



February 1, 2012

FILE NO.: SL-16578-SA

Ms. April Winecki  
DUDEK  
621 Chapala Street  
Santa Barbara, CA 93101

PROJECT: MORRO BAY AND CAYUCOS SANITARY DISTRICT  
WASTEWATER TREATMENT PLANT UPGRADES  
MORRO BAY, CALIFORNIA

SUBJECT: Maximum Tsunami Flood Elevations

REF.: Shoreline Erosion Study and 100-year Sea Wave Run-Up Analysis,  
Morro Bay and Cayucos Sanitary District Wastewater Treatment Plant  
Upgrades Morro Bay, California, by Earth Systems Pacific, dated  
October 25, 2011

Dear Ms. Winecki:

In accordance with your request, we have revised Cross Section A-A' in Appendix A of the referenced Shoreline Erosion Study and 100-year Sea Wave Run-Up report in response to the Coastal Commission staff's request to provide additional information on potential tsunami inundation at the Morro Bay Wastewater Treatment Plant (MBWWTP). It is our understanding that the California Coastal Commission staff requested additional information regarding potential maximum tsunami flood elevations at the MBWWTP site based on the applicable State tsunami inundation map; consequently, the cross section was revised to incorporate this information.

The State of California ~ County of San Luis Obispo Tsunami Inundation Zone Map for Emergency Planning, dated July 2009, was prepared by the California Emergency Management Agency. This map shows the MBWWTP site to lie within a Tsunami Inundation Zone Map, but does not show any tsunami flood elevations. The Tsunami Inundation Zone was based on a USGS quadrangle map with a scale of 1:24,000 or 1 inch = 2,000 feet, and an elevation precision that could vary up to 33 feet. Mr. Kevin Miller of the Earthquake & Tsunami Program, California Emergency Management Agency, was contacted regarding the elevations upon which the map was based. The Method of Preparation stated on the map indicates that it was prepared using bathymetric/topographic data that were used in the tsunami models which consisted of a series of grids. The near-shore grids with a 3 arc-second (75-to 90-meters) resolution or higher were adjusted to "Mean High Water" sea-level conditions, representing a conservative sea level



for the intended use of the tsunami modeling and mapping. A suite of tsunami source events was also used for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near-shore landslides. The MBWWTP site is located within a Tsunami Inundation Zone that was based on the maximum tsunami flood elevations that were obtained by the California Emergency Management Agency. These floods elevations were provided to us by Mr. Miller and are presented below.

### Maximum Tsunami Flood Elevations

Local Worst Case Earthquake Source: Repeat of the 1927 Point Arguello 7.3 mag. earthquake. Maximum tsunami flood elevation from local source: 3.6 feet (NAVD 88 datum).

Distant Worst Case Earthquake Source: Aleutians Alaska 9.0 mag. earthquake. Maximum tsunami flood elevation from distant source: 23.9 feet (NAVD 88 datum).

The approximate elevation of the MBWWTP is 21 feet, which indicates that the maximum tsunami flood elevation from a distant worst case source earthquake event is 2.9 feet above the site elevation. The maximum tsunami flood elevation from a local worst case earthquake source event is 17.4 feet below the site elevation. For comparison purposes, the Shoreline Erosion Study and 100-Year Sea Wave Run-up Analysis prepared in October 2011 for the site estimated the maximum tsunami flood elevation to be 17.2 feet, when considered in conjunction with an eroded or scoured beach, a 100-year storm event, an extreme high tide, the projected 100-year rise in sea level, and the highest tidal surge documented for the March 11, 2011 8.9 magnitude Japan earthquake. The maximum tsunami flood elevations presented above are plotted on the attached Cross Section A-A'.

If there are any questions concerning this letter, please do not hesitate to contact the undersigned.

Sincerely,  
Earth Systems Pacific

  
Richard T. Gorman, C.E.G.

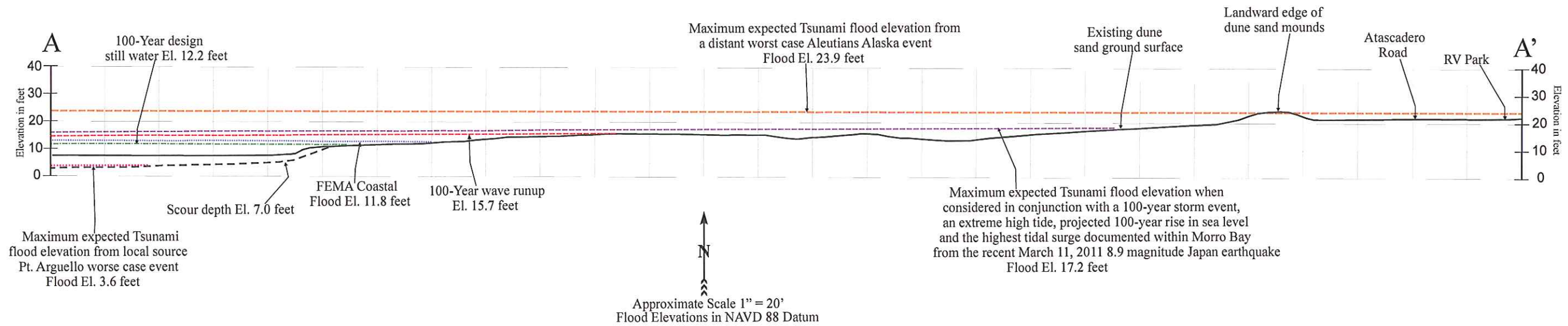


Attachments: Cross Section A-A'

Doc. No.: 1202-001.LTR/jr

# CROSS SECTION A-A'

## Morro Bay and Cayucos Sanitary District Wastewater Treatment Plant Upgrades Morro Bay, California



Ref.: Contour Map provide by  
EDA Design Group, 2011