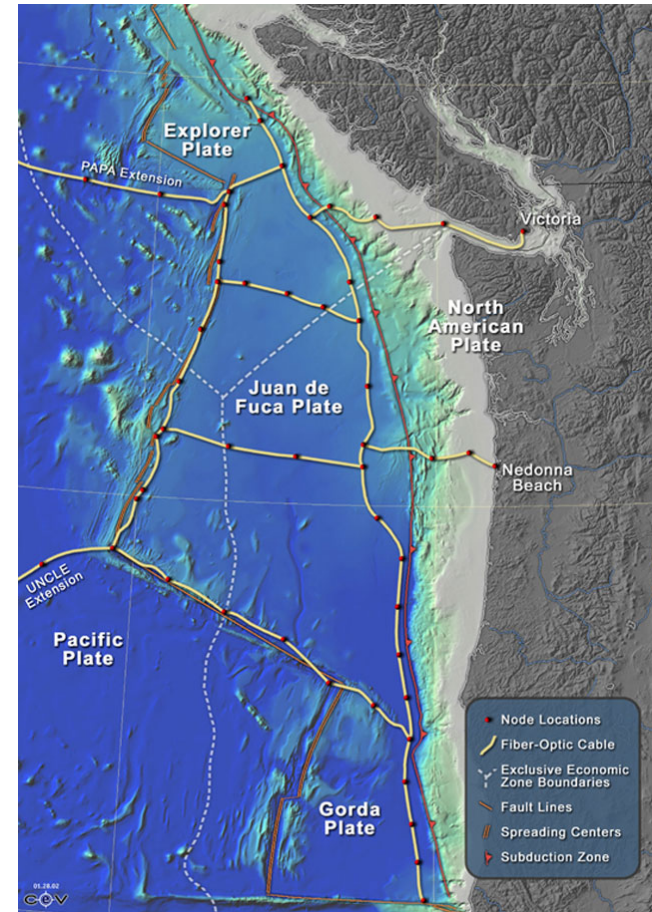


Project Description: MARS
Cabled Observatory Test Bed in
Monterey Bay

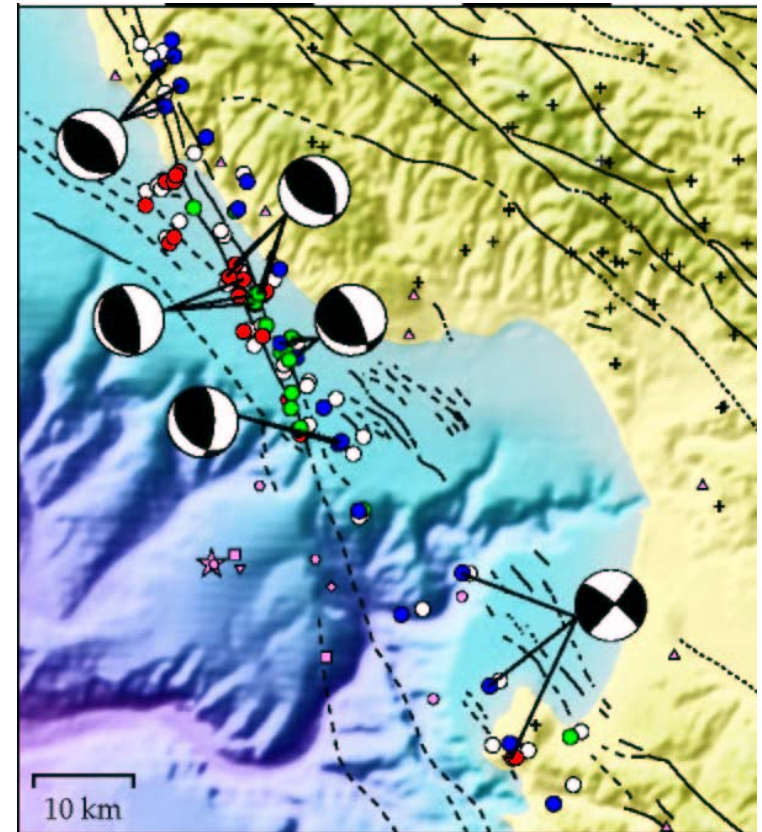
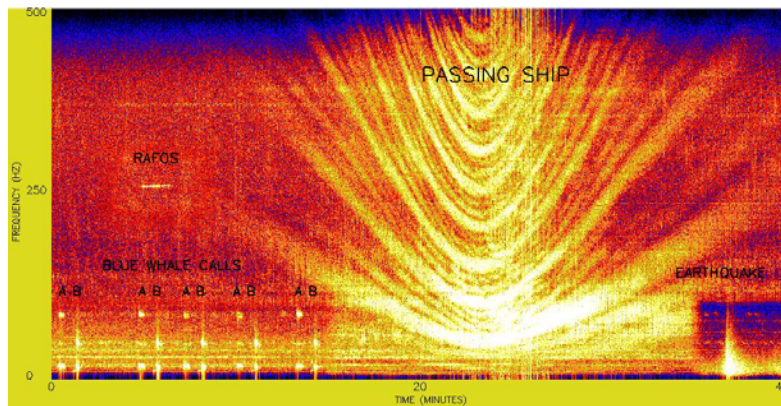
MARS Need and Purpose

- Cabled observatory test bed.
 - Test technology being developed for the NSF science cabled observatory off Oregon, Washington coast (NEPTUNE)
 - Test newly developed instruments prior to installing them on NEPTUNE

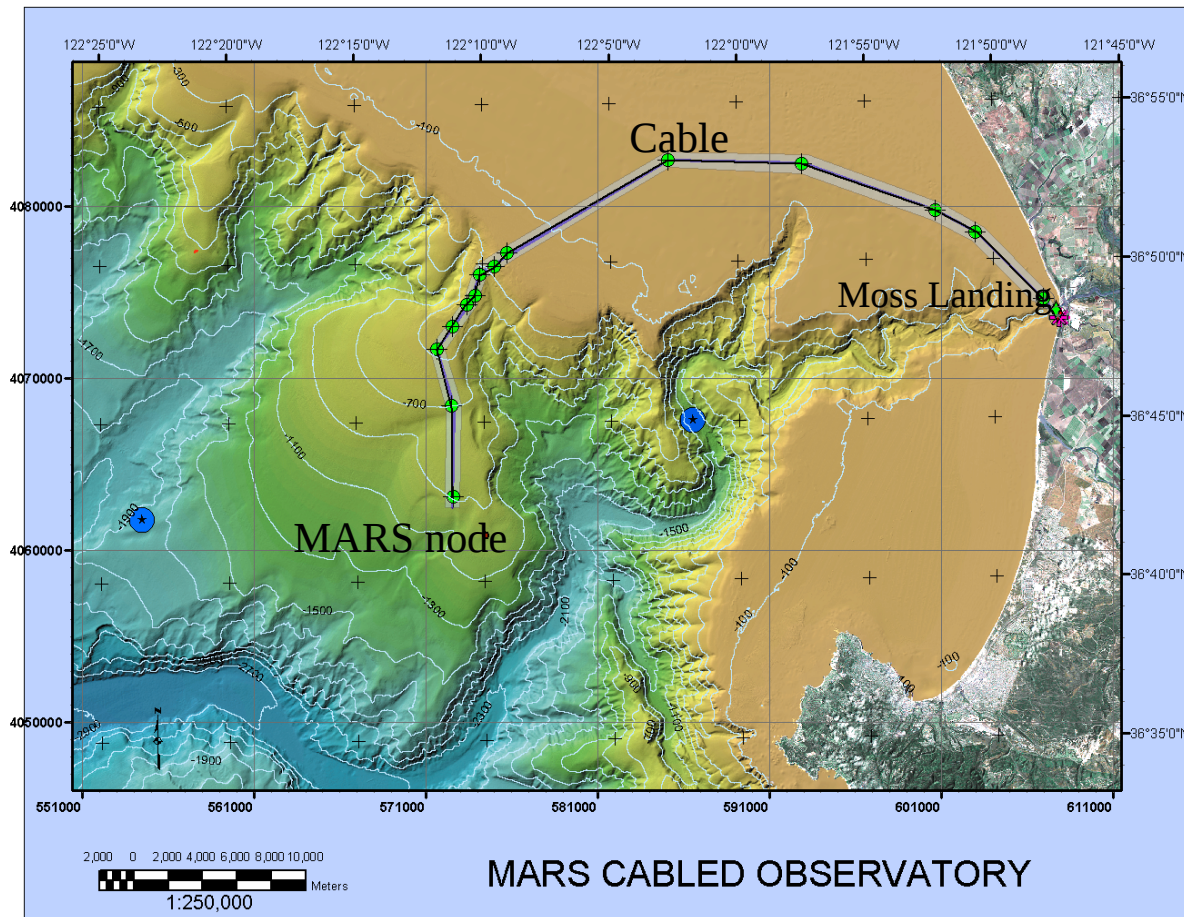


MARS Overview, cont'd

- Perform science in the MBNMS: examples
 - Monitor seismic activity to the west of the San Gregorian fault zone
 - Passive acoustics, eg monitor whale activity



Proposed Location and Cable Route



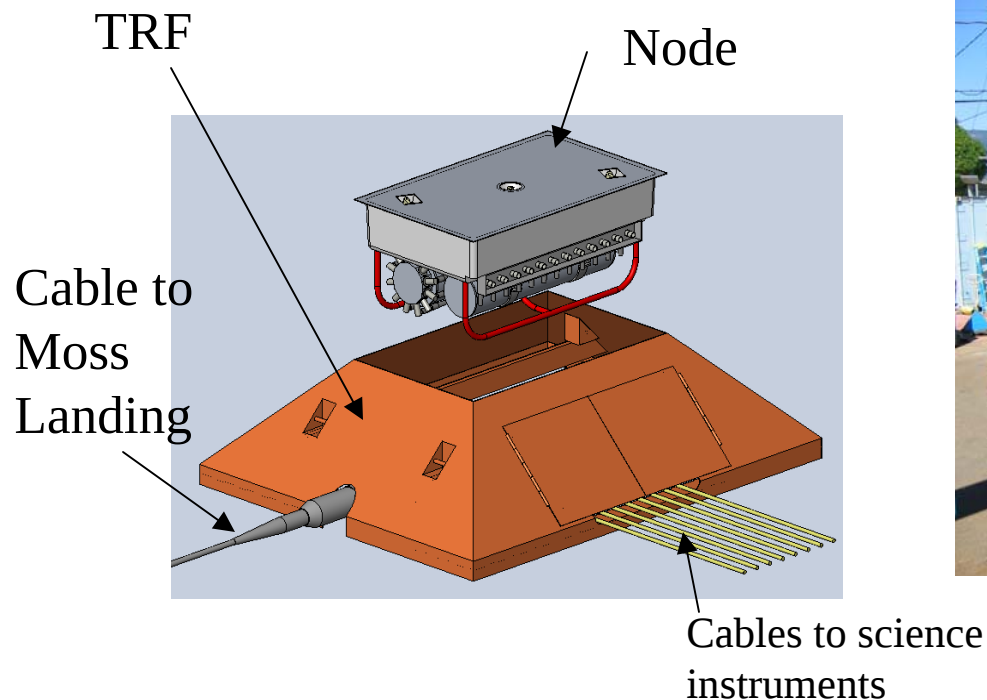
- Single node sited in 870m water depth on Smooth Ridge
- 53km of cable between shore landing and node
- Cable shore landing through 5 inch diameter HDD steel pipe

MARS: details

- Cable buried 70% of the route
 - not buried at neck of Smooth Ridge
- Lifetime 25 years
- New instruments installed periodically throughout its lifetime within 4 km radius of the MARS node, connected to the node with light surface laid cables
- 10kW power at the node, Gb/sec bandwidth communication link to the shore
- 8 instrument connections on the node

MARS Node Design

- MARS node is protected inside a Trawl Resistant Frame (TRF)
- Node can be removed and returned to shore for maintenance using MBARI R/V Point Lobos



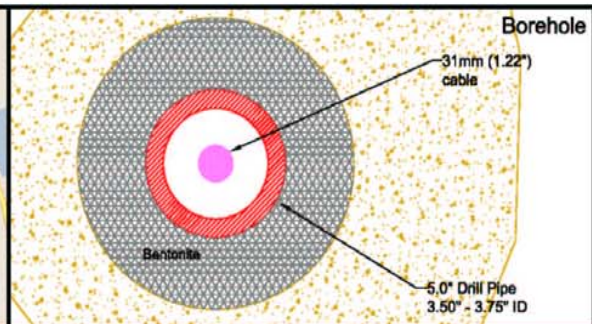
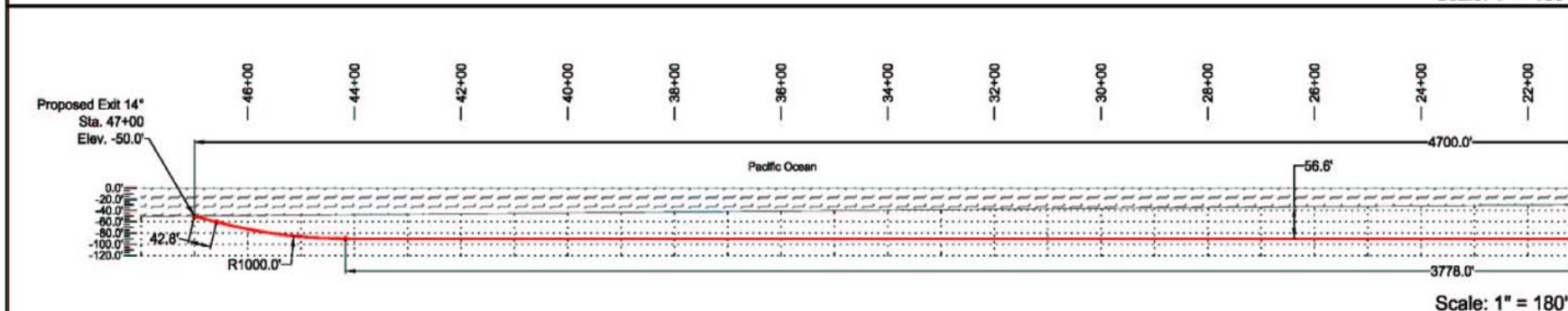
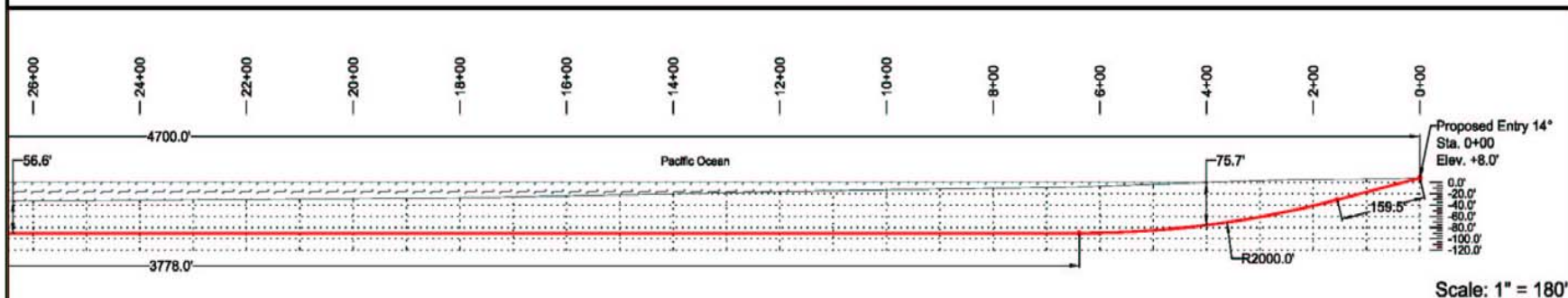
MARS Shore Landing

Shore Landing



Shore Landing

Monterey Bay Aquarium Research Institute Moss Landing, California Proposed 5" Directional Drill

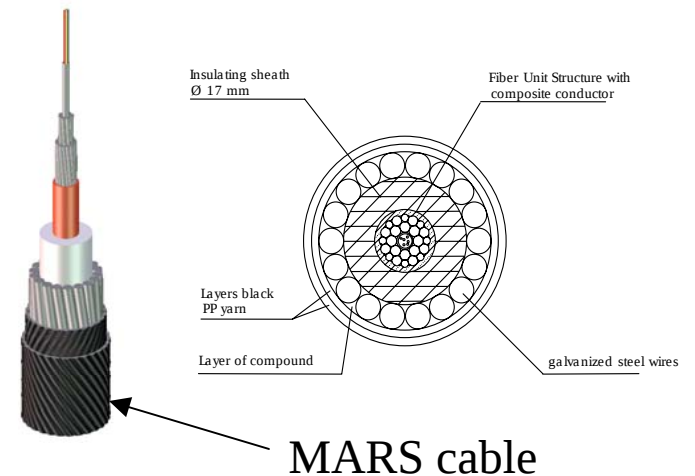


Horizontal Drill Length = 4700'
Measured Pipe Length = 4713'

868 ROBINWOOD CT. TRAVERSE CITY, MI 49686 PH: (231) 929-1242 FAX: (231) 941-7412		
DATE 9-22-04	JOB No. 04 -4071	DRAWN BY GJE
CLIENT Research Institute Monterey Bay Aquarium		PROFILE DESCRIPTION SE to NW
LOCATION MBARI - Directional Bore Moss Landing, CA		DRAWING No. Proposal

Cable and Installation

- Cable is approx 1 inch diameter, SAL and LWP cable, buried to 1m depth 70% of the route
- Cable installation, 3-4 days
- Node installation, 2-3 days
- Post lay inspection and burial, 1-2d



Schedule

- Permits in hand early Sept
- HDD start mid Sept 2005
- Cable and node installation Oct-Nov 2005
- Shore landing hut installation Nov-Dec 2005
- Operations start early 2006