruction and construction phases.

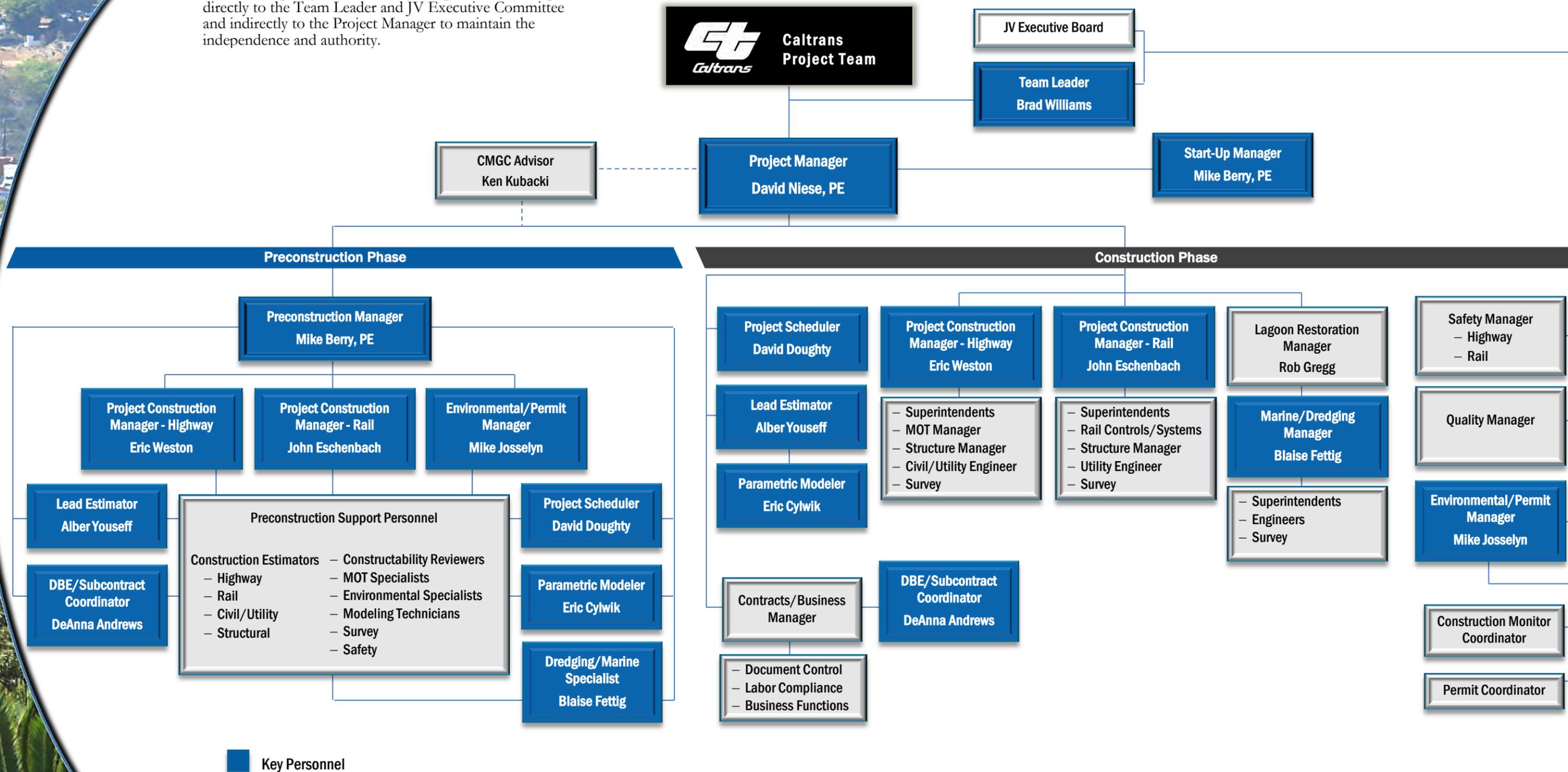
- **JL Patterson & Assoc., Inc. (JLP).** JLP will support our team with expertise in rail safety and construction management. They have extensive experience along the corridor and with Caltrans. John Eschenbach will serve as the Rail Project Construction Manager for the duration of the contract.
- **WRA, Inc. (WRA).** WRA will add value to the team in environmental construction oversight and permit compliance. As the Environmental/ Permit Manager, Mike Josselyn brings specific experience in the corridor including relevant past performance at Baticuitos Lagoon.
- **Vortex Marine Construction, Inc. (Vortex).** Vortex is a specialty marine/dredging contractor with significant marine construction experience ranging from large national structure projects to local waterfront projects. Blaise Fettig will serve as our Dredging Specialist in support of our specific efforts at the San Elijo Lagoon.

Exhibit 5.3 on the following page represents our Organization Chart for both phases of the Project.

EFFECTIVE | INTEGRATED CMGC ORGANIZATION

Exhibit 5.3

Granite | Sundt is structured to deliver all scopes of work from key and support personnel, DBE/UDBE subcontractors, and local subcontractors and subject matter experts. Our experienced and professional CMGC team is committed to provide Caltrans a truly integrated and cohesive organization. Our safety, quality and environmental personnel will report directly to the Team Leader and JV Executive Committee and indirectly to the Project Manager to maintain the independence and authority.



Key preconstruction staff will transition to the construction phase to maintain momentum and continuity in scopes of work, stakeholder agreements, construction means and methods, schedule, safety, quality, cost, and risk mitigation. This ensures preconstruction decisions are understood and valuable stakeholder input is translated correctly into construction phase.



Key Personnel

Our Key Personnel were selected for their individual expertise, collaborative nature and experience working in an integrated delivery model. Their unique experiences enable them to bring forth innovative design and construction practices that will minimize risk and impacts while at the same time add value through improved schedule and lower costs. Resumes are included in Appendix A. The Granite | Sundt Key Personnel include:

Team Leader – Brad Williams

With over 32 years of Heavy Civil construction experience, Brad is a veteran leader who has spent the majority of his career working on Caltrans projects. He has worked in all but one Caltrans district developing long-standing trusted relationships with Caltrans leadership throughout the state. **Brad has earned and maintained his reputation by treating the owner fairly, focusing his team on achieving project goals, and partnering.** Brad has also had the opportunity to manage and lead construction teams on both rail and environmentally sensitive beach projects. His wide array of experience and talents will benefit Caltrans, SANDAG, and the Lagoon Conservancy by providing senior “Project First” leadership and vision to the I-5 NCC Phase 1 Project team.

Project Manager – David Niese, PE

David brings 36 years of experience to the I-5 NCC Phase 1 Project including both public and private service. David spent 13 years at Caltrans in roles from Civil Designer to Area Construction Manager; and 23 years as a designer and contractor in the Heavy Civil transportation sector in such roles as Structures Manager, Project Manager, Construction Manager, and Area Manager. **During his tenure at both Caltrans and in the private sector, he accrued significant experience with environmentally sensitive projects in California.** This experience allows David to bring a unique and balanced, design and construction perspective – benefitting Caltrans, SANDAG, and the Lagoon Conservancy with innovative thinking and solutions.

Highway Project Construction Manager - Eric Weston

Eric Weston is a veteran project manager with the skillset and expertise required to fill the role of the Highway Project Construction Manager. His experience includes highway projects such as the \$196M US60 Granite | Sundt JV Design-Build Project; heavy rail projects including the \$179M

Strauss Intermodal Facility, and construction of bridges on congested Interstate highways over environmentally sensitive wetlands and 404 permitted areas. **Eric’s diverse background offers a balanced construction understanding of the similar challenges associated with the I-5 NCC Phase 1 Project.** Eric is skilled in communication, team building, and scheduling best practices adding more value to his role as Highway Project Construction Manager.

Rail Project Construction Manager – John Eschenbach

As the Rail Construction Manager, John will provide constructability review, schedule and estimating input and value engineering expertise during preconstruction. **His 38 years of experience and multiple certifications in the design, operation and safety aspects of Heavy Rail specific to the LOSSAN corridor** is an extraordinary asset to the Project in support the double track design and construction within the San Elijo and Batiquitos Lagoon segments. John brings a unique “owner” perspective having served as a Senior Project Manager over Engineering and Construction for Amtrak. His activities included the day-to-day management of outside contractors and subcontractors performing NCTD, Amtrak, and State of California capital construction projects on NCTD’s – San Diego Northern Railway (SDNR).

Lead Estimator – Alber Youssef

Alber has contributed his expertise in construction estimating for 34 years on Caltrans and other national owner programs valued at over \$10B. Many of these projects used alternative contract delivery methods providing Alber with vital knowledge in all aspects of cost estimating and budget control during the preconstruction phase. **Alber is an expert in HCSS estimating software, allowing for accurate and efficient preparation of detailed estimates and cost comparisons.** This experience will benefit Caltrans, SANDAG, and the lagoon conservancy with a strong understanding of estimating and compliance of federal and state regulations regarding budget/finance and procurement for a CMGC delivery.

Scheduler – David Doughty, PSP

David is a nationally recognized expert in CPM scheduling. He has extensive contracting experience in transportation, infrastructure, and rail work; including CMGC. This experience allows David to bring lessons learned regarding scheduling to the Caltrans, SANDAG, and the Lagoon



Conservancy team **benefitting the project with fully integrated schedules allowing for accurate cost and schedule impact analysis** throughout the preconstruction and construction phases.

**Environmental/Permit Manager
– Mike Josselyn, PhD, PWS**

Mike has over 33 years of experience with specific wetland restoration expertise that will be important to the Project considering virtually all of the storm water runoff in the I-5 corridor and double track work eventually drains to the lagoons in this coastal region. **Mike managed the permitting to “Waters of the US” and “Waters of the State” for the \$1.5B Sunrise Powerlink transmission line in San Diego and Imperial Counties.** Along with managing the Environmental Permits for the overall Project, Mike brings specific expertise in Habitat Restoration and Wetland design and construction, including serving as the lead biological consultant for the design, and implementation of the Batiquitos Lagoon Restoration project.

Preconstruction Manager – Mike Berry, PE

Mike’s career spans over 44 years and includes over 24 years working in the field constructing challenging projects and 20 years estimating highway, rail, and environmentally sensitive projects including the \$215M Sellwood Bridge CMGC project. **Mike has managed preconstruction on 18 CMGC transportation projects, successfully negotiated a GMP on each of these projects,** and worked collaboratively with the team’s to produce over \$115 M in project savings. Our team fully understands that the start-up phase of preconstruction and construction is critical to achieving project success. We have made Mike 100% available for the full duration of the preconstruction phase and the start-up phase of construction to assist Dave Niese.

Dredging Specialist – Blaise Fettig

Blaise Fettig started Vortex Marine Construction, Inc. (Vortex) in 1992 and has grown the company into one of the west coasts’ premier marine construction companies. Blaise specializes in challenging marine and heavy civil construction projects and providing safe and innovative construction techniques to his clients. He has a thorough understanding of the permit requirements for dredging and dredge disposal operations in the waters of the State. **He brings the expertise and the modern dredging fleet that can operate in shallow marsh conditions while still handling the large quantity of dredge material required for this project.**

**DBE Subcontracting Coordinator
– DeAnna Andrews**

DeAnna is a resident of San Diego County and is fully committed to exceeding the DBE and UDBE goals set for the Project. As the DBE Subcontracting Coordinator on the San Diego Airport Landside Expansion project **she worked closely with the Airport Small Business team to develop an outreach plan that has become the standard for the airport authority and achieved 34% SBE/DBE participation in the project.** She has continued this role on the San Diego Airport’s Consolidated Car Rental Facility. DeAnna has a strong understanding of the federal regulations associated with DBE/UDBE programs and will benefit the Project by exceeding the project goals and providing proper documentation for reporting DBE/UDBE results.

Parametric Modeler – Eric Cylwick

Eric is a natural innovator and an industry leader in 3D Modeling. He is actively involved as a founding member of the USACE Civil Information Modeling Task Force and the Autodesk Heavy Civil Construction Council and has presented at numerous FHWA Every Day Counts Summits. Eric played a critical role in developing models and assisting Multnomah County in presenting construction staging and sequencing to the public on the Sellwood Bridge CMGC project. **Eric’s 3D models can also tie directly to our estimating software providing for cost-loaded alternative scenario planning.** Known as Parametric Estimating, this added-value tool is described in more detail in Section 6.C.

While not a Key Personnel position, Rob Gregg will join the team at the start of the construction phase as the **Lagoon Restoration Manager.** Rob brings over 20 years of experience successfully working in and around environmentally sensitive areas along the southern California coast. He is currently managing the \$52M Caltrans Highway 101 Mussel Shoals Project along the Pacific Ocean between Santa Barbara and Ventura which has **complex vehicular, bicycle, and pedestrian staging while ensuring all of the many stringent environmental permit requirements are met.** Rob has also been instrumental on such projects as the Guadalupe Beach Restoration and the Santa Barbara Airport Tidal Zone Restoration. This knowledge makes Rob uniquely qualified to lead the construction within the lagoon.



Exhibit 5.4 Key Personnel Commitments

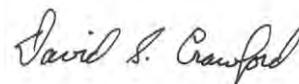
Key Team Members	Preconstruction (CM Phase)	Construction (GC Phase)	Other Commitments
Team Leader Brad Williams	50%	50%	<ul style="list-style-type: none"> Granite Sundt fully understands that Caltrans has the final decision on actual hours of the key personnel on the project. 100% commitment means that this person is 100% available to meet Caltrans’ schedule for meetings and providing deliverables. Preconstruction effort is expected to change from week to week depending on the project needs and Caltrans’ schedule. The I-5 NCC Phase 1 Project will be the primary responsibility for all Key Personnel. Work on other projects will be performed as time allows.
Project Manager David Niese, PE	100%	100%	
Highway - Project Construction Manager Eric Weston	100%	100%	
Rail - Project Construction Manager John Eschenbach	100%	100%	
Environmental/ Permit Manager Mike Josselyn	100%	100%	
Scheduler David Doughty	100%	100%	
Lead Estimator Alber Youssef	100%	100%	
Preconstruction Manager Mike Berry, PE	100%	100%	
Marine/Dredging Specialist Blaise Fettig	100%	100%	
DBE/Subcontracting Coordinator DeAnna Andrews	100%	100%	
Parametric Modeler Eric Cylwik	100%	100%	

“Caltrans is our top priority client – as one of the largest and oldest California based contractors, Granite completes over 50 Caltrans projects every year including traditional bid-build to larger alternative delivery projects. Our ability to leverage our Large Projects West Region based out of Sacramento, coupled with 12 office and construction material locations throughout Southern California, offers this Project the most qualified resources in the industry. On behalf of the company, I personally commit Brad Williams, Dave Niese, David Doughty and Alber Youssef as Key Personnel for the I-5 NCC Phase 1 Project. In addition, I commit whatever additional resources are needed, from dozens of Granite offices across the country, to make sure this project is built on time, on budget and of the highest quality.”



James H. Roberts
President and Chief Executive Officer
Granite Construction Incorporated

“Sundt Construction has been a long-time proponent of the CMGC delivery method. We have delivered several CMGC “pilot” projects and we look forward to assisting you in the development of your CMGC program. Our experienced CMGC personnel, including Eric Weston, Mike Berry, DeAnna Andrews, and Eric Cylwik, offer Caltrans the same high-quality experience appreciated by our other clients. You have my personal assurance that our key personnel will be fully committed to the I-5 NCC Phase 1 Project.”



David S. Crawford, CEO
Sundt Construction, Inc.

Attached herein is Form D: Proposed Key Personnel Information and the Required Licenses requested in the RFQ.

Form D

PROPOSED KEY PERSONNEL INFORMATION

Name of Proposer Granite-Sundt, A Joint Venture

Instructions for Form completion: Responses shall be addressed within the table below. Should additional space be needed to adequately respond, Proposer is advised to increase the number of lines within the table as appropriate. Form D has no SOQ page limitation. [Note to Drafter: Edit positions for Project, refer to Section 3.6.1.]

Position	Name	Years of Experience	Education and Registrations	Parent Firm Name
Team Leader	Bradley Williams	32	<p>Education: BS, Civil Engineering, Ohio Northern University, 1982, with Honors</p> <p>Licenses/Associations: National President, Construction Institute of the American Society of Civil Engineers</p> <p>Awards Evaluation Member of the International Partnering Institute</p>	Granite Construction Company
Project Manager	David L. Niese, P.E.	36	<p>Education: Civil Engineering, University of Southern California, Los Angeles 1982</p> <p>Licenses/Registrations: Professional Engineer, Civil CA #C44107 -1989-Present, Expires (06-2015)</p> <p>Safety Trained Supervisor, STS #IEX05043</p>	Granite Construction Company
Project Construction Manager (Highway)	Eric Weston	17	<p>Education: Bachelor of Science, Geological Engineering, University of Arizona, Tucson, AZ, 1999</p> <p>Certified Professional Constructor, 2010</p>	Sundt Construction, Inc.

Position	Name	Years of Experience	Education and Registrations	Parent Firm Name
Project Construction Manager (Rail)	John Eschenbach	38	<p>Education/Certifications: Coursework, Engineering, Essex Community College, 1972 Coursework, Engineering, Harford Community College, 1980 Continuing Education Units, Engineering, George Washington University, 1986; George Mason University, 1990; Penn State University, 1992 Federal Railroad Administration Track Safety Standards CFR 49, parts 213.7 (a) & 214 Railroad Bridge Inspector: Federal Railroad Administration (1993) Qualified Railroad Bridge Supervisor FRA, CFR 237.55, NCTD and Metrolink. General Code of Operating Rules (GCOR) Maintenance of Way Employees Trained PUC General Orders Amtrak, Metrolink, Pacific Imperial Railroad and NCTD railroad safety-trained Licenses/Registrations: Class A Contractor’s License (CA) Class B Contractor’s License (CA)</p>	J. L. Patterson & Associates, Inc.
Lead Estimator/Budget Manager	Alber Youssef	34	<p>Education: BS, Civil Engineering, Cairo, Egypt, Year 1980 MS, Civil Engineering, Clarkson University, Potsdam, NY, Year 1989</p>	Granite Construction Company
Scheduler	David Doughty	34	<p>Education: BS/Construction Management, Washington State University, Pullman, 1979 Oracle Primavera certified as a Client Trainer for P6 v7 AACEI Planning and Scheduling</p>	Granite Construction Company

Position	Name	Years of Experience	Education and Registrations	Parent Firm Name
Environmental / Permit Manager	Michael Josselyn, PhD, PWS	33	<p>Education: PhD, Marine Botany, University of New Hampshire, 1978</p> <p>MS, Marine Science, University of Miami, 1975</p> <p>BS, Biology, Cornell University, 1972</p> <p>Certified Professional Wetland Scientist, Society of Wetland Scientists</p> <p>Licenses/Registrations/Affiliations:</p> <p>Society of Wetland Scientists</p> <p>Professional Wetland Scientist Certification Program (Past President)</p> <p>Association of Environmental Professionals</p> <p>American Association for the Advancement of Science</p>	WRA Environmental Consultants
Preconstruction Manager	Mike Berry	44	<p>Education: Bachelor of Science, Civil Engineering - Virginia Polytechnic Institute, 1975</p> <p>Bachelor of Science, Building Construction - Virginia Polytechnic Institute, 1975</p> <p>Licenses/Registrations: Registered Professional Engineer, AZ</p> <p>Certified Professional Constructor (CPC)</p> <p>LEED Accredited Professional</p> <p>Designated Design-Build Professional</p>	Sundt Construction, Inc.

Position	Name	Years of Experience	Education and Registrations	Parent Firm Name
Marine / Dredging Specialist	Blaise Fettig	30	<p>Education: Surface Supplied Air and Gas Diving, Hyperbaric Chamber and Treatment Operations, Rigging, Underwater Welding and Cutting Operations, Observation and Lock-Out Bell Diving, Saturation Diving - The Ocean Corporation - Houston, TX, 1985</p> <p>Philosophy and Mathematics - St. John's College - Annapolis, MD - 1982-1984</p> <p>Political Science - St. Michael's College - Winooski, VT - 1980-1982</p> <p>Licenses/Registrations: 2001-Present Associated General Contractors Of California (AGC) -</p> <p>State Board Member, Past Chair of Local District and Various Committees, Director of Heavy-Highway Division</p> <p>2007-Present The Beavers - Contractor Member Representative</p>	Vortex Marine Construction, Inc.
DBE Subcontracting Coordinator	DeAnna Andrews	21	<p>Education: Bachelor of Arts, Liberal Studies, San Diego State University, 1990</p> <p>Construction Management Certificate Program, Management Practices SDSU</p> <p>Green Building Construction Certificate Program, SDSU</p> <p>Licenses/Registrations: Certified Professional Constructor (CPC)</p> <p>Certified Supplier Diversity Professional</p>	Sundt Construction, Inc.
Parametric Modeler	Eric Cylwik	8	<p>Education: Bachelor of Arts, Design Studies; Digital Visualization, Arizona State University, 2009</p> <p>Licenses/Registrations:</p> <p>AutoCAD Civil 3D Professional</p> <p>3D Studio Max Professional</p> <p>Revit Professional</p> <p>Certified BIM Specialist: Road and Highway 2014</p>	Sundt Construction, Inc.



Caltrans - SR22 HOV Project, Orange County, CA



Our soundwalls are beautiful and represent our community well, Thank You.



6 | PROJECT UNDERSTANDING and APPROACH



Partners Improving the Environment for the Future

STRENGTHS & BENEFITS

- **CMGC Expertise**
A balanced, interrelated approach that will seamlessly unite highway, rail and lagoon expertise and maximize value for the entire Project.
- **Caltrans Experience**
Best Practices from current Caltrans CMGC project ensures a successful tailored approach.
- **Rail and Lagoon Capabilities**
Specialized rail and lagoon restoration expertise fully integrated into the CMGC organization.
- **Community and Environmental Sensitivity**
Strong relationships with DBE/UDBE subcontractors and a reliable framework for managing our environmental responsibilities.
- **Cost Certainty**
Caltrans estimating expertise and successful CMGC GMP negotiation record.

A. PROJECT UNDERSTANDING

We understand the scope of this project includes working with the Caltrans Team as your CMGC to support design and ultimately construct Phase 1 of the Interstate 5 North Coast Corridor Program (I-5 NCC Phase 1 Project). The success of Phase 1 is critical to the long-term NCC Program goals in this high-profile I-5 corridor. The primary objectives are safe and efficient movement of people and goods, compatibility with future bus rapid transit and other modal options while protecting/enhancing the human and natural environment.

SB 468 emphasizes the importance of protecting the unique natural resources and wetland lagoons in the coastal zone when major transportation construction is proposed. This legislation brought forward by Senator Christine Kehoe provides the opportunity for Caltrans to include multi-modal options in transportation including the proposed double track work at the San Elijo and Batiquitos Lagoons, as well as incorporating the much needed wetland restoration work for the San Elijo Lagoon Conservancy. **Uniting the highway, rail and lagoon work under one Contract requires a CMGC Team like Granite | Sundt to bring high-profile, complex interrelated project experience and provide innovation and expertise in each discipline.**

Ultimate North Coast Corridor

“GATEWAY TO SAN DIEGO”

The ultimate NCC “Gateway to San Diego” is located within some of the most scenic and environmentally protected coastline in California, providing access for commuters, goods movement, and tourism including world-renowned beaches, recreational areas, activity destinations, and cultural resources.





Federal/State and Local Requirements

We recognize there are many stakeholders in addition to Caltrans, SANDAG, North Coast Transit District (NCTD) and the San Elijo Lagoon Conservancy who have a keen interest in the I-5 NCC Phase 1 Project as shown in Exhibit 6.1. **The focus of the stakeholders encompasses environmental protection, aesthetics, economics, cultural, multi-modal transportation, safety, mobility, and traffic noise abatement.** The following examples demonstrate our understanding and approach in working with the Federal, State and Local Permitting and Inspecting Agencies.

Starting immediately, upon Notice to Proceed (NTP), our Environmental Permit Manager, Mike Josselyn and his team of Construction Compliance and Permit Coordinators will address all portions of the project along the freeway right of-way, rail corridor, and areas in and around the lagoons, to ensure environmental compliance measures are thoroughly understood. Federal State and Local Agencies will require specific permits when working within the coastal region. For example the California Department of Fish and Wildlife (CDFW) has jurisdiction over state and federal listed plants and animals, lakes, streams, rivers and other potentially sensitive habitats. Their goal is to protect and preserve all wildlife within the region. One of three permit categories will be required: FESA Section 7 Consistency Determination, CESA Incidental Take Permit, or Lake/Streambed Alteration Agreement. Mike’s team will consider all construction methods that address the permit requirements.



Early compliance focus starting in the design phase and maintained through construction will involve avoidance, minimization and mitigation through agency collaboration and evaluation of innovative measures in constructability, timing, technical approach, and monitoring. This will satisfy CDFW’s goal of minimal impact to California’s Biota, and ensure compliance with the agency.

A specific example of how Mike will approach managing the diverse permit requirements considering Federal, State and Local Agencies is within the San Elijo Lagoon Region. Three different types of work are planned in this region, Highway, Rail and Lagoon Restoration. Mike will call upon his large corridor project experience to translate the full suite of Permit Constraints to the Team.

Exhibit 6.1: Project Stakeholders

- Federal Highway Administration
- Federal Transit Authority
- Federal Rail Authority
- U.S. Fish and Wildlife
- U.S. Army Corps of Engineers
- National Oceanic and Atmospheric Administration
- National Marine Fisheries Service
- California Department of Fish and Wildlife
- Regional Water Quality Board
- California Coastal Commission
- California Coastal Conservancy
- State Historic Preservation Officer
- Native American Tribes
- Native American Heritage Commission
- Camp Pendleton
- County of San Diego
- Cities of San Diego, Del Mar, Solana Beach, Encinitas, Carlsbad, and Oceanside
- Local businesses
- Residents
- Traveling Public

We will consider a variety of construction methods and Mike will advise in phasing options to avoid migratory species, endangered species, and sensitive marine life to allow sequencing of different scopes of work with the least amount of impact while maintaining compliance. Early involvement in the design phase will ensure a constructable and realistic implementation of permit requirements creating cost and schedule certainty mitigating potential project issues. This knowledge will be transferred into the construction phase where Mike and his team will provide careful oversight during construction.

Daily tracking and reporting in the construction phase will be available to the entire team including stakeholders. Transparency with permit reporting will give the entire team confidence that the construction methods comply with all the Federal, State and Local requirements. A full-time, dedicated Construction Monitor Coordinator will oversee field operations for the construction monitoring team, ensuring all monitors have the knowledge and equipment to do their jobs. Similarly, a dedicated Permit Coordinator will be responsible for daily compliance tracking through detailed logs and records of all activities. Both Coordinators will cross check the compliance with the permit requirements regularly, and provide training to all personnel prior to mobilization. Consistent construction monitoring and reporting

helps identify potential issues on future phases, so the team can develop and incorporate appropriate mitigation measures into the remaining GMP's. Continuity of staff and real time reporting demonstrates the Granite | Sundt Team's ongoing commitment to corridor wide Federal, State and Local permit compliance.

Another example involves Granite | Sundt's Rail Project Construction Manager, John Eschenbach. John will plan and coordinate the proposed work in compliance with the North County Transit District (NCTD), as shown in Exhibit 6.2 below.

A great deal of the work within the NCTD ROW must be accomplished with the use of Track Order Form B protection, as per the NCTD's, General Code of Operating Rules (GCOR). GCOR Rule 15.2 "Protection by Track Bulletin Form B" will be used in conjunction with watchmen, track and time, and Absolute Work Windows (AWW). Form B's will be used for work adjacent to live track for both the San Elijo and Batiquitos Doubletrack segments.

John understands that NCTD must approve the timing of any railroad closure and/or shutdown well in advance and his team will **focus on not interfering with the normal operations of the passenger and freight trains passing through the project area**. The maximum AWW is 56 hours from midnight on Friday to 4:30 am on Monday morning. During the AWW's the major work at each Control Point (CP) will be accomplished. Each control point requiring major modifications will require an AWW. The AWW's period is from October through March. In addition Absolute Freight Work Windows (AFWW) will be required to accomplish track shifting and other components of the track work.

Major Elements of Work

Keeping the ultimate NCC Program build-out in mind, the major scope elements for the I-5 NCC Phase 1 Project including conditional work are:

- Constructing one high occupancy vehicle (HOV) lane in each direction from Loma Santa Fe Drive to SR78
- Double tracking of the LOSSAN rail line from Control Point (CP) Cardiff to CP Craven across the San Elijo Lagoon and from CP Ponto to CP Moonlight across the Batiquitos Lagoon
- Replacing the rail bridges over the San Elijo and Batiquitos Lagoons, including signaling and communications work
- Restoration of the San Elijo Lagoon including the reuse or disposal of material excavated as part of that restoration.
- Replacing the MacKinnon Avenue overcrossing
- Constructing a direct access ramp (DAR) and multi-use facility at Manchester
- Replacing the San Elijo and Batiquitos lagoon highway bridges
- Soundwalls
- Maintenance of traffic
- Utility relocation
- SWPPP
- Environmental compliance
- Substantial third party stakeholder coordination
- Community updates

Other work scope opportunities include:

- ITS elements supporting initial HOV facilities
- Bike lanes/trails
- Pedestrian trails

Exhibits 6.3 and 6.4 on the following pages illustrates our understanding of the major elements (■ Highway ■ Rail ■ Lagoon), their issues and challenges and our approach to successfully address them.

Exhibit 6.2: Strong Relationships Built on Trust and Experience

NCTD EXPERIENCE

John Eschenbach's experience in design and construction within NCTD's jurisdiction is a valuable asset to ensure success when interacting with this local agency. His planning in preconstruction, and management during the construction will ensure compliance with NCTD's Policy No. 23 on Railroad Construction Scheduling and Management, which covers construction activities involving slow orders, partial shutdowns, and/or full shutdowns and the principles supporting maintaining rail operations with disruptions minimized during construction.



San Elijo Lagoon

Major Component Challenges and Potential Solutions

Exhibit 6.3



Challenge	Potential Solution (💡 represents solution described in more detail in Section 6.G – Innovation)
1 Removal of CP Craven, MP 241.1 – Absolute Work Window (AWW) required to remove No. 24 turnout.	Maximize the amount of work performed during the approved AWW and coordinate with NCTD to utilize AWW’s previously planned on other projects when possible. This minimizes the number of AWW’s within the corridor and reduces the impact to Passenger and Freight Rail service.
2 Maintain pedestrian and bicycle access to lagoon, beach, and businesses during bridge and park and ride construction.	Project specific pedestrian and bicycle access information will be updated via website, and smart-phone app. This same approach was utilized on the Northwest Extension CMGC Project for Valley Metro Rail in Phoenix, Arizona.
3 Maintain false work clearances during reconstruction of bridge.	Design false work with 24-inch beams to accommodate bicycle and vehicular clearances. Similar alternative bridge construction methods are potentially available on this Project as discussed further in Section 6.G – Innovations. Also a similar method was used on the SR202 Red Mountain Freeway Design Build outlined in Section 4 – Form B Firm Experience. 💡
4 Flooding basin for dredging operations can have a negative effect on native vegetation.	Minimize level of flooding by using alternative dredging methods. Vortex Marine utilizes shallow “Low-Draft” dredging equipment with high production capabilities in 2’ of water. Section 6G – Innovations describes in more detail the value of this potential opportunity. 💡
5 Endangered / protected species habitat disturbance.	Use biological monitors to survey area prior to construction. Phase the dredging work outside of the nesting season. Critical grade control will be utilized to ensure tolerances are maintained to protect the endangered species (marine life) that inhabit the region.
6 Minimize disturbance when constructing three major components (Highway, Rail & Lagoon) within the San Elijo Lagoon Region.	Coordinate all three scopes of work in a sequence that is compliant with the Federal State and Local permits. Design and Construct permanent access points that can be utilized for construction staging and access. These access points provide additional benefit for the Lagoon Conservancy and future maintenance needs.
7 Maintain uninterrupted rail traffic/minimize impacts to NCTD operations when construction new bridge at MP 240.4	Construct new bridge for main track 2, shoofly rail traffic to new bridge, demo and reconstruct new bridge for main track 1.
8 Suspended pedestrian bridge construction .	Increase width of highway bridge structure to accommodate bike/pedestrian path. 💡
9 Maintain LOS during staged bridge construction.	Use MOT phasing plan for Manchester as we have detailed in Section 6.G – Innovations. 💡

Environmental Permitting | Minimize Endangered Species Disturbance



San Dieguito – Wetland Restoration Project

WRA was responsible for preparation of conceptual and final designs for a 450 acre wetland and lagoon restoration plan in Del Mar, CA. The restoration was required as a part of the SONGS mitigation to replace impacts to coastal fisheries and establish a functioning coastal wetland habitat for fish and wildlife. Granite | Sundt’s Environmental/Permit Manager Mike Josselyn worked closely with federal and state agencies and the project team to design habitats for special status plants and wildlife, to provide support to permitting actions for the project.



Main Corridor

Major Component Challenges and Potential Solutions

Exhibit 6.4



Challenge	Potential Solution 💡 represents solution described in more detail in Section 6.G – Innovation)
1 Construction of double track at existing Chesterfield Grade Crossing MP 239.8.	Coordinate with City of Encinitas and stakeholders to provide alternate access routes during double-track construction.
2 Construction of No. 24 Turnout at CP Cardiff MP 239.6.	Use salvaged No. 24 turnout from former CP Ponto. 💡
3 MacKinnon Bridge location has potential vertical grade issues on the east side and potential impacts to the newly constructed Encinitas Community Park on the west side.	Optimize bridge alignment and vertical profile to minimize rework in the newly constructed park and reduce impacts to residents on the east side.
4 Maintain Pedestrian Access to Harris Elementary School and Encinitas Community Park when MacKinnon Ave Bridge is reconstructed over the I-5.	Stage the bridge construction to utilize existing structure and temporary "Baily-Bridge" to maintain access while new structure is built. Similar pedestrian access was safely maintained with temporary structures on previous projects.
5 Minimize impacts to local traffic at Leucadia Boulevard. Grade crossing has substantial grade differences between existing at grade crossing and Pacific Coast Highway 101.	Work with design team and stakeholders during preconstruction to optimize roadway design and traffic detours to reduce impacts.
6 Construction of soundwalls outside Caltrans right-of-way (multiple locations along corridor).	Reduce impact by taking "back yard contractor" approach, adjusting work hours, and using smaller equipment and construction materials, see Section 6.G – Innovation for a more detailed approach on working with the residents. 💡
7 Reconstruct the I-5 Bridge over the Batiquitos Lagoon while maintaining a high LOS during construction.	A revised bridge staging plan has been developed for the San Elijo Bridge as described in Section 6.G – Innovation. A similar approach could be used at this location, improving equipment access, safety and providing better mobility. 💡
8 Preserving endangered species and environmentally sensitive habitats during construction activities within Batiquitos Lagoon.	Stake disturbance limits prior to construction and install visible delineation of ESA areas. Utilize low vibration equipment and bubble curtains for any in-water pile driving. Ensure crews are environmentally trained and have work plans reviewed and approved by the Environmental Manager prior to starting work.
9 Maintain uninterrupted rail traffic/ minimize impacts to NCTD operations when construction new bridge at MP 234.8.	Construct new bridge for main track 2, shoofly rail traffic to new bridge, demo and reconstruct new bridge for main track 1
10 New cross-over construction at CP Ponto, MP 234.5 will require installation of No. 24 turnout.	New universal No. 24 cross-overs were recently installed at CP Farr, MP 231.6 – recommend utilizing new CP Farr for crossovers (do not replace CP Ponto) resulting in significant savings to the project. 💡
11 Delivery and staging of rail, concrete ties, special track, etc.	Coordinate with NCTD to use house track at CP Ponto to deliver and store materials
12 Right of way acquisition required for slopes and bike paths (multiple locations along corridor).	Reduce the required ROW acquisition by optimizing wall design, temporary construction easements, and access points. Similar ROW reduction measures were utilized on Granite Sundt's US60 DB as described in Section 4 - Form B Firm Experience
13 SDG&E power lines limit access and create a potential overhead safety hazard.	Create safe work zones by signing overhead hazard and communicating with all personnel working in the area. Utilize specialized low profile construction equipment in this area. - Granite Sundt utilized low profile equipment when constructing soil nail walls beneath existing bridges on the I-17 DB Project referenced in Section 4 - Form B Firm Experience.

Maintain Access | Minimize Soundwalls



US 60 Superstition Freeway Design-Build

The Granite | Sundt JV saved \$55M by depressing the freeway and using the material to create sound berms in lieu of soundwalls; used soil nail walls versus cast-in-place walls, modified construction sequence and MOT reducing closures on I-10 and associated ramps; enhanced median light pole foundations; and installed stepped masonry pilasters to strengthen existing masonry walls to accommodate added height.





Relationship of the Project Elements and their Constraints on the Schedule

The Kehoe Act states: *“In order to reduce environmental impacts to the coastal lagoons, both rail and highway bridges crossing each lagoon shall be constructed concurrently”.*

To achieve this goal, it will not be enough to simply stage the construction work in the lagoons. The best enhancement of the lagoons will come from careful consideration of individual project elements and understanding how that element, when combined with others, will influence the lagoons and the overall project. Certain design elements will require information from other design elements. A clear example is the need to select the preferred alternative for the San Elijo Lagoon Restoration first, in order to advance the design of the San Elijo Lagoon Double Track since one of the alternatives requires an additional rail bridge.

As design elements are advanced, the identification of construction constraints will follow. Certain construction activities will be constrained by the bird nesting season between February 15th and September 30th. Another constraint, though less clear, is the dredging around the existing I-5 San Elijo Lagoon Bridge. This should wait until the new foundations (and possibly the superstructure) are complete so the existing roadway fill can be used as construction access for the new bridge preventing multiple disturbances to the lagoon.

In addition to the common constraints created by utility relocations, ROW acquisitions, permit conditions, Memorandums of Understanding (MOUs) with Local Agencies, etc., other constraints to consider are:

1. Building of soundwalls prior to other construction activities so as to minimize the impacts of construction noise on the adjacent homeowners.
2. Early construction of bio-swales and ponds so that these elements can be used to control run-off during construction. *
3. Staging of highway and rail construction with an understanding of construction access needs to minimize impacts to the travelling public during construction.
4. Stage earthwork and foundation construction for the combined highway and rail bridges in each lagoon to allow continuous flow of manpower and equipment thus providing the least impact to the lagoon.

5. Stage lagoon dredging to occur concurrent with, or closely, following highway and rail earthwork and foundation construction.

(* As a general rule of thumb to reduce construction costs, our team always looks for permanent project features that can be used in a temporary condition during construction).

The interaction between projects elements and any constraints between them will be identified in preconstruction, placed in both the Risk Register and the CMP Schedule and continuously monitored throughout the duration of the Project.

B. CMGC APPROACH

The NCC Phase 1 Project is unique; it is the largest of Caltrans’ six (6) projects selected for the CMGC Pilot Program, and is comprised of interrelated works scopes; highway, rail, and lagoon restoration. We recognize how challenging this opportunity is and have experience successfully accomplishing complex interrelated CMGC projects. Utilizing the CMGC delivery approach to design and construct this high profile, environmentally sensitive highway project in conjunction with the rail and lagoon restoration improvements, provides an opportunity to maintain a holistic approach to managing the improvements within the North Coast Corridor.

Approach to CMGC Contracting

Due to the construction complexities, environmental sensitivities, and numerous Caltrans team members that will be involved for the preconstruction phase of this major interrelated project, **the Granite-Sundt team will, immediately upon NTP, establish its preconstruction team office within minutes from the Caltrans District 11 Taylor Street office.** Our hub office, located at 1660 Hotel Circle N, will provide cost-effective facilities that allow our preconstruction personnel to be accessible to Caltrans; providing for the collaboration and partnering necessary to make this project successful without the typical additional co-location costs. As the preconstruction phase transitions to construction, Granite | Sundt will relocate personnel to a site office in close proximity to the project alignment with provisions for co-location of Caltrans team personnel. This provides for the effective and consistent integration of the Granite | Sundt team with the different areas of expertise (Highway, Rail & Lagoon) with the current Caltrans Team, design consultants and stakeholders.

Partnering is Paramount

Partnering is about making long-term commitments to achieve mutual goals and continuously cultivating the strong positive team-based relationships necessary to realize project success, see Exhibit 6.5. It is the backbone of our successful CMGC management platform and has led to winning the **AGC Marvin M. Black Excellence in Partnering Award on 25 projects** over the past fifteen years. Granite|Sundt has extensive experience participating in the Caltrans partnering process, and Granite was a founding member over 20 years ago. Project Manager, David Niese, PE will champion the Project’s partnering principles on a daily basis to create an atmosphere of collaboration, innovation and creativity during preconstruction services. He will organize **the first partnering meeting within 60 days of NTP and regularly schedule follow-up meetings in order to measure our performance and implement continuous improvement** throughout the preconstruction and construction phases.

Preconstruction Services Approach

Our goal during preconstruction is to optimize design and reduce risk by tackling the project challenges together as a collaborative I-5 NCC Phase 1 Project Team. Project Manager, David Niese and Preconstruction Services Manager, Mike Berry will guide our team through the process. David will lead our team and facilitate communication between the Caltrans Team and appropriate CMGC team members throughout the life of the project. Mike is responsible for coordinating our specific preconstruction work efforts and Key Personnel integration with the multidisciplinary teams (Highway, Rail and Lagoon) and diverse stakeholders.

Our integrated preconstruction approach will include over the shoulder reviews and interdisciplinary working meetings in addition to the regularly scheduled task group meetings. **We will not simply wait for a set of plans to be**

Exhibit 6.5: Partnering Experience

“The strong partnership between UDOT and [the Granite JV] has allowed the Project [I-15 NOW Expansion] to be completed several months ahead of schedule, under budget and most impressive of all— with no unresolved issues or disputes after nearly 28 months of ongoing construction work.”

— Cory Pope, UDOT Region One Director,
(letter dated 9/11/08)

given to us for review; instead we will, in conjunction with the Caltrans Team, continuously pursue innovative ideas customized to the needs of the I-5 NCC Phase 1 Project.

Understanding District 11’s desire to maximize value by minimizing “re-design” work – only producing the necessary design documents for our specific construction approach – our early involvement can reduce the level of design effort typically expended in a traditional bid-build design project. **“Design Once”** is a slogan our team feels is an important goal for the entire I-5 NCC Phase 1 Project Team to embrace. With Granite|Sundt on board, we will all be effectively working towards:



Final design development and construction implementation of **innovative, efficient solutions that reduce risk** and provide cost and schedule certainty.



Maximizing value by collaboratively identifying best design/construction approaches and permanently build as much as we can in Phase 1.

These icons are used throughout the remainder of our qualifications statement drawing attention to our focused efforts to reduce risk and maximize value.

As your CMGC, Granite|Sundt will engage with the Caltrans Team to eliminate the knowledge gaps between design and construction. Our eight step CMGC approach is described below. Section 6.H discusses the specific work efforts we will accomplish within the first three to six months after Notice to Proceed for preconstruction services.

1. Seek First to Understand

Granite|Sundt suggests that Caltrans schedule a kickoff meeting in order for our entire team to gain an understanding of the current status of the project, permits and environmental approvals. This meeting should bring all of the key individuals together and provide an update on Project Goals, expectations and any unique details and/or changes beyond the information contained in the current design documents, and supplemental information provided with the RFQ.

- **Outcomes/Deliverables:**

This initial meeting allows our team to understand priorities and if need be, refine our CMGC approach and organization to ensure



the required level of effort is efficient, effective and most importantly, successful.

2. Validate Constructability of Design

Immediately following the Project kick-off meeting and partnering meeting, the Granite | Sundt Team recommends scheduling meetings with project stakeholders in conjunction with Caltrans to establish relationships, develop clear lines of communication, and review current status of the design and schedule. These meetings will facilitate information sharing and document flow.

Coordination and continuity throughout the corridor is critical and the Phase 1 plans and specifications need to address these third party considerations. We will review current design plans and begin attending existing Highway, Rail and Lagoon Task Force Group meetings to understand the status of design and immerse ourselves into the established culture. **It is essential that our team have a comprehensive understanding of the Project requirements in order to validate the current state of design for cost and schedule assumptions.**

- **Outcomes/Deliverables:**
Comprehensive Criteria Compliance Document, Communications Plan, Action Plans for Resolving Conflicts with Third Parties, Additional Field Investigation/Testing, Summary of Environmental Mitigation Measures, Updated Risk Register, Current Project Schedule, Basis of Estimate.

Each of the three major scopes of work; highway, rail and lagoon deliverables will be managed to ensure coordination of design and construction has occurred achieving an optimal balance of project goals; and the least amount of impact to the coastal environment has been considered.

3. Design and Constructability Analyses



Design optimization and innovation are critical components of the preconstruction process, and our experienced CMGC contractor's perspective will create efficiencies in the design phase which translates to cost and schedule savings during construction. Granite | Sundt will assist the Caltrans Team in generating, evaluating, tracking and documenting the constructability reviews. With our current understanding of the Project we believe there are opportunities to realize significant cost and schedule savings and reduce risk through innovative design and construction sequencing.



Granite | Sundt will participate in design reviews and conduct constructability reviews to identify improvement areas and ensure the Project can be constructed within the budget and schedule constraints. Right-of-way, utility relocations, long lead time materials and staging will be carefully analyzed for cost certainty and schedule improvements. In addition to our key personnel, we can also offer in-house experts in all facets of civil design, pavement design, rail interfaces, and geotechnical engineering to provide additional value to Caltrans when/if their expertise is requested.

- **Outcomes/Deliverables:**
ROW Prioritization Plan, Utility Relocation Plan, Material/Equipment Market Survey, Construction Phasing Plans, Schedule/Estimate Updates.

4. Parametric Estimating



Eric Cylwik will create the necessary models of the features that need to be evaluated in the design phase. The 3D modeling will be utilized to check for potential clashes, validate the necessary temporary construction easements, and illustrate how the work will be sequenced in order to confirm compliance with permit regulations within the lagoons. **The model can also be used with our cost estimating software so that Caltrans can make the right project wide decisions considering the overall project budget.** This technology and its benefits are discussed in more detail in Section C.

- **Outcomes/Deliverables:**
3D model in AutoDesk software that can be used by the project team, staging and sequencing plans that illustrate our construction approach, support graphics that can be used by the NCC Project Team for stakeholder meetings.

5. Risk Analyses



During this stage of preconstruction, risk items are identified and tracked. Granite | Sundt will work with Caltrans in progressing the Project's Risk Register, to track progress and decisions regarding risk. **Other tools, such as our Decision and Resolution Tracking (DART) system and our Design/Budget/Schedule Evolution Log can be brought to the Project** and are discussed in more detail in Section C.



- **Outcomes/Deliverables:**

Risk Register, Design/Budget/Schedule Evolution Log, DART Analysis

The Caltrans Team benefits from an experienced CMGC contractor’s input with these deliverables and can prioritize the design team’s effort to support the critical items.

6. Scope and Schedule Evaluations

As design is being refined, our Scheduler Dave Doughty will develop and maintain the overall design and construction phase schedule. The schedule will be regularly updated or as directed by the Caltrans Team. **Using Primavera P6, Dave has the ability to show the Caltrans Team**



specific impacts to the Project Milestones if major design features are changed, to forecast and provide trend analysis and what-if scenarios on multiple project options.

Our network capabilities of P6 allow our team to more accurately model the entire scope of work, and capture construction sequencing and work item dependencies. Specific attention will be placed on such items as the long lead materials required to be purchased for the doubletrack work and the associated absolute work windows. These critical path construction items will be established in the design phase, so that proper planning and project sequencing is considered in order to accommodate these constraints. During construction when changes occur, Dave will analyze the impact of those changes and examine alternate strategies to complete the project in a timely manner. Our systems ensure accountability and transparency not only with ourselves, but also with the entire Project Team, stakeholders and third parties.

- **Outcomes/Deliverables:**

Primavera P6 Project Schedules, Sequencing Recommendations, Construction Phasing Plan, Updated Risk Register

7. Potential Early Construction



One of the unique elements of CMGC delivery is the ability for Caltrans to leverage early contractor involvement and develop early work packages. The potential benefits of early packages include optimization (shortening) of the overall schedule and generating field information that may affect final design of the project. Understanding the field conditions early can lead to cost savings, schedule savings and a reduction of project risk. Scope, cost, schedule and risk mitigation benefits of early packages will be evaluated by the project team during

preconstruction services. Areas of early work packages to consider will include: soundwalls, bioswales and ponds, utility potholing, and utility relocation. Caltrans can also consider more aggressive schedule enhancement options. These early construction packages would include traffic handling switches or bridge sub-structure installation.

- **Outcomes/Deliverable:**

Construction Package for Early Work (Plans/Specifications/Estimate), Schedule Improvement, Field Data for Design Development, Reduction of Project Risk

8. Scope and Price Establishment

Alber Youssef will lead the Granite | Sundt estimating team by creating and updating a production based cost model compatible with the Caltrans Engineer’s estimate format. It will be based on the baseline production rate assumptions, current schedule, escalations, mark-ups, profit and contingencies established in the initial “Approach to Cost” meeting with the Department and Independent Cost Estimator (ICE). Our Team has access to our cost histories and project reports not only for local areas, and in California, but also those covered by our national footprint. Alber will use our HCSS estimating systems and processes to provide a cost book as Opinions of Probable Construction Cost (OPCC) are developed on milestone design deliverables.



Following submittal of the final cost estimate, we will begin open book negotiations with a goal of reaching a GMP within 30 days. **We have reached an acceptable GMP on every one of our CMGC projects.** Alber, Project Manager, David Niese and Preconstruction Manager, Mike Berry will start negotiating the final GMP after all methods of performing the work under the Subcontracting Plan have been discussed, the DBE/UDBE Subcontracting Plan is reviewed and approved, and all alternative value engineering methods based upon the 90% design have been incorporated. This open book negotiation will entail sharing information provided by both the contractor and the Department, including all supporting background information, unit prices, quantities, scope and detailed pricing data.

- **Outcomes/Deliverables:**

Cost estimates at each Milestone, summary of quantities, narrative of estimate assumptions, narrative of estimate mark-ups and escalations, DBE/UDBE Subcontracting Plan, and GMP.

Transition to Construction Services

Our fully committed key personnel will provide for a smooth transition from preconstruction to construction. **This continuity of staff maintains momentum and continuity in scopes of work, stakeholder agreements, construction means and methods, schedule, safety, quality, cost, and risk mitigation.** Dave and the team will continue the collaborative effort and strong partnership developed during preconstruction into the construction phase.

Integrated Team Development

The Project’s diverse scope and multiple stakeholders requires a sophisticated and experienced CMGC with proven methods and a dynamic organizational structure that ensures integration and collaboration during preconstruction as well as structure and discipline during construction. With our **“Project First”** mentality the Granite | Sundt team will align with the Department’s team to encourage communication, mutual respect, and shared accountability.

This integration with the Caltrans Team will begin immediately upon Notice to Proceed (NTP) and will create a cohesive organization based on trust and transparency in order to deliver a successful project.

Exhibit 6.6 illustrates how Granite | Sundt plans to effectively integrate with the Caltrans Team.

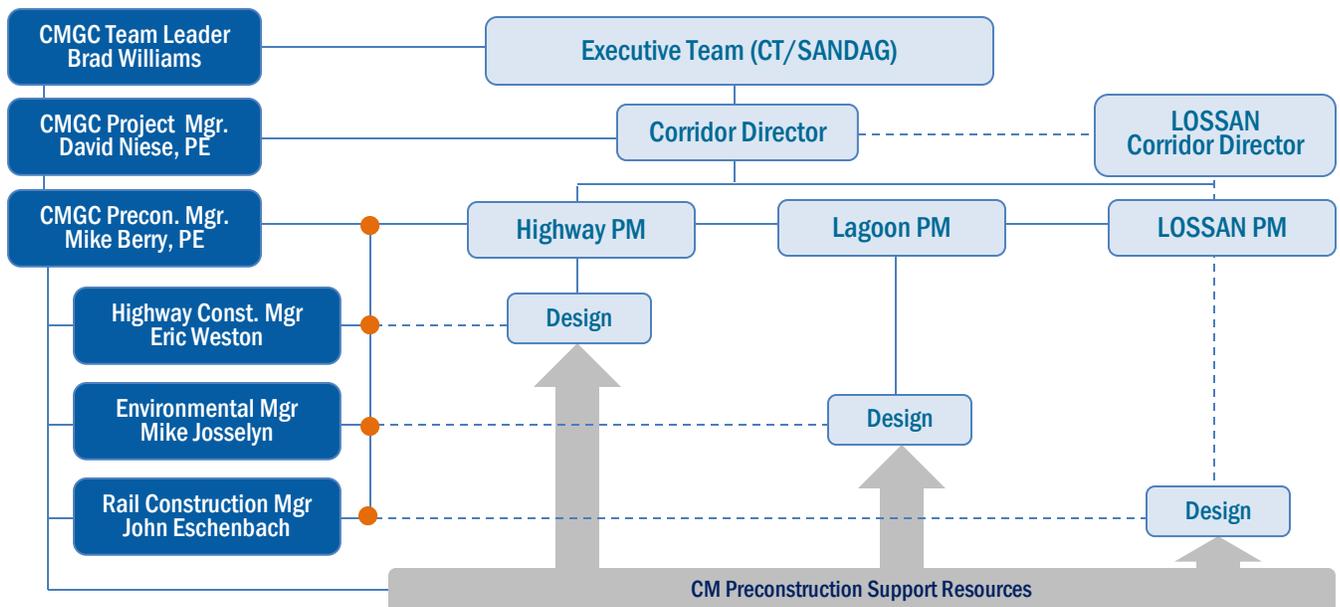
Managing the Interrelated Project Components

The Granite | Sundt team is experienced with complex projects that have multiple scopes, designers and stakeholders. Caltrans will be administering the overall contract, and they have placed a high priority on maximizing the I-5 scope of work within a fixed budget. SANDAG has a well-defined scope for the LOSSAN Corridor doubletrack work and will be seeking competitive pricing with, safety, quality and service in mind. The San Elijo Lagoon Conservancy and Batiquitos Lagoon Foundation along with Caltrans’ team of biologists will be particularly concerned with the environmental constraints related to the bridge improvements and how the construction activity relates to the proposed Lagoon Restoration and mitigation measures. All of these different scopes of work have different design teams and stakeholders associated with them. We considered the three major components of the project; Highway, Rail and Lagoon, and the specific details of the Kehoe Act when to assembling our team members. **Our Key Personnel were specifically selected based on technical qualifications and CMGC project experience to provide expert professional services in partnership with the Department and all other stakeholders.**



Exhibit 6.6 Integrating the CMGC Team

COLLABORATION . COMMUNICATION . RESULTS



C. CMGC ORGANIZATION ALIGNED WITH THE PROJECT GOALS

Granite|Sundt’s CMGC expertise, organization, processes and best practices combined with our knowledge of the corridor and Caltrans standards and practices offers the Department the right combination of experience and confidence to

successfully deliver the project. Exhibit 6.7 describes how we will use these assets in alignment with your organization and the specific I-5 NCC Phase 1 Project goals.

Approach to Meeting Project Goals

Exhibit 6.7 Granite|Sundt’s Alignment with Project Goals



Project Goal	Granite Sundt Approach
Safety:	<ul style="list-style-type: none"> • Safety Compliance Officer will interface regularly with our CMGC Team during preconstruction to Incorporate safety into the Project during design phase • Train Subcontractors on safety requirements of the Project • Obtain required safety certifications (example: FRA CFR 49 Roadway Workers Protection Training) • Provide clear construction zone messaging for travelling public
Mobility:	<ul style="list-style-type: none"> • Remain sensitive to the community needs and consider mobility needs in development of phasing plan • Regularly meet with stakeholders to discuss their needs and provide updates on construction plan • Leverage the strong relationships our Rail Project Construction Manager, John Eschenbach has with affected rail entities to ensure on-going communication and collaboration
Quality:	<ul style="list-style-type: none"> • Implement our Quality Plan that conforms to ISO 9001:2008 • Implement our four phase quality process (Plan, Execute, Check, Document) • Preconstruction Manager champions the quality process during preconstruction • Contractor quality control integrated with Caltrans quality assurance program during construction
Environmental:	<ul style="list-style-type: none"> • Develop and implement an Environmental Permit Management Plan that identifies requirements • Leverage our Environmental/Permit Manager, Mike Josselyn’s expertise and relationships with stakeholder Agencies • Use innovative, less impactful construction techniques (such as shallow dredging)
Customer/ Stakeholder Satisfaction:	<ul style="list-style-type: none"> • Integrate CMGC personnel in all disciplines through task force interaction and constructability reviews • Use 3D Modeling for concept development, scenario planning and public involvement • Tap into our past experience databases for similar alternative technical concepts • Use expertise of CMGC advisor, Ken Kubacki and others within our respective companies • Assign experts in Project Management, Highway, Rail and Environmental Permitting and allow them to work together with design team to achieve results • Transition all the key personnel to the construction phase to maintain continuity • Develop Early Construction Work Packages such as the Soundwalls • Coordinate early with utilities and other third party stakeholders
Budget:	<ul style="list-style-type: none"> • Utilize GMP’s developed during the preconstruction phase to produce detailed cost accounting systems for accurate progress and mutually agreed project allowance (if any) tracking • Implement Parametric Estimating to support decisions in the best interests of the Project • Use proven CMGC systems and tools such as the Design/Budget/Schedule Evolution Log to track design alternatives considering cost and schedule impacts
DBE/UDBE:	<ul style="list-style-type: none"> • Identify DBE/UDBE Subcontracting opportunities • Regularly attend and conduct outreach events to encourage participation • Maintain a project-specific email address and DropBox for DBE/UDBE Outreach • Advertise in local trade and focus publications • Sends out Notices Inviting Bids (NIB) to DBE/UDBE firms located on the California Unified Certification Program’s(CUCP) website as well as to firms we have experience working with on past projects

Approach to Ensure Project Scope is Maximized



Granite | Sundt’s CMGC and Alternative Delivery experience includes implementing over \$200M in innovations on recent projects, providing our previous Owners the capability to maximize their project scope; an example from the Mountain View Corridor CMGC Project is described below in Exhibit 6.8. We understand Caltrans’ priorities in making sure the improvements within the I-5 corridor are designed and constructed efficiently, with minimal impacts to the environment and eliminating the potential for “throw-away” work and interim conditions. **Design Once and Construct the Ultimate Condition with a phased sequence that provides the best features that are functional and aesthetically pleasing.**

3D Modeling

Our approach to providing maximum value begins with generating reliable cost, schedule and visual information in the form of 3D Modeling. Our 3D model can be integrated with our estimating software and is known as parametric estimating. Parametric Estimating ties the 3D animation to cost data that can be adjusted on the fly, providing owners “real-time” information in order to make big picture decisions. These decisions create efficiencies in the design phase, optimizing Caltrans’ time and level of effort, reducing the amount of design phases, re-design, and potentially eliminating unnecessary design information that does not need to be developed in order for our team to build the project.

3D modeling is a high-tech replacement for construction drawings on paper. Utilized in the vertical building market for years, Granite | Sundt has found advantages incorporating this same technology for the right components on transportation or “linear” projects. **Using multi-dimensional computer models, our project teams have been able to identify and resolve construction issues in the design phase instead of during construction (in the conference room in lieu of the field).**

In the Preconstruction Phase of the I-5 NCC Phase 1 Project, our team has the ability to develop a model for the entire scope of work; highway, rail and lagoon. This integrated set of design models will be an essential tool for our constructability reviews, developing staging plans and illustrating the sequence of work with animation tied to durations. For example, Erik Cylwik, Parametric Modeler will develop a model, and work with Mike Josselyn, Environmental Permit Manager to capture all of the in water work constraints associated with the San Elijo Lagoon Bridge and Batiquitos Lagoon Bridge construction. On the \$215M CMGC Sellwood Bridge project a similar 3D Model was produced to validated the sequence of events to ensure environmental compliance in the construction phase.

Parametric Estimating



Our team’s ability to maximize the value and quality of the I-5 NCC Phase 1 Project is highest during the earliest stages of planning and design. To assist owners and engineers in this process, we utilize 3D modeling tied to our HCSS (HeavyBid) estimating software creating a parametric estimating program. As the Caltrans Team develops alternative conceptual designs, we provide real-time costs for each scenario, along with an analysis for various right-of-way requirements and phasing sequences.

Exhibit 6.8 Mountain View Corridor CMGC, Utah



\$31M = SEVEN ADDITIONAL MILES

The largest and most complex CMGC Project ever undertaken by UDOT, \$246M Mountain View Corridor consisted of a 15-mile, new highway including earthwork, utilities, walls, 10 new bridges, reconstruction of local cross streets and an ITS system. Granite provided alternate construction concepts as well as constructability reviews to reduce project costs while increasing project scope. Elements evaluated included: use of precast partial depth bridge deck panels, eliminate soundwalls through alignment optimization, use of performance grade liquid asphalt, increasing earthwork scope to reduce structure scope, substructure alternatives and storm drain materials. Overall, the project documented savings of over \$31 million which allowed UDOT to build seven additional miles.





Through the use of 3D modeling and parametric estimating, the team on the Caltrans SR99 Realignment CMGC has identified major constructability and program savings opportunities. Its use has facilitated collaboration between design and construction which has to date has identified over \$10.2M in design and scope refinements that are currently being incorporated into the project. It is currently estimated this process will yield an additional \$4-\$5M in scope reductions and projected schedule saving opportunities of over a 100 days. These additional opportunities are currently being reviewed for viability in the DART process. The models have proven critical in the production of estimating deliverables early in the design process. They are also currently being refined for presentation of concepts to the City of Fresno and other outside organizations.

Parametric estimating will provide the I-5 NCC Project Team a visual representation of the design alternatives being considered so that the best decisions can be made to benefit the project over its lifetime.

Specific to this Project, we know that a potential early work item being considered is the soundwalls. The Granite | Sundt Team **has already developed a model comparison utilizing a typical engineered masonry soundwall versus a soundwall with a view panel**, shown on Exhibit 6.9 on the following page.

Approach to Controlling Budget and Project Schedule

A critical element of success is the ability to deliver the project meeting both the construction budget and Project schedule. Granite/Sundt’s proven approach to achieving this goal begins immediately upon award, continues through preconstruction, and throughout construction until final acceptance. Starting at award, our approach includes utilizing our Preconstruction Services 8 step approach (as described in Section 6.B). During the construction phase, the Granite | Sundt Team ensures meeting the Project budget and schedule by utilizing several components including:

- GMP Budgets, developed in Item 8
- Risk Register, developed in Item 5
- Project CPM Schedule, developed in Item 6

Proactive Approach to Budgeting

Utilizing GMP’s developed during the preconstruction phase, Granite | Sundt will produce detailed cost accounting systems for accurate progress and mutually agreed project allowance (if any) tracking. These accounting systems allow the construction team to track cost, quantities, and progress on a daily, weekly, and monthly basis. The ability to have detailed accounting systems provides the Project team with important information such as early indicators of potential negative impacts.

Early detection provides the team with the ability to review and make adjustments, many times mitigating issues before they happen thus controlling the project budget.



The Risk Register is another valuable tool in the construction phase, and is a regular agenda item discussed during our weekly meetings and workshops. Identified risks will continue to be mitigated through disciplined commitment while opportunities will continue to be maximized through brainstorming sessions and planning. Our CMGC Team will use these tools to manage the GMP’s individually and collectively resulting in a successful project.

Proactive Approach to Scheduling

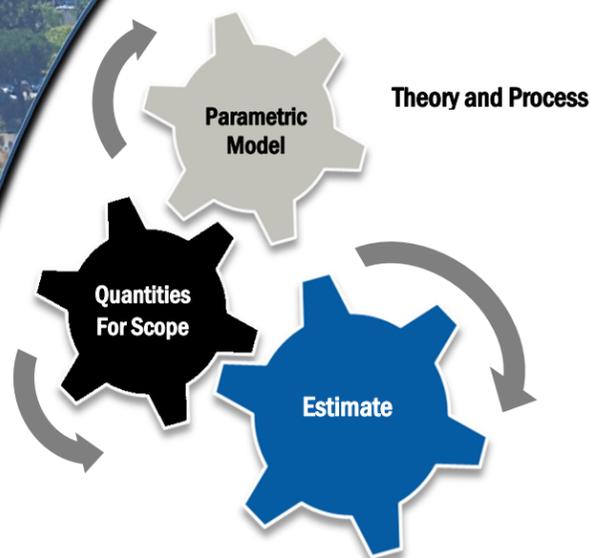
The Project team will continue to proactively use the CPM schedule utilizing its ability to track such items as critical path, long-lead items, and ROW acquisition as developed in the preconstruction phase (discussed in Section 6.B). **The Project schedule is a powerful tool that not only indicates actual progress relative to planned, but also provides the project team the ability to fully analyze potential opportunities as they arise including alternative sequencing, increased productions, and early delivery of materials.**

The CPM schedule will be updated and thoroughly analyzed on a monthly basis. Analysis includes identifying schedule gains and slippages, understanding the reasons for those identified changes, and investigating modifications, as necessary, to either improve or maintain the critical path. Our monthly reviews will be interactive with Caltrans and the entire Project team to ensure the success of the NCC Phase 1 Project is maximized.

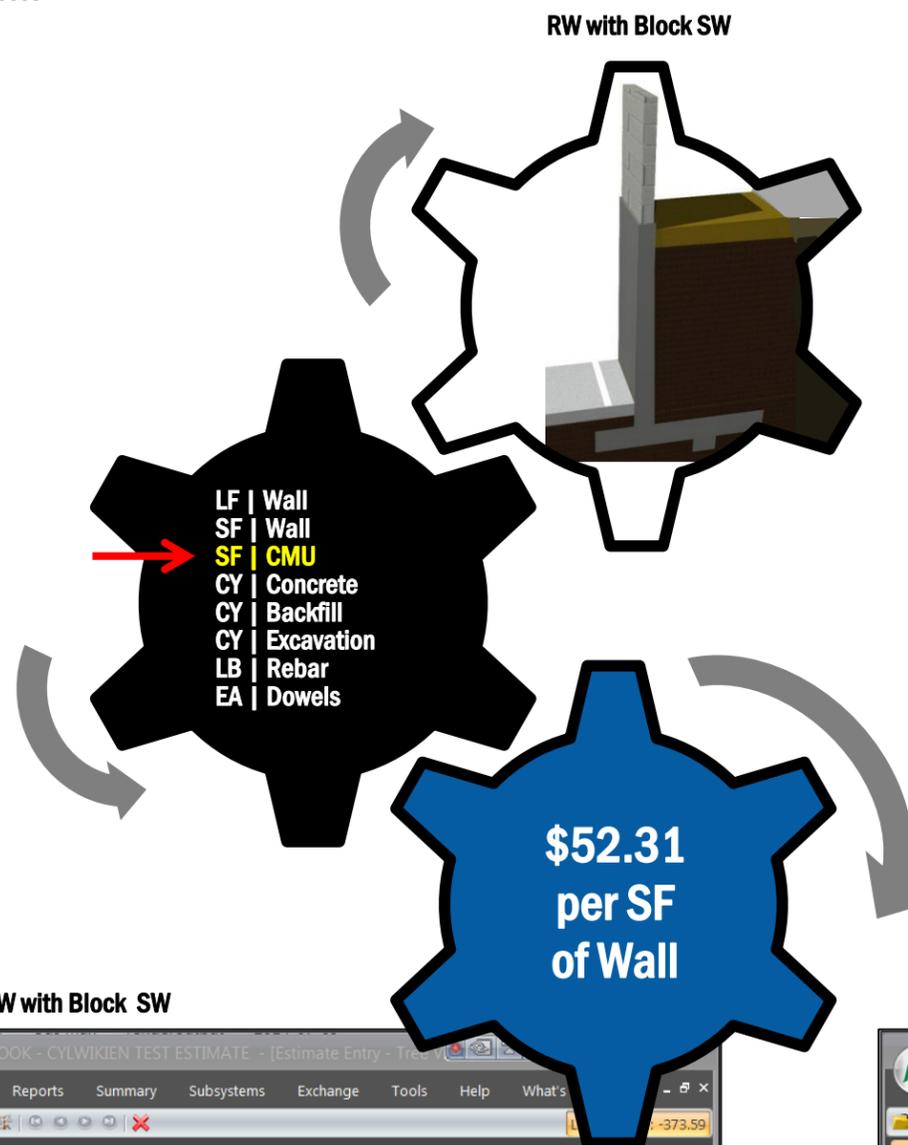
Rolling three-week look ahead schedules generated from the CPM, will provide detailed information for the project team to use to ensure progress is met on all elements of the project. In cases where even further detailed planning/scheduling is required, daily and hourly schedules will be utilized.

CMGC BEST PRACTICE | PARAMETRIC ESTIMATING

Exhibit 6.9



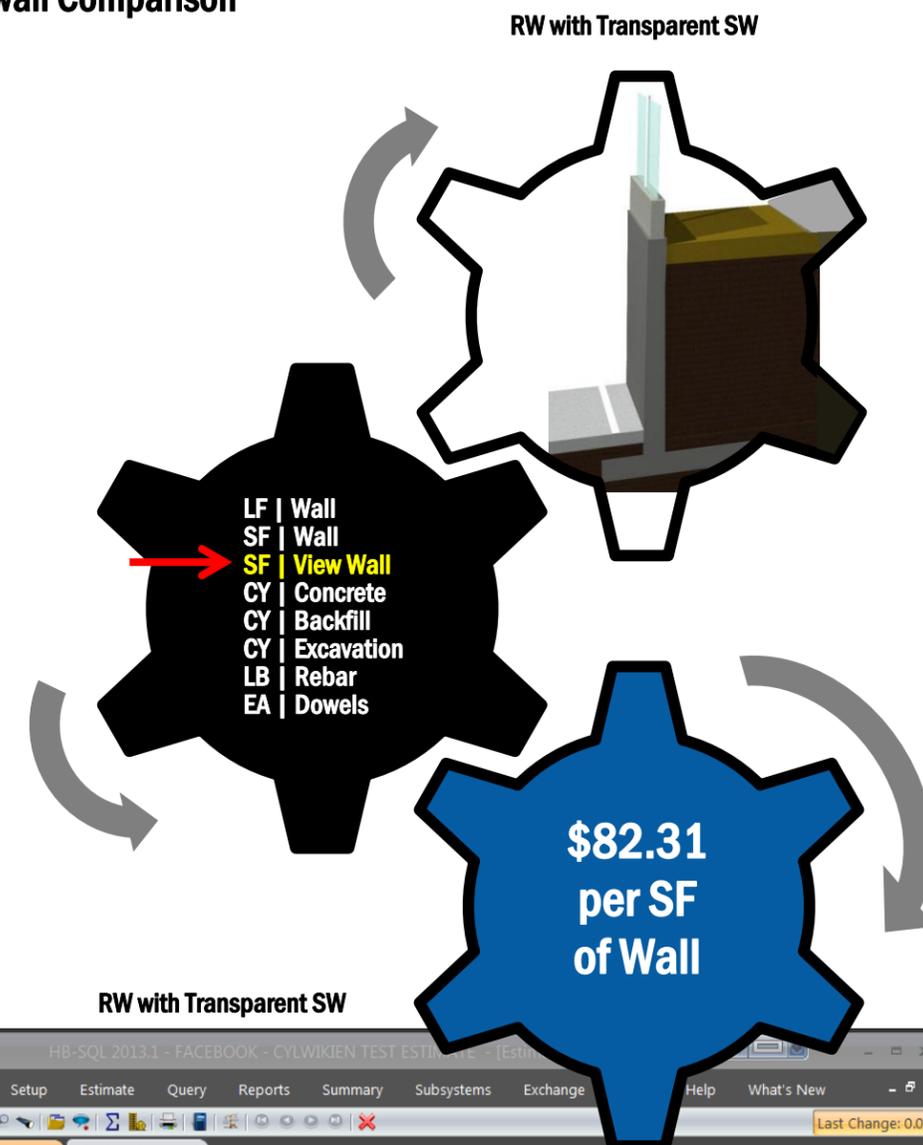
As the NCC Phase 1 Project Team develops alternative conceptual designs, we provide real-time costs for each scenario, along with an analysis for various right-of-way requirements and phasing sequences



RW with Block SW

Biditem Information			
Biditem	Description	Takeoff Quantity	Unit Cost
23	CMU Block SW	50,000	\$52.312
Total Cost: \$2,615.59			

Application and Results Soundwall Comparison



RW with Transparent SW

Biditem Information			
Biditem	Description	Takeoff Quantity	Unit Cost
11	Transparent SW	50,000	\$82.310
Total Cost: \$4,115.49			



VALUE: Granite | Sundt can maximize the value and quality of the I-5 NCC Phase 1 Project during the earliest stages of planning and design by identifying the cost implications of every design decision.



Communication/Coordination and Quality Assurance Protocols

Working as true partners in the process, our Key Personnel will collaborate with our design partners through “over the shoulder reviews” and interdisciplinary working/review meetings to assist the Caltrans Team and help ensure the proposed design is constructible, environmentally sound and addresses all of the commitments set forth in the Public Works Plan that the California Coastal Commission has reviewed and accepted.



This will maximize Caltrans’ design budget by minimizing the amount of design.

Specific Communication/ Coordination protocols include:

Task Force Meetings

In over 15 years of alternative procurement project we have found that the collaboration between design and construction to be one of the biggest factors in a projects success. Our Key Personnel and other preconstruction staff will communicate and coordinate with the Caltrans Team by organizing or attending existing Discipline-Based Task Force meetings. These meetings are the primary avenue for providing constructability, cost and schedule input to specific scope. This is also the time for the team to identify project risk and opportunity. These meetings serve as brainstorming sessions that analyze and guide the desired design approach.

Weekly Design Check In Meetings

Additionally, we would propose holding weekly discipline specific Design Status or Check-In Meeting. We have found that using this collaborative process constructability, price and schedule optimization can be addressed in real time throughout the design. This process limits rework, provides a continuously improving design and eliminates surprises at design milestone reviews.

This process has been effective most recently on the \$140M SE Connector CMGC in Reno, Nevada and the SR99 Realignment CMGC project in Fresno. **Specifically, on the SR99 project we have found that fostering this type of collaboration is especially effective in solving complex project challenges through a holistic approach.** Our team (Design, Program Management, Right of Way, Construction, and Maintenance) is working together to manage not only the construction costs, but the whole program cost, to provide the best value for Caltrans.

Design/Budget/Schedule Evolution Log

Our team utilizes a specific tool to help communicate, coordinate and manage information from multiple designers and stakeholders called a Design/Budget/Schedule Evolution Log (DBSE Log). With multiple schedules, budgets and stakeholders, it can be easy to lose track of specific design intent, direction and funding source constraints. This tool has proven to successfully track design decisions that have changed and/or altered the design evolution providing a means to identify individual impacts to the overall budget and/or schedule. David Niese and Mike Berry will use this tool to manage the evolution of design decisions and provide the relative cost and schedule information so that Caltrans can measure the overall effect to the I-5 NCC Phase 1 Project.



The DBSE Log has been successfully used to track design changes, record the positive and negative impacts to the budget and schedule so the Team can manage the information and Caltrans can make ultimate decisions during final design. The log helps guide big picture decisions that may impact the overall goals of the project. This tool will be maintained from preconstruction through construction. It has proven to be a valuable point of reference for construction team members when questions on design decisions, specific features, and/or construction milestones come up during the Construction Phase. **The log also memorializes the Teams’ efforts to provide the best possible solutions for the project stakeholders.**

Decision Analysis and Resolution Team (DART)

Our proven CMGC approach includes forming a Decision Analysis and Resolution Team (DART) to review all major design decisions and project approaches, as well as prioritize items based on



their Risk and Opportunity assessments. This information, reviewed at the Caltrans Risk Assessment Meetings and at the Project Risk Workshops, enables the team to understand the risks on the project. Granite | Sundt will develop a rough order of magnitude cost to apply to each item to understand the cost impact and document it on our DART Form. The rating system not only captures and prioritizes risk items that have potential to impact cost or schedule but also identifies those items that have potential to reduce cost or develop schedule flexibility. **The focus is on minimizing potential impacts and maximizing potential gains for the identified items.**



Quality Assurance Protocols



Granite | Sundt’s Quality Management System conforms to ISO 9001:2008 which is an internationally recognized state-of-the-art standard for Quality Management. These system protocols, originally developed for classic construction phase operations, are easily adapted to the earlier phases of project development. For example, we will help create balanced solutions to complex issues using a four-phase quality process:

1. **Plan:** Listen and learn about the goals and objectives of each challenge, paying specific attention to the perspectives of agencies, regulators, designers, and other contractors.
2. **Execute:** Develop sequencing ideas and design suggestions, complete with means and methods plans and cost/schedule data. Integrate third party tasks into the master project schedule.
3. **Check:** Receive feedback from all stakeholders, brainstorm adjustments, and refine the solutions for incorporation into the construction documents.
4. **Document:** Maintain the DBSE Log, DART Matrix, Cost Model, and Master Schedule.

Planning

Preconstruction Manager Role. We have included Mike Berry, Preconstruction Services Manager, as one of our four added key personnel positions. Mike will support our Project Manager, David Niese, as we optimize design and construction, reduce risk, and add value while the project design is developed. Together, they will execute our 8-step approach to preconstruction services as described in Section 3C. This added position benefits Caltrans and the project by allowing David to focus carefully on the complex issues surrounding the highway, rail, and lagoon challenges. Mike will coordinate the details of the designs, estimates, schedule elements, phasing plans, and means/methods.

Execution

Schedule Integration. In addition to providing traditional preconstruction services of design reviews, cost scenarios, and constructability input, we will also incorporate all of the items required by all parties into our master schedule. This step allows us to track critical action items, making sure that decisions are made promptly and everyone has the right information at the right time to perform their assignments.

Checking

Refine Solutions. A critical component to our protocol system is the review and refinement of our preconstruction input. Our team embraces the iterative process to generate the best solutions for the project. We will actively participate in the resolution meetings and provide follow-up data. In addition, we have the ability to perform independent analyses for critical items.

Documentation

Plan Development. In addition to the tracking logs and matrices described in the previous section, we will memorialize decisions for the design, safety, quality, and environmental aspects of the project. These documents will serve as the conduit to share project-specific details with all personnel assigned to the project.

D. RISK MANAGEMENT



A fundamental component of the CMGC process is the opportunity for the owner/designer and construction manager to identify and effectively manage potential project risks together during design. This process eliminates risks and implements cost-effective mitigation plans during pre-construction or construction. Granite | Sundt’s experience on CMGC and other Alternative delivery projects has resulted in a robust “toolbox” of proven systems and processes that proactively manage risk, including:

- Risk/Opportunity Sharing
- Comprehensive Risk Register
- Collaborative Risk Workshops
- Schedule Analysis

Risk/Opportunity Sharing

Our risk sharing philosophy generally follows this principle: **Risk should be owned by the party best suited to manage the risk.** This is in concert with the State’s approach to managing risk. For example, Caltrans’ contracts generally have liquid asphalt price escalation clauses that allow for fluctuations in liquid asphalt pricing. On large, multi-year projects it can be impossible to lock in the price of liquid asphalt so a risk/opportunity is created based on the likelihood of prices increasing or decreasing. Caltrans generally assumes this risk/opportunity and ultimately pays the fair market value for the product.

Likewise, quantity and production risk are generally owned by the contractor. With the CMGC process, plans and specifications are advanced to a point where the contractor can perform a detailed takeoff and prepare a cost certain estimate for the work. Schedule risk generally follows quantity and production risk. When quantities and scope are known, the contractor should have responsibility for schedule risk.

There are many items where some percentage of shared risk should be considered. No black and white rule exists and each situation should be evaluated independently and fairly. On the I-5 NCC Phase 1 Project, some of these items could include cost and schedule risk of: third-party approvals, discovery of contaminated material, utility work performed by third-parties, and Right-of-Way acquisition impacts. The creative use of contingencies, allowances, not-to-exceed amounts, schedule float ownership, and force account work can produce a fair and balanced approach to many risk items resulting in cost certainty for Caltrans.

Comprehensive Risk Register

R Risks and opportunities are two items that often get overlooked until it is too late. Every risk is an opportunity, if we manage that risk, see Exhibit 6.10 below. To ensure we do not miss these opportunities, a Risk Register will be developed and maintained throughout preconstruction and construction. All Team members will have the opportunity to help identify potential risks and decide which ones will become project risks. Any risk that can affect project cost or schedule should be carried as a project risk.

All project risks will be evaluated for probability and severity, and will be cost quantified so that they can be scheduled for mitigation. As risks are developed, a specific Team member will be asked to champion that risk to insure efficient mitigation of that risk. The potential cost impacts on the Risk Register will remain separated from the direct cost of the work, maintaining transparency of individual bid items during preconstruction cost reviews.

We will utilize our Parametric Estimating and Decision Analysis and Resolution Team (DART) to help quantify and mitigate project risks.

The Risk Register is a dynamic document that will be reviewed regularly during our Task Force and weekly management meetings. As risks are mitigated, the risks will be retired and any associated contingency budgets removed.

A copy of our initial Project Risk Register describing the top risks of the Project is shown on Exhibit 6.11 on the following pages.

Collaborative Risk Workshops

R In collaboration with Caltrans, Granite | Sundt will hold several “Risk Workshops” at key milestones throughout pre-construction and construction. These Risk Workshops will be used to continuously identify, track and mitigate risks. While these risks are routinely discussed during our Design Task Force and weekly management meetings, the specific Risk Workshops will focus solely on achieving an understanding of and consensus on risk items. These workshops will be used as brainstorming sessions to help develop mitigation strategies with an ultimate goal of maximizing potential gains for the identified items.

Schedule Analysis

R As described earlier in Section C: Approach to Controlling Schedule and Budget on page 6-13, Granite | Sundt utilizes the Critical Path Method (CPM) of scheduling not only to establish a Project Baseline Schedule, but also to track periodic performance and forecast remaining work as the project progresses. Our experience has proven that a comprehensive cost loaded, resource loaded, schedule is invaluable to fully understand the impacts of project risks. Key items such as ROW acquisition items, hazardous material investigation, geotechnical investigation, permitting, and work performed or coordinated with utilities/third parties on the CPM project schedule assist the Project team in early identification of conflicts that could pose risk to Project.

Exhibit 6.10 InterCounty Connector Design-Build, Maryland

MAINTAINING ACCESS



The staged bridge construction on the InterCounty Connector was challenging due to the requirements of maintaining traffic on major thoroughfares, working over heavily-traveled roadways and building in extremely sensitive neighborhoods. Temporary roads/walkways were constructed to provide access for pedestrian and vehicle traffic through the construction area. Over 100 community meetings were held to update the public on general construction planning and traffic impacts.





RISK REGISTER | ALL RISKS ARE OPPORTUNITIES WHEN THEY ARE MANAGED

Exhibit 6.11

No.	Type							Probability			Severity			Description	Possible Impact	Potential Solutions	\$ Value	Action (Next Step)	Action By	Action Due Date	
	Construction	Design	ROW	Environmental	Stakeholder	Highway	Rail	Lagoon	Low	Medium	High	Low	Medium								High
1	√	√			√	●	●								Current Draft Staging of I-5 San Elijo Lagoon Bridge	Current draft staging will require numerous lane closures when constructing the center bridge portions for access and delivery of material. Thus resulting in reduced level of services to traveling public (Public Convenience) and increased risks to traveling public (Public Safety). The resulting increase in night work will decrease construction efficiency and will increase light pollution to the lagoon.	Sequence: 1) Construct new southbound SEL bridge (portion). 2) Switch southbound traffic to this portion of new southbound SEL bridge. 3) Switch northbound traffic to existing southbound SEL bridge. 4) Construct new northbound SEL bridge, DAR UC1 bridge, DAR UC2 bridge, and DAR walls (portion). 5) Switch northbound traffic to new northbound bridge. 6) Construct remaining southbound SEL Bridge and DAR walls. Use previously constructed southbound bridge (center portion) for access and delivery of materials. 7) Place traffic in final alignment.				
2	√	√			√	●	●								Staging of I-5 Batiqitos Lagoon Bridge	If staging does not account for construction access the resulting increase in lane closures will reduced level of services to traveling public and will increase costs.	Use similar sequence as proposed San Elijo Lagoon Bridge.				
3	√			√	√										Lagoon Flooding for Dredging.	The artificially raised water levels caused by lagoon flooding will increase habitat loss during construction thereby increasing restoration scope an cost	CM will use shallow draft dredge equipment (i.e. can operate in 2.5 feet of water). Use "Aquamog" for hard to reach areas. Reduced flood (inundation) levels will reduce the amount of replanting and recovery time. It will also reduced pumping costs to maintain water levels, and will reduced dike installation, maintenance, and removal costs. Furthermore, the overall recovery time of the lagoon will be substantially reduced.				
4	√	√			√										Maintenance of Traffic (MOT)	Improper planning to handle expected traffic volumes will have negative impacts to Traveling Public (Public Safety & Convenience) and will result in a negative public image.	CM's MOT Manager will interact with each design group to increase awareness of, and resolve MOT issues. CM's MOT Manager will develop, prioritize, and maintain MOT opportunities/risks in the Project's Opportunity/Risk Register. CM's MOT Manager will assist in the dissemination of accurate and timely information to the public.				
5		√					●								Existing configuration of La Costa Ave OP does not provide sufficient space for additional track with acceptable clearances	Additional scope for Phase I of NCC (i.e. additional bridge replacement in first phase).	Minimize bridge design and construction costs through early identification of bridge and local road requirements. This will challenge the team to come up with savings elsewhere in the project to offset this increased cost.				
6		√					●								New cross-over at CP Ponto.	New cross-over at CP Ponto, MP 234.5, will require installation of No. 24 turnout.	New universal No. 24 cross-overs were recently installed at CP Farr, MP 231.6 - recommend removing CP Ponto and double track CP Ponto area resulting in savings to the project.				
7	√						●								The length of time and number of Absolute Work Windows may be insufficient to construct certain rail aspects.	Delays to construction and possible delays and safety issues with trains.	Identify potential problem areas during design. Develop detailed work plans to ensure the planned work can be completed within the specified window. Identify possibility for Work Blitz with adjacent projects.				
8			√		√										Right-of-Way Acquisition	Increased ROW costs. Negative Public Image. Delays to the project.	CM will promote early identification of preferred/required project alignment and will set-up brainstorming sessions to help identify and resolve ROW issues. CM will develop, prioritize, and maintain ROW opportunities/risks in the Project's Opportunity/Risk Register. CM will work with ROW Agents to ensure they have accurate and timely information for their tasks. Key ROW tasks will be tracked in the Project CPM Schedule.				
9		√			√		●								Possible conflict with 12-inch SoCal gas line in new fill of San Elijo Lagoon Double Track.	Construction of new fill for SEL Double Track may cause conflicts when keying in new fill. Also settlement from new fill may exceed that allowable by the gas line. Both issues may require the relocation of the gas line.	Pothole/Survey existing 12-inch gas line and create parametric model of mitigation options (i.e. relocate, protect in place, and/or otherwise design around).				
10	√			√	√		●								Environmental restrictions/ requirements are not met. Specifically San Elijo Lagoon Restoration (SELR) goals not met.	Possible permit violations or negative impacts to the environment and/or contractor fails to properly control his work. Plan and specifications for SELR do not fully address the needs and restrictions of the lagoon.	CM's Environmental Manager will coordinate with all lagoon stake holders to ensure goals and expectations for the lagoon are addressed. CM's Environmental Manager will review all required lagoon permits and ensure accurate and timely information is provided for their approval. Work crews will be environmentally trained and CM's Environmental Manager will review and approve work plans prior to the start of work.				
11	√			√			●								Sand quality from lagoon dredging will not meet requirements for beach replenishment.	Increased alternative disposal requirements. Possible delays if not properly planned.	Perform borings/take samples prior to dredging to allow proper planning for material disposal. Create alternatives in the plan to allow for unexpected changes in material quality.				



RISK REGISTER | ALL RISKS ARE OPPORTUNITIES WHEN THEY ARE MANAGED

Exhibit 6.11

No.	Type						Probability			Severity			Description	Possible Impact	Potential Solutions	\$ Value	Action (Next Step)	Action By	Action Due Date		
	Construction	Design	ROW	Environmental	Stakeholder	Highway	Rail	Lagoon	Low	Medium	High	Low								Medium	High
12	√			√	√	●	●	●							Minimizing disturbance when constructing three major components (Highway, Rail & Lagoon) within the San Elijo Lagoon Region	Lack of coordination could cause harm to the lagoon habitat if disturbances are repeated or prolonged.	Coordinate all three scopes of work in a sequence that is compliant with the Federal State and Local permits. Design and Construct permanent access points that can be utilized for construction staging and access. These access points provide additional benefit for the Lagoon Conservancy and future maintenance needs.				
13	√			√		●	●								Minimize impacts to NCTD operations when constructing new bridge at MP 240.4	Poorly planned staging of rail bridge construction could cause delays and even safety concerns to train service on the existing line.	Develop plan to construct new bridge for main track 2 while maintaining proper safety clearances to existing tracks, shoofly rail traffic to new bridge, demo and reconstruct new bridge for main track 1.				
14	√			√		●									Removal of CP Craven, MP 241.1	Absolute Work Window(AWW) required to remove No. 24 turnout	Maximize the amount of work performed during the approved AWW and coordinate with NCTD to utilize AWW's previously planned on other projects when possible. This minimizes the number of AWW's within the corridor and reduces the impact to Passenger and Freight Rail service.				
15	√														Multiple Design Phases and GMP's	As design develops in each project unit/portion, costs estimates are revised. If problems in later units/portions are not discovered early, risks to the overall budget may not be identified in time to mitigate any increases. Untimely cost increases may be detrimental to the overall project.	CM will utilize Parametric Estimate model to develop a cost model that includes all project "features" (4 phases) including the conditional scope. The overall project budget will be validated at the end of each individual Design Phase.				
16	√	√				●									Maintain falsework clearance at Manchester Blvd.	Possible clearance issues if soffit level is lowered on new bridge or if deep falsework beams are necessary.	Maintain current soffit level on new bridge and use maximum 24-inch deep falsework beams. An alternative would be to use precast bridge beams along with pier table type construction to maintain parabolic shape of superstructure.				
17	√	√		√		●									New McKinnon Ave OC tie-in at new Encinitas Community Park.	New bridge will require modification of newly built park entrance resulting in increased local roads costs and possible ROW costs.	Optimize bridge alignment to minimize rework in the newly constructed park. Involve City early in discussions and keep them informed of progress. Work with community to choose a bridge location that best serves all parties.				
18				√		●									MacKinnon Ave Overcrossing Maintain pedestrian access.	Detour for pedestrian access is excessive, especially for the nearby Harris Elementary School.	Maintain pedestrian access on existing bridge by phasing bridge construction to build new bridge prior to full demolition of existing structure. Utilize existing structure and temporary "Baily-Bridge" to maintain access while new structure is built.				
19	√	√	√	√											Sound Wall Construction on Private Property (Sheets L-3,4,7,10,)	Public backlash may create difficulties in reaching ROW agreements with property owners.	Use public outreach to listen to and provide response to public concerns. Limit disturbance by using small equipment and modifying work hours.				
20	√	√		√		●	●								Suspended pedestrian bridge at lagoons.	Construction of suspended pedestrian bridges over the lagoon will require lane closure during construction and may impact the lagoon habitat.	Construct wider highway bridges to accommodate new pedestrian access and use view barriers and fencing in accordance with the aesthetic design guidelines.				
21		√				●									Existing configuration of Requeza Street OC may not provide sufficient space for additional HOV lanes with acceptable shoulder widths.	Additional scope for Phase I of NCC (i.e. additional bridge replacement in first phase).	Get FHWA approval for substandard shoulders. If a new bridge is required, minimize bridge design and construction costs through early identification of bridge and local road requirements. This will challenge the team to come up with savings elsewhere in the project to offset this increased cost.				
22		√				●									Existing configuration of Jefferson Street OC may not provide sufficient space for additional HOV lanes with acceptable shoulder widths.	Additional scope for Phase I of NCC (i.e. additional bridge replacement in first phase).	Get FHWA approval for substandard shoulders. If a new bridge is required, minimize bridge design and construction costs through early identification of bridge and local road requirements. This will challenge the team to come up with savings elsewhere in the project to offset this increased cost.				
23		√	√			●									New McKinnon Ave OC tie-in at Villa Cardiff Dr. Current proposed bridge location ties into Villa Cardiff Dr. approx. 6 feet lower than existing intersection.	This may cause clearance issues on I-5 at new bridge location. The resulting vertical clearance of the new bridge will be reduced due to the lower intersection location. (exist vert clr. 22'-6" minus 6' => 16'-6")	Perform early survey of existing conditions so as to allow sufficient time to resolve any potential problems may arise from such survey.				
24	√	√	√	√											Early Sound Wall Packages	Soundwalls constructed early will reduce construction noise impact to adjacent property owners. However, the following items could delay the process: 1) Right of Entry Agreements 2) Aesthetic Design Approval 3) Maintenance Agreements for walls on private property.	Prioritize Soundwalls based on design development and expected time to complete design. Early identification and management of time constraining activities. Expedite agreements with private property owners for off-right-of-way walls. CM can provide early constructability and design assistance for aesthetic materials. CM can provide Phased GMPs for wall packages contingent upon ROW acquisition. CM can assist ROW agents in negotiations with property owners by providing timely information of construction needs for these walls.				



RISK REGISTER | ALL RISKS ARE OPPORTUNITIES WHEN THEY ARE MANAGED

Exhibit 6.11

No.	Type						Probability			Severity			Description	Possible Impact	Potential Solutions	\$ Value	Action (Next Step)	Action By	Action Due Date	
	Construction	Design	ROW	Environmental	Stakeholder	Highway	Rail	Lagoon	Low	Medium	High	Low								Medium
25	√	√		√		●								Leucadia Railroad Grade Crossing	Profile Grade of Leucadia Blvd. will be constrained by the addition of a second track at this grade crossing.	Perform early survey to identify any problems. Optimize design at Leucadia to minimize grade issues. Review options for raising/lowering grades of the adjacent intersections. Involve City of Encinitas when discussing any needed solutions.				
26	√	√		√		●								Chesterfield Railroad Grade Crossing	Construction of Chesterfield Grade Crossing , MP 239.8, will impact traveling public.	Coordinate with City of Encinitas and stakeholders to provide alternate access routes during double-track construction.				
27	√					●								New No. 24 Turnout at CP Cardiff	Cost of new No. 24 Turnout	Use salvaged No. 24 turnout from former CP Ponto.				
28	√					●								Long lead railroad material purchase, rails and railroad ties, have a six-month lead time on purchases.	Delays to rail construction if not purchased timely.	Develop early material purchase packages ahead of full rail plans and specs.				
29	√													Forward Compatibility	If ultimate build-out is not carefully considered, certain aspects of current design and construction may interfere with final build-out. Thus resulting in new improvements requiring removal for future development.	CM will make a Forward Compatibility design check a requirement for all plan reviews. This is best accomplished by including an ultimate build-out CADD Layer in the electronic files.				
30	√		√	√			●							Environmental Permitting Restrictions for Construction in Lagoons. Endangered / Protected Species Habitat Disturbance	Failure to properly identify construction limits and ESA areas could cause damage to sensitive areas and/or permit violations.	Use GPS survey methods to layout ESA areas and install temporary fencing and/or delineation prior to construction. Use biological monitors to survey area prior to construction, phase work outside nesting season.				
31	√		√			●								Maintain On/Off Ramp Access During Construction I-5 Construction.	On/off ramps to/from I-5 may interfere with new construction.	Develop MOT Plan to support proposed bridge staging plan and ensure full LOS is maintained.				
32	√	√	√	√										SWPPP Violations	Fines and negative stakeholder relationships.	Prioritize/Manage drainage design to provide early construction of bioswales and basins. Increased control of construction run-off/sediment. Foster positive relationship with Regional Water Quality Control Board. Reduced construction costs for SWPPP measures.				
33					√									DBE and UDBE Goals not met.	Negative stakeholder image and possible Federal fines.	Utilize Granite Sundt's comprehensive DBE Standard Operating Procedure. This SOP details our teams commitment and will; A) Identify potential DBE/UDBE Subcontractors, B) Verify Commercially Useful Function, C) Comply with specifications and 49 CFR Part 26 related to Good Faith Effort, D) Provide reasonable opportunity to bid work, E) Assist DBE Subcontractor to insure their success, F) Accurate reporting of DBE/UDBE Utilization.				
34		√		√										Control Pre-Construction Costs for all Stakeholders	Reduced project delivery costs. Reduced project delivery time.	CM will Invite all stake holders to participate in the identification and management of risks/opportunities related to the project. CM will maintain and distribute the current Opportunity/Risk Register to appropriate stakeholders. CM will maintain and distribute the current Opportunity/Risk Register to appropriate stakeholders. CM will promote open communication between stakeholders to assist in the management of individual opportunities/risks. CM will promote Formal Partnering at all levels.				
35	√	√		√										SDG&E Power lines	Potential safety concern for work around power lines. Possible need to relocation and or protection.	Identify needed work zones in time for construction activities. Use low profile equipment as necessary.				
36	√	√	√	√										Utility Protection and/or Relocations.	Delays to construction and impacts to utility owners.	Pothole in advance, protect during construction, and coordinate relocation work. Place critical utility relocations in project's CPM Schedule.				
37	√	√		√										Bike Pedestrian Access during construction.	Access is reduced or eliminated. Negative public impact.	Provide for access during construction. Provide proper planning and new bike path construction in advance of project activities and monitor during construction. Support Caltrans PIO to update communities with new routes.				
38	√	√	√	√										Maintain Access to Local Business during construction.	Decreased access to local business during construction may cause undue harm to local business.	Provide access during construction and keep businesses informed of potential impact prior to work. Use MOT Phasing Plan to ensure sufficient access is maintained. Provide project specific Smart phone application.				
39	√	√		√										Bike Path Construction Requires ROW Acquisition (Sheets L-4,8,9)	Possible negative impact to desired construction schedule.	Identify ROW needs early and provide ROW agents the information needed to reach agreements. If necessary, phase construction to allow time for ROW Acquisition process				

E. DBE/UDBE PLAN

Granite | Sundt understands and is committed to exceeding Caltrans’ overall DBE/UDBE goals of 5.1% for the Preconstruction Phase. We realize that the goals are based on the project funding sources as follows:

Scope of Work - Goal (DBE/UDBE)

LOSSAN Rail (FTA funded) – 5.1% (UDBE)

I-5 Highway and Lagoon (FHWA funded) – 5.1% (DBE)

Immediately upon award, we will track and report DBE and UDBE utilization based upon Caltrans’ proven established reporting structure in conjunction with the project funding breakdowns identified by Caltrans.



Granite | Sundt is committed to meaningful DBE and UDBE participation in all aspects of the Project throughout both the Preconstruction and Construction Phases. **Granite | Sundt’s “Project First” philosophy, promoting the project and stakeholder interests over the interests of our own is built into our entire team’s culture including all subcontractors.** This will be accomplished through partnering sessions, community communications, and team quality and safety meetings to ensure that the project goals are met.

Approach to Exceed DBE/UDBE Goals

Granite | Sundt has a proven successful outreach program. Our outreach began prior to the release of the RFQ and will continue throughout the life of the Project. Granite | Sundt participated in the Caltrans, District 11 outreach, and many other local outreach events throughout San Diego County. We discussed subcontracting opportunities and encouraged firms to work with us on this project. This resulted in hundreds of interested subcontractors, many of which are DBE/ UDBE certified firms, registering with Granite | Sundt’s project e-mail address



(NorthCoastCorridor@gcinc.com) to receive updates and documents on this project from our teams’ DropBox. Once the RFQ was released, our team continued to aggressively exercise good faith efforts to ensure that the Department’s DBE/UDBE goals are exceeded. In compliance with 49 CFR Part 26, our aggressive targeted good faith effort approach consists of:

- Identifying possible preconstruction and construction trades;
- Searching Caltrans website for certified DBE firms;
- Focusing on DBE firms who meet the UDBE requirements;
- Sending solicitations to identified firms for participation in the project;
- Monitoring our Project specific e-mail address;
- Placing ads in Trade and Focus publications;
- Placing ads on BidSync at Caltrans’ I-5 North Coast Corridor Phase 1 project Data Room;
- Contacting local small business associations to encourage participation by their members;
- Offering assistance to DBE/UDBE firms;
- Tracking responses, following up with firms interested in participating in the project;



Granite | Sundt sent 746 solicitations to firms identified through Caltrans DBE search engine, in conjunction with those who registered with our team expressing interest in working with us on this project. We placed advertisements to solicit DBE/UDBE participation in print and online in multiple trades and focus publications, as well as at BidSync (Caltrans’ I-5 North Coast Corridor Phase 1 project Data Room). **Granite | Sundt was the first Prime contractor, pursuing the I-5 NCC Phase 1 Project, to utilize the BidSync Data Room to maximize participation early in the preconstruction process.**

David Niese, Project Manager has contacted DBE/UDBE firms responding to our solicitations expressing interest in the project to discuss potential opportunities. Based upon responses received we anticipate utilization of DBE/UDBE firms in the preconstruction phase to fulfill the trades shown in Exhibit 6.12 on the following page. Actual utilization will be determined with collaboration and approval from Caltrans, and scope of work breakdown for actual subcontract packages during negotiations with Caltrans for the preconstruction services contract.



Exhibit 6.12

Preconstruction Trade	Anticipated Contract Value	Anticipated Contract % (based on \$4M)
Safety and Security Planning	\$500	0.01%
Technical Writing	\$500	0.01%
3-D Modeling	\$1,000	0.03%
Catering	\$1,000	0.03%
Construction Workforce Training	\$1,000	0.03%
Risk Management	\$1,000	0.03%
Cleaning	\$3,000	0.08%
Clerical Services	\$3,000	0.08%
Reprographic Services	\$4,000	0.10%
Construction Quality Planning	\$5,000	0.13%
DBE Outreach	\$5,000	0.13%
Partnering	\$5,000	0.13%
Quantity Takeoff/ Cost Estimating	\$5,000	0.13%
Subsurface Utility Location	\$5,000	0.13%
Water Quality Surveys	\$5,000	0.13%
Project Scheduling	\$10,000	0.25%
Site Investigation	\$10,000	0.25%
SWPPP	\$10,000	0.25%
Biological Monitoring /Surveys	\$15,000	0.38%
Permitting	\$20,000	0.50%
Geotechnical Investigation	\$25,000	0.63%
Utility Coordination	\$25,000	0.63%
Environmental Plan / Compliance	\$50,000	1.25%
Traffic Control / MOT Planning	\$100,000	2.50%
Railroad Coordination	\$200,000	5.00%
Trades Made Available	\$510,000	13.00%



Granite | Sundt selected Rail Construction Manager John Eschenbach as one of our team’s key personnel based upon his local knowledge, expertise, and experience along this corridor. John works for JL Patterson and Associates, a certified UDBE firm. This provides the best value to Caltrans and the I-5 NCC Phase 1 Project. Based on the information provided in the RFQ, in conjunction with the information gathered from our team’s aggressive targeted good faith efforts **we commit to 10% DBE/UDBE participation during the preconstruction phase** of the Project. As GMPs are negotiated on the construction portion of work we will continue to aggressively exercise good faith efforts on each

portion of work to maximize DBE/UDBE utilization while providing the best value to the I-5 NCC Phase 1 Project and its stakeholders. We realize the anticipated DBE/UDBE goals for construction will be based on the final estimates for any construction services to be awarded under the Preconstruction Services Contract. For GMPs, or early work package, during or near completion of the preconstruction services, Caltrans in partnership with SANDAG will confirm the Scope of Work and finalize a goal for the construction services portion, which will be communicated to the Granite | Sundt for incorporation into the Construction Services Contract.

In an effort to effectively communicate all opportunities to the subcontracting community, Granite | Sundt has developed and maintains a project-specific email address and DropBox; advertises in local trade and focus publications; sends out email blasts; and sends out Notices Inviting Bids (NIB) to DBE/UDBE firms located on the California Unified Certification Program’s(CUCP) website as well as to firms we have experience working with on past projects. Project Manager, David Niese works closely with DBE/UDBE Subcontracting Coordinator, DeAnna Andrews to maximize utilization of certified firms during the preconstruction and construction phases of the I-5 NCC Phase 1 Project. Granite | Sundt will continue this approach throughout the preconstruction and construction phases of this project.

Granite | Sundt recommends breaking down work into size, scope, and economically feasible portions to encourage participation by DBE/UDBE firms. Bid packages will be developed by grouping related work disciplines. As the bid packages reach the 100% design stage, we will release bid packages for subcontractor proposals. Pre-qualification of subcontractors will be concurrent with the development of the work packages. The CMGC process allows the owner to pursue early subcontract bidding, if desired Granite | Sundt will proactively identify these opportunities for consideration.

Subcontracting Approach

Granite | Sundt’s subcontracting approach is designed to provide maximum value to Caltrans. While self-performing critical items of the work within our expertise, Granite | Sundt will select subcontracting opportunities that provide value to



Caltrans. Granite | Sundt has adopted Granite’s comprehensive Disadvantaged Business Enterprises (DBE) Standard Operating Procedures (SOP). This SOP provides guidance to be used by all Granite | Sundt personnel involved with monitoring and documenting compliance with DBE/UDBE or other special program requirements, including but not limited to, Good Faith Efforts (GFE), Commercially Useful Function (CUF), DBE/UDBE Certifications and owner/agency reporting. This SOP is intended to:



- Set forth processes and procedures (the “Rules”) to be followed by Granite | Sundt personnel at all phases of a construction project in which DBE/UDBE requirements exist (this includes any time we are required to report DBE/UDBE credit);
- Assure compliance with the Rules; and
- Promote best practices and requirements for DBE/M/WBE utilization and participation.

We intend to award subcontracts, as appropriate, during the preconstruction and construction phases to qualified DBE/UDBE firms. Subcontracting is a critical and necessary element of all construction projects. Granite | Sundt is experienced in managing, mentoring, and assisting large numbers of subcontractors. Our subcontracting approach will:

- Maximize utilization of DBE/UDBE and local subcontractors
- Determine insurance and bonding requirements
- Leverage Granite | Sundt’s core competencies with skill of subcontracting community
- Balance self-perform vs. subcontracted work to maximize schedule performance
- Select subcontractors based on qualifications, experience, and cost
- Monitor and track DBE/UDBE utilization throughout the contract
- Implementing additional aggressive good faith effort to locate targeted DBE/UDBE firms when necessary to ensure Project goals are exceeded

Subcontractors will be required to include all prime contract provisions relative to DBE/UDBE participation in their second-tier subcontractor solicitations to encourage further participation. Our subcontractors will be expected to establish trade specific goals to be tracked throughout the project. Granite | Sundt’s office and field staff will aggressively seek

opportunities where DBE/UDBE firms can be utilized during the course of construction.



Granite | Sundt will provide at least three competing bids for each substantial item of work to be subcontracted. Certain packages may have less than three quotes, for example if it is a specialized product or subcontractor and significant competition does not exist. In collaboration with Caltrans, we will recommend best value subcontracting options based upon criteria such as qualifications or DBE/UDBE certification. We will evaluate prospective subcontractors through interviews to establish that subcontractors perform a commercially useful function in compliance with 49 CFR Part 26. Granite | Sundt will verify that DBE/UDBE subcontractors are CUCP certified.

DeAnna Andrews will serve as Granite | Sundt’s DBE Subcontracting Coordinator. DeAnna will coordinate with David Niese, Alber Youssef, and Caltrans, following the Outreach Cycle approach to develop business opportunity fairs, and targeted outreach to business and community organizations. **Granite | Sundt will exceed Caltrans’ established DBE/UDBE goals through:**



- **Solicitations:** Through all reasonable and available means (e.g., web searches through Caltrans DBE/UDBE database, attendance at arranged meetings, advertising in minority focus media, general circulation papers, trade magazines, written notices, etc.), we will solicit the interest of certified DBE/ UDBEs. We will determine if they are interested with phone calls and follow-up solicitations.
- **Pre-Proposal Meetings:** Granite | Sundt will attend Caltrans pre-proposal meetings to reach out to DBE/UDBE firms and discuss contracting opportunities with our team. We will also facilitate pre-proposal meetings to



reach out to DBE/UDBE firms to offer subcontracting opportunities.

- **Scope Packaging:** We will break work into economically feasible portions to facilitate participation, and select portions of the work to be performed by DBE/UDBEs in order to increase the likelihood that the goals will be achieved.
- **Information:** Granite | Sundt will provide interested firms with information about the preliminary plans, other Project information, and requirements of the contract. For this CMGC contract, construction scopes and quantities will become more clearly defined as design progresses. As such, interested firms will be provided detailed information as it becomes more clearly defined and quantified.
- **Good Faith Efforts:** We will make portions of work available to qualified DBE/UDBE firms consistent with the available DBE/UDBE subcontractors and suppliers. Evidence of good faith includes the names, addresses, telephone numbers of firms, a description of the information provided for the work selected for subcontracting, and in some cases the reasons why additional agreements could not be reached for DBE/UDBEs to perform work.
- **Capabilities Evaluation:** Granite | Sundt will use sound business judgment when considering subcontractors, taking into consideration a firm’s price and capabilities as well as project goals. We will utilize a pre-qualification process to determine subcontractor capabilities.
- **Assistance to DBE/UDBE Firms:** Granite | Sundt will offer assistance in interpreting work and contract requirements to prepare their proposals. We will assist interested DBE/UDBEs with bonding, lines of credit, or required insurance. We will assist DBE/UDBEs with technical training, safety training, accounting and payroll submissions, and business administration assistance.
- **Local Organizations:** Granite | Sundt effectively utilizes the business assistance offices of local, state, and Federal minority, women, and community organizations. We will contact local organizations to post opportunities in an attempt to locate additional DBE/UDBE firms for project participation.

Managing Risk



Granite | Sundt is experienced managing all phases of the subcontracting process on projects of similar size, scope, and complexity. The CMGC delivery method allows for successful procurement and execution of subcontracted work. Subcontracting risk is managed as follows:

- Caltrans will be involved in subcontracting decisions
- All subcontracts include well defined scopes of work and clear terms and conditions
- Pre-qualification of critical or specialty subcontractors
- Subcontractors are included in the partnering process
- Subcontractors must perform to all safety and quality requirements
- Granite | Sundt will assist, train, mentor, and monitor subcontractors whenever needed
- Subcontractors will participate in scheduling and coordination meetings

Performance History



Granite and Sundt each have strong company histories of exceeding DBE/UDBE goals. **For example, Granite has achieved 123% of the DBE/UDBE participation goals on its large transportation projects in the last 5 years.** Many of these projects utilized the CMGC delivery method. The established goals on these projects totaled \$579.4M; Granite utilized \$716.6M in DBE/UDBE participation on projects. Sundt’s commitment is equally impressive by their outstanding DBE utilization over the past 5 years at San Diego International Airport on both the CMGC Consolidated Rental Car Complex Project and the Terminal 2 Landslide Improvements Project. **Although no DBE goal was required, the team achieved 8% DBE participation to date and has distributed approximately \$62M to Local, Small, and Historically Underutilized businesses.** Through a creative best value procurement process during the project construction, the entire team from office to field committed to maximizing participation. Sundt anticipates another \$50M to be distributed by 2016.

Granite | Sundt’s history of exceeding established DBE/UDBE goals on projects similar to the I-5 NCC Phase 1 Project will continue to be employed through a proactive approach to exceed the established Project goals.

F. APPROACH TO MINIMIZING IMPACTS

Granite | Sundt has extensive experience working in project corridors with multiple mobility constraints similar to the I-5 and LOSSAN Corridors in San Diego County (see Exhibit 6.13). Our team will develop thorough work plans for each segment of the NCC Phase1 Project with a “Project First” approach maintaining the current level of service on the I-5 corridor and minimizes the number of absolute work windows required on the LOSSAN corridor. Additionally, we will work with Caltrans, SANDAG, and the many stakeholders during the preconstruction phase to optimize the phasing plan and to achieve consensus. Our approach to minimizing impacts to the traveling public includes the following components:



Vehicular Traffic

Granite | Sundt has worked on numerous complex projects and will use prior lessons learned to minimize disruptions and maintain the current level of service on I-5 and adjacent roads. Our approach includes providing Krail concrete barrier when applicable to provide more efficient vehicular mobility as well as maintaining workforce and project team safety. **We have developed a proposed detailed phasing and sequencing plan for the I-5 San Elijo Lagoon Bridge, see Page 6-28 that provides the traveling public with a completed project earlier, minimizes throw-away work, and maintains the current I-5 level of service.**

In addition to revised construction sequencing, our approach also includes many non-construction mitigation enhancements such as developing a project specific smart phone application to stay connected with area businesses and provide project updates. For example, our Team Members developed a project specific app for the Valley Metro Light Rail NW Extension Project that contained coupons, business promotions, route information, construction updates, information about community groups, and traffic impacts

providing real time solutions to the Public’s concerns. We will coordinate through Caltrans to the other agencies (CHP, Weigh Stations, Border Patrol, etc.) along the regional corridors providing information that will assist in more efficient freight movement. Additionally, we will explore if and when special work hours (nights, long weekends, etc.) might be a preferred alternative to normal working hour charts.



Pedestrian and Bicycle Access

The pedestrian and bicycle trails are a vital part of the community for transportation and recreation. Granite | Sundt has experience providing continuous access for these trails during the construction throughout California and the nation. Continual access for pedestrians and bicycles through specific project elements may be accomplished by proposed features such as:

- Staging construction of the San Elijo Lagoon Bridge to maintain access to the lagoon and Manchester
- Constructing the Batiquitos Lagoon Bridge in phases to maintain access to the lagoon
- Constructing the MacKinnon Avenue bridge in phases to allow access to the Harris Elementary School and the Encinitas Community Park
- Creating safe work zones by keeping access to the rail limited to established safe crossings during double track operations
- Phase lagoon restoration construction to maintain access to trails and beach
- Install work zone protection during dredging operations that maintains access to the beach and lagoons

In addition to providing access through specific project elements, **we intend to develop region-wide access plans that can provide more efficient bicycle movement, resulting in better levels of service and an enhanced experience.** The region-wide planning will include such items as a temporary network of North-South and East-West bicycle routes consisting of bicycle lanes, shared lanes, and multi-use trails that will provide improved access; and a website for communicating information with local bicycle clubs.

Exhibit 6.13: Minimizing Impacts



The Reno ReTrac Project required lowering the freight rail line 33 feet below grade through the middle of downtown Reno, NV. Granite performed the work without disrupting existing rail service or vehicular and pedestrian traffic. This was accomplished through multiple phase staging, sophisticated pedestrian and traffic control, and continuous coordination with local government entities. The project received several awards for its successful implementation.





Rail (Passenger and Freight)

The LOSSAN corridor serves as a major component of the mass transit system in San Diego County and we understand the importance of minimizing impacts to commuters and the movement of freight during off peak hours. Led by John Eschenbach, our team will work during preconstruction to develop a comprehensive phasing and sequencing plan for the work on the LOSSAN Corridor. The majority of the work will be performed using Form B protection with railroad flaggers and will be coordinated with NCTD. The majority of the bridge replacement work will be completed under Form B protection. The tie in work will require a 56-hour Absolute Work Window (AWW). In addition to the bridge tie in work, there are several items of work that will require 56-hour AWW's including:

- Universal cross-over at Control Point (CP) Cardiff, MP 239.6
- Removal of the existing CP Craven at MP 241.1
- Installation of CP Moonlight, MP 237.2
- Crossover at CP Ponto, MP 234.5

Granite | Sundt will follow NCTD's Policy No. 23 and will schedule AWW's on weekends from October to March. John Eschenbach will work with NCTD to plan the AWW's and to coordinate this work with other projects on the corridor.



When possible, John will schedule the work to coincide with planned Work Blitz' to minimize impacts to the corridor.

We are aware of the other significant adjacent projects occurring during this project and the potential for resulting labor shortages during a Work Blitz. We understand the criticality of this work and will ensure the qualification and final proposal of subcontractors will include subcontractor capacities when presented to NCTD for approval.

Granite | Sundt will discuss using the house track at CP Ponto with NCTD to stage rail and concrete ties. John's 17 years of experience and detailed knowledge of the LOSSAN Corridor will bring tremendous value to the team in minimizing impacts in this corridor.

In addition to John Eschenbach, our team will use the subcontractor selection process during preconstruction to select a qualified firm to provide expertise in the signaling work required on the LOSSAN Corridor. This work is critical to the operations of the corridor and our signaling experts will be included in all discussions related to planning the work on the corridor.



Local Businesses and Residents

More than 200 Granite | Sundt employees call San Diego home. Our experience has shown that understanding individual needs, pre-

planning and communication is the key to developing positive relationships with the local businesses and residents within these communities.

On similar projects, our team has provided a crew dedicated to working with the local businesses and residents providing workable solutions to maintaining access throughout the duration of the project. These crews "walk the streets" and become a part of the community to better understand the needs and provide access solutions.

Our Construction Managers' work hand-in-hand with the project's Public Information Officer (PIO) to deliver timely and accurate construction information. Our team strongly encourages participation from the PIO in our weekly meetings and we often invite stakeholders that may be impacted by our operations to attend so our superintendents and foremen can understand first-hand their concerns. Local events such as festivals will be included in our schedules allowing for avoidance planning. Special attention will be given to construction of the sound walls on private property. To provide the smallest footprint, our team will take a "back yard contractor" approach when constructing the sound walls minimizing impacts by using smaller equipment, adjusting work hours, and communicating regularly with the stakeholders to update them on schedules.

G. INNOVATION AND VALUE ENGINEERING

Granite | Sundt has successfully collaborated with owners and designers to develop cost effective innovations. **We will bring this tradition to the Project, collaborating with your team in the preconstruction phase to identify, develop, and implement innovative ideas that will advance the project goals.** The task force groups, concentrating on specific project elements, such as roadway, structures, rail, lagoon, etc., foster brainstorming and encourage innovative thinking. We feel that there are several opportunities for incorporating innovative technologies and techniques into the project that will provide the cost savings to allow more of the project to be built. The following exhibits and narrative describe a few of those potential innovation opportunities our team has investigated to date.

Exhibit 6.14

INNOVATION #1 | SAN ELIJO LAGOON DREDGING

The current draft dredging plan proposes to build dikes and flood the lagoon to a depth of six feet in order to float standard dredging equipment. This flooding will inundate the existing vegetation for an extended period of time and will destroy habitat that will then need to be restored.

INNOVATION

The Granite | Sundt Team, with the help of Vortex Marine, proposes to use equipment that can handle the large volume of dredge material (1M+ cubic yards) while operating in 2.5 feet of water. This will allow dredging to occur without flooding. Our proposed plan will use dikes similar to the current draft plan; however these dikes will be smaller and are for the purpose of sediment control and control of tide fluctuations. Additionally, Vortex has extensive knowledge in the use of silt curtains to control sediment. Such curtains will be used in disposal areas and other strategic locations to provide additional sediment control.



This innovation has the potential of saving 120 acres of existing vegetation and habitat thus significantly reducing restoration costs and recovery time.

Proposed Phase I



Proposed Phase II



Proposed Phase III



 Potential Vegetation/Habitat Savings

 Dredge Flooding Limits (Blue)



Results: Natural habitat recovery period is significantly shorter thereby establishing sooner a functioning coastal wetland habitat for fish and wildlife.



INNOVATION #2 | I-5 BRIDGE STAGING SAN ELIJO LAGOON

Exhibit 6.15

Granite | Sundt has developed a potential modification to the current draft staging plan for the I-5 San Elijo Lagoon UC Bridge. This innovation will greatly reduce disruptions to the traveling public while also reducing construction costs. This innovation further proposes to relocate the pedestrian/bike path from its current underside position to a topside position thus further reducing the construction costs and impacts.

INNOVATION

Our proposed staging would start with building the west half of the southbound structure (i.e. southbound outside only). This stage would also build the pedestrian/bike path on the outside of the new southbound bridge through an add-on or extension of the new bridge. Once complete, the southbound traffic would be switched to the new bridge portion. The next step would be to switch northbound traffic to the existing southbound structure and demolish the existing northbound bridge.



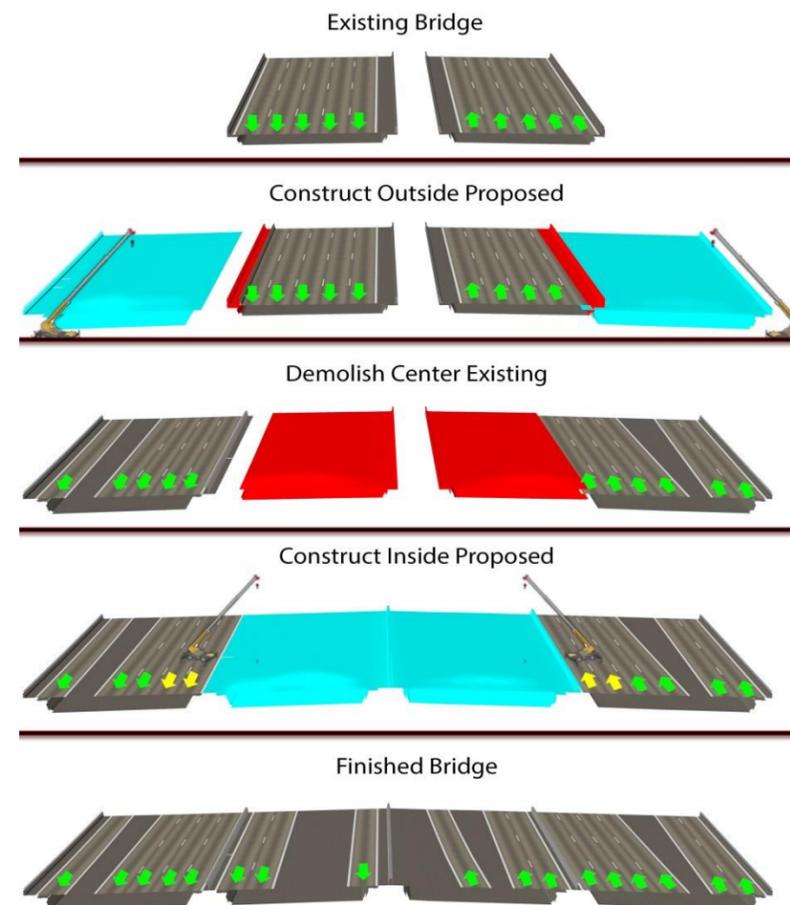
This sequence will allow the entire new northbound bridge portion to be built with the benefit of an open (unconstrained) side for construction access and material deliveries. **Importantly, this condition will significantly reduce the requirement for lane closures and night work, resulting in accelerated construction and minimized impacts to the traveling public.** Once this stage is complete, northbound traffic will be switched to the outside portion of the new northbound structure and the remaining southbound bridge segment can be built (utilizing the inside portion of the newly built northbound bridge for construction access and material delivery).

An additional benefit to this proposed staging of the I-5 SEL UC Bridge is the ability to construct the DAR UC1 and portions of the adjacent walls without staging, resulting in a further reduction in construction costs.

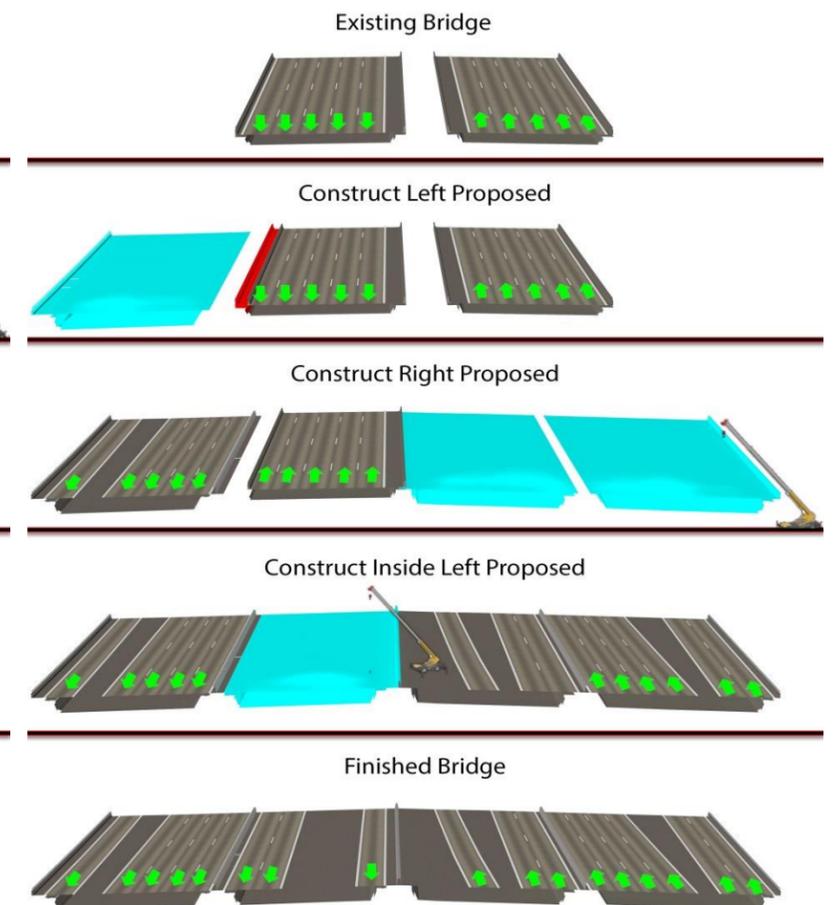
In summary, this innovation will increase public mobility and maximize value by:

- Increasing production efficiency through better access and daytime work thereby reducing construction costs and schedule
- Reducing the amount of night work and disruption to the adjacent neighborhoods
- Reducing construction costs and minimizing disruption to the lagoon habitat and traveling public by constructing the pedestrian/bike path concurrent with the highway bridge structure.
- Significantly reducing the number of lane closures needed for construction access and material deliveries.

Caltrans Preliminary Plan



Granite | Sundt Plan



Note: This same method of staging may be applied to the I-5 Batiqitos Lagoon Bridge.



Achieves : Significantly reduced requirements for lane closures and night work, resulting in accelerated construction and minimized impacts to the traveling public.

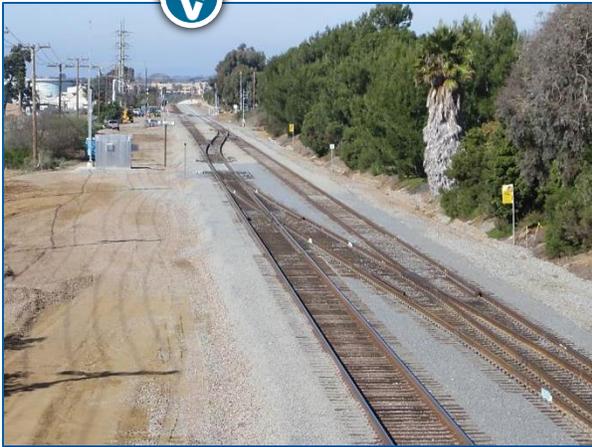
INNOVATION #3 Batiquitos Lagoon Double Track (BLDT)

North County Transit District (NCTD) owns the railroad right-of-way from the Orange County line to Del Mar which includes the BLDT segment. The BLDT is the northern segment of the LOSSAN rail corridor improvements scope extending from Control Point CP Ponto to proposed Control Point CP Moonlight. This segment includes 2 miles of second track and the replacement of the Batiquitos lagoon rail bridge.

The current plan considers the installation of a new cross-over at CP Ponto.



INNOVATION:



New universal #24 cross-overs were recently installed at CP Farr, approximately 3 miles north of CP Ponto. One potential innovative solution to reduce cost would be to remove/ relocate the #24 turnout

at CP Ponto. This turnout could be utilized at the new cross-over to be installed at CP Cardiff located in the southern segment of the LOSSAN rail corridor improvements scope.

In this innovation the CP Ponto could be retired entirely. The flexibility of operational requirements for train movements would be met by utilizing the cross overs at CP Farr. **This innovation would result in a potential savings to the project of \$1.2 million.**

H. PRECONSTRUCTION APPROACH (First 3-6 Months)

Granite | Sundt’s CMGC approach, as described in Section 6.B, offers Caltrans a collaborative, cost-effective and efficient progression of work leading to reduced risk and maximized value. Exhibit 6.16 on the following page illustrates how, through our integrated 8-Step approach, we will interact with the Caltrans Team and Stakeholders; manage the interrelated elements through the process; and, potentially develop early construction packages for the soundwalls within the first three to six months of preconstruction services.

Understanding Caltrans’ preliminary plan to divide the Project into seven GMP’s, our Team has focused on describing the efforts appropriate for the first three GMP’s; Highway Unit #1, San Elijo Lagoon Restoration and the San Elijo Double Track.

Granite | Sundt SOQ Summary

Granite | Sundt understands the importance of our consulting role in the CMGC process, and will provide the best value to Caltrans. As demonstrated throughout this SOQ, we bring unmatched CMGC and Caltrans experience offering:

- Careful cost and schedule consulting, constructability and risk reviews to reduce risk and increase scope to design and construct to budget.
- “Project First” Partnering with all stakeholders to develop mutual respect and build a collaborative team.

- Effective planning during preconstruction and significant manpower, material and equipment resources in construction to optimize the ultimate construction schedule.
- Sharing of creative solutions that emphasize quality and safety to build innovation into the process and the project.
- Transparency in pricing, a focused commitment to public involvement, and a willingness to share and listen to foster public trust and confidence.



We look forward to working with all of you as your *Partners Improving the Environment for the Future!*

Preconstruction Game Plan

Work Efforts in the first 3 - 6 Months

Exhibit 6.16

Granite | Sundt 8-Step CMGC Approach

Tasks and Deliverables

1 Seek First to Understand

- Kick-Off Meetings **KO**
- Partnering Workshops **PW**
- Risk Workshops **RW**

2 Validate Constructability of Design

- Compliance Document **CD**
- Communications Plan **CP**
- Additional Field Investigations **FI**

3 Design and Constructability Analyses

- Cost Estimate **CE**
- Material/Equipment Market Survey **ME**
- Construction Phasing Plans **PP**

4 Parametric Estimating

- 3D Model/Parametric Estimating **PE**

5 Risk Analyses

- Risk Register Development **RR**
- DART Analysis **DRT**

6 Scope and Schedule Evaluations

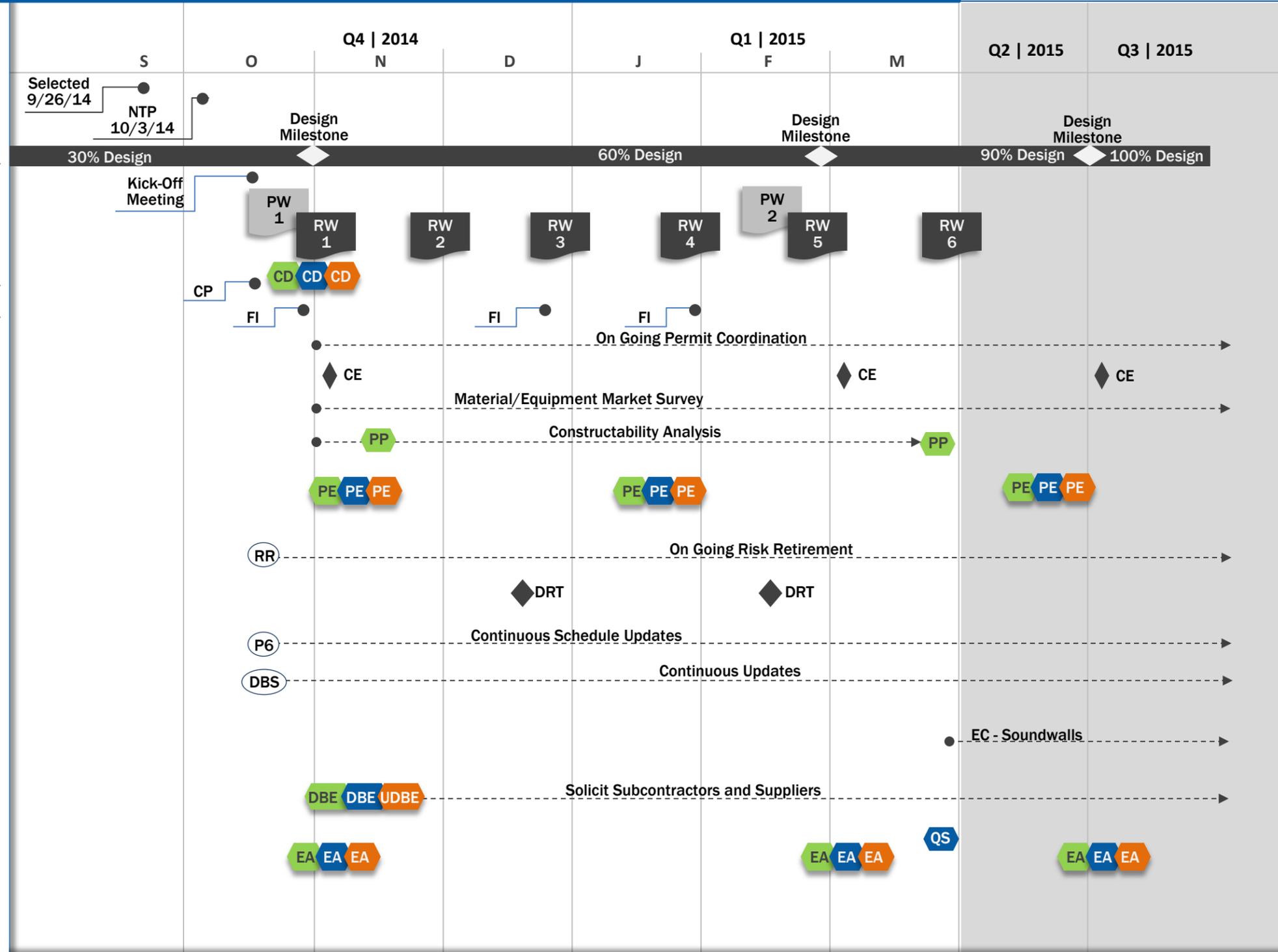
- Project Schedule Development **P6**
- Design/Budget/Schedule Evolution Log **DBS**

7 Early Construction

- Early Construction **EC**

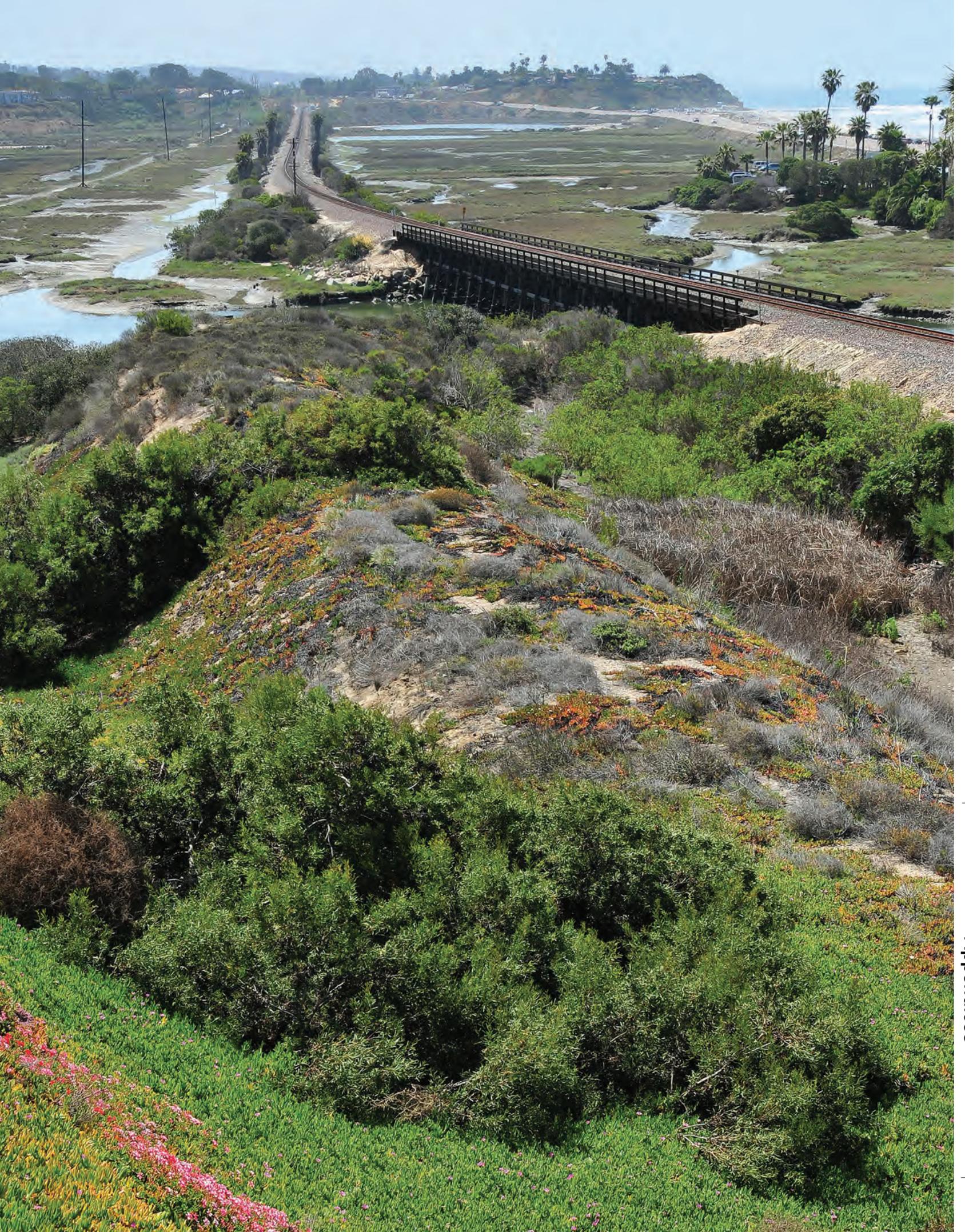
8 Scope and Price Establishment

- DBE/UDBE Subcontracting Plan Development **DBE**
- Quantity Summary **QS**
- Estimate Assumptions **EA**



Legend

- Corridor-Wide
- Highway Unit #1
- San Elijo Double Track
- San Elijo Lagoon Restoration



Mountain View Corridor CMGC, Salt Lake City, UT





TEAM LEADER

**BRAD
WILLIAMS**



Caltrans Experience . Team Builder . Collaborative

Parent Firm:

Granite Construction Company

Years of Experience:

32

Licenses/Associations:

National President, Construction Institute of the American Society of Civil Engineers

Awards Evaluation Member of the International Partnering Institute

Education:

BS, Civil Engineering, Ohio Northern University, 1982, with Honors

Areas of Expertise:

- Operations and Business Management
- Resource Allocation
- Partnering
- Alternate Procurement Project Delivery
- Urban Highway Construction
- Innovative Maintenance of Traffic
- Construction Sequencing to Minimize Impacts
- Stakeholder Coordination

Position Description/Responsibilities:

As Team Leader, Brad will ensure that adequate personnel and other resources are made available for this project and will handle all contractual matters. He will provide oversight for the Safety, Quality Management and Environmental Permit Compliance Programs and actively participate in Partnering sessions throughout the duration of the Project. He will ensure that the project is tracking as planned, both in terms of schedule and budget. **Brad will be ultimately responsible for the quality and timeliness of Grante-Sundt’s performance as CMGC on the Project.** His previous extensive experience on Caltrans projects, and on Alternative Delivery projects provides added value to the Team.

Authority:

Brad will have ultimate authority and accountability for project oversight and to ensure key personnel and other resources are available for this project as committed in the best interest of the I-5 NCC Phase 1 Project. He will also share the same authority levels as the Owner for the purposes of change management and issue escalation.

As a Large Project Executive for Granite’s West Region he currently pursues and oversees the management and construction of some of Granite’s largest projects in the West Region servicing California, Oregon, Washington, Alaska, Utah, Nevada, and Arizona. **He manages business and contractual matters, is ultimately responsible for the safety, production, quality, partnering, client satisfaction, and environmental stewardship for his Large Projects.**

With over 32 years of Heavy Civil construction experience, Brad is a 27 year Granite veteran leader who has spent the majority of his career working on Caltrans projects. During his 30 years working in California, he has worked in all but one Caltrans district, developing long-standing trusted relationships with Caltrans leadership throughout the state. **Brad has earned and maintained his reputation by treating the owner fairly, focusing on team project goals, and partnering.** Brad has also had the opportunity to manage and lead construction teams on both rail and environmentally sensitive beach projects. His wide array of experience and talents will benefit Caltrans, SANDAG, and the lagoon conservancy by providing senior leadership and vision to the I-5 NCC Phase 1 Project team keeping the Project goals in focus at all times.



Brad has developed a long and successful partnering relationship with the Department as evidenced by his significant leadership roles with the 2000 Caltrans Engineers Academy; being a Trainer on several Caltrans Fundamentals of Partnering courses in District 11 (2008); and individually, being the **recipient of 6 Caltrans Partnering Awards since 2001**. Brad’s commitment to team collaboration and the partnering spirit is further evidenced by his personal involvement in the International Partnering Institute since 2008.

Additionally, Brad has managed a wide range of alternate procurement delivery method projects through design and construction with contract values between \$30M and \$260M. He has coordinated successful collaborative project teams with local, state, federal agencies, designers, concessionaires, subcontractors, and end-users to provide safe, efficient and economical project delivery.

Select Project Experience

NAVFAC Southwest MV-22 Miramar Hangar Design-Build - San Diego, CA

Project Role: Project Principal	Dates: 09/2011 – 7/2013
Contact: Corrado Introna, PE, (858) 577-6284	Time On Project: 30%
Email: corrado.introna@navy.mil	Project # N62473-11-C-0401

The Hensel Phelps/Granite JV team provided design-build services at the Marine Corps Air Station Miramar in San Diego, CA. This \$107 million project consisted of 220,000 sf of new hangar construction and 1.2 M sf of new concrete tarmac. **Duties Included:** Design coordination and constructability analysis, managed a team of 200, coordinated with JV Partners, cost estimating and budgeting, resource allocation and scheduling, contract management, stakeholder coordination, quality, environmental compliance oversight, project execution, and close-out.

Project Challenges and Successes: A significant challenge was to understand and interpret the Government’s new High Temperature Concrete (HTC) specification for Airfields. Key components of the original specification did not address production concrete paving, availability of the rock needed for this mix and the frequency of tests samples required on a larger production operation.

Brad conducted numerous meetings with the Government, over a nine (9) month period, to discuss and understand the Government’s intended outcomes. He and his team worked collaboratively with the Owner to improve certain key components of the specification. This resulted in significant cost savings, schedule certainty, and an improved HTC concrete specification that is applicable for the intended use of Large Airfields throughout the NAVFAC program. Through Brad’s leadership, Granite gained the respect from the Government in working towards and resolving many key issues.

Dept of Homeland Security Design-Build Multiple Award Task Order Contract - CA

Project Role: Project Principal	Dates: 07/07 – 07/12
Contact: Julie Martinez, Dep. Area Engineer USACE	Time On Project: 35%
Telephone (520) 907-6711	Project: MATOC N912BV-07-D-2020 and
Email: julie.a.martinez@usace.army.mil	W912BV-07-D-2033 (9 task orders)

This Multiple Award Task Order Contract (MATOC) was administered by the United States Army Corps of Engineers for Customs and Border Patrol Sectors. Design and construction scope highlights included; 63-miles of tactical infrastructure, 66-miles of all-weather patrol road, 700,000 cy excavation, 133,000 cy of structural concrete, 53,5000-ton of structural steel, 42-each low water crossings, 5-each single span bridges. 258,000-man hours worked, delivered safely while on-time and on-budget. **Duties Included:** Building effective teams to construct each of the 9 Task Orders issued by USACE. Brad managed contract administration, small business subcontracting plan oversight to ensure goals were met. Brad also managed design consultant teaming agreements, estimating, scheduling, resource allocation, safety, environmental compliance, quality, project execution and project close-out.

Project Challenges and Successes: Due to the rugged terrain on the Monument 250 Project, the Corps was only able to provide a ‘redline’ design alignment at the preconstruction phase including 3 canyons with slopes ranging from 15 to 57%. The initial site investigations on this 7.1 mile border fence and road project had to be performed with helicopters. Every construction element presented increased challenges due to the rugged environment. These elements included the construction of 5 bridge structures; rock excavation, panel installation, and concrete foundation placement for the fence. To overcome these challenges, Brad and his team worked closely with the USACE, Border Patrol, and the Government’s biologist. Open and transparent communication resulted in trusting relationships between the USACE and Granite. Environmental matters were proactively included in our design planning which minimized impacts to the



natural environment. Through this trusted partnering, Brad led the project team to develop many innovative solutions to these challenging construction elements. For example, 24-ft tall fence panels, each weighing over 6,500 lbs. were built off-site, delivered by truck, then transported to its final installation by specialized off-road equipment. The 100-ft beam span bridge structures were hauled and placed by using a combination of conventional and nonconventional equipment, safely and efficiently maneuvering the beams around tight radiuses and across steep grades.

Caltrans Hwy 50 Sunrise to El Dorado Hills Blvd Design-Sequence - Sacramento, CA

Project Role: **Project Principal**
Contact: Brian Syftestad
Email: brian.syftestad@dot.ca.gov

Dates: 3/2001 – 11/2005
Time On Project: 50%
Project # 03-4416U4

This \$33.7 M State and National award winning Design-Sequence HOV project included the construction of 24-miles of HOV lane (12-miles each direction) from Sunrise Blvd to El Dorado Hills Blvd. comprised of 8 construction stages. Other features of this project included the successful completion of design, negotiation of final price and construction for the Sunrise Blvd. interchange (6 stages); the construction of 58,500 sf of soundwalls, 99 drainage systems; 4 bridge widenings, including the widening of the mainline bridge over Alder Creek; and 5 miles of concrete barrier. **Duties:** Oversight of innovative value engineering, safety, environmental compliance, quality control; and leading Granite’s ongoing partnering relationship with Caltrans.

Project Challenges and Successes: Critical elements of the overall project’s success for both schedule and budget was the seamless completion of design-sequence negotiation, and construction of the Sunrise Blvd. interchange; utilization of innovations during the Alder Creek mainline bridge widening. Alder Creek is a tributary of Lake Natomas, a lake that is fed by the American River. The original design included plugging the ends of the existing double 10’ x 10’ reinforced concrete box (RCB) structure to allow Granite to construct a 15’ extension of the existing RCB. This work required divers to install anchors that would allow the installation of a water tight seal using 24’ x 12’ steel plate. Once the water tight seal was installed, Granite began the planned dewatering of Alder Creek and the team soon realized the existing highway had been built utilizing native cobbles from the nearby area as water continued to flow into the project. Concerned about the project’s design to dewater the Alder Creek without continued Lake Natomas water intrusion due to the cobble fill, and subsequent potential settlement of the freeway, Caltrans and Granite began exploring alternative construction methods. Granite’s Project management team, led by Brad, investigated and proposed an innovative solution of building a retained earth wall with barrier slab and concrete barrier in lieu of extending the RCB extension. This method of construction substantially minimized the amount of dewatering necessary to Alder Creek, mitigating mainline settlement potential and unforeseen additional dewatering cost issues.

Guadalupe Beach Restoration Design-Build - Guadalupe, CA

Project Role: **Project Manager**
Contact: Gonzalo Garcia 805.934.8290

Dates: 08/93 – 12/95
Time On Project: 80%
Project # 2325ONS / 2932

This \$35M Design-Build project along Pacific Ocean’s coastline, the project included installing 108,000 sf of sheetpile cofferdam in the Pacific Ocean surfline, 200,000 cy of contaminated sand excavation, and backfill with clean sand loaded and hauled from inland approved dune sources. Due to the environmentally sensitive nature of the area, habitat and winter ocean storms, federal and state agencies required work activities 24 hours a day, 7 days per week to minimize overall impacts. **Duties:** Design coordination and constructability analysis, cost estimating and budgeting, resource allocation and scheduling, contract management, communication coordination, stakeholder coordination, quality, environmental compliance oversight, project execution and close-out.

Project Challenges and Successes: This was a very sensitive high-profile project. Local and national news organizations required immediate access to the site as well as latest news about response efforts. In collaboration with these news organizations, Brad developed and provided the owner with a daily project progress fact sheet as well safety zone photographic locations to proactively provide information needed for the news organizations. Through Brad’s leadership the project developed a communication structure following the US Coast Guard Command Structure that satisfied all agencies’ needs. These efforts resulted in the agencies and client giving high marks to Granite for its collaborative and efficient operations, and having Brad lead the same Granite personnel in the Avila Beach clean-up project.



PROJECT MANAGER

DAVE NIESE



Caltrans Experience . Problem Solver . Multi-Tasker

Parent Firm:

Granite Construction Company

Years of Experience:

36

Licenses/Registrations:

Professional Engineer, Civil CA
#C44107 -1989- Present, Expires
(06-2015)

International Partnering Institute
(Founding Member)

Safety Trained Supervisor, STS
#IEX05043

Education:

Civil Engineering, University of
Southern California, Los Angeles
1982

Areas of Expertise:

- Project Management
- Highway Construction & Realignment
- Bridge/Structures
- Caltrans Partnering Process
- Preconstruction Services Management
- Stakeholder Coordination
- Design Management
- Value Engineering
- Constructability Review
- Construction Scheduling and Phasing
- Risk Identification and Mitigation
- Maintenance of Traffic
- Subcontractor Management
- Project Controls Management

Position Description/Responsibilities:

As Project Manager, David will collaborate with the Caltrans Team and manage the Granite | Sundt Team to ensure delivery of all tasks required for Preconstruction and Construction Services. **David will provide continuity to ensure the project is delivered in accordance with the design and project contract requirements.** He will participate in design and constructability reviews, public and stakeholder meetings and estimating during preconstruction services. He will be present at the site of work at all times while construction is in progress.

Authority:

David has authority over all of the Granite | Sundt direct reports and subcontractors and will ensure dedication of these team members to the project. He has the authority to negotiate a GMP with Caltrans; as well as enter into subcontracts, consulting agreements, and purchasing agreements on behalf of Granite | Sundt. During construction David is empowered to “Stop Work” when a dangerous situation; environmental or quality issue is observed.

David brings 36 years of experience to the I-5 NCC Phase 1 Project including both public and private service. David spent 13 years at Caltrans in roles from Civil Designer to Area Construction Manager; and 23 years as a designer and contractor in the private Heavy Civil transportation sector in such roles as Sr. Project Engineer, Project Manager, Construction Manager, and Area Manager. **During his tenure at both Caltrans and the private sector, David accrued significant California experience on projects with environmentally sensitive aspects such as the Santa Ana River Replacement Bridge adjacent to the Bolsa Chica wetlands in Huntington Beach, Benicia Wetlands Restoration, and the Marina Vista Interchange in Martinez.** Additionally, the UPRR ran through the middle of both the Benicia Wetlands and Marina Vista projects thus requiring significant rail coordination.

This experience provides David a unique and balanced perspective that will benefit Caltrans, SANDAG, and the Lagoon Conservancy with innovative thinking and solutions during both preconstruction and construction.



Select Project Experience

Caltrans Presidio Parkway P3, Design-Build, and O&M - San Francisco, CA

Project Role: **Construction Manager**

Dates: 2011 - 2012

Contact: Bob Finney, Caltrans - (925) 766-8258

Time On Project: 60%

Email: bob_finney@dot.ca.gov

Project # 04-7637U4

This \$270M Caltrans project is a Public Private Partnership for the Design, Build, Operation, Maintenance, and Financing of the highway reconstruction of State Route 101 through the Presidio of San Francisco. The project includes 10 bridges, three cut-and-cover tunnels, and 11 retaining walls. David led his team in constructability reviews and pre-planning for construction activities. David worked with the engineers to develop efficient designs that are sensitive to the environmental and historical nature of the Presidio.

Duties: Scheduling, early construction planning, participation in and provide feedback during all Design Task Force meetings, Preparing Safety, Environmental and Quality Procedures; fostering relationships with owners, vendors and subcontractors; facilitating issues resolution; and ensuring accurate cost forecasting and reporting.

Project Challenges and Successes: The historical nature of the Presidio combined with the environmental sensitivity of the Crissy Marsh required close interaction and coordination with multiple project stakeholders. When developing work plans, David worked closely with the Presidio Trust to ensure their concerns were addressed. David also developed for the team to execute the project's Storm Water Pollution Prevention Plan (SWPPP) which was designed to prevent all construction run-off from entering the highly sensitive Crissy Marsh. The SWPPP bypassed discharges into the Crissy Marsh by utilizing adjacent stormwater outfalls.

The popular Presidio Pet Cemetery was adjacent to construction activity. In order to protect the pet cemetery from falling debris during demolition, Dave developed a cover system that also served as a support system for the Super Structures during construction. Since intrusion to the pet cemetery was not allowed, the plan utilized 120' precast concrete girders.

Caltrans 92/880 Interchange Bid-Build - Hayward, CA

Project Role: **Area Manager**

Dates: 2008 - 2012

Contact: Maurice El Hage, Caltrans - (408) 210-6777

Time On Project: 30%

Email: maurice_el_hage@dot.ca.gov

Project # 04-016014

This \$138M Caltrans project reconstructed the I-880/SR-92 as the main interchange for traffic going to and coming from the San Mateo-Hayward Bridge in San Francisco Bay. The project included replacing the existing at-grade cloverleaf interchange with fully directional flyover ramps, which includes a variety of bridges, retaining walls, soundwalls, and a pump station. Included in the many structures was the widening of a UPRR Overpass bridge.

The project was faced with many challenges due to the high volume of traffic and the countless staging needed in this highly congested area. Through collaboration with the project stakeholders David's team was able to overcome the projects obstacles and the project was completed ahead of schedule and within budget. All decisions were made with the Project first in mind. David commented "Any newcomer to a team meeting had a hard time figuring out who worked for who because the focus was always on what was best for the project rather than individual agendas." David also believed a key to the project's success was having the designer actively involved in the construction process. **Duties:** Ensuring the implementation of the Safety, Environmental and Quality Policies and Procedures; managing personnel, equipment and material resources; fostering relationships with owners, vendors and subcontractors; facilitating issues resolution; and ensuring accurate cost forecasting and reporting.

Project Awards:

- National Marvin M. Black Excellence in Partnering Special Recognition Award,
- International Partnering Institute Diamond Partnering Award,
- AGC California Excellence in Partnering,
- Caltrans Gold Partnering Award,
- AGC Constructor – Excellence in Project Management.



Project Challenges and Successes: This highly congested interchange required a multitude of project stages and complex MOT plans. When faced with an unworkable staging plan that would have resulted in \$2.5M in delays, David led his team to develop a creative alternative that allowed the work to be completed within the original schedule while only costing \$15K.

FHWA Pt. Bonita Lighthouse Bridge CMGC - Marin Headlands, CA

Project Role: **Area Manager**

Contact: Ed Hammontree, FHWA-CFLHD 720-963-3724

Email: Ed.Hammontree@dot.gov

Dates: 1995 - 1998

Time On Project: 20%

Project # HFPD-16

David served as Area Manager on this \$2M CMGC contract to replace the historic Point Bonita Lighthouse Suspension Pedestrian Bridge in the Golden Gate National Recreation Area. The original bridge was built in 1954 to provide access to the lighthouse after the original trail fell into the sea. Access to the site was restricted by a steep, half-mile long trail and through a tunnel, only six feet tall and four feet wide. Additionally, special efforts were required to help the new bridge meet its expected 50-year lifespan in the harsh marine environment.

During the design phase, David proposed the use of “old school” methods for material delivery on the foot trail rather than the planned (and more expensive) helicopter operation. Due to the long lead time for the purchase of the exotic hardwood and suspension hardware needed for the new bridge, David arranged for an early purchase order while the plans were still being finalized. During review of the rock buttressing required of the cliffs below the bridge, David facilitated changes to the design to ensure the plan was constructible with available materials and resources.

To provide Coast Guard access to the lighthouse at all times during construction, David engineered a system where in the existing deck system was supported on temporary towers while the new bridge was constructed within the temporary towers. This allowed full access via the existing deck system while the new bridge was being built.

Project Awards:

- 2012 – ENR California – Best Project under \$10 million
- 2012 – AGC California – Award for Safety Excellence on a High Hazard Job
- 2013 - AGC Constructor - Excellence in Project Management - Projects less than \$10 million

Project Challenges and Successes: Through the CMGC process, David led his team to assist FHWA in opening this popular tourist attraction on time and within budget. Quote from Ed Hammontree, Project Management Branch Chief, FHWA. *“Specifically, FHWA would like to thank Mr. David Niese... who supported all delivery phases of the project in an outstanding manner.” “Your dedication to quality and willingness to identify, discuss and resolve project challenges, while meeting project schedule and budget constraints, made this an extremely successful project.”*





Caltrans Benicia Wetlands Restoration Bid-Build – Benicia, CA

Project Role: **Area Manager**

Contact: Bob Finney, Caltrans - (925) 766-8258

Email: bob_finney@dot.ca.gov

Dates: 2004 - 2006

Time On Project: 40%

Project # 04-006084

This \$6M project included wetlands restoration, dredging 2900 feet of new and widened channel, and multiple jacked pipe culvert crossings under live railroad tracks. The project included coordination with both freight and passenger rail with Form B restrictions.

In order to control silt and sediment, David chose to perform all dredging from the land towards the bay. Additionally, David chose specialized dredging equipment capable of operating in shallow marsh conditions which allowed them to dig the channel with minimal impact to the surrounding wetlands.

David also maintained exceptionally good relations with the Union Pacific Railroad through his high respect for the Railroad's Safety Policies and Procedures. **Duties:** Ensuring the implementation of the Safety, Environmental and Quality Policies and Procedures; managing personnel, equipment and material resources; fostering relationships with owners, vendors and subcontractors; facilitating issues resolution; and ensuring accurate cost forecasting and reporting.

Project Awards: National Aon Build America Environmental Award

Project Challenges and Successes: At the start of this project the team was challenged with maintaining survey control within the existing wetlands. With David's survey experience the project was set up with GPS survey controls that allowed real-time information on depths and widths of cut during dredging operations.

Due to the dense tidal wetlands access was challenging. David secured a subcontractor to supply specialized low ground pressure equipment capable of operating in this dense tidal wetland habitat. This equipment was utilized to gain access to dredge the new channel with minimal disturbance to the existing habitat. This equipment also allowed us to dredge the channel from the landside towards the bay thus providing greater control over sediment during dredging operation.

David led his team to develop a specialized shoring system to support the railroad in order to construct multiple jacked pipe crossings under the existing railroad.

WDOT I-405 HOT Lanes, Design-Build - Bothell, WA

Project Role: **Construction Manager**

Contact: Lisa J Hodgson, WSDOT - (425) 420-9984

HodgsoL@wsdot.wa.gov

Dates: 2012 - 2014

Time On Project: 100%

Project # 8204

David served as Construction Manager for this \$155M Design-Build project to add tolled carpool lanes to 17 miles of Interstate 405 from Bellevue to Lynnwood in Washington State. The project included widening and replacing all existing shoulders with full depth structural sections, bridge structures, retaining walls, soundwalls, drainage systems, and ITS controls. Over 100% of the new storm water runoff was designed to be treated with bioswales and ponds. David developed a relationship with the project's Environmental Compliance Manager and involved him in early construction planning. Through this process, David was able to efficiently plan his construction activities while maintaining strict adherence to the project's environmental restrictions. **Duties:** Early construction planning and scheduling, participate in and provide feedback in all Design Task Force meetings, Preparing Safety, Environmental and Quality Procedures; fostering relationships with owners, vendors and subcontractors; facilitating issues resolution; and ensuring accurate cost forecasting and reporting.

Project Challenges and Successes: David participated in all Public Information Task Force meetings to ensure the proper message was delivered to the public. David's motto is "Say what you are going to do then do what you said you were going to do." David understands the importance of keeping the public informed and reacting to their concerns. "After all, we are building the project for the public"



PROJECT CONSTRUCTION MANAGER (HIGHWAY)

ERIC WESTON



CMGC Experience . Collaborative . Community Focused

Parent Firm:

Sundt Construction, Inc.

Years of Experience:

17

Education:

Bachelor of Science, Geological Engineering, University of Arizona, Tucson, AZ, 1999

Certified Professional Constructor, 2010

Areas of Expertise:

- Construction Manager / General Contractor Delivery Method
- Preconstruction Phase Coordination with multiple Stakeholders
- Heavy Rail Construction Projects
- Construction Phasing in Environmentally Sensitive Areas

Position Description/Responsibilities:

Eric Weston, as Project Construction Manager (Highway) on the I-5 NCC Phase 1 Project, **will plan, organize, schedule, and direct all project construction activities.** He will work with the team to develop a schedule and budget; then deliver to those specific plans. He will participate in Constructability Reviews and estimating during preconstruction services and will be present 100% of the time during construction. He will manage construction staff, craft labor, subcontractors and suppliers. Eric will be responsible for enforcing the Project’s safety, quality, and environmental plans and policies. Eric will ensure that the project is constructed in accordance with the design and project contract requirements.

Authority:

Eric has the authority to “Stop Work” when a dangerous situation is observed, or for an environmental or quality issue. He has authority to direct daily construction operations including field and subcontractor staff.

Eric has 17 years of Heavy-Civil Construction Experience. He has been a member of the Sundt Construction Team for 14 years of working on large scale CMGC contracts for State DOT agencies and Municipalities. As a veteran Project Manager on multiple CMGC Transportation Projects, Eric brings an alternative delivery method skillset to the role of Project Construction Manager for the Highway scope of work on the I-5 NCC Phase 1 Project. His experience includes highway projects such as the \$196M US 60 Granite | Sundt design build project, heavy rail projects including the \$179M Strauss Intermodal Facility, and construction of bridges on congested Interstate Highways over environmentally sensitive wetlands and 404 permitted areas. **Eric’s experience includes CMGC contracts for owners delivering their first CMGC transportation contract.** His diverse background provides a unique perspective and understanding of the similar challenges associated with the I-5 NCC Phase 1 Project.

Eric’s experience also includes 4 years of estimating and 8 CMGC projects which will provide value to Caltrans during constructability reviews and in developing innovative ideas to reduce risk, increase value, and enhance the project schedule. Two of Eric’s projects were awarded the National Marvin M Black Partnering Excellence award which validates his commitment to partnering and a project first approach.



Select Project Experience

ADOT US 60 Superstition Freeway Design-Build - Phoenix, AZ

Project Role: **Field Engineer**

Contact: Floyd Roehrich, Dep Dir for Policy, ADOT,
602-712-7550 Email: Froehrich@azdot.gov

Dates: 05/01 – 07/03

Time On Project: 100%

Project # 060 MA 172 H537001 C: AC

Granite|Sundt delivered this \$196M DB project that included widening of 12 separate bridges, a direct access fly-over bridge connecting center HOV lanes at the interchange of US-60 and the I-10. Eric worked with the JV Team on multiple scopes of work including the bridge widenings while maintaining an acceptable level of service during the construction period. Similar scope of work included sound walls within the 13 mile corridor of the existing Superstition Freeway. The project was completed in 26 months.

Duties: Eric, serving as the Field Engineer for the Granite|Sundt Team, coordinated the maintenance of traffic (MOT), directed field crews during grading and structures work associated with the urban freeway widening activities. His experience on the project contributed to the success of eliminating 1.2M Cubic Yards of waste material, utilizing soil nail retaining walls vs. conventional cast-in-place walls, and modifying the sequence of construction. Eric was instrumental in coordinating an efficient and effective MOT and Traffic Control plan to satisfy the Department's requirement to keep at least six lanes of traffic open during the day and to limit restrictions to nights and weekends. As a result of an accelerated schedule and the design/build concept, this six-year project was finished in two years.

Project Challenges and Successes: Eric played a key role in the planning and installation of the fabricated pedestrian bridge that spanned east- and west-bound traffic with a new centerline foundation constructed adjacent to live traffic. Eric's field experience on this large, fast-paced project brings value beyond a typical Construction Manager position, it confirms his abilities to contribute effectively in the design and preconstruction phase on a CMGC project like the I-5 NCC Phase 1 Project for Caltrans.

ADOT Cordes Junction Traffic Interchange Improvements CMGC - Mayer, AZ

Project Role: **Project Manager**

Contact: Alvin Stump, District Engineer, ADOT, 928-713-7216
Email: Astump@azdot.gov

Dates: 08/11 – 09/13

Time On Project: 100%

Project # 017 YV 261 H426901C

This \$53M CMGC project included the construction of a new, free-flow directional interchange between SR-69 and I-17 in Mayer, Arizona. The project included removing of the existing loop ramps and structures in addition to construction of new structures and ramps. Other improvements included the replacement of Big Bug Creek bridges, construction of local street improvements, and a new, two-way local connector road over I-17 with roundabouts. **Duties:** He was responsible for the cost estimating in the preconstruction phase and the overall project management during construction.

Project Challenges and Successes: During preconstruction, Eric was an integral leader who re-sequenced the proposed construction phasing which originally called for a complex state highway to interstate freeway connection utilizing an interim interchange. Eric and his team collaborated with the design team and eliminated two phases of work which shortened the schedule by six months, provided larger work areas earlier in the project, improving productivity and traffic flow while eliminating driver confusion. This valuable experience working in the preconstruction phase and transferring that knowledge as Project Manager in the construction phase was integral in the success of this complex traffic interchange CMGC project. Eric's experience with CMGC projects will be extremely beneficial to his role as the Project Construction Manager for the Highway scope of work on the I-5 NCC Phase 1 Project.





UPRR Strauss Fueling and Intermodal Facility Bid-Build - Santa Teresa, NM

Project Role: **Project Manager** Dates: 08/12 – 03/14
Contact: Daniel King, Eng Designer, UPRR, 602-322-2602 Time On Project: 100%
Email: DKING@up.com Project # 747229

Built for the Union Pacific Rail Road, the Santa Teresa Rail Facility is located on a 2,200 acre parcel of desert in New Mexico about two miles north of the U.S. border. The \$179M contract was awarded to Sundt and Eric managed the overall project including the concrete paving and related intermodal block swap/switching yard, and an intermodal ramp. **Duties:** As project manager, Eric coordinated all work between the different divisions of the UPRR. New facilities management, existing operations and maintenance personnel all had specific requirements to complete the work while maintaining current operations. He understood all of the safety requirements adjacent to an active rail line and the communication protocol which demonstrated his ability to coordinate critical work while not disrupting rail service on the project.

Project Challenges and Successes: Eric was tasked with building a \$179M Intermodal Facility for the UPRR, but in reality had multiple stakeholders within UPRR on the project. He served the needs of the new construction facilities, but also maintained relationships with the operations personnel, and maintenance personnel within the facility as sections of the project became usable. This complex project management experience presents Eric with the necessary skillset to deliver the I-5 NCC Phase 1 Project considering the multiple phases, stakeholders and scope coordination between the Highway, Rail and Lagoon work.

ADOT SR 303 Highway, Cactus, Waddell & Bell Road CMGC - Surprise, AZ

Project Role: **Estimator / Project Manager** Dates: 05/2009 – 02/2011
Contact: Bharat Kandel, Resident Engineer, ADOT, 602-768-4403 Time On Project: 100%
Email: bkandel@azdot.gov Project # H723901C

This CMGC project was located along State Route 303 in Maricopa County. The work on this project included interim improvements to the major arterial roadways of Cactus, Waddell, and Bell Roads crossing the future Loop 303. At Cactus and at Waddell Roads, improvements were made to the crossroads, which remained at grade, facilitating and expediting future construction of the SR-303 Over Passes. At Bell Road, SR-303 was depressed, with Bell Road crossing SR-303 on a Cast in Place Post Tension Box Bridge. Existing utilities and irrigation wells at each location were required to be relocated to accommodate the crossroad construction, The Bell Road crossing required detouring traffic, relocating existing utilities, and constructing a temporary ramp connection at the west end of the Bell Road structure. **Duties:** As the Estimator and Project Manager on this CMGC contract he developed the cost model and schedule, coordinated the design and constructability reviews and developed value engineering proposals. In the Construction Phase, he was responsible for the overall Project Management. Serving as the Lead Estimator during the Preconstruction Services Phase and the Project Manager during the Construction Phase, provided continuity of personnel and knowledge which was essential to capitalize on phasing possibilities considered in the design phase.

Project Challenges and Successes: When the Notice to Proceed was issued to Eric to begin work, certain portions of the Right-of-Way had not yet been obtained. In order to maintain the project schedule and budget, Eric was able to re-sequence the work around the unavailable Right-of-Way. The Department completed the acquisition, and Eric's crews were able to complete the remaining work within the original schedule and budget. Eric's experience with creating contingency phasing plans based on available Right of Way, will benefit the I-5 NCC Phase 1 Project. He will utilize this experience as the Project Construction Manager for the Highway scope and provide phasing recommendations considering Right-of- Way constraints relative to the Construction Schedule. His strong project management experience will enhance his ability to manage the highway construction portion during the construction phase. Eric's experience working with the Department and the adjacent municipalities to maintain traffic and provide the same level of service throughout construction will also be valuable on the I-5 NCC Phase 1 Project.



City of Flagstaff Fourth Street Railroad Crossing Phase II CMGC - Flagstaff, AZ

Project Role: **Project Manager**

Contact: Randy Whitaker, Sr Project Mgr, City of Flagstaff,
928-213-2681; Email: rwhitaker@flagstaffaz.gov

Dates: 10/04 – 12/06

Time On Project: 100%
Project # 353000

This project included the construction of Fourth Street from Huntington/Industrial Drive to US Highway 66 with a 230' vehicle and pedestrian bridge over the BNSF railroad double-track, and the traffic interchange at the intersection of Fourth Street U.S. Highway 66. 3,000' of Route 66 was also reconstruction as part of the project. In addition to the construction of the bridge over the railroad, Sundt's scope of work included relocation of 6,610 LF of BNSF railroad Double-track along US Highway 66. The project also included improvement to the Flagstaff Urban Trail System (FUTS), which parallel the project on the west side, and required a partnership between Sundt and the City of Flagstaff Parks and Recreation Division. Similar to the bike and pedestrian trail system planned upgrades on the I-5 NCC Phase 1 Project, the City of Flagstaff was in desperate needs to upgrade their system. A second crossing at the east end of town was sorely needed and was essential to improving mobility and solving the City of Flagstaff's problems with traffic congestion. **Duties:** As Project Manager on Flagstaff's first Transportation CMGC Project, Eric's managing the day to day project activities coordinating with the City of Flagstaff, BNSF Railroad, local businesses, and residents. He was responsible for maintaining the schedule and providing project oversight for all operations.

Project Challenges and Successes: Eric and his team utilized innovative ideas to eliminate a detour and created a solution that ultimately improved the project's budget and schedule. The option selected mitigated the impact to residents and created safer and more efficient drive times. Eric and his team proposed an innovative method to form the cast-in-place post tensioned box bridge utilizing a soffit-fill technique. This alternative method to conventional forming provided a more cost efficient alternative while producing a bridge over the BNSF line that could be built within the original. It was the use of this technique that allowed the project to continue on schedule so that a critical milestone could be met.

Once the bridge was fully constructed, and the fill was removed from the 4th Street Overpass site, the excess fill was then transported to the City's planned Recreation Center site. Understanding the City's needs on a separate Recreation Center Project provided them full use of the material and helped keep the cost of borrow to a minimum. This Stakeholder and adjacent project coordination is another example of Eric's management experience utilizing the CMGC delivery method. This same level of interaction will be essential for success on the I-5 NCC Phase 1 Project.





PROJECT CONSTRUCTION MANAGER (RAIL)

JOHN ESCHENBACH



Problem Solver . Community Focused . Trusted Partner

Parent Firm:

J.L. Patterson & Associates, Inc.

Years of Experience:

38

Licenses/Registrations:

Class A Contractor's License (CA)

Class B Contractor's License (CA)

Certifications:

Federal Railroad Administration
Track Safety Standards CFR 49,
parts 213.7 (a) & 214

Railroad Bridge Inspector: Federal
Railroad Administration (1993)

Qualified Railroad Bridge
Supervisor

General Code of Operating Rules
(GCOR) Maintenance of Way
Employees Trained

PUC General Orders

Amtrak, Metrolink, Pacific Imperial
Railroad and NCTD railroad safety-
trained

Education:

Coursework, Engineering, Essex
Community College, 1972

Coursework, Engineering, Harford
Community College, 1980

Continuing Education Units,
Engineering, George Washington
University, 1986; George Mason
University, 1990; Penn State
University, 1992

Rail Expertise and Experience:

- Project Management and Safety
- Right-of-way, signals, grade crossings, and structures

Position Description/Responsibilities:

As the Rail Project Construction Manager, John Eschenbach will be responsible for assuring that all rail portions of the project are constructed in accordance with the design and project requirements. **He will be on site 100% of the time while all rail construction activities are in progress and ensure a safe and well-maintained right-of-way, including signals, grade crossings, bridges and other structures.** His activities will include providing the day-to-day oversight of outside contractors performing NCTD, SANDAG, and State of California rail construction on the I-5 North Coast Corridor project.

Authority:

John will work with David Niese, Project Manager, on rail related activities, to negotiate a GMP with Caltrans; as well as enter into subcontracts, consulting agreements, and purchasing agreements on behalf of Granite-Sundt, A Joint Venture. During rail construction John has the authority to "Stop Work" when a dangerous situation is observed, or for an environmental or quality issue. He has authority over daily rail construction operations as well as field and rail related subcontractor staff.

John's 38 years of experience in rail construction and maintenance will provide the expertise needed for in-depth constructability reviews in the Preconstruction Phase, as well as thorough and effective construction management during the day to day field operations overseeing the rail work. His understanding of train systems and rail safety controls will be invaluable to the project for the successful completion of construction activities NCTD's rail corridor. John has over 30 years in management positions of increasing responsibility. **As Senior Project Manager, Engineering and Construction for Amtrak, he was responsible for assuring a safe and well-maintained right-of-way, including signals, grade crossings, bridges and other structures.** His activities included the day-to-day management of outside contractors performing NCTD, Amtrak, and State of California capital construction projects on NCTD's - San Diego Northern Railway, now known as the Coaster Main Line (Coaster).



Select Project Experience

Amtrak Carlsbad Double Track Project - Carlsbad, CA

Project Role: **Senior Project Manager and Bridge Supervisor**
Contact: Bill Bronte, Chief Division of Rail
E-mail: bill_bronte@dot.ca.gov

Dates: 2011 - 2012
Time On Project: 80%
Project C-034-01389

John provided Project Construction Management for Amtrak's \$18M Carlsbad Double Track and Bridge Project. **Duties:** Design and Construction Manager for Caltrans Division of Rail, review of design documents for constructability issues, participation in developing the best approach for installation of CISS piles, abutments, trackwork, advise on necessary utility relocations and assisted with the overall plan to erect the bridge super structure.

Project Challenges and Successes: Building a bridge for an active rail line that has to remain in service during construction is a challenge. John's 38 years of experience and long time work history working in the LOSSAN corridor provided the local expertise to know what realistic construction means and methods could be utilized in the approach to managing the bridge construction. The project was built successfully under John's oversight, and his participation in developing the best approach for all the required work within the AWW's and AFWW's will be a valuable asset to Caltrans ensuring that the Rail component and Construction Management is handled by an experienced veteran familiar with the corridor.





SANDAG/PGH Wong Engineering, Inc. San Onofre to Pulgas Double Track, Stage 1 Design Phase - San Onofre to Pulgas, CA

Project Role: **Senior Project Manager**
Contact: Steve Hoyle, Project Manager
E-mail: sho@sandag.org

Dates: 2011 - Present
Time On Project: 60%
Project 5001072, 86390-007-13

John provided Preconstruction Phase professional services on the \$19M San Onofre to Pulgas DT Stage 1 Design. **Duties:** Review comments at 60%, and 90% of Plans, Specifications and Estimates (PS&E) pertaining to track, signal, civil and bridge work. He developed requirements for Absolute Work Windows (AWW), Absolute Freight Work Windows (AFWW), and estimated flagging hours. He attended Project Management meetings with design consultants to finalize PS&E for bid solicitation.

Project Challenges and Successes: John’s challenges on this project included review of engineered documents and incorporating realistic construction methods to perform the work within the AWW and AFWW constraints. His input during the design phase provided SANDAG/PGH Wong Engineering with realistic constructable design, and a complete set of specifications that can be interpreted correctly by the contracting community to provide cost certainty during the procurement phase. John’s experience and knowledge of the constraints building work on active passenger and freight rail lines is a valuable asset to the design phase. It creates a set of plans, specifications and realistic estimate incorporating all of the required safety and AWW’s in order to build the work within the local and regional regulations. His contribution to the Granite | Sundt Team during the Preconstruction Phase will be valuable as he transitions from the design phase into Construction to Manager the Rail components of the I-5 NCC Phase 1 Project.

SANDAG/PGH Wong Engineering Inc. Oceanside Transit Center Third Track Project - Oceanside, CA

Project Role: **Senior Project Manager**
Contact: Steve Hoyle
E-mail: sho@sandag.org

Dates: 2011 - 2012
Time On Project: 20%
Project 5001072

On this Design Phase contract, John provided design review comments at 60%, and 90% of Plans Specifications and Estimates (PS&E) pertaining to track, signal, and civil work. He developed requirements for absolute work windows, freight work windows and estimated flagging hours. He attended meetings with the design consultant, NCTD and other consultants to finalize PS&E for bid solicitation. **Duties:** Design review and construction phasing for trackwork; coordination of flagging and Form B’s; review and approval of site specific work plans and shop drawings for track and structures work; inspection of trackwork and daily reports; conducting joint track inspections with NCTD’s contractor TASI; determining when speed restrictions were required during track shifting and installation of new track; and review and approval for AWW’s & AFWW’s.

Project Challenges and Successes: This project was an improvement to an existing transit center. Working around an existing facility and maintaining a safe operating environment surrounded by the public is a challenge. Mr. Eschenbach developed an operations phasing plan to minimize disruption of service to Sprinter and Commuter train service during construction. This experience will be valuable when developing similar work plans during the Preconstruction Phase for the San Elijo Double-track and Batiquitos Double-track work on the I-5 NCC Phase 1 Project.

AMTRAK / NATIONAL RAILROAD PASSENGER CORPORATION

Project Role: **Senior Project Director**
Contact: Cassim Mamoon, Amtrak Division Engineer
E-mail: mamoonc@amtrak.com

Dates: 1992 - 2010
Time On Project: 100%
Project Various

After serving as a Senior Engineer in Amtrak’s Engineering Department (Track/Structures), John Eschenbach was named Senior Project Director and was responsible to execute the following:

- Coordination and oversight of Amtrak, NCTD and State of California contractors on the Coaster
- Provided coordination for flag protection, form B’s, AWW and speed restrictions for train movements.
- Provided review comments for movement of BNSF heavy and wide loads over NCTD’s R/R.
- Presented contractor safety training classes for Amtrak and NCTD projects.
- Provided CM services for the successful completion of the entire O Neil to Flores second main track



- project within budget and without accidents.
- Provided CM services for the installation of several new control points and second main track projects on the Coaster. Projects completed with no change orders and on budget. Total double track projects, directly responsible for 24 miles and provided management of design process.
- Managed the installation of 3 new crossing upgrades with Amtrak forces on the Escondido Subdivision.
- Provided direct oversight of general contractors to assure projects comply with plans and specifications.
- Interpreted plans and specifications to resolve disputes
- Provided 24-hour on-call emergency service to assist in restoring rail service.
- Coordinated with NCTD and resource agencies to obtain permits on behalf of NCTD for several double track projects.

In addition to providing the above services while serving as Senior Project Director, Mr. Eschenbach provided construction management services for the following large capital projects on NCTD:

- False Bay Second Main Track and Tecolote Bridge
- Rose Cannon Bridge, MP 259.6 replacement project
- Bridge repairs, Bridge MP 223.0 four spans replaced/repared
- Bridge 240.4 cap replacement and repairs
- Encinitas Second Main Track project
- Lomas Santa Fe Grade Separation and Double Track
- Pier View Way underpass installation
- Bridge 230.6 replacement project
- Fallbrook siding up-grade project
- San Onofre Second Main Track project
- O’Neil to Flores Second Main Track project
- Oceanside Passing Track project and bridge replacement. (This project was similar in scope to what is required on the bridge replacement phase of BLDT project).
- Bridge 208.6 cap replacement and repairs
- Santa Fe Depot station track and platform improvements project
- Carlsbad Double Track and Bridge Project (Similar in scope to BLDT project).
- Bridge 208.6, modifications (Green Beach)) timber bridge replacement

All of these projects were built on a class 5 operating track with both passenger and freight service similar to the I-5 NCC Phase 1 Project scope at San Elijo and Batiquitos Doubletrack Projects. All projects required close coordination of railroad flagging services and Form B’s were required for the construction of each project. John provided review, comment and approval of site specific work plans for track and structures.

John provided direct oversight during the construction of track, railroad bridges, signal systems and grade crossing installations, which included the demolition and replacement of railroad timber trestle bridges. He also reviewed, commented and approved shop drawings and inspected trackwork components and reported. He conducted joint track inspections with NCTD and/or their contractor TASI and determined when speed restrictions were required during track shifting and installation of new tracks and control points (CP’S). He reviewed and approved submittals, coordinated and provided updates to assure that track was placed back in service on schedule for absolute work windows (AWW) and absolute freight work windows (AFWW) with NCTD, BNSF, Amtrak and Metrolink.

John’s ability to anticipate potential issues during construction comes from his balanced experience working in the Design Phase of similar projects. This will be a valuable asset to the CMGC Team on the I-5 NCC Phase 1 Project. His strong relationships and understanding of the federal regulations within the LOSSAN Corridor and NCTD operating procedures will provide exceptional Construction Management expertise for the Rail components on The Project.



LEAD ESTIMATOR/BUDGET MANAGER

ALBER YOUSSEF



CMGC Experience . Problem Solver . Collaborative

Parent Firm:

Granite Construction Company

Years of Experience:

34

Education:

BS, Civil Engineering, Cairo, Egypt,
Year 1980

MS, Civil Engineering, Clarkson
University, Potsdam, NY, Year 1989

Areas of Expertise:

- Quantities Estimates
- Cost Estimating Alternatives
- HCSS Estimating Software
- Value Engineering
- Constructability Review
- Input on Schedule and Phasing
- Guaranteed Maximum Price Development
- Construction Bid Package Development

Position Description/Responsibilities:

As Lead Estimator/Budget Manager, Alber Youssef will lead the estimating effort through preconstruction services including GMP negotiations as final scopes of work become available within the project's budget. **Alber will be responsible for creating the open cost model for the Project, estimating each milestone Opinion of Probable Construction Costs (OPCC), preparing alternate cost estimates, managing the Granite | Sundt takeoff department for quantity verification, providing detailed production input to the scheduling team, life-cycle cost estimates, and providing cost related information for all risk items.**

Authority:

Alber has the authority to share cost information including crew composition and history of productions with his Caltrans and Independent Cost Engineer counterparts. Alber has the authority to interact with subcontractors and suppliers and discuss innovation alternatives, current cost considerations and escalations.

Alber has contributed his expertise in construction estimating for 34 years on Caltrans and other large national owner programs valued at over \$10B. In addition to the projects listed below other projects Alber has provided cost estimates for include: Caltrans \$32 M I-805 Chula Vista, CA; Caltrans \$120M I-5/SR 118, San Fernando, CA; Caltrans \$70M SR 99, Fresno, CA; \$115M U/G Storm Water Overflow Storage Tank, Queens NY; \$143M Fountain Ave Landfill, Brooklyn NY; \$128M Long Island Expressway, Long Island, NY; and the \$95M Long Island Expressway, Long Island NY. Alber's responsibilities include constructability reviews and development of cost estimates for the constructing and rehabilitation of heavy civil construction projects including highways, bridges, transit, waste and water treatment plants, landfill and tunnels in range of \$100M to \$2B.

Many of these projects used alternative contract delivery methods providing Alber with vital knowledge in all aspects of cost estimating and budget control during the preconstruction phase. Alber is an expert in HCSS estimating software, allowing for accurate and efficient preparation of detailed estimates and cost comparisons. He has experience in all aspects of cost estimating, from the development of Opinion of Probable Construction Cost (OPCC) cost models, to the entire range of reports required for Caltrans contract packaging.



These include the experience assessing price and risk, definition of project assumptions, and cost estimations of design alternatives including subcontractor procurement that are critical to the development of a Guaranteed Maximum Price (GMP) for the general contractor phase of construction. This experience will benefit Caltrans, SANDAG, and the lagoon conservancy with a strong understanding of estimating and compliance of federal and state regulations regarding budget/finance and procurement for a CMGC delivery.

Select Project Experience

Caltrans SR 99 Realignment CMGC - Fresno, CA

Project Role: Chief Estimator	Dates: 6/20/14 – Present
Contact: James Waller, Preconstruction Manager	Time On Project: 5%
Email: james.waller@gcinc.com	Project #06-2HT101

This \$110M CMGC project includes preconstruction services for the 2.5 mile realignment of SR 99 to accommodate the High Speed Rail through Fresno including the reconstruction of 2 overhead structures, 1 interchange, and 1 overcrossing structure. This is Caltrans first project to be awarded in the CMGC pilot program. Alber provided oversight of the team of estimators during the estimate preparation phase.

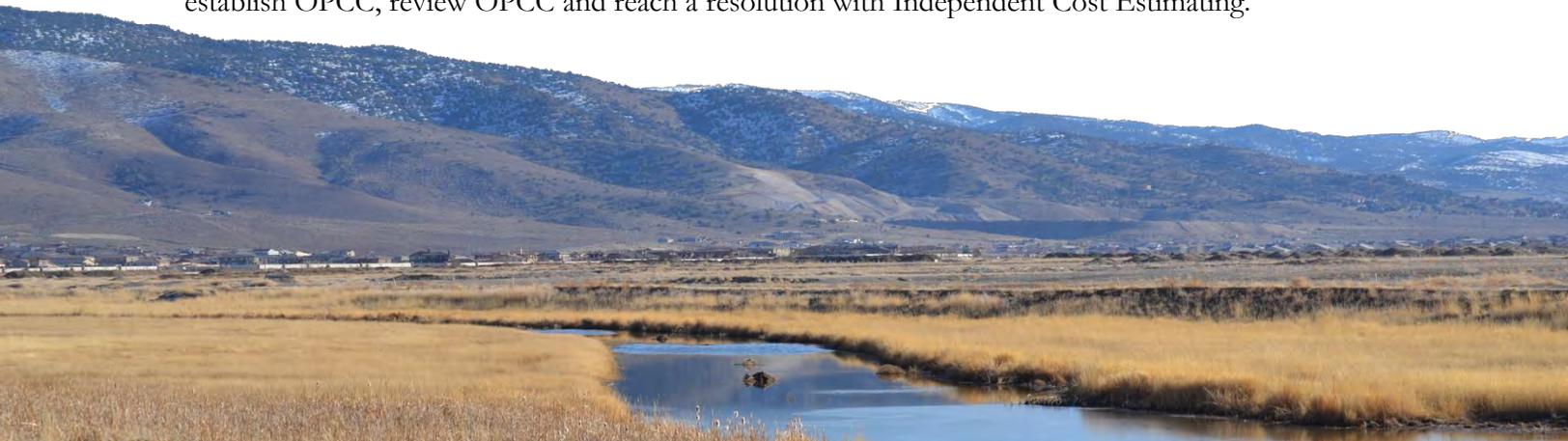
Responsibilities included: Provided oversight and support to the estimating staff. Alber led the estimate reviews providing insight and technical knowledge of complex highway construction. Alber aided in the development of cost and work breakdowns, final estimate development, quantity calculations, craft and salaried personnel rate information, subcontractors plug prices, risk register, and alternative solutions ideas that will result in future savings to the owner.

Regional Transportation Commission SouthEast Connector CM/GC - Reno, NV

Project Role: Lead Estimator	Dates: 11/13 – Present
Contact: Brian Roll, Preconstruction Manager	Time On Project: 20%
Email: brian.roll@gcinc.com	Project # 532013

Alber is the Lead Estimator for this \$150 million CMGC project, which will connect Sparks Boulevard and Greg Street down to the intersection of Southwest Parkway and Veterans Parkway. This corridor is presently underserved to meet the challenge of 120,000 cars per day from 13 regional roads to the west of I-580, and another 103,000 vehicles funneled in from three regional roads. Granite is leading the preconstruction services and Alber is developing the GMP for the general contractor phase of work. The project includes a new six-lane road, provides opportunities for multimodal improvements, and is being designed to emphasize and protect the assets of the natural environment. Stakeholder contribution to the design involves a range of public interest and community groups. Being developed through a wetlands area, the design includes bridges and culverts, along with recreational pedestrian paths and biking trails.

Responsibilities included: Developing estimate work breakdown structure, final estimate development, quantity calculations, owner coordination/collaboration including preparation of estimate instructions, provide craft and salaried personnel rate file, provide permanent materials and subcontractors plug prices, mitigate risk and contingencies, attend design work shop meetings, constructability reviews and alternative solutions and ideas that will result in savings, vendor communications, and subcontractor management, establish OPCC, review OPCC and reach a resolution with Independent Cost Estimating.





San Clemente Dam Removal Design-Build - Carmel Valley, CA

Project Role: Lead Structures Estimator	Dates: 2009
Contact: Bill McGowan	Time On Project: 100%
Email: bill.mcgowan@gcinc.com	Project #3000051486

Alber prepared the final estimate for this project. The work involves re-routing Carmel River and the demolition of the 90 year old San Clemente Dam. The \$61 million Design-Build project includes the construction of a new construction access road, a temporary diversion system, a dewatering system, 700,000 cubic yards of sediment excavation, 350,000 cubic yards of rock drill and blast, a rock fill diversion dike, and rock fill stabilized sediment slope. The project also included channel and habitat restoration to provide fish and wildlife habitat.

Similar to the I-5 NCC project there was significant channel restoration on this project. The channel restoration improved fish passage, diminished erosion, restored natural character and function, created long-term sustainable habitat, and restored the natural and aesthetically pleasing features of Carmel River and San Clemente Creek.

Responsibilities included: Lead task force meetings, developed ATCs, cost estimate development, take-off quantities, vendor communications, subcontractor management, budget, safety, and production.

ICC Contract A Design-Build - Baltimore, MD

Project Role: Lead Structure Estimator	Dates: 06/06 – 12/06
Contact: Pat Mullen	Time On Project: 10%
Email: patrick.mullen@gcinc.com	Project Contract A

Alber was the Lead Structural Estimator construction of this \$463M ICC Contract A, Maryland. The InterCounty Connector (ICC) links existing and proposed development areas between the I-270/I-370 and I-95/US 1 corridors within central and eastern Montgomery County and northwestern Prince George’s County with a state-of-the-art, multimodal east-west highway that limits access and accommodates the movement of passengers and goods. This project encompassed approximately 650,000 square yards of paving and 2,400,000 cubic yards of earthwork. The work consisted of mainline, ramps and cross roads pavement, utility relocations, bridges, retaining walls, noise walls, earth berms, drainage facilities, landscaping, signing, signals, lighting, pavement markings, tolling infrastructure, maintenance of traffic, intelligent transportation devices, public relations support, and environmental compliance. Highway structures consisted of: constructing 7 new dual bridges, constructing 11 new single brides and widening 4 existing bridges.

Responsibilities included: Estimate development, evaluation and costing project risk items, value engineering concept development and pricing, pricing impacts of multiple traffic handling alternatives, quantities, vendor communications, subcontractor management, budget, safety, and production.

Design Build SR202 - Phoenix, AZ

Project Role: Lead Structures Estimator	Dates: 2009 - 2010
Contact: James Waller	Time On Project: 10%
Email: james.waller@gcinc.com	Project # H745701C

Alber was the Lead Structure Estimator for \$40 million of scope in this overall \$85M project. The roadway realignment involved widening and reconstruction of about 5 miles of SR202. The project involved Reconstruction of a major interchange and fly over, night shift work requiring close coordination with other activities in adjoining road closures and other contracts, detailed and innovative traffic control configurations requiring extensive planning.

Responsibilities included: Estimate development, quantities, vendor communications, subcontractor management, evaluation of traffic control options, profit and loss, safety, and production, as well as project planning, scheduling and coordination.



SCHEDULER

DAVE DOUGHTY



Caltrans Experience . CMGC Experience . Collaborative

Parent Firm:

Granite Construction Company

Years of Experience:

34

Licenses/Registrations:

Certified Planning & Scheduling Professional / AACEI

Education:

BS/Construction Management,
Washington State University,
Pullman, 1979

Oracle Primavera certified as a Client
Trainer for P6 v7

AACEI Planning and Scheduling
Professional. (PSP)

Areas of Expertise:

- Expert in CPM scheduling software (Oracle Primavera P6)
- Alternative Procurement Process (CM/GC & D-B)
- Caltrans SR-125 Toll Road Design-Build Project
- Construction Project Controls
- Schedule update management and analysis
- Contemporaneous Time Impact Analysis
- Critical Path Project Management

Position Description/Responsibilities:

As Scheduler, David will work with the Project Team to develop and maintain the baseline project schedule. Using Primavera P6, or another approved software, **David will support the CM in validating the current schedule and analyzing schedule risk.** David's responsibilities as Scheduler on the I-5 North Coast Corridor Phase 1 Project will include developing and updating the projects' preconstruction and construction cost / resource loaded schedules. In conjunction with Caltrans and the design team, he will develop a baseline construction schedule that will be updated at major milestones, deliverables, and dependencies.

Authority:

David will have the authority to work directly with his Caltrans counterpart to validate the Caltrans schedule logic, provide updates and create alternative schedules. David has the authority to share all of Granite-Sundt JV's schedule information directly with Caltrans.

David Doughty has 34 years of experience in the heavy civil construction industry, specializing in CPM schedule development and maintenance. **He is experienced in working with a variety of stakeholders including consultants, contractors, engineers, designers, and clients.** He has extensive general contracting experience including transportation, infrastructure, water/wastewater and light rail. David is active in the Project Controls Community - AACEI, PMI and Planning Planet. He is highly skilled in oral and written communication and has a passion for Project Controls, Planning and Scheduling. His experience includes scheduling and reporting responsibilities for projects such as the Portland I-205 LRT CMGC, Caltrans SR-125 Toll Road design-build as well as many other design-build and bid-build projects.

David's passion for scheduling is utilized as a Scheduling Manager at Granite Construction Company. He provides supervision and assistance to project teams in the development and integration of proposal and project schedules. **He provides schedule analysis then recommends actions for potential impacts to determine criticality of delay events.** He works with project teams to provide ongoing support for monthly updates, reporting and revisions during the project lifecycle. David also plans and schedules training for Granite employees including certified Oracle University classes. He is responsible for developing, implementing, and maintaining corporate scheduling practices and procedures.



Select Project Experience

Caltrans SR-125 South Toll Road Gap Connector Design-Build - San Diego, CA

Project Role: Project Scheduler / Public Outreach Coordinator	Dates: 2005 - 2006
Contact: Laurie Berman (619) 688-3631	Time On Project: 100%
Email: laurie.berman@dot.ca.gov	Project # SR-125

This \$368M design-build project was to build 13-mile, 4-lane segment combination of new freeway and a privately funded controlled access toll road in the San Diego area. The project was executed as a joint venture under a franchise agreement between Caltrans and California Transportation Ventures. The nature of the two contracts, the Gap/Connector administered by Caltrans, utilizing federal and state funding; and the Toll Road, administered by California Transportation Ventures, utilizing private funding and federal loans, the team created a seamless interface for coordination, project specifications, and schedule. The JV team self-performed the construction on all three segments and managed the work of subcontractors with a peak personnel onsite of 560.

Responsibilities included: The periodic updating of schedule, schedule maintenance and analysis. When David's scheduling assignment concluded, his was responsible for conducting public outreach meetings, assisting in constructability review of soundwall design drawings, and coordinating with client easement acquisition efforts.

Regional Transportation Commission SouthEast Connector CM/GC - Reno, NV

Project Role: Schedule Sponsor	Dates: 2014 - Present
Contact: Ersan Eldelekliglu, Project Manager	Time On Project: 5%
Email: ersan.eldelekliglu@gcinc.com	Project # 532013

This \$150 million CM/GC project will connect Sparks Boulevard and Greg Street to the intersection of Southwest Parkway and Veterans Parkway. This corridor is presently underserved to meet the challenge of 120,000 cars per day from 13 regional roads to the west of I-580, and another 103,000 vehicles funneled in from three regional roads. The project includes a six-lane road, provides opportunities for multimodal improvements, and is being designed to emphasize and protect the assets of the natural environment. Stakeholder contribution to the design involves a range of public interest and community groups. Being developed through a wetlands area, the design includes bridges and culverts, along with recreational pedestrian paths and biking trails.

Responsibilities included: Granite is leading the preconstruction services with Dave managing and developing the project schedule for all phases of work. As the Schedule Sponsor Dave is responsible for oversight of scheduling activities throughout the duration of the project. He provides the project team with ongoing support and scheduling expertise during the life of the project.

NY State Thruway Authority Tappan Zee River Crossing Design-Build – Tarrytown, NY

Project Role: Scheduling Manager	Dates: 2012 - 2013
Contact: Peter Sanderson, Project Manager (303) 886-6679	Time On Project: 30%
Email: peter.sanderson@newnybridge.com	Project D214134

The \$3.14 B Tappan Zee Hudson River Crossing project, is the largest transportation design-build project to date in the United States and one of the largest construction contracts in New York State history. During the proposal phase our team worked hand-in-hand with the Agencies to develop technical concepts and construction approaches that yielded lower costs, improved maintainability, reduced environmental impact and improved aesthetics.

Responsibilities included: Dave provided scheduling expertise during the proposal phase prior to submission. Following award, Dave has worked with the project scheduling team to provide a **Baseline Project Schedule consisting of 5,500 activities**. He provides supports, oversight and expertise on a periodic basis and during scheduling workshops.



TriMet Portland I-205 LRT Extension CM/GC - Portland, OR

Project Role: **Scheduler / Project Controls**
Contact: Megan Oldfield, TriMet (503) 962-8863
oldfieldm@trimet.org

Dates: 2006 - 2008
Time On Project: 100%
Project RH040161LE

David was assigned in the design phase on a \$165 million design build Tri-Met light rail project. The double track, I-205 new light rail extension begins at the north end with a fully interlocked double crossover that ties the I-205 segment into the existing Blue Line. New construction of 6.7 mile double-track runs parallel to I-205 and is tied into an existing line. Structures included two at-grade crossings, five bridges and two portals as well as eight platforms/stations, seven traction power substations, six signal communications buildings, storm drains, sound walls, installation of ticket vending machines, local art on the station platforms, and four major park-and-ride facilities, including construction of curbs and gutters, paving and islands.

Responsibilities included: Final CPM development with 2,000 activities, implementation and updating, technical submittal, RFI coordination and management, and miscellaneous Granite non-sponsor administration.

Nevada DOT I-215 / I-515 Interchange Project - Henderson, NV

Project Role: **Project Scheduler / Cost Engineer**
Contact: Lucy Joyce, Project Manager, (775) 888-7537
Email: ljoyce@dot.state.nv.us

Dates: 2004 - 2005
Time On Project: 100%
Project 3150

David was assigned to this \$107 million urban interchange project to manage the project scheduling and cost engineering. The work scope consisted of constructing the I-215 / I-515 Interchange, specifically the last section of the southeastern leg of I-215, commonly known as the Las Vegas Beltway. This project will also link the Beltway with I-515 in Henderson, Nevada.

Responsibilities included: Maintenance and updating of the CPM schedule, weekly schedule briefings to the Nevada Department of Transportation, and the review and approval of daily charges to project cost accounts. Primavera, 1900 Activities.

Colorado DOT US 36 Managed Lanes Phase 1 Design-Build, Broomfield, CO

Project Role: **Schedule Sponsor**
Contact: Mark Gosselin, Project Director, 303-404-7020
Email: mark.gosselin@state.co.us

Dates: 2012 – Present
Time On Project: 10%
Project NH 0361-093

This \$242M project consisted of providing design-build services on widening US-36 near Broomfield Colorado, from Federal Blvd to 88th Street; the construction encompasses 10 miles of existing freeway. The project requires the widening of three existing bridges, and complete reconstruction of five additional bridges including one over the BNSF railroad. Additional work includes: removing and replacing the existing pavement with new concrete paving; widening the roadway to accommodate the bus rapid transit (BRT) system and managed lanes; installing ten major box culverts; excavating storm water retention ponds; installing storm drainage; constructing MSE and sound walls; and signing, lighting, bike paths, landscaping, and ATM/LUS/ITS installation.

Responsibilities included: As the Schedule Sponsor on this project Dave is responsible for oversight of all scheduling activities on both phases of these projects. He provides the project team with ongoing support and scheduling expertise during the life of the project.



ENVIRONMENTAL / PERMIT MANAGER

MIKE JOSSELYN



Collaborative - Environmentally Sensitive - Innovative

Parent Firm:

WRA Environmental Consultants

Years of Experience:

33

Licenses/Registrations/Affiliations:

Society of Wetland Scientists

Professional Wetland Scientist

Certification Program (Past President)

Association of Environmental Professionals

American Association for the Advancement of Science

Education:

PhD, Marine Botany, University of New Hampshire, 1978

MS, Marine Science, University of Miami, 1975

BS, Biology, Cornell University, 1972

Certified Professional Wetland Scientist, Society of Wetland Scientists

Environmental Recognition:

Conservator of the Year, 2000, Bolsa Chica Conservancy

Life Time Fellow, California Academy of Sciences

Position Description/Responsibilities:

As the Environmental/ Permit Manager, Mike Josselyn will be responsible for ensuring that the **project is carried out in accordance with all of the environmental commitments and permits specified in the Environmental Impact Report and Statement (EIR/EIRS)**. Mike has extensive experience working in and around sensitive habitat and lagoon/wetland areas. He has a complete understanding of State and Federal environmental laws and regulations.

Authority:

Michael will work with David Niese, Project Manager, on environmental related activities, utilizing his expertise to ensure cost and schedule certainty in the Preconstruction Phase developing the GMP with Caltrans. During construction Michael has the authority to “Stop Work” if an environmental or permitting issue is in question. He will manage biologists for compliance monitoring and work with a permit coordinator to ensure the overall project requirements are maintained.

As a co-founder and former President of WRA Inc., Mike formed the company to incorporate the best scientific information to manage environmental compliance and to assure successful implementation of habitat protection and restoration. **Mike’s work has focused on environmental permitting, habitat restoration, large scale compliance monitoring, and expert testimony.** WRA employs over 55 professionals at offices in San Rafael, Los Angeles, Fort Bragg and San Diego.

He served as the Biological Permitting Principal for the San Diego Gas and Electric’s (SDG&E) \$1.9B Sunrise Powerlink Project where WRA provided biological and permitting services for the installation of a transmission line running from renewable generation sources in the imperial Valley to the coastal areas of San Diego County. Mike prepared the approved Habitat Mitigation and Monitoring Plans covering five mitigation sites for impacts to wetlands and waters including detailed construction documents for mitigation. Complementing the permit work, Mike managed his Compliance Team who monitored the construction work for permit compliance and coordinated the mitigation construction and management of the properties.



He was the lead biologist for major conservation plans at Tejon Ranch in Kern County and for several large scale wetland restoration projects throughout the nation. Mike has received awards for his work at the 1000-acre Bolsa Chica tidal restoration project, the Gateway Center tidal wetland on San Francisco Bay, and for the design of freshwater wetlands at the Santa Lucia Preserve in Monterey.

Mike’s combined experience as an Environmental Permit Manager on large projects coupled with his expertise in lagoon and wetland restoration and mitigation will be a valuable asset to the I-5 NCC Phase 1 Project.

Select Project Experience

Sempra Sunrise Powerlink Transmission Line - Imperial Valley to San Diego County, CA

Project Role: Project Principal	Dates: 2010-2012
Contact: Donald Haines	Time On Project: 15%
E-mail: DEHaines@semprautilities.com	Project No.: 17128

As the Project Principal overseeing a team of biologists on the \$1.9B project, Mike managed biological and permitting services to SDG&E under a \$1.5M contract to permit and oversee compliance for the installation of a transmission line running from renewable generation sources in the Imperial Valley to the coastal areas of San Diego county, California. **Duties:** Supervision of wetland and stream jurisdictional determinations on federal and private lands where the power lines were designed and installed, preparation of permit applications and documentations for the federal (Section 404: US Forest Service Riparian Conservation Areas) and state (Regional Water Quality Control Board and Department of Fish and Game) permits related to the construction, operation, and maintenance of the power line. **During Construction** Mike managed his team with oversight of the Habitat Mitigation Monitoring covering five mitigation sites for impacts to wetlands and waters, including detailed construction documents for mitigation. WRA managed the project compliance with various permit conditions and coordinated the mitigation and construction management of the mitigated properties.

Challenges and Successes: The Sunrise Powerlink Project spanned 117 miles to the coastal areas of San Diego County. Mike was challenged with permit applications to numerous Federal, State, and Local agencies in multiple geographical regions. Applications and processing times varied between agencies. Mike and his team successfully utilized a streamlined Project Permitting Program obtaining 135 Nationwide Permits for single and complete crossings of waters of the United States. WRA also gained water quality certification from the State Water Resources Control Board and approvals from the Department of Fish and Wildlife and US Forest Service. This same Program will be utilized on the I-5 NCC Phase 1 Project to manage the permit application, coordinating all three different scopes of work: Highway, Rail and Lagoon. Tracking the required permits during the design phase, and utilizing the same tool in the construction phase to coordinate and monitor during construction will be a valuable asset to the Granite | Sundt Team.

Port of Los Angeles Batiquitos Lagoon Restoration - Carlsbad, CA

Project Role: Lead Biological Consultant	Dates: 1987-1997
Contact: Ralph Appy	Time On Project: 10%
E-mail: ceqacomment@portla.org	Project 954

As lead biological consultant for the design, and implementation of the Batiquitos Lagoon restoration project. The 650 acre \$300M lagoon restoration project was proposed by the Port of Los Angeles for mitigation of its Pier 400 project. The project involved the restoration of tidal action to the lagoon, the dredging and creation of least tern nesting islands, and the recovery of salt marsh and eelgrass habitats. The project construction took three years, during which WRA provided detailed biological monitoring and habitat management services. The project is now owned and managed by the Department of Fish and Game. **Duties:** Lead biologist to the Port on the site specific design elements related to biological resource restoration, prepared construction specifications for all habitat restoration activities; worked on permitting elements for the project, and managed the construction monitoring for biological resources during construction. He was responsible for working with the agencies to address specific issues related to habitat protection and permit compliance during construction. Mike participated in the ten year monitoring program following construction. The project was deemed successful by the agencies and the Port received all of its mitigation credits for its construction.



Challenges and Successes: Mike developed the restoration design and oversaw the implementation. Creating Least Tern nesting islands and recovering salt marsh habitats is extremely challenging. During the final design and during construction, Mike worked with the Restoration Contractor to develop the best approach producing the highest success rate for salvaged plants and incorporating the appropriate number of customized nursery plants that were generated from locally harvested seeds. The success rate of the restoration project has been extremely positive, and Mike will utilize this same blended approach to the restoration efforts in the San Elijo Lagoon balancing local salvaged plants, with new “nursery” supplied plants that have been grown under the same local conditions which enhances the survival rate and success of the implementation phase. The exact scope of the Batiquitos Lagoon Restoration Project and local knowledge of the planting conditions and nursery market capabilities will be a valuable asset to the implementation phase of the San Elijo Lagoon Restoration scope on the I-5 NCC Phase 1 Project.

Southern California Edison San Dieguito Wetland Restoration Project - Del Mar, CA

Project Role: Lead Biological Consultant	Dates: 1994-2014
Contact: Tracey Alsobrook	Time On Project: 10%
E-mail: Tracy.Alsobrook@sce.com	Project 04037

As the lead biological consultant for the design and implementation of the 150 acre San Dieguito Wetland Restoration Project that was constructed by Southern California Edison as mitigation for the operation of the San Onofre Nuclear Power Generating Station. Mike led public and agency meetings to gain input and receive authorization for the implementation of a new tidal wetland area to provide fishery habitat. He prepared the final designs that were utilized for the construction and worked with over 18 agencies to receive permits and authorizations for the project. WRA provided landscape and fine grading plans for the final restoration plan and provided construction oversight for the project. **Duties:** Lead biological consultant to SCE in the development, approval, and implementation of the restoration project, presentation of project alternatives to the agencies and the public, oversaw biological consultants who prepared specific studies within the lagoon that were subsequently used for EIR/EIS preparation, and worked on permitting with the Coastal Commission staff to assure compliance with all mitigation conditions. **During construction,** Mike served as the lead biological consultant to SCE, prepared specifications for the contractor, reviewed and commented on RFIs, and attended regular construction coordination meetings.

Challenges and Successes: Mike utilized his design and construction experience with wetland restoration to act as a liaison to agencies on resource issues and developed project modifications to address agency concerns. Because of the successful construction phase utilizing realistic applications, SCE has kept him on contract and Mike continues to provide consulting services to assure compliance of the project with numerous agency permits. During its first year of monitoring, the project site met 90% of its long-term performance standards. On the I-5 NCC Phase 1 Project, Mike will utilize this same expertise in review of the preferred alternative for the San Elijo Lagoon Restoration Project. Mike will translate the permit requirements to our Lagoon Restoration construction forces, in order to develop the best approach and sequencing balancing permit requirements with realistic applications in the field. Successful integration with the Federal, State and Local Agencies in final design and during construction will be essential to the success of marrying the three different scopes of work; Highway, Rail and Lagoon, on the I-5 NCC Phase 1 Project.





PRECONSTRUCTION MANAGER

MIKE BERRY



CMGC Experience - Collaborative - Problem Solver

Parent Firm:

Sundt Construction, Inc.

Years of Experience:

44

Licenses/Registrations:

Registered Professional Engineer, AZ

Certified Professional Constructor (CPC)

LEED Accredited Professional

Designated Design-Build Professional

Education:

Bachelor of Science, Civil Engineering - Virginia Polytechnic Institute, 1975

Bachelor of Science, Building Construction - Virginia Polytechnic Institute, 1975

Areas of Expertise:

- CMGC Project Delivery
- Preconstruction Services
- Large Project Estimating
- Value Engineering Studies
- Urban Highway Design & Construction
- Highway Geometrics
- 3D Modeling
- Innovative Maintenance of Traffic
- Construction Sequencing to Minimize Impacts
- Stakeholder Coordination

Position Description/Responsibilities:

As the Preconstruction Manager, **Mike Berry** will lead the **preconstruction services effort, coordinating with Caltrans and Granite | Sundt's subject matter experts in the Highway, Rail, and Lagoon disciplines** to ensure the I-5 NCC Phase 1 Project Team is collaborative and integrated. Mike will coordinate his staff of preconstruction specialists, and report to David Niese, Project Manager. Mike will participate in process training and in construction startup to ensure continuity and a smooth transition into the construction phase.

Authority:

Mike has the authority to add additional resources during the preconstruction phase to meet the changing needs of the project. He has the authority to commit the team to timelines and work products during preconstruction.

Mike is a Preconstruction Manager with more than 44 years of experience in the Heavy Civil construction industry including 24 years of hands-on experience working on major infrastructure projects with cumulative value of over \$1.0B. He has spent the last 10 years collaborating with design teams on large, complex projects in the design phase of CMGC and Design Build Projects. **Mike has the ability to identify innovative solutions to project challenges and excels at delivering projects on time and under budget.** Mike's practical experience as a construction manager and estimator provide a solid foundation for his current role.

As the Preconstruction Manager for the Heavy Civil Division of Sundt, his experience working in the field and estimating will benefit Caltrans, SANDAG, and the Lagoon Conservancy by providing leadership during the preconstruction phase to focus on the items that have the greatest cost and schedule impacts. **Mike has filled this same role on 18 CMGC transportation projects, successfully negotiated a GMP on each of these projects, and worked collaboratively with the team's to produce over \$115M in project savings.**

Mike's Preconstruction Phase experience will be an extreme value to coordinate the Highway, Rail, and Lagoon scopes of work. Mike has experience with major urban freeway reconstruction, heavy rail reconstruction, and environmentally sensitive projects. Eight of Mike's projects received National Marvin M Black Partnering Excellence awards. He is a collaborative team member with unmatched experience in successfully delivering CMGC projects.



Select Project Experience

Multnomah County Sellwood Bridge CMGC - Portland, OR

Project Role: **Preconstruction Manager**
Contact: Ian Cannon, Project Manager, Multnomah County
Transportation, 530-704-5170;
Email: ian.b.cannon@co.multnomah.or.us

Dates: 11/01 - Present
Time On Project: Precon = 100%
Project # 4600008713 & P11-10308

Sundt and their JV Partner were selected, based on qualifications, on the \$215M Bridge Project by Multnomah County Department of Transportation. This was the first transportation project utilizing the CMGC delivery method that the County has done and selected the Sundt Team to provide Preconstruction and Construction Services for this challenging project. Mike was instrumental leading the Preconstruction Phase as the Preconstruction Manager. **Duties:** All Cost estimating, managed and developed conceptual budgets, estimates, value engineering, and systems analyses for the project throughout the preconstruction phase. Mike is supporting the team during the construction phase and interfaces with all team members in developing specific “start-up” phases on this multiple GMP contract.

Challenges and Successes: Tasked to remove and replaced the 2,000' bridge over the Willamette River in Oregon. Mike led the Preconstruction Phase effort to develop a system to slide the existing bridge onto temporary piers constructed in the Willamette River in order to move traffic to the temporary (old) bridge while the new structure was under construction. Specific attention was placed on the “in-water” work that had to be permitted and coordinated around environmental constraints that involved strict noise and vibration regulations due to the spawning season of the local marine life.

Mike’s team developed a work plan to construct the temporary foundations in 100% compliance of the environmental permit regulations. The temporary bridge “Slide” was a success, and the construction of the new bridge is currently under way. Similar Preconstruction Phase planning will be required with all three scopes of work; Highway, Rail and Lagoon considering the environmental sensitivity in the Coastal Region of San Diego County. Mike will be dedicated 100% of the time in the Preconstruction Phase to make sure the interrelated scopes is coordinated in design and during construction start-up ensuring success on the I-5 NCC Phase 1 Project.

Valley Metro Rail, Metro Light Rail Transit Northwest Extension CMGC – Phoenix, AZ

Project Role: **Preconstruction Manager**
Contact: Russell Smith, Sr. Contract Administrator,
METRO Light Rail, 602-254-9896
Email: procurement@valleymetro.org

Dates: 01/12 – present
Time On Project: Precon - 50%
Construction – 10%
Project # LRT-13-190-CMNWE

The \$174M CMGC Project was METRO Light Rail’s first contract delivered utilizing the CMGC method. The 3.2-mile light rail extension included coordinating major utility relocations, widening the roadway to accommodate track alignment, and self-performing the concrete paving to support the new double tracks along the route. The project included a diverse scope of work within an Urban environment working on arterial city streets and constructing three new train stations with passenger platforms. Additional scope included building a Park-and-Ride lot, constructing three traction power substations (which supply electricity to the trains), installing new intersection signals, crossovers, and constructing the concrete foundations for the overhead catenary system that feed electricity to the trains. **Duties:** all design phase deliverables including cost models at 30%, 60%, 90% and GMP. Multiple phases were constructed under this contract facilitating necessary utility relocations, right-of-way “cost of cure” work, and roadway demolition and reconstruction packages prior to the main line work. Mike developed value engineering, and systems analyses for the project throughout the preconstruction phase and is supporting the team during the construction phase.



Challenges and Successes: The diverse scope of work is similar to the I-5 NCC Phase 1 Project because of the multiple stakeholders, outside utility relocation coordination, and construction property lines along private businesses and residents. The integration of outside stakeholders during the preconstruction phase of this CMGC project was a key element to a successful start-up, and set the stage for a successful construction phase. Mike led his team in developing multiple GMP's to accommodate METRO Light Rail's request to phase the project based on available funds and Right-of-Way needs. Early construction packages were identified and prioritized based on Utilities that needed to be relocated and Structures that needed to be removed in order to accommodate the new roadway alignment. This experience with multiple phases and GMP's will be valuable to Caltrans understanding the seven separate GMP's that are planned for on the I-5 NCC Phase 1 Project. Mike has the experience to Manage the Preconstruction Phase effort and coordinate the start-up of each phase providing continuity of knowledge and staff ensuring the success of The Project.

ADOT US 60 Superstition Freeway Design Build - Phoenix, AZ

Project Role: Preconstruction Manager	Dates: 05/01 – 07/03
Contact: Floyd Roehrich, Dep Dir for Policy, ADOT, 602-712-7550; Email: Froehrich@azdot.gov	Time On Project: Design Ph: 100% Project # 060 MA 172 H537001 C: AC

This \$196M Design Build project was delivered by Granite | Sundt and included widening of 12 separate bridges, as well as the new construction of the fly-over bridge at the interchange of US-60 to the I-10. Center HOV lanes, outside auxiliary lanes, sound walls, lights and overhead message boards were built on this 13 mile corridor of the existing Superstition Freeway in 26 months. **Duties:** Mike was the Preconstruction Phase Manager during final design and he managed the cost estimating during the design phase effort, developed budgets, estimates, value engineering, and systems analyses for the project throughout the preconstruction phase as well as supporting the team during the construction phase.

Challenges and Successes: Similar to the I-5 NCC Phase 1 Project the US60 DB was located within multiple cities and Maintenance of Traffic was a huge concern of ADOT. Mike interfaced with all team members in developing an acceptable MOT and Traffic Control Plan in the final design phase that provided mobility to one of the highest traveled freeways in the Southwest. Bridge widening and Center HOV Lane Construction were similar scopes of work to the I-5 NCC Phase 1 Project. Mike will bring this successful experience to Caltrans and the surrounding Stakeholders to develop an MOT and Traffic Control plan that maintains mobility throughout the corridor during construction.

ADOT SR 101L HOV I-10 to Tatum Boulevard Design Build - Phoenix, AZ

Project Role: Preconstruction Manager	Dates: 12/10 – 10/11
Contact: Steve Mishler, Project Manager, ADOT, 520-388-4227 Email: smishler@azdot.gov	Time On Project: Precon 100% Project # 101 MA 001 H745601C NH- EB-STP-CMAQ-101-A (208)N

This \$98M Design Build Project consisted of constructing center HOV and outside auxiliary lanes, widening five bridges, reconstructing eight ramps, sound walls, retaining walls, and a median barrier. This highly traveled 30-mile transportation corridor passes through three cities and links three major freeways, Interstates 10, 17 and State Route 51. **Duties:** As Preconstruction Manager, Mike developed budgets, value engineering, systems analysis and oversaw all project cost estimating.

Challenges and Successes: Mike led the Preconstruction Team and developed a project schedule that planned for the construction to be complete 406 days faster than ADOT's original schedule and \$15.5M under the agency's estimate. With a well thought out construction sequencing plan, ability to utilize self-performing concrete paving crews, Mike and his team will bring this same aggressive yet realistic approach with similar scope items as the I-5 NCC Phase 1 Project.



DREDGING & MARINE SPECIALIST

BLAISE FETTIG



Environmentally Sensitive - Collaborative - Problem Solver

Parent Firm:

Vortex Marine Construction, Inc.

Years of Experience:

30

Licenses/Registrations:

2001-Present Associated General Contractors Of California (AGC) -

State Board Member, Past Chair of Local District and Various Committees, Director of Heavy-Highway Division

Education:

Surface Supplied Air and Gas Diving, Hyperbaric Chamber and Treatment Operations, Rigging, Underwater Welding and Cutting Operations, Observation and Lock-Out Bell Diving, Saturation Diving - The Ocean Corporation - Houston, TX, 1985

Philosophy and Mathematics - St. John's College - Annapolis, MD - 1982-1984

Political Science - St. Michael's College - Winooski, VT - 1980-1982

Dredging Areas of Expertise:

- Project Management/ Administration
- Safety
- Design/Planning/Permitting
- Hydraulic Suction Dredging
- Mechanical Dredging
- Utilities Coordination

Position Description/Responsibilities:

As a Dredging & Marine Specialist on this project, **Blaise Fettig will oversee the formulation of work plans and procedures for dredging operations, wetland habitat creation and restoration, and for dredge spoil disposal operations.** In conjunction with the CM's Environmental Manager he will provide direction and assistance to the project management team for dredge specific permits and permit compliance procedures. He will ensure that dredge/marine crews have received project specific environmental training and proper grade control is maintained during dredging operations.

Authority:

Blaise will have direct authority to make staff and resource decisions and implementations for dredging and marine construction work on this project.

Blaise started Vortex Marine Construction, Inc. (Vortex) in 1992 and currently maintains hands-on interest and control of as President and CEO. Vortex owns and operates one of the largest fleets of floating marine construction equipment in the western United States, and specializes in challenging marine and heavy civil construction projects throughout the country. Blaise prides himself with the company's ability to provide safe and innovative construction techniques to his clients. Blaise has a thorough understanding of the permits and permit requirements for dredging and dredge disposal operations in the waters of the State. Vortex brings a modern dredging fleet that can operate in shallow marsh conditions while still handling the large quantity of dredge material required for this project. Blaise's knowledge and expertise in dredging operations and the control of dredge generated sediment will prove to be invaluable to the project.



Select Project Experience

USACE IDIQ Task Orders 1 & 2 Maintenance Dredging Sacramento and Stockton Deep Water Ship Channels – Sacramento & Stockton, CA

Project Role: **Project Sponsor**

Contact: Mr. Bernard S. Jackson / Ms. Rachel Rosas – USACE
Sacramento District (916) 557-7733

E-mail: Bernard.S.Jackson@usace.army.mil/
Rachel.A.Rosas@usace.army.mil

Dates: 9/13-12/13; 10/12-12/12

Time On Project: 40%

Project IDIQ

This \$9.4M project consisted of the annual maintenance dredging of the Sacramento and Stockton Deep Water Ship Channel (DWSC). The combined total length of both channels is approximately 80 miles. The project included dredging up to 377,000 cubic yard from DWSC using hydraulic suction dredge equipment. Dredged materials were disposed of through 5000 feet to 20,000 feet of pipelines with placement into various upland disposal sites, including the Antioch Dunes National Wildlife Refuge. One of the general requirements in this project is to minimize environmental pollution and damage that may occur as the result of dredging operations. Fisheries and water quality studies were conducted in this project. The main goal was to estimate entrainment of aquatic organisms over multiple years of dredging and comply with terms and conditions of Biological Opinion issued by the National Marine Fisheries Service and U.S./CA Fish and Wildlife Service. The project also included preparation and maintenance of the placement sites. Such preparation included construction of interior dikes, drainage ditches, siphons and return water facilities necessary prior to operation of the placement sites. Water quality monitoring and testing was also performed continually at dredging and placement sites in accordance with the Water Discharge Requirement established by California Regional Water Quality Board. **Duties:** Blaise provided oversight and direction to project management, particularly with regard to contract matters, schedules, commercial aspects, and project close-out. He was also responsible for major resource and equipment allocation, particularly the design and procurement of a 18” cutter suction dredge, booster system, and 20,000 feet of HDPE pipeline.

Challenges and Successes: This IDIQ contract required Vortex to mobilize and hydraulically dredge at a large number of variable sites, in support of navigational traffic to the Ports of Sacramento and Stockton. This work was performed in open navigation channels, and required continuous awareness and preparation to allow for large ship movements within the rivers. Environmentally sensitive sites had to be prepared at each location to allow for controlled placement of dredge spoils, and pipeline and equipment had to be remobilized and moved large distances between worksites.

USACE Redwood City Harbor Channel Maintenance Dredging Project - Redwood City, CA

Project Role: **Project Sponsor**

Contact: Mr. Dennis Chung – Chief, Construction Branch
USACE San Francisco District (415) 272-0140

E-mail: Dennis.T.Chung@usace.army.mil

Dates: 9/11 – 12/11

Time On Project: 30%

Project W912P7-11C-0013

The work consisted of \$3.3M maintenance dredging of the Redwood City Harbor Channel of approximately 160,000 cubic yards of materials to maintain the navigable depth of –28.5 MLLW for the Redwood City Channel. Dredged materials excavated from the Redwood City Harbor Channel were transported and disposed at USACE San Francisco Disposal Site No. 11 (Alcatraz). Dredging was performed using a clamshell dredging plant with closed, environmental-style bucket. This project included environmental protection in consideration of impacts on vegetation, fishes, wild life and species listed as endangered or threatened, or proposed for such listing by Federal or State agencies. The work under this contract also complied with all applicable Federal, State, County and Municipal regulations concerning environmental awareness and responsibility of the bay, harbor or beaches. **Duties:** Blaise’s responsibilities on this project included the oversight and direction of project management, particularly with regard to contract matters, creation and maintenance of schedules, commercial aspects, and project close-out.

Challenges and Successes: The dredging conducted during this project entailed work within a small, active shipping harbor. Vortex was contracted to dredge to a specified contract depth despite almost continual ship movements and displacement of bottom material through ship movements. As with all SF Bay dredging project, this work was done on an accelerated basis, during a restrictive working window.



USACE Suisun Bay Channel & New York Slough Maintenance Dredging - Contra Costa County, CA

Project Role: Project Sponsor	Dates: 9/10 – 1/11
Contact: Mr. Kevin McCullough – Resident Engineer	Time On Project: 30%
USACE San Francisco District – (415) 272-0140	Project W912P7-10-C-0023
E-mail: Kevin.F.McCullough@usace.army.mil	

The work consisted of \$2.9M maintenance dredging of approximately 100,000 cubic yards of materials, to provide a project authorized depth of –35 feet MLLW for Suisun Channel and New York Slough, and –37 feet MLLW for the Bullshead Channel. New York Slough was dredged by knock-down dredging method. Suisun Bay and Bullshead channel were excavated with clamshell dredging plant with disposal at the San Francisco Disposal Site No. 16. This project included environmental protection in consideration of impacts on vegetation, fishes, wildlife and species listed as endangered or threatened, or proposed for such listing by Federal or State agencies. This work also complied with all applicable Federal, State, County and Municipal regulations concerning pollution of the bay, harbor or beaches. **Duties:** Blaise provided assistance to project management particularly contract matters, schedules, commercial aspects, and project close-out.

Challenges and Successes: This project entailed dredging to approximately -35.0 feet in an active navigation channel, adapting to ship schedules, having the resources and flexibility to move as necessary, and continue with diligent execution of the project dredging, all within an environmentally restrictive working window.

USACE Port of Richmond Inner Harbor Dredging Project - Contra Costa, CA

Project Role: Project Sponsor	Dates: 5/09-11/09
Contact: Mr. Jere Harper – Resident Engineer	Time On Project: 30%
USACE San Francisco District (415) 289-3310	Project W912P7-09-C-0005
E-mail: Jere.Harper@us.army.mil	

The work consisted of \$5.9M maintenance dredging of the Federal channel located at the Port of Richmond. Dredged material excavated from the Richmond Inner Harbor was transported and offloaded for beneficial reuse at the Hamilton Wetland Restoration Project (HWRP). This project included environmental protection in consideration of impacts on vegetation, fishes, wild life and species listed as endangered or threatened, or proposed for such listing by Federal or State agencies. The work under this contract also complied with all applicable Federal, State, County and Municipal regulations concerning environmental regulations for the bay, harbor or beaches. **Duties:** Blaise provided direction and oversight to project management particularly contract matters, schedules, commercial aspects, and project close-out.

Challenges and Successes: A closed dredge bucket was successfully utilized within 50 meters of eelgrass beds to minimize dispersion of dredged materials as spoils were transferred through the water column. All dredge spoils from this project were able to be beneficially reused by a large military base closure project.

Treviicos-Rosio JV, W.F. George Spillway and Powerhouse - Ft. Gaines, GA

Project Role: Project Sponsor/ Project Manager	Dates: 01/02 -03/04
Contact: Stefano Valagussa - PM for TREVIICOS/RODIO	Time On Project: 75%
Joint Venture 617-241-4800; E-mail: svalagussa@treviicos.com	Project DACW-01-R001-0014

This \$9.4M project consisted of successfully installing a concrete secant pile cut-off wall immediately upstream and connected into the existing dam and spillway structure to prevent the flow of water under the dam and eliminate the potential for structural failure. This repair methodology was the first of its kind for the USACE. Vortex provided all marine support. Activities included deep-water “surgical” dredging, removing existing underwater obstructions, mass concrete placement by tremie, installation of steel sheet pile and rip-rap retaining walls, removal and reconstruction of concrete lock walls and underwater concrete retaining wall, and removal and disposal of dredge and drill spoils. Underwater work on this project was performed at depths in excess of 90’. **Duties:** Blaise’s project responsibilities included detailed project design and approach for the marine portion of this negotiated USACE project, in collaboration with the prime contractor, as it’s marine subcontractor, project start-up, contract administration, scheduling, staffing and equipment allocation, safety, project execution, cost estimates and value engineering.

Challenges and Successes: Vortex engineered and constructed a VECP that resulted in significant savings to the Owner and avoided substantial environmental impact to shoreline and associated National Wildlife Refuge. This multi-year project was completed 6 months ahead of schedule, and Vortex was awarded the “Subcontractor Safety Award of the Year” by the USACE Mobile District.



DBE SUBCONTRACTING COORDINATOR

DEANNA ANDREWS



Community Focused - CMGC Experience - Collaborative

Parent Firm:

Sundt Construction, Inc.

Years of Experience:

21

Licenses/Registrations:

Certified Professional Constructor (CPC)

Certified Supplier Diversity Professional

Education:

Bachelor of Arts, Liberal Studies, San Diego State University, 1990

Construction Management Certificate Program, Management Practices SDSU

Green Building Construction Certificate Program, SDSU

Areas of Expertise:

- Alternative Contracting
- Consistently exceeds compliance goals
- CMGC delivery method
- San Diego resident/network with subcontracting community
- Team Building
- Innovative Subcontracting
- Partnering

Position Description/Responsibilities:

DeAnna will manage the Disadvantaged Business Enterprise (DBE) and Underutilized Disadvantaged Business Enterprise (UDBE) program as well as Labor Compliance for the Granite | Sundt JV Team. She will work very closely with Caltrans and SANDAG to develop and support the outreach plan for the I-5 NCC Phase 1 Project which will carry forward for the entire \$6B corridor program. DeAnna’s main responsibilities include mentoring DBE & UDBE firms so they are able to understand the CMGC process. She will work with our Preconstruction Services team to develop packages that are customized to accommodate specific DBE & UDBE size and scope. **DeAnna works with LCP Tracker to manage contractor compliance with State and Federal wages and apprentice requirements as well as monitoring local hire personnel for subcontractors.**

Authority:

DeAnna has the authority to work with Caltrans’ and SANDAG’s Small Business Liaisons and compliance personnel to ensure the CMGC subcontractor outreach, selection, and training process is compliant with state and federal guidelines.

DeAnna has successfully managed the Small/Disadvantaged business Program as well as Labor Compliance at the San Diego Airport for the past five years. During this time she has worked very closely with the Airport Small Business Team to develop a new outreach plan for the \$1 billion Terminal 2 Green Build Expansion that exceeded all goals and expectations.

She is a resident of San Diego County and is fully committed to exceeding the DBE and UDBE goals set for the Project. DeAnna is currently providing the same leadership on the Small/Disadvantaged Business and Labor Compliance Programs for Sundt and the Airport Authority on the new Consolidated Rental Car Center. This facility is the Airport’s first CMGC project,

DeAnna will be instrumental supporting Caltrans and SANDAG bringing valuable lessons learned with her recent local experience supporting both of these outreach programs. Developing a successful DBE and UDBE subcontracting plan will be an essential part of meeting and exceeding the established preconstruction and construction phase goals on the NCC Phase 1 Project.



Select Project Experience

San Diego International Airport – Consolidated Rental Car Complex CMGC - San Diego, CA

Project Role: Small Business and Labor Compliance Manager	Dates: 2012-2016
Contact: Robert Bolton, San Diego Co Regional Airport Authority	Time On Project: 2013-Present
Email: bbolton@san.org	Project # 104151

This CMGC project consists of a four-level, 5,000 – vehicle facility. The preliminary total building area is 2,079,000 square feet consisting of 127,600 square feet of customer service area, 1,526,511 square feet of ready/return and storage area, and 425,130 square feet of quick turn-around area. DeAnna is coordinating the local SBE/DBE participation. **Duties:** Managing certified payroll submission to ensure compliance with California State Labor Codes and the Owner Controlled Insurance Program, she coordinates with the preconstruction team to run trade assessments to create scope specific goals for SBE/DBE participation and release bid packages, she hosts, attends, presents on panels at outreach/networking events where SBE/DBE firms can connect with contractors bidding on the specific work and she also assists subcontractors bidding on specific work scope to reach out to the SBE/DBE community to team and mentor. She monitors monthly subcontractor SBE/DBE participation reporting of lower tiers to ensure they meet or exceed their contractual goals which they previously committed to during the bid process. DeAnna works with the field personnel to provide opportunities to SBE/DBE firms during the course of the construction phase. She also demonstrates Small Business activity, bid results and current committed and expended dollars to SBE/DBE firms in monthly reports to the Airport Authority.

Challenges and Successes: DeAnna is often faced with inexperienced subcontractors when it comes to the CMGC delivery method and State, Federal and project compliance requirements. Typical subcontractors do not understand the preconstruction phase, prequalification process custom to the CMGC delivery method and State and Federal Labor Codes. DeAnna has worked with specific trades to mentor and train them on preparing their quotes and bids to accommodate the selection process and communicate the timeframe involved from final design to the construction phase. A similar customized outreach program will be developed for the I-5 NCC Phase 1 Project so the subcontracting community fully understands the preconstruction phase timing relative to the actual construction dates of multiple phases involved with the overall project.

San Diego International Airport Terminal 2 Landside Improvements - San Diego, CA

Project Role: Small Business and Labor Compliance Manager	Dates: 2008-2014
Contact: Robert Bolton, San Diego County Regional Airport Authority	Time On Project: 2009-2014
Email: bbolton@san.org	Project # 201401

The \$1 billion project that expanded San Diego International Airport’s Terminal 2. The team constructed the “landside” portion of the project, which included construction of the dual-level roadway, two check-in curb pavilions, parking improvements, a new building for the USO San Diego and parking management office, and two new pedestrian bridges. As the Small Business and Labor Compliance Manager, **Duties:** managing certified payroll submission to ensure compliance with California State Labor Codes and the Owner Controlled Insurance Program, she provided and facilitated Labor Compliance workshops for all subs and sub-tier subcontractors. She conducted and attended outreach/networking events where SBE/DBE firms could connect with the shortlisted subcontractors bidding on the specific work scope. DeAnna assisted bidding subcontractors in reaching out to the SBE/DBE community, she worked with the field personnel to provide opportunities to SBE/DBE firms during the course of the construction phase.

Challenges and Successes: DeAnna led an effort that exceeded a 24% SBE/DBE commitment by delivering a 34% result. Over 800,000 man hours were completed without compliance violations. She Coordinated with pre-construction to run trade assessments and created specific scope goals for SBE/DBE participation and released them to the public. This was accomplished through the development of a very smart and inclusive plan, coupled with a tremendous amount of diligence and follow through. DeAnna will bring this successful experience to the I-5 NCC Phase 1 Project.



Richard J. Donovan Correctional Facility Infill Complex - Otay Mesa, CA

Project Role: Small Business Development Manager

Dates: 2014 - 2016

Contact: Bobby Khaghani, Sr. Project Director III for the CDCR

Time On Project: 2014 to Present

Email: babak.khaghani@cdcr.ca.gov

Project # 5600004382

A \$169 million Design/Build project for the California Department of Corrections and Rehabilitations (CDCR) includes a new 317,000-square-foot housing facility with a three Level II 264-bed housing units for a total of 792 inmates. The project includes programming, health care, visitation and other support functions. **Duties:** creating and implementing a subcontracting plan that exceeds 25% SBE and 3% DVBE participation as well as focusing on local job hiring. She established a database for bidding and networking between subcontractors, tier-contractors, vendors and suppliers and attends and participates in local outreach events to build current database and provide networking opportunities for tier-contractors, supplier and vendors. DeAnna updates the project specific website with current bidding opportunities, training videos, compliance documents/requirements and outreach event opportunities. She works closely with the estimating team to seek qualified SBE/DVBE contractors, established and maintains records that document the Good Faith Efforts during preconstruction which will also carry through construction, and reviews subcontracts to ensure the flow down requirements for SBE/DVBE contracting and local hire participation is included for all awarded subcontractors.

Challenges and Successes: There are always challenges, at the beginning of projects, to announce the bid opportunities available and collect interest from the contracting community. DeAnna works closely thru various internet search engines such as; the DGS, CALTRANS, and the Supplier Clearinghouse as well as local organizations to advertise the prequalification process and deadlines. Up to 10,000 initial notifications have gone out for the Donovan Project to date. How To Get Involved, step by step instructions were created as well as a video made to walk contractors thru the prequalification 3 step process. At times the second notification has required phone assistance with one-on-one training for the smaller contractors. Our current database has 1450 vendors with 180 DBEs, 236 MBEs, 231 WBEs and 658 SBEs with 815 local companies. This same dedicated approach will be taken on the I-5 NCC Phase 1 Project in the Preconstruction Phase.



PARAMETRIC MODELER

ERIC CYLWIK



Innovative - Collaborative - CMGC Experience

Parent Firm:

Sundt Construction, Inc.

Years of Experience:

8

Licenses/Registrations:

AutoCAD Civil 3D Professional

3D Studio Max Professional

Revit Professional

Certified BIM Specialist: Road and Highway 2014

USACE Civil Information Modeling Task Force (Founding Member)

Autodesk Heavy Civil Construction Council (Founding Member)

Subject Matter Expert for FHWA's FHWA Every Day Counts 2's 3D Eng. Models for Construction Initiatives

Education:

Bachelor of Arts, Design Studies; Digital Visualization, Arizona State University, 2009

Areas of Expertise:

- AutoCAD
- 3D Modeling
- Parametric Estimating
- Technology-Based Applications

Position Description/Responsibilities:

Eric focuses on creating 3D Virtual Design and Construction models to enhance the review of constructability issues and help in the estimating processes illustrating the design in three dimensions. Eric uses AutoCAD Civil 3D to develop models of survey surfaces, machine control, quantity take offs, utility coordination, constructability reviews and visualizations. As the Senior Virtual Design and Construction Engineer, **Eric also utilizes 3D Models with what we call Parametric Estimating, which utilizes engineering data and integrates the specific quantities with estimating software to show the effect on cost of work when changes to the design are considered.**

Authority:

Eric has the authority to work directly with the Design Team developing the 3-D Models and Parametric Estimates to ensure the correct design perimeters are incorporated into the model in order to provide accurate constructability and estimating reviews.

Eric Cylwik is the senior virtual construction engineer for Sundt Construction's Heavy Civil group. Virtual Design and Construction leverages 3-D Models to create construction-quality bridge, road, and trench visualizations that are used for survey surfaces, machine control, quantity take offs, utility coordination, constructability reviews and parametric estimates.

Eric will utilize the modeling process to integrate the three different scopes of work; Highway, Rail & Lagoon. For example, the Granite | Sundt Team will focus on the San Elijo Lagoon region modeling the I-5 Bridge, San Elijo Doubletrack work including the bridge, and the San Elijo Lagoon Restoration scope. It is important for all three scopes to be considered when developing the best approach for the overall sequence of the project.

The modeling effort will be coordinated with Eric Weston Project Construction Manager for the Highway scope, John Eschenbach the Project Construction Manager for Rail work, and Mike Josselyn, Environmental Permit Manager to ensure all safety, operational and permitting constraints are considered when developing the sequence of work with minimal environmental impact to the region. These models will also be available to provide visual aids for Stakeholder Outreach to groups such as surrounding cities and the San Elijo Lagoon Conservancy.



The Parametric Estimating application adds a cost dimension to the model that will react to design changes in the model and show real-time cost estimates of the different alternatives. This information is valuable to Caltrans allowing decisions to be made and provide clear direction on alternatives so the design only has to be developed one time.

Select Project Experience

Multnomah County Sellwood Bridge CMGC - Portland, OR

Project Role: **Parametric Modeler**
Contact: Ian Cannon, Project Manager,
Multnomah County Transportation, 530-704-5170
Email: ian.b.cannon@co.multnomah.or.us

Dates: 11/01 - Present
Time On Project: 30% of Precon /
20% of Construction
Project # 4600008713 & P11-10308

Sundt removed and replaced the 2,000' bridge over the Willamette River in Oregon. The project team slid the existing bridge onto temporary piers constructed in the Willamette River and traffic was moved to the temporary (old) bridge while the new structure was built. Bridge is designed to accommodate existing capacity and will accommodate future light rail as well. Construction is currently under way. **Responsibilities included:** Eric was the lead Parametric Modeler on the \$215M Sellwood Bridge Project and creation of aesthetically enhanced 3-D animations for public relations and stakeholder outreach to illustrate the phased construction sequence and the different flows of traffic in each phase. He utilized 3D models for temporary works placement and concrete pump selection. Eric also created 3D model engineered with utilities, roadway, bridge substructure, and superstructure for planning and constructability reviews. A 3-D survey model was used for concrete placement on the bridge.



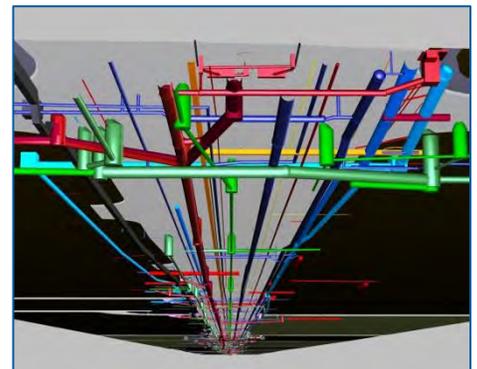
Challenges and Successes: Eric played a critical role in developing models and assisting Multnomah County in presenting construction staging and sequencing to the public on the Sellwood Bridge CMGC project. A similar example of where this can be used on the I-5 NCC Phase 1 Project to gain trust with the project stakeholders is showing the staging for construction of the soundwalls located outside Caltrans right-of-way.

Valley Metro Rail, Metro Light Rail Transit Northwest Extension CMGC – Phoenix, AZ

Project Role: **Parametric Modeler**
Contact: Russell Smith, Sr. Contract Administrator,
METRO Light Rail, 602-254-9896
Email: procurement@valleymetro.org

Dates: 01/12 – present
Time On Project: 5% - Precon / 15% - Construction
Project # LRT-13-190-CMNWE

The 3.2-mile CMGC light rail extension includes coordinating major utility relocations, widening the roadway to accommodate the 40-foot-wide track alignment, and self-performing the concrete paving to support the new double tracks along the route. Eric was the Lead Parametric Modeler on this \$174M CMGC Project. **Responsibilities included:** supporting construction engineers using 3D model of existing and proposed utilities for constructability reviews and planning purposes, he trained surveyors to use Civil 3D for survey data extraction and model creation and supported construction engineers in the use of 3D laser scanning of entire project's existing conditions. Under Eric's direction, Sundt piloted the use of automated machine guidance on excavators to place utilities directly from data in the 3D model.



Challenges and Successes: Eric Modeled the existing subsurface utilities based on as-built plans prior to the construction phase. This allowed the team to perform “clash detection” and develop alternative alignments for gravity sewer and storm water lines. Preventing potential conflicts with existing utilities prior to opening up trenches in the field mitigated potential delays to the project if the existing utilities would have needed to be relocated. This same clash detection process can be utilized at the I-5 and Manchester interchange where the ramps will be reconstructed around existing utilities.



San Diego International Airport Landside Expansion - San Diego, CA

Project Role: **Parametric Modeler**

Contact: Robert Bolton, Senior Program Manager, San Diego County Airport Authority, 619-400-2400
Email: rbolton@san.org

Dates: 06/11 – 04/13
Time On Project: 20% Precon
80% - 10 months/Construction
Project # 201401A

Sundt was a joint venture partner on the \$1 billion project that expanded San Diego International Airport's Terminal 2. The team constructed the "landside" portion of the project, which included construction of the dual-level roadway, two check-in curb pavilions, parking improvements, a new building for the USO San Diego and parking management office, and two new pedestrian bridges. Eric's **Responsibilities included:** construction sequencing models, survey-grade 3D model of seven CIP box girder bridges and developed 3D models for field survey use.



Challenges and Successes: Eric utilized the 3-D models developed on the project to bring visual aids to the field when developing work sequencing plans, false work erection, and pedestrian access plans. The 3-D visual aids are extremely valuable to the operations teams as they utilize them to communicate sequencing plans to adjacent stakeholders that may be concerned with restricting access or alternative routes.

The team knows challenging aspects of the NCC Phase 1 Project will require clear and precise communication with project stakeholders. The team is excited to support Caltrans in this effort through use and sharing of its 3D models as a way to share the end vision, as well as construction means and methods, creating a higher level of trust and engagement with the surrounding communities.

ADOT Cordes Junction Traffic Interchange Improvements - Mayer, AZ

Project Role: **Parametric Modeler**

Contact: Alvin Stump, District Engineer, ADOT, 928-713-7216
Email: astump@azdot.gov

Dates: 08/11 – 09/13
Time On Project: 15% - Precon
60% of 9 months/Construction
Project # 017 YV 261 H426901C

\$53M construction of a new, free-flow directional interchange between SR-69 and I-17 in Mayer, Arizona, including removing the existing loop ramps and structures in addition to construction of new structures and ramps. Eric's **Responsibilities included:** 3D models for quantity take off, creation of 7 "survey-grade" 3D bridge models and automated machine guidance models for all subgrade and finish grade surfaces.



Challenges and Successes: The 3-D visualizations created on this CMGC project provided the means to communicate a new phasing plan that eliminated 2 months of work from the original construction schedule. This type of 3-D representation will be utilized when planning the sequence of the interrelated work between the Highway, Rail and Lagoon scope at the San Elijo Lagoon on the I-5 NCC Phase 1 Project.



US 60 Superstition Freeway, Phoenix, AZ

Proven JV Partnership

Form E – Organization Information
Granite-Sundt, A Joint Venture Agreement
Power of Attorney
Corporate Resolutions Authorizing Signers
Certificates of Status
Insurance Letter
Bondability Letter

Form E

PROPOSER'S ORGANIZATION INFORMATION

Name of Proposer: Granite-Sundt, A Joint Venture

Instructions for Form completion: Responses to each subject area shall be addressed within the table below. Should additional space be needed, Proposers are advised to increase space following question as appropriate. Form E shall have no SOQ page limitation.

Proposer (Individual Firm / Joint Venture / Partnership / LLC)	
Name of Entity: Granite Construction Company	
Address:	585 W Beach Street Watsonville, CA 95076
Contact Name:	Michael F. Donnino Title: Senior Vice President
Telephone No.:	972-874-8724 Fax No.: 972-353-6275 E-mail: mike.donnino@gcinc.com
Local / Regional Contact	
Name:	Brad Williams
Address:	38000 Monroe Street Indio, CA 92203
Telephone No.:	760-391-6224 Fax No.: 760-775-8229 E-mail: brad.williams@gcinc.com

Form E
PROPOSER'S ORGANIZATION INFORMATION

Name of Proposer: Granite-Sundt, A Joint Venture

Instructions for Form completion: Responses to each subject area shall be addressed within the table below. Should additional space be needed, Proposers are advised to increase space following question as appropriate. Form E shall have no SOQ page limitation.

Proposer (Individual Firm / Joint Venture / Partnership / LLC)		
Name of Entity: Sundt Construction, Inc.		
Address: <u>2620 South 55th Street</u> <u>Tempe, Arizona 85282</u>		
<hr/>		
Contact Name:	<u>G. Michael Hoover</u>	Title: <u>Executive Vice President & COO</u>
Telephone No.:	<u>480-293-3000</u>	Fax No.: <u>480-293-3451</u> E-mail: <u>gmhoover@sundt.com</u>
Local / Regional Contact		
Name: <u>Jeff Williamson</u>		
Address: <u>2620 South 55th Street</u> <u>Tempe, Arizona 85282</u>		
<hr/>		
Telephone No.:	<u>480-293-3000</u>	Fax No.: <u>480-293-3503</u> E-mail: <u>jjwilliams@sundt.com</u>

GRANITE CONSTRUCTION COMPANY

CERTIFICATE OF SECRETARY

I, Richard A. Watts, Secretary of GRANITE CONSTRUCTION COMPANY, a California corporation (the "Company"), do hereby certify that the following is a true and correct copy of resolutions duly adopted on June 4, 2014 by a Unanimous Written Consent of the Board of Directors in accordance with the provisions of Article III, Section 9 of the Bylaws of the Company; that the Directors acting were duly and regularly elected; and that the resolutions adopted have not been repealed and are still in full force and effect:

AUTHORIZATION TO EXECUTE DOCUMENTS AND AGREEMENTS

RESOLVED, that the below listed officers are authorized to execute and deliver on behalf of the Company all documents, agreements and undertakings required in connection with construction contract formation and operations of the Company:

James H. Roberts	President & Chief Executive Officer
Laurel J. Krzeminski	Senior Vice President, Chief Financial Officer & Assistant Secretary
Thomas S. Case	Senior Vice President, Operations Services Manager & Assistant Secretary
Philip M. DeCocco	Senior Vice President of Human Resources & Assistant Secretary
Michael F. Donnino	Senior Vice President, Group Manager & Assistant Secretary
Martin P. Matheson	Senior Vice President, Group Manager & Assistant Secretary
James D. Richards	Senior Vice President, Group Manager & Assistant Secretary
Richard A. Watts	Senior Vice President, General Counsel, Corporate Compliance Officer & Secretary
Jigisha Desai	Vice President of Corporate Finance, Treasurer, Assistant Financial Officer & Assistant Secretary
Bradley G. Graham	Vice President, Controller, Assistant Financial Officer & Assistant Secretary
Kent H. Marshall	Vice President and Director, Public Private Partnerships & Assistant Secretary
Nicholas B. Blackburn	Director of Corporate Taxation & Assistant Secretary

RESOLVED FURTHER, that the authority provided for herein shall be in accordance with applicable policies, procedures and limits of authority previously approved and the Granite Construction Incorporated Delegation of Authority and Policy then in effect.

AUTHORIZATION TO ATTEST DOCUMENTS AND AGREEMENTS

RESOLVED, that the below listed officers are authorized to attest documents, agreements and undertakings required in connection with construction contract formation and operations of the Company:

James H. Roberts	President & Chief Executive Officer
Laurel J. Krzeminski	Senior Vice President, Chief Financial Officer & Assistant Secretary
Thomas S. Case	Senior Vice President, Operations Services Manager & Assistant Secretary
Philip M. DeCocco	Senior Vice President of Human Resources & Assistant Secretary
Michael F. Donnino	Senior Vice President, Group Manager & Assistant Secretary
Martin P. Matheson	Senior Vice President, Group Manager & Assistant Secretary
James D. Richards	Senior Vice President, Group Manager & Assistant Secretary
Richard A. Watts	Senior Vice President, General Counsel, Corporate Compliance Officer & Secretary
Jigisha Desai	Vice President of Corporate Finance, Treasurer, Assistant Financial Officer & Assistant Secretary
Kent H. Marshall	Vice President and Director, Public Private Partnerships & Assistant Secretary
Bradley G. Graham	Vice President, Controller, Assistant Financial Officer & Assistant Secretary
Nicholas B. Blackburn	Director of Corporate Taxation & Assistant Secretary
Kenneth M. Smith	Group Counsel & Assistant Secretary
Jason M. Jasper	Group Counsel & Assistant Secretary
Heather J. Lenhardt	Group Counsel & Assistant Secretary

Dated: June 4, 2014



Richard A. Watts



CERTIFICATE OF CORPORATE RESOLUTION

STATE OF ARIZONA)
) SS.
COUNTY OF MARICOPA)

MICHELLE K. ASHMORE, being first duly sworn, on oath, deposes and says:

That she is Corporate Secretary of Sundt Construction, Inc., an Arizona corporation, and custodian of the official records and seal of said corporation.

That by resolution duly adopted by the Board of Directors of Sundt Construction, Inc. on the 17th day of March 2014, it was unanimously

RESOLVED by this Board of Directors that the following individual, in addition to any other individuals previously authorized by resolution, are and shall hereinafter be duly authorized to execute legal documents that bind Sundt Construction, Inc. regarding all matters, including but not limited to bid proposal documents and contracts:

G. Michael Hoover
Jeff J. Williamson

That such resolution has not been rescinded or modified as of the date hereof in any manner whatsoever.

IN WITNESS WHEREOF, I have hereunto affixed my name as Corporate Secretary and have caused the corporate seal of said corporation to be hereunto affixed the 17th day of March 2014.

Corporate Secretary

SUBSCRIBED AND SWORN TO before me this 17th day of March 2014 by Michelle K. Ashmore, Corporate Secretary of Sundt Construction, Inc. on behalf of Sundt Construction, Inc.



My Commission Expires: 5/5/2015

Notary Public

Our People Make the Difference.sm

2620 SOUTH 55TH STREET • TEMPE, AZ 85282 • 480.293.3000 • WWW.SUNDT.COM

NOVATO • PHOENIX • RENO • SACRAMENTO • SAN DIEGO • TUCSON

CONTRACTOR LICENSES: AZ: ROC068012-A ROC068014-L-09 ROC078799-L-37 ROC076101-L-11 CA: 453175-A-B
 ROC068013-B-01 ROC078088-L-04 ROC076561-L-39 ROC067653-B NV: 22067-A-B



State of California
Secretary of State

CERTIFICATE OF STATUS

ENTITY NAME:

GRANITE CONSTRUCTION COMPANY

FILE NUMBER: C0097484
FORMATION DATE: 01/04/1922
TYPE: DOMESTIC CORPORATION
JURISDICTION: CALIFORNIA
STATUS: ACTIVE (GOOD STANDING)

I, DEBRA BOWEN, Secretary of State of the State of California,
hereby certify:

The records of this office indicate the entity is authorized to
exercise all of its powers, rights and privileges in the State of
California.

No information is available from this office regarding the financial
condition, business activities or practices of the entity.



IN WITNESS WHEREOF, I execute this certificate
and affix the Great Seal of the State of
California this day of July 08, 2014.

Debra Bowen

DEBRA BOWEN
Secretary of State



**SECRETARY OF STATE
NAME CHANGE
CERTIFICATE OF QUALIFICATION**

C1226362

I, BILL JONES, Secretary of State of the State of California, hereby certify:

That on the **13th day of October, 1998**, there was filed in this office an Amended Statement and Designation by Foreign Corporation whereby the corporate name of **SUNDT CORP.**, a corporation organized and existing under the laws of **Arizona**, was changed to **SUNDT CONSTRUCTION, INC.**. This corporation complied with the requirements of California law in effect on that date for the purpose of qualifying to transact intrastate business in the State of California and as of said date has been and is qualified and authorized to transact intrastate business in the State of California, subject however, to any licensing requirements otherwise imposed by the laws of this State.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this day of October 15, 1998.



Bill Jones
BILL JONES
Secretary of State



June 24, 2014

California Department of Transportation
Division of Procurements and Contracts
1727 30th Street
Sacramento, CA 95816

RE: Project: Interstate 5 North Coast Corridor, Phase 1
Construction Manager/General Contractor Services
Project Number: 112T21CM
Granite-Sundt, A Joint Venture
Insurance Requirements

To Whom It May Concern:

We understand that Granite-Sundt, A Joint Venture will be submitting a proposal for the Construction Manager/General Contractor Services for the above-referenced project.

This letter declares that Granite-Sundt, A Joint Venture, if awarded the contract, can and will provide the Department with the required insurance as detailed in Section 1.15.2 and 3.3 of the Request for Qualifications for the above referenced project. This is to include the following types of insurance: Commercial General Liability, Automobile Liability, Workers' Compensation, Excess Liability, Pollution Liability coverages as well as Railroad Protective Liability with at least the minimum limits required by contract. In addition, the insurance companies will be rated in the top two categories by two nationally recognized rating agencies, or have a "Best's Credit Rating" of at least "A minus" and "Class VIII" or better by A.M. Best Company.

Please do not hesitate to contact us if you need any further information in regards to this insured.

Sincerely,

A handwritten signature in black ink, appearing to read "Catherine Gustavson".

Catherine Gustavson, CRIS
Sr. Vice President
1418 S. Main Street, Suite 104
Salinas, CA 93908
831-775-4798
kate.gustavson@aon.com



CHUBB GROUP OF INSURANCE COMPANIES

3 Mountain View Road, Warren, NJ 07059

June 26, 2014

California Department of Transportation
Division of Procurements and Contracts
1727 30th Street
Sacramento, CA 95816

Re: I-5 North Coast Corridor Phase 1, Contract No. 112T21CM

To whom it may concern:

We understand that Granite Construction Company and Sundt Construction, Inc. in a joint venture known as Granite-Sundt, A Joint Venture (the "Joint Venture"), are submitting a Proposal for the above-captioned project. The undersigned are the sureties for Granite Construction Company and Sundt Construction, Inc. individually. Granite Construction Company and Sundt Construction, Inc. have requested a letter confirming the ability of the Surety companies to issue Performance and Payment Bonds for the Joint Venture for the above-captioned project.

The Joint Venture has available bonding capacity in excess of \$3,800,000,000 and is capable of obtaining 100% Performance and Payment Bonds each in the amount of the estimated construction price, \$550,000,000, subject to acceptable contract terms, contract conditions, bond forms, and underwriting conditions at the time the bonds are requested by the Joint Venture.

Each of the below sureties is listed on the Treasury Department Circular 570.

We have every confidence that Granite Construction Company and Sundt Construction, Inc. in a joint venture known as Granite-Sundt, A Joint Venture, has the necessary financial and operational capacity to successfully complete such a project. We hold the parties in the highest regard and we recommend them to you for every possible consideration.

Sincerely,

FEDERAL INSURANCE COMPANY, A.M. Best Rating: A++ XV
TRAVELERS CASUALTY and SURETY COMPANY of AMERICA, A.M. Best Rating: A++ XV
ZURICH AMERICAN INSURANCE COMPANY, A.M. Best Rating: A+ XV


Lillian Tse
Attorney in Fact

ACKNOWLEDGMENT

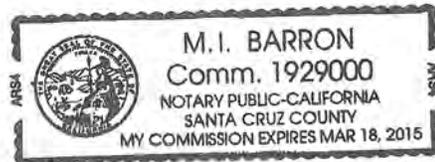
State of California
County of Santa Cruz)

On June 26, 2014 before me, M.I. Barron, Notary Public
(insert name and title of the officer)

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

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

WITNESS my hand and official seal.



Signature M.I. Barron (Seal)
M.I. Barron, Notary Public



**Chubb
Surety**

**POWER
OF
ATTORNEY**

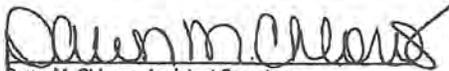
**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Jigisha Desai, John D. Gilliland, Catherine Gustavson, Cynthia P. Johnson, Kathleen Schreckengost, Ashley Stinson and Lillian Tse of Watsonville, California

each as their true and lawful Attorney- In- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business on behalf of Granite Construction Incorporated and all Subsidiaries alone or in joint venture in connection with bids, proposals or contracts to or with the United States of America, any State or political subdivision thereof or any person, firm or corporation. And the execution of such bond or obligation by such Attorney- In- Fact in the Company's name and on its behalf as surely thereon or otherwise, under its corporate seal, in pursuance of the authority hereby conferred shall, upon delivery thereof, be valid and binding upon the Company.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 10th day of April, 2013.


Dawn M. Chloros, Assistant Secretary


David B. Norris, Jr., Vice President

STATE OF NEW JERSEY

ss.

County of Somerset

On this 10th day of April, 2013 before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By- Laws and in deponent's presence.

Notarial Seal



KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No 2316685
Commission Expires July 16, 2014


Notary Public

CERTIFICATION

Extract from the By- Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

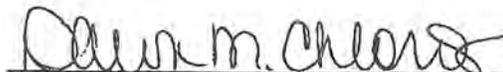
I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By- Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect

Given under my hand and seals of said Companies at Warren, NJ this

June 26, 2014




Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656 e-mail: surety@chubb.com

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **Geoffrey Delisio, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Jigisha DESAI, Catherine GUSTAVSON, Cynthia P. JOHNSON, Kathleen SCHRECKENGOST, John D. GILLILAND, Ashley STINSON and Lillian TSE**, each its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings, issued on behalf of Granite Construction Incorporated, Watsonville, California and all subsidiaries alone or in a joint venture** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 1st day of **March**, A.D. 2013.



Geoffrey Delisio

By: _____
Vice President – Geoffrey Delisio

Gerald F. Haley

By: _____
Assistant Secretary – Gerald F. Haley

State of Maryland
County of Baltimore

On this 1st day of **March**, A.D. 2013, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **Geoffrey Delisio, Vice President and Gerald F. Haley, Assistant Secretary** of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.



Constance A. Dunn

By: _____
Constance A. Dunn - Notary Public
My Commission Expires: July 14, 2015

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

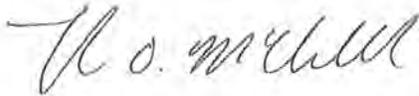
RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies,

This **June 26, 2014**



Thomas O. McClellan, Vice President





POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In-Fact No. 226331

KNOW ALL MEN BY THESE PRESENTS: That St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc. is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint **John D. Gilliland, Jigisha Desai, Cynthia P. Johnson, Kathleen Schreckengost, Catherine Gustavson, Ashley Stinson, and Lillian Tse** of the City of **Watsonville**, State of **California**, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power of Attorney is limited to bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof for Granite Construction Incorporated and all subsidiaries and affiliates, alone or in joint venture.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 14th day of March, 2013.

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

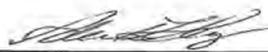
St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut

City of Hartford ss.

By:

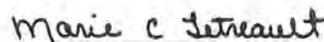

Robert L. Raney, Senior Vice President

On this the 14th day of March, 2013, before me personally appeared Robert L. Raney, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.

My Commission expires the 30th day of June, 2016.




Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this June 26, 2014



Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

**Form F – DBE/UDBE Project Goal Declaration
Affidavit**

Form F

PROPOSER'S DBE/UDBE PROJECT GOAL DECLARATION AFFIDAVIT

Name of Proposer: Granite-Sundt, A Joint Venture

It is understood and agreed by the Proposer that it has carefully examined all documents that form this Request for Qualifications (RFQ) and acknowledges that California Department of Transportation (Department) has established a proposed Project DBE goal of 5.1 % and a Project UDBE goal of 5.1% for the preconstruction phase based on the total Contract value for the Preconstruction Services Contract. This affidavit further serves to confirm that Granite-Sundt, A Joint Venture will aggressively exercise good faith efforts to the satisfaction of Department to meet the proposed Project DBE/UDBE goals in accordance with DBE Program requirements defined in the Construction Contract documents, when issued.

STATE OF Texas)

COUNTY OF Denton)

Each of the undersigned, being first duly sworn, deposes and says that Michael F. Donnino
(Contact Name)

is the Senior VP of Granite Construction Company and G. Michael Hoover is the Executive VP & COO
(Title) (Company) (Contact Name) (Title)

of Sundt Construction, Inc., which entity(ies) are the Joint Venture Partners
(Company) (Joint Venture/Partnership, Other)

of Granite-Sundt, A Joint Venture, the entity making the foregoing Statement of Qualification.
(Joint Venture Company)

The Proposer hereby affirms that it will either meet the DBE goals described in this solicitation or exercise and provide demonstrable evidence to the satisfaction of the California Department of Transportation (Department) that it has aggressively exercised Good Faith Efforts to do so in accordance with defined program requirements, including contractual and regulatory provisions set forth under Title 49, Code of Federal Regulations (CFR), Part 26 and subsequently published in the Federal Registrars.

Michael Donnino

(Signature)

Michael F. Donnino

(Name Printed)

Senior Vice President, Granite Construction Company

(Title)

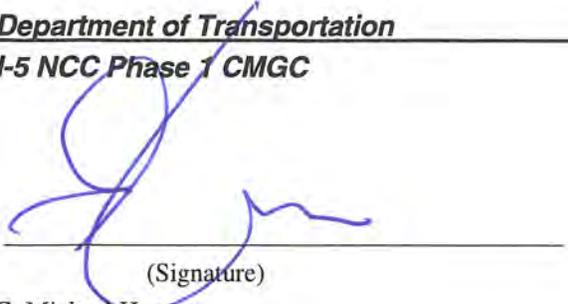
State of Texas
County of Denton

Subscribed and sworn to (or affirmed) before me on this 8th day of July, 20 14, by Michael Donnino proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Notary Public Signature [Signature]

[Duplicate or modify this form as necessary so that it accurately describes the entity making the proposal and so that it is signed on behalf of all partners/members of the proposing firm.]





(Signature)

G. Michael Hoover

(Name Printed)

Executive Vice President and COO, Sundt Construction, Inc.

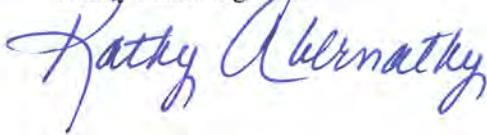
(Title)

State of Arizona

County of Maricopa

Subscribed and sworn to (or affirmed) before me on this 15th day of July, 20 14, by G. Michael Hoover, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Notary Public Signature



Notary Public Seal



**Appendix D – Disclosure of Conflict of Interest
Certification from:**

Granite Construction Company

Sundt Construction, Inc.

J.L. Patterson & Associates, Inc.

WRA Environmental Consultants

Vortex Marine Construction, Inc.

Appendix D

DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST CERTIFICATION

Name of Proposer: Granite-Sundt, A Joint Venture

Applicant Firm Granite Construction Company

Having had the opportunity to review Organizational Conflict of Interest Checklist, the Proposer hereby indicates that it has, to the best of its knowledge and belief:

Determined that no potential organizational conflict of interest exists.

Determined a potential organizational conflict of interest as follows:

Attach additional sheets as necessary.

Describe nature of the potential conflict(s):

Describe measures proposed to mitigate the potential conflict(s):



Signature

7/15/2014
Date

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure certification with Department of Transportation contract personnel.

Michael F. Donnino, Senior Vice President
Name

972-874-8724
Phone

Appendix D

DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST CERTIFICATION

Name of Proposer: Granite-Sundt, A Joint Venture

Applicant Firm Sundt Construction, Inc.

Having had the opportunity to review Organizational Conflict of Interest Checklist, the Proposer hereby indicates that it has, to the best of its knowledge and belief:

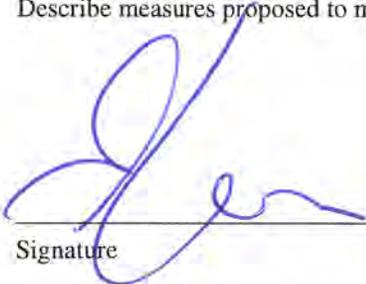
Determined that no potential organizational conflict of interest exists.

Determined a potential organizational conflict of interest as follows:

Attach additional sheets as necessary.

Describe nature of the potential conflict(s):

Describe measures proposed to mitigate the potential conflict(s):



Signature

7/15/2014

Date

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure certification with Department of Transportation contract personnel.

G. Michael Hoover, Executive Vice President and COO

Name

480-293-3000

Phone

Appendix D
DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST CERTIFICATION

Applicant Firm J.L. Patterson & Associates, Inc. (JLP)

Having had the opportunity to review Organizational Conflict of Interest Checklist, the Proposer hereby indicates that it has, to the best of its knowledge and belief:

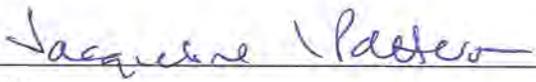
- Determined that no potential organizational conflict of interest exists.
- Determined a potential organizational conflict of interest as follows:

Attach additional sheets as necessary.

"J.L. Patterson & Associates, Inc. has reviewed the RFP and Describe nature of the potential conflict(s): states it has no conflict of interest for the pre-construction and design phases of the RFP. In the interest of full disclosure, the NCTD Board approved unanimously the award of a Contract to JLP for Bridge Inspection and Management for the District."

Describe measures proposed to mitigate the potential conflict(s):

In order to mitigate any potential conflicts, John Eschenbach will be excluded from performing any Bridge Supervisory services as per FRA 49 CFR Part 237 on behalf of NCTD.


Signature

7/7/2014
Date

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure certification with Department of Transportation contract personnel.

Jacqueline Patterson
Name

714-835-6355
Phone

Appendix D
DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST CERTIFICATION

Applicant Firm WRA Environmental Consultants

Having had the opportunity to review Organizational Conflict of Interest Checklist, the Proposer hereby indicates that it has, to the best of its knowledge and belief:

Determined that no potential organizational conflict of interest exists.

Determined a potential organizational conflict of interest as follows:

Attach additional sheets as necessary.

Describe nature of the potential conflict(s):

Describe measures proposed to mitigate the potential conflict(s):


Signature

7/8/2014
Date

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure certification with Department of Transportation contract personnel.

Liston Witherill
Name

415.454.8868
Phone ext. 144

Appendix D
DISCLOSURE OF POTENTIAL CONFLICT OF INTEREST CERTIFICATION

Applicant Firm Vortex Marine Construction, Inc.

Having had the opportunity to review Organizational Conflict of Interest Checklist, the Proposer hereby indicates that it has, to the best of its knowledge and belief:

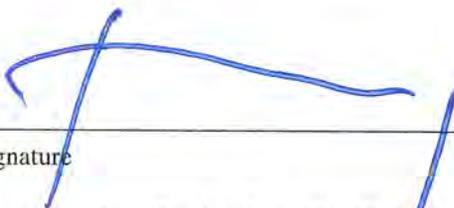
Determined that no potential organizational conflict of interest exists.

Determined a potential organizational conflict of interest as follows:

Attach additional sheets as necessary.

Describe nature of the potential conflict(s):

Describe measures proposed to mitigate the potential conflict(s):



Signature

7/2/14
Date

If a potential conflict has been identified, please provide name and phone number for a contact person authorized to discuss this disclosure certification with Department of Transportation contract personnel.

Blaise Fetting
Name

510-261-2400
Phone