

BRENTON BRIDGE ENGINEERING, INC.

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Joseph P. Gutierrez

President, Principal Bridge Engineer

Registration 1995, Civil Engineering (California), No. C 53273

Education BS, Civil Engineering, San Jose State University 1991

Professional Qualifications

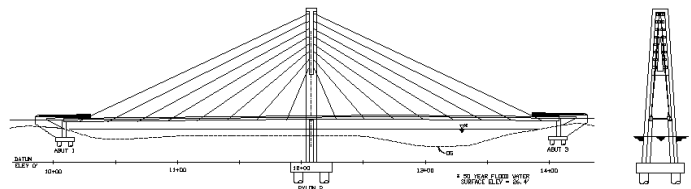
Mr. Gutierrez has eighteen years experience focused on bridge design and construction projects. His work experience includes the design, construction, and Caltrans project administration of new bridges, seismic retrofit and rehabilitation of existing bridges, appurtenant facilities such as retaining walls, culverts etc. His experience also includes land surveying, civil land development, and transportation studies. He has been an assistant project manager for Caltrans projects including the San Diego - Coronado Bay Bridge Retrofit Project, and more recently the SR152/SR156 Interchange Improvement Project. Details of select projects and work experience are as follows.

2004-present Brenton Bridge Engineering, Inc, Santa Cruz

Whitson Engineers/TAMC On-Call (TAMC) BBE prepared PS&E for a 95' long pedestrian undercrossing tunnel under Carmel Valley Road alongside Highway 1. The width was 14' and height 9'. The low bid was the cast-in-place alternative, and precast was included in the PS&E to ensure providing the lowest cost alternative to the Client. Mr. Gutierrez served as principal-in-charge for the structures portion of this contract.

Whitson Engineers/Big Sur Land Trust - Carmel River Floodchannel at SR-1 (Co Monterey, TAMC, Caltrans, BSLT) BBE prepared type selection advance planning studies and cost estimates for construction alternatives of a 520' long roadway bridge or equivalent cost box-culvert. Geotechnical considerations of seismic induced liquefaction make this the worst bridge site reviewed by me to-date.

Whitson Engineers/TAMC On-Call (TAMC, Caltrans) Planning for a 400' long pedestrian and bicycle bridge over the Carmel River alongside Highway 1. BBE prepared a Type Selection Report. The bridge types studied included precast concrete bulb-tee girders, cast-in-place post-tensioned concrete box girder, and a cable-stay signature structure. All bridge types included large diameter pile deep foundations with various configurations.



Coyote Valley Research Park (Ci San Jose, VTA, Caltrans, SCVWD, St CA) Construction Inspection of four structures. Bailey Avenue Bridge Widening at Fisher Creek also designed by Mr. Gutierrez. Fisher Creek Dam/Retaining Wall a double 12x12 RCB culvert and culvert extension, several large diameter pipe headwall and tailwall structures. Mr. Gutierrez

designed the bridge widening, and provided continuous construction inspection of the listed structures. This was required to comply with the California Dept Water Resources Division of Safety of Dams.

San Francisco-Oakland Bay Bridge Temporary By-Pass Structure (Contractor, Caltrans)

This project was performed for TRC Imbsen Engineering as part of a design/build contract between Caltrans and the Contractor. This new bridge design provides temporary realignment of I-80 to the south of the existing bridge and east of Yerba Buena Island to accommodate new bridge construction. This temporary bridge is divided into three segments called the West-Tie-In, Viaduct, and East-Tie-In. Mr. Gutierrez performed final design calculations of West-Tie-In segment, Frame 2.

BART Earthquake Safety Program - A, C and R Line Aerial Stations & Coliseum Walkway

Pedestrian Bridge (City Oakland, BART, UPRR) This project was performed for DMJM Harris as part of the seismic evaluation of elevated stations. BBE was responsible for the analysis and seismic strategy report for the Coliseum Walkway Pedestrian bridge from the station to the coliseum. BBE was also responsible for secondary structures such as escalators and elevators, and temporary shoring of buildings and critical facilities.

4th Street Bascule Bridge at Marina Creek, (Ci & Co SF)

This project was a seismic retrofit of an historic bridge built by Joseph Strauss circa 1913. The seismic strategy required complete replacement of the substructure. During pile-driving operations, the 3' diameter piles wandered through the soft bay-mud out of place by over 6'. This required an emergency re-evaluation of the footing design. Mr. Gutierrez performed this emergency re-evaluation and found the design adequate for the dislocated piles and consequent footing extension.

BART Warm Springs Extension Project at Washington Boulevard/Paseo Padre Parkway (Ci

Fremont, BART, VTA, UPRR) Construction inspection of earthworks for Railroad embankments with a Railroad flagger on-site, including wick drains, settlement/consolidation period and monitoring; survey construction staking and grade checking; utility relocations of water, sewer, Hetch-Hetchy aqueduct, Kinder-Morgan fuel lines, boring and jacking casings, fiber-optics cable, phone copper lines, PG&E power including a trunk line, utility pothole locations and backfill; environmental mitigation and continuous inspection for tiger salamander, well extraction and abandonment, removal of hazardous materials; hydraulic structures and pipelines; construction traffic control and lane closures including signage, tapers, and flaggers.



Paradise Park Covered Bridge (Private Client, Co Santa Cruz)

BBE performed a conditional assessment of this 136 year old timber covered bridge with proposed repair measures. This bridge was a 170' single-span built for mining cars on rails.

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Horse Ranch Creek Bridge Widening at SR-76, (Co San Diego, Caltrans) Final design for TRC Imbsen who was working as a structural sub-consultant to URS. The existing three-span slab bridge was widened from two-lanes to four-lanes. Design included seismic retrofit of the existing bridge and seismic restraining of the existing with the new structure. The final bridge length was 110' (3x36') and width was 78'.

1997-2004 Biggs Cardosa Associates, Inc, San Jose

Martinez Marsh Restoration Project Pedestrian Bridges (Ci Martinez, EBRPD, Caltrans) This project will become part of the pedestrian Bay Trail encircling the San Francisco Bay. The East Bay Regional Park District requested the use of precast-prestressed voided slabs with 40' simply supported spans. The bridges are 120' and 240' long and 14'-2" and 11'-4" wide respectively. Design and construction inspection.



BART / Commuter Rail / LRT Study, San Jose Project Engineer for feasibility study to grade separate a commuter rail corridor (or future BART corridor) and the Tasman East LRT line.

Brentwood Park, Andrew Molera State Park, and San Felipe Road pedestrian bridges

These projects involved design of foundation structures for pre-fabricated steel truss bridges of 52', 40' and 100' lengths respectively.

Sand Creek Central, (Ci Brentwood) This project included design and construction inspection of four structures. An extension of an existing 12'x24' box culvert, a new 37' single-span slab pedestrian undercrossing bridge, a new 9'x12' pedestrian undercrossing box structure, and an in-depth type-selection study of an UPRR underpass. The railroad underpass design criteria restricted the track closure to 14 total days for construction. This required all the elements of the bridge to be precast. The foundation cast-in-drilled-hole piling were to be constructed prior to track closure then the entire two-span bridge would have been excavated and erected within the construction window. The Railroad declined to allow the track closure after the study.

Lower Silvercreek Reach 4, (SCVWD, Ci San Jose) This project for Santa Clara Valley Water District involved the design of hydraulic structures including a RCB culvert, U-channel walls, retaining walls and ramp structures. This project used Service Load Design as recommended by Natural Resource Conservation Service.



SR-152/SR-156 Interchange Project (VTA, Caltrans) This project near Casa de Fruta was for the Santa Clara Valley Transportation Authority. This project was a grade-separation interchange project. BCA was selected as Prime Consultant leading Environmental, Civil and other Subconsultants. Mr. Gutierrez was utilized as the Assistant Project Manager. He was responsible for

communications with Subconsultants and the Client, meeting minutes, preparing structural alternatives and costs, design to 35% and preparing presentation materials.

Bailey Avenue Grade Separation, (VTA, Caltrans, Ci San Jose)

This project in San Jose's Coyote Valley, extends Bailey Avenue to Interstate 101. This required three major bridges, an Overcrossing at I101, a Bridge at Coyote Creek, and an Overhead at Monterey Road and UPRR. Mr. Gutierrez led the design of the Bridge (489') and Overhead (260'). This included aesthetic components to produce a landmark appearance as a gateway to the City of San Jose.



Donlon Boulevard Bridge, (Developer, Ci Antioch) This new bridge at Markley Creek was a single-span precast-prestressed bulb-tee girder (122') bridge on tall abutments, and incorporated aesthetic railings with pilasters and stone cladding. This was a fast-tracked project providing primary access to the site for a new land development. Mr. Gutierrez developed an MS Excel spreadsheet for the design of precast girders, including bulb-tees, and stress calculations for debonding of tendons.

Windemere Utility Crossing Independent Check, (Developer, Ci Martinez) This bridge carried two large-diameter (36") sewer pipes flowing under pressure, and a service road. The structure type selected was precast-prestressed Caltrans Bulb-Tee girders (123'). Mr. Gutierrez developed an MS Excel spreadsheet for the design of precast girders, including bulb-tees and stress calculations for debonding of tendons.

Hanson Road and Vulcan Road Bridges, (Developer, Co Alameda, Ci Pleasanton, Ci Livermore) This project was for a planned future development at the site of the current aggregate quarries. For this fast-tracked project, design of both bridges was completed in two-months, and the bridges were built in six-months. The design and construction support was for cast-in-place post-tensioned bridges of two 100' spans (200'), and two 110' spans (220').

Buchanan Street/Eastshore Highway Connection, (Ci Albany, Caltrans, UPRR) This project was a combination in-fill widening overhead structure and new elevated intersection/connection structure. The infill-widening was designed using precast-prestressed Caltrans I-girders, and cast-in-place T-girders to match the existing structure. The new connection structure was designed using post-tensioned combined with mild steel reinforcing for slab design with curving geometry. The substructure utilized a tall cantilever abutment with an MSE wall approach. Mr. Gutierrez exercised considerable coordination due to large design team for multiple components, numerous utilities and proximity to Railroad.



West Cliff Drive at Swanton Boulevard and West Cliff Drive at Woodrow Avenue, (Ci Santa Cruz) This FEMA project was an emergency replacement of a failing crib wall. The crib wall was demolished and replaced with a soil nail retaining wall that extended full height from the top of the sandstone bedrock to the existing roadway grade. Due to early completion of the design, the City of Santa Cruz awarded BCA a second soil nail wall design at West Cliff Drive and Woodrow Avenue. Design and construction inspection.

Canyon Oaks Bridges, (Developer, Ci Pleasanton) This project involved the design and construction inspection and support of three bridges. The first using precast-prestressed voided slab units of a single 60' span. The remaining two bridges were cast-in-place slabs. Design and construction inspection.

Jack Tone Road/Hwy 99 Interchange, (Ci Ripon, Co San Joaquin, Caltrans, UPRR) This replacement interchange project involved the design of four new bridges. Mr. Gutierrez designed the Railroad Overhead (419'), and led or assisted in the design of the other three. Due to site constraints the Overhead bridge type selected was an unbalanced three-span (157, 144, 118') cast-in-place post-tensioned box girder.

Arizona Street Bridge, Union City Project Engineer for a 76' single-span cast-in-place post-tensioned box girder bridge for a developer.

Monterey County Seismic Retrofit Project (Co Monterey, Caltrans) This project involved seismic retrofit design and construction inspection of seven bridges in Southern Monterey County. Mr. Gutierrez was responsible to develop a retrofit strategy, plans, plans specifications and estimates for two of these bridges. The first (Indian Valley Road) was a steel girder bridge with concrete deck, and the second (Nacimiento-Ferguson Road) was a two span flatcar bridge. He was also responsible for performing an independent check of Cattlemen Road Bridge, a ten-100' span (1000') steel truss bridge.

Broadway-Brommer Bike Path, Santa Cruz BCA was selected to provide plan sheets for an environmental document (EIR/EA) prepared for the City of Santa Cruz. The report was focused on building a bicycle pathway connecting Broadway to Brommer Street by bridging Hagemann and Arana Gulches north of the yacht harbor.

King Road Driveway Bridge, (Developer, Ci San Jose, SCVWD) This bridge over Lower Silver Creek near King and McKee Roads provided secondary access to a new commercial development. The geometry of the site was constricted below by freeboard requirements of the creek, and above by roadway profile restrictions. This led to the use of a highly optimized post-tensioned slab bridge design with 60' span length and tapered superstructure depths of 26" at mid-span, and 17" at the end-spans, and construction inspection.



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Cisco Systems Five Bridges, (Developer, Ci San Jose, SCVWD) This project in San Jose's Coyote Valley provided access to Cisco System's future campus. This required a total of five bridges. All bridges were 60' single-span, cast-in-place, post-tensioned combined with mild-reinforced slabs, with varying geometry. Aesthetic demands for the bridge design were complex to satisfy the Client's grand architectural vision.

1995-1997 TY Lin International, San Diego

San Diego - Coronado Bay Bridge Seismic Retrofit This BTHA project involved the retrofit of one of California's major Toll Bridge crossings (7,826'). Mr. Gutierrez was utilized as Assistant Project Manager and for design calculations. As APM, he assembled Scope of Services for Task Order execution, Task Order Cost Estimate Worksheets for budgeting, and prepared Monthly and Semimonthly Contract Progress Estimate charts. He was responsible for writing meeting minutes, communications with Subconsultants and the Client, and preparing presentation materials. Additionally, Mr. Gutierrez worked on strategy development for the Easterly Ramp structures, developing deflection capacities of the bents and performing rocking analyses. He prepared independent check calculations for the footing retrofits of two Ramp structures.



1991-1995 Boyle Engineering, Sacramento

Rancho Mission Roadway Bridge, (MTDB, Ci San Diego) This project was a new bridge design for the relocation of a roadway bridge due to the MTDB's new light rail extension project, Mission Valley West. The new bridge design was constrained by hydraulics below and a finalized profile grade above which limited the structure depth to 1'-9". Cost analysis established that a two-span (60, 60') prestressed slab was less expensive than a three span reinforced slab bridge due to pier wall foundation costs. The less expensive alternative was selected. The final design fee of the more complex structure was within budget for the less complex structure.

Soquel Avenue Bridge, (Ci Santa Cruz, Caltrans) This HBRR bridge replacement project began with a seismic retrofit analysis, and hydraulic study of the existing structure. The existing structure was shown to be deficient for both seismic and hydraulic reasons, and was replaced. Mr. Gutierrez designed this replacement structure up to the 35% PS&E level.

Laurel Street Bridge, (Ci Santa Cruz, Caltrans) This seismic retrofit project was difficult due to the liquefiable soils under the bridge, the high water table and the extensive overhang of the superstructure over the substructure. These limitations obstructed cost effective structural retrofit solutions. Finally, it was determined that the most effective way to protect the structure from liquefiable soil conditions was to treat the soil and prevent liquefaction.



Water Street Bridge, (Ci Santa Cruz, Caltrans) This HBRR project involved the replacement of the structurally deficient northerly portion and seismic retrofit of the southerly portion of the bridge. This required a Preliminary Seismic Retrofit Strategy Report for Caltrans, and a Rehabilitation Study to evaluate cost and feasibility of rehabilitation compared with complete replacement. A Location

Hydraulic Study was prepared (by other team members) including coordination with the Corps of Engineers. Special consideration was given to liquefaction of the soils for a CIDH pile foundation design that could support and restrain both new and existing bridges during a maximum credible event using a site-specific ARS curve. The structure selected was a three-span (78, 170, 78') cast-in-place box girder with aesthetic superstructure haunches and parabolically stepped pier walls.

Route 73 Moulton Parkway Undercrossing Left Bridge, Laguna Hills (TCA, Caltrans) This project was part of a four bridge undercrossing interchange. This new bridge design had three-spans (75, 178, 75') and was cast-in-place/ post-tensioned concrete box girder construction. This project required close cooperation with three other bridge designers for similarity of details and efficient use of time, minimizing duplication of work. It also involved a unique seismic analysis process using three separate criteria. Mr. Gutierrez also performed hand analysis of post-tensioning used for verification of PC Bridge software as required by the client.

I-101 Ash Creek Bridge Retrofit, Cloverdale (Caltrans) This project involved preserving an existing reinforced concrete T-beam bridge built in 1932. A Preliminary Strategy Report was submitted to Caltrans and approved. The strategy developed limited transverse flexure of the piers by providing a prestressing chord force to either side of the superstructure that was tied back to a CIDH piling frame behind the abutments. The chord tied-up the spans into one continuous diaphragm, thus limiting transverse deflection at midspan, and minimizing damage to existing pier columns. Mr. Gutierrez developed PS&E for this retrofit.

I-280 Southern Freeway Viaduct Retrofit Independent Check, San Francisco (Caltrans) Seismic retrofit design check of the Bay Area's last remaining double-decked concrete structure. Mr. Gutierrez was responsible for check of edge beam ultimate capacity, column capacity for transverse live loads, and a check of the complex double-decked freeway geometry and element properties of the seismic model.

Laurel Grove Avenue POC Retrofit, Los Angeles Analysis of a timber truss and identification of existing structure deficiencies. No attempt at retrofit was made, and a new bridge was designed by others.

Colfax Avenue POC Retrofit, (Ci Los Angeles) This project involved seismic retrofit design of a steel through-truss. Analysis of the existing structure showed the bridge could not withstand maximum transverse seismic accelerations without buckling. A seismic retrofit strategy was developed using the City's first application of a friction-plate damper that

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releases the truss to translate transversely under seismic loads that would exceed the capacity of the truss. A new foundation was designed that accommodated the deflection with new dampers, bearings and longitudinal elastic spring restrainers.

Mission Center Trolley Bridge, MTDB San Diego Independent check of abutment design. Foundations were deep, large diameter, cast-in-drilled hole steel reinforced concrete piles.

I-10 / Waterman Interchange, San Bernardino: Scripps Poway Parkway / SR67 Interchange, Poway Prepared surveying stakeout grid grades for Caltrans.

Schnoor Ave, Madera, and Greenwood Underpass at I805, San Diego MTDB Falsework design checks.

Professional References

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