

Recognition of current status on the Access Roads to “El Tesoro” Project Report.

July 22nd, 2002

Meeting with Luis Verdugo Repetto, S.A.

Beginning of the route from “Los Encuentros” Km. 128 Ruta C-A 1

On Wednesday July 17th 2002, at 11:00 p.m., the beginning of the route with the Companies Luis Verdugo Repetto, S.A., represented by Mr. Vicente Jeréz and Soluziona Ingeniería S.A. represented by Mr. José Ademar Cruz and Augusto Fernando Toledo. The recognition of the potentially problematic places to transport heavy equipment like a 30MW Transformer and Turbines between 40 and 32 tons and other similar equipment came first. Finding difficult to get through Chichicastenango’s entrance as well as its downtown which has an antique arch, for 40 feet platforms or Low Boy, vehicles used to transport those kinds of equipments; according to Repetto’s personnel this could be solved using short platforms in order to turn in these reduced spaces.



Picture No. 1

This picture shows the narrow of the street (4.00 m) and the low of the roof (4.00m) which can be a problem when transporting equipment. It can be solved with shorter transport.



Picture No. 2

Opposite site from picture 1, it can be seen the narrow of the street taking the car on it as reference.



Picture No. 3

The 40 feet platform in the picture is having problems, with the white house, to turn in the corner.



Picture No. 4

Same corner described on picture 3 see from a different angle. It can be seen the damage vehicles had caused to the white house when they turn.



Picture No. 5

Corner in front of Hotel Santo Tomás (Chichicastenango's downtown) there is not possible to turn with equipment with a width larger than 3.00 meters.



Picture No. 6

This is the last difficult turn on Chichicastenango's exit.



Picture No. 7

Bridge between Chichicastenango and Santa Cruz del Quiché, which does not have enough reinforcement to resist the weight of the heaviest equipments plus the transport weight, but it can be solved by using long platforms so the weight is not concentrated (2 shafts).



Picture No. 8

There are no main problems on turning in Santa Cruz del Quiché.



Picture No. 9

Exit to Sacapulas, the perpendicular street to the central line of the cross sectional line for the bridge is too narrow, consequently it is not possible to turn with a long platform because the street is under filler; it can be solved by extending the stuffed.



Picture No. 10

There are approximately 6 sections like this where it is very difficult to transit with heavy equipment, reason why it is necessary to extend the width of the curve from the outside. Also due to the steep slopes it was suggested to use a frontal shipper, for example to push the transport of the equipment where necessary, this picture taken in kilometer 4 after Sacapulas and before arriving to Nebaj.



Picture No. 11

Picture taken from the front of the truck of picture 10, the narrow curve can be observed.



Picture No. 12

Cuts on slopes will be needed in order to help platforms to turn.



Picture No. 13

There are some stone cuts, which make necessary to determine whether to use explosives or not in such areas. Pictures (12 and 13) were taken on kilometer 8, From Sacapulas to Nebaj.



Picture No. 14

According to Luis Verdugo Repetto, S.A. and Soluziona Ingeniería, there are some areas where material can be extracted. Kilometer 12 from Sacapulas to Nebaj.



Picture No. 15

There are also some sections from Sacapulas to Nebaj which are in very good condition.

Meeting with Tyrsa, Madisa, Constructora D.L S.A. and Luis Verdugo Repetto, S.A.

These are the companies which will make an offer to extend and fix the road from Chajul to Dam site (El Tesoro) and Power House site (Panchita) .

Beginning of the route From Nebaj to Panchita Site

The beginning of the route was done from Nebaj's town hall to Chajul's town hall. This is the stretch which needs more extension and fixing works.



Picture No. 16

Between Nebaj and Chajul there are some sections with slides due to the lack of slopes protection. Up to present the road construction works are in hold.



Picture No. 17

There are some clay sections which turn difficult to drive through, especially for rainy season. On the right side of this picture, slides on the slope can be found.



Picture No. 18

Because of the lack of slopes protection and roadside ditches, the soil gets saturated causing slides which sometimes makes necessary to close the road. See the slide on the left side.



Picture No. 19

Chajul's downtown has 4 places like the one in the picture, where there are turning problems because of the houses and the narrow street. It is a must to negotiate with owners in order to extend the it.



Picture No. 20

Another difficult corner to turn in Chajul.



Picture No. 21

There are a lot of material Banks which can be useful to fix the roads, like this one between Chajul and La Perla. 12 kilometer from Chajul.



Picture No. 22

Stone cuts must be done in many sections in order to help big vehicles to turn.



Foto No. 23

A retention wall must be build in areas like the one describe on picture 23 due to the narrow of the road.



Foto No. 24

This is one of the most difficult curves, because it has a very steep slope.



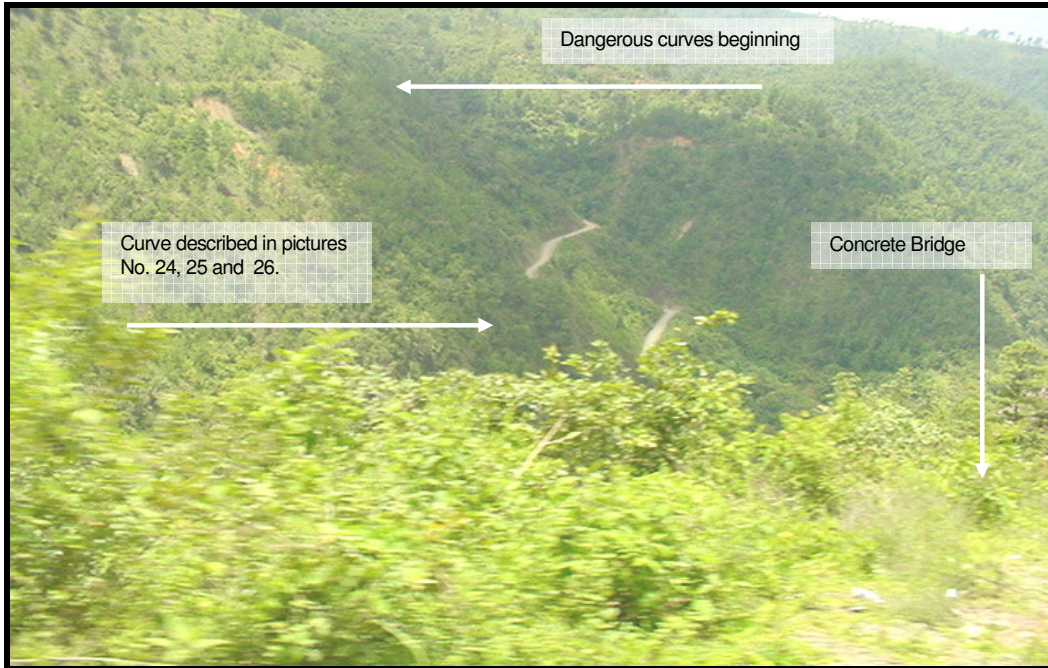
Picture No. 25

Complement of picture No. 24. All vehicles must go back in order to take the curve.



Picture No. 26

Same curve as in pictures No. 24 and 25. It is not possible to extend the curve on its outside side because the precipice, so Repetto, S.A., said they can supply the transport equipment up to kilometer 22 from Chajul.



Picture No. 27

In this picture it is showed the most critical section for the equipment transportation. On sections described on pictures 24, 25 and 26 is not possible to extend the curve on the outside side because there is a gully and on the inside side neither because that would make a very steep slope.



Picture No. 28

This view is taken after the concrete bridge, where the most of the road has big stone steep slopes.



Picture No. 29

Narrow of the road (1 way)



Picture No. 30

The narrow curve makes difficult to turn, that is why is it's a need to cut the outside side of the curve. The curve cannot be filled because the gully is too big.



Picture No. 31

The landslides make difficult to drive through the road. This section is between the concrete bridge and La Perla.



Picture No. 32

On the right side of this picture the narrow curve described on picture No. 30 can be observed. It is not possible to fill the gully; the slop must be cut. It is dangerous to work in that section.



Picture No. 33

It is frequently to find landslide along the road.



Picture No. 34

Long platforms cannot drive through this road, just small vehicles.



Picture No. 35

From the concrete bridge to La Perla, the road is dangerous.



Picture No. 36

This is a landslide 4 kilometers before La Perla, and it is needed to have constant fixing Works.



Picture No. 37

The road is full of gullies and narrow, which makes it dangerous especially with landslides, see right shore.



Picture No. 38

The narrow curve situation can be fixed filling the inside side of the curve in order to have space to turn.



Picture No. 39

2.5 kilometers before La Perla. The constant rains caused a big landslide.



Picture No. 40

2 kilometers before La Perla, there is land bump, which would block the movement for long transportations. It must be cut.



Picture No. 41

La Perla Square



Picture No. 42

Ixtupil River (first entrance) where a bridge will be built in order to ease the access and it will be extended to prevent flooding on rainy season.



Picture No. 43

Ixtupil River (second entrance), it is harder than the first one, because this one is not dredged.



Picture No. 44

The road tread on Ilóm town it is damaged and narrow. It would be necessary to find a new section in order to avoid enter Ilóm.



Picture No. 45

Near the high pressure penstock site the soil is argillaceous and that makes pretty difficult to drive through it especially on rainy season. A solution would be to build ditches to drain the rain.



Picture No. 46

This is the suggested site to build the power house and at the same time the end of the route which will be extended.

CONCLUSIONS

- Topography it is necessary in order to specify earthworks. Verdugo Repetto, S.A., and Soluziona Ingeniería S.A. agreed that the most important line is the big movement volumes for the extension and improvement of the road.
- According to Repetto, S.A., and Soluziona Ingeniería S.A. it is impossible to transport the electromechanical equipment to the power house site now because of the roads actual conditions. They will give their offers according to the extension and improvement of the roads.
- Repetto, S.A., and Soluziona Ingeniería S.A participated in the access roads and they will present their offers based on work estimated; provided by Soluziona Guatemala.