

Site Information

- 1) Since the district road, which this bridge is located on, accesses from NR1 to the district center of Ham Thuan Bac, this road is important for the surrounding people to carry agricultural production such as sugarcane and dragon fruit and of daily life.
- 2) The existing bridge was built before 1975. The damage level of H-beams is observed to be low at the moment although corrosion of the beams has been making progress. In addition, scouring around a pier and abutment was observed. The load of vehicles is limited to 5 ton.
- 3) Flood occurred in 1983, 1984, 1999 and 2000. HWL is assumed to be 3.0m over the bridge surface in 1999 according to the interview result. Although the flood level in 1984 was higher than it, it became lower after completion of the reservoir at upstream side. The river winds its way and the river banks are significantly eroded by previous flooding.
- 4) Ethnic minority, Cham tribe, inhabits the surrounding area.
- 5) The access roads on both banks have been upgraded to asphalt pavement with 4-5m in width.
- 6) The new centerline will be set at around 10m downstream from the existing one in consideration with the stability of river banks. The proposed bridge length will need consideration with previous flood records. A pier should not be set in the river center due to rapid flow.
- 7) Protection work will be needed for river banks close to abutments.
- 8) A few houses will be affected by new approach road at the left bank. The irrigation canal at the left bank should be considered in the approach road design.
- 9) A corn field at the right bank will be available for the construction yard.

The site rough sketch

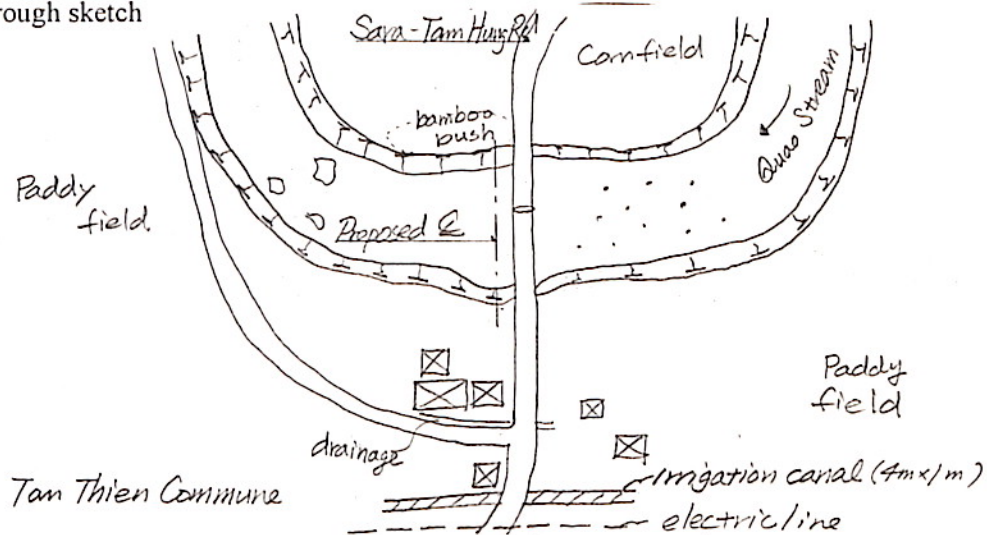


Photo 1: Existing Bridge



Photo 2: Existing Bridge

**No. 43 Tam Ngan Bridge – Component A -**

**( Ninh Thuan Province)**

**Site Information**

- 1) The road, which the bridge is located on, is an only access route from communes in mountain area to school, hospital and market. There is transport demand to carry agricultural production such as sugarcane, tobacco, and cotton on the bridge.
- 2) The existing bridge is a suspension type for pedestrian constructed in 1992. The heavy vehicles cross the river only in dry season. Damages are observed on the deck of the bridge
- 3) There is little damage by flooding and HWL is assumed to be 0.3 m below the bridge surface according to interview result. The ordinal river flow is rather rapid.
- 4) The access road on the right bank with 3-5m in width is under upgrading work and it is planed to improve the asphalt paved road with 6m in width by local fund. F/S of the development plan including access road on the left bank has been undertaken. It will extend to NR27B in future.
- 6) Ethnic minority of Rag Lay and K'tto tribes inhabit in the surrounding communes on the left bank.
- 7) The proposed bridge location will be shifted to 100m upstream from the existing one to avoid resettlement of houses as possible. Its length will be around 70m with 3 spans. It is preferable not to set a pier in the river center due to rapid flow. 1 meter of freeboard is required.
- 7) The design of approach road at the right bank will need attentive consideration because the bridge centerline connects with its approach road at right angle and should be considered with irrigation canal. The approach road at the left bank will be access to a square in front of the church.
- 8) A few houses will be affected by the new approach road construction at the left bank.
- 9) A paddy field will be available for construction yard at the place close to the bridge site at the right bank. The measures to transport heavy equipment to the right bank should be examined.

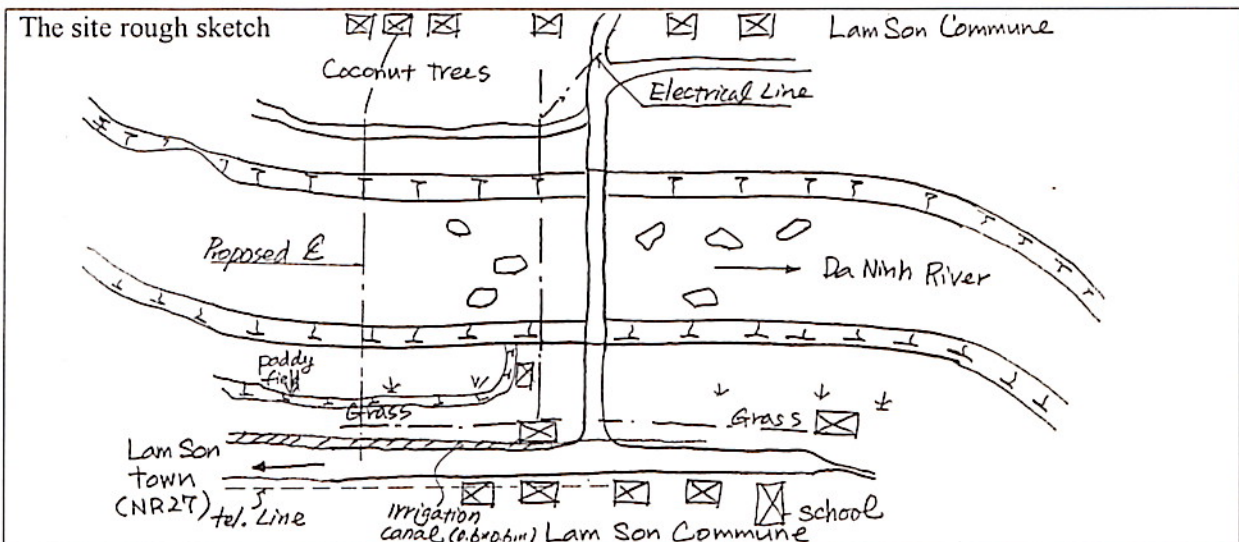


Photo 1: Existing Bridge



Photo 2: Side view

Site Information

1) Provincial Road 725, which the bridge is located on, is only access to the district center of Dinh Van of Lam Ha District including school, hospital and market from vicinity communes. There is transportation demand to carry agricultural production such as coffee, rice and vegetables. Much motorcycle traffic are observed.

2) The existing bridge is a H-beam type and its substructure is composed of RC and gabion mattresses constructed in 1978. The flood in 2000 swept A1 abutment away and cause the collapse of the first span. It took three weeks to repair it and the steel-meshed slab was applied instead of the wooden one. Although corrosion on the H-beams is making progress, serious damages are not observed. The load of a vehicle is limited to 13 ton.

3) HWL is assumed to be 1.0m over the bridge surface in 2000. The ordinal river flow is quite rapid. Erosions on river banks at the downstream of left bank are observed.

4) Access roads are planed to upgrade with 5.5m in a carriage way covered by asphalt pavement.

5) Immigrants of soldiers and ethnic minorities inhabit in four communes in the affected area.

6) The centerline of the new bridge will be set at around 15m upstream of the existing one. The bridge length is required to be little longer, 78m with 3 spans. 1.0 m of freeboard is required.

7) A few houses will be affected at both banks for construction. The electrical line should be shifted.

8) A construction yard is available at the upstream side of the left bank but it seems unsuitable as PC girder fabrication yard in consideration with girder erection.

The site rough sketch

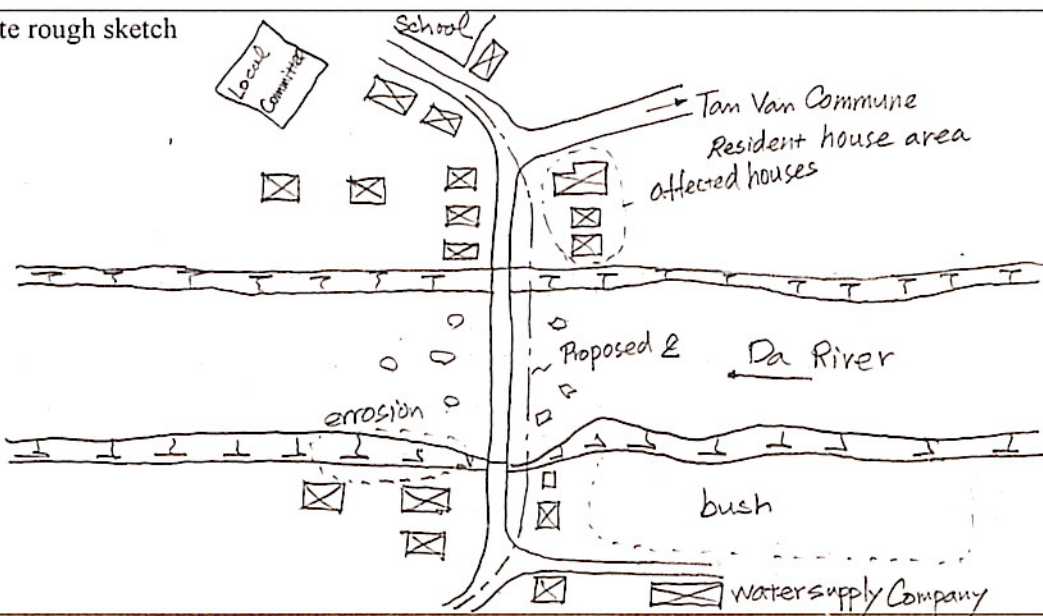


Photo 1: Existing Bridge



Photo 2: Existing Bridge