

Protecting Coral Reefs through Watershed Restoration and Management: Laolao Bay, Saipan





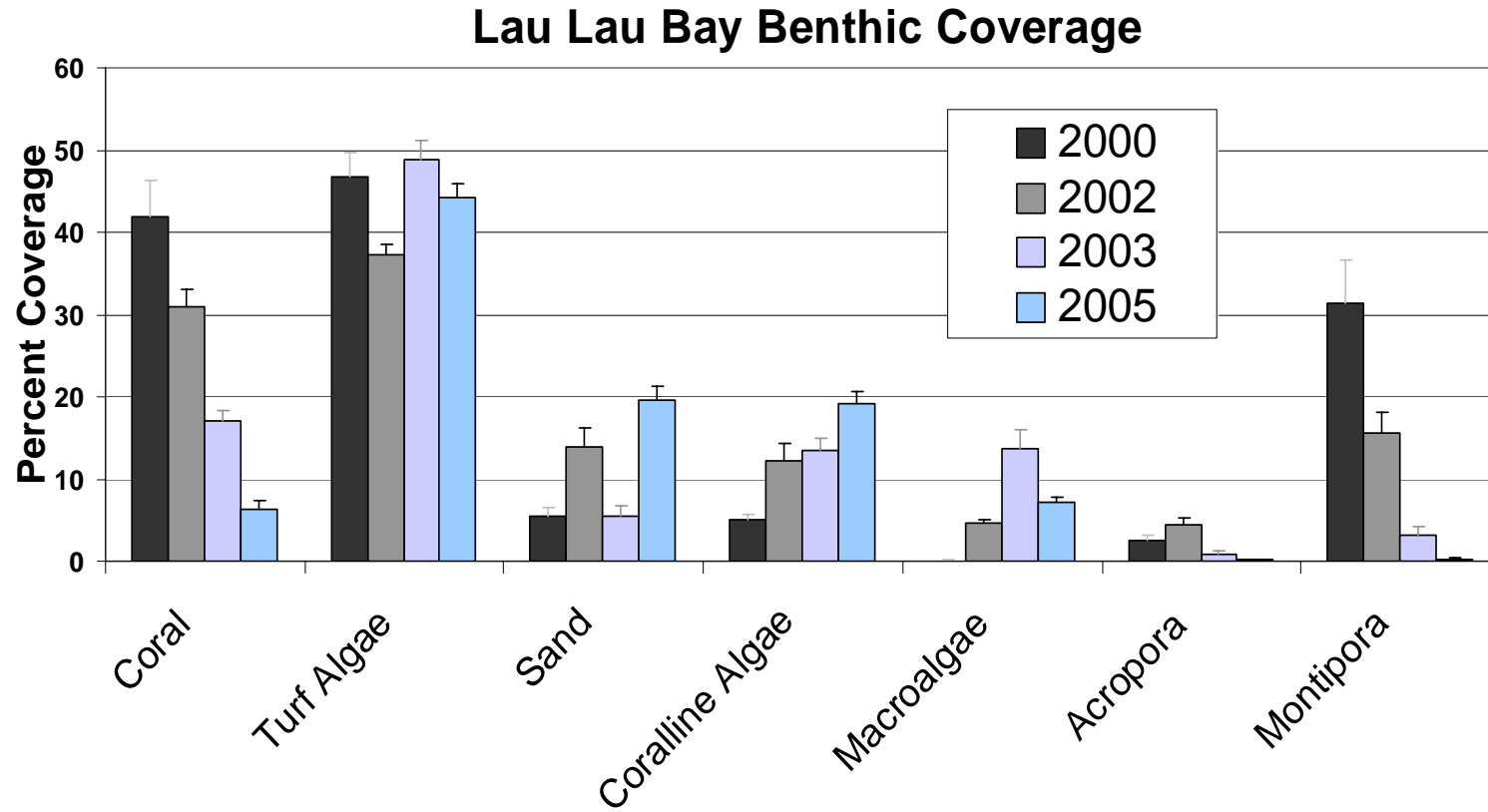
Laolao Bay Values

- **Coral reef & marine ecosystem**
- **Tourism - dive site (100+ divers per day)**
- **Recreation & fishing**
- **Turtle nesting habitat**
- **Historic sites**

Threats to Laolao Bay



Trends in Laolao Reef Health



(Houk, 2005)

Laolao Actions

Know Your Watershed Awareness Campaign

Badlands Revegetation

Paving & Drainage of Gaggap Rd.

Stream Mapping & Monitoring

Dive Site Erosion Controls

Beach Access Improvements

Coral Reef & Water Quality Monitoring

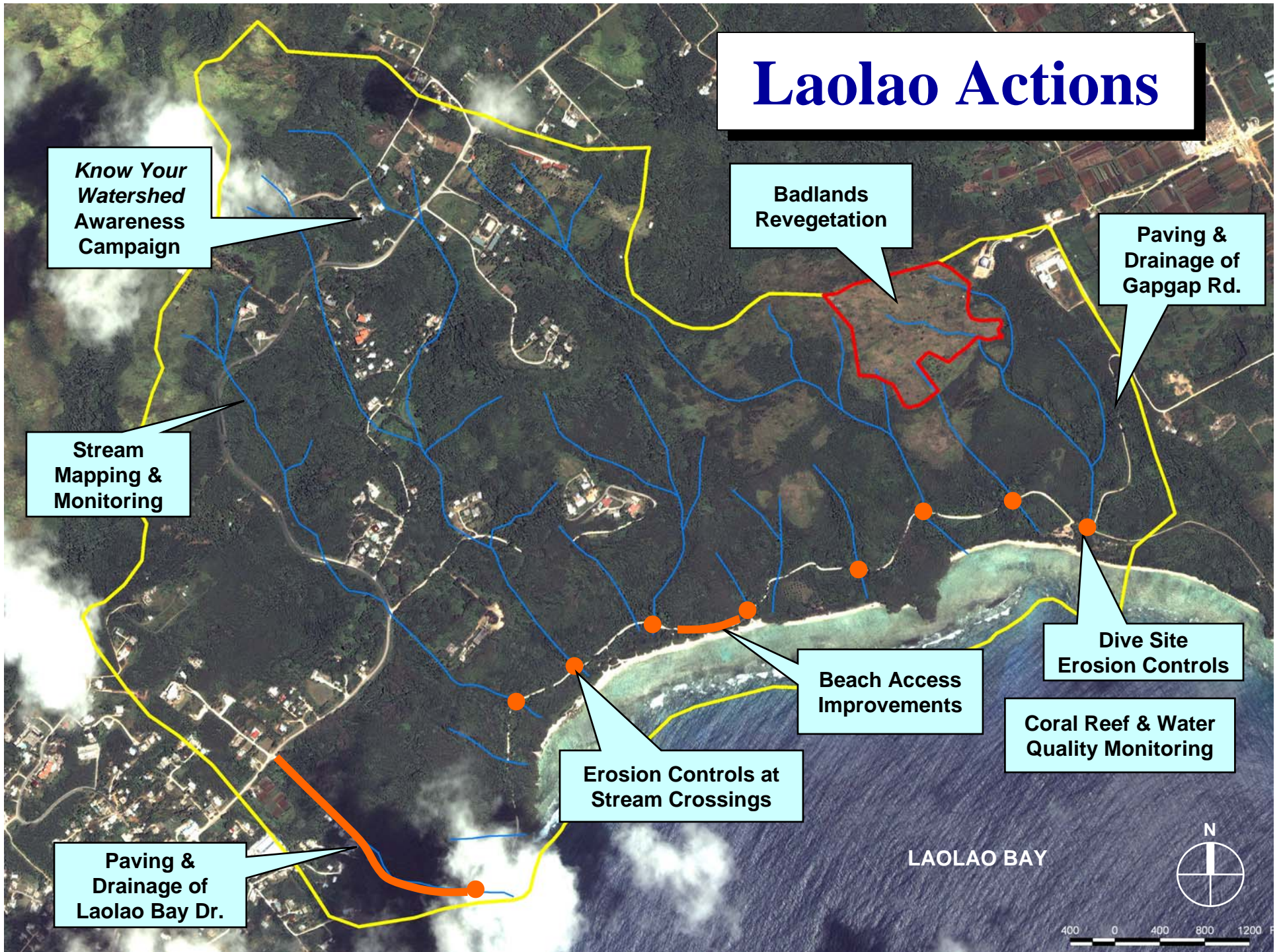
Paving & Drainage of Laolao Bay Dr.

Erosion Controls at Stream Crossings

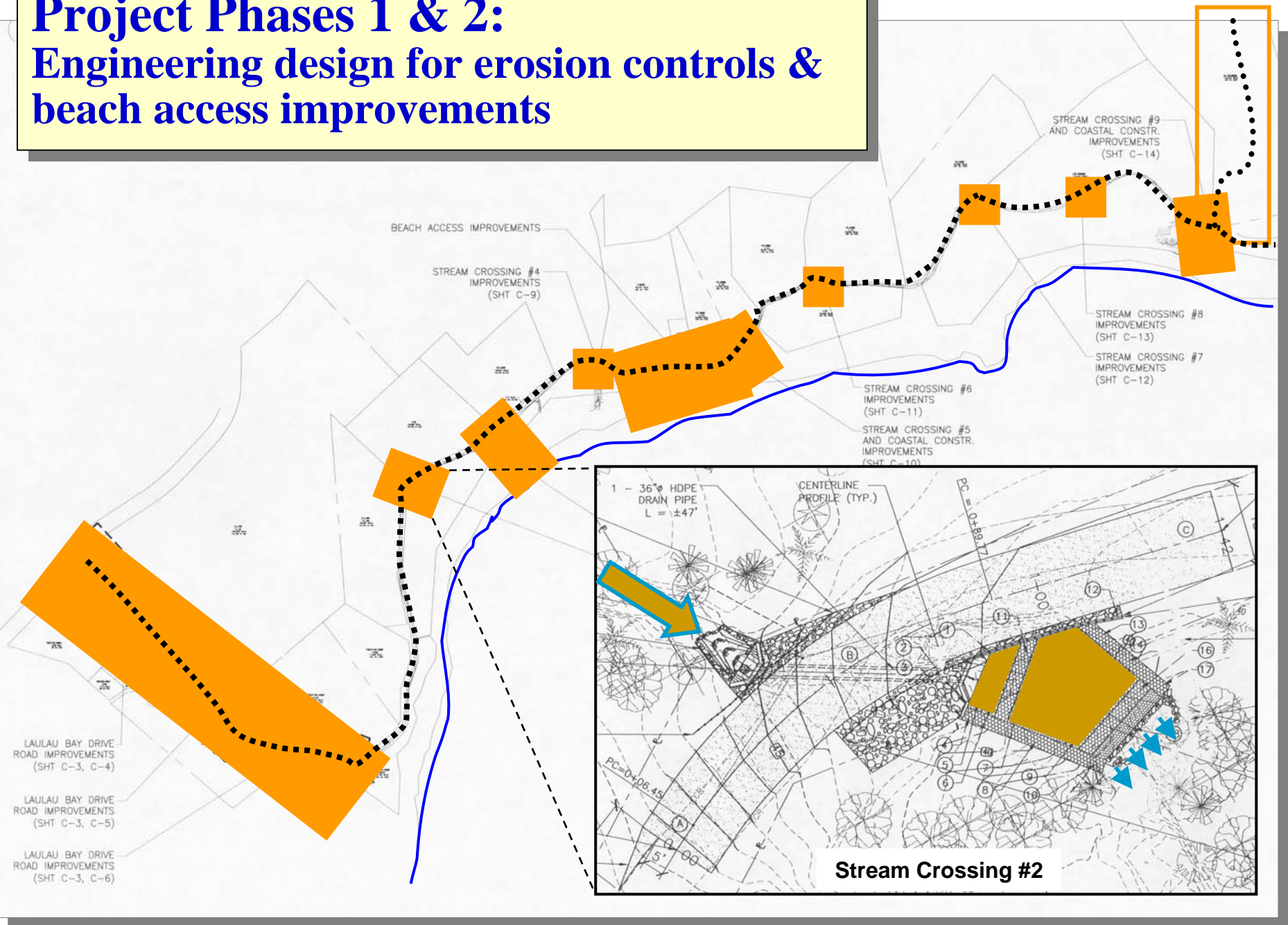
LAOLAO BAY

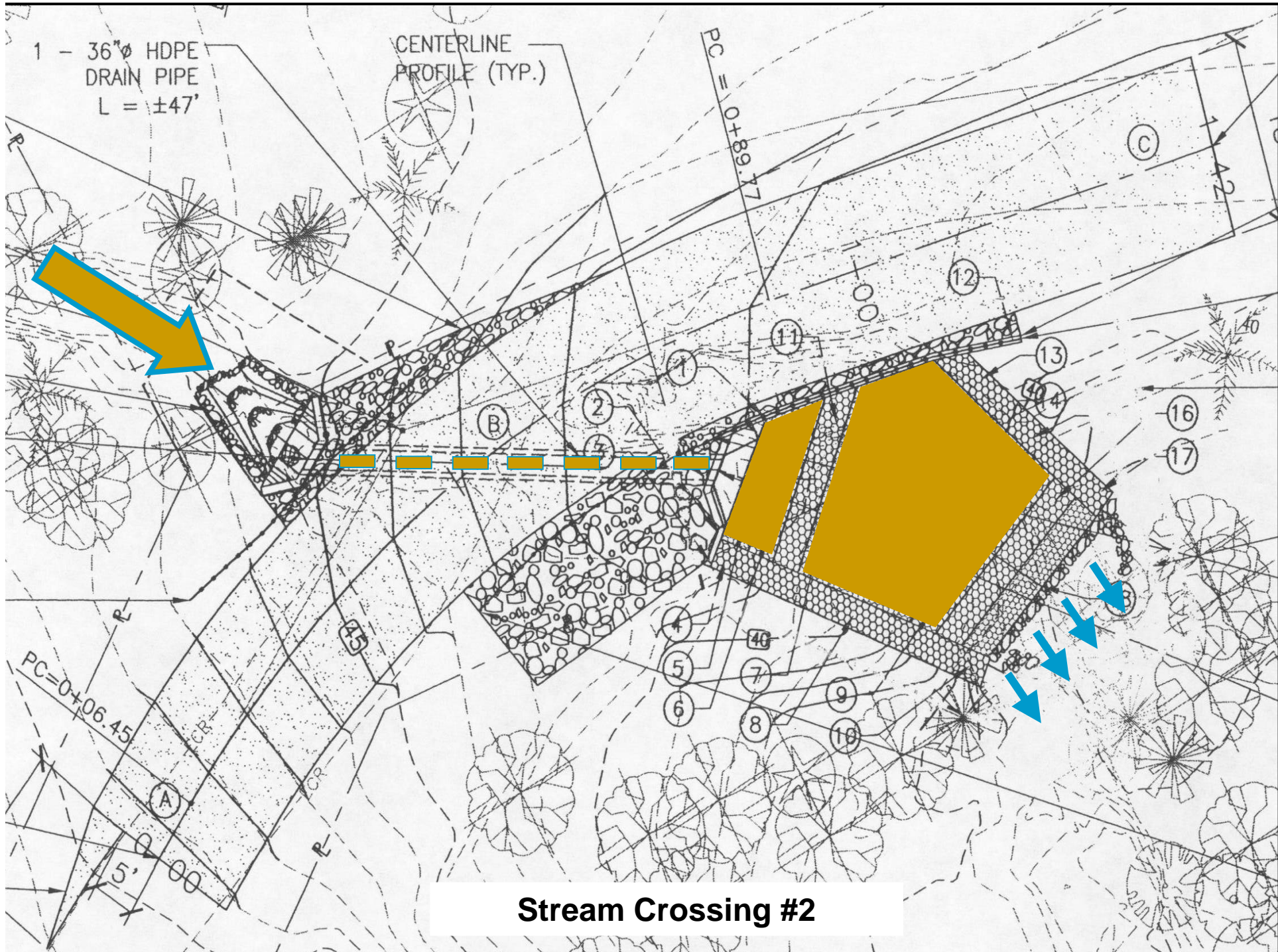


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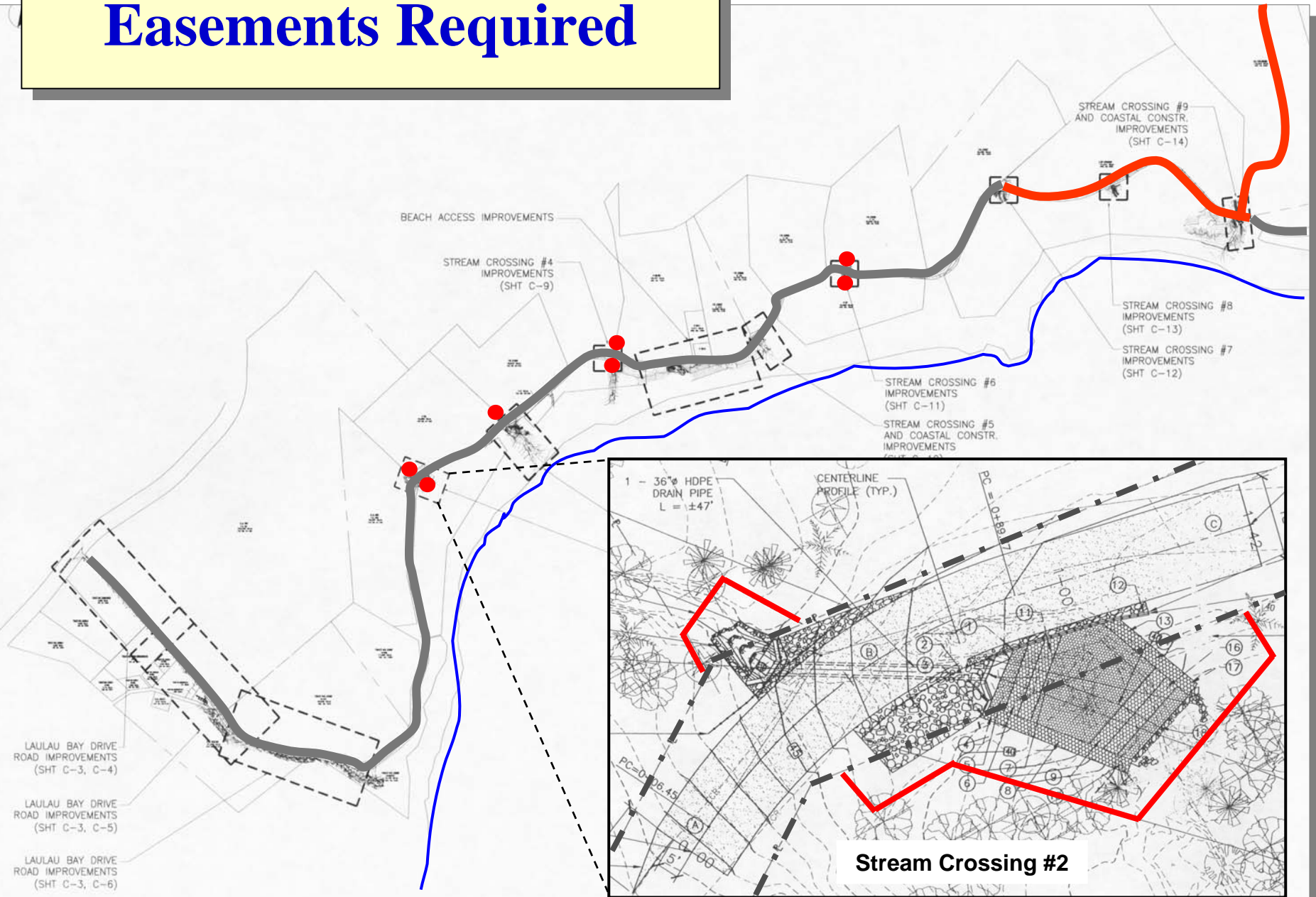
Project Phases 1 & 2: Engineering design for erosion controls & beach access improvements



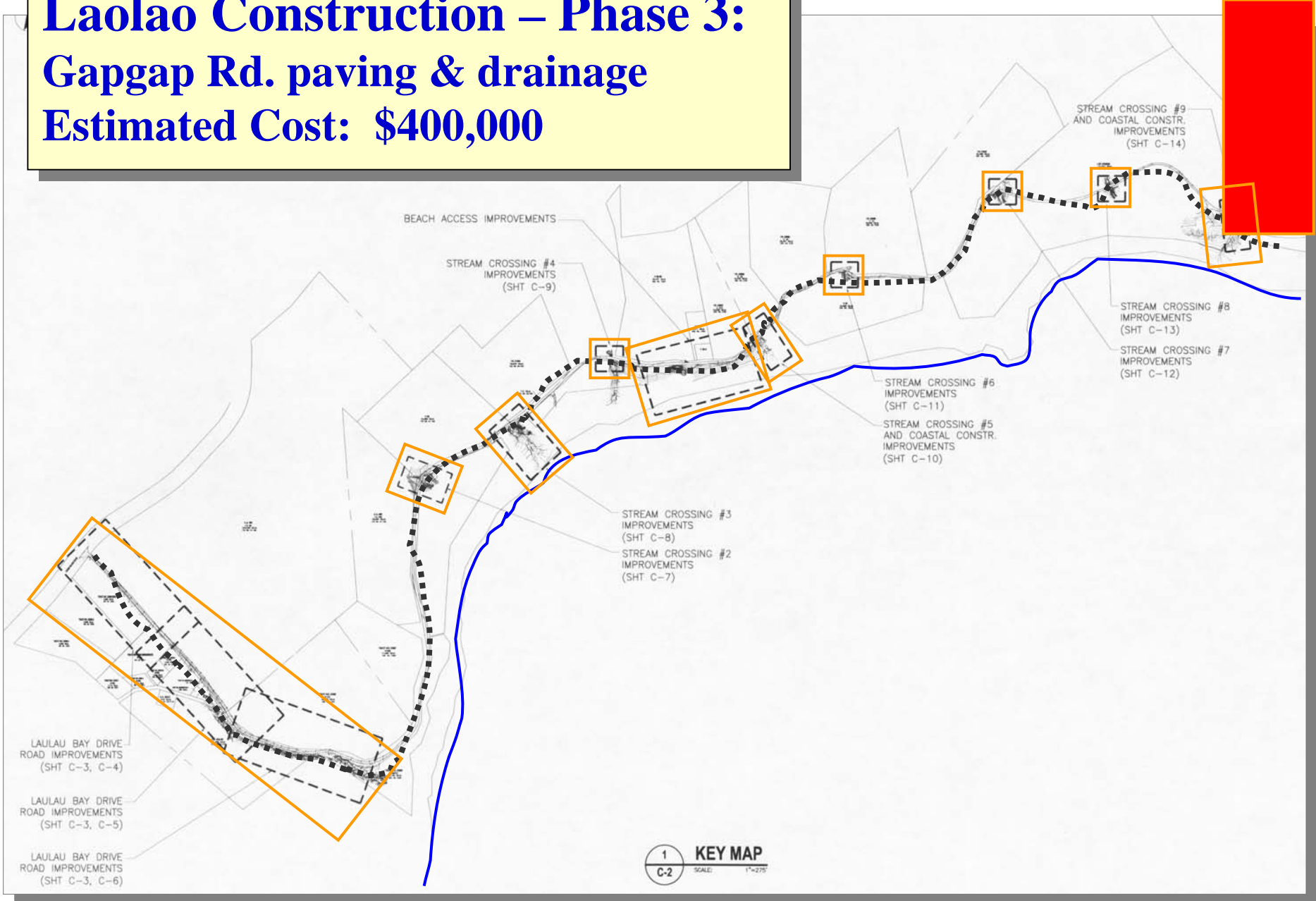


Stream Crossing #2

Easements Required

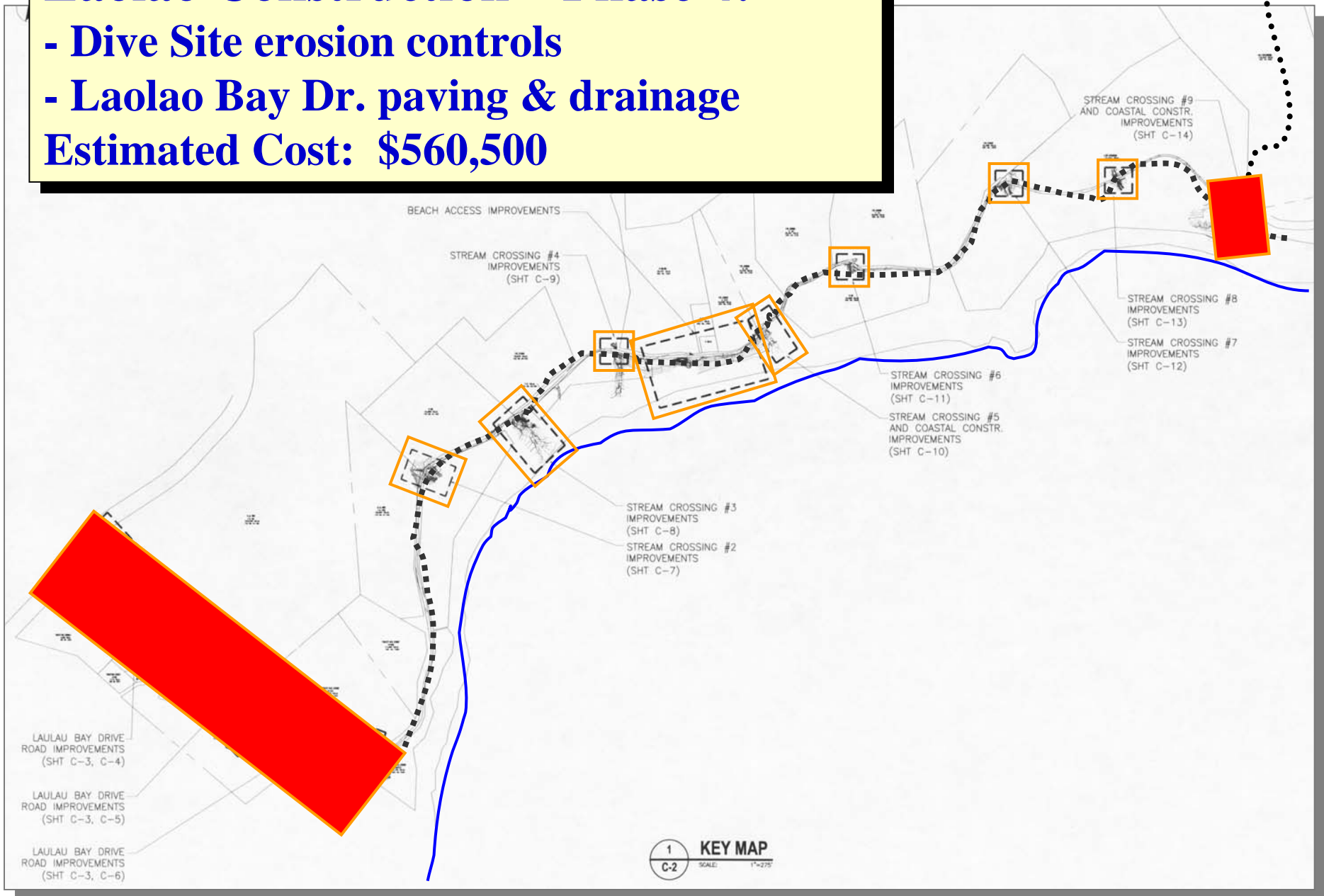


Laolao Construction – Phase 3: Gapgap Rd. paving & drainage Estimated Cost: \$400,000



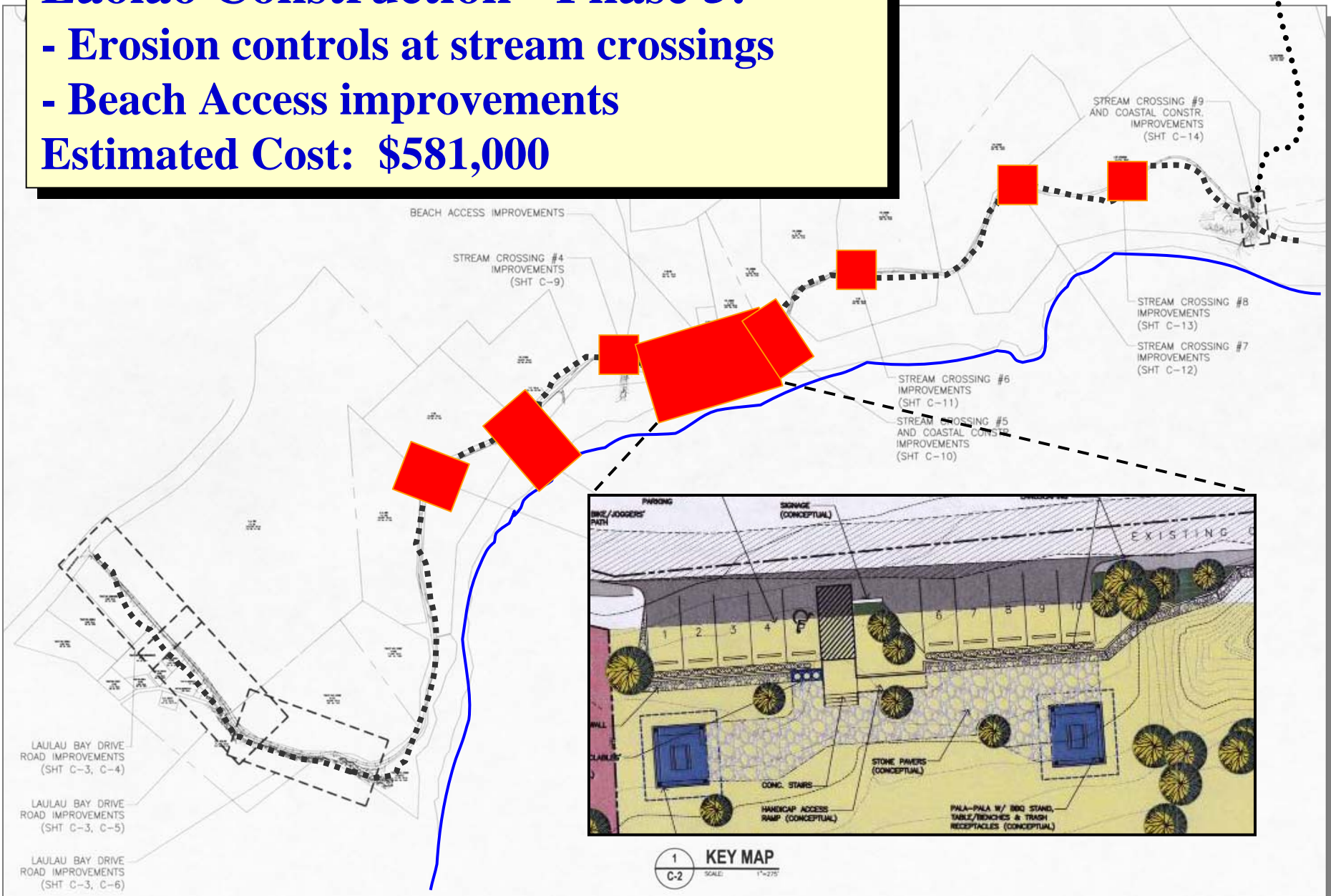
Laolao Construction – Phase 4:

- Dive Site erosion controls
 - Laolao Bay Dr. paving & drainage
- Estimated Cost: \$560,500**

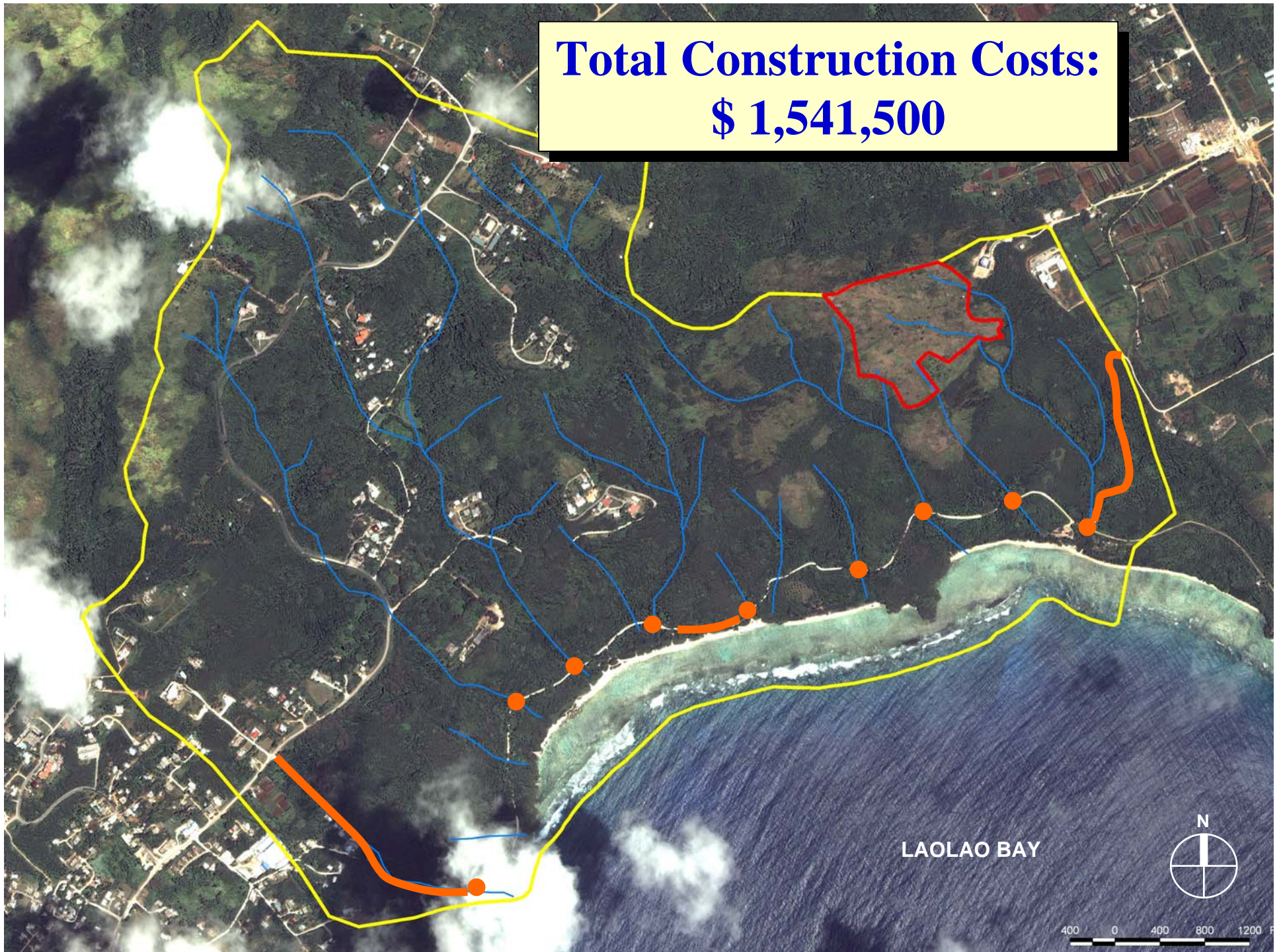


Laolao Construction - Phase 5:

- Erosion controls at stream crossings
 - Beach Access improvements
- Estimated Cost: \$581,000**



**Total Construction Costs:
\$ 1,541,500**





Project Benefits

- **Improve water quality and coral reef health**
- **Enhance tourism and economy**
- **Improve beach access and recreational amenities**
- **Protect sea turtle habitat**
- **Ensure Kagman access**