



National Economic Development
Risk Managed by Diversification:
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 Transportation/Seaports/Airports/Logistics
 Healthcare/Real Estate/Tourism
 Natural Resources/Agriculture
 Education/Media/Software
 Heavy Civil Infrastructure

CivTek International

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RELEVANT TEAM PROJECT HISTORY

Experience of Key CivTek Leaders

Rail, Bridges, Tunnels, Highway, General Infrastructure

Quality Assurance/ Quality Control (QA/QC)

Land Development Projects.....Pages 46-112

PROFILE

Throughout their combined careers, CivTek’s leadership team members have collectively completed thousands of projects, including, thousands of miles of rail, hundreds of bridges and urban transportation rail and highway viaducts, tunnels, structure designs, seismic earthquake retrofits, and special studies, including large cut and cover tunnels and numerous other complex structures. CivTek also brings extensive logistics, operations and planning experience in all modalities of transportation to include: trucking, rail, and trans-oceanic shipping. **For Land Development projects, CivTek’s private real estate equity management and development house focuses on acquisition, development, and value add.**

CivTek’s hand-selected cadre of principal experts offer proven track records, collectively more than 4500 person-years of multi-disciplined experience. This corps group of experts, bring you a scalable project delivery team with a direct network of well over 15,000 professionals ready to engage as your project’s work packages move from feasibility to design, construction, and operations. This collective experience represents several hundred billion dollars of completed infrastructure projects. The following narrative represents highlights of our team’s relevant collective experience transportation infrastructure.

CivTek provides project management, engineering, contractor services, program and corporate leadership for project development, design, construction and operations. Our team has extensive experience on large mega-sized transportation projects that include rail, highways and roads, bridges, public infrastructure and private developments. CivTek leads multi-disciplinary teams to design and construct complex urban transportation projects including major rail programs, bridge structures, complex multi-modal interchange designs, corridor planning studies, project reports, and capital maintenance projects.

We have extensive knowledge and experience in all phases of project delivery from feasibility studies, engineering, construction, operations, and capital maintenance. CivTek’s personnel wield a strong history of Risk Management, Quality Assurance and Quality Control (QA/QC) experience during all project phases.



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During construction phase, CivTek has an experienced team of inspectors ready to ensure QA on a global basis for all materials incorporated into your project.

Major Project and Rail Road Corporate Leadership Experience of CivTek Team Available and Relevant to Your Project Include:

- Design of the largest and most complex United States urban passenger rail project
- Rail transit projects throughout the world
- Leadership of major United States rail operations of more than 8,000 personnel
- Infrastructure Commissioner of the third largest city in the United States
- Leadership that in only three (3) years turned around \$500 million Australian rail company and sold it for \$1.7 billion
- Leadership that implemented the merger of two of the largest United States rail companies, the Union Pacific and the Southern Pacific
- Leadership that assisted the President of Southern Pacific to develop their ten (10) year Strategic Plan that included acquisition of the Southern Pacific Rail Road by Rio Grande Industries
- Vice-President and General Manager for Southern Pacific Rail Road, United States
- General Superintendent of the Northwestern Pacific Rail Road
- General Manager for the Australian Rail Road Group
- Leadership and Expertise in Safety and Transportation Efficiency for both Passengers and Freight
- Leadership of the San Francisco Bayshore Freeway Seismic Retrofit
- San Francisco Bay Bridge Seismic Retrofit (*See page 32*)
- San Francisco Bay Area (Oakland, California) Cypress Corridor Reconstruction through Southern Pacific Rail Road yard
- Eastern Transportation Corridor, Design/Build Toll Road System (Orange County California)
- QA/QC of engineering and surveying for large private developments
- Hundreds of bridge projects throughout California and the world
- Harbor and dam projects in China (Fly-Ash Dam)
- Seismic and Tsunami probabilistic risk studies worldwide for the petroleum, nuclear and transportation industries

CivTek personnel understand the challenges of mega projects and stand ready to deliver all professional services, construction, maintenance and operations.



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RELEVANT QA/QC, SPECIALIZED PROGRAMS and PROJECTS of CivTek Team Leaders

Rail Projects

The Trans Hudson Express -“THEP”; Access to the Regions Core “ARC”



Multi Billion Dollar Rail Tunnel Project under the Hudson River that connects New Jersey to Manhattan, New York. (See Attached Press Release)

Managed all Disciplines for

the Manhattan Entrances Packages as Program / Package manager. Interfaced with and managed the Project Partnership technical teams, Port Authority of New York, Legal Teams, Real Estate Teams and Construction Consortium.



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Project alignment through New York and New Jersey



(See Attached Project List)

Additionally, Chief Structural Engineer for all Tunnels and system wide facilities on the line in both New Jersey and New York including Cut and Cover Tunnels, Retaining Structures, Underpinning, Construction Sequencing, Pedestrians Flows, Traffic Studies and Right of Way .

Rendering of a new New York Penn Station Expansion cross section

Design and construction solutions were substantially completed to approximately 70% when political decisions put the project on hold for an indefinite period.



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Rendering of a new New York Penn Station Expansion cavern





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Millbrae Intermodal Terminal – Cal-Train Rail and Air Train Terminal, Millbrae, California, USA

Millbrae Station is the largest intermodal terminal in the United States west of the Mississippi. It consists of three at-grade main tracks for BART and two for Caltrain. An island platform provides a cross-platform connection between the two systems (for traveling northward to San Francisco). An elevated concourse mezzanine is located above the platforms.

The station is also a regional bus transit hub with multiple bus bays served by several SamTrans lines. Millbrae Station has approximately 2,900 parking spaces, including a five-story parking garage and surrounding surface parking.

CivTek personnel provided contract administration and claims analysis for Spenser



Construction (General Contractor) and A&A Mechanical (HVAC subcontractor). Major rail project contract compliance / claims were assessed and presented to Tutor-Saliba-Perini-Buckley J.V. – this rail project's lead General Contractor. URS was the construction manager for this major rail project, an at-grade Bay Area Rapid Transit /

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Caltrain Rail station located in Millbrae, California, which extended service to the San Francisco International Airport. The facility is a station on future California high-speed rail system.

Work on this major rail project included construction management, contract management, program / project controls [estimating / scheduling / document control / quality control], construction dispute management and resolution (claims and disputes). CivTek personnel were responsible for constructability & value engineering reviews; assisting GC/subs with construction bidding; managing/ coordinating GC/subs construction activities; inspecting work for quality control & compliance with contract/codes; developing/monitoring construction schedules; managing cost/contractor payments; monitoring/reporting on progress; mitigating construction conflicts.

Downtown Oakland BART (Train) Station Realignment, Oakland, California, USA – Construction Manager

The project was the construction - reconfiguration – realignment of BART tracks and the rebuilding of BART Stations affected by the 1989 earthquake that hit the San Francisco Bay Area. (1989-1992)

Southern Pacific Rail Road Track Replacement and Realignment, West Oakland, California, USA – Construction Contractor

The project was the construction - reconfiguration – realignment of Southern Pacific rail tracks for upkeep and maintenance purposes. Mr. Wilson worked as a sub-contractor providing excavation, grading and underground utility installation to general contractors. Work was performed in the congested rail area of West Oakland, California USA.

Tennessee Department of Transportation Comprehensive Rail Plan, USA - Project Manager and Quality Assurance

The components completed for the rail plan included; a statewide passenger rail study,

Long List of potential intercity passenger rail corridors for Tennessee region.



the analysis of multiple rail corridors for passenger rail service including three proposed new segments, the evaluation of the operational and engineering criteria to establish the feasibility and associated cost of implementing passenger rail service on each corridor, and the planning, operational analyses, preliminary design necessary for the revitalization of passenger



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rail service using new and existing rail infrastructure. Specific infrastructure issues included the planning and design consideration of passenger rail service. Factors evaluated included grade crossing safety, train control, track infrastructure, speed analyses, operational analyses, and passenger facility issues.

Components Involved in this Work

- Public Involvement Plan that included (a) identifying and involving the stakeholders (b) securing factual input and data from the stakeholders (c) provide timely and adequate public notice through the TDOT Website and encourage the involvement of the TDOT Rail System Plan Advisory Committee to ensure public/private participation.
- Develop an inventory of Tennessee's existing rail freight, passenger, and intermodal infrastructure and services.
- Review the current TDOT Short Line Railroad Rehabilitation Program and make recommendations for improvements to the program.
- Review the intercity rail passenger service, and make recommendations to the state that includes three to five candidate corridors for further consideration for development of intercity passenger rail service.
- Document current freight movements and provide forecasts of those freight movements.
- Identify intermodal facility capabilities and needs and recommend to the State the types of investments in infrastructure that the state should be involved in, and the policy or regulatory intervention the State might undertake to promote the most efficient and effective development of an intermodal transportation system.
- Develop and then recommend to the State protocols and procedures for evaluating major rail freight and rail-related intermodal facility projects.
- Evaluate specific infrastructure improvement proposals:
- Knoxville--Memphis rail feasibility study funded by the U.S. Congress in the FY 2000 Transportation Appropriations Bill. This project specifically addressed the re-establishment of rail freight infrastructure and service between Algood and Oliver Springs, Tennessee.
- High-speed freight and passenger rail connection that facilitates service between Knoxville and Memphis.
- Regional rail bypass of Memphis.
- Evaluate rail impacts resulting from the permanent closure of the Chickamauga Lock on the Tennessee River.
- Develop descriptions of Federal, State, and Local funding sources and evaluate funding capacity needed to make the improvements identified by the Rail System Plan.

High-Speed Rail Corridor Cost Study for the State of Oklahoma, USA

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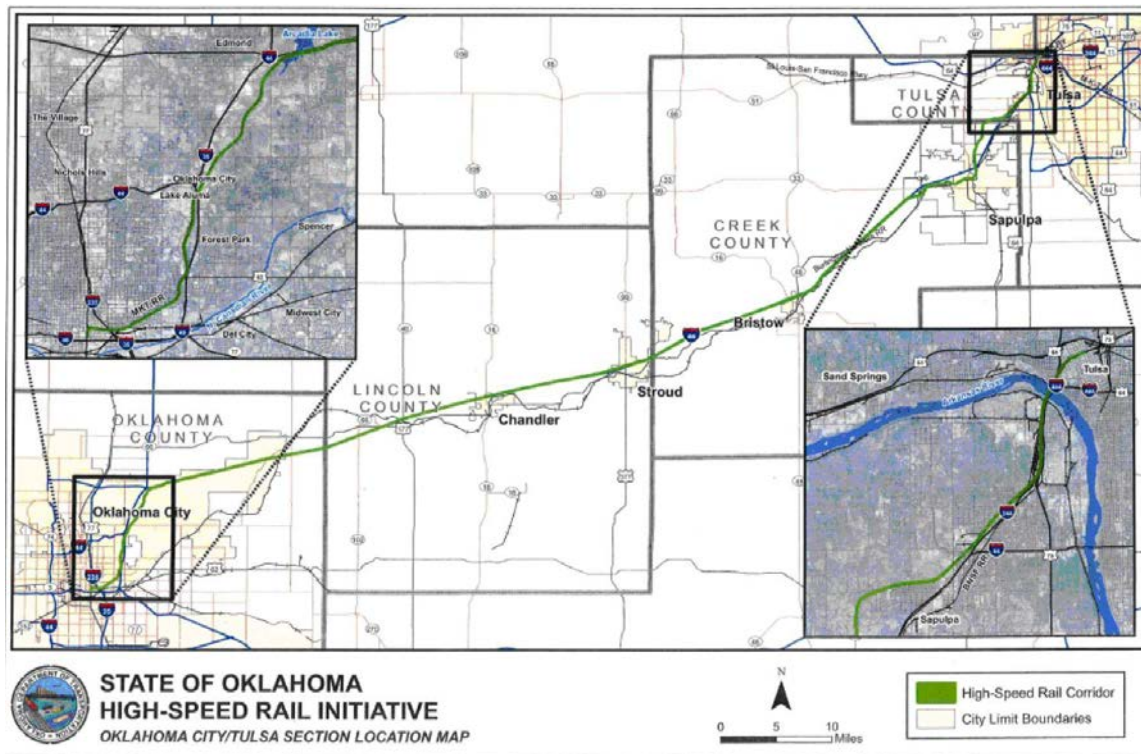
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This cost study included the development of feasible alternative corridors between Oklahoma's two major economic centers for rail operations with proposed operating speeds of up to 150 MPH. These preliminary plans incorporated existing FRA design



Conceptual Drawing/ I-244 Multimodal Bridge (to accommodate Study Recommendations), drawing by Garver Engineering/ODOT State of Oklahoma Passenger Rail Study, USA

standards and the incorporation of international design standards where necessary, to develop two primary core corridor alternatives with various alternative alignment options. The final report included operating times, plan and profile sheets for each alternative, and detailed cost estimates for each corridor alternative identified for High-Speed operations between Oklahoma City and Tulsa including infrastructure, maintenance, equipment, and operations.

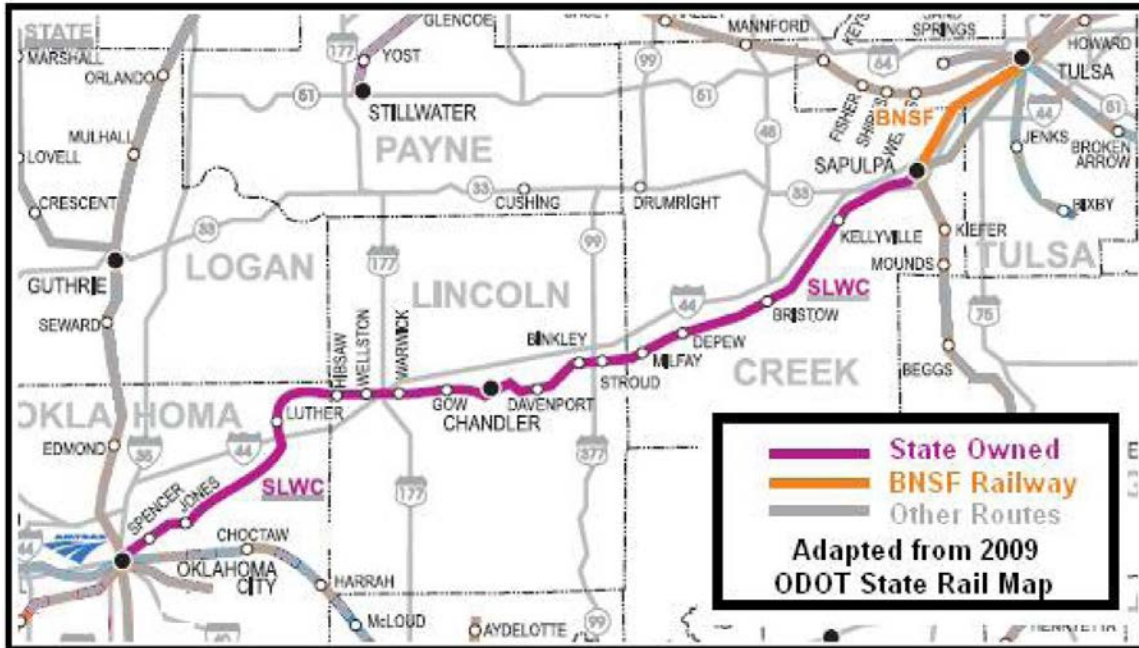


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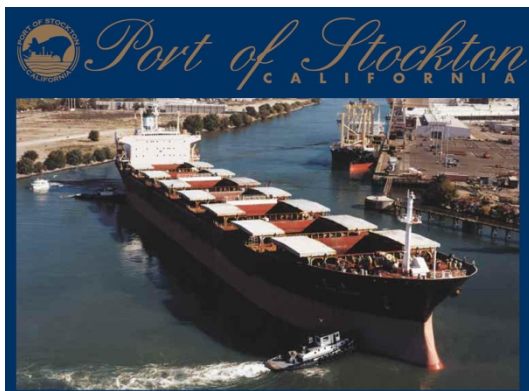
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This passenger rail study for the State of Oklahoma included the analysis of over ten rail corridor segments for potential passenger rail service. This study involves the evaluation of the operational and engineering criteria to establish the feasibility and associated cost of implementing passenger rail service on each corridor. The evaluation includes



planning, operational analyses, preliminary design, and cost estimation for the revitalization of passenger rail service using new and existing rail infrastructure. Specific experience associated with the planning and design consideration of passenger rail service include grade crossing safety, train control, track infrastructure, speed analyses, operational analyses, and passenger facilities issues.



Port of Stockton, Portwide Railroad Master Planning Stockton, California, USA

A two-phase project, Phase I addressed immediate rail infrastructure needs to minimize delays associated with rail operations, and Phase Two focused on a long range plan for Port rail operations. Phase One was completed in November 2003 and the components of this project included; short-term freight forecast projections, the analysis of railroad operations on the existing rail infrastructure, a review of existing traffic

patterns associated with present operating procedures for both the Shortline local rail service provider and the Class One railroads serving the Port, and operational enhancements to relieve existing freight bottlenecks and projected five-year freight



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volumes. The analysis required an in-depth review of existing operations, the development of immediate operational changes to enhance rail service into and out of the Port, and the development of a rail infrastructure improvement plan to



facilitate adequate operations over the next five years. Phase Two will focus on the development of components of the rail plan that will assist the Port in marketing freight service utilizing marine, rail, and truck transport modes with enhanced freight interchange between modes. The final rail plan will also include proposed developments based on long-term forecasting projections and potential marketing strategies that will optimize the Port's capability to efficiently expand operations based on potential combinations of market trends.

Union Pacific Railroad Rochelle Grade Crossing Mitigation Plan, Rochelle, Illinois, USA

The components of this project included the analysis of traffic patterns associated with six consecutive at-grade railroad crossings for potential elimination, grade separation, or signal improvements. The final report included a summary of the planning and design criteria formulated to facilitate future traffic movements within the county that would be altered by the construction of a large railroad freight yard. Specific project activities included; public involvement activities, planning coordination, traffic studies, the planning and preliminary design of a roadway over rail grade separation, and the final design of a segment of county roadway.

Farmrail System Alignment Alternatives, Clinton, Oklahoma, USA

Completed an evaluation of various alignment alternatives for the Farmrail System, Incorporated Railway Company in Clinton, Oklahoma. This project involved the assessment of the feasibility of altering the present alignment of a segment of rail to facilitate a less expensive highway overpass design. Specific components of the project included the collection of field survey information and the evaluation of the available

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operational and engineering criteria, to establish the feasibility and associated cost of each proposed alignment alternative. The evaluation included planning, operational analyses, preliminary design, and cost estimation for the removal of existing infrastructure to facilitate the new construction and for the completion of the new construction associated with each alternative.

Burlington Northern Santa Fe Railroad Track Design, Various Locations, USA

Project manager for an eighteen-mile segment of track design including the design of a highway overpass, and several highway/rail grade crossings with an estimated total construction cost of 20 million dollars. Project manager for projects on six individual BNSF rail corridors established to evaluate the highway/rail intersections on each corridor for consolidation or elimination. Each corridor has a total estimated cost ranging from 2 to 5 million dollars. Previous project-related experience includes the management of several grade crossing review projects throughout the

South Florida Rail Corridor, Various Locations, USA

A project involving over fifty highway/rail intersections with moderately high to extremely high volumes of traffic. The design concepts utilized on this corridor included median design for standard gate installations and four-quadrant gate installations to establish total closure systems during activation. Video surveillance and grade crossing health monitoring linked to the central train control center and traffic management center were also used to facilitate a proactive approach to addressing queuing problems, signal malfunctions, and problems with stalled vehicles or other obstructions at or near highway/rail intersections. Standard loop detection technologies and activated warning sign applications were developed to provide direct notification of track encroachment during train signal activation.

CSX Highway/Rail Intersection Improvements, Marietta, Florida

A rail safety corridor project with the CSX Railroad that involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of three highway/rail intersections, the elimination of two highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing, the installation of median barriers to reduce the number of run-around violations at the gated signal locations, and addressing major drainage issues associated with the realignment and grade changes at one of the crossings.

CSX Highway/Rail Intersection Upgrade Study, Plant City, Florida

A rail safety corridor project with the CSX railroad that involved the analysis of railroad and roadway operations as they related to the proposed improvements focused on reducing the amount of motor vehicle emissions associated with train related traffic delay. The proposed new construction also included the utilization of federal funding for the beautification of the downtown area near the railroad tracks. The project ultimately resulted in the upgrade of nine highway/rail intersections including one crossing designed specifically for pedestrian traffic, the elimination of three highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing location and the resurfacing of several city streets.



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- **TxDOT Statewide Railroad Grade Crossing Inventory, Statewide, Texas; Project Management & Quality Assurance.** The TxDOT Statewide Railroad Grade Crossing Data Collection project included the development of a training module to provide efficient and uniform methods for the statewide data collection involving: accurate data recording using the approved format, sight distance triangle measurements, and the assessment of private crossings for potential public utilization. Project coordination with the Railroad, Federal, State, and Local agencies was an extremely important component of the data collection efforts from both a field coordination and data exchange perspective. The inclusion of accurate train data and coordination through pre-established contacts with each railroad were a valuable asset Dr. Webb and the C-B Team brought to those efforts.
- **Coletto Creek, Victoria, Texas; Project Management and Quality Assurance.** Projects included: an eighteen-mile segment of track design including a highway overpass, and several highway/rail grade crossings with an estimated total construction cost of \$20 million, six individual rail corridors established to evaluate the highway/rail intersections on each corridor for consolidation or elimination. Each corridor had a total estimated cost ranging from \$2 to \$5 million, the management of several grade crossing review projects throughout the southern and Midwestern regions to identify locations with potential for consolidation, including the submission of final reports providing recommendations for the improvements needed to mitigate the impact of eliminating crossings.
- **BNSF Red Rock Subdivision Private Crossing Closure Initiative, Multiple, Texas; Project Management and Quality Assurance.** Performed corridor study from Texas/Oklahoma State Line to Arkansas City, to identify potential crossing closures. Additional efforts included the development and presentation of a crossing consolidation plan for the City of Ardmore, Ok.
- **BNSF Hereford Subdivision Private Crossing Closure Initiative, Various, TX; Project Management and Quality Assurance.** Provided coordination of Public Grade crossing projects in select counties and communities on the Hereford Subdivision from Eastern to Texico, Texas.
- **BNSF Lafayette Subdivision Private Crossing Closure Initiative, Various, LA; Project Management and Quality Assurance.** Coordinated public grade crossing projects in select counties and communities on the Louisiana Subdivision from Iowa Junction to Avondale, Louisiana. Additional efforts included the development and presentation of crossing consolidation plans for the Cities of Jennings, Crowley, Rayne, Lafayette, New Iberia, and Franklin, Louisiana.
- **BNSF Galveston Subdivision Private Crossing Closure Initiative, Various, Texas; Project Management and Quality Assurance.** Provided corridor study from Tecific to Texico, Texas to identify potential at-grade crossing closures.
- **BNSF Madill Subdivision Private Crossing Closure Initiative, Various, OK; Project Management and Quality Assurance.** Provided inventory record update from Madill, Oklahoma to South Irving, Texas.
- **Coletto Creek Power Station Transportation Alternative Project, Fannin County, Texas; Project Management and Quality Assurance.** Provided engineering services

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for 18+-mile connection track between Fannin and McFaddin.

- **TXDOT Rail Crossing Passive Warning Device Recommendations, Statewide, Texas; Project Management and Quality Assurance.** Established methodology to deploy Stop and Yield sign m
- **Tai Ranch Railroad Crossing, Project Engineering, Management and Quality Assurance;** included the geometric layout of a rail grade crossing location necessary to facilitate expanded access into a proposed subdivision. Project involved coordination with the Nevada Public Utilities commission and the Union Pacific Railroad prior to obtaining approval from the county to widen the associated roadway and necessary railroad crossing.
- **Virginia & Truckee Railway Phase II, Sorey County, Nevada, Project Engineering, Management and Quality Assurance;** The V&T Railway - Phase II project represents the next step in the overall project that will ultimately reconstruct this historic railroad from Virginia City to Carson City, Nevada, a 15.6-mile long addition to the existing V&T Railway. A principal challenge was the construction of a widened existing roadbed for portions of the reconstruction following the original route and a new roadbed for the portions of the construction undergoing a "line change." Additional challenges include reopening Tunnel #2, erecting the G-790 bridge overtop U.S. 50 at the Carson City/Lyon County line, and site selections for the Carson City Terminal/Depot, secondary depot and operational support facilities.
- **TXDOT, South Orient Rehabilitation Phase 1, Southwest, Texas; Project Manager and Quality Assurance,** Phase 1 of the rehabilitation of the South Orient rail line purchased by the State of Texas to facilitate rail freight movements into Mexico via Presidio, TX. This project included establishing the improvements necessary to upgrade freight operations to Class Three operations (25 MPH) in lieu of the existing "excepted operational status" previously being utilized. Partners in these endeavors included Ferromex Rail, TxDOT and several of the local communities along the route.
- **TXDOT, Gulf Coast High Speed Rail Corridor Review, Texas Project Manager and Quality Assurance;** This project involved an in-depth review of the Designated High Speed Corridor between Houston and Beaumont, Texas. The analysis focused on the utilization of an existing route for incremental high speed improvements and the safety improvements necessary to facilitate safe and efficient passenger operations. The associated safety improvement assumptions were based on improvements deemed necessary to facilitate the phased implementation of the rail capacity improvements that would be necessary to enhanced passenger operations with the associated increase in operating speeds.
- **TxDOT Rail Grade Crossing Training; Project Manager and Quality Assurance, Texas;** This project included the development of a training manual in the early stages of the TxDOT Railroad Grade Crossing Inventory to assist the field crews in the efficient collection of consistent data elements. The training manual was the primary reference for the classroom training course that was developed and conducted prior to the deployment of the teams for further field training prior to the full scale deployment of individual teams. Additional follow-up review processes were also developed to assess the capabilities of each team, which lead to the continuation or termination of



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data collection by an individual team based on performance and accuracy.

- **Regional Rail Corridor Study - North Central Texas Council of Governments, Texas;** The Regional Rail Corridor Study (RRCS) in the North Central Texas region assessed the feasibility of future passenger rail in the corridors on regional basis. The primary issues addressed were the development of a combination of planning and engineering criteria that would facilitate accurate cost estimates that could be utilized for corridor assessments based on information that could be collected under limited budgetary constraints.
- **UPRR Rochelle Roadway Improvements, Rochelle, Illinois; Project Manager and Quality Assurance.** Prepared the preliminary design for a grade separation carrying a county roadway over the UPRR west of Rochelle, IL. The design for the necessary improvements also included the preparation of plans and specifications for the extension of an existing county road to facilitate traffic movements rerouted based on the original UPRR Rochelle Mitigation Plan developed in the initial phase of the project.
- **TSU Connection Design, Texas; Project Manager and Quality Assurance.** Track and drainage design for a direct connection between the TSU and the former Union Pacific track near Southwest Boulevard in Tulsa, Oklahoma. The design included track geometry and grading as well as a concrete box culvert. The scope of the project involved the planning design and construction management of the project. Many issues involving active and previously abandoned utilities in the area combined with a Corp of Engineers drainage channel governed by the Tulsa Levee District complicated the coordination and final construction of the improvements.
- **Local Rail Economic Feasibility & Relocation Study-Bryan/College Station, Bryan-College Station, Texas;** to be classified. Project included alternative corridor analysis to determine feasibility of constructing new, or upgrading the existing rail network through Bryan and College Station. Work included public involvement support, development of alternatives, field work, data collection, and development of documents, including the Public Involvement Plan, Phase I-Initial Screening Alternative Analysis Report, and Phase 2 Alternative Analysis Report. Research included environmental and social effects, e.g., noise and vibration studies, land use and farmlands, and past studies.

Texas Transportation Institute (TTI) Projects

- **Doctorate of Engineering Program, College Station, Texas; Research.** Involved in the development of enhanced highway/rail and highway/highway signal coordination during railroad preemption including hardware in the loop simulation of interconnected signal activities and vehicle movements associated with railroad preemption, and liaison with government entities to assess needs related to rail preemption. Other system rail-related research includes acting as principle investigator on projects to integrate rail information into a traffic management center, and to develop guidelines for testing traffic detection equipment for highway/rail applications.



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- **TTI Doctorate of Engineering Program, College Station, Texas; Research.** Research efforts focused on the development of advanced transitional preemptive strategies for traffic signal systems preempted by a highway/rail intersection signal system to ensure that the maximum benefit of advanced train detection information was fully utilized
- **TTI Intelligent Transportation System Applications, College Station, TX; Research.** The development of intelligent transportation system (ITS) applications. Research project to provide viable information beneficial for highway/rail intersection operations. Field applications include the development of the Wellborn rail corridor as a testbed for the application of current traffic detection technologies. The traffic technologies under evaluation were primarily used to provide advanced train detection information for enhanced highway/rail intersection operations. The analysis criteria for specific detection technologies were developed based on the research conducted to establish viable applications for intelligent transportation (ITS) technology at highway/rail intersections.
- **2009 National Highway-Rail Grade Crossing Safety Training Conference.** Light Rail, Transit, and Commuter Rail, Session Moderator
- **2007 National Highway-Rail Grade Crossing Safety Training Conference.** "BOOT" Projects for Rail Terminal Facilities, Logistics Development Strategies – BNSF's Kansas City Intermodal Project, Session Moderator

Florida (FL) DOT Projects

- **Rail Corridor Programs Engineer, Program Management and Quality Assurance.** In charge of State and Federally funded Highway-Rail Corridor Programs including: Passenger Rail corridor safety improvements, Rail Safety Enhancement projects, High Speed Rail corridor safety improvements, the allocation of discretionary funding for demonstration projects, and highway/rail at-grade crossing elimination.
- **Marietta CSX Rail Safety Corridor Project, Marietta, FL; Rail Corridor Programs Engineering and Quality Assurance.** A rail safety corridor project with the CSX Railroad that involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of three highway/rail intersections, the elimination of two highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing, the installation of median barriers to reduce the number of run-around violations at the gated signal locations, and addressing major drainage issues associated with the realignment and grade changes at one of the crossings.
- **Plant City CSX Rail Safety Corridor Project, Plant City, FL; Rail Corridor Programs Engineer and Quality Assurance.** A rail safety corridor project with the CSX focused on reducing the amount of motor vehicle emissions associated with train related traffic delay. The proposed construction included the utilization of federal funding for the beautification of the downtown area near the railroad tracks. The project ultimately resulted in the upgrade of nine highway/rail intersections including one crossing designed specifically for pedestrian traffic, the elimination of three highway/rail

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intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing location and the resurfacing of several city streets.

- **South Florida Rail Corridor,, Various, FL; Rail Corridor Programs Engineer and Quality Assurance.** A project involving over 50 highway/rail intersections with moderately high to extremely high volumes of traffic. The design for this corridor included medians for standard gate installations and four-quadrant gate installations to establish total closure systems during activation. Video surveillance and grade crossing health monitoring linked to the central train control center and traffic management center were used to address queuing problems, signal malfunctions, and problems with stalled vehicles or other obstructions at or near highway/rail intersections. Standard loop detection technologies and activated warning sign applications were developed to provide direct notification of track encroachment during train signal activation.

Oklahoma (OK) ODOT Projects

- **Highway/Rail Safety Engineer.** Duties included construction management, the final inspection and acceptance of improvements, the coordination of highway/rail safety task force issues, and railroad safety research. Specific project related experience included the development of procedures to eliminate highway/rail intersections, the development of preemption guidelines for interconnected highway/rail and traffic signal installations (prior to the national initiative associated with Fox River Grove), and the development of median design criteria to establish total closure systems at highway/rail intersections using standard gate installations.
- **Claremore UP / BNSF Rail Safety Corridor Projects, Claremore, OK; Highway/Rail Safety Engineer.** Two rail safety corridor projects conducted simultaneously with the Union Pacific Railroad and the Burlington Northern Santa Fe Railroad. These corridor improvement projects involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of thirteen highway/rail intersections, the elimination of five highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing remaining in operation and the interconnection of railroad warning devices with traffic signal devices where necessary.
- **Enid UP Rail Safety Corridor Project, Enid, OK; Highway/Rail Safety Engineer.** A rail safety corridor project with the Union Pacific Railroad that involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of ten highway/rail intersections, the elimination of four highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing, the installation of median barriers to reduce the number of run-around



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violations at the gated signal locations, and the interconnection of railroad warning devices with traffic signal devices where necessary.

- **Jackson County BNSF Rail Safety Corridor Project, Jackson County, OK; Highway/Rail Safety Engineer.** A rail safety corridor project with the Burlington Northern Santa Fe Railroad that involved the analysis of railroad and roadway operations on a county roadway network. The scope of the project ultimately resulting in the upgrade of eighteen highway/rail intersections, the elimination of seven highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements associated with this project included the total resurfacing of two city streets, two county roads, and new construction of approximately 0.5 miles of roadway built to county standards.
- **Lawton BNSF Rail Safety Corridor Project,, Lawton, OK; Highway/Rail Safety Engineer.** A rail safety corridor project with the Burlington Northern Santa Fe Railroad that involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of fourteen highway/rail intersections, the elimination of three highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included repaving the approaches to each crossing, the installation of median barriers to reduce the number of run-around violations at the gated signal locations, and the interconnection of railroad warning devices with traffic signal devices where necessary.
- **Pryor UP Rail Safety Corridor Project, Pryor, OK; Highway/Rail Safety Engineer.** A rail safety corridor project with the Union Pacific Railroad that involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of five highway/rail intersections, the elimination of three highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings.
- **Vian UP Rail Safety Corridor Project, Vian, OK; Highway/Rail Safety Engineer.** A rail safety corridor project with the Union Pacific Railroad that involved the analysis of railroad and roadway operations, ultimately resulting in the upgrade of four highway/rail intersections, the elimination of two highway/rail intersections, and the roadway improvements needed to facilitate the rerouting of motor vehicle traffic away from the eliminated crossings. The roadway improvements included the complete resurfacing of two city streets to facilitate anticipated increases in automobile traffic.

Construction Management, Quality Assurance and Quality Control (QA/QC), Surveying and Mapping, Engineering, and Program Management



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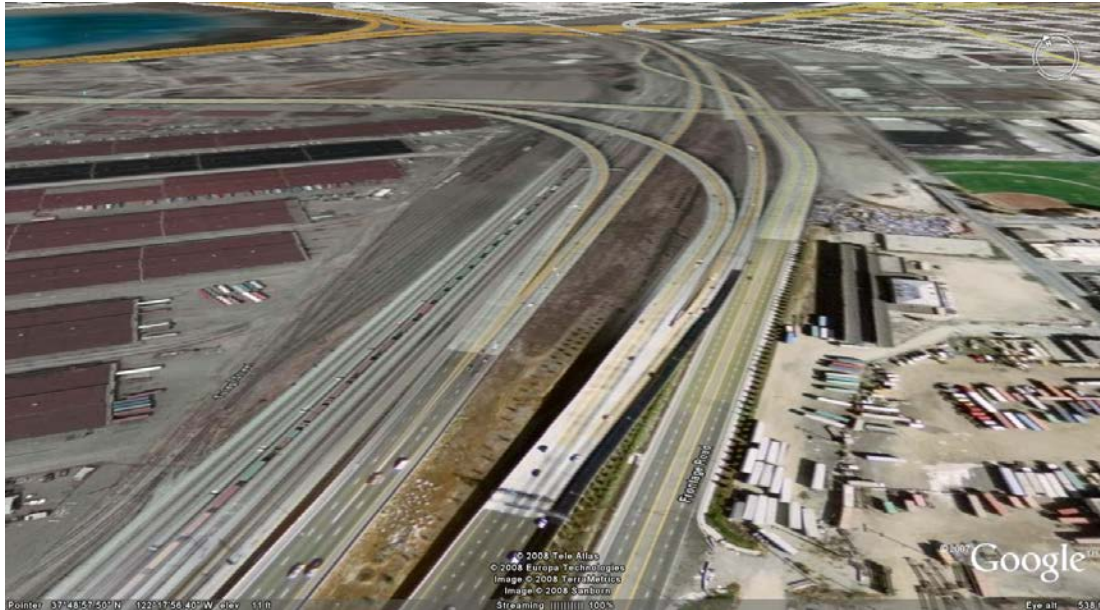
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Southern Pacific Rail Corridor Realignment, Cypress Seismic Bridge Replacement Project, Construction Management, Construction Engineering, Quality Assurance



and Quality Control – Performed Quality Control and construction oversight duties for major urban freeway corridor reconstruction. Through on-site QC surveys, established and maintained bridge line and grade (bridge geometry). To ensure life safety, performed QC (detailed stress and stability analysis of falsework and trenching and shoring). Documented work progress (QC) through daily surveys, diaries and photographs. Completed field inspections, QC, of bridge sub- and superstructures. Ensured contractor compliance with contract plans, specifications, and approved shop drawings.



Reviewed contractors' critical path (CPM) schedules. Enforced environmental compliance. Negotiated field solutions to design oversights. Performed accident and incident investigations. Performed quantity takeoffs and monthly pay estimates of contractors' work. Maintained construction records and files. Identified additional Quality Assurance duties as required to ensure the safe and timely execution of contract at cost.

Jack Tone Road On-Ramp Overcrossing Falsework Design Check and Jack Tone Road Off-Ramp Separation Falsework Design Check – Performed Construction Quality Control of bridge falsework to ensure life safety of the public and contractor's **Partial Project History CivTek Team Members**

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personnel. Assessed adequacy (QC) of falsework to maintain bridge geometry. performed detailed stress and stability analysis of falsework.

Parkway Calabasas Falsework Design – To ensure life safety of the public and contractor’s personnel, performed detailed stress and stability analysis of falsework containing up to 90-foot clear spans and supporting a new four span and an adjacent single span extension for CIP/PS structures over Route 101 in Los Angeles County.

Quality Assurance for Major Departments of Transportation and State Governments – Enterprise Level Quality Improvement Initiatives

State of Alaska

Member of the State of Alaska Privatization Task Force, Department of Transportation and Public Facilities Subcommittee. Active member on the Design and Construction focus group. Spearheaded legislative recommendations to develop a core group of project managers within ADOT so that both internal and external support groups would have a single point of contact within ADOT that would be responsible for Quality Assurance/Quality Control (QA/QC) and project development. Coordinated expert witness testimony from California. CivTek’s primary recommendation on Program Management was included in the final report:

“16. Recommendation: Implement total project management. One project manager assigned to carry a project from conceptual design through construction. Rationale: To provide continuity, consistency, and accountability for entire project rather than piecemeal management. Barriers: Departmental resistance. May have to change skill set of current work force.”

California Department of Transportation, Caltrans North Region, Super District – Assessed current Quality Assurance/Quality Control (QA/QC) workflow processes for program and project delivery of bridge and highway projects throughout the northern half of the State of California. Effected positive change throughout Caltrans North Region by refocusing project engineering staff to modern QA/QC methodologies..

Eastern Transportation Corridor (Design/Build, Section 13) Northbound Jamboree Road Over-Crossing Design – Fast track design/build construction delivery of bridge with extremely complex geometry. Designed



bridge, prepared construction documents and developed Construction Quality Assurance Plan to maintain correct geometry, camber, and deflections for a 734 foot,

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five-span, CIP/PS, highly skewed bents (up to 60 degrees) with unbalanced spans, box girder structure that entailed extremely complex geometry.

The horizontal alignment included a left-hand to right-hand curve reversal from 900 to 1800 feet with 17% super elevation transition from +10% to -7%.



Northbound Jamboree Road Overcrossing, Orange County, California (Designed by Thomas Young, P.E.). This cast-in-place, pre-stressed, concrete box girder highway structure is located at the western end (post mile 0.0) of Highway 261. **This was a FAST-TRACK, DESIGN/BUILD project.**

Performed seismic analysis, design, detailing, and resolution of significant construction issues resulting from new ETC design criteria. Special drop slabs and overhangs were employed to efficiently locate #18 main bent cap reinforcement needed to overcome column plastic moment inputs. A two-tier design earthquake that required elastic behavior for the lower level event produced plastic shear demands upon the foundation that historically have not been seen within the Caltrans bridge system.

Achieved significant foundation cost savings (50%) by increasing column lengths and using isolation casings. This reduced shear demand and thus the required number of piles by 50%. ***An in-progress construction picture of these special column details was included in an ETC feature article for California Construction Magazine.*** Made falsework QA & design recommendations to construction personnel.



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Monterey County Bridge Construction Support and Design Services for Seven Bridges (CivTek as Independent Construction Quality Assurance / Quality Control to Monterey County, CA) – Provided construction support services for seven bridges.

Results of QA/QC included six contract change orders: complete redesign for abutments, redesign for

compression bracing for steel members (thru-truss bottom chord).

To ensure life safety of construction personnel, QC results required design of safe construction sequence for seismic retrofit of pier wall structure removal and reconstruction.



Also designed traffic control plans that protected public safety, added structural steel specifications, reviewed and approved Quality Assurance Plan for welding procedures, and reviewed and approved CIDH repair methods for pile anomalies. Resident engineer relied on Mr. Young's Quality Assurance expertise regarding interpretation of contract plans, specifications, and a variety of technical issues.



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Survey & Engineering QA/QC for Large Private Projects - Sample:



Skyborne Development (Coachella Valley, California) - Performed final Survey and Engineering Quality Control Services for large one square mile private project. CivTek's services were usually on the overall project's critical

path schedule. Construction activities commenced as soon as CivTek completed its services. Construction activities peaking at an estimated \$200,000 per day relied on timely Quality Control and Surveying services.

CivTek mobilized with a professional survey and engineering team of 150 years combined experience plus GPS, conventional survey equipment, computers, and job trailers to run up to ten field survey crews. CivTek employed GPS and conventional survey techniques. The project required hiring local labor and running as many as seven survey crews simultaneously. Staff and workers performed in up to 122 degree heat at an extremely fast pace seven days per week, 16 hours per day, for approximately eight months during 2006. CivTek conducted final quality control checks and redesign to fit field conditions on engineering plans and surveying, including sewer, water, site design (including engineering elements of landscape architecture), roadway and, when required, performed pragmatic redesign in the field under severe schedule constraints.





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In addition to the entire subdivision infrastructure, the project involved developing a fire house site (including trash enclosures and ADA requirements) as well as public roads, drainage channels, and bridge structures.

QA/QC for Highway Project Development:

Interstate 80/Douglas Boulevard Interchange, City of Roseville, California (CivTek sub-contractor) – Performed Quality Control of survey and correct integration of



geometric controls. Performed constructability review and Quality Assurance/ Quality Control (QA/QC) for compliance of plans to sound engineering practice and California Department of Transportation (Caltrans) standards. Reviewed and corrected issues with project survey controls. The structural geometries of this urban interchange are highly complex. Also performed lead hydraulic/drainage engineer design duties to include design for highway interchange

drainage facilities including hydrology, runoff analysis, flow routing, and open channel flow. For 800 foot long cut and cover tunnel, made design and construction specification recommendations. Unique and challenging features included: cut and cover tunnel (coordinating safety, mechanical and electrical design of tunnel storm water pump station, tunnel



ventilation and fire suppression system, tunnel lighting system), stage construction and traffic handling plan. Instructed the corporate leadership on Caltrans QA/QC standards.



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Sunrise/Highway 50 Urban Interchange Reconstruction, Sacramento County – Performed preliminary project development QA/QC oversight duties to include review and approval of Sacramento County’s consultant submittals (geometric approval drawings, draft project report and quantities estimate). Co-authored the Cooperative Agreement between Sacramento County and Caltrans. Project Engineer in responsible charge of development of Quality Assurance (QA) for preparation of construction documents. This project modified an existing Type L-10 four-quadrant cloverleaf to a Type L-9 two-quadrant cloverleaf interchange with diagonal on-off ramps. Design responsibilities inclusive of highway geometrics, stage construction, signing and pavement delineation, drainage, and structural design of concrete retaining walls and masonry sound walls.

Route 80/Business 80 HOV Project Study Report – Performed QC and Identified highway design exceptions, developed feasible mitigation measures, and performed structural cost analysis to be included in Project Study Report. A structures design background enabled Mr. Young to ascertain a previously unidentified 40% cost impact due to special and geometrical structural conflicts that the proposed High Occupancy Vehicle lanes would impose upon a previous project cost estimate. Had Mr. Young’s QC efforts not caught these conflicts, the mitigation measures could possibly have been cost prohibitive, potentially canceling the project.

Highway 49 Capital Maintenance Program – Wrote pavement Quality Assurance plan. Wrote revised project study report to incorporate scope increase of 5.3 miles of additional highway. Delivered project one year early.

Sycamore Interchange Drainage Design Check – Performed Quality Control (independent design check) for highway interchange drainage facilities to include hydraulic analysis of runoff, flow routing, open channel flow, backwater analysis, inlet/outlet control and orifice/weir calculations.

Eastern Transportation Corridor (ETC) Bridge Deck Drainage Design – Developed Quality Assurance plans for drainage design process. Designed final deck drainage for the Northwest Connector and preliminary deck drainage for 5 other ETC structures.



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Seismic Retrofit & Research:

Route 170-5 Separation Retrofit Design and Route 90/405 Separation Projects, Jefferson Boulevard, UC – Designed traffic control and stage construction work plan for seismic retrofit on Interstate 5 in Los Angeles County that minimized disruption to commuter traffic. Performed seismic analysis and developed seismic retrofit strategies and details for two seven-span R/C box girder single and multi-column bent structures on curved alignments. 1992-1993.

Santa Monica Viaduct Project Design – Seismic retrofit, San Pedro Off-ramp EB, Griffith Street Off-Ramp EB, performed seismic analysis and developed retrofit strategies for 353-foot and 374-foot total length 5&7 span, R/C box girder off-ramps with single column bents.

Terminal Separation – Drilled Shaft Testing, assisted design senior with contract oversight duties. Performed analysis of terminal separation drilled shaft testing to develop proper force vs. displacement (P-Y) design curves for site-specific foundation conditions in San Francisco.

Bayshore Highway 101 Viaduct (University of California, San Diego, Seismic Research Oversight) – Checked compliance of combined concrete and structural steel scale test model for conditions of similitude and adherence of model detailing to proposed retrofit schemes.

PEQIT – Post-Earthquake Investigation Team. Co-Author in the writing and preparation



of report documenting the Cypress Viaduct Collapse in Oakland, California during the October 1989 Loma Prieta Earthquake.

This photo demonstrates that the 1950's steel reinforcing was inadequate.



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Tieback/Retaining & Sound Wall Design:

Tieback Walls, Rancho Bernardo Road Undercrossing – After previous delays caused by failure to achieve Caltrans approval, the prime consultant hired CivTek to redesign and then obtain Caltrans approval for tieback walls. Performed review and redesign of tieback walls to support bridge abutments founded on both spread footings and pile caps on Rancho Bernardo Road Undercrossing on Interstate 15 in the County of San Diego. As part of a larger land development project, Rancho Bernardo Road was widened from two lanes to six mixed flow vehicular lanes plus two bike lanes and sidewalks.

Significant value added to client: Accelerated total project delivery six months by eliminating the bottleneck with the Caltrans approval. Experience allowed Mr. Young to quickly recognize that the original geotech lateral wall pressure loadings were undervalued by a factor of four. If the tiebacks walls had been designed and built under the geotechs' original recommended loadings, the walls and thus the abutments and bridge structure on mainline Interstate 15 would have been subject to excessive settlement or potential collapse. Additionally, Mr. Young provided rational responses to Caltrans district engineers as to why tieback walls should not be extended to accommodate future structure widenings.

City of Rocklin/Route 80 Sound Walls – Project Manager and Engineer in responsible charge for developing the PS&E for 3000 feet of sound walls (\$1.5 million) along Interstate 80 west of Rocklin Road. Design issues included aesthetics, wall layout geometry, environmental coordination, right of way issues, drainage design, structural masonry design, traffic safety and construction area signing.

Paige Undercrossing Sound Wall Design and Construction Support Conducted feasibility study to recommend several design options for a new sound wall on an existing bridge deck overhang. Designed masonry sound wall, conducted seismic analysis of existing bridge, and wrote specifications. Developed unique structural detail to support new sound wall above but independent of existing structurally inadequate bridge abutment wing walls. To ensure life safety of the public and contractors personnel, performed independent review check of contractors falsework and concrete mix designs.



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Bridge Design:

Van Nuys Airport (CivTek Corporation Consultant to City of Los Angeles) – Designed, detailed, and performed seismic analysis of 2-span slab bridge with pier wall over Bull Creek, a major Los Angeles County Flood Control facility with peak flow rates of over 11,200-cfs. The geometry of the bridge was tightly controlled by the airfield elevation. To ensure minimum freeboard (vertical clearance from the water surface) to both the bridge soffit and tops of channel, performed complex hydraulic analysis of the Bull Creek channel including water surface profiles that included the effects of the bridge pier upon the water surface profile. Analyzed airfield hydrology and hydraulics. Coordinated design and plan approval with the Los Angeles County Flood Control District.

Independent Quality Assurance/Quality Control, Peer Review, Plans and Contract Documents Check of Elkhorn Boulevard Overhead Widening (CivTek Corporation Consultant to Sacramento County, CA) – Performed independent project oversight and peer review to meet three requirements of Sacramento County: (1) life safety, (2) reduce costs, (3) reduce schedule. Goals were accomplished by performing structural and seismic analysis, constructability review (including geometric constraints), and specifications review for cast-in-place, reinforced concrete, post-tensioned, three-span bridge widenings and seismic retrofit of existing bridge. Made 110 total design changes, ten of which were potential life safety or fatal flaw issues and 100 of which saved a minimum of \$3,000 per issue in change orders, total cost savings to client at least \$330,000 and most probably more.

Lewis Road Overhead, Ventura County (CivTek Corporation Consultant to Ventura County, CA) – This proposed structure was cutting edge in terms of innovative seismic design strategy and Caltrans design review. The design must conform to a 90% confidence that the failure probability does not exceed two percent in 50 years, according to the probabilistic fault displacement hazard assessment (FDHA) performed. As the responsible engineer-in-charge, Mr. Young developed the structural configuration and the seismic design concept, design strategy, and performed the seismic analysis to accommodate a fault rupture directly under this railroad overhead. Originally planned as a 5-span structure, Mr. Young was able to reduce costs by an estimated \$750,000 over the preliminary design performed by others. He accomplished this by eliminating one span and the high skew angles and unbalanced span lengths that were further complicating the seismic capacity design. Analysis of bent location constraints revealed that high skew angles could be eliminated at all but one bent. Cost savings were also achieved by utilizing a slab bridge for the northern span. To accommodate the 0.8 meters of vertical displacement and to prevent a punching shear failure of the column through a traditionally detailed column to bent cap connection, drop bent caps supported simple spans tied together with continuous anchor cables running the full length of the bridge were utilized. Caltrans (Division of Structures) has stated that they do not have a policy or guidance for bridge design with fault rupture potential and that this is uncharted territory for their agency. Mr. Young presented design concept to both Caltrans seismic

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reviews and Dr. Sewell and received initial verbal concurrence of design concept and strategy.

Lonoak Road Bridge Design, Federal HBRR Funding Program, Monterey County (CivTek Corporation sub-contractor) – This bridge is a two-span, cast-in-place, prestressed box girder structure spanning Lewis Creek. 2001.

Final Bridge Design, PS&E, Federal HBRR Funding Program, San Benito County (CivTek Corporation sub-contractor) – These four structures are slab bridges that required special design due to long span lengths and high skew angles. These bridge designs were shelved several years ago. Mr. Young reviewed and revised both the roadway and bridge plans and specifications as necessary to meet current standards of practice. 2001.

- **San Juan Creek Branch @ San Juan Highway (Br. No. 43C-24)**
- **San Juan Creek @ San Juan Highway (Br. No. 43C-25)**
- **Arroyo Dos Picachos Creek @ Fairview Road (Br. No. 43C-009)**
- **Santa Ana Creek @ Fallon Road (Br. No. 43C-32)**

Soscol Avenue Bridge over Napa River Bypass Project, Final Design Review, City of Napa (CivTek Corporation Provided Independent Quality Control Check) – Unique features for this 335-foot, 3-span, cast-in-place, prestressed box girder structure include variable span depths (arch) and large diameter cast-in-drilled-hole shaft foundations. Performed final summary review of construction plan set for client. Noted several life safety and constructability issues to include the number 14 main column reinforcement development length and conflict with girder reinforcement. Client then had the opportunity to correct these issuers prior to final construction document submittal.

ETC Bridge Deck Drainage, Design-Build Toll Roads Design – Designed final deck drainage for the Northwest Connector and preliminary deck drainage for five other ETC structures. Selected and ascertained the placement sizing, and material types for pipes, and other drainage appurtenances. 1995-1997.

ETC (Section 8), Design-Build Toll Roads, Wildlife Crossing Culvert Design – Estimated construction costs, \$500,000. Under direction of senior engineer, performed design, detailing and specifications writing for large high profile steel multi-plate culvert, 316 feet long, 24-6" wide, with 15 feet of cover, and supported on a concrete mat foundation. Implemented construction costs savings of 50% for this design/build project by conducting a value engineering study to determine the best economic alternative between a cast-in-place reinforced concrete (RC), a pre-cast RC, or multi-plate culvert. The original contract documents called for a pre-cast concrete structure at twice the cost of the multi-plate system that Mr. Young selected. These culverts were then employed in every other similar instance on this \$700 million design/build project. This structure runs under and supports a major highway, the new six-lane Route 241 toll road in Orange County. 1995-1997.



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ETC (Section 10) Chapman Avenue OC Abutment and Wing-Wall Design (Dokken, Caltrans District 12); ETC (Section 14) Walnut Avenue OC Abutment and Wing-Wall Design – Unique features included the design and development of new details for special transverse seismic walls. These walls provided additional lateral seismic capacity at a cost much less than that of additional piles. Chapman Avenue utilized lead core bearings to dampen seismic response. 1995-1997.

ETC (Section 15) Peters Canyon Culvert Design – Estimated construction cost, \$500,000. Conducted design, detailing and specifications writing of a large multi-plate steel high profile arch culvert, 238 feet long, 31-7" wide, 7 feet of cover, and supported on a concrete mat footing. This structure runs under and supports the new alignment for Irvine Boulevard in Orange County. 1995-1997.

ETC (Section 8) Portola Parkway UC (Right) Design – Estimated construction costs \$1.5 million. Designed single span CIP/PS box girder structure including analysis of abutment seismic forces. 1995-1997.

ETC (Section 8) Portola Parkway UC (Left) Design – Estimated construction costs \$1.5 million. Designed single span CIP/PS box girder structure including analysis of abutment seismic forces and special construction live load analysis for a materials hauling lane.

Abutment and Wing-Wall Design

- ETC (Section 13) Northwest Conn
- ETC (Section 13) Northeast Conn
- ETC (Section 6) S5-N133 Separation Conn
- ETC (Section 13) WS/NW Separation

Arroyo Simi Bridge on Sequoia Avenue Design Check - Performed independent design and detail check calculations for a two-span CIP/PS structure supported by a pier wall and seat type abutments.



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For Bay Bridge Projects, CivTek personnel performed:

- 65% submittal Quality Control review of Bay Bridge Self-Anchored Cable Suspension Main Span
- 85% submittal Quality Control review of Bay Bridge Transition Structure (see next page)



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YERBA BUENA ISLAND TRANSITION STRUCTURE



The Yerba Buena Island Transition Structure (YBITS) will connect the Self-Anchored Suspension (SAS) span to Yerba Buena Island (YBI), and will transition the East Span's side-by-side road decks to the upper and lower decks of the YBI tunnel and West Span.

As with all of the Bay Bridge's Seismic Retrofit Projects, crews must build the YBITS close to moving vehicles without disrupting traffic. To accomplish this daunting task, eastbound and westbound traffic were shifted off the existing roadway over YBI and onto a temporary detour during Labor Day weekend in 2009. The detour connects East Span traffic to the tunnel. Drivers are using the detour, just south of the original roadway, until traffic is moved onto the new East Span.



The first in a series of phases to build the temporary 900-foot-long detour, as well as the YBITS, took place during the Labor Day holiday on the first September weekend of 2007. During this historic milestone, the entire Bay Bridge was closed—for the first time since the Loma Prieta earthquake of October 1989 — so crews could replace a 350-foot-long, 6,500-ton section of viaduct on YBI, just before the tunnel. Crews replaced this with a seismically upgraded section of roadway that will serve as a connection to both the YBITS and detour. This marked the completion of the first part of the new





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bridge that drivers are already using.

YERBA BUENA ISLAND TEMPORARY DETOUR



Shifting traffic to this temporary detour will allow crews to attach the western end of the SAS span to the tunnel. This shift to the temporary detour has been the most significant realignment on the bridge to date. To accomplish this, crews cut away a 288-foot-portion of the existing truss bridge and replaced it with a connection

to the detour. This maneuver completed over Labor Day weekend in 2009, was the most dramatic operation yet and involved aerial construction occurring more than 100 feet above YBI. Vehicles will travel on the detour until the completion of the new East Span.





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Airports

- United Airlines Passenger Terminal 1 Complex, O'Hare International Airport, Chicago, Illinois: design engineer for Terminal 1, which includes over 800 feet of paved tarmac between the main concourse and a parallel concourse to allow for dual taxiing of wide-body aircraft between the two concourses. An underground pedestrian tunnel, equipped with moving sidewalks, and an overhead kinetic light sculpture connects these concourses. The terminal further houses one of the world's largest underground baggage-handling rooms, capable of processing 480 bags per minute. Responsible for design of the slabs and tunnels as described above and for overseeing delivery, installation, and stressing of multi-strand and mono-strand prestressed concrete.
- North American Jet Fixed-Base-Of-Operations (FBO), Palwaukee Airport, Wheeling, Illinois: principal-in-charge for structure/civil for two phases. The original building was created in the first phase, and it features a customer lounge, business meeting rooms, and a communications center, as well as administrative offices for the FBO. The second phase involved adding 9,000 square feet of office space and 25,000 square feet of hangar space to the existing facilities, which include an 8,000 square foot headquarters and a 21,000 square foot hangar. The additional space will include an aviation center, expanded NAJ corporate headquarters, flight school, pilot retail supply house and an upscale cafe.

Municipal Facilities

- Hinsdale Community Center, Hinsdale, Illinois: principal-in-charge for remodeling the existing multi-purpose office building and the auditorium and adding one one-story and one two-story steel-framed structure. Due to variance of soil properties of the site, the structures are supported on a combination of foundation systems that consisted of spread footings, caissons, and micro-piles. In addition, a 60-foot-high gymnasium has been added to the community center. It utilized a steel truss roof system, engineered masonry buttresses, and load-bearing masonry walls.
- Kilbourn Park Gymnasium, Chicago, Illinois: senior project manager for this single-story gymnasium for the Chicago Park District, with 40-foot-high masonry walls. The roof is a heavy metal deck, framed with structural steel trusses approximately 20' o.c., steel purlins approximately 5' o.c. perpendicular to the trusses. Perforated masonry walls resist lateral load. The structure has a conventional foundation.
- Bartlett Village Hall, Bartlett, Illinois: principal-in-charge for this 20,000-square-foot, two-story town hall. The bulk of the building is steel framed with precast plank floors and built-up light gauge over precast plank roof. The exterior walls are brick veneer on steel stud, and the lateral system is a steel moment frame. The main design challenge was the single-story portion containing the council chambers, with its complicated roof form over a column-free space with a cathedral ceiling. The system chosen was light gauge framing on a structural steel skeleton that includes two scissor trusses.
- Willow Springs Village Hall, Willow Springs, Illinois: principal-in-charge for this two-story, 50,000-square-foot steel structure with long span joist girders and a metal roof deck. The structure has a two-story atrium and is founded on a conventional foundation system.



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Library Facilities

- Oak Park Library, Oak Park, Illinois: principal-in-charge for this 104,000 square foot on three levels with a basement. A combination of steel, concrete, and heavy timber was used. The basement serves as parking and storage. The library is located on the property line of a load bearing masonry church that was built in the early twentieth century. Designing and building the foundation on caissons and grade beams protecting the church was paramount and very complex given the nature of the soil present. The architects were charged with reflecting the rich heritage of Frank Lloyd Wright's home town, and therefore, wanted open spaces and a unique series of roof cantilevers using sustainable materials. The degree of complexity of the structure, its roof, and the cladding required comprehensive understanding of the behavior of all materials used. The result is an award-winning structure that complements Wright's vision and architecture.
- Elmhurst Library, Elmhurst, Illinois: principal-in-charge for this 90,000-square-foot, two-story structure with a basement. Load-bearing masonry and a steel frame with composite floors were supported on a conventional foundation system. This project was value engineered and up to a million dollars was saved by working with the construction company and the owners.
- Elgin Library, Elgin, Illinois: principal-in-charge for this concrete-frame, two-story structure with arches and domes to reflect the vision of the architect and the community. Stone buttresses and masonry façade. The approximately 200,000-square-foot structure is supported on a mat foundation due to poor soil conditions. The structure has a basement under the entire footprint.
- Hinsdale Library, Hinsdale, Illinois: principal-in-charge for this two-story, 80,000-square-foot library utilizing load-bearing masonry and a concrete structure. The building sits on a conventional foundation system.
- Huntley Library, Huntley, Illinois: principal-in-charge for this one-story, 100,000-square-foot structure with a basement. Heavy timber trusses with tie rod bottom cords spaced at 20 feet on center allow for a completely open space.
- North Park University Library, Chicago, Illinois: principal-in-charge for this three-story, 100,000-square-foot structure with a full basement, composite floor deck, steel beams and girders, and exterior masonry walls, founded on a conventional foundation system.

Educational Facilities

- University of Illinois at Chicago Athletic Center, Chicago, Illinois: principal-in-charge for the new 58,000-square foot UIC Athletic Center, which renovated and converted the university's existing ice rink. The new facility contains a state-of-the-art practice facility for men's and women's basketball, varsity team lockers, a weight training area, and a sports medicine center, as well as administrative offices for coaches and the Athletic Department. Also, a new mezzanine level was inserted to create two floors within the existing structure, and a new glass entrance and circulation link were added. The structure is steel, space-frame with long-span steel joists and load-bearing engineered masonry walls. It includes a basement and concrete mat foundation.



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- Anderson Hall, Northwestern University, Evanston, Illinois: principal-in-charge for this building that houses the Academic Advising Department/Student Services for all athletes, administrative offices for coaches, and the Marketing and Development Departments of Northwestern University. The basement includes a practice gym for the wrestling team.
- **University of Chicago Laboratory Schools, Chicago, Illinois:** principal-in-charge for renovation and expansion of four of the five buildings on this campus that is part of the University of Chicago. The campus serves children from nursery school through 12th grade. The project received the following awards: Excellence in Masonry, Silver Medal Award; Award of Recognition, Chicago Building Congress; and Excellence in Masonry, Best of Stone Award.
- Kovler Gymnasium Complex, University of Chicago Lab Schools, Chicago, Illinois: The project consisted of a two-story building with a basement, steel framed with concrete floor slabs on composite steel beams. The support for the structure is on spread footing foundations, the roof is a metal roof deck supported by long span, open-web steel joists and beams. Exterior walls are non-load-bearing masonry. The new gym is connected to the existing building by an arcade. The first floor contains a multi-purpose/dance area and an arcade overlooks into the lower level practice gym. The second floor contains a full size competition gym with seating for 550.
- University of Chicago Midway Plaisance Ice Rink, Chicago, Illinois: principal-in-charge for this new Olympic-sized skating rink and warming house complex designed to center Midway Plaisance on the University of Chicago campus. The overarching idea was to construct a festive park complex that enhances the Midway and University setting rather than detracting from it. The two-level warming house appears only 12-feet high at street level, designed in a manner compatible with the architecture of the university. The terrace faces south, fabricated in metal panels with integral lighting that step vertically to resemble icicles. The project consists of a two-level structure with a slab-on-grade first floor and precast concrete plank roof (terrace) supported on steel beams and load-bearing concrete walls. The structure is situated such that the north wall retained soil over its entire height. Access to the terrace required exterior stairs that had to be framed structural stairs and an elevator tower with mechanical and storage areas. The tower floor and roof is steel beams with concrete-filled metal deck supported on CMU masonry walls. North, east and west walls were designed as retaining walls. The complex also contains an isolated, single-story Zamboni structure with slab-on-grade and precast concrete plank roof supported on concrete retaining walls.
- Medgar Evers School Expansion, Ford Heights, Illinois: principal-in-charge for the expansion/addition of two classroom wings and a gymnasium to an existing elementary school. The roof structure is metal deck over steel bar joists and curved beams at the wings, and over long-span steel joists with curved top chords at the gymnasium. The roof is supported on CMU bearing walls with brick veneer that also acts as the lateral system. The structural design was completed in two weeks in order to meet owner's schedule.
- School of Education, Northwestern University, Evanston, Illinois: senior project manager for this five-story, 70,000-square-foot educational building. The structural framing is made up of composite steel and concrete floor and roof deck supported on steel beams and columns. Braced bents and shear walls provide lateral stability. The structure is founded on spread footings



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- Latin School-New Middle School; Chicago, Illinois: principal-in-charge for construction of the five-story, \$15.4-million, 80,000-square-foot middle school. Flat plate cast-in-place concrete structure with a steel bridge connecting the second floor of the building to the second floor of the neighboring Latin High School.
- Salanter Academy, New York, New York: principal-in-charge for approximately 80,000-square-foot K-12 boarding school in New York City located on the Hudson River, situated on a steep slope. Trusses were utilized to frame floors and roof in a stepped fashion. The structural system is a combination of composite floors and precast concrete.
- Francis W. Parker School Science Wing Expansion, Chicago, Illinois: principal-in-charge for various projects, including new structures, additions, expansions, and below grade and foundation work.
- University of Chicago Biological Science Laboratory, Chicago, Illinois: senior project engineer this project that consisted of multiple areas and functions. The majority of this 233,000-square-foot building was a wide module long-span concrete joist system supported on concrete girders. The spacing of the columns allowed for the best optimum use of the spaces and afforded the university a great flexibility in dividing the spaces. A three-story glass greenhouse and steel structure was built adjacent to this structure.
- The Family Institute at Northwestern University; Evanston, Illinois: senior project manager for this new four-story, 120,000-square-foot, steel-framed structure with a basement. The floors are concrete slabs on metal deck. The roof is metal deck on bar joists. Lateral load resistance is provided by shear walls and braced bents. Exterior walls are non-load bearing precast concrete; the structure is supported on spread-footing foundations.
- Residence Hall at Northwestern University, Evanston, Illinois: senior project manager for this new four-story precast concrete plank building on load-bearing masonry. The structure is supported on spread-footing foundations. It is a 160-bed residence hall with a basement located on the Evanston Campus of Northwestern University. It also includes lounges, toilets, and other ancillary spaces for a net usable area of approximately 26,000 square feet.
- Michael Barlow Center, Chicago, Illinois: principal-in-charge the Michael Barlow Center, a job training facility for residents of St Leonard's House, a not for profit organization that provides permanent and transitional housing for ex-offenders. The building services include facilities for computer and restaurant training; classrooms for GED courses; and facilities to serve in house business such as mail processing and landscaping.

Housing/Residential/ Skilled and Enhanced living Facilities

Principal in charge and the project manager on as many as two hundred custom homes with budgets ranging from \$5 million to \$15 million and square footages ranging from 8,000 square feet to 42,000 square feet. Many of these residences have won awards. These residences have significant structural complexities that are unique to these types of structures. Selected projects include the following:

- Metropolitan, Grand Rapids, Michigan: principal-in-charge for this four-story structure that used indigenous materials and achieved LEED certification. A combination of mat and pier foundation provides lateral and wind resistance stability. The project was further complicated by the necessity to mitigate poor soil conditions on the site.



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- Classic Residence by Hyatt, Glenview, Illinois: principal-in-charge for this retirement residential community located on a 26-acre parcel on Chicago's suburban North Shore. The project consists of a low-rise main building with 251 residential units and common areas; 18 assisted living apartments, 45 detached one- and two-unit villas; and adjacent health center for continuing care. The project is almost entirely located below grade with 270 parking spaces. The foundations are spread footings, the floors are supported on steel beams and columns and load bearing exterior masonry walls.
- Holy Family Villa Skilled Nursing Residence, Lemont, Illinois: principal-in-charge for this 99-bed skilled care nursing residence. The structure is a two-story building with a partial basement. There is a lower-level "tunnel" that connects the basement to the adjacent priest's housing facility. The structural framing is load bearing exterior masonry walls with an interior steel frame supporting precast concrete plank floors. The roof is framed with light gauge steel trusses, and a mechanical attic space was created at the commons area with a precast plank floor and gable roof framing of light gauge steel over the precast plank. The entire structure is founded on shallow-spread footings. A significant element is the chapel with a balcony to accommodate less ambulatory residents on the second floor.
- Holy Family Villa Bishop Timothy J. Lyne Residence, Lemont, Illinois: principal-in-charge for this residence constructed for the Archdiocese of Chicago to provide housing for retired diocesan priests. It is located at the Catholic Charities Holy Family Villa Campus. The structure consists of a two-story building with a partial basement. The structural framing consists of load-bearing interior and exterior wood-stud walls supporting prefabricated floor and roof trusses. The entire structure was founded on shallow spread footings. In addition to the main structure a 16-car, single-story garage was provided. Exterior wall was load bearing masonry. The roof was framed with prefabricated wood trusses supported on the exterior walls and on steel beams and columns on the interior. The ground floor was conventional slab-on-grade construction.
- Misericordia Skilled Nursing Home, Chicago, Illinois: principal-in-charge for this new 80,000-square-foot, two-story facility will have over 50 bedrooms, numerous nurse's stations, multi-purpose rooms, offices and plenty of common areas and service rooms. The structure consists of two main rectangular-shaped buildings connected by a common area that exits to the garden. The floor structural system consists of structural steel framing supporting 10" thick precast concrete plank with a two-inch concrete topping. The buildings have reinforced concrete foundations, and the roof is made of light gauge metal framing and roof deck. The exterior wall of the building consists of eight-inch-thick CMU walls, which form the lateral load resisting system of the building.
- Brighton Gardens, Wheaton, Illinois: project manager for a three-story, 123-bed sheltered care facility, approximately 75,164 square feet. The structural system is precast concrete plank supported on steel beams and columns. The ground floor is slab-on-grade.
- CJE/Drexel, Deerfield, Illinois: project manager for this two-component project. The first component is a six-story elderly assisted living apartment building with a partial basement. The building contains 125, one- and two-bedroom apartments and public service areas. This phase is approximately 141,000 square feet and was constructed with a cast-in-place concrete slab and column system with non-load-bearing masonry exterior. The second component is a single-story building housing 35 Alzheimer patients in a 25,000 ± sq. ft.



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structure. This building is constructed using load-bearing exterior masonry walls supporting a steel frame/bar joist roof/structure.

- Bivins Childers Foundation, Amarillo, Texas: principal-in-charge for this 97,000-square-foot, two-story assisted living facility for the elderly. The project consists of conventional spread footings with a deep basement concrete structure over 60 percent of the site. The upper level over the basement employs a two-way concrete plate structural system. The framing above the upper and grade levels is a structural steel frame using moment resisting and cross-braced system to resist lateral loads. Architectural features include; a hip roof design, "L" shaped wings, walkout central entry, and exposed curved glue-laminated roof beams and timber plank within the common areas of the facility. Value engineering early in this project provided the owner with a cost-efficient structural system.
- Westminster Village Center, Scottsdale, Arizona: principal-in-charge who worked closely with a pre-selected contractor for this 45,000-square-foot elderly living facility that is a cost-efficient two-story structural steel and composite floor slab structure. Masonry shear walls, moment resisting frames, and crossed-braced steel frames resist the lateral wind and seismic loading mandated by the building code. Exterior architecture of standing seam roofs and stucco wall finishes match the surrounding architecture.
- Poplar Creek Elderly, Hoffman Estates, Illinois: project manager for this approximately 254,000-square-foot, eight-story elderly apartment building with a basement. The structure is made up of cast-in-place concrete floors and columns with non-load-bearing masonry exterior walls.
- The Moorings, Arlington Heights, Illinois: project manager for this approximately 71,000 - square-foot, 120-bed, two-story nursing home with a partial basement and crawl space. The structure is of cast-in-place, two-way concrete slabs and columns with non-load-bearing masonry exterior walls.
- Tabor Hills Elderly Housing, Naperville, Illinois: senior project manager for this 211-bed, two-story nursing home, a twenty-six unit two-story building with no basement and a single-story five-car garage. The building has no basement and is constructed of steel frame supporting bar joists and concrete slab with a non-load bearing masonry exterior wall. The 26-unit, two-story building with no basement consists of precast plank on load-bearing masonry walls. The garage is a load-bearing masonry wall structure supporting a prefabricated wood truss roof.
- Brighton Gardens, Orland Park, Illinois: senior project manager for a three-story, 120-bed sheltered care facility consisting of approximately 75,000 square feet. The structure consists of steel frames supporting precast concrete plank floors and roofs. The exterior is made up of masonry load-bearing walls.
- Golfview Retirement Manor, Midlothian, Illinois: senior project manager. The project consists of a three-story, 70,000-square-foot building with no basement. The structure is a steel frame supporting bar joists and concrete slab, which is supported on a spread-footing foundation with a conventional slab-on-grade first-floor construction. The exterior walls and the walls at the stairwells are load-bearing masonry.
- Seasons of Glenview, Glenview, Illinois: principal-in-charge for a congregate housing project consisting of a five-story, 230,000-square-foot facility containing a total of approximately 220



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units. The structural system is cast-in-place concrete slabs supported on concrete columns. The ground floor is slab-on-grade, and the foundations are conventional spread footings.

- King-Bruwaert Assisted Living, Burr Ridge, Illinois: project manager for a two-phased development of cluster town homes of an existing congregate facility. The two-bedroom houses are of ordinary construction with attached garages. The units have conventional foundation systems.
- 2000 Green Bay Road, Highland Park, Illinois: senior project manager for a five-story, 100,000-square-foot L-shaped condominium building on one-story above grade parking. The structural system is made of precast concrete floor on load-bearing masonry walls. The building is founded on conventional foundation system.
- The Montreville, Chicago, Illinois: principal-in-charge for construction of this seven-story, 200,000-square-foot condominium building with two-story, 50,000 square-foot, lower-level parking. Superstructure is a structural steel joist, metal deck concrete floors; X-bracing, and chevron bracing resist lateral load. The garage is concrete flat plate caissons and grade beams foundation system.
- Grand Rapids Dominican Sisters Marywood Center, Grand Rapids, Michigan: principal-in-charge for construction of a three-story assisted living facility for retired Dominican nuns, 80,000-square-foot structure that utilized the state of the art design using steel, concrete, load bearing masonry, glue-lams, and precast. The building with its curves and elegant architectural features has been the subject of innovation and cutting edge design for the assisted living facilities in the U.S.
- Casa Kirk, Chicago, Illinois: principal-in-charge for five three-story, low-income housing structures (8,700 square feet each) located on the south side of Chicago. The structural system consists of open-web wood joist floors with light-gauge metal framing. Due to poor soil conditions, each building is supported on grade beams and concrete piles.
- 6320 Higgins Condominiums, Chicago, Illinois: project manager for this six-story, 130,000-square-foot structure with load bearing composite exterior masonry walls, precast concrete on steel girders, and a conventional foundation system.
- Residences of Kirkwood, Kansas City, Missouri: principal-in-charge for a 12-story, 250,000-square-foot concrete frame building. The foundations were designed to bear on bed rock found approximately 13 feet below the first floor, allowing the basement to be used as a garage for this high-end luxury condominium building
- Kirkwood Grove; Kansas City, Missouri: principal-in-charge for a five-story, \$12.7-million, 86,000-square-foot apartment building in Kansas City, Missouri. The building is a flat plate cast-in-place concrete structure with shear walls supported on spread footings.
- Kirkwood Row Homes; Kansas City, Missouri: Principal-in-charge two three-story, \$3.6-million, 30,400-square-foot condominium buildings. Each building consists of four units using open-web wood truss floors.
- Lakefront Supportive Housing--Near North, Chicago, Illinois: principal-in-charge for six-story, \$14-million, 45,800-square-foot, single-room-occupancy building. The structure uses a flat plate floor system for the typical floors and a steel roof. The exterior columns are slanted outward along the height of the building.



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- 910 South Michigan Ave, Chicago, Illinois: principal-in-charge for the six-story addition to this steel-framed condominium building. The addition brings the building to 25-stories.
- 600 West Adams, Chicago, Illinois: principal-in-charge for a six-story loft building that required strengthening of floors when converted to studio use. Floors were also reframed to accommodate new elevators and new stairways. As a part of tenant build-out, a new mezzanine was constructed on the first floor in one area of the building.
- St. Leo's S.R.O. Apartment Building and Clinic, Chicago, Illinois: principal-in-charge for this building being developed for Catholic Charities Housing Corporation and the Veteran's Administration. The building will include 141 single-room occupancy apartments for veterans. Amenities on the first floor will include a large Day Room as well as a Fitness Room. As a part of this project, a two-story V.A. clinic is also being developed for a nearby site. The building will include a Primary Care/ Mental Health Clinic on the first floor, and a Job Training Clinic on the second floor.
- Bishop Goedert Residence, Chicago, Illinois: principal-in-charge for the Hines V.A. Elderly Housing for Catholic Charities Development Corporation. The project is the renovation of and addition to an existing building on the grounds of the Hines V.A. Hospital just outside of Chicago. Seventy one-bedroom units will be included in the project above a multipurpose room and activity rooms on the ground floor. The new front facade is being designed to blend with the Georgian architecture of the building and campus.
- North Avenue, Chicago, Illinois: principal-in-charge for this redevelopment for Hispanic Housing that will utilize two existing buildings and a near vacant lot to create a new cornerstone for the neighborhood. The existing four-story warehouses will be converted into market rate family condominiums, the sale of which will finance a new five-story building of affordable elderly apartments.
- Casa Puebla, Chicago, Illinois: principal-in-charge for a group of separately constructed, heavy timber loft buildings were rehabilitated and converted from warehouses into affordable family housing for a Hispanic housing development group in the historic Pilsen neighborhood in Chicago. Fifty-two apartments, from studios to three-bedroom units, were organized around a well lit courtyard created by selectively demolishing portions of the existing structures. Energy efficient methods of construction were employed to ensure that future utility costs to the tenants will be low, and both public areas and apartment units were designed to be accessible.



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Commercial/Retail Facilities

- March First, Chicago, Illinois: principal-in-charge for an 11-story post-tensioned parking garage, 11-story new construction flat plate concrete office building, renovated six-story existing timber masonry structure, and renovated eight-story timber masonry structure. The new and existing buildings are organized around a series of glass-enclosed circulation links radiating from a central rotunda and overlooking an outdoor courtyard. The complex foundation system involved grade beams supported on deep rock caissons, which was further complicated by the need to avoid existing city tunnels and abandoned utility tunnels.
- Harpo Studios, Chicago, Illinois: senior project manager for this 100,000-square-foot adaptive reuse project. The project included the installation of advanced production facilities into 1920s-era studio buildings that were poorly maintained. This conversion helped revitalize a suffering urban neighborhood.
- Cary Bank, Cary, Illinois: principal-in-charge for this two-story, 50,000-square-foot bank building with a full basement. The structural framing is made up of structural steel with metal studs and brick veneer exterior walls. Flexible moment connections form the load-resisting frame. The structure has a conventional foundation system.
- Beverly Bank and Trust, Chicago, Illinois: principal-in-charge for this 18,000-square-foot, two-story bank building. The building is steel framed with precast plank floors and roof, and exterior CMU bearing walls. The roof level is built up with light-gauge framing to create a gabled roof. The basement includes a vault with a cast-in-place top that forms part of the first floor.
- Gerson Associates Office Building, Northbrook, Illinois: principal-in-charge who was also responsible for all aspects of the structural design. Due to its unusual shape and height restrictions, concrete flat-plate construction was chosen for this triangular, three-story, 50,000-square-foot office building. The exterior is cast-in-place concrete bearing wall with brick veneer and the elevator and stair walls are cast-in-place as well, with all of these walls serving as the lateral system.
- Binks Sames Headquarters, Chicago, Illinois: senior project manager for this four-story, oval-shaped, 125,000-square-foot office building for Binks Paint. The design used maximum column free areas of the building to be used as a showcase building with double-story areas for customers to view paint samples from balcony above. First floor was a walkout on sloping site that necessitated extensive use of concrete retaining walls.
- Border's Book Store, Evanston, Illinois: principal-in-charge for a two-story, 60,000-square-foot retail store. The structural system is made up of structural steel framing with masonry infill with composite floor deck. Flexible moment connections, semi-rigid frame form the lateral load resistance for the structure. The building is founded on a conventional foundation system.
- Anti-Cruelty Training and Parking Facility, Chicago, Illinois: principal-in-charge for four-story, 85,000-square-foot structure with a full basement. Structural system is post-tensioned slabs and beams founded on a caisson foundation system. Structure is building adjacent to existing historical building. Building had to be built vertically in two segments due to site restrictions.



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- Harris Bank Headquarters, Chicago, Illinois: project manager for three-story, 60,000-square-foot structure with a full basement, and structural steel framing with masonry in-fill walls. Composite floor construction, beam and concrete deck, rigid frame forms the lateral load resistance of the structure. The foundation system is conventional.
- Various Harris Banks, Illinois and Indiana: principal-in-charge of various projects that involved design of one- and two-story structures using masonry, steel, and timber throughout the Chicagoland area. A total of 23 structures were designed.
- Divine Word, Techny, Illinois: senior project manager for this project that consisted of a new building between two existing buildings. The project also included new-framed walkways, entrances, and hallways, new canopies, and remodel of the existing buildings. Skylights were also added, and the floors were redesigned to accommodate new floors. The building was designed for steel and masonry lintels to support new windows and openings.
- Teamsters Garage, Chicago, Illinois: senior project manager for post-tensioned, nine-story garage, approximately 250,000 square feet. Structural framing is made up of beams and one-way slabs. Concrete shear walls are used to resist lateral forces. Foundation system is caissons and grade beams.
- LaGrange Parking Structure, LaGrange, Illinois: principal-in-charge for two-story, \$7.4 million parking structure with 353 parking spaces, cast-in-place post-tensioned concrete with a precast concrete exterior supported on grade beams and drilled concrete caisson foundation system.
- 6 North Michigan Ave., Chicago, Illinois: principal-in-charge for value engineering and owner's representation of a 26-story steel-framed building. Mixed structural system with steel frame for lateral loads and concrete floors. The building was evaluated for an extra five stories.
- 777 South Dearborn, Chicago, Illinois: principal-in-charge for this project consisting of a 25-story, concrete-frame office building. The design work was completed, the general contractor was selected, and the building foundations were poured, but the building was never built due to finances.
- Taebert & Hoffer Jewelers, 111 East Oak Street, Chicago, Illinois: principal-in-charge for design of new floors, stairs, elevators, and all new openings for an existing five-story structure. A mechanical mezzanine level was also added.
- 1250-1254 North Lake Shore Drive, Chicago, Illinois: principal-in-charge of a total renovation of an existing four-story building. The project included redesigned floor areas; new links with new stairs, new walkway, and elevators between the two buildings; new loft area at 1250 building; new staircase leading to the roof of the 1254 building to serve new living area; and a new roof.
- 168 North Michigan Ave., Chicago, Illinois: principal-in-charge for this 12-story steel-framed building.



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Mixed Use Facilities

- Block 110, St. Louis, Missouri: principal-in-charge for this project consisting of a 30-story residential high rise, a seven-story parking garage, and a four-story retail mall. This complex is situated in the heart of St. Louis and occupies an entire block. Different structural systems were utilized to expedite the schedule and phase the project for the different usages that is intended to serve.
- Multi-Use High Rise Building, Milwaukee, Wisconsin: principal-in-charge for a 24-story structural steel, concrete core building composite system, with over 400,000 square feet. The first eight stories are parking, the next five floors are offices, and the remaining stories are residences. The mixed usage of the structure required creative structural systems to minimize cost and accommodate function. This unique building is prominent in the Milwaukee skyline.

Health Care - Medical Facilities

- Alexian Brothers Medical Center East Pavilion Addition, Elk Grove, Illinois: project manager for a two-story 80,750-square-foot addition and alterations to approximately 39,000 square feet of the existing building. In addition, has been involved on many projects within the hospital since 1989.
- Gottlieb Hospital, Melrose Park, Illinois: principal-in-charge for a four-story, 60,000-square-foot steel structure with composite steel, conventional foundation. The building utilizes existing foundation, walls, and footings of adjacent buildings on two sides. Work also included numerous jobs for mechanical upgrades and unique structures for MRI, Cath labs, and simulators.
- St. Francis Hospital, Evanston, Illinois: principal-in-charge on this project that included major mechanical upgrade in the range of \$100 million. Mechanical system required utilizing existing stair shafts and other means to new ducts throughout the hospital. The project also included rehabilitation of the gift shop and renovation of a professional office building.
- Evanston Hospital, Evanston, Illinois: senior project manager for numerous new construction, additions to the hospital; MRI, Cath labs, operating rooms, emergency room upgrades and new facilities, including CT Scan rooms and X-Ray rooms.
- Provena Mercy Medical Center, Aurora, Illinois: principal-in-charge for one-story, 100,000 square foot surgery facility with a basement throughout a large portion of the building footprint.
- North Shore Medical Center, Evanston, Illinois: senior project manager for four-story, 80,000-square-foot, post-tensioned parking structure that extends beyond footprint of seven-story, 80,000-square-foot office superstructure above it. The structure was composed of mild reinforced flat plate transferred at fourth floor above parking, utilizing deep post-tensioned concrete girders.
- Resurrection Health Care System Hospitals and Facilities, Illinois: principal-in-charge for various projects throughout the Chicago area.



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Entertainment Facilities

- House of Blues, Chicago, Illinois: senior project manager for this adaptive reuse. The project uses the old MARINA building shell with its complex structural system, and existing drawings were not available. The adaptive reuse required the addition of new framing, new floors, new stairs, and elevators and escalators to make this award winning blues venue just as magnificent as the structural modifications that had to be implemented. Steel framing was used throughout the structure and over 100,000 Hilti bolts were used on this project to facilitate bracing, support and attachments to the existing shell concrete walls.



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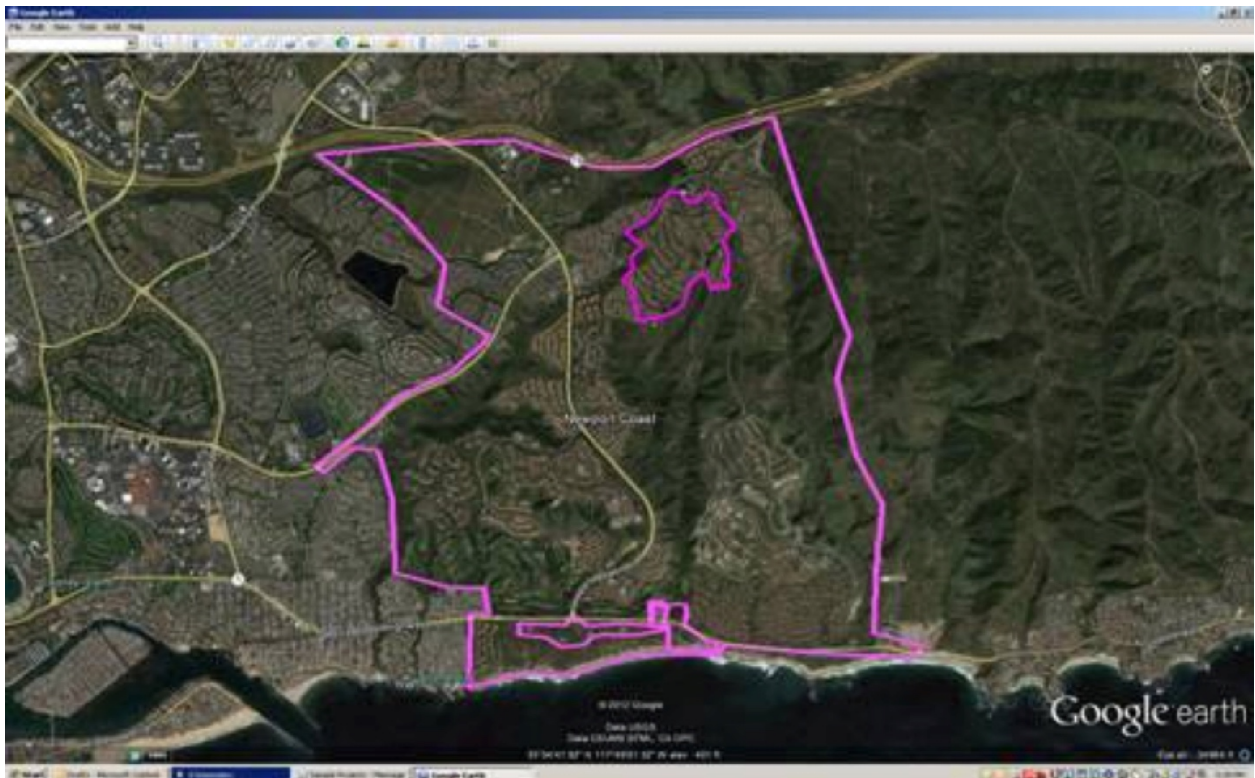
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Arial Photos of Land Development Projects Completed Under Leadership of CivTek Personnel

Newport Coast - 9000 acre luxury residential & Historic District, Orange County, CA

Acted as master developer's project manager and engineering lead starting with raw land working through evolution of the master plan and entitlements until finished lots were sold to merchant builders. This includes several miles of backbone roads and infrastructure, realigned 2.5 miles of PCH, extensive grading, utilities, endangered species, archaeology and brutal environmental permitting.





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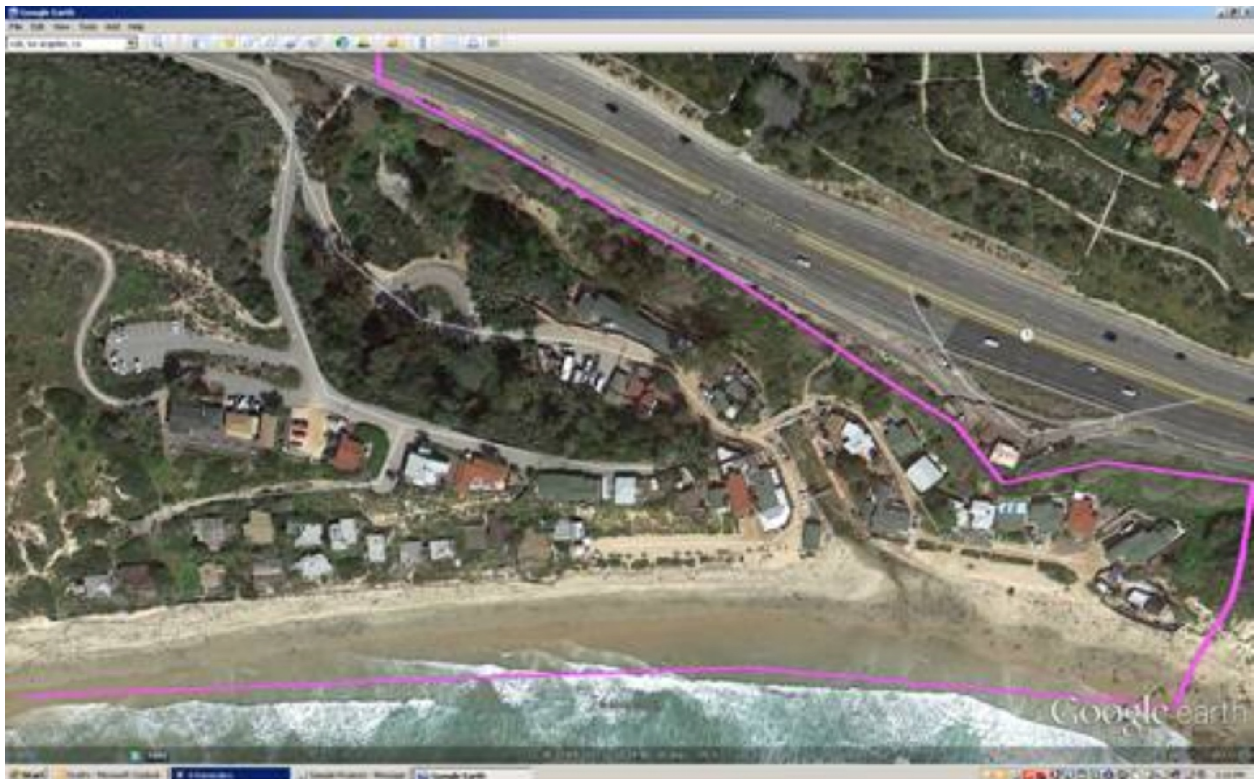
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Crystal Cove Historic District – Orange County, CA

Founded a development partnership that was contracted by the State of California to design, build, finance and operate a boutique resort hotel (we were bought out before construction started).





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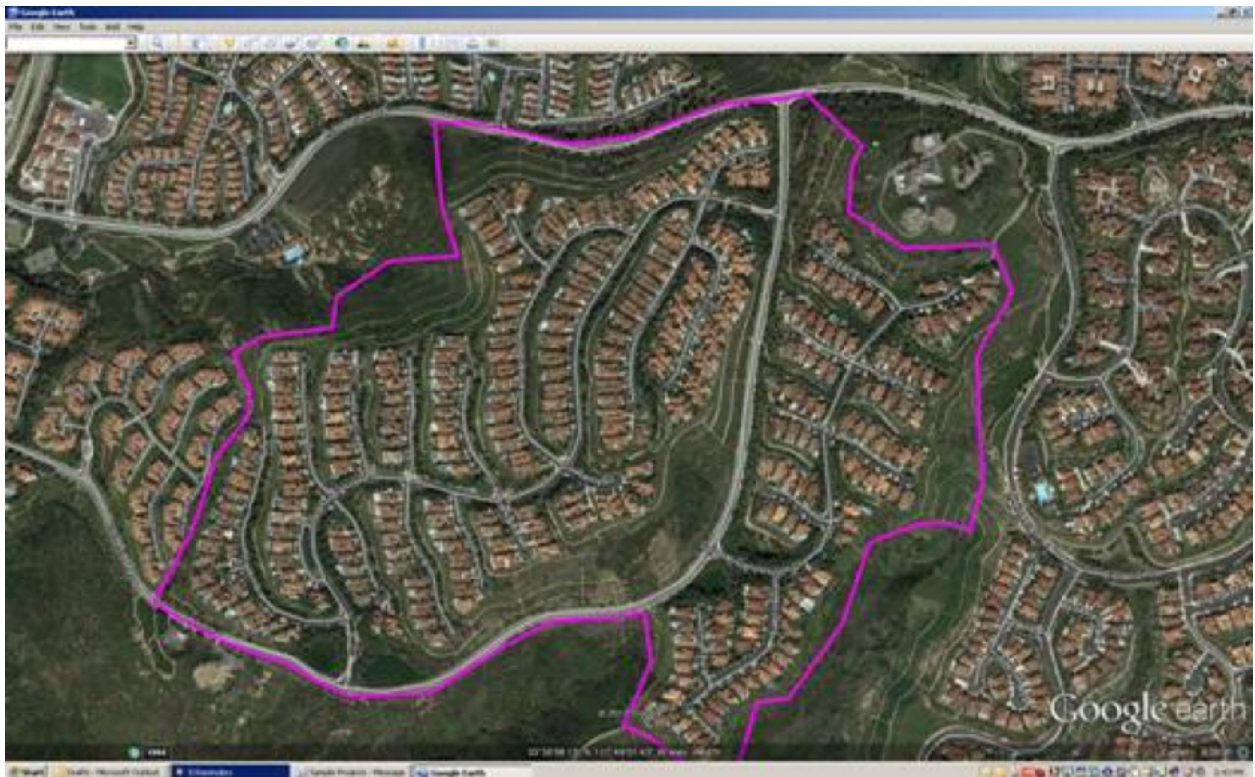
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Newport Coast Builder Sites – Newport Beach, CA

Joint design program with TIC and builders, design master plan, grading, and infrastructure through build-out





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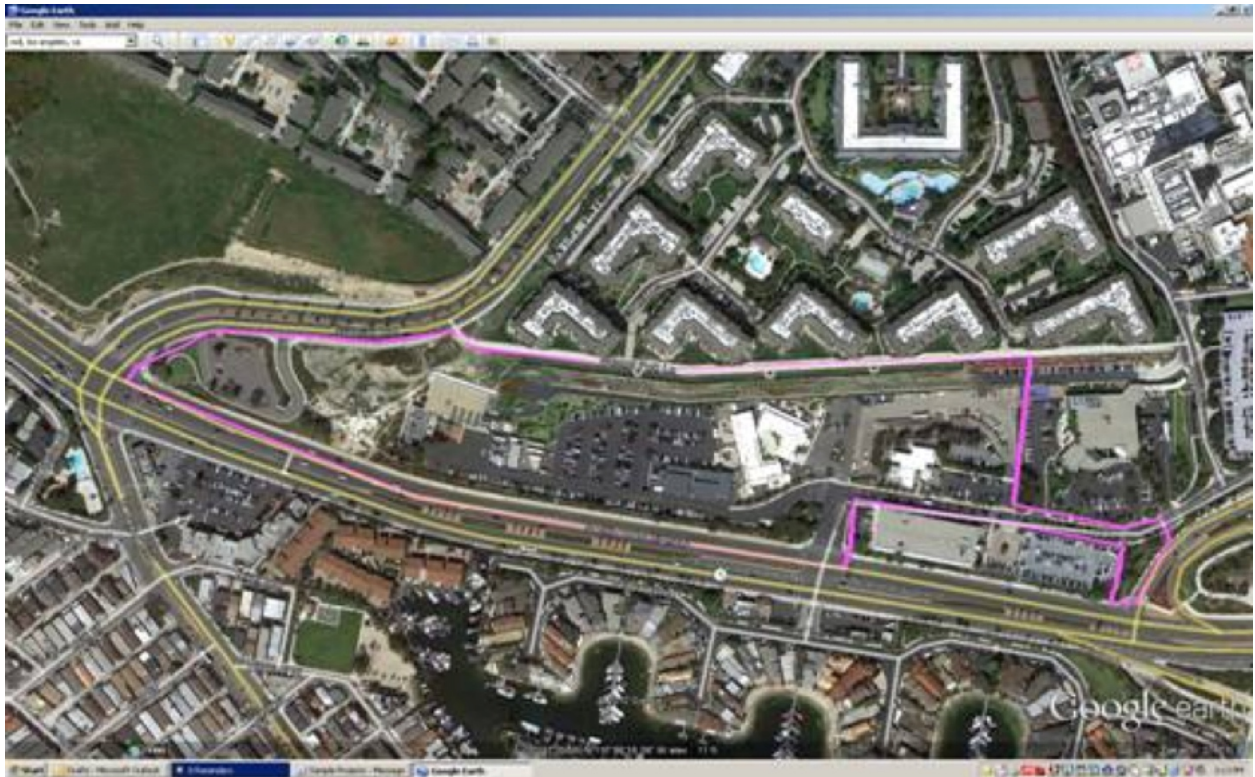
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Hoag Hospital South Campus – Newport Beach, Ca
Fixed Fee Design-Build of site expansion including a 1,000' x 40' retaining wall
in the Coastal Zone





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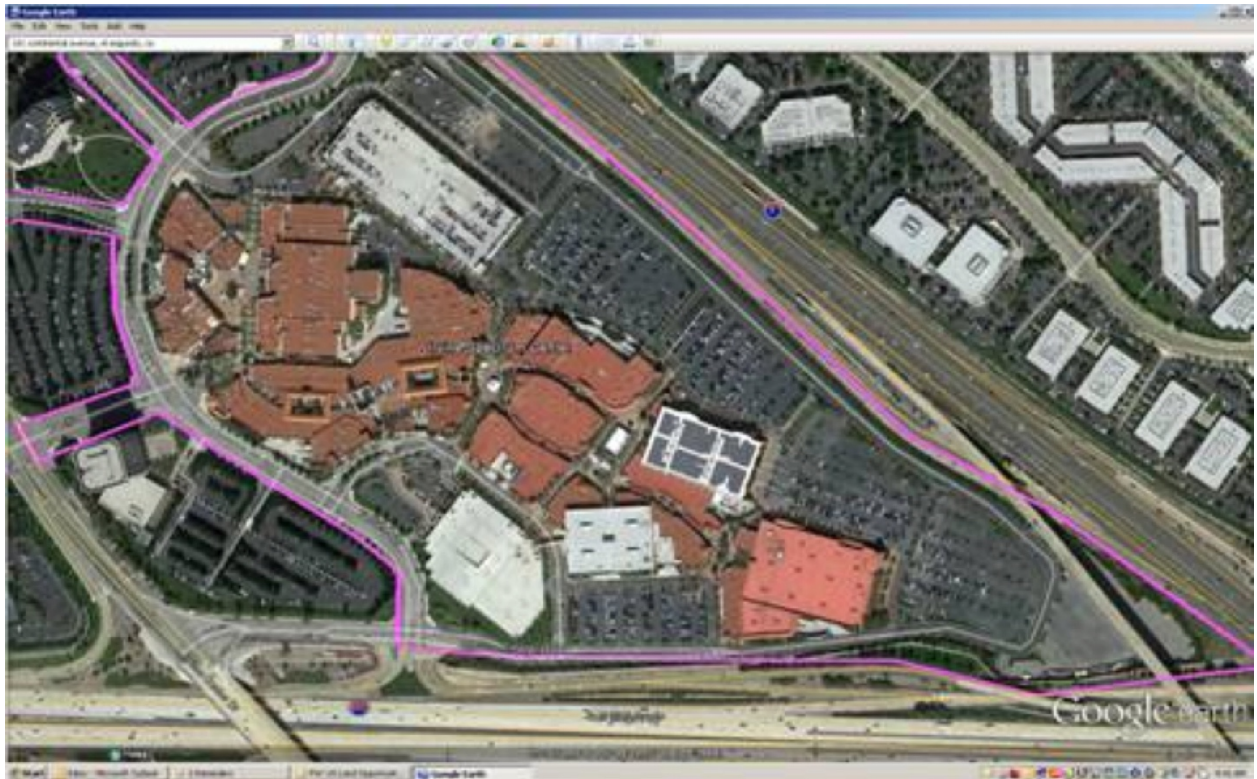
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Irvine Spectrum Entertainment Center - 150 acre destination retail – Irvine, CA
Master developer's engineer for 3 phases of infrastructure, grading, streets and utilities (there were 5 total)





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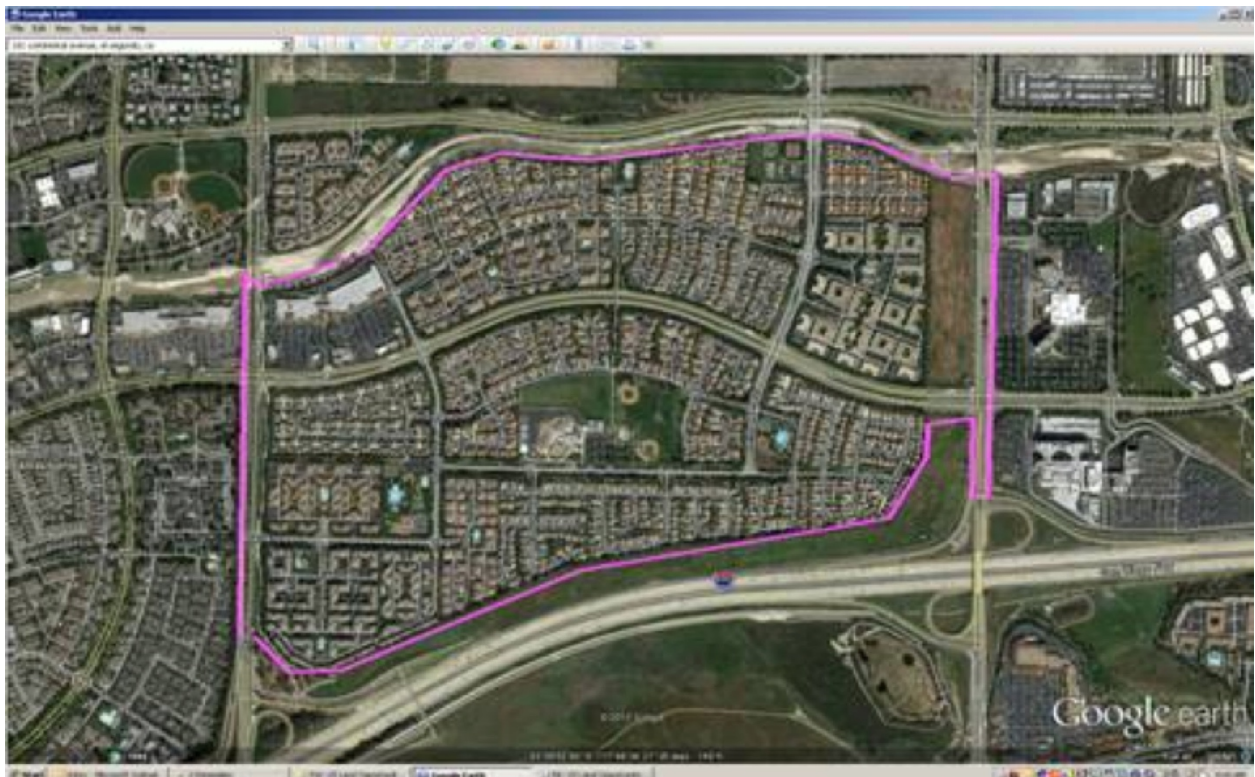
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Oak Creek - 200 acre infill residential sold to 40 builders simultaneously – Irvine, CA

Master developer's lead engineer for planning, subdivision mapping, back-bone street and utilities design and construction and construction management support



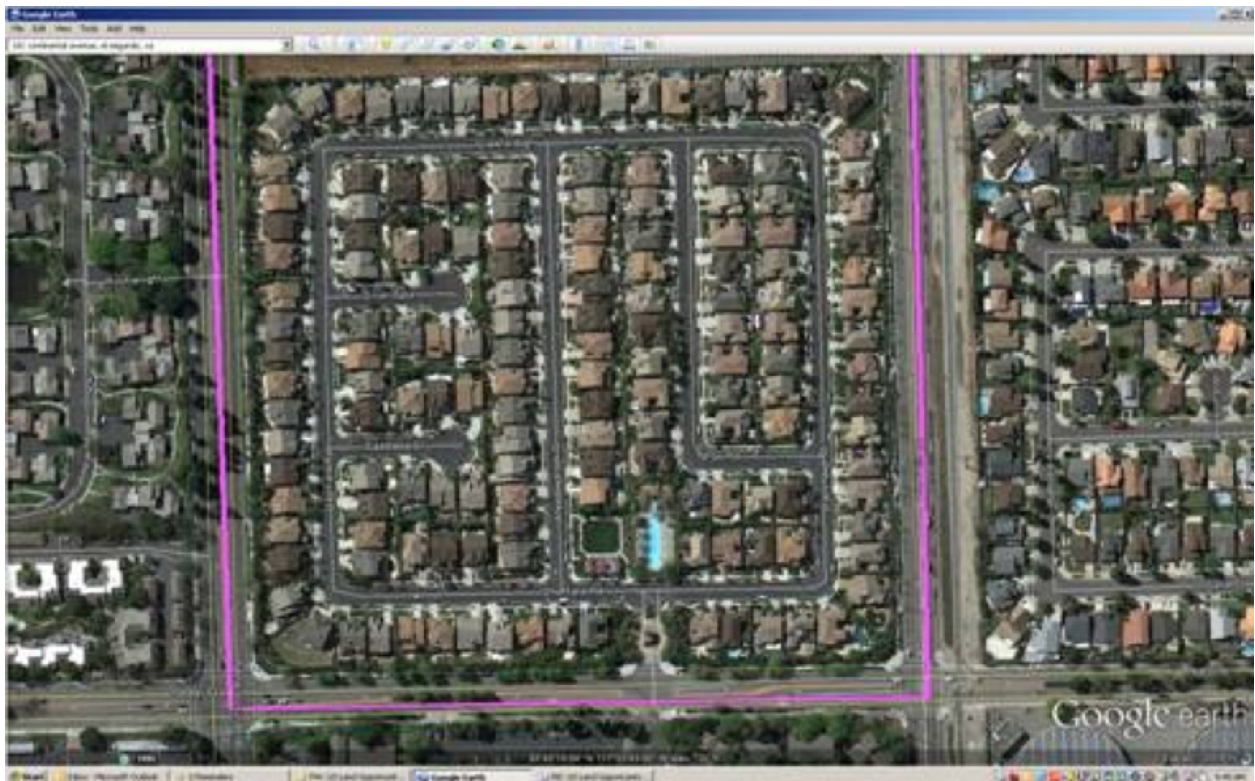


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Armstrong Ranch - 160 unit infill residential – Shea Homes, Santa Ana, CA
Master development engineer, EIR technical studies, purchase and sale agreement,
all perimeter and intract streets and utilities, brought in home builder/buyer and
acted as his entitlement and engineering leader until built out





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Armstrong Ranch YMCA, Aquatics Center and Temporary Church – Santa Ana, CA

Subdivided, designed and permitted all facilities





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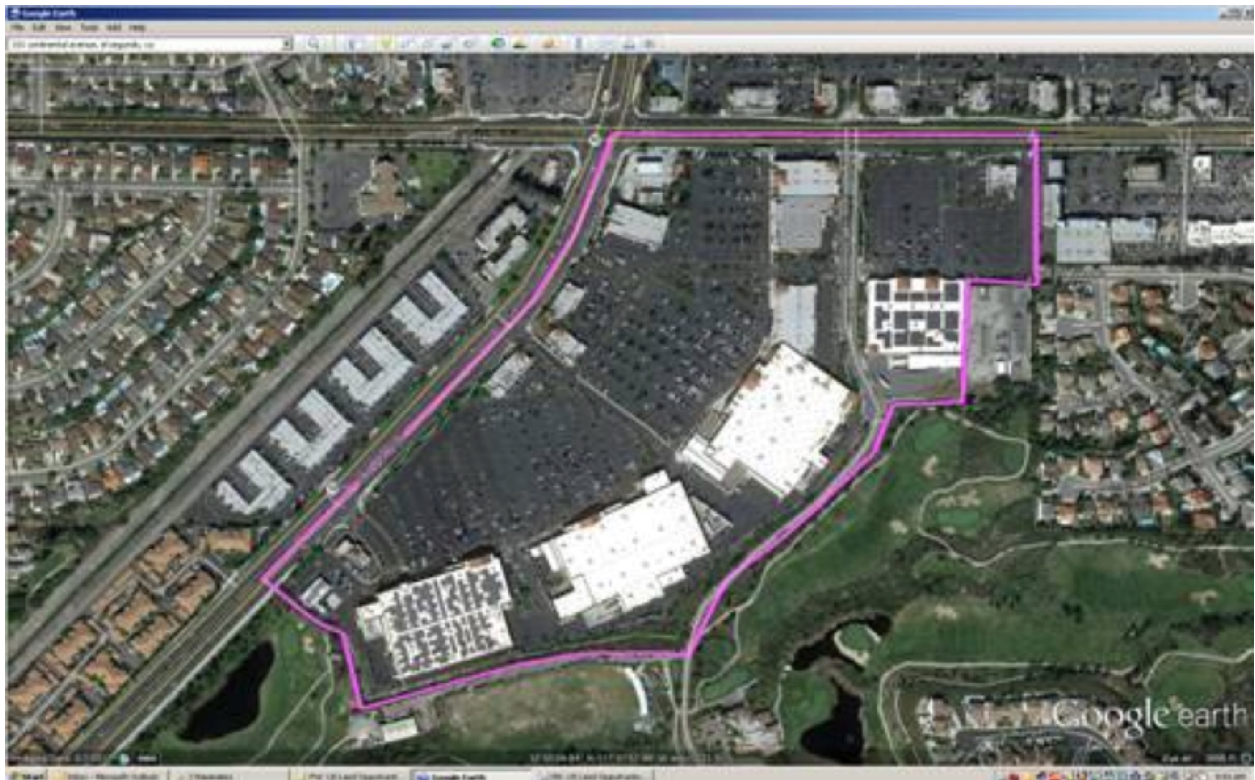
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La Habra Westridge Plaza - 60 acre Chevron Oil headquarters redevelopment as retail – La Habra, CA

Engineering lead to owner. Started with an existing campus, planned, entitled, mapped, designed, permitted, demolition of existing buildings and supervised construction of all horizontal improvements including 2 CalTrans highways (Beach and Imperial).





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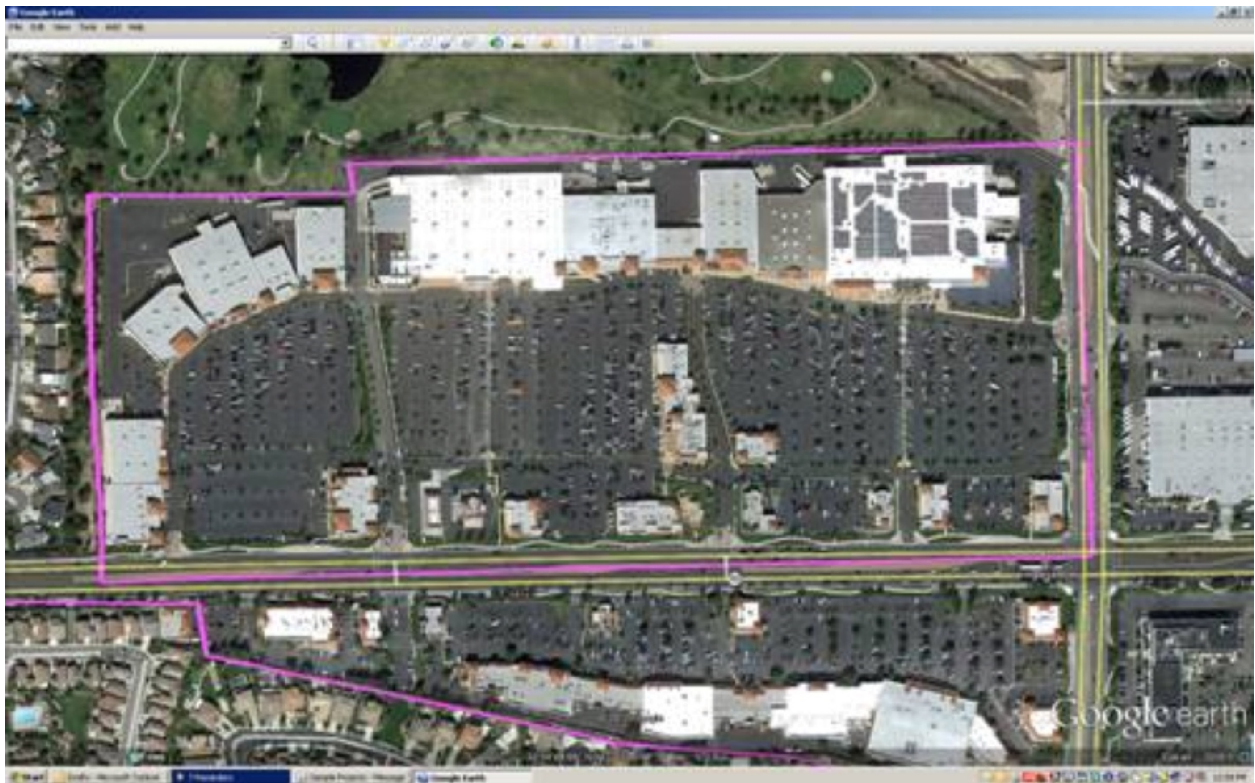
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Brea Union Plaza - Brea, CA

50 Acre retail center design, entitlement, permitting and construction on former Unocal campus with remediation





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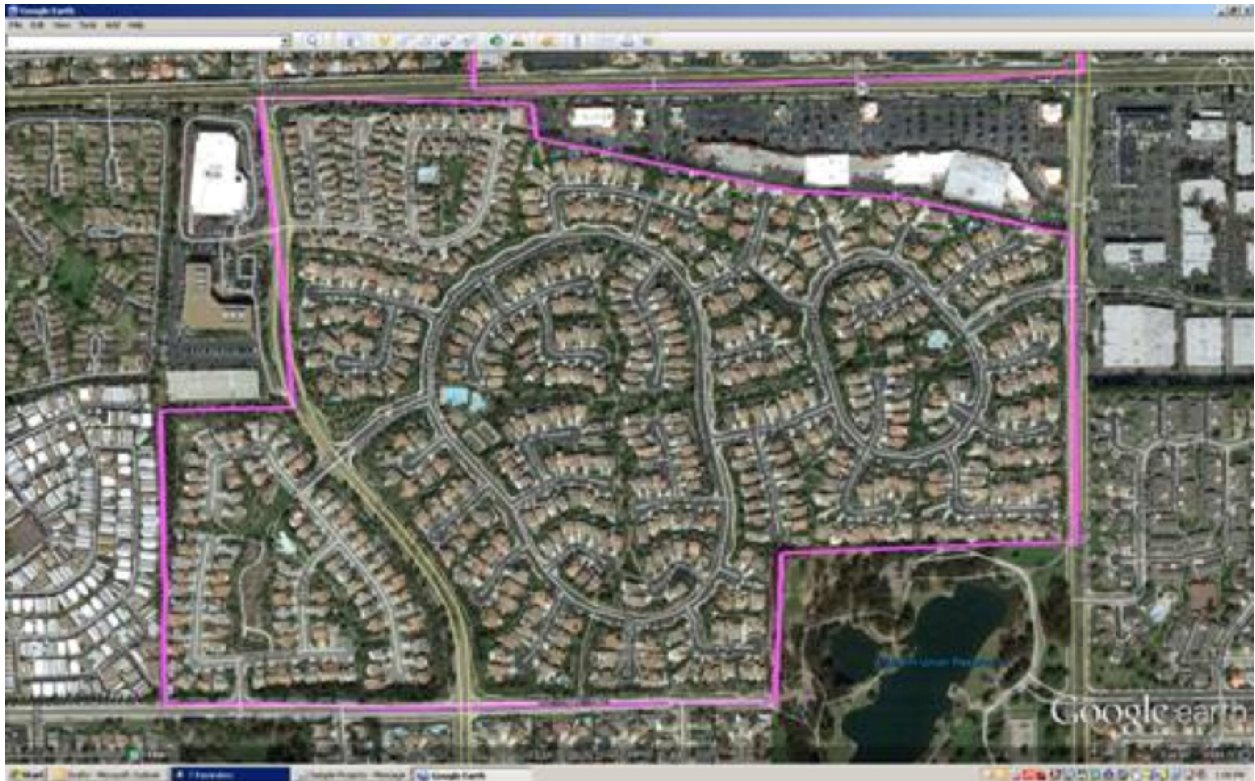
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Imperial Properties – Brea, CA

Oilfield redevelopment as residential, master plan, grading, infrastructure and remediation





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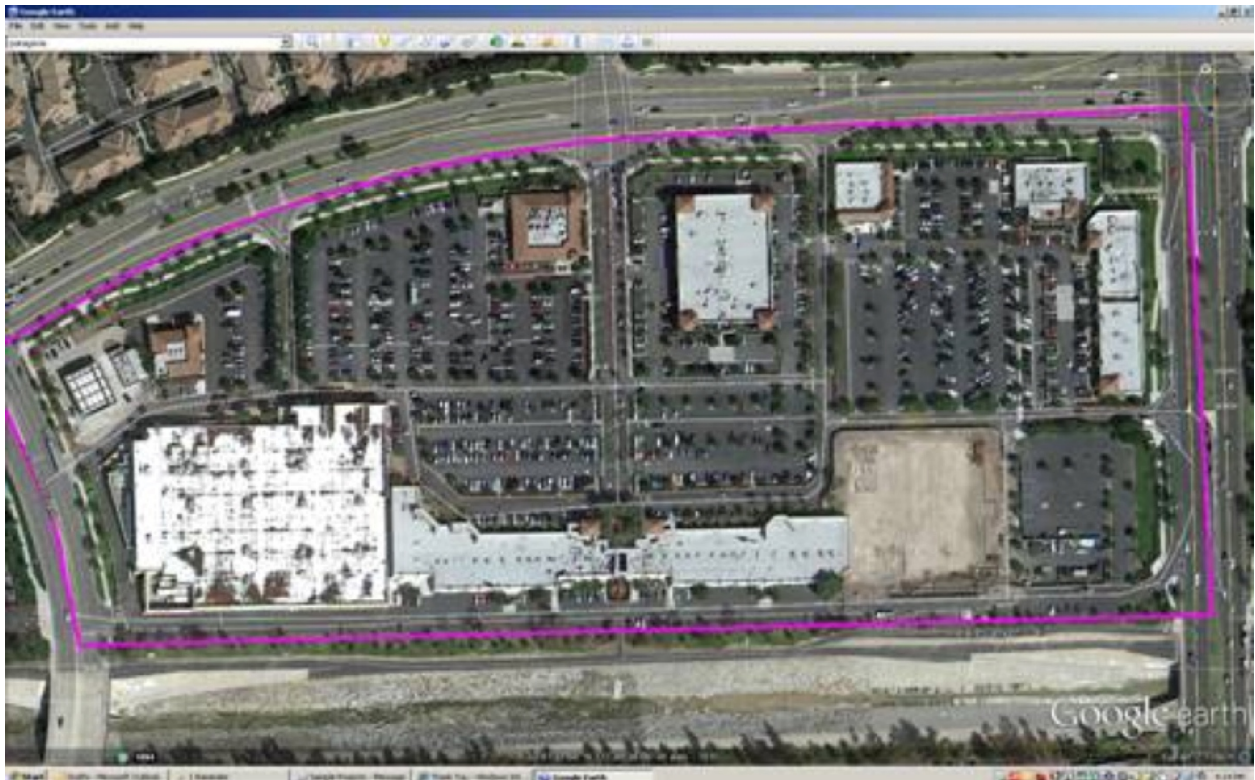
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Crossroads – Irvine, CA

50 acre retail center re-imaging, all site design, permitting and construction oversight.





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FoodPark – Irvine, CA

12 acre retail center reimaging, all site design, permitting and subdivision





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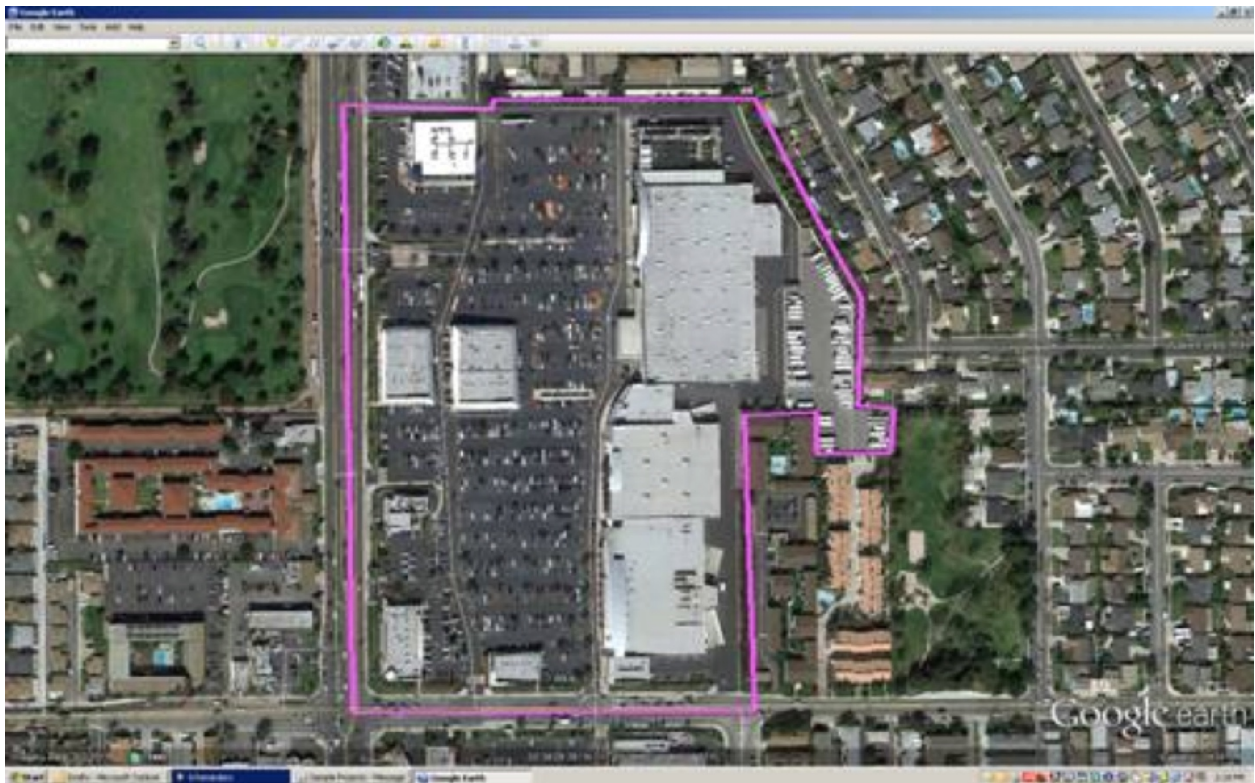
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Harbor Center – Costa Mesa, CA

26 acre retail center demo and redevelopment, all site design, permitting and subdivision





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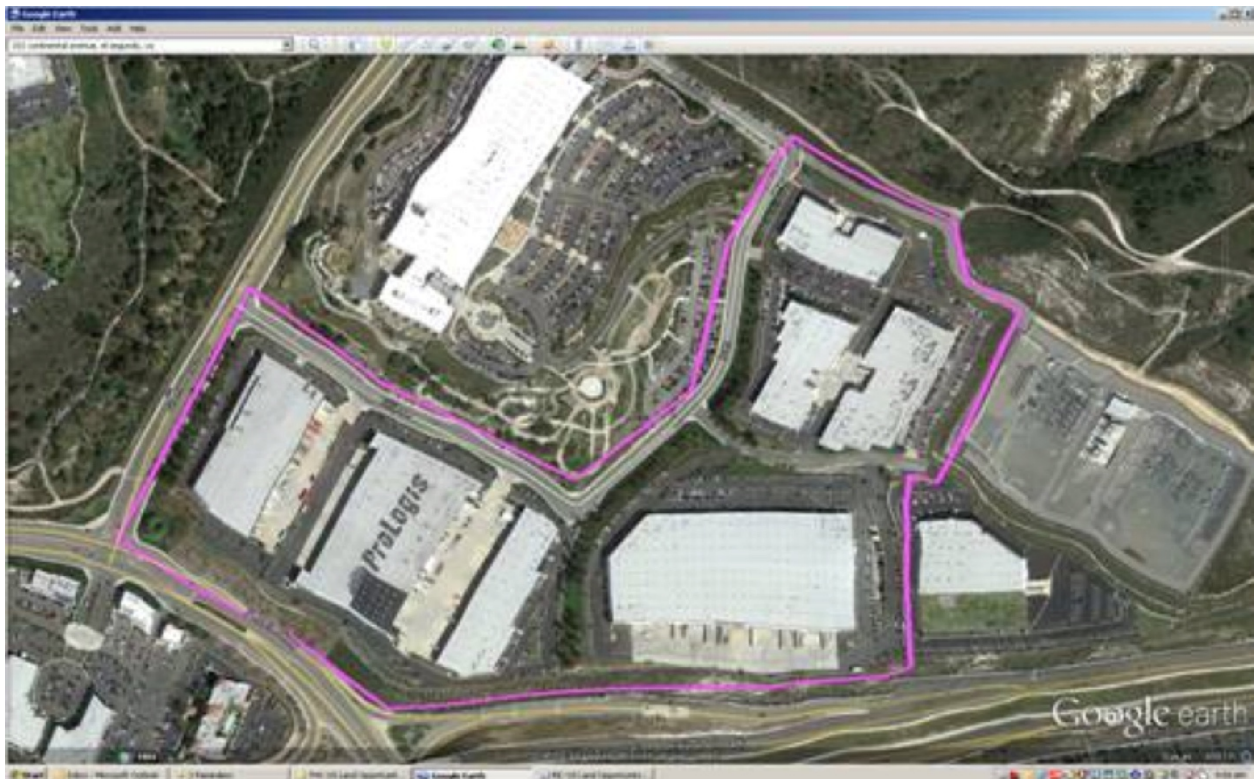
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Security Capital Industrial Trust - Acquisition of industrial property for warehouse and distribution REIT – Foothill Ranch, CA
Advisor to acquiring REIT, prepared feasibility studies, cost estimates, purchase recommendations, mapping and master plans and then stepped out after sale.





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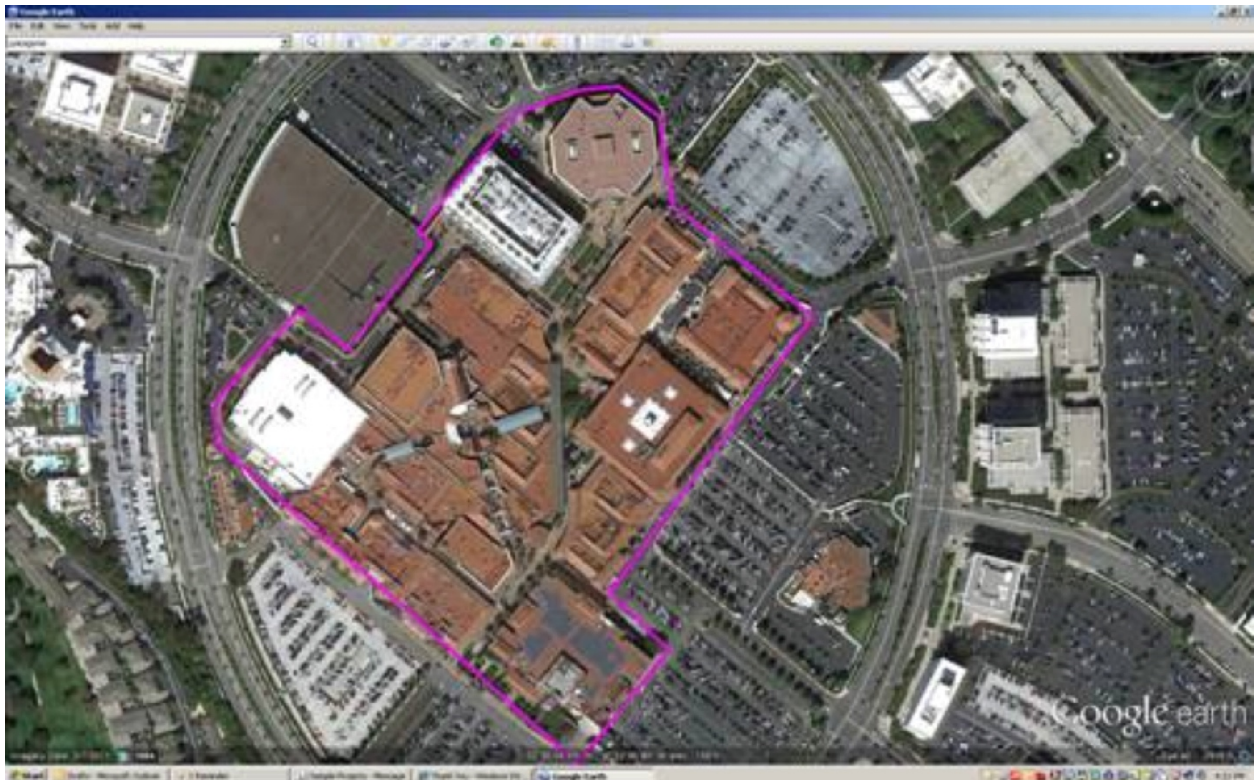
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Fashion Island – Newport Beach, CA

Retail center landscape re-imaging, provided precision base mapping.





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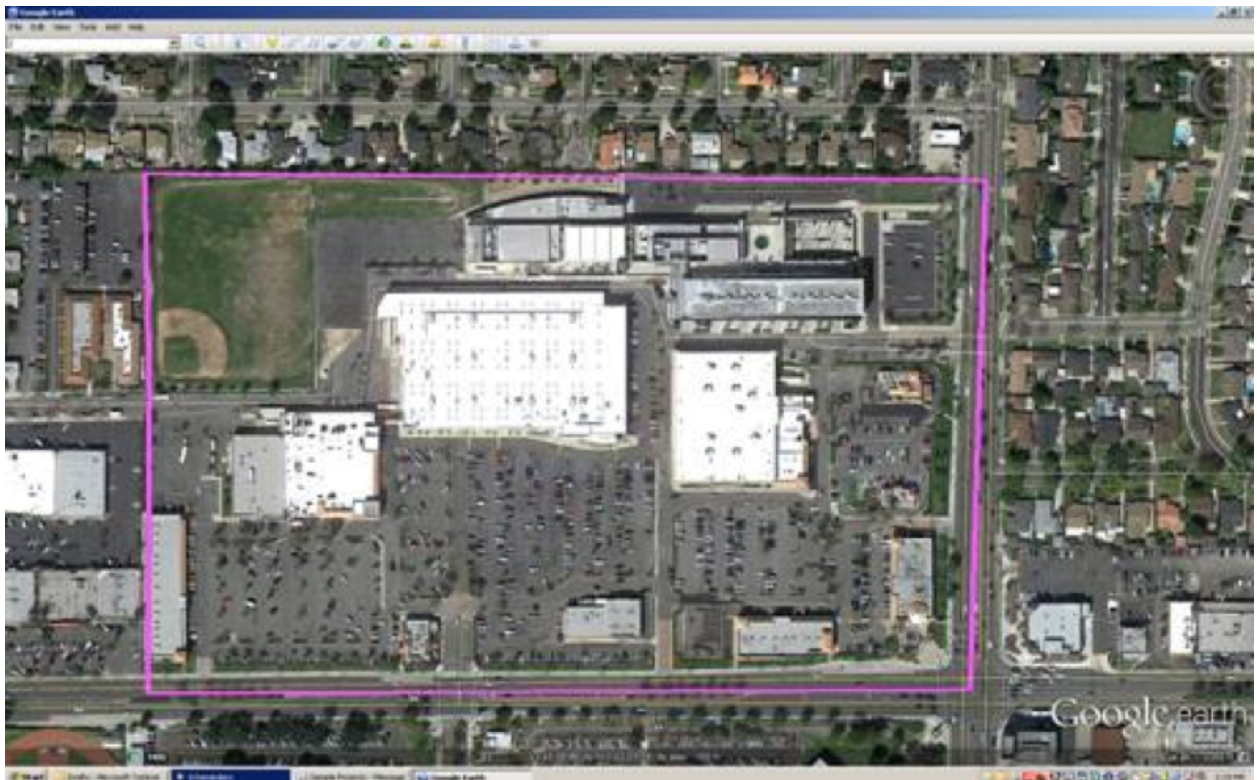
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Bristol Market Place – Santa Ana, CA

Retail center redevelopment master planning and engineering including school site





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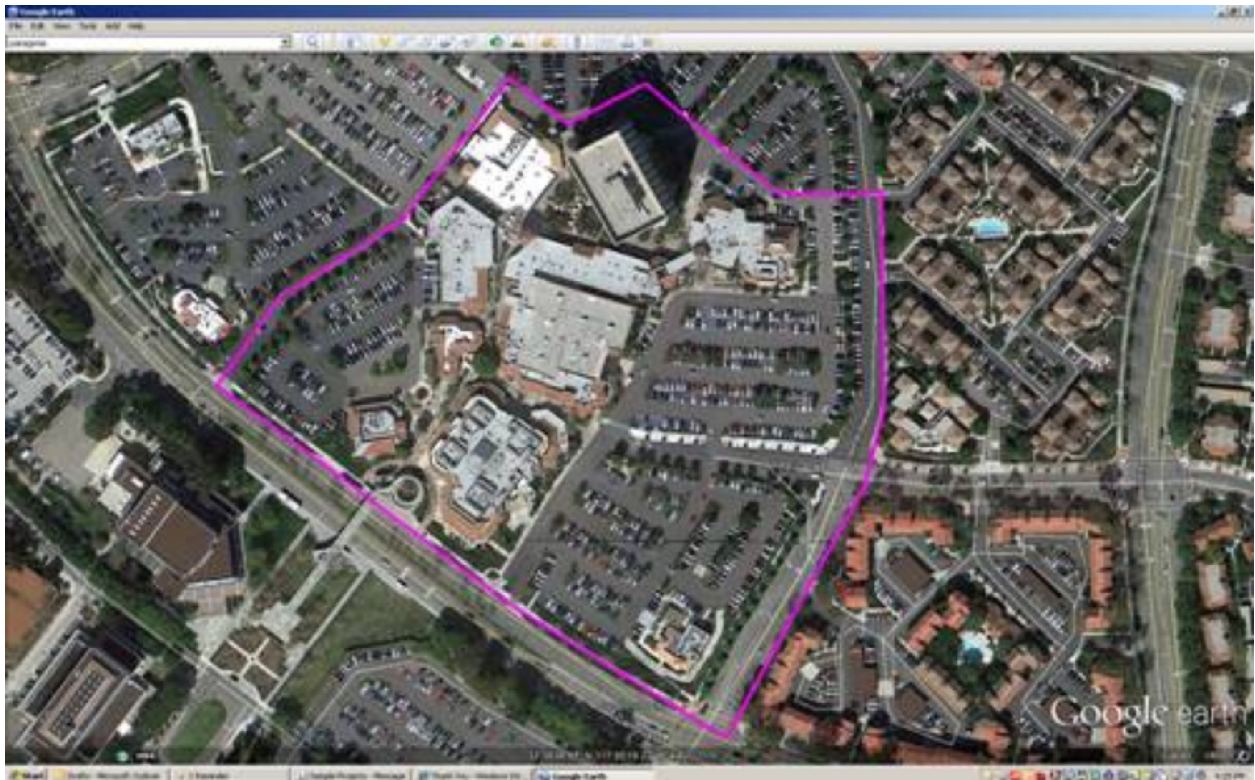
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University Center – Irvine, CA

Retail Center Expansion – provided subdivision and infrastructure.





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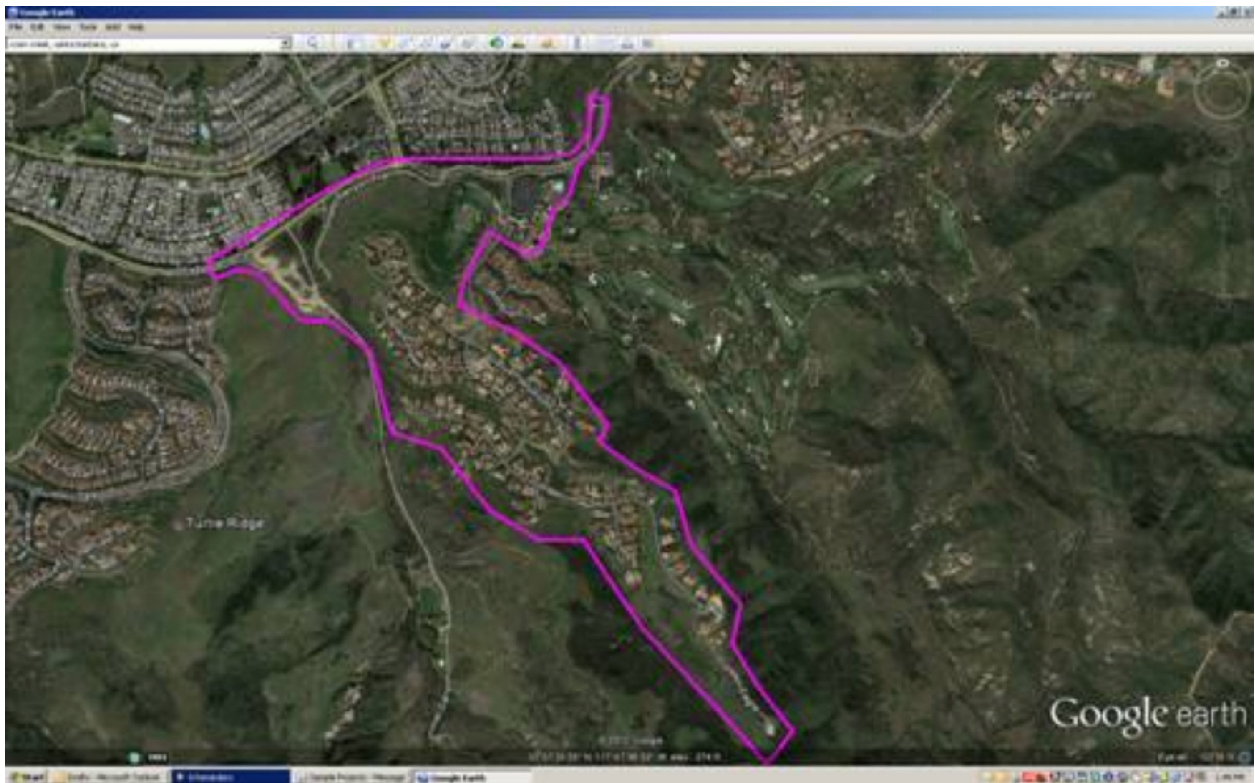
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Shady Canyon Golf Residential – Irvine, CA

Phase 1 Infrastructure master plan, access, water supply system and NCCP reserve reconfiguration





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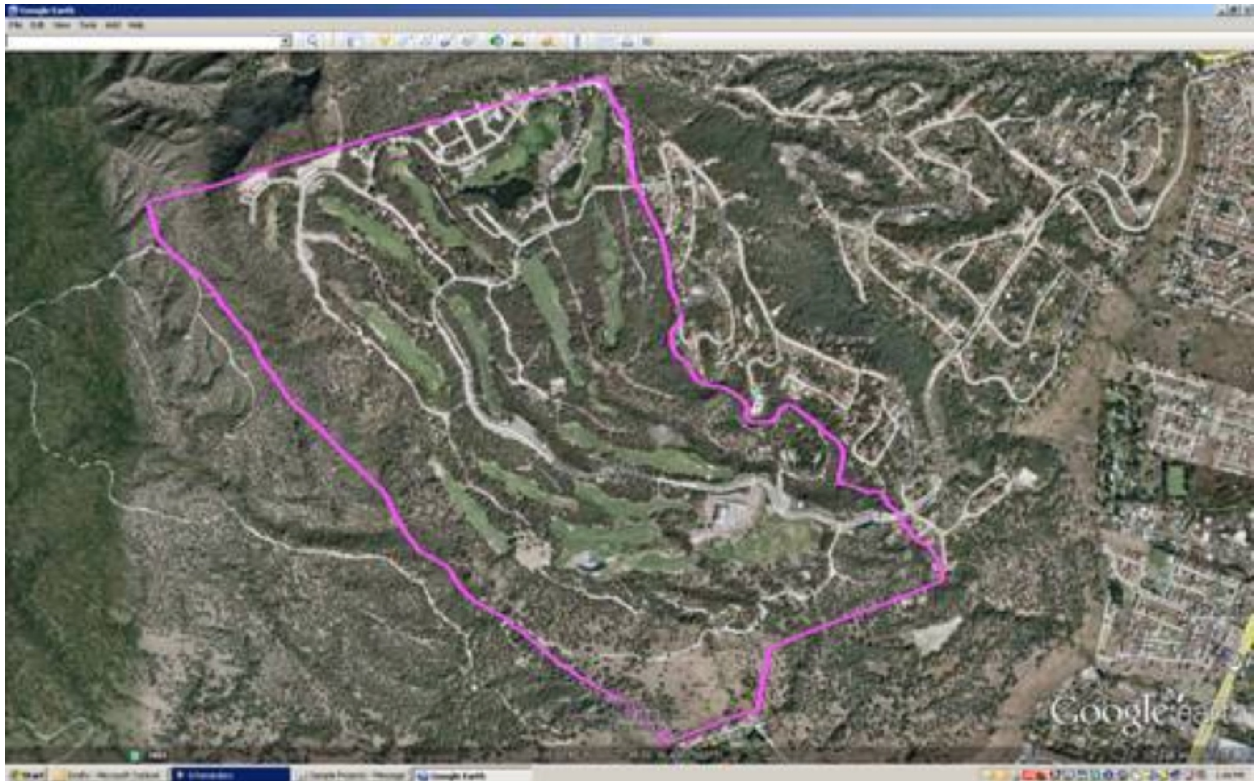
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El Palomar Golf Community – Guadalajara, Mexico

Master plan, infrastructure, golf routing, subdivision mapping, water & sewer plant, EXIM Bank and NAFTA





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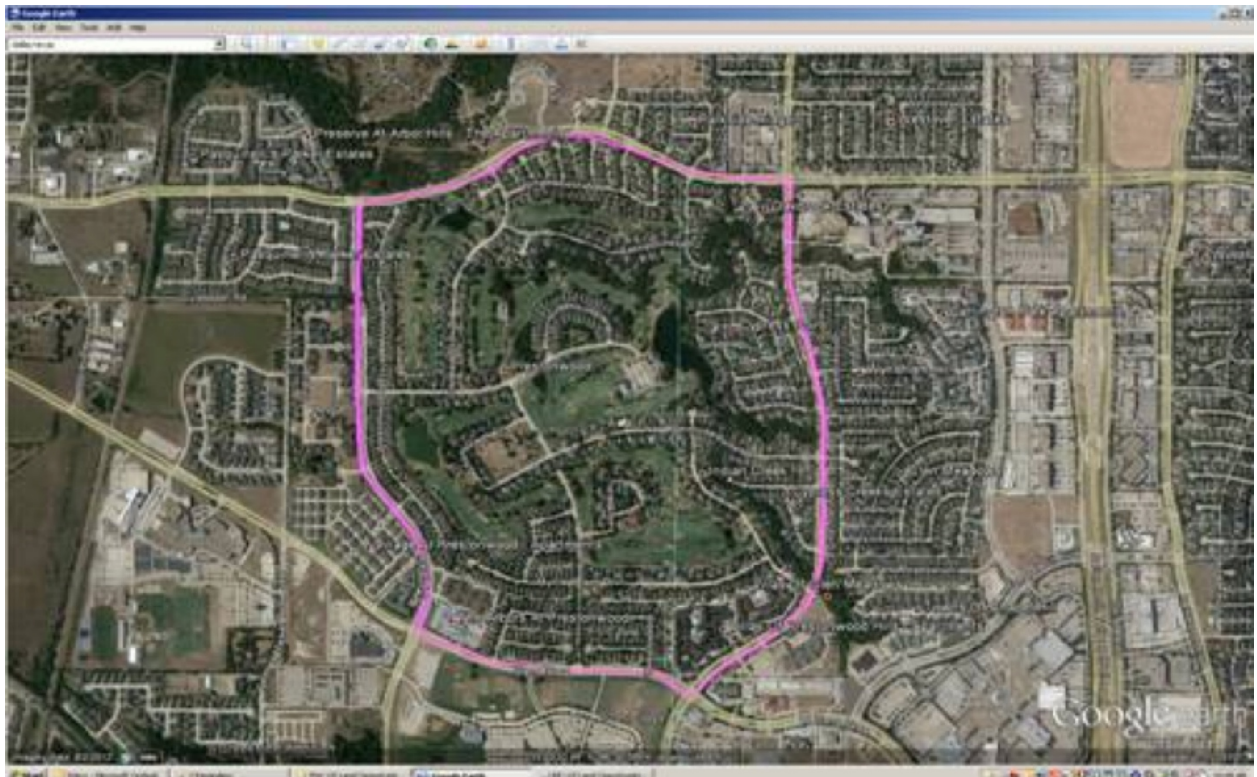
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Indian Creek (golf course & residential), Prestonwood Country Club - Dallas, Texas

Project engineering manager, prepared master plans, designed subdivision maps (called Preliminary Plats in Texas), infrastructure and subdivisions, lake and flood control systems, supervised construction and apportioned costs to consortium of property owners.





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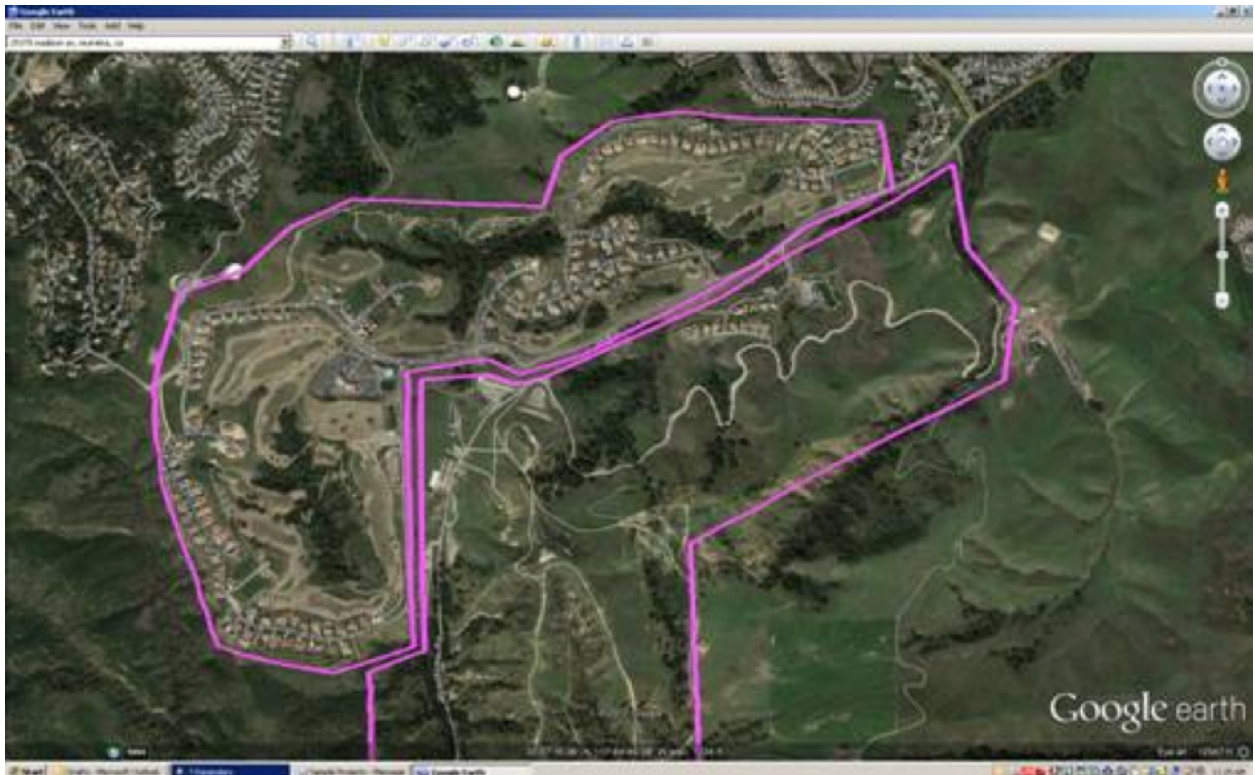
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Vellano Country Club – Chino Hills, CA

A Reese Jones turned Greg Norman gold course community, master plan, course lay-out, entitlement, TTM, grading (300' relief), infrastructure and custom lot marketing

Aerojet General Site Re-Use – Chino Hills, CA

Master planned the re-use, remediation and development.





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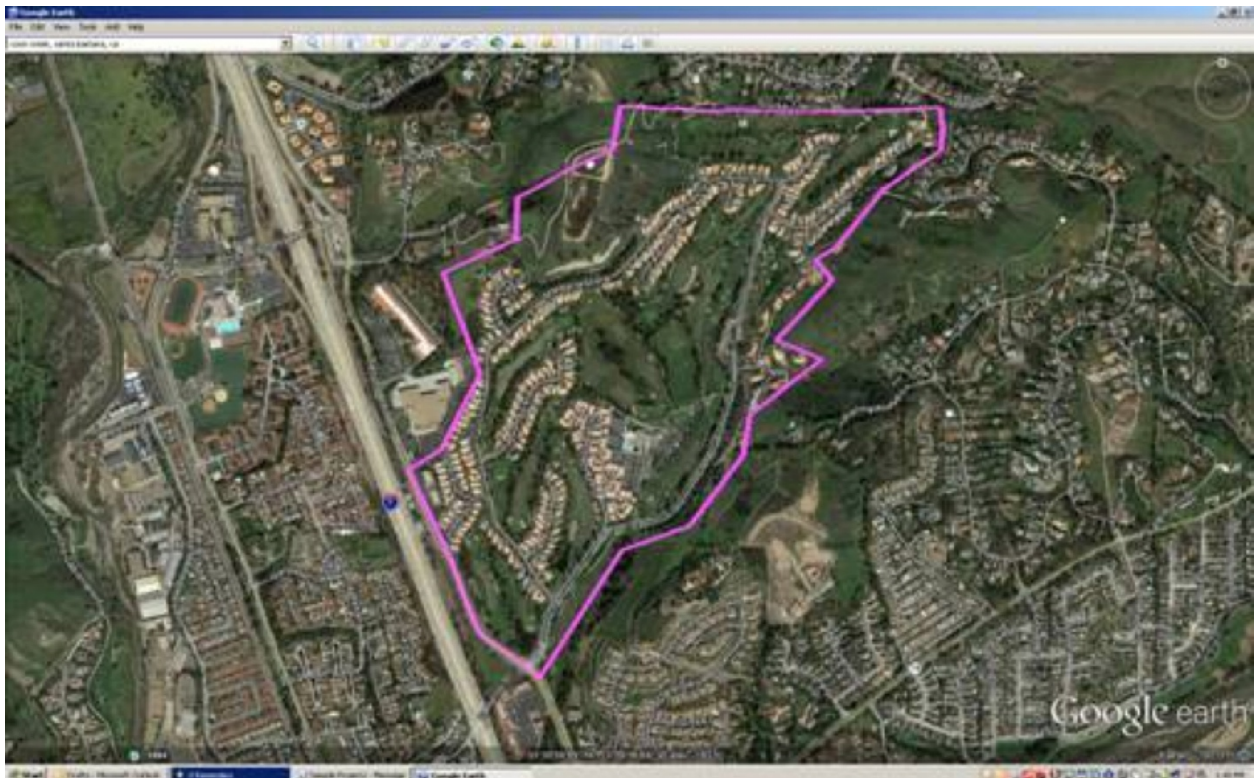
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Marbella Country Club – San Juan Capistrano, CA
Development master plan, lot lay-out, golf water feature system





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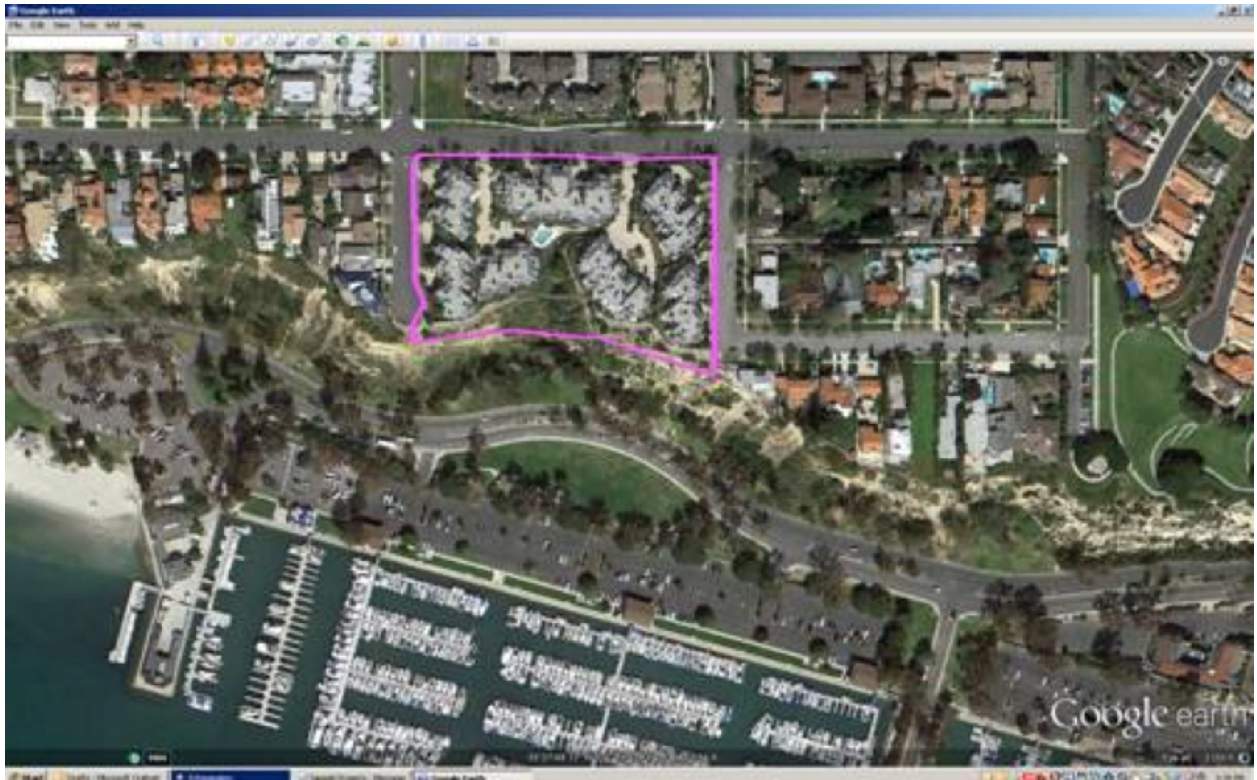
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The Admiralty – Dana Point, CA

Luxury condos, designed site improvements, utilities and subdivision





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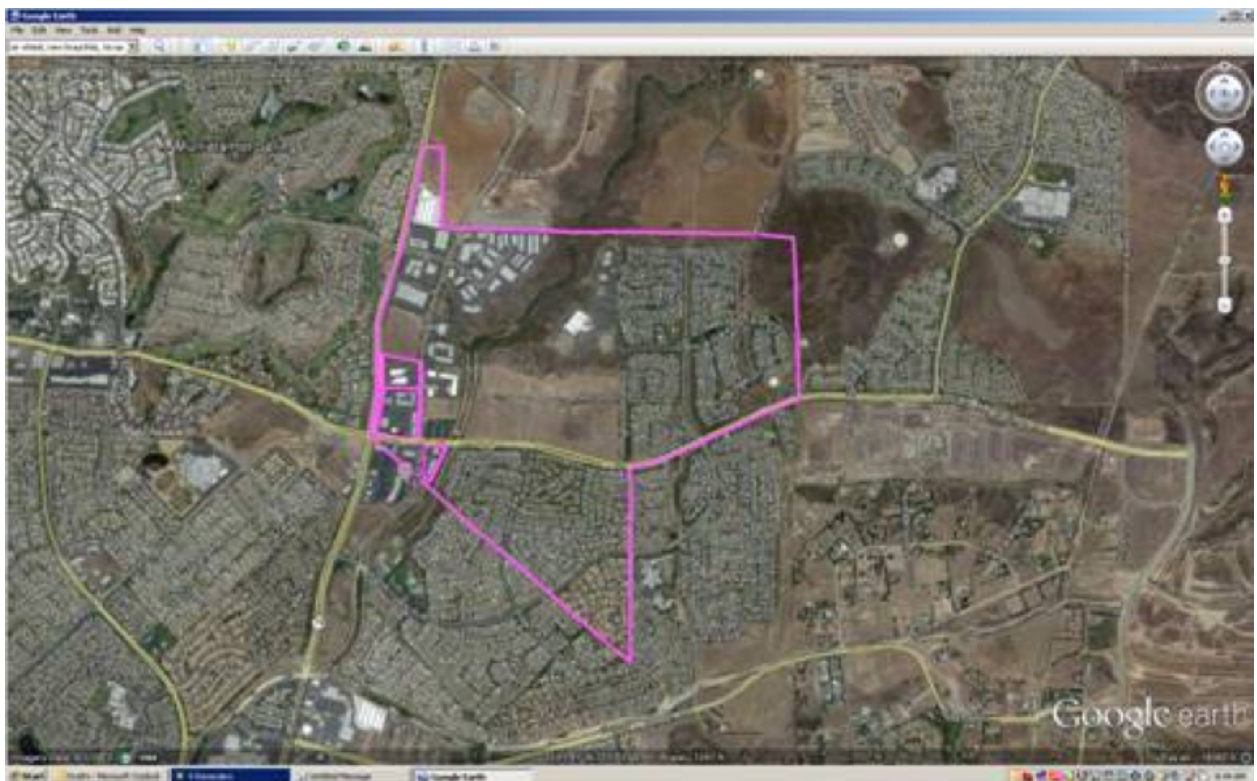
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Winchester Ranch / Silverhawk - 650 acre master plan in Riverside County, CA
Prepared the master land use plan, TTM, grading plan, flood control channel, bridge, reservoir, all infrastructure plans and permits, CalTrans encroachment permits, acted as Special District Engineer formed CFD 88-4 and raised \$30M





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Education/Media/Software
Heavy Civil Infrastructure

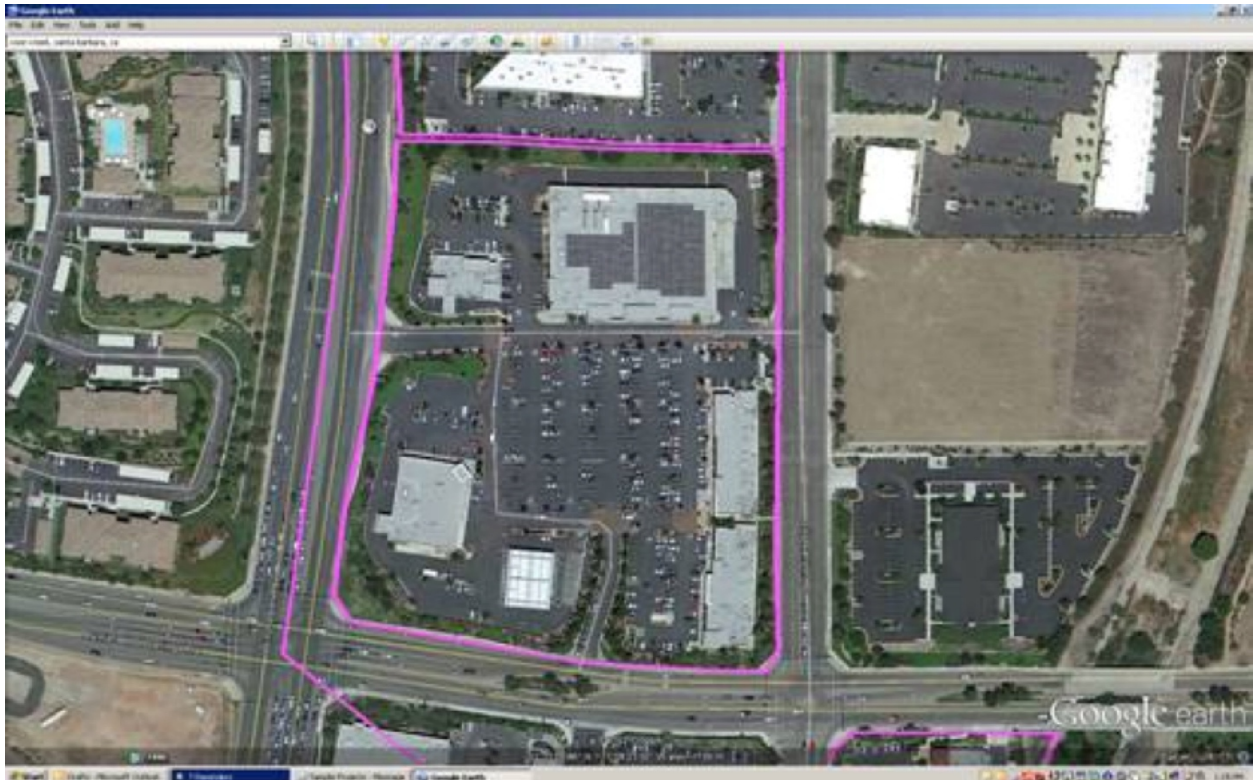
CivTek International

Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Vons Retail Center – Riverside County, CA
12 acre Retail Center design, permitting and construction





National Economic Development
Risk Managed by Diversification:
Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
Healthcare/Real Estate/Tourism
Natural Resources/Agriculture
Education/Media/Software
Heavy Civil Infrastructure

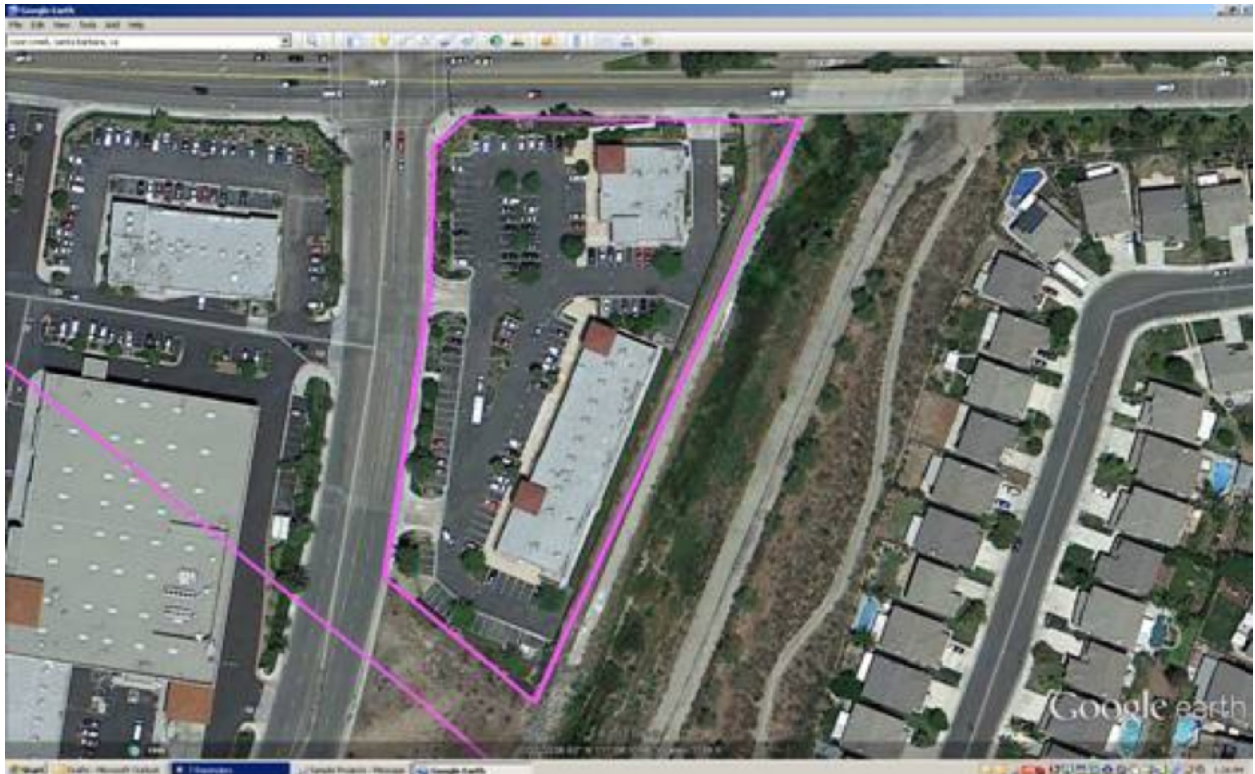
CivTek International

Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Sky Canyon Plaza – Riverside County, CA
3 acre retail center, design, entitle, build





National Economic Development
Risk Managed by Diversification:
Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
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CivTek International

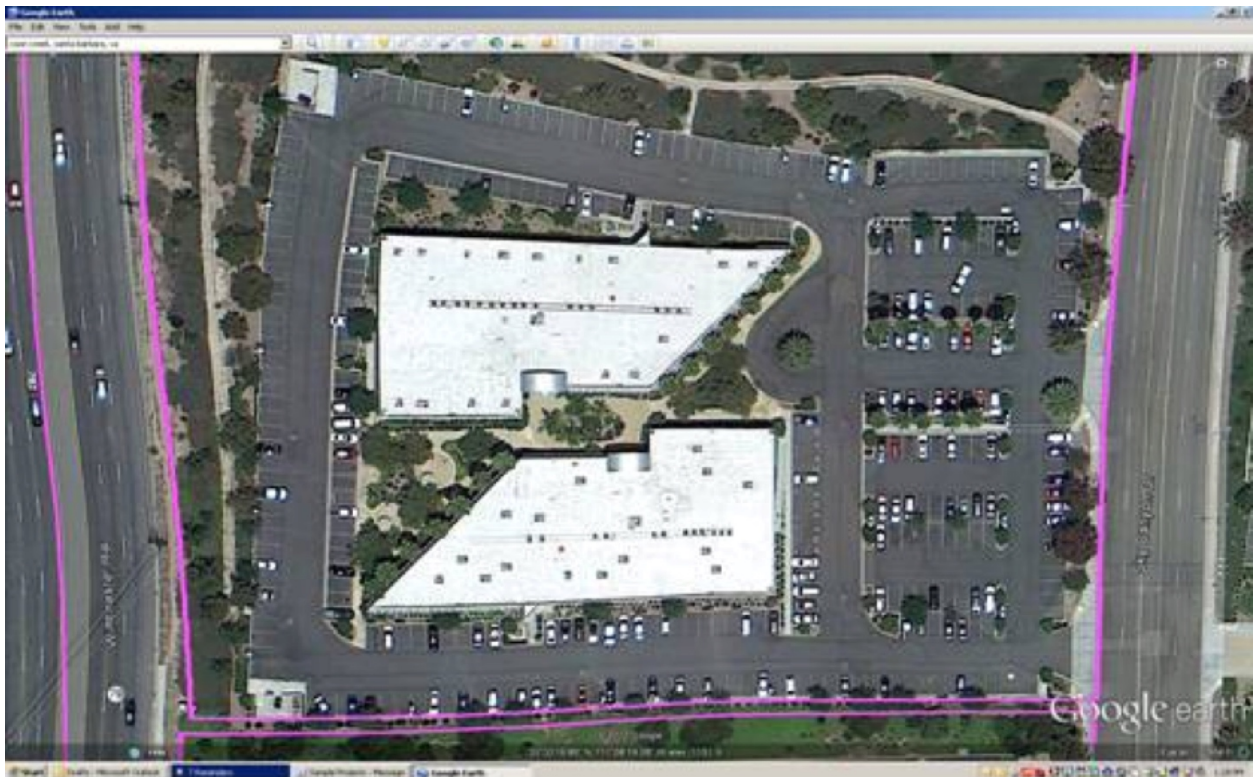
Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Winchester Office Park – Riverside County, CA

2 – 40k SF office buildings, design, entitle, map, condominium, construction support





National Economic Development
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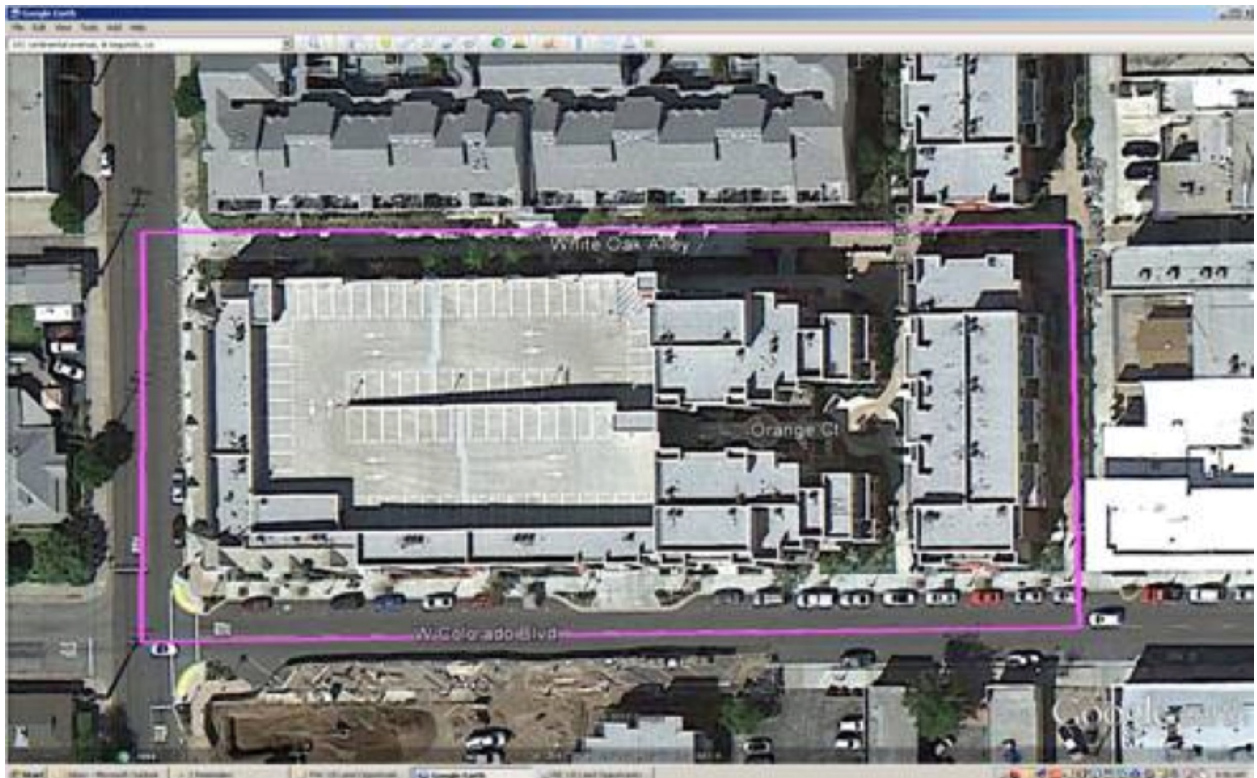
Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Colorado Commons - 64 unit mixed use condo wrapping a new parking structure
– Monrovia, CA

Engineering, subdivision and entitlement design consultant to public private partnership. Prepared, processed, permitted and supervised construction of all horizontal improvements.





National Economic Development
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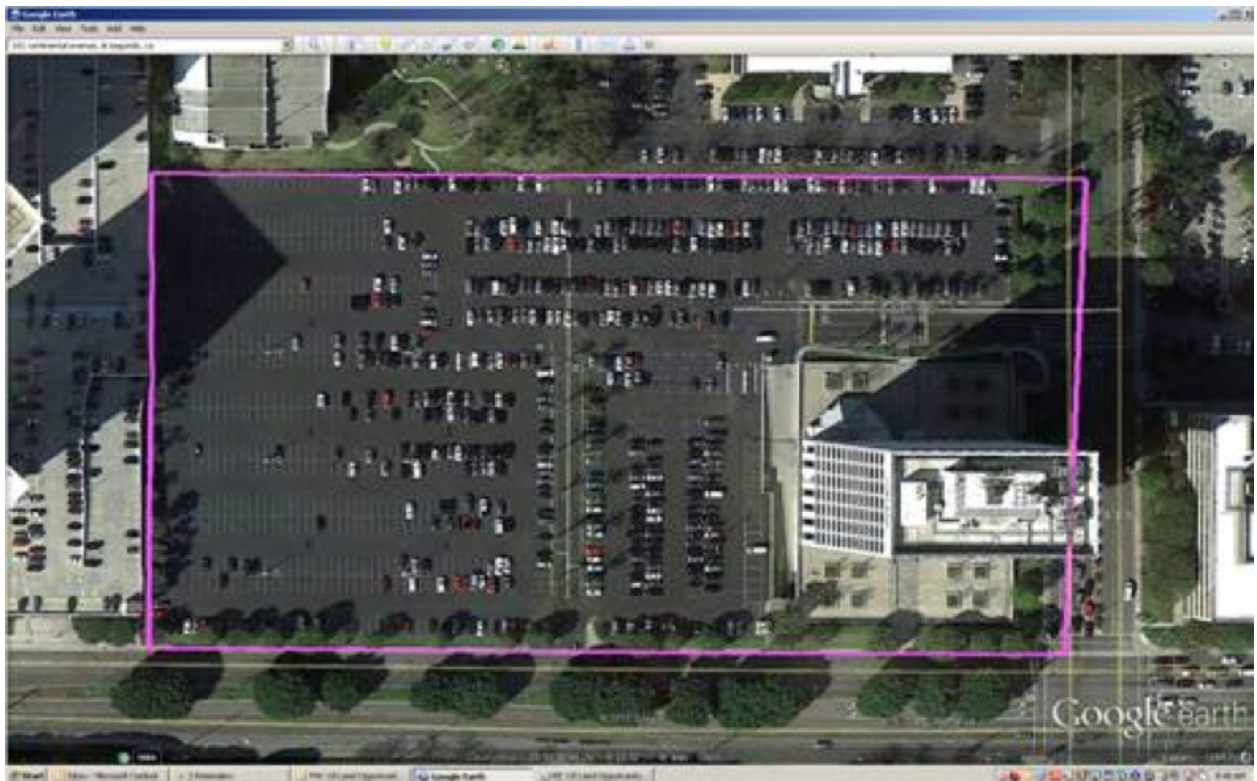
CivTek International

Ph +1.916-869-4097

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tyoung@civtek.com

Barker Pacific 101 Continental - Office renovation and conversion to office + business hotel and retail (not built yet) – El Segundo, CA
Planning, engineering, mapping and entitlement... nothing built yet.





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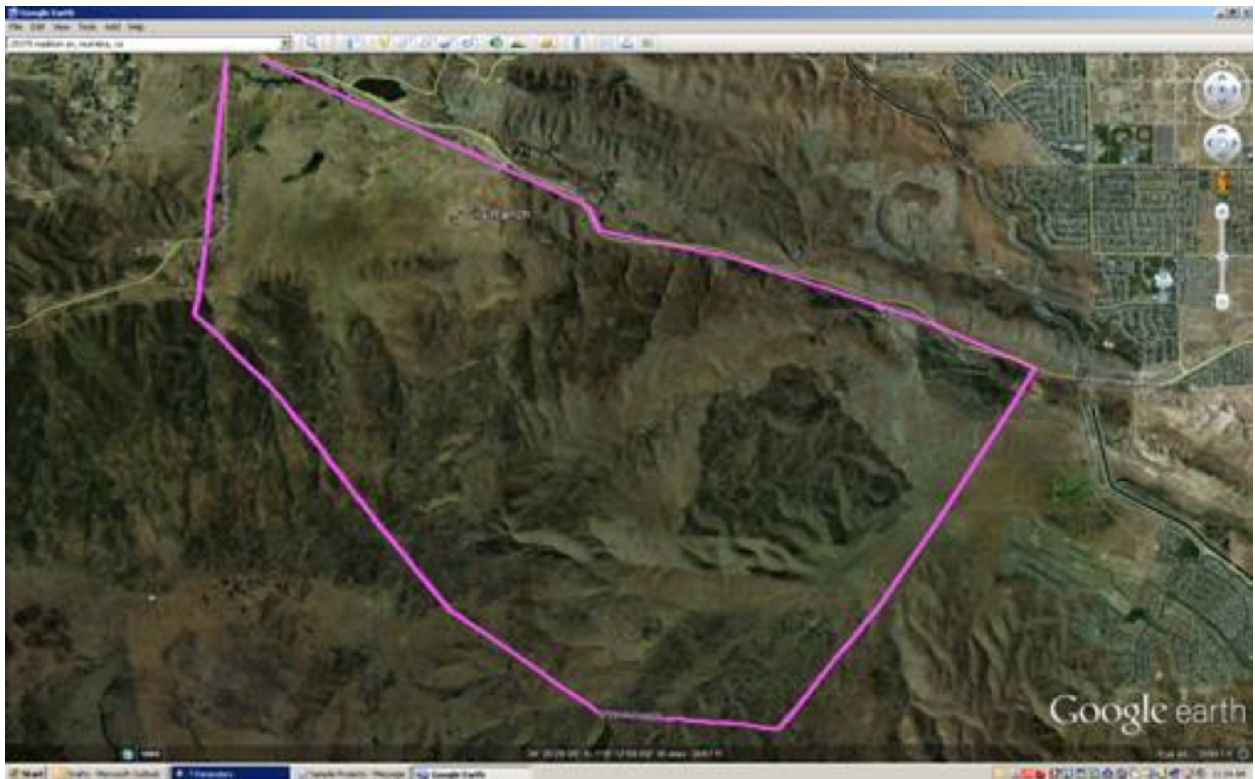
Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Ritter Ranch – Palmdale, CA

10,000 acre Master Plan for 7,000 units + golf, and commercial. Master infrastructure funding plan and development strategy, BK turn-a-round plan





National Economic Development
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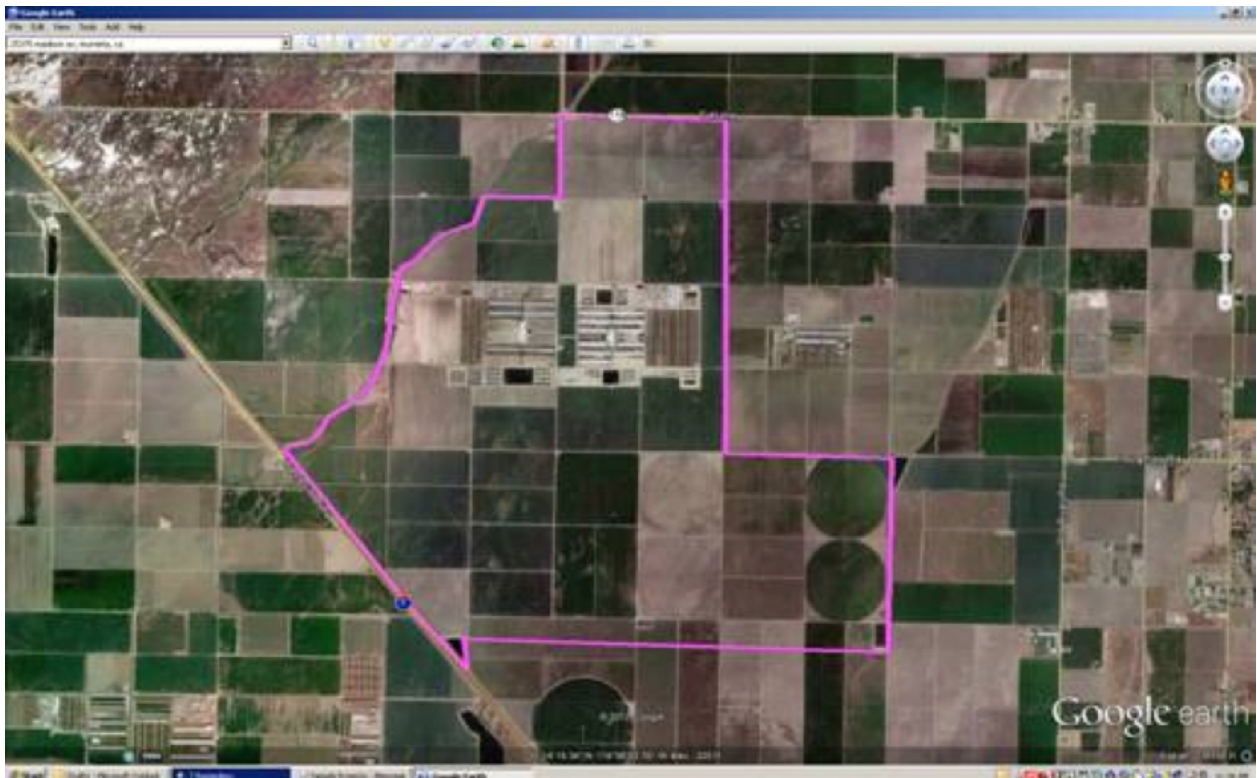
Ph +1.916-869-4097

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tyoung@civtek.com

Pacificana – Bakersfield, CA

5,000 acre master plan, TTM, infrastructure, golf courses





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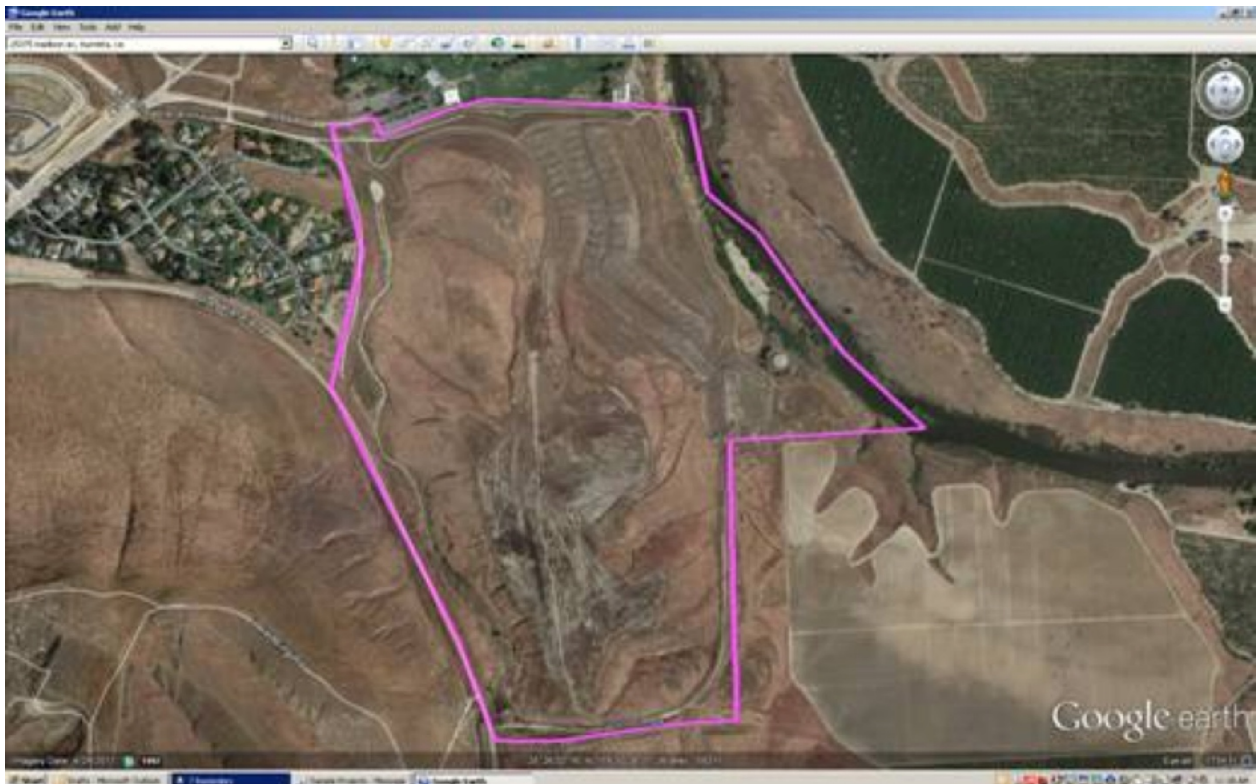
CivTek International

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tyoung@civtek.com

Rivers Edge – Kern County, CA
Master plan, TTM and grading plan





National Economic Development
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Heavy Civil Infrastructure

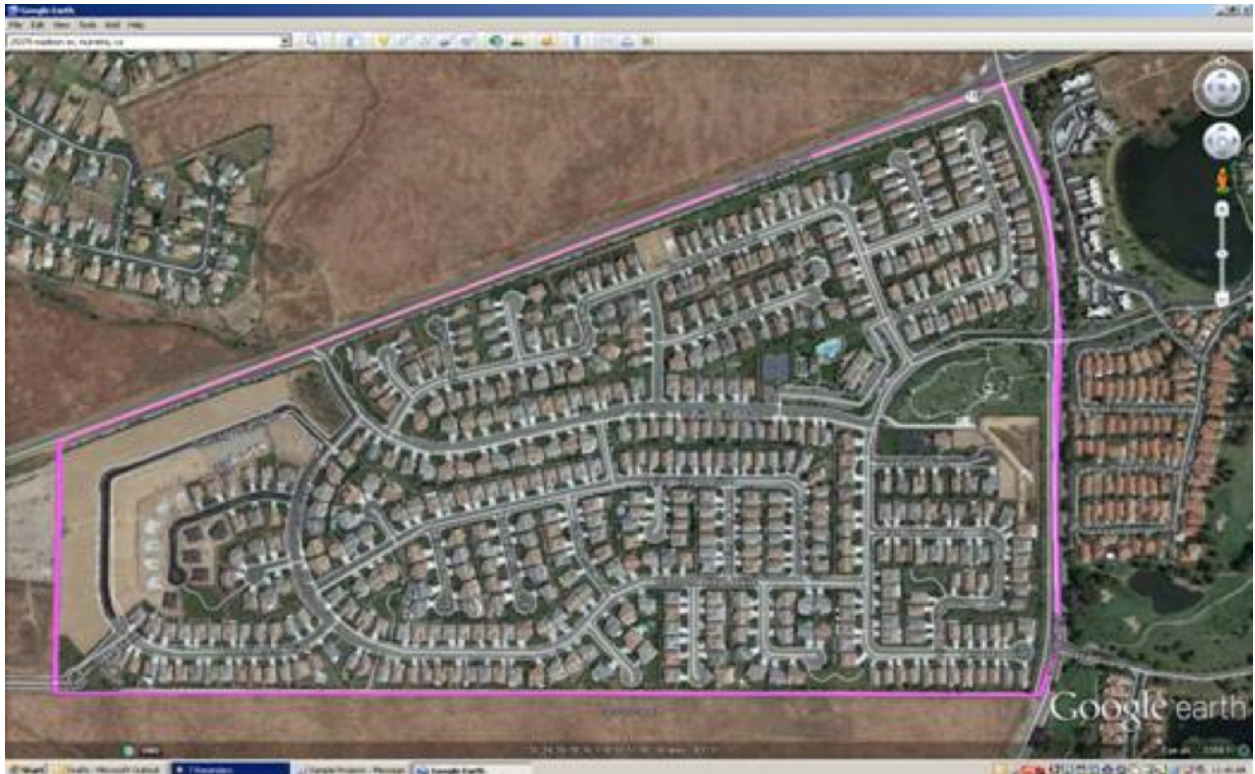
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tyoung@civtek.com

Country Club – Kern County, CA
Master plan, TTM and development budget





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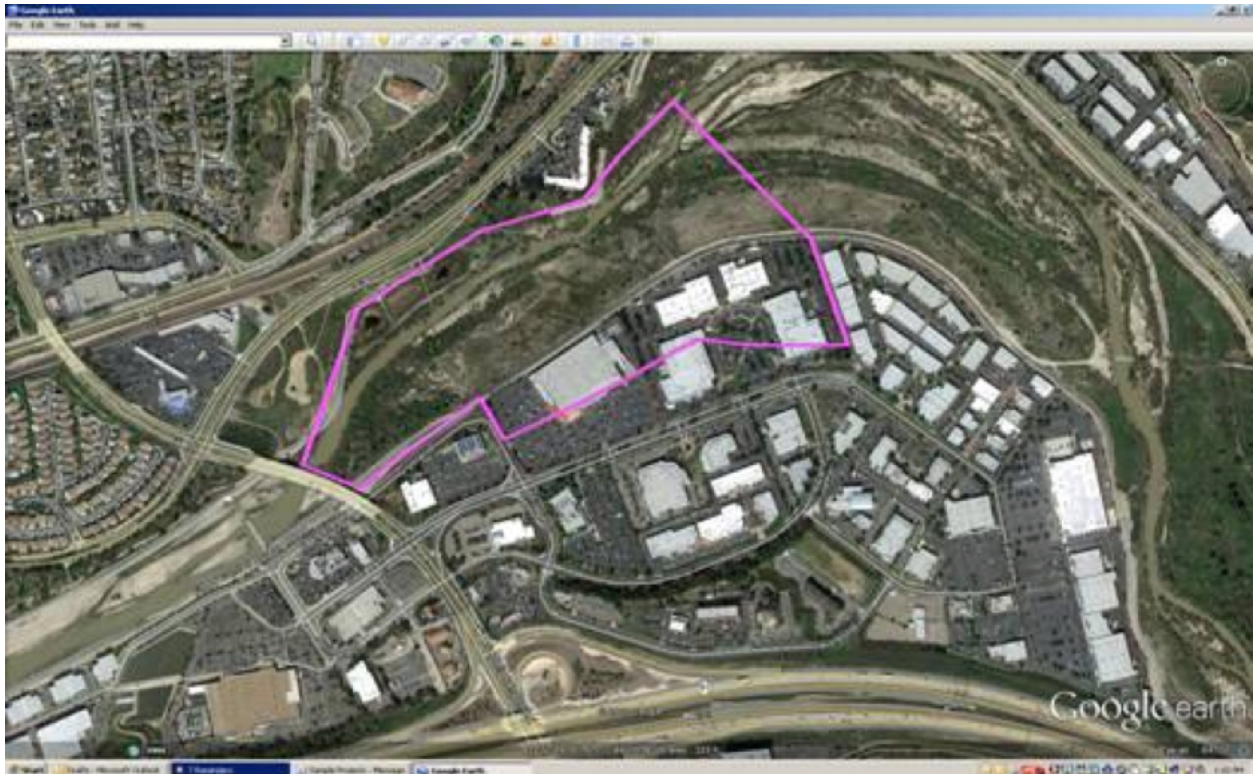
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tyoung@civtek.com

Savi Ranch, Anaheim Hills, CA
Flood Plain and FIRM revision





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Heavy Civil Infrastructure

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tyoung@civtek.com

Indus Mixed Use Site – Chino Hills, CA

Master planned, financial modeling, entitlement strategy, subdivision mapping





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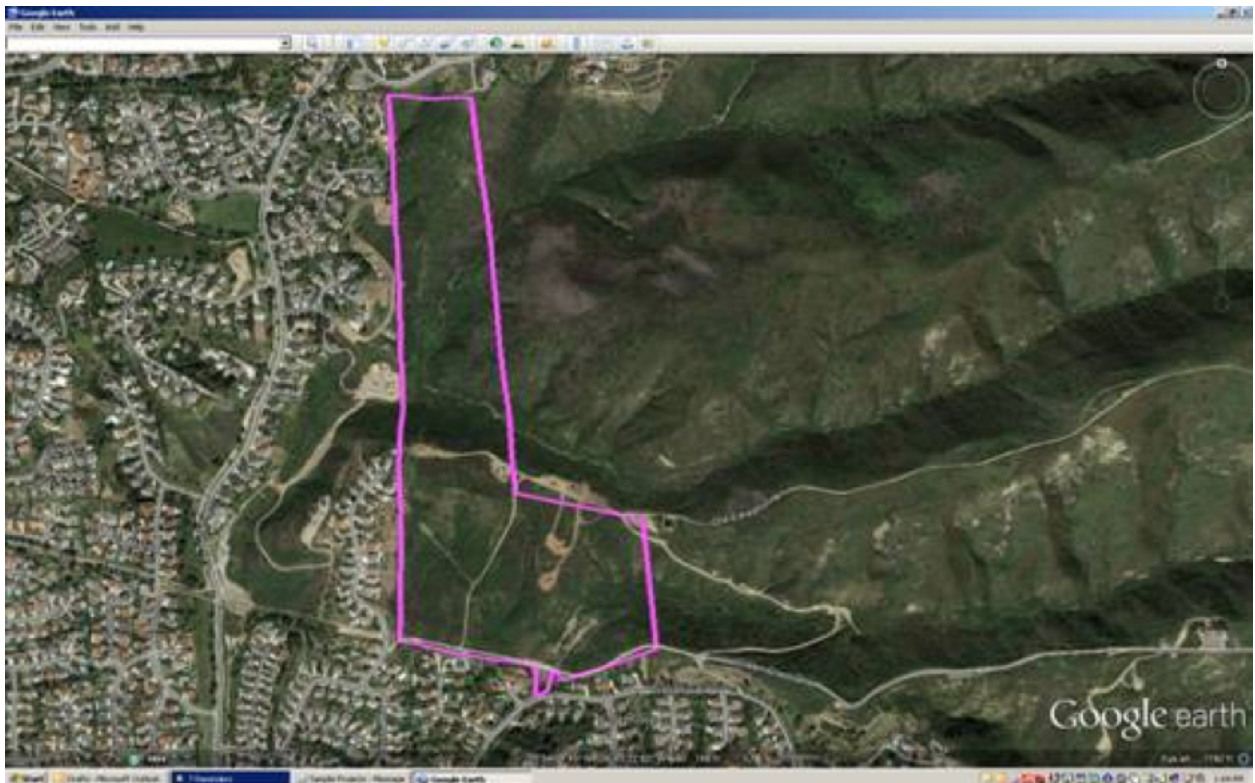
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tyoung@civtek.com

Cielo Vista – Yorba Linda, CA

Residential development master plan, product repositioning and development budget





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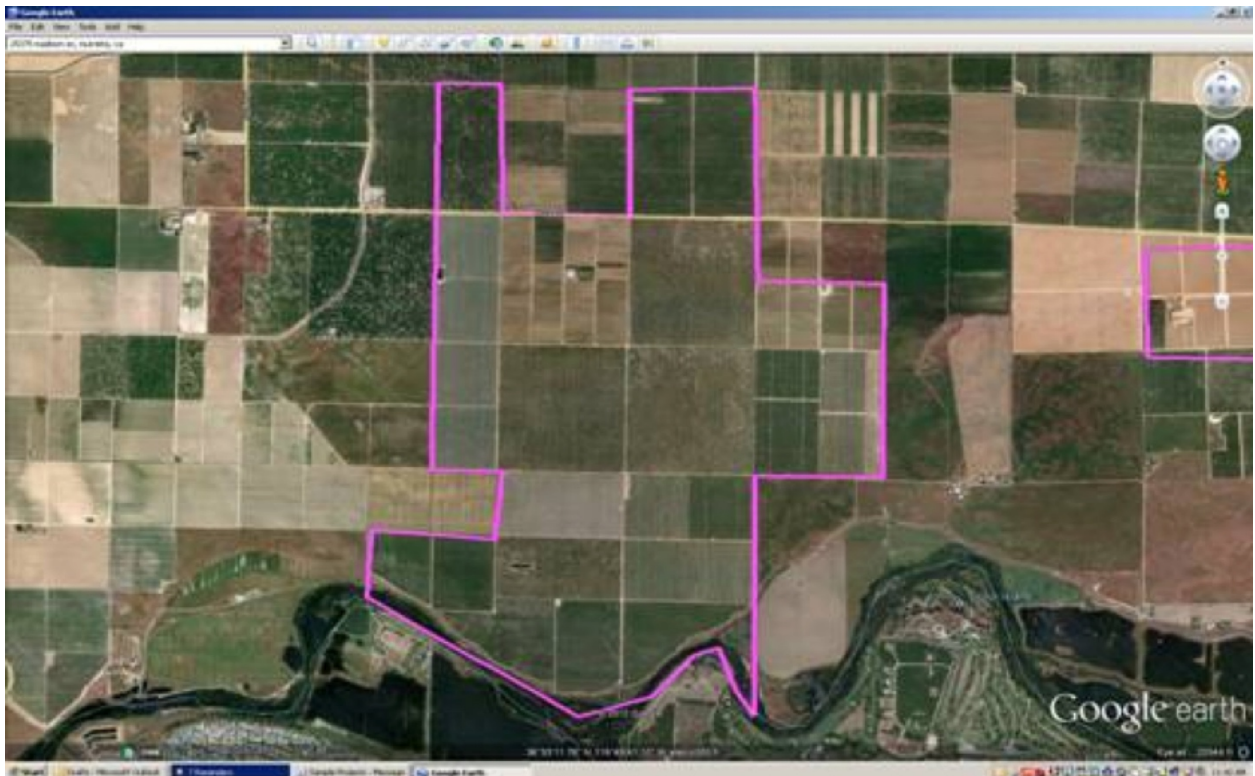
CivTek International

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tyoung@civtek.com

S&J Ranch Castle & Cooke – Madera County, CA
7,000 acre Master development plan and infrastructure budget for Murdock.





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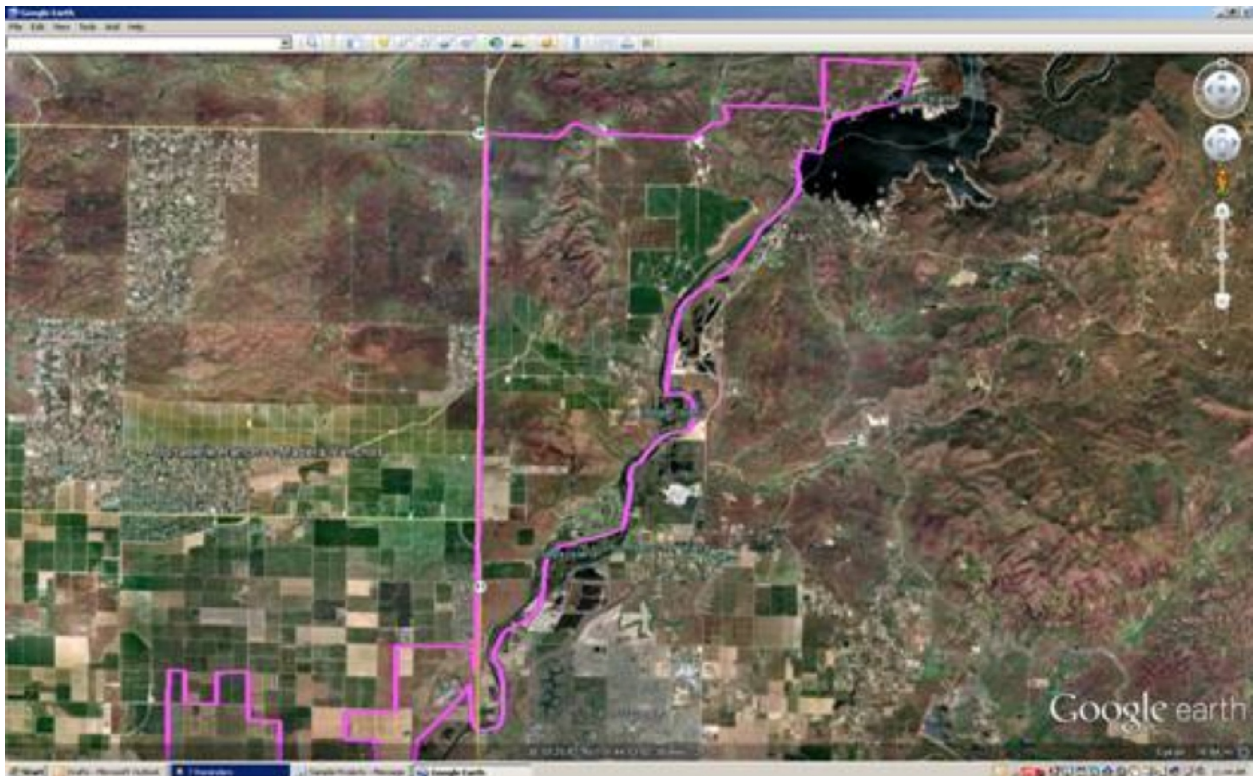
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University of California - County of Madera, CA
15,500 acre Master development and infrastructure plan





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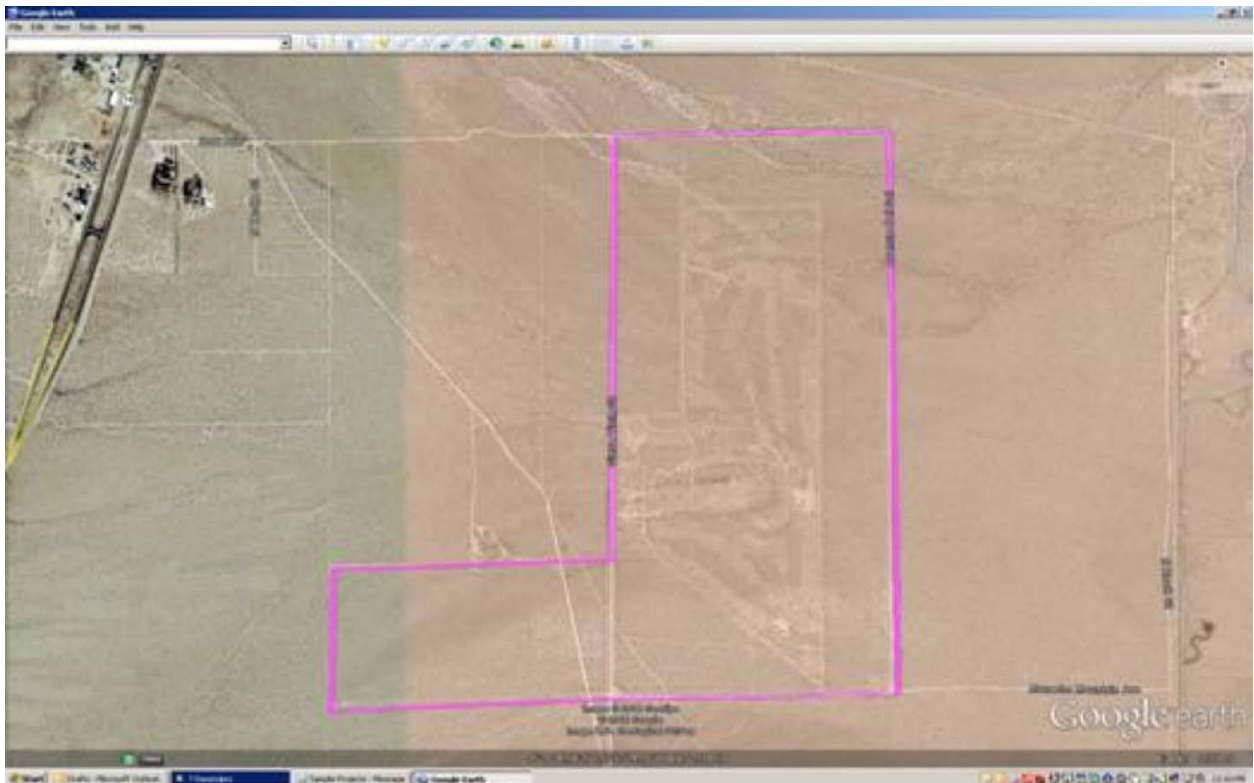
Ph +1.916-869-4097

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tyoung@civtek.com

Sierra Vista – Ridgecrest CA

340 acre, 520SF, 240MF golf community master plan, entitlement and funding strategy





National Economic Development
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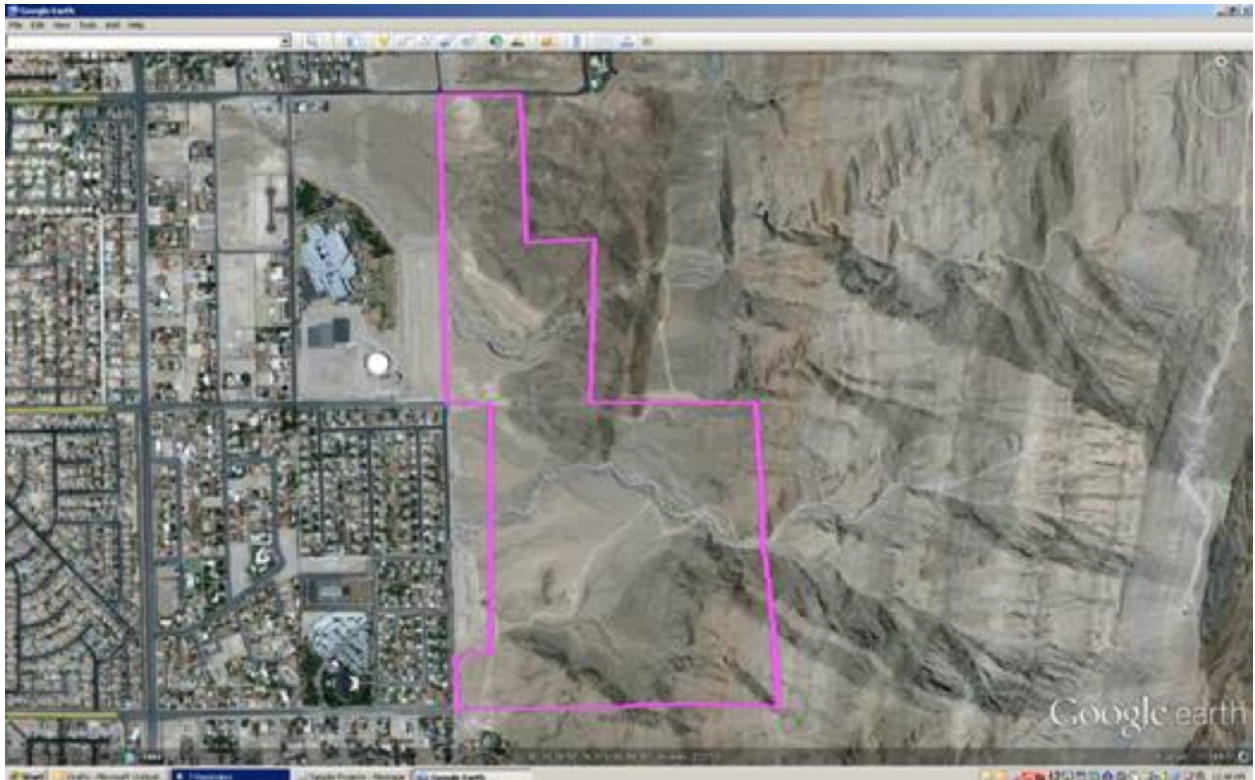
CivTek International

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tyoung@civtek.com

Sage Sunrise 195, Las Vegas, NV
200 acre, 300 lot master plan, TTM and infrastructure plan





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Heavy Civil Infrastructure

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tyoung@civtek.com

Sage Logandale, NV

240 unit equestrian master plan, TTM and entitlement extension





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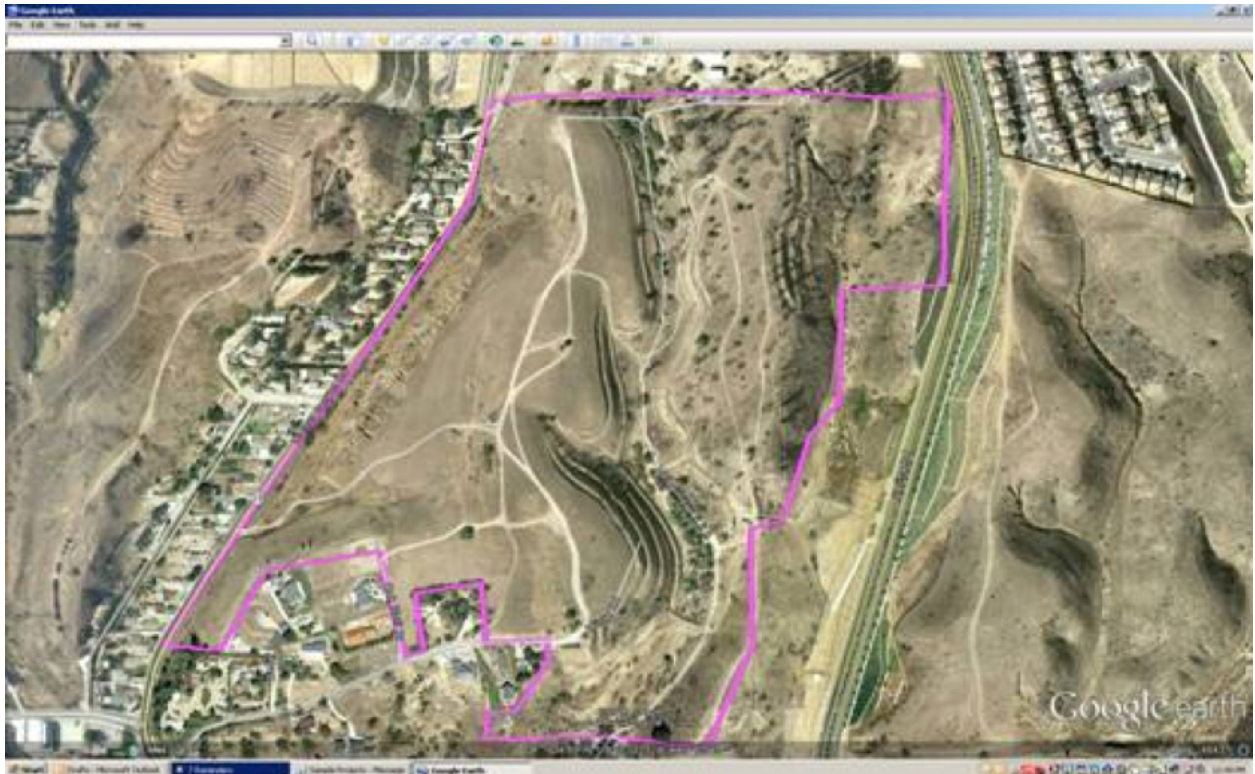
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Vistas – Moorepark, CA
110 lot conceptual grading and lotting plan





National Economic Development
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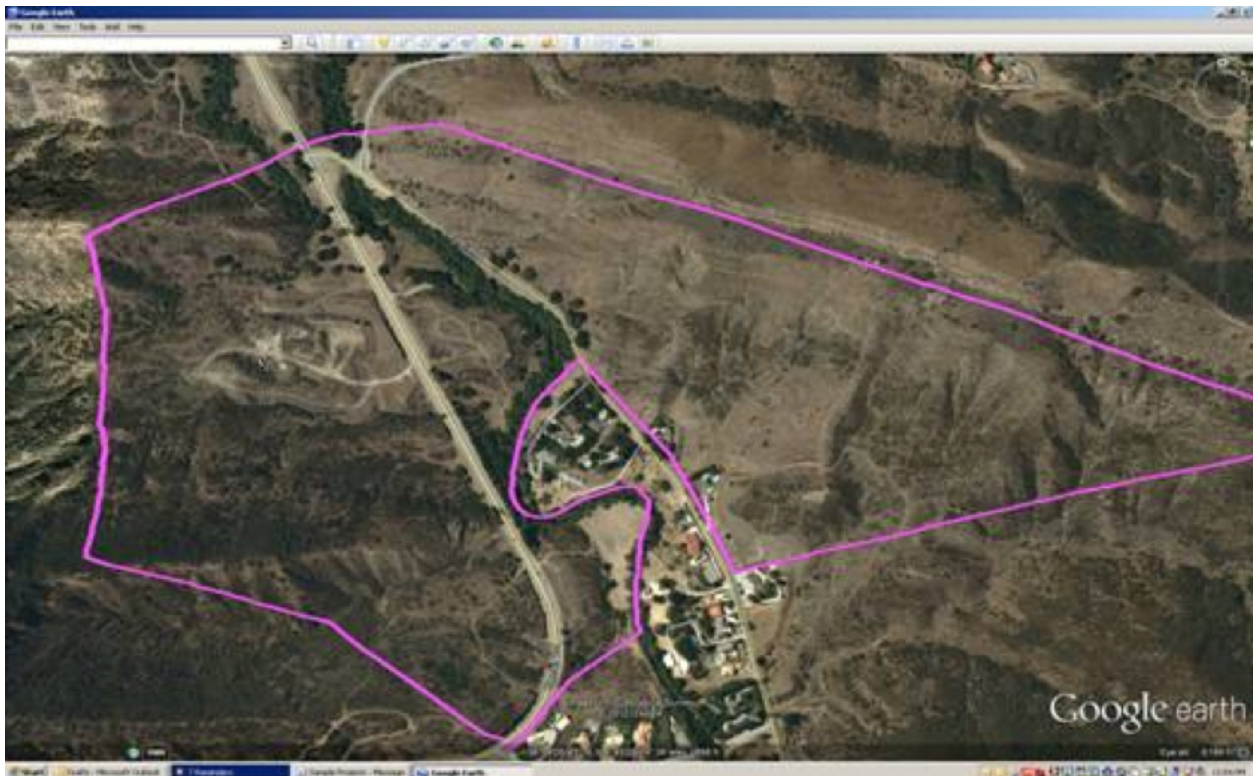
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tyoung@civtek.com

Live Oak Ranch – Agoura Hills, CA
250 lot master plan, infrastructure plan and cost budget





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CivTek International

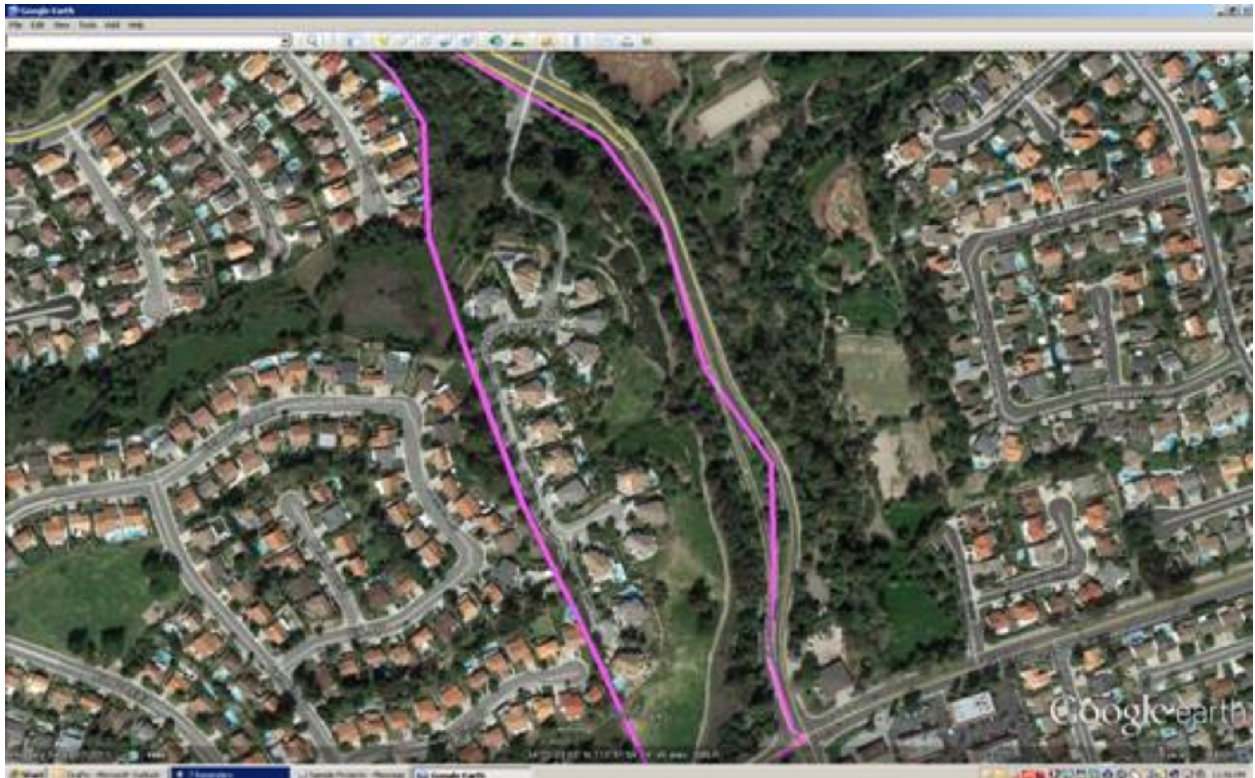
Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Rodeo Ridge Estates – Walnut, CA

BK work-out 150 custom lot subdivision design, entitlement and build-out





National Economic Development
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Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
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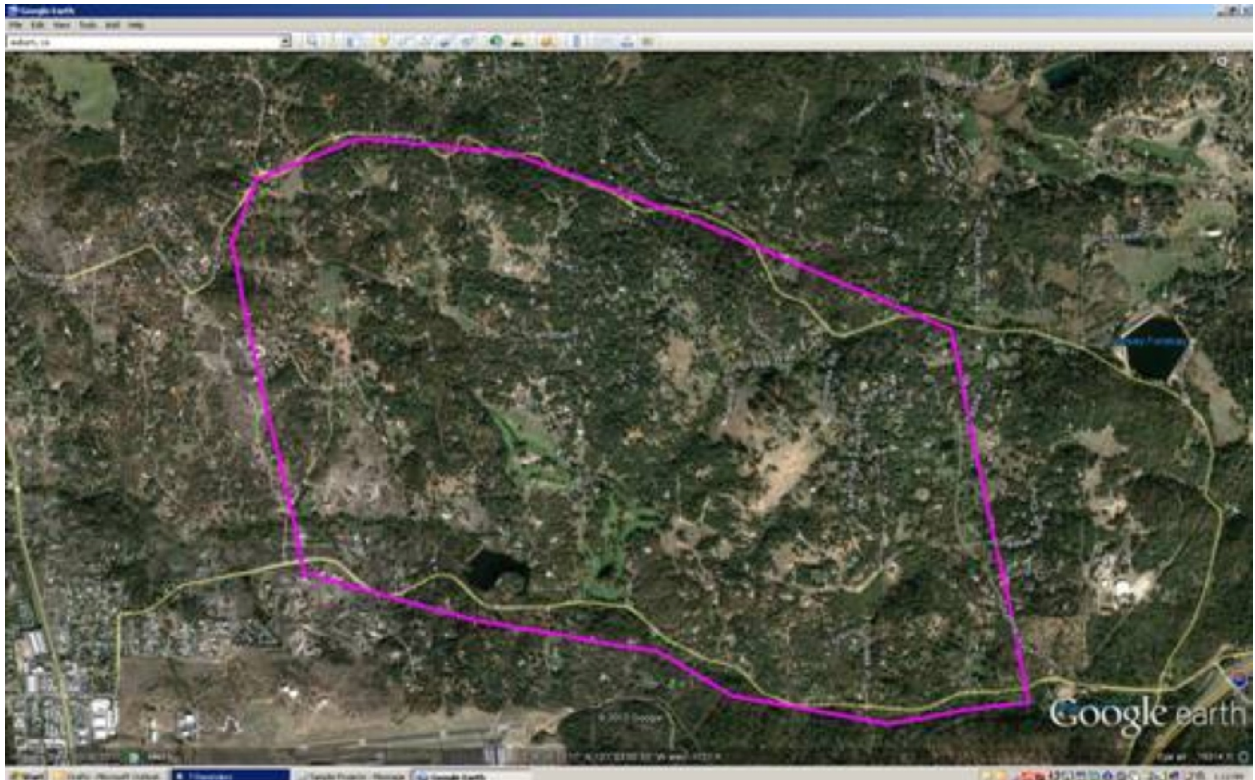
CivTek International

Ph +1.916-869-4097

www.civtek.com

tyoung@civtek.com

Auburn Ranch – Auburn, CA
5,000 acre development master concept plan





National Economic Development
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Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
Healthcare/Real Estate/Tourism
Natural Resources/Agriculture
Education/Media/Software
Heavy Civil Infrastructure

CivTek International

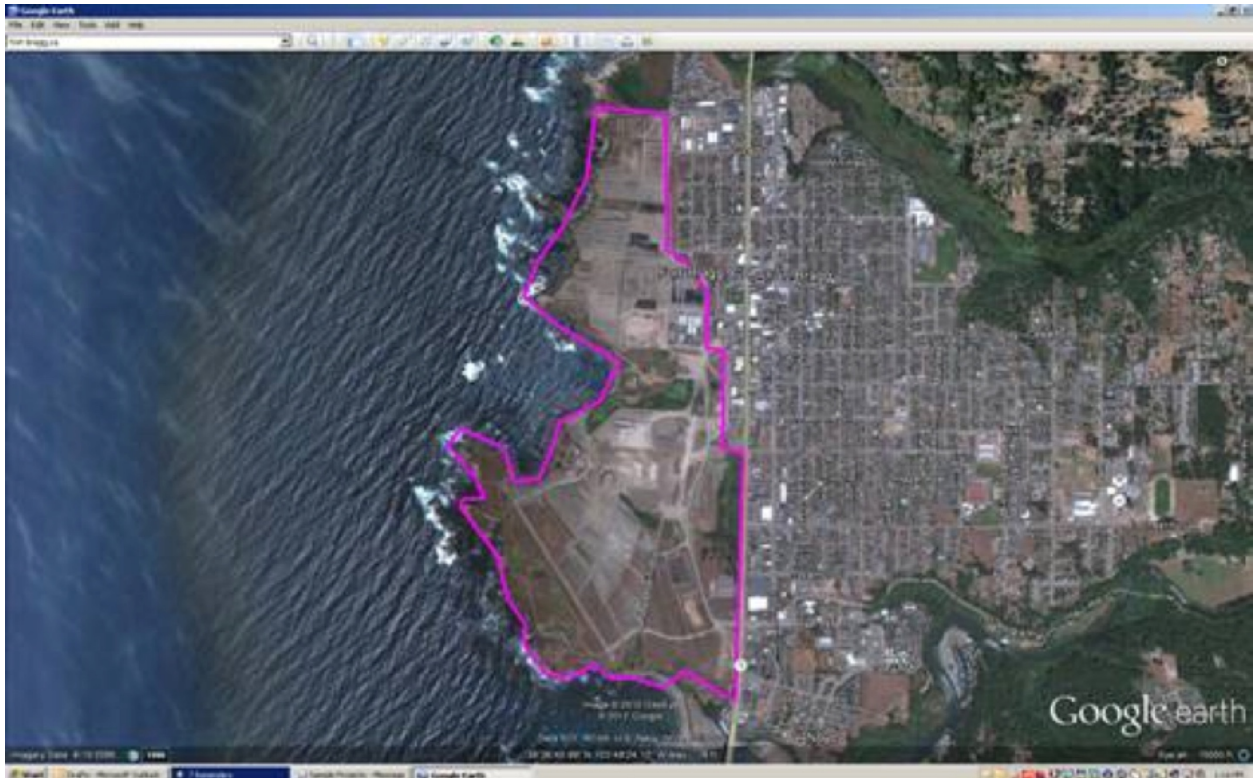
Ph +1.916-869-4097

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tyoung@civtek.com

Georgia Pacific - Fort Bragg, CA

Saw mill redevelopment master plan and value opinion





National Economic Development
Risk Managed by Diversification:
Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
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Heavy Civil Infrastructure

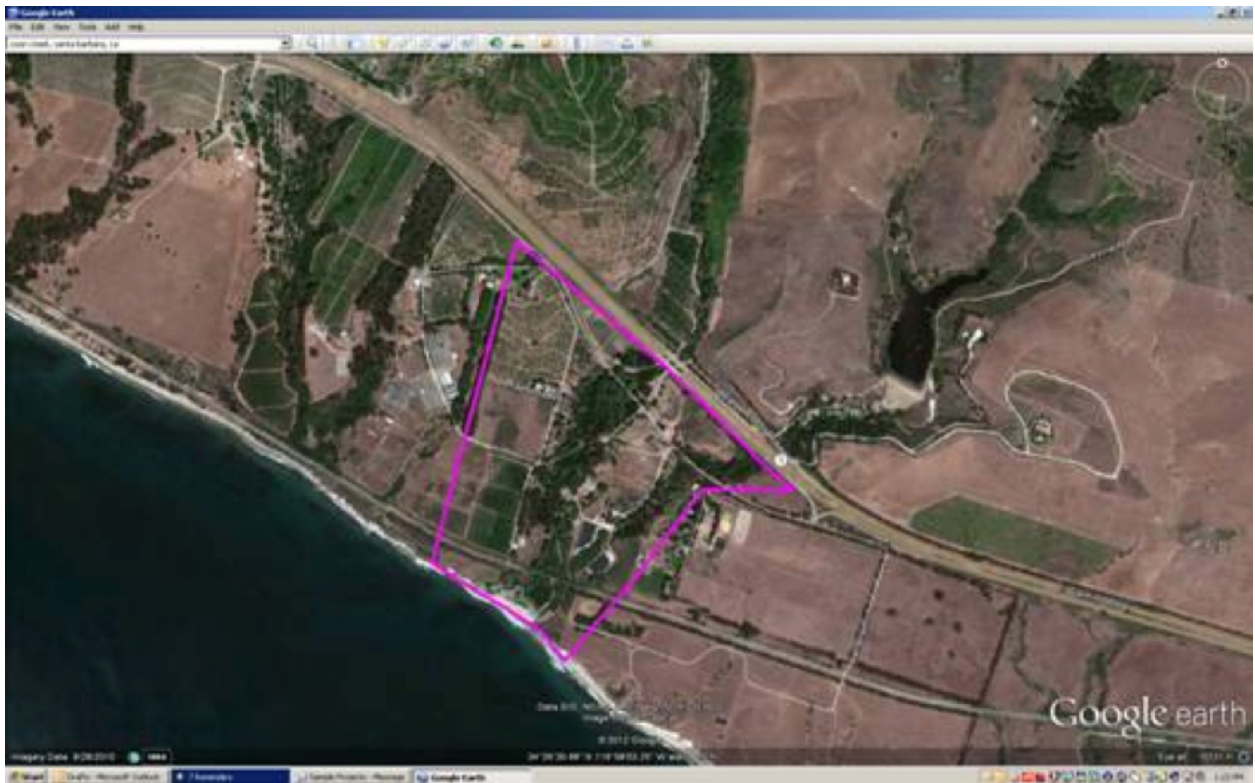
CivTek International

Ph +1.916-869-4097

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tyoung@civtek.com

Coon Creek Steelhead Trout Fish Passage – Santa Barbara, CA
Watershed analysis and hydraulic restoration of blocked fish passageway from ocean to inland waterway





National Economic Development
Risk Managed by Diversification:
Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
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Education/Media/Software
Heavy Civil Infrastructure

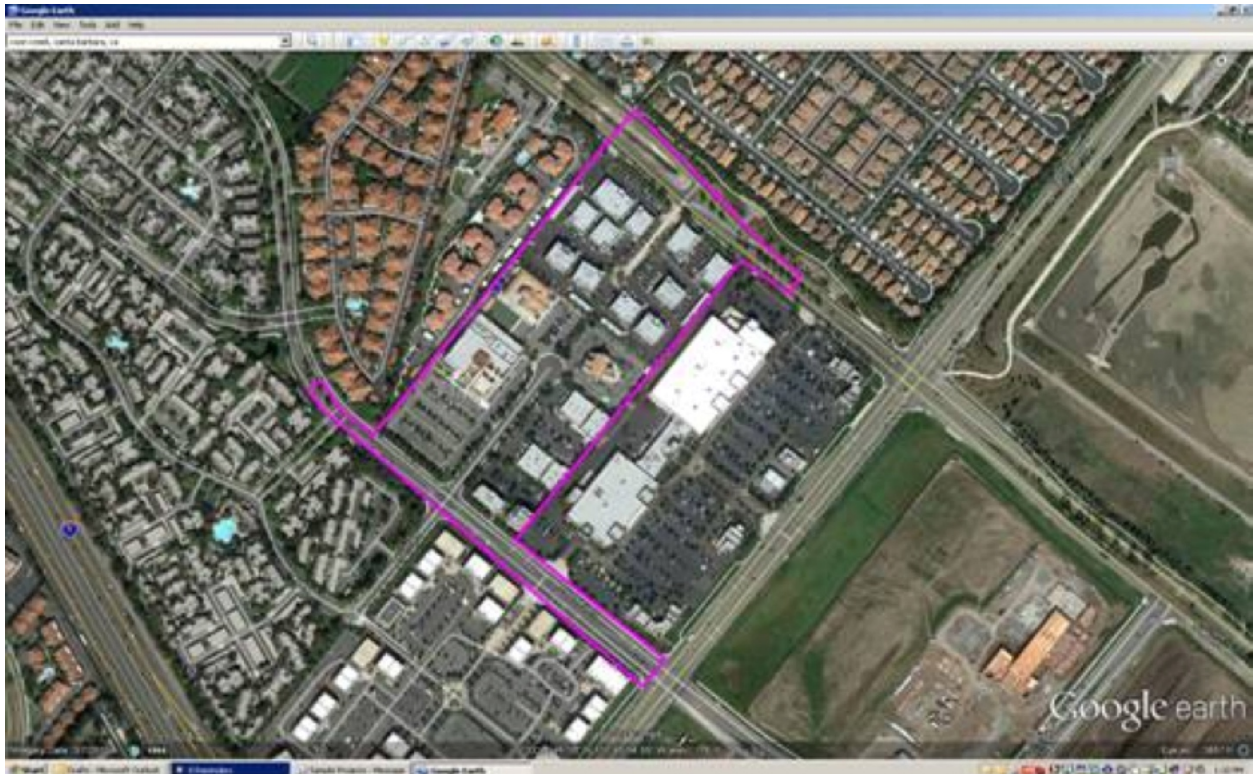
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Jeffrey Corporate Center – Irvine, CA
Subdivision and infrastructure for multiple office park buyers





National Economic Development
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Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
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Heavy Civil Infrastructure

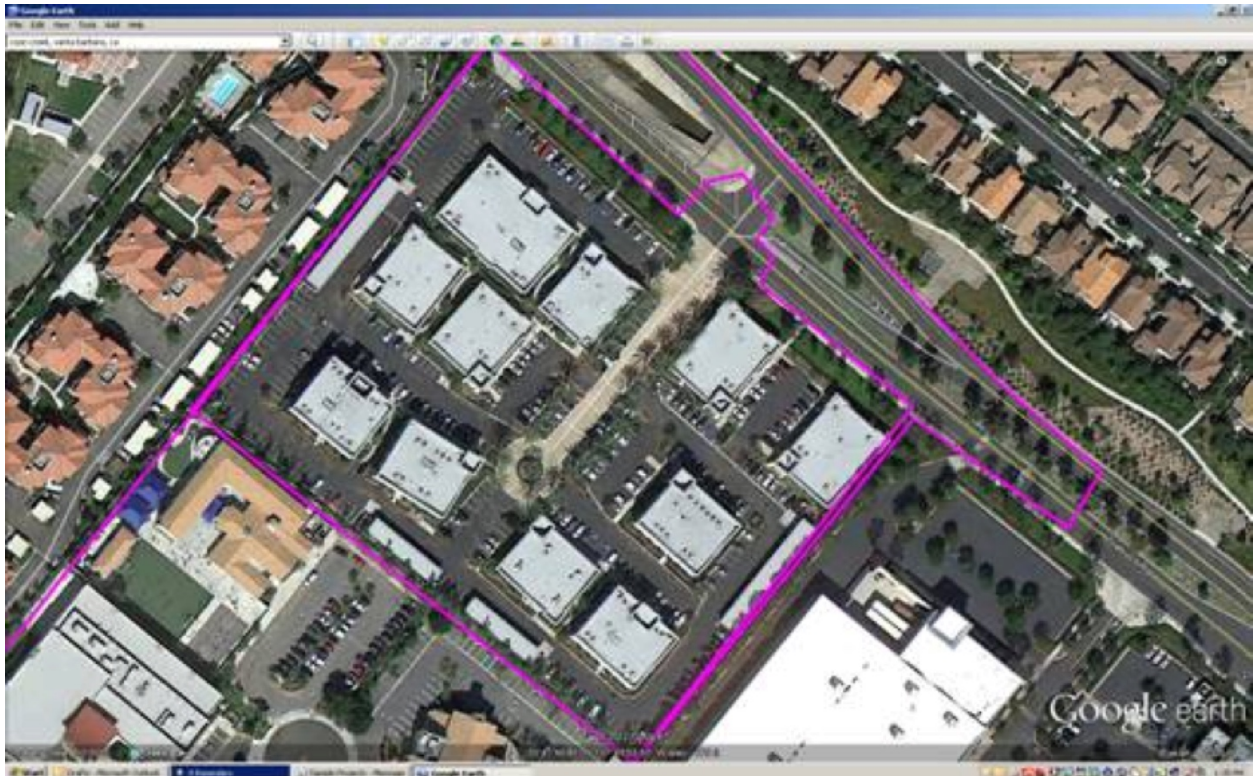
CivTek International

Ph +1.916-869-4097

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tyoung@civtek.com

Trabuco Office Condos – Irvine, CA
Final site design, permitting and condo subdivision





National Economic Development
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Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
Healthcare/Real Estate/Tourism
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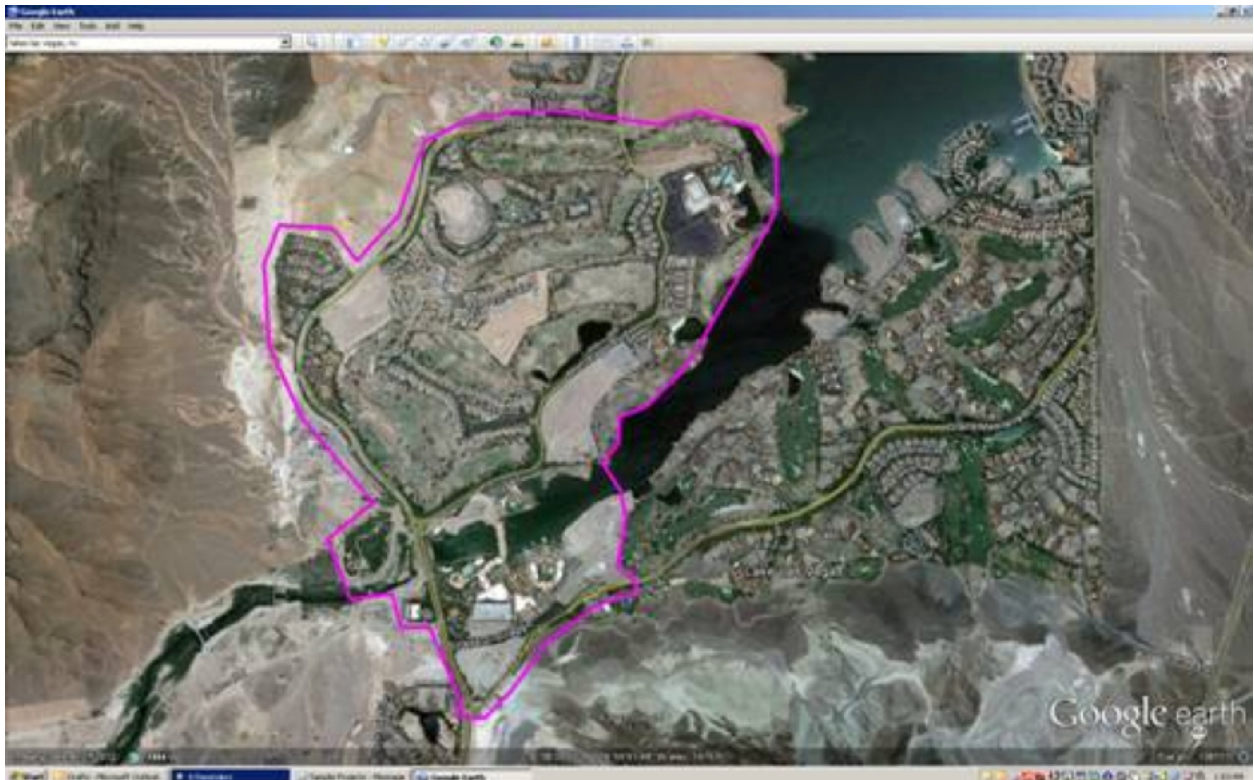
Ph +1.916-869-4097

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The Lakes, Las Vegas, NV

Phase 1 master plan and utility system design advisory





National Economic Development
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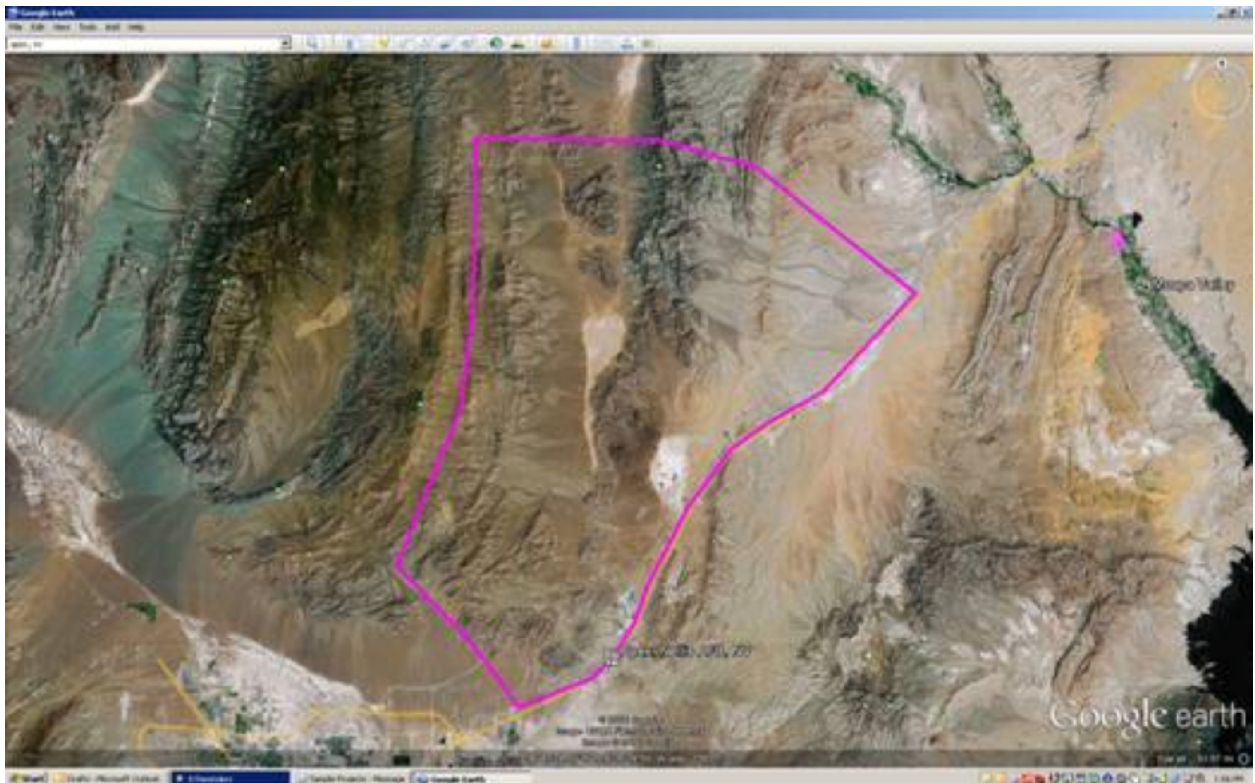
Ph +1.916-869-4097

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tyoung@civtek.com

Apex Heavy Industry Park, NV

26,000 acre heavy high-hazard industry park master plan, development strategy and risk control





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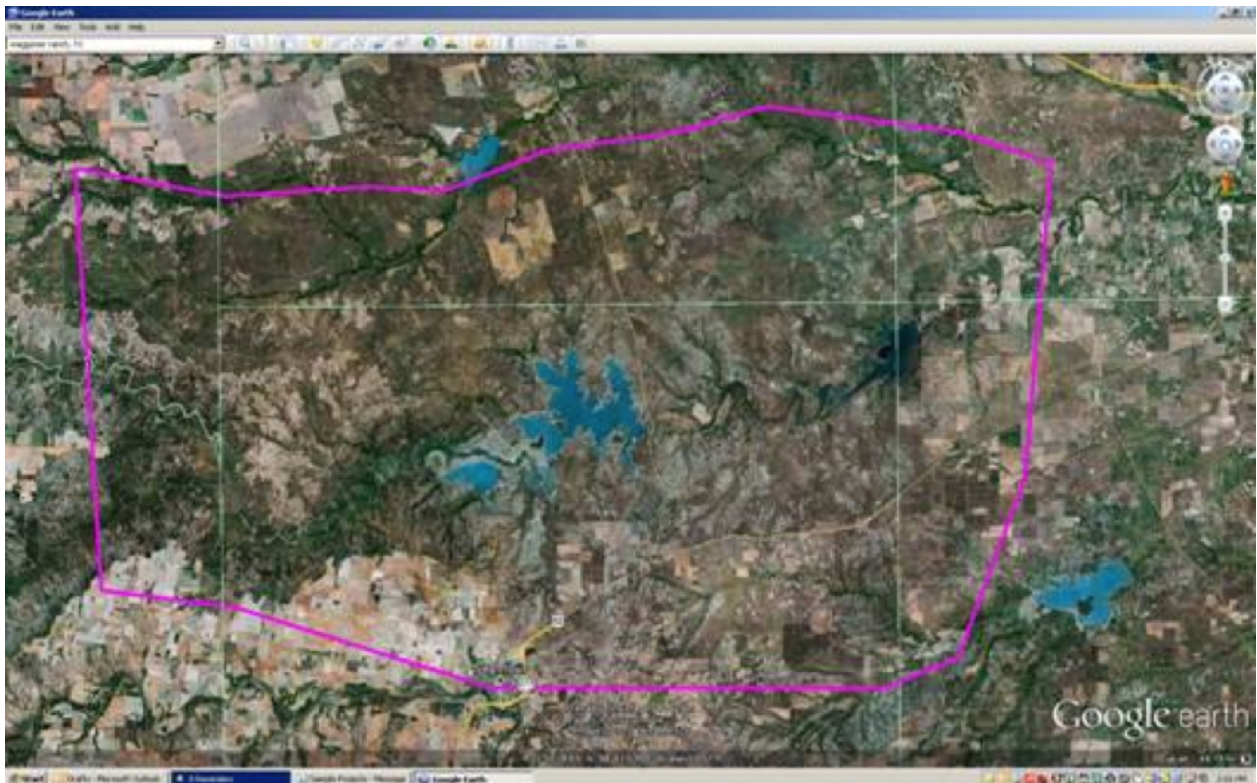
Ph +1.916-869-4097

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tyoung@civtek.com

Waggoner Ranch Estate – Texas

520,000 acre ranch, master plan concept, land use strategy, valuation, purchase and sale negotiation support





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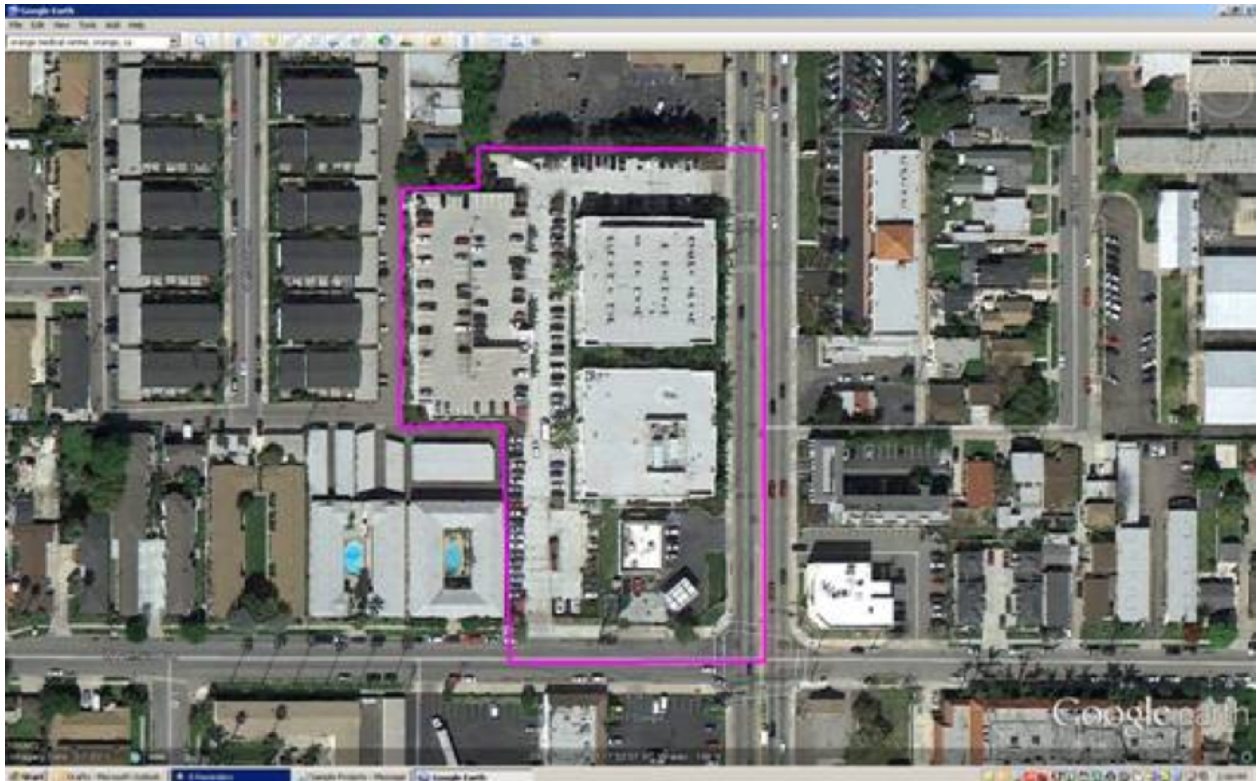
Ph +1.916-869-4097

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tyoung@civtek.com

Orange Medical Center – Orange, CA

2 MOB center with parking structure, design, entitle, permit and construction support





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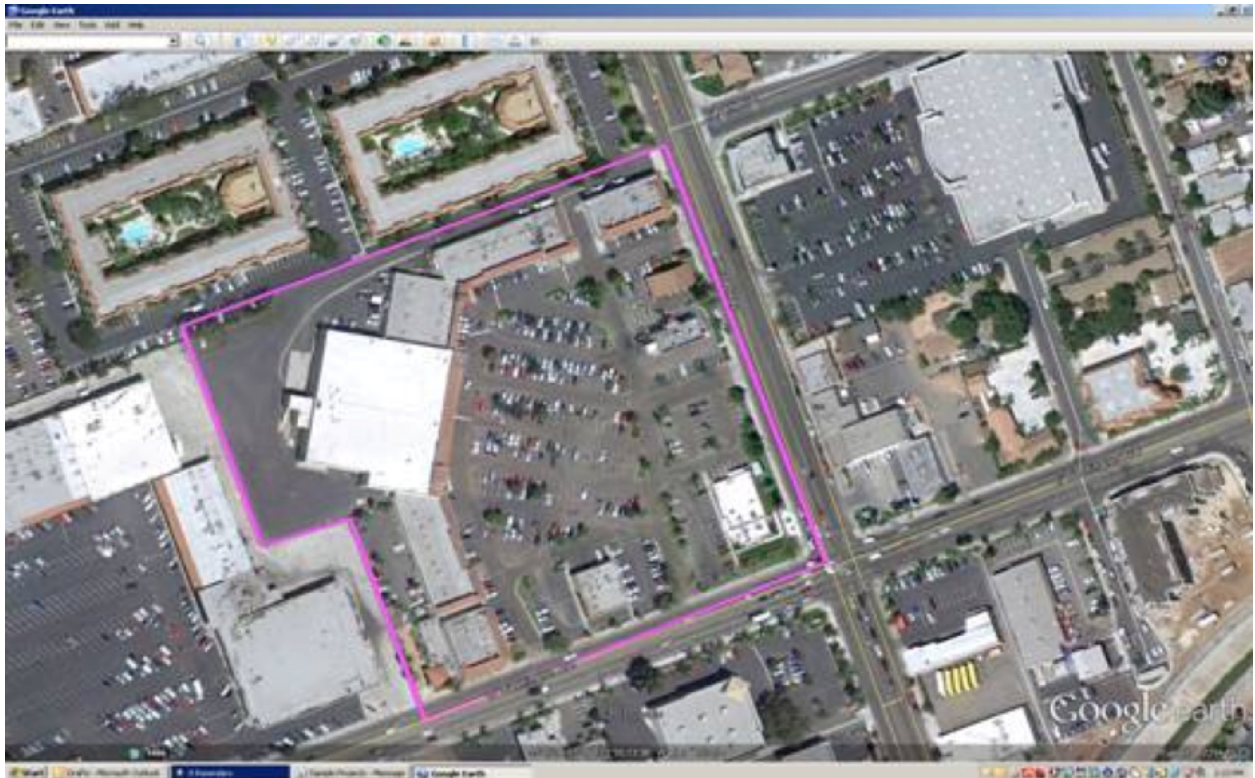
CivTek International

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tyoung@civtek.com

Vineyard Square Retail Center – Escondido, CA
12 acre retail center demo and redevelopment for Albertson's Anchor





National Economic Development
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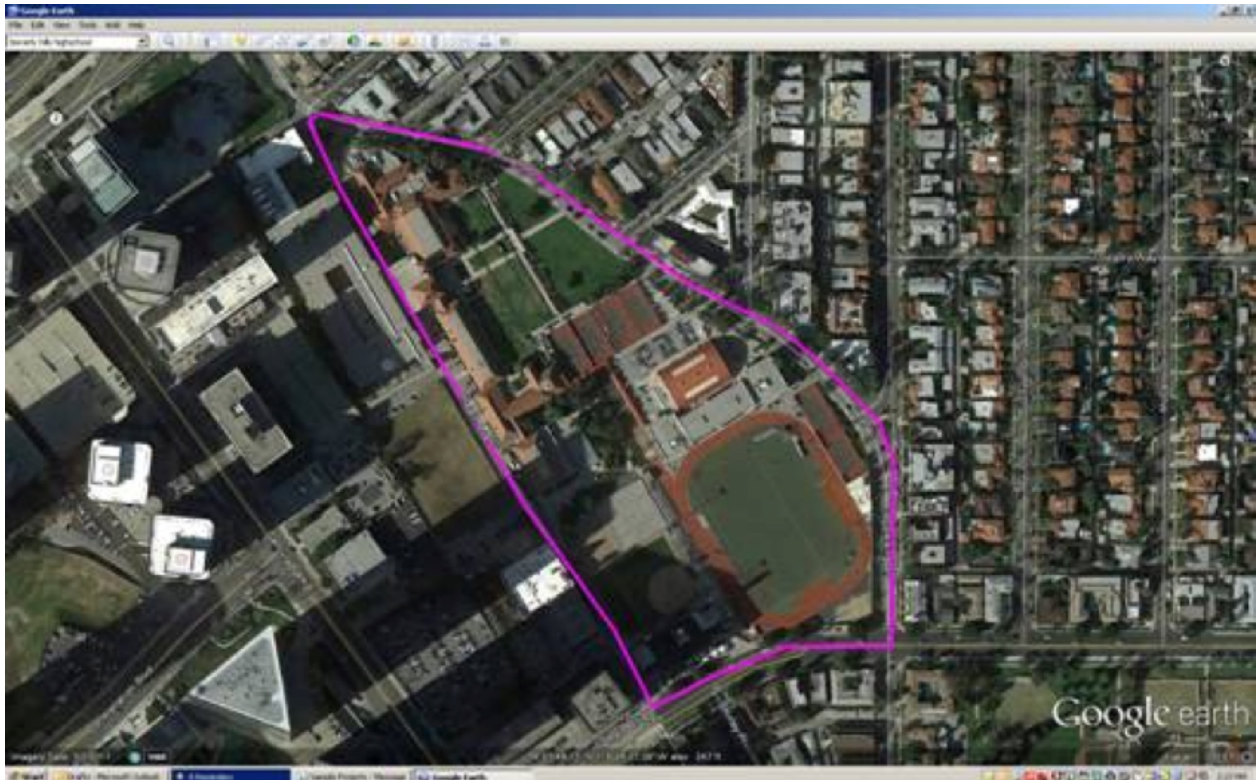
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tyoung@civtek.com

Beverly Hills High School – CA

Master infrastructure planning and remediation program





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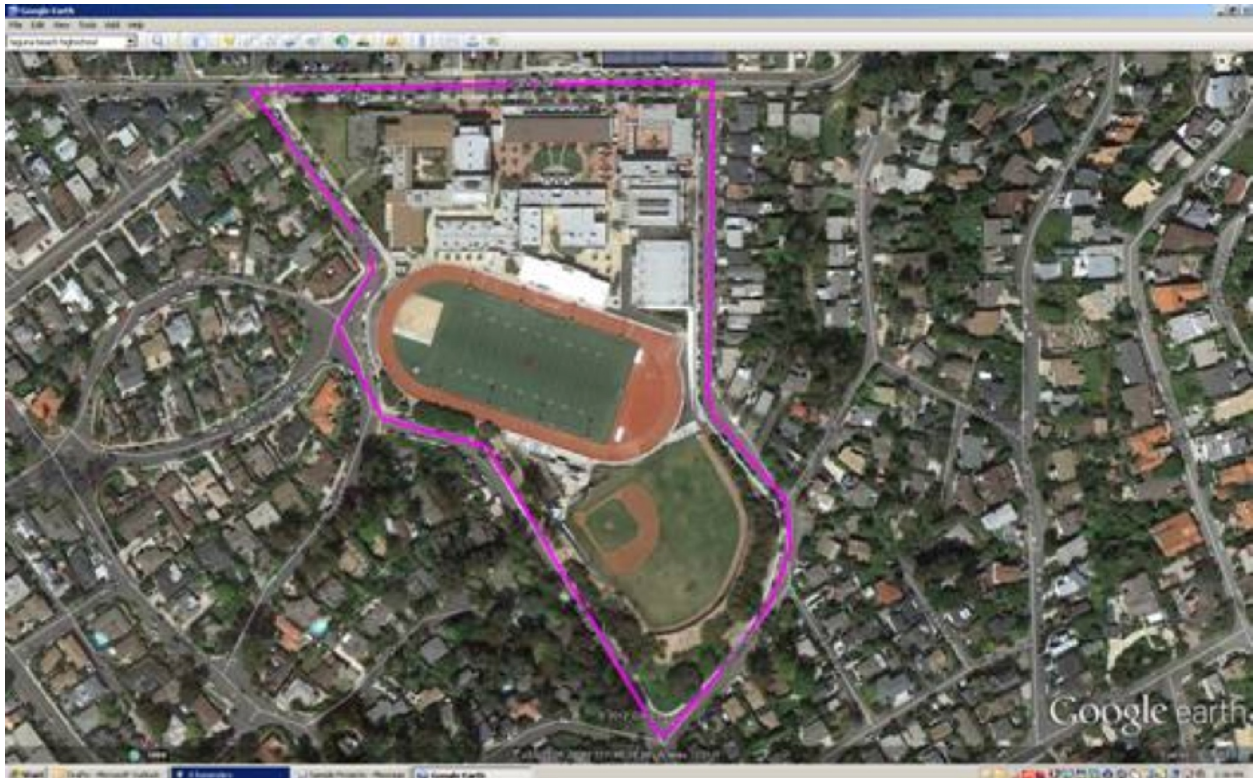
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tyoung@civtek.com

Laguna Beach High School – CA

Advisor to redevelopment and re-imaging team





National Economic Development
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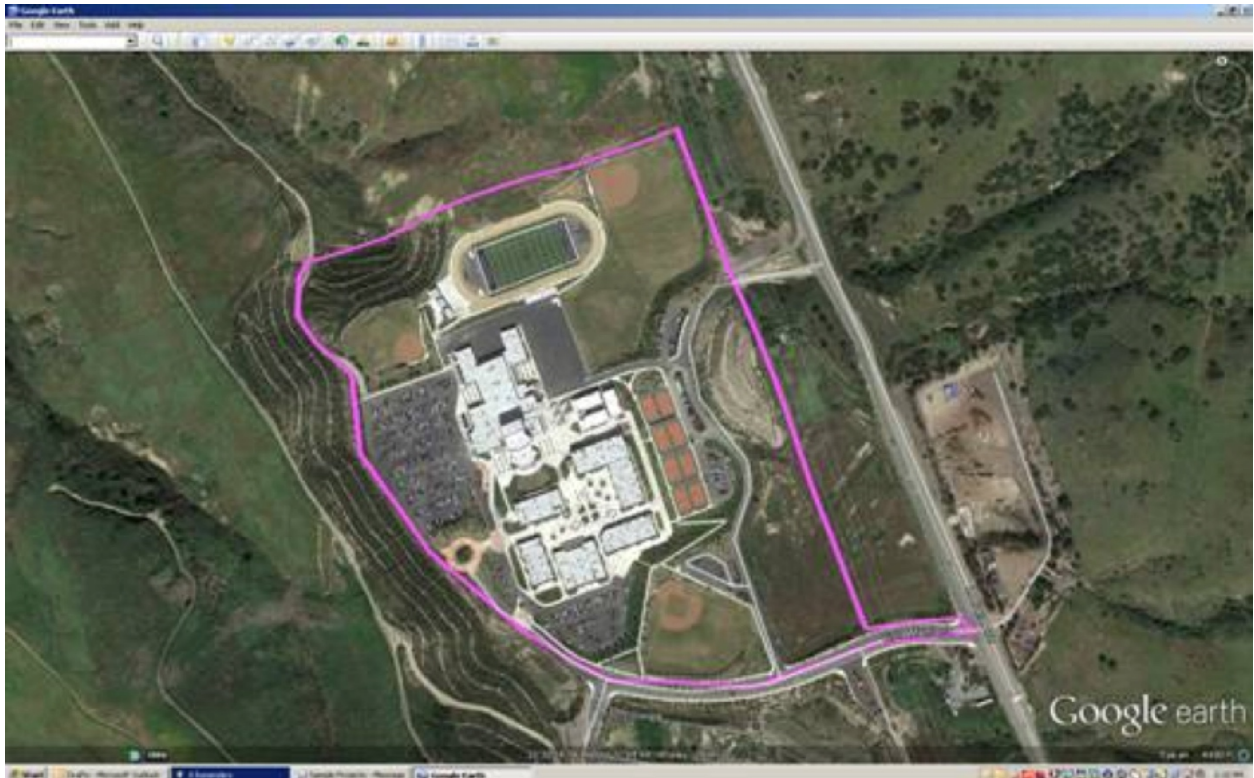
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San Juan Capistrano High School, CA
Site and infrastructure engineering





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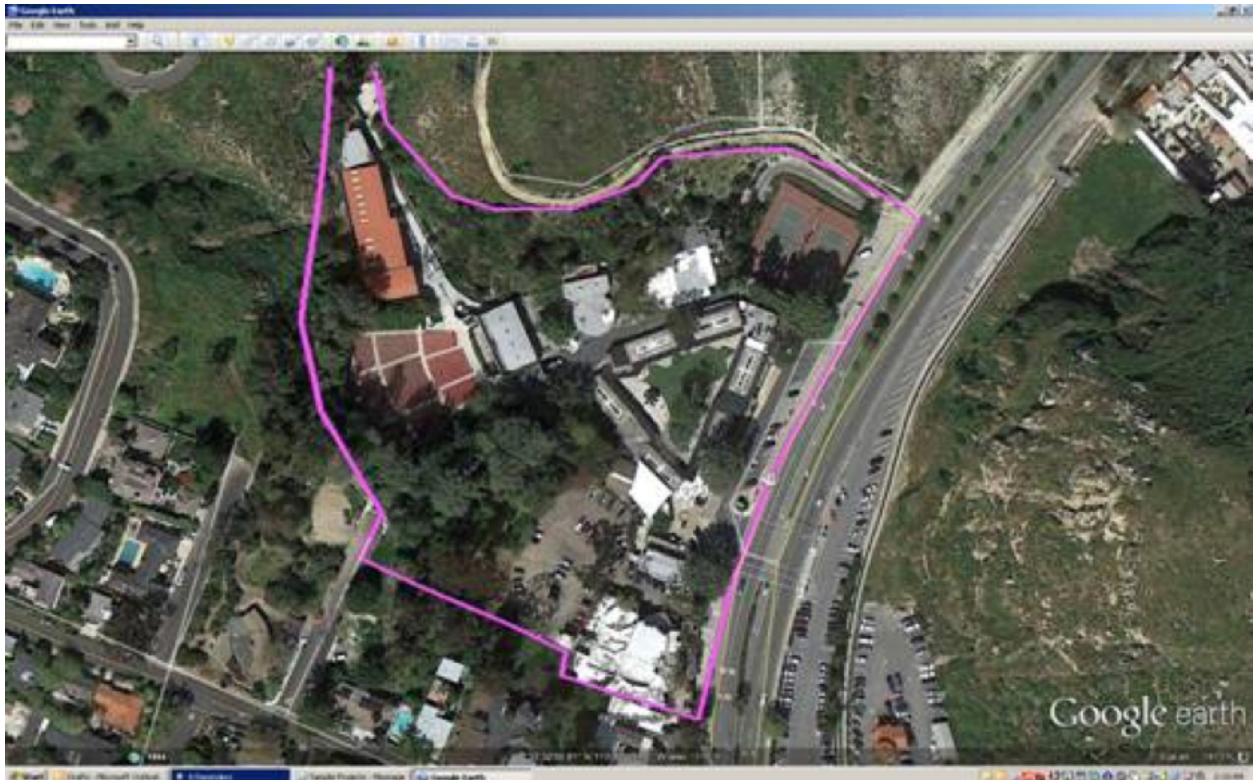
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Laguna Playhouse and Pageant of the Masters – Laguna Beach, CA
Legal descriptions and lease negotiation support





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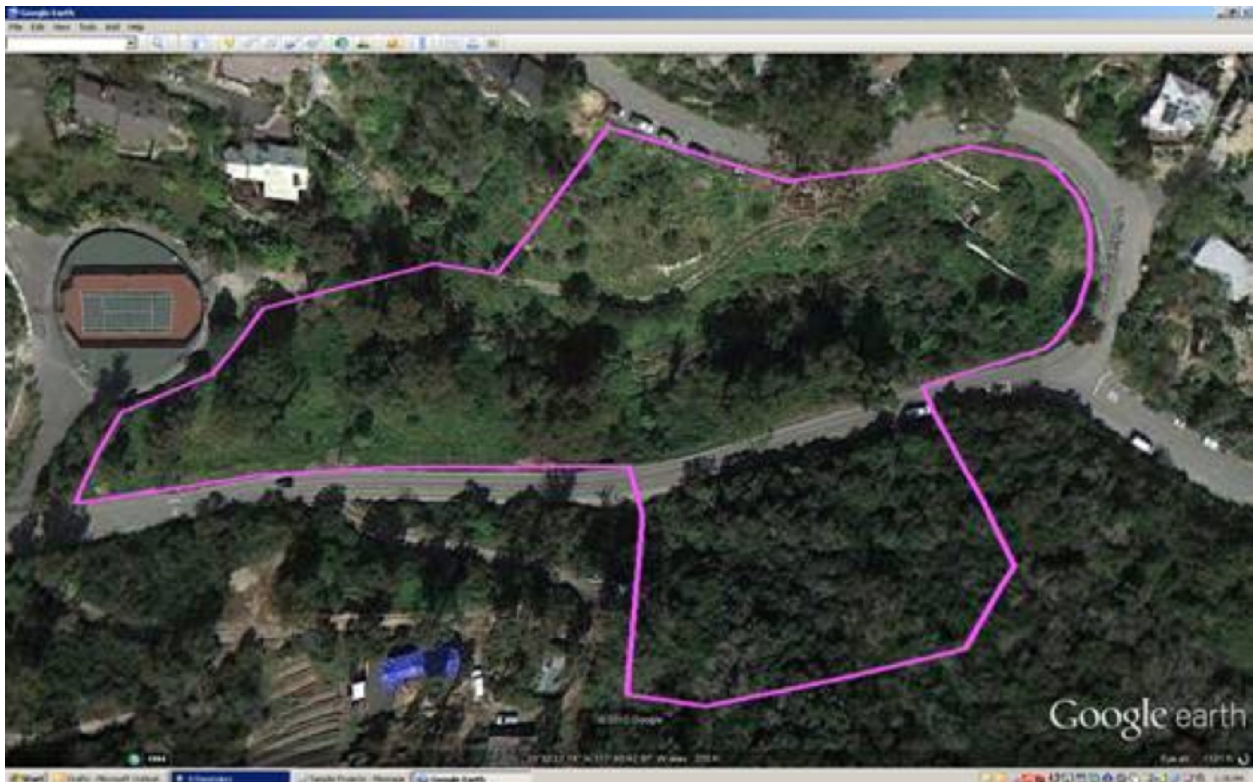
Ph +1.916-869-4097

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tyoung@civtek.com

Blue Bird Canyon Acquisition – Laguna Beach, CA

Legal descriptions, merger and open-space acquisition support to City Manager





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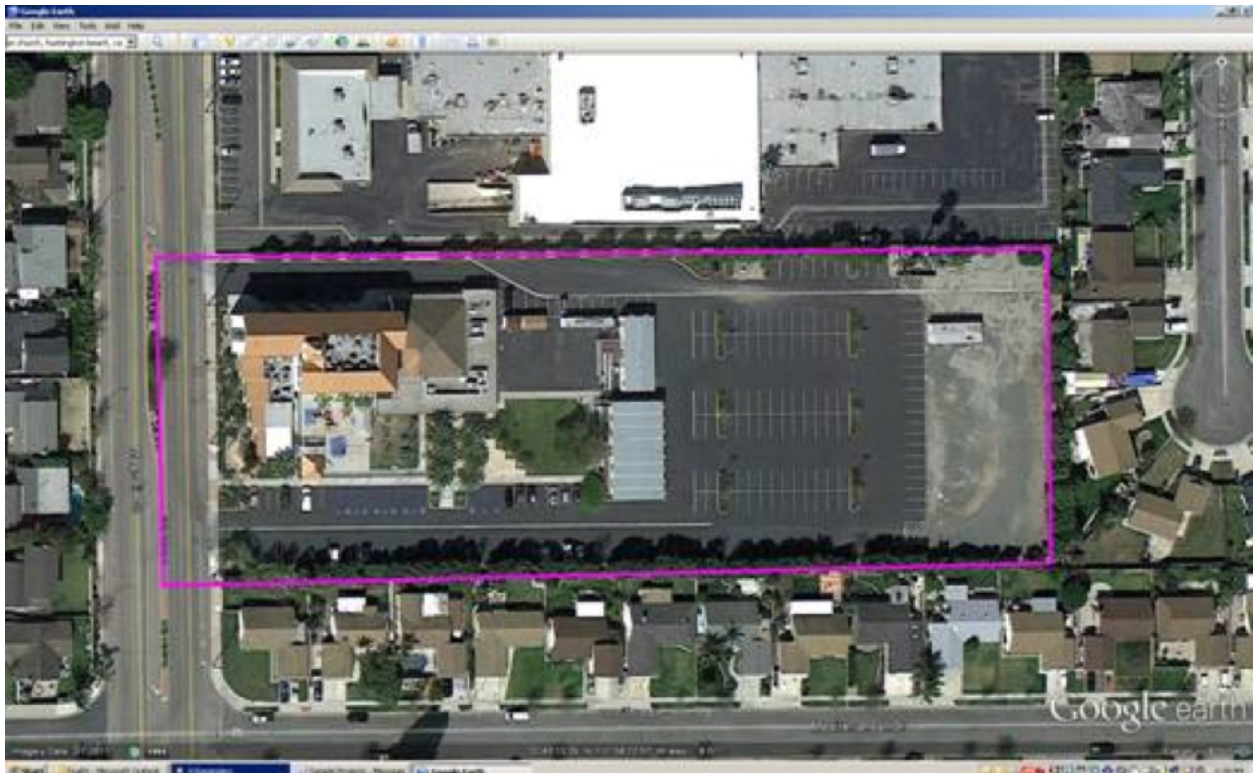
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tyoung@civtek.com

St Andrews Presbyterian Church – Newport Beach, CA

Site work and utilities design and permitting for demo and reconstruction program





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Christ Presbyterian Church – Huntington Beach, CA
Site redevelopment engineering





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Heavy Civil Infrastructure

CivTek International

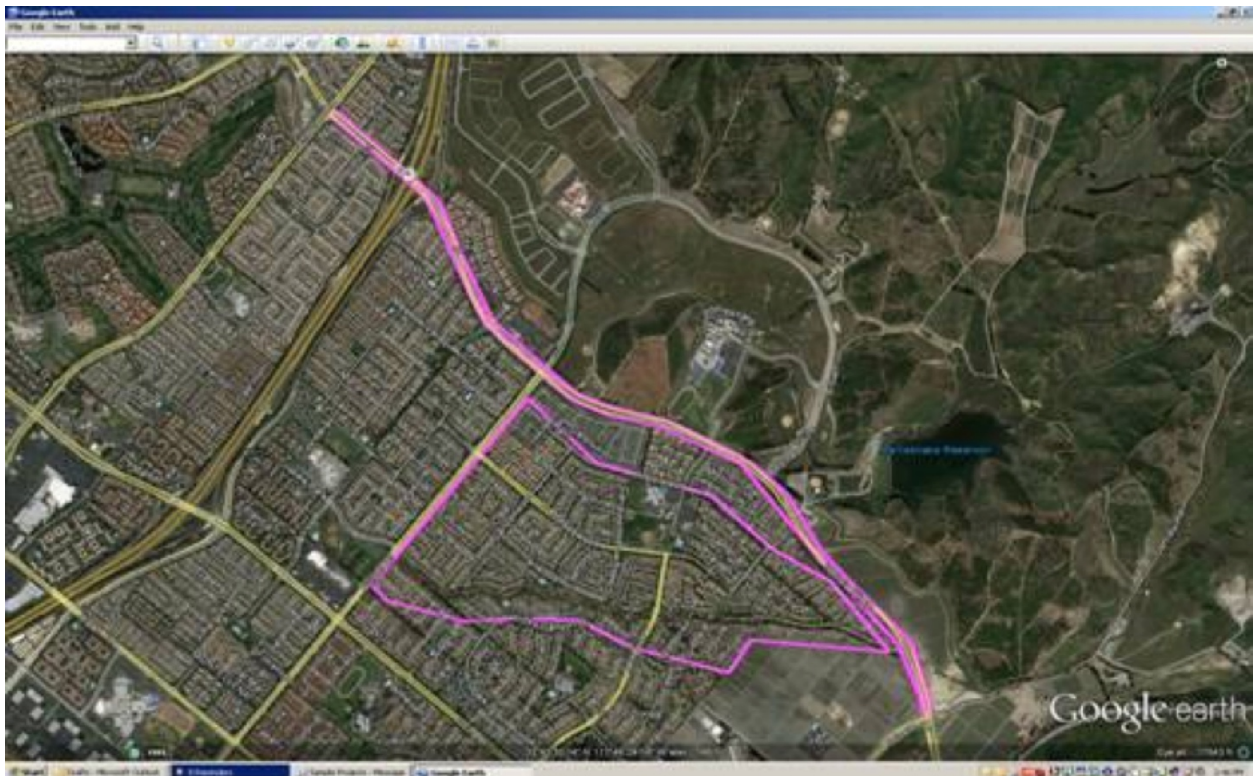
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Portola Parkway - Irvine, CA

Initial development phase infrastructure, Flood Plain recovery





National Economic Development
Risk Managed by Diversification:
Renewables/Water/Waste/Energy/Refineries
Transportation/Seaports/Airports/Logistics
Healthcare/Real Estate/Tourism
Natural Resources/Agriculture
Education/Media/Software
Heavy Civil Infrastructure

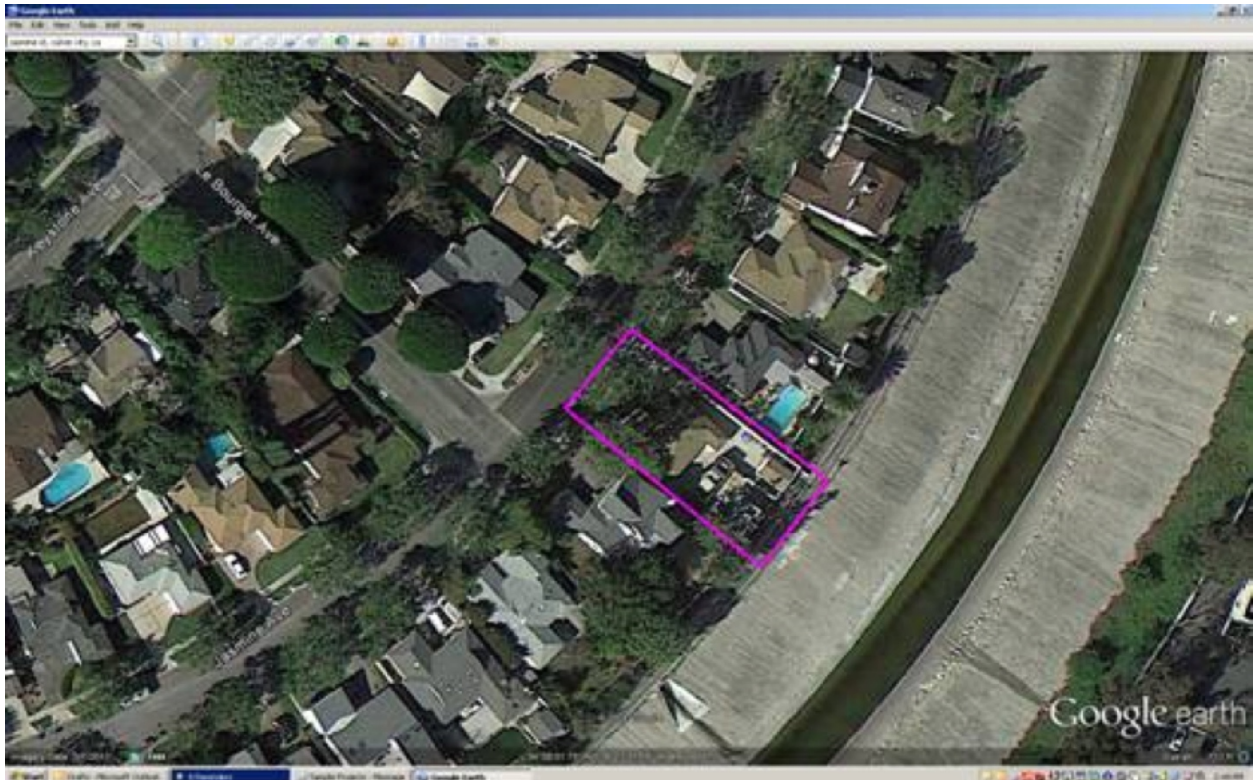
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Jasmine Pumping Station – Culver City, CA
CM Design-Build pump station disguised as a residence





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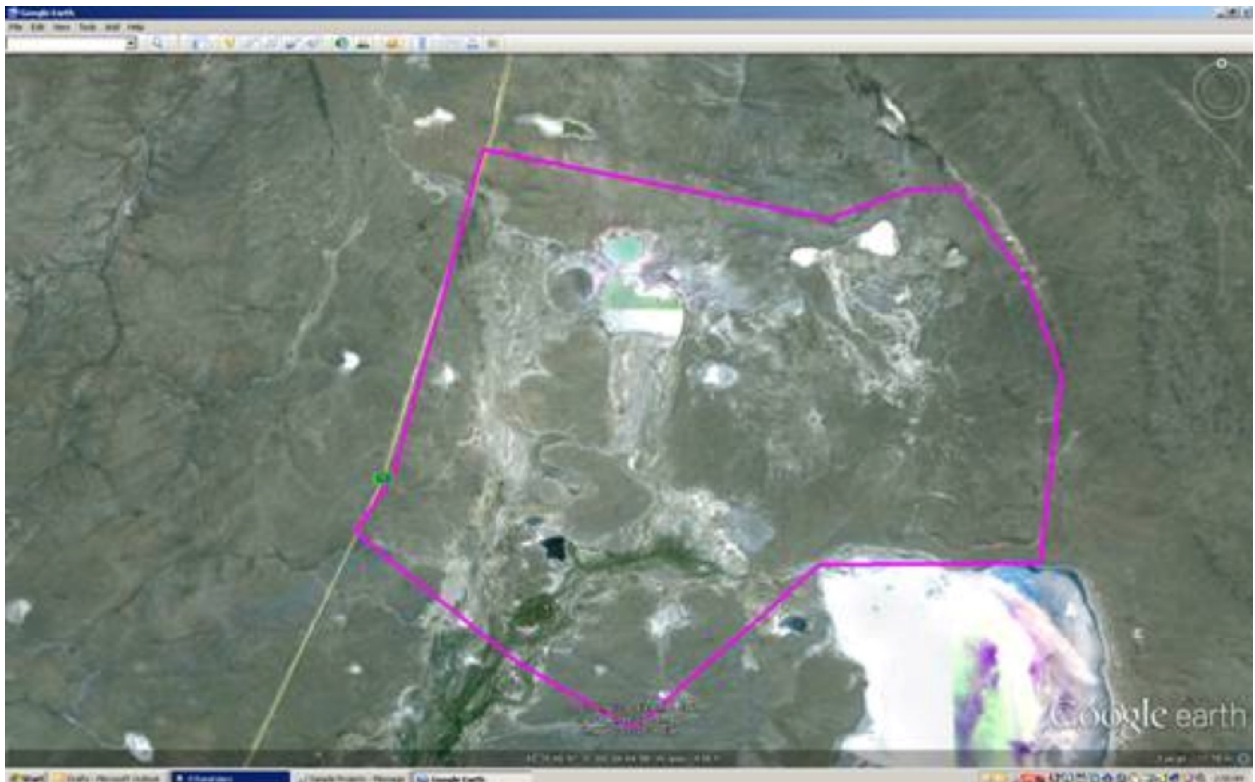
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Escal Gold Mine – Argentina

Master Plan access, paste plant, portals overburden stockpile





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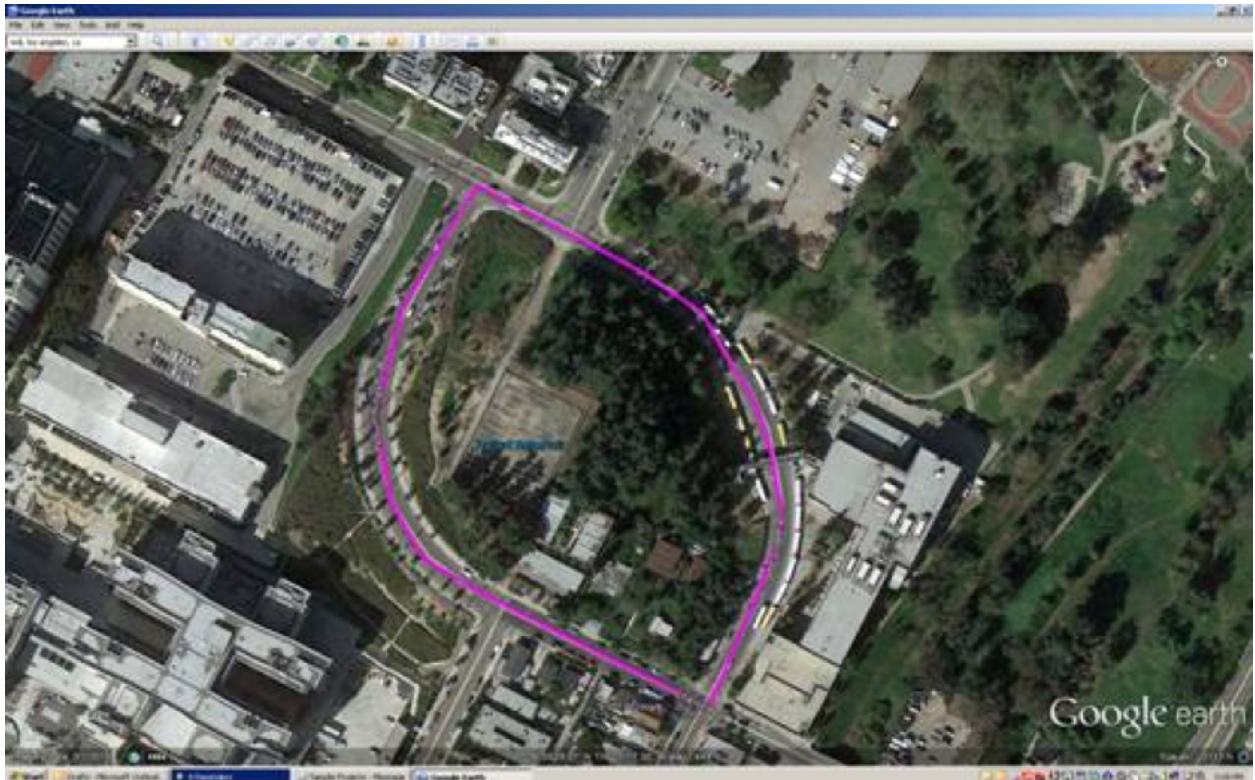
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Waste Disposal Superfund Site, La County, CA
Master plan for capping, closure and reuse





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Barranca Parkway Pedestrian Over Crossing, Irvine, CA

Elevated structure to increase clearance and re-aligned approaches to meet ADA accessibility

