Naples Seawall Report

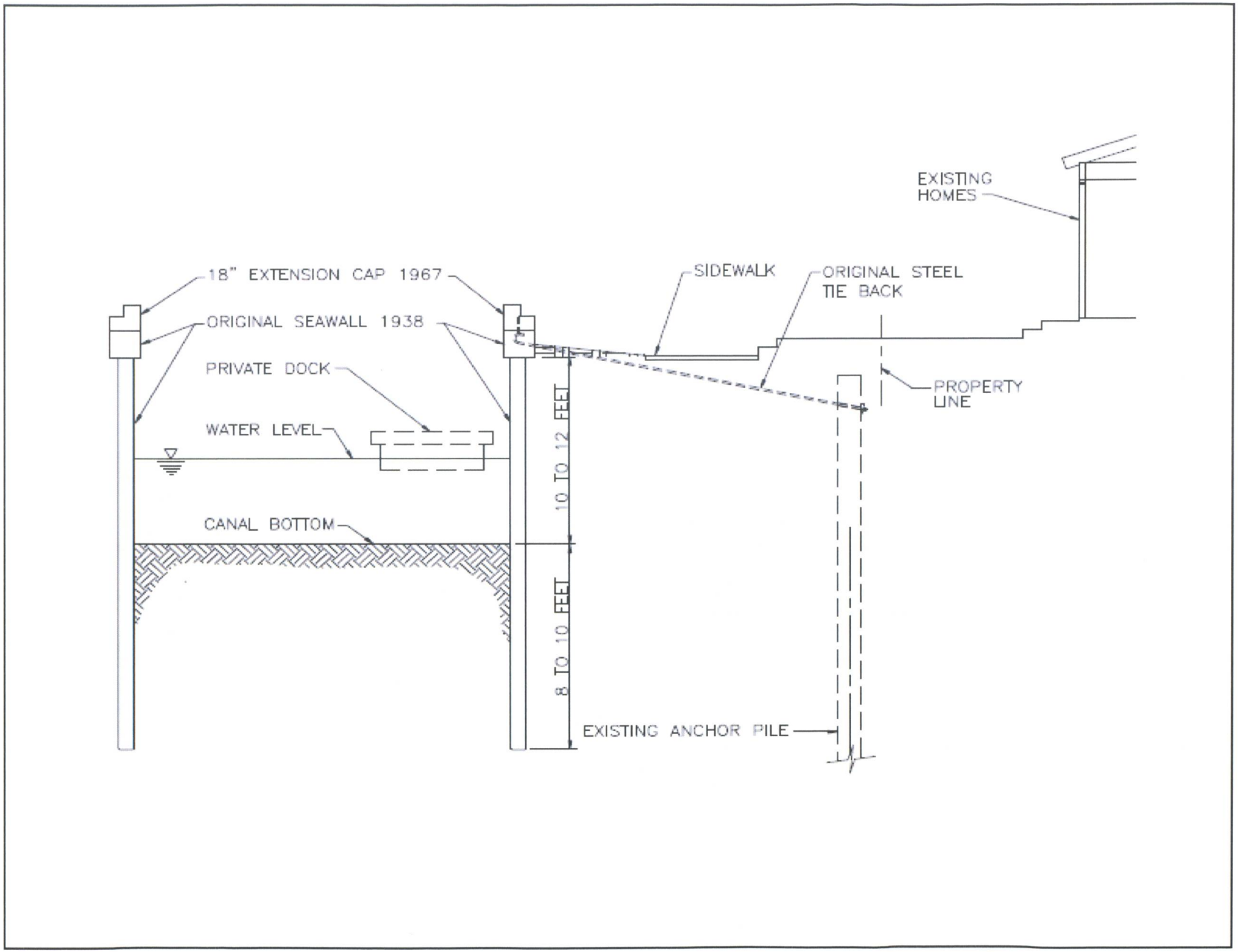
Department
of
Public Works

April 6, 2010

Seawall locations

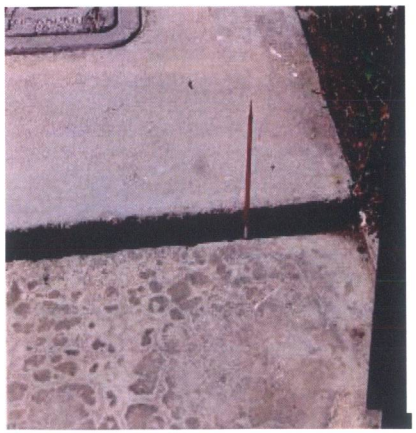
History

- 1905 canals dredged
- 1923 canals walls constructed
- 1933 canal walls damaged by earthquake
- 1938-1939 pre-cast concrete walls constructed
- 1938-60's canal walls subside 1.5ft
- 1960's high tides crest over seawall
- 1967 18 inch cap added to top of original seawall


EXISTING HOMES
18" EXTENSION CAP 1967
ORIGINAL SEAWALL 1938
PRIVATE DOCK
WATER LEVEL
CANAL BOTTOM
SIDEWALK
ORIGINAL STEEL TIE BACK
PROPERTY LINE
10 TO 12 FEET
8 TO 10 FEET
EXISTING ANCHOR PILE

Seawall movement

- 1980's voids and seawall movement is detected
- 1990's studies determine tiebacks are failing



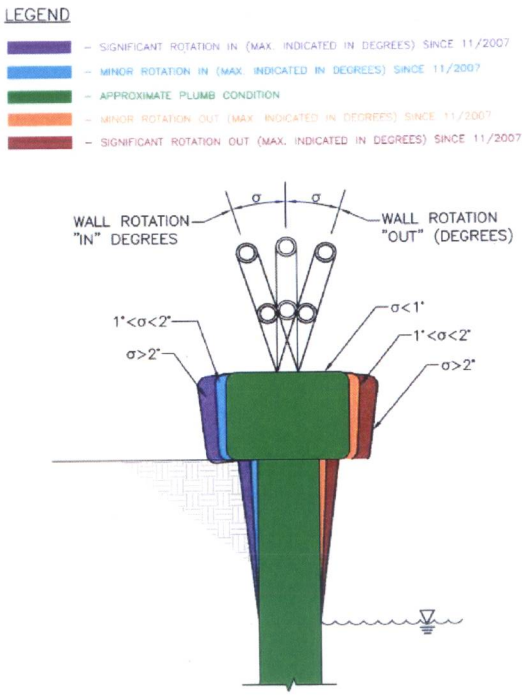
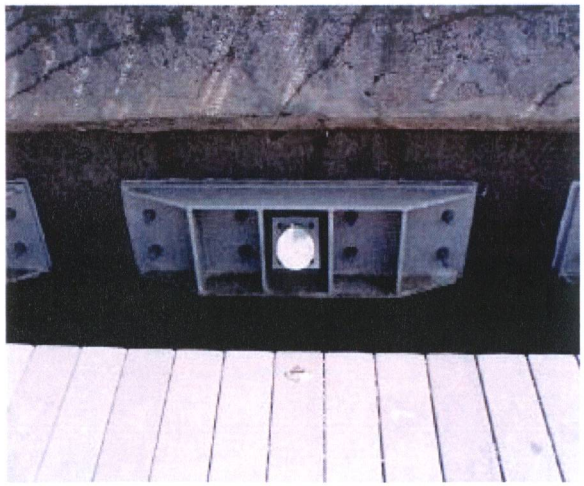


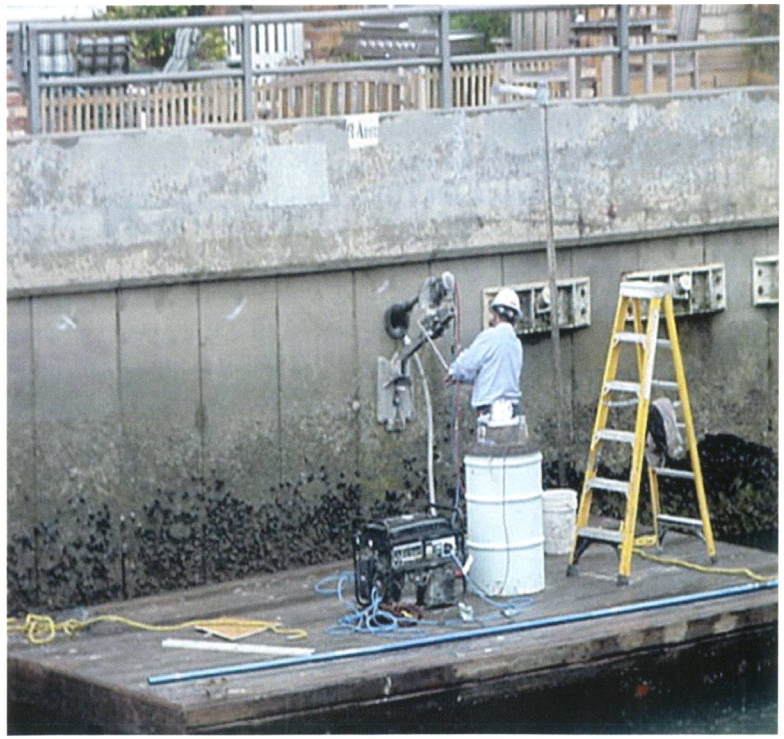
FIGURE 3-0 ROTATION ANALYSIS FROM SURVEY OF GUARDRAIL POSTS

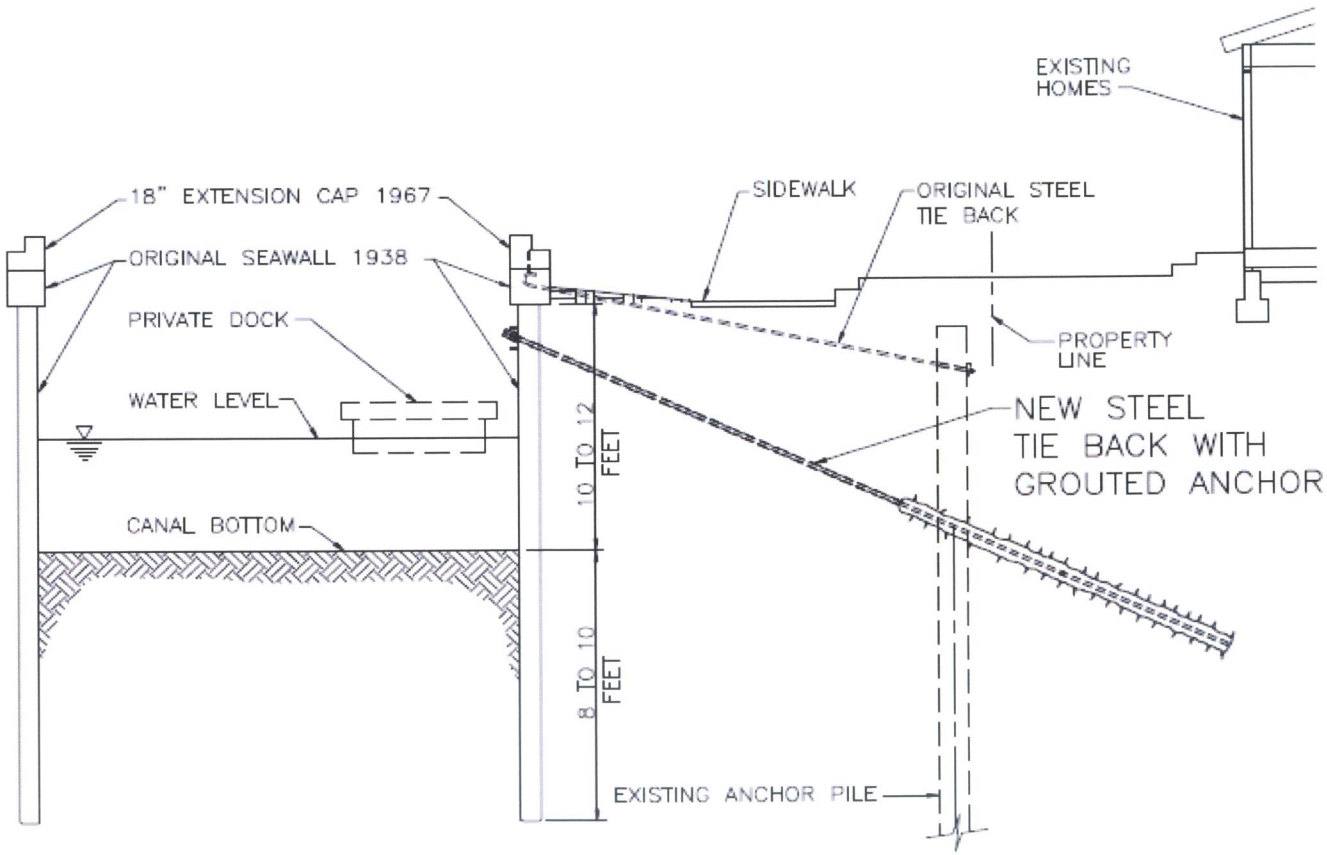
3-3

Seawall Tieback Repairs

- 2000's City replaces tiebacks at critical locations

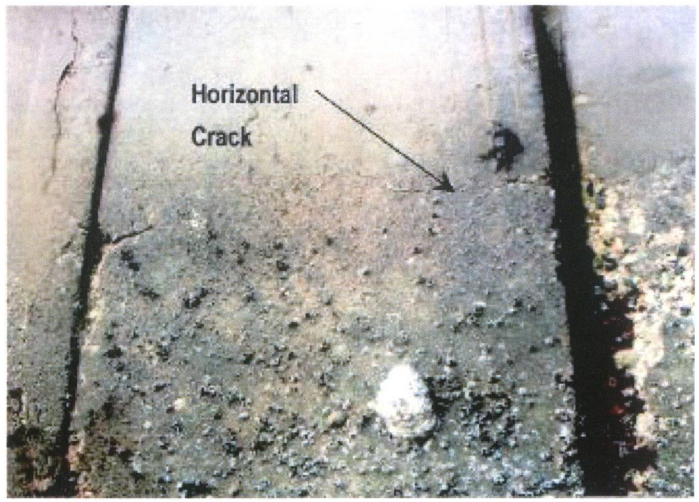


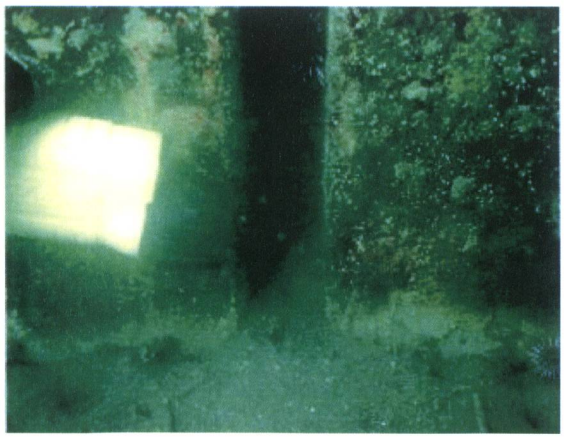



EXISTING HOMES
18" EXTENSION CAP 1967
ORIGINAL SEAWALL 1938
PRIVATE DOCK
WATER LEVEL
CANAL BOTTOM
SIDEWALK
ORIGINAL STEEL TIE BACK
PROPERTY LINE
NEW STEEL TIE BACK WITH GROUTED ANCHOR
10 TO 12 FEET
8 TO 10 FEET
EXISTING ANCHOR PILE

Current issues

- 2009 Study reveals deterioration of lower seawalls





Seawall Prioritization

Source: TranSystems, February 25, 2009.

RBF CONSULTING

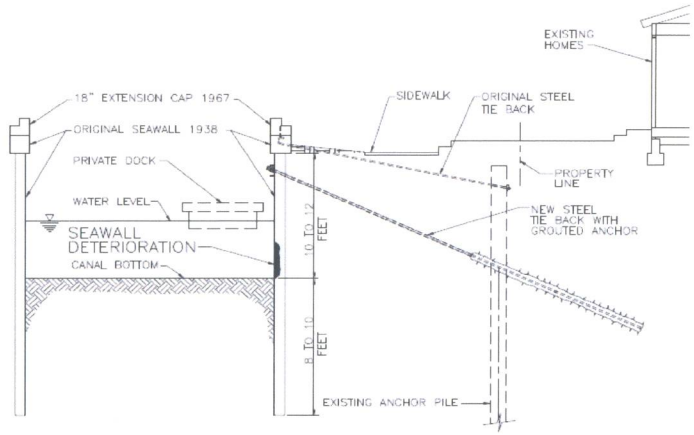
not to scale

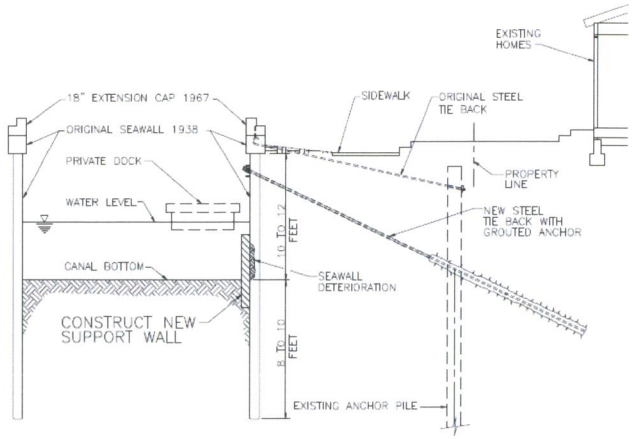
NAPLES SEAWALL INTERIM AND LONG-RANGE REPAIR PROJECT • IS/MND

Long-Term Repairs Key Map

Short-term Solutions

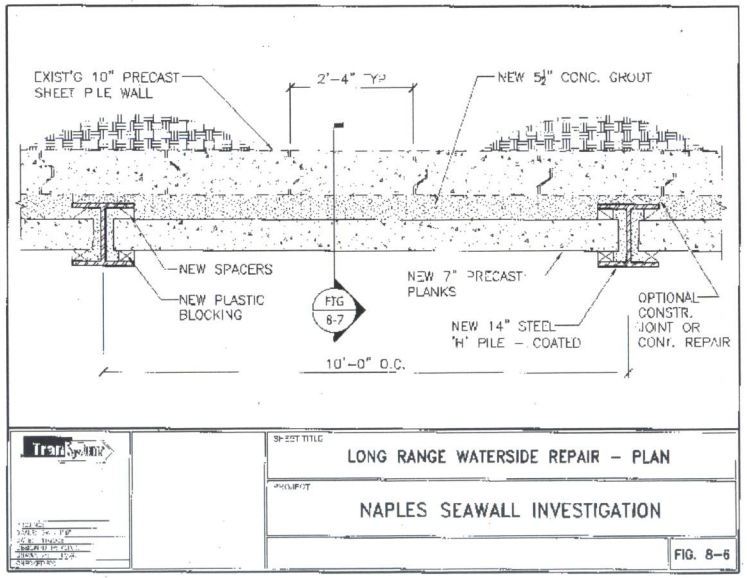
- Construct a small reinforcing wall at the base of the seawall
- Replace damaged tie backs
- Fill voids with grout
- Total estimated cost is approximately $2 million





Long Term Solution

- The long term solutions proposes a new seawall encased in steel H-beams and a new cap
- Construction of a full replacement wall at this locations is estimated at $9 million



Recommendations

- If funding permits, pursue the long range solution in order to avoid duplication of costs.
- I funding does not permit, pursue short range plan in order to provide interim relief