Naval Amphibious Base Pedestrian Tunnel

Client

Project Description

The proposal is an underground pedestrian tunnel under the SR-75 as a means of crossing from one side to the Naval Amphibious Base to another base. The tunnel is created as a replacement for the pedestrian crossing on Intersection of SR-75 and Tarawa Road off Coronado. The Project has included Geotechnical investigation, structural design, construction planning and scheduling, traffic analysis and a storm water prevention plan.

TEAM 14
From left to right
Robert Villota : Structural
Stefanos Jerjees: Geotechnical
Minerva Munoz: Stormwater
Carlos Lopez: Project Manager & Site Design
Rachelle Ann: Transportation
Emanuel Guerrero: Construction

3D RENDERING OF TUNNEL

Structural

Throughout the structural design, Caltrans standards were used as a guiding point for all aspects including the box culvert (12’x14’), retaining walls (12’ H), and the slab footing used (14” thickness). A gradual slope was incorporated into the culvert sections seeing as though there is a need for stormwater drainage due to the location of the water table. Using high strength concrete for the Precast culvert sections is needed due to the fact that there is a traffic load the culvert is exposed to.

Transportation

Based on the City of Coronado’s volume reports of pedestrians, bicycle and traffic along the SR-75, and the peak hours of traffic, it is determined that the best hours of construction would be between 7 PM to 5 AM. In addition, traffic control plans are designed (based on Caltrans and MUTCD standards) consisting of 4 different phases of lane closures, working east to west of the SR-75. For the design of the ADA ramp on both ends of the pedestrian tunnel, it is done in compliance to ADA 2010 standards.

Stormwater

The Stormwater department was in charge of quantifying the critical flows through the Rational Method. Using the County of San Diego Drainage manuals, we were able to obtain the peak flows for multiple storm rain events affecting the construction site of the tunnel. Assessment of storm drains were assessed for capacity and recommendations were made to install inlets at the entrance of the tunnel, as well as, the installation of BMPs to prevent pollution from the project site.

Construction

The construction department is in charge of delivering the project to the Navy NAB center. Doing so, it is the contractor responsibility to provide each entity with construction documents, specifications, and plans. Moreover, Prestige International, Inc. provides a site logistic plan, permitting/codes documents, project schedule and a project estimate.

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