



LOS ANGELES SECTION, REGION 9

San Bernardino & Riverside Counties Branch

FOUNDED 1953

Outstanding Project Awards

OUTSTANDING PRIVATE SECTOR CIVIL ENGINEERING PROJECT (Please select the category or categories below that are applicable to your project)

Project Name: _____

Project Address or Location: _____

Project Owner Name or Company: _____

Contact Person: _____

Address: _____

Phone: _____ e-mail: _____

On a separate sheet of paper, please describe the project, including any special features, innovations, and challenges. Consider all phases of the project, including planning, design, construction, and operation maintenance. Include information on the environmental impacts and public benefits of the project, a color photograph of the project and any articles from trade journals or newspapers about the project.

OUTSTANDING PUBLIC SECTOR CIVIL ENGINEERING PROJECT (Please select the category or categories below that are applicable to your project)

Project Name: NORTH MILLIKEN AVENUE GRADE SEPARATION PROJECT.

Project Address or Location: MILLIKEN AVENUE S/D I-10 FREEWAY, ONTARIO

Project Owner Name or Company: CITY OF ONTARIO

Contact Person: NABIL KASSIH

Address: 303 EAST "B" STREET, ONTARIO, CAL. 91764

Phone: (909) 395-2117 e-mail: nkassih@ci.ontario.ca.us

On a separate sheet of paper, please describe the project, including any special features, innovations, and challenges. Consider all phases of the project, including planning, design, construction, and operation maintenance. Include information on the environmental impacts and public benefits of the project, a color photograph of the project and any articles from trade journals or newspapers about the project.

Award Category for ASCE Region 9 Consideration (please check (✓) all that apply)

<input type="checkbox"/>	Airports & Ports Project
<input type="checkbox"/>	Architectural Engineering Project
<input type="checkbox"/>	Bikeways & Trails Project
<input checked="" type="checkbox"/>	Bridge Project
<input type="checkbox"/>	Community Improvement Project
<input checked="" type="checkbox"/>	Construction Project
<input type="checkbox"/>	Energy Project

<input type="checkbox"/>	Environmental Engineering Project
<input type="checkbox"/>	Flood Management Project
<input type="checkbox"/>	Geotechnical Project
<input type="checkbox"/>	Historical Renovation Project
<input type="checkbox"/>	Parks & Recreation Project
<input checked="" type="checkbox"/>	Roadway & Highway Project
<input type="checkbox"/>	Small Project

<input type="checkbox"/>	Structural Engineering Project
<input type="checkbox"/>	Sustainable Engineering Project
<input type="checkbox"/>	Transportation Project
<input type="checkbox"/>	Urban or Land Development Project
<input type="checkbox"/>	Water Project
<input type="checkbox"/>	Water/Wastewater Treatment Project

(The following must be completed with each nomination)

THIS NOMINATION HAS BEEN SUBMITTED BY:

Name: NABIL KASSIH

Title: ASSISTANT CITY ENGINEER

Employer: CITY OF ONTARIO

Address: 303 EAST "B" STREET, ONTARIO, CAL 91764

Phone: (909) 395-2117 e-mail: nkassih@ci.ontario.ca.us

All nomination forms and supporting documents are the property of the San Bernardino & Riverside Counties Branch and may be used at the Branch's discretion. Submittals will not be returned.

Please complete one form for each nomination.

NORTH MILLIKEN GRADE SEPARATION PROJECT

The North Milliken Grade Separation Project (Project) includes a roadway and railroad track grade separation at the Milliken Avenue and Union Pacific Railroad (UPRR) Alhambra Line crossing located in the City of Ontario. The intersection had an at grade configuration. The newly constructed railroad alignment raises over one and a half mile of class 1 UPRR double track utilizing Mechanically Stabilized Earth (MSE) retaining walls on both approach ends of a two span precast box beam railroad bridge over Milliken Avenue. A Statutory Notice of Exemption to address the environmental requirements for this Project was filed on 3/3/2008.

Currently there are more than 36 freight trains traversing Milliken Avenue averaging 5 minutes each, with estimates for more and longer trains in the future. This vital crossing was ranked 8 of 75 in priority on the California Public Utilities Commission (CPUC) Section 190 Grade Separation Priority Study list.

The Primary goal for this project was the ability to separate the train traffic from the vehicle traffic on Milliken Avenue with minimal disruption to existing traffic flow and without severing access to any of the surrounding businesses including two existing large TA truck stops.

During the planning and design stages of this project a variety of challenges were encountered including constructing a costly shoofly track on private properties behind the local industrial businesses utilizing an extensive temporary sheet pile shoring system, and incurring excessive project costs associated with right of way acquisition and temporary construction easements, preserve free traffic flow for both trains and vehicles through and around the project area and to maintain good rapport with everyone impacted by this project.

These challenges made the cost go up so much that it made the feasibility of funding this project in jeopardy. Considering the size, cost, location and importance of the project, the City of Ontario decided to hire a constructability review team to review and evaluate the multiple design options throughout the design period. This approach ended up saving the project millions of dollars. With this review the project was re-designed to use a new proprietary type of MSE walls known as "T- Walls". They're called "T walls" because they are constructed like the letter "T". With the use of a special double ended T-Wall, the south half of the bridge was constructed first. The north part of the double ended T-Wall acted as a shoring (retaining) wall allowing the tracks to be placed on the fully constructed ramps and over Milliken Avenue Bridge thus eliminating the "at grade" crossing 14 months earlier than anticipated. The time saving was realized because no at grade shoofly was constructed and no right of way acquisition or temporary construction easements were necessary as all of the track work was done within UPRR right of way. This type of construction also allowed for the project to maintain live train and vehicle traffic as Milliken Avenue was only closed during specified weekends. The north half of the structure was

then constructed using T-Wall sections while the shoring (retaining) section of the south T-Wall was buried. The final phase of the project was to widen Milliken Avenue under the structure to allow for 4 thru lanes northbound and 3 thru lanes south bound, and landscaping under the bridge.

The City of Ontario, San Bernardino Associated Governments (SANBAG) and the San Bernardino County Flood Control District (SBCFCD) all worked together to make this project a success. This project also aided with the construction of a much needed flood control basin for the SBCFCD at the Turner Basin site, which is approximately 3 miles from the Milliken Project. The City of Ontario coordinated the effort to design the select backfill requirements for the Project's one and a half mile ramps with the material that was generated from the Turner Basin site. This economical source of nearly 200,000 cubic yards of select backfill allowed for both the Milliken Avenue Grade Separation and Turner Basin Projects to be constructed simultaneously while saving more than \$2 Million for both agencies.

During construction, an alternative bridge type was proposed. All Project team members worked diligently to review and approve the change from a structural steel plate girder bridge to a precast box beam bridge resulting in a net savings of \$650,000.

The original cost estimate for the Project was \$63 Million as previously designed. The revised Engineer's construction estimate when the Project was bid was \$48 Million. The lowest responsible bidder was awarded the Project for \$27 Million, less than half the original cost. The Project was completed on time and under budget resulting in a taxpayer savings of approximately \$36 Million and a \$2 Million flood basin.























































