

# NAVWAR SANDAG Grand Central Station



Marine and Mainland Engineering is in charge of providing professional engineering services for the NAVWAR SANDAG Grand Central Station Project. Our main focus will be the proposed mixed-use development on Site 1 and the design of a new office building. We will also consider the impact of the proposed facilities for Site 2.



Exhibit 1: The USGS U.S. Quaternary Faults

## Geotechnical:

The objective is to provide the current soil analysis and foundation recommendation for the Site 1. The M&M Engineering team used the Cone-Penetration Test provided by Dr. Valdes to perform the soil classification, settlement analysis and soil bearing capacity calculations in order to determine the recommended foundation system.

## Structural:

Our team is responsible for providing a structural analysis for the proposed design of the structure's building shell and the foundation design of the office building. Our calculations will include shear walls, slabs, columns, beams, as well as foundation design.

## Construction:

The objective is to ensure that demolition and construction process of Site 1 is the least disruptive for the general public in the surrounding area. Construction will be broken into three separate phases.



Exhibit 2: Stormwater Sub Basins



Exhibit 3: Construction Phasing

## Transportation:

The objective is to analyze and compare the existing and proposed traffic conditions surrounding Site 1 and Site 1. For the Traffic Study we calculated the trip generation to approximate the increase in traffic volume and analyzed the level-of-service conditions for 3 intersections.

## Stormwater:

This project includes a new conveyance system with resized inlets and four sub-basins that meet the current peak discharge rates. Biofiltration BMPs were installed to treat the stormwater in the project's vicinity prior to its release back into the San Diego Bay. We also installed cisterns to harvest the stormwater runoff collected from the roofs for future reuse. The net result of each of these installations include flow/pollutant control, peak flow attenuation and stormwater treatment.

## Water/Wastewater:

The water demand and wastewater flow of the sites currently service offices and warehouses which will increase significantly with the new mixed-use development. The water and wastewater pipe systems are outdated and will need replacing for the future development.

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