A PUBLICATION OF NECA-IBEW, NORTHERN CALIFORNIA

VOICE DATA VIDEO
SOUND AND COMMUNICATIONS
of Northern California

THE VOICE

2016
FOURTH QUARTER

LATEST SOUND & COMMUNICATIONS TECHNOLOGY NEWS

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The I-580 express lanes, two eastbound and one westbound are specially designed to improve the commute along the approximately 14-mile Tri-Valley corridor through Dublin, Pleasanton and Livermore.

PHOTO BY NICK ELIAS

Rosendin Electric Wires New I-580 Express Lanes To Help Speed Up Commute In The Tri-Valley Corridor

The new I-580 express lanes may speed up the East Bay commute, thanks to the work of Rosendin Electric. The I-580 express lane installation, the most advanced of its kind in the Bay Area, serves 700,000 users monthly.

Rosendin Electric wired all low voltage power in the new High Occupancy Vehicle (HOV) express lanes, including fiber, CAT6 and coaxial cabling. (See illustration pages 4-5).

The company began work on the express lanes in May 2015 and completed the project in December. Rosendin Electric had previously wired the I-680 Sunol Southbound express lane.

The electronic toll contractor for the I-580 project was Electronic Transaction Consultants Corporation (ETC). The Alameda County Transportation Commission (Alameda CTC) oversaw the $345 million highway improvement.

PHOTO BY NICK ELIAS

Rosendin Electric's work could speed up the commute.

The I-580 express lanes, two eastbound and one westbound, are specially designed lanes created to improve the commute along the approximately 14-mile Tri-Valley corridor through Dublin, Pleasanton

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A publication of the National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) of Northern California.

PHOTO COURTESY ROSENDIN ELECTRIC

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Rosendin Electric wires low voltage power in the new I-580 express lanes.

Rosendin Electric Wires New I-580 Express Lanes To Help Speed Up Commute In The Tri-Valley Corridor

I-580 HOV Express Lane Project Team:

CLIENT:
Alameda County Transportation Commission (Alameda CTC); Kanda Raj, Project Manager

ELECTRONIC TOLL CONTRACTOR:
Electronic Transaction Consultants Corporation (ETCC); Steve Hester, Senior Project Manager

ELECTRICAL CONTRACTOR:
Rosendin Electric, San Jose
Rosendin Electric Network Services

ROSENDIN ELECTRIC NETWORK SERVICES DIVISION MANAGER:
Ron Clarkson

ROSENDIN ELECTRIC NETWORK SERVICE PROJECT MANAGER:
Tony Tate

ROSENDIN ELECTRIC NETWORK SERVICES FOREMAN:
Eric Winterstein

NETWORK SERVICES TECHNICIANS:
Five technicians from IBEW Local 332 in San Jose; IBEW Local 595 in Dublin and IBEW Local 6 in San Francisco; Sergio Gonzales; Sione Fanua; Ariel Filongan; Howard Craig; Manny Home

ROSENDIN ELECTRIC ELECTRICIAN:
Leonard Morrison, IBEW Local 595

ROSENDIN ELECTRIC EXPRESS LANE SERVICES:
CAT6 Cabling; Fiber CCTV including installing antennas camera license plate readers; overview cameras; traffic lights and LED lights on 30 Gantry Poles; installation of CCTV system including lane induction loops and magnetometer pucks

and Livermore. The express lanes operate Monday - Friday from 5 a.m. to 8 p.m. and are toll-free for carpools, motorcycles, buses and eligible clean air vehicles that have a FasTrak flex transponder. Toll prices depend on congestion and the distance you travel in the express lanes.

The I-580 express lanes through the Tri-Valley corridor have near continuous access, and for the most part there are not specific ingress and egress access points. Overhead signs indicate the cost to enter the lanes at specific areas along the corridor, allowing the driver to make a decision to enter based upon the commute need. Solo drivers can choose to use the express lanes when there is available capacity by paying a toll using a FasTrak or FasTrak flex transponder.

Rosendin Electric technicians completed 90% of the express lane project work at night, working

PHOTO BY NICK ELIAS

Rosendin installed 39 enclosures on the side of the freeway which route the gantry pole wiring to the central control center.

PHOTO BY NICK ELIAS

Control enclosures mounted to each of the 30 gantry poles includes all low voltage, high voltage wiring and fiber connections.

PHOTO BY NICK ELIAS

Rosendin Electric installed 30 gantry poles that include all low voltage, high voltage wiring and fiber connections along the 14 miles Express Lane.

high in the air from bucket trucks. "Working at night was our biggest obstacle and challenge with the project," said Foreman Eric Winterstein. Both Alameda CTC and Caltrans worked diligently to ensure the safety of the workers.

Much of Rosendin's work on the $1.6 million job centered on wiring 30 gantry poles within the toll lanes that spanned the route. The gantry poles included the installation of a number of devices per pole (see center spread on pages 4-5).

These devices include an antenna card reader for the FasTrak transponders, including the new FasTrak flex toll tag which has a three-position switch to signal whether you are traveling alone or with a carpool; the violation enforcement cameras, which allow for billing of those that use the express lane even if they travel without a FasTrak transponder; beacon lights, which are triggered by the antenna card reader, and show the presence or absence of a FrasTrak toll tag and it occupancy setting; a CCTV camera, to observe the traffic flow; and LED lights, which are used to illuminate the license plate capture cameras.

All low voltage power and fiber from the control cabinets at the gantry poles were then routed to 39 enclosures installed on the side of the freeway. These enclosures are then connected to the central control center.

In addition to installation of devices on the gantry poles, Rosendin also installed several devices in and along the HOV lane pavement that helped to form a real time monitoring system, including magnetometer pucks and induction lane loops. The magnetometer pucks (census pucks) are installed in the pavement 20 feet apart in some areas and indicate the speed of vehicles in real time. The induction lane loops count cars as they pass to help judge how heavy traffic flow is.

In addition to Foreman Eric Winterstein, five technician-installers from the International Brotherhood of Electrical

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PHOTO COURTESY ROSENDIN ELECTRIC

Working at night on I-580 was Rosendin Electric's biggest challenge.

PHOTO BY NICK ELIAS

Induction Lane Loops and Magentrometers were installed along the 14 miles Express Lane for real time monitoring of the flow of traffic.

From Antennas To LED Lights, Rosend
14-Mile Tri-Valley Corridor Into A

Thanks to the wiring of Rosendin Electric, your commute in the Tri-Valley Corrido and Livermore has been networked with cameras, counters, and other devices by egress of traffic into express lanes along the corridor. If you are a solo driver an flex, to enter the express lanes and pay a toll. Drivers with car pools can en

Many of the devices installed by Rosendin Electric on the 30 gantry poles within the toll lanes help to monitor traffic flow. These devices include an antenna card reader, a violation enforcement camera, beacon lights, a CCTV camera, and LED lights.

LED lights are used to illuminate the license plate capture cameras.

Control enclosures mounted to each of the 30 gantry poles include all low voltage, high voltage wiring and fiber connections.

Rosendin Electric also installed induction lane loops in the pavement to count cars as they pass, helping to judge how heavy traffic is.

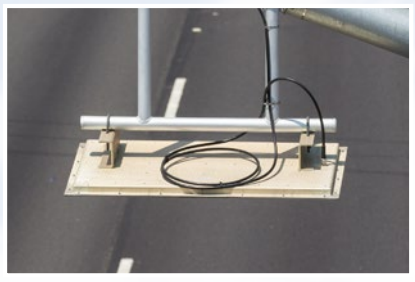
Violation enforcement cameras allow for billing of those that use the express lane even if they travel without a FasTrak transponder.

Violation enforcement cameras help catch cheaters.

lin Electric's Wiring Helps Turn I-580's Faster Commute Via Express Lanes

r will speed up. A 14-mile section of I-580 that passes through Dublin, Pleasanton y Rosendin Electric to help track the commute. These devices monitor ingress and d want to speed up your commute, you can use your FasTrak, or the new FasTrak ter the express lanes toll free with a a FasTrak toll tag. Here's how it works:

Beacon lights are triggered by the antenna card reader and show the presence and setting of FasTrak toll tags.



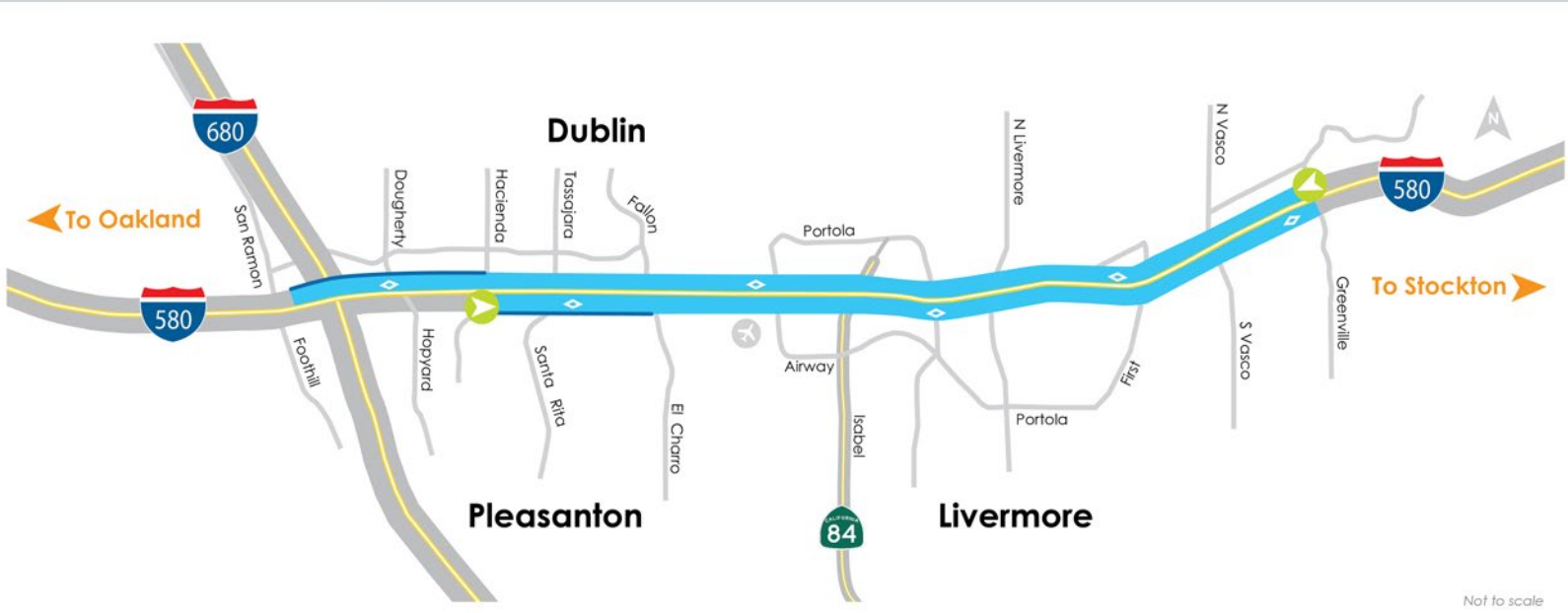
Toll tag readers read the FasTrak transponder identification number for both standard and flex transponders.

All low voltage power and fiber from the control cabinets at the gantry poles were then routed to 39 enclosures installed on the side of the freeway. These enclosures are then connected to the central control center.

Rosendin Electric installed wiring to all the express lane signage, which provides drivers the cost to drive the next section of freeway.

ILLUSTRATION BY PAICHING WEI
PHOTOS BY NICK ELIAS
MAP COURTESY ALAMEDA CTC

I-580 EXPRESS LANES IN THE TRI-VALLEY CORRIDOR



PHOTOGRAPHY BY NICK ELIAS

Cal Coast Telecom installed Pelco cameras in various areas at the Santa Clara Convention Center, including emergency exits and other perimeter doors.

Cal Coast Telecom Wires New Camera System Upgrades At The Santa Clara Convention Center

The Santa Clara Convention Center hosts numerous events each year in Silicon Valley. To maintain a technological edge in the technology capital of the world, the Convention Center has updated parts of its Closed-Circuit Television (CCTV) system with the help of Cal Coast Telecom.

Cal Coast Telecom's $130,000 makeover of the Convention Center's video surveillance system began in November 2014 and has upgraded major portions of the CCTV system from analog to digital, replacing out-of-date cameras with the latest in technology.

PHOTOGRAPHY BY NICK ELIAS

Cal Coast Telecom installed Pelco 360-Degree cameras, providing the new digital CCTV system total situational awareness and video motion detection.

Cal Coast Telecom is partnering with Pelco Security Cameras, one of the leading manufacturers for commercial security installations, to update and expand video surveillance at the 302,000-sq.-ft. Santa Clara Convention Center.

"To upgrade and simplify the Convention Center's old analog systems, we installed a Pelco network video recorder system (Pelco NVR) and replaced the old analog cameras," said John Caldwell, Cal Coast Telecom project manager. Technicians from IBEW Local 332 in San Jose worked with Cal Coast Telecom to complete the installation.

The 72 new Pelco Power over Ethernet (PoE) IP cameras installed by Cal Coast Telecom replaced two separate outdated analog camera systems, that existed on two different video software platforms which were managed separately. The systems that were replaced primarily monitored internal convention center areas, including corridors, cash rooms, kitchen facilities, emergency exit doors, and other doors along the perimeter.

"We migrated all of the old systems onto the Pelco NVR system and then added additional cameras," said Caldwell. "A total of 72 new digital cameras replaced 15 analog cameras on one software platform and 22 cameras on the other platform. We installed additional cameras to monitor areas that hadn't previously been covered. Pelco worked with Cal Coast Telecom to engineer and design the project's new system, and to determine the amount of video storage."

Caldwell said the old CCTV system was replaced because images from the surveillance cameras were blurry, with the quality deteriorating.

"The new digital system is of much higher quality and has expanded the number of cameras used to provide additional areas of surveillance," he said.

PHOTOGRAPHY BY CAL COAST TELECOM

FROM LEFT TO RIGHT:
John Caldwell; Eduardo Chavez; David Inzunza; Chris Caldwell; Hector Mejia; Joe Hernandez, James Hartley; Telly Rollins; Edmund Ordaz; John Sawtelle; David San Miguel; Marie Pernick; Phil Butler; Luis Avalos

PHOTOGRAPHY BY NICK ELIAS

Cal Coast Telecom installed a Pelco network video recorder system and digital cameras at the Santa Clara Convention Center, expanding the video surveillance to 302,000-sq.-ft.

PHOTOGRAPHY BY NICK ELIAS

The Pelco Pan-Tilt-Zoom (PTZ) cameras installed are capable of remote directional and zoom control.

The new Pelco NVR system includes a variety of different camera models, including box style cameras, dome cameras, 360 cameras and Pan Tilt Zoom (PTZ) cameras. The new high-definition megapixel cameras provide superior image quality to the analog cameras used in the old system.

The box cameras are shaped like square cylinders and are attached to an arm that allows the cameras to be pointed in any direction. The dome cameras feature various styles, including a service mount dome, mini dome and pendent mount dome.

Caldwell said installing the new cameras posed a challenge in certain instances because the new cameras have different mounting patterns than the analog camera. "We had to patch the exterior of the building whenever we removed an old analog camera," Caldwell said. "We fabricated brackets so we could mount the new cameras to the different hole patterns. We also had to eliminate the old wiring that connected the analog coaxial cable, replacing it with a 24 Port PoE encoder, which is a PoE convertor that puts power into the coax."

Cal Coast installed a dedicated cabling infrastructure to support the new camera, including fiber backbone, a dedicated network and PoE switches. The CCTV system is monitored in the Convention Center's headend room through a video monitor. Cal Coast Telecom set up several client monitoring stations that allow surveillance on all video cameras. The client monitoring stations can be viewed from computers by security personnel and other authorized staff members.

Cal Coast Telecom's Security Division engineers and deploys CCTV, intrusion and access control systems. Other services provided include structured wiring, audio visual systems, distributed antenna systems (DAS) and paging systems. For more information about Cal Coast Telecom, contact their corporate office at (408) 275-8888 or go to www.cctcom.net.

Cal Coast Telecom Team Santa Clara Convention Center CCTV Installation:

OWNER:
City of Santa Clara

CAL COAST TELECOM SENIOR MANAGEMENT:
David S. San Miguel, President
Security Systems Division

CAL COAST TELECOM PROJECT MANAGEMENT:
John Caldwell, Project Manager

CAL COAST TELECOM ENGINEERING:
James Hartley, Security Sales Engineer

PROJECT TECHNICIANS:
IBEW Local 332, San Jose
Phil Butler, Chris Caldwell, Chris Cleveland, Alex Montez, John Sawtelle

STRATEGIC PARTNER:
Pelco Security Cameras
Gordy Abbott, Business Development Manager

PHOTOGRAPHY BY NICK ELIAS

Pelco Pan Tilt Zoom (PTZ), 360 degree, and dome cameras in the new digital CCTV system.

PHOTOGRAPHY BY NICK ELIAS

Cal Coast Telecom replaced the existing outdated analog cameras in the Santa Clara Convention Center with Pelco digital cameras.

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Workers (IBEW) Locals 332, 595 and 6 worked on the project, including Sergio Gonzales, Sione Fanua, Ariel Filongan, Howard Craig, and Manny Horne. Rosendin also completed high-voltage installation for the project with the assistance of IBEW Local 595 Electrician Leonard Morrison, who ran high voltage power to the enclosures.

For more information about Rosendin Electric's low voltage and communication work, contact Ron Clarkson, Division Manager, Rosendin Network Services, at 408.534.2816 or email rclarkson@rosendin.com or go to www.rosendinelectric.com.

PHOTO BY NICK ELIAS

Rosendin Electric installed many devices to help monitor traffic, including CCTV, overview cameras, and LED lights across 30 gantry poles placed along the route.

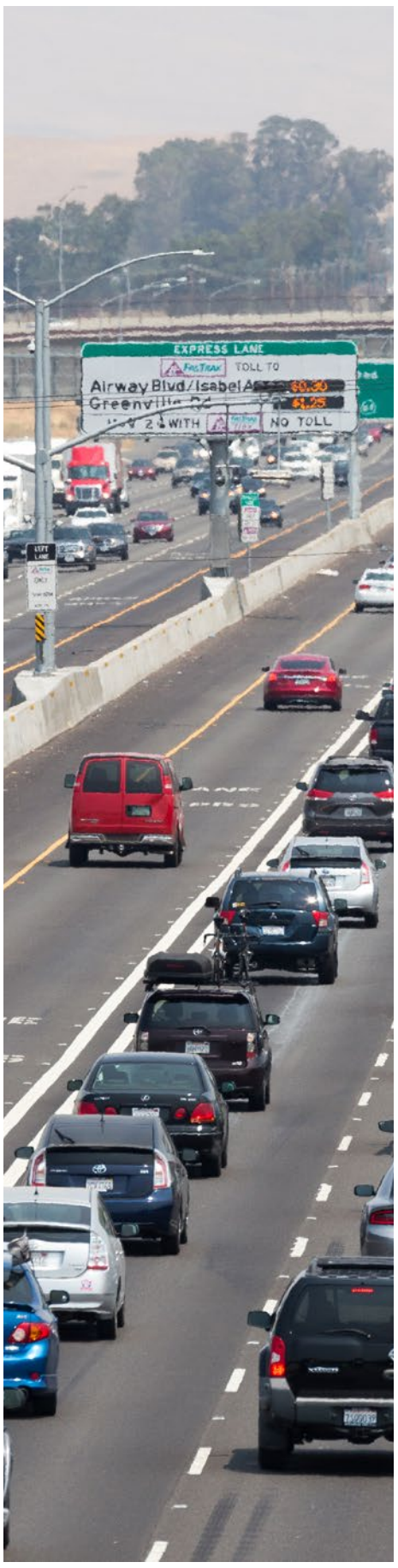

PHOTO BY NICK ELIAS

Rosendin Electric wired all low voltage power in the new 580 express lanes, including fiber, CAT6 and coaxial cabling.