

APPENDIX A
ANCHORING PLAN
PALOS VERDES REEF RESTORATION PROJECT

APPENDIX A

ANCHORING PLAN

An anchoring plan is necessary to assure the quarry rock is placed as precisely as possible in the design locations, to avoid placing rock on hard substrate areas, and to avoid anchor drag that might damage hard substrate. Figures A-1 and A-2 show the derrick barge and offloading operations. Figure A-3 is a schematic showing the operations including the placement of anchors.

The derrick barge will be moored by six anchor cables attached to winches on the barge. During rock placement, the barge will be located at the required position by winching on the six cables connected to the respective anchors. The anchors are designed to minimize possible drag on the bottom. This will be achieved by connecting each offshore anchor to a ten-ton concrete block located on the ocean floor and by connecting the cable from the barge to each concrete block via a foam-filled can (surge-can), as shown in Figure A-3. Anchors will be placed on sandy-bottom areas or on areas with less than 30 percent coverage of hard substrate.

Each anchorage location will allow a maximum coverage of 2,000 ft by 800 ft. The anchors will be located based on (a) the ocean bottom topography; (b) the existing potential for environmental harm to existing habitat as a result of the placement of anchors, chains, buoys, and/or cables; (c) and the weather conditions.



Figure A-1. Derrick barge.



Figure A-2. Rock placement method; front-end loader/flat supply-barge “push off” method.

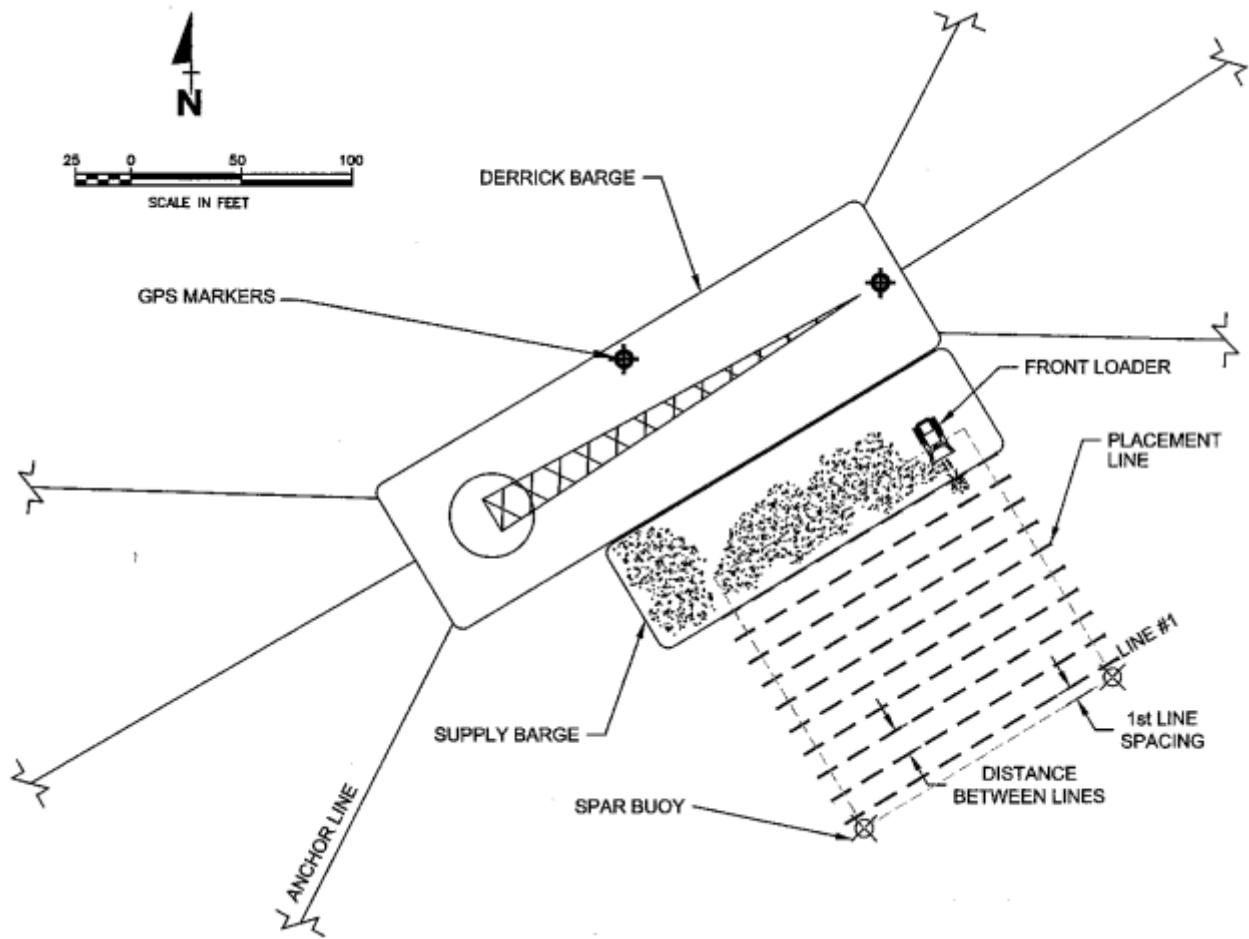


Figure A-3. Construction-method schematic showing derrick barge, supply barge, front-loader, rock placement lines, and six-anchor positioning.