

[illegible]



Looking toward the ocean from the middle of the Lauhulu stream bed.



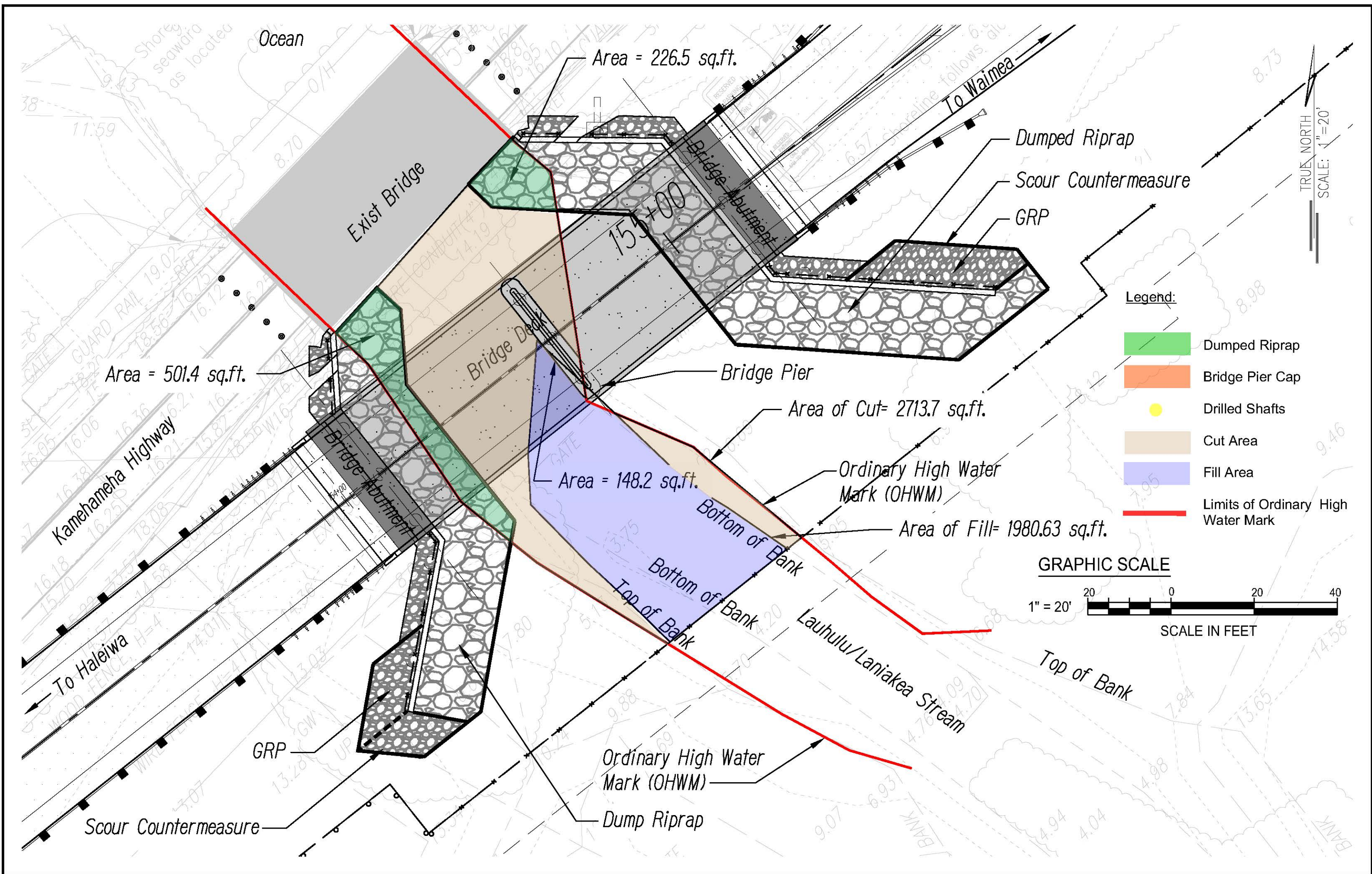
Looking toward the ocean from the approximate location of the new bridge.



View from under existing bridge to location of new bridge.



View of existing bridge from beach.



Kamehameha Highway Drainage and Safety Improvements
Vicinity of Laniakea Beach
Proj No. 83B-01-09

Fill Material Calculations

Assumptions:

Finish Grade Elevation= 7' MSL

Water Surface Elevation within OHWM = 6' MSL

Length of Drilled Shafts = 60'

Dump Rip Rap

	Area	Thickness below WSL	Volume (CF)	Volume (CY)
Haleiwa	501.4	3	1504.2	55.71
Waimea	226.54	3	679.62	25.17
			Total	80.88

Drilled Shafts

No of drilled shafts	Length	Diameter	Volume (CF)	Volume (CY)
3	60	3	635.85	23.55

Pier Cap

Area	Thickness	Volume (CF)	Volume (CY)
148.2	3	444.6	16.47

Total Concrete Fill Material 40.02

Fill Material above WSL to finish grade

Area	Thickness	Volume (CF)	Volume (CY)
1980.63	1	1980.63	73.36

