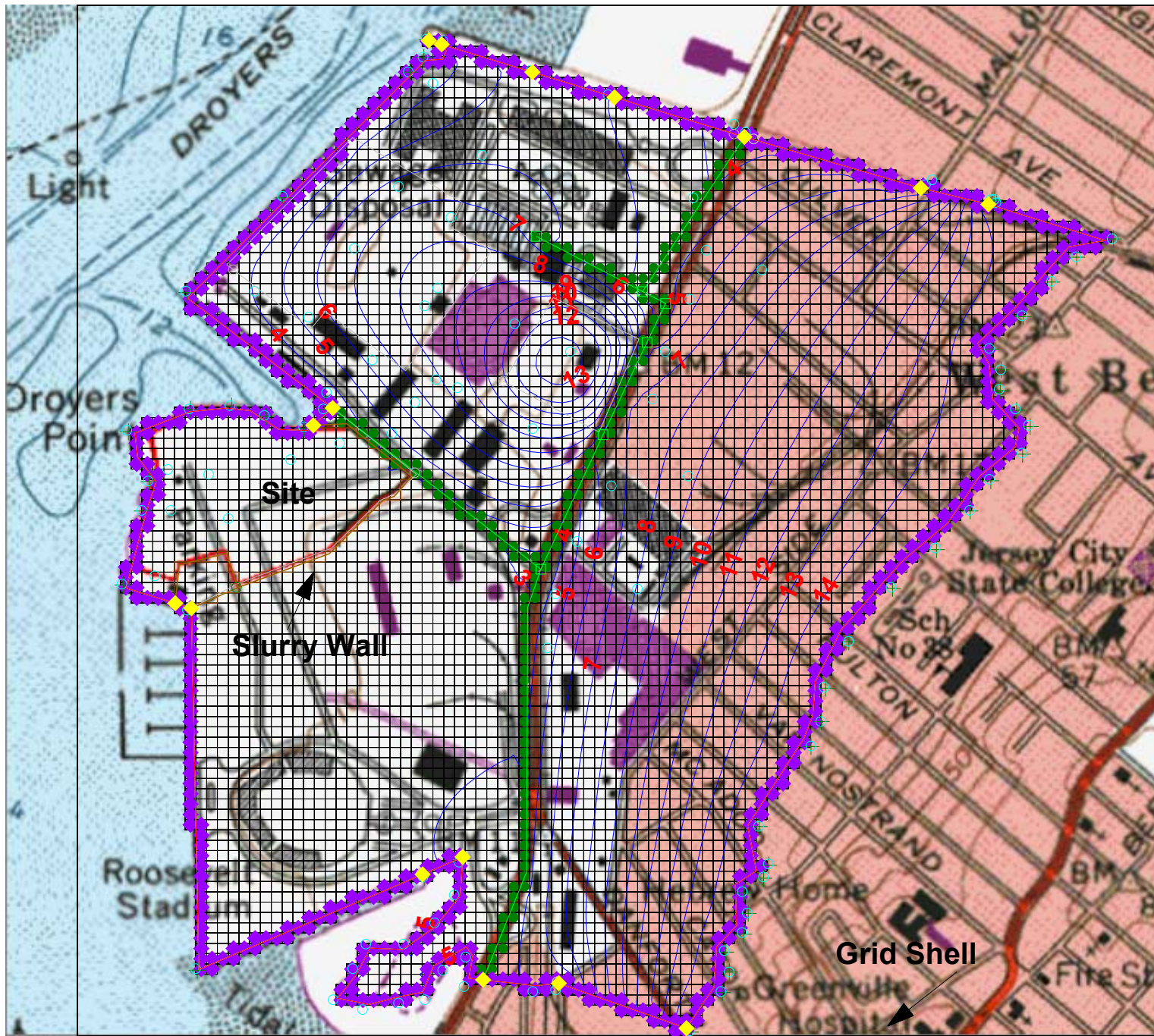







MODFLOW Simulated Groundwater Elevation Contours (ft, above Mean Sea Level) - Scenario 2 (Completed Slurry Wall)






Map Symbols


-  Specified Head
-  Specified Head
-  Drain

2D Scatter Pt Symbols

-  GWT
-  BOT

MODFLOW BC Symbols

-  Horiz. Flow Barr.
-  Drain
-  Changing Head

 (1 inch = 800.000 ft)

Groundwater Modeling

As part of the New Jersey Department of Environmental Protection (NJDEP)-approved Remedial Action Workplan (RAW) for a residential development site in Jersey City, a Vertical Barrier System consisting of Soil-Bentonite slurry wall and sheet pile has been installed as a hydraulic barrier to prevent the migration of potentially contaminated offsite groundwater into the project site. However, the NJDEP Case Manager expressed concern over possible impacts with respect to groundwater mounding outside the slurry wall and increased groundwater elevation in the peripheral areas outside the proposed development site. Thus, the primary intent of the proposed model simulations was to investigate the relative impact of the slurry wall on groundwater elevations along the outside boundary of the slurry wall.

A series of model simulations were conducted by employing GMS (Groundwater Modeling System) package that utilizes MODFLOW groundwater model in order to investigate the impact of the slurry wall on groundwater elevations in the peripheral areas outside the slurry wall. Model simulations were conducted for various pre- and post- slurry wall construction conditions. The regional groundwater flow appears to be directed toward the project site to its final destination of Newark Bay. However, the local groundwater flow pattern near the site is influenced by the localized onsite and offsite recharge and the presence of a network of underground interceptor and sewer lines. The model simulations indicated a limited impact of the slurry wall on localized groundwater mounding. The result is attributed to the sewer interceptor along a state highway further upstream from the site that intercepts the groundwater and acts as an impediment to the regional groundwater flow towards the project site.