CHAPTER 4
ALTERNATIVE ALIGNMENT STUDY OF BYPASSES

The alignment selected during the feasibility study (hereinafter referred to as the "F/S alignment") was reviewed based on the following:

- Changes of the site condition along the F/S alignment
- Present and future land use along the F/S alignment
- Opinions of LGUs and residents along the F/S alignment
- Location of river crossings particularly wide rivers

4.1 Plaridel Bypass

The F/S alignment was generally judged appropriate, except the beginning section of the bypass where the alternative study was required on the following (see Figure 4.1-1):

- Location and type of interchange between the North Luzon Expressway (NLE) and the Bypass
- New subdivision was under construction along the F/S alignment. The study how to cope with this new development was required.

4.1.1 Location and Type of Interchange between NLE and the Bypass

1) Interchange location of the F/S Alignment

The feasibility study selected the existing Burol Interchange where the Bypass be connected.

2) Estimated Traffic Volume

Estimated traffic volume for the years 2005, 2010 and 2020 is shown in Figure 4.1-2.

3) Traffic Service to be Provided at the Interchange

Major traffic flows are as follows:

- Manila (A) $\leftrightarrow$ Cabanatuan (B)
- Manila (A) $\leftrightarrow$ Malolos (C)
- Manila (A) $\leftrightarrow$ Tarlac (D) (This is North Luzon Expressway)

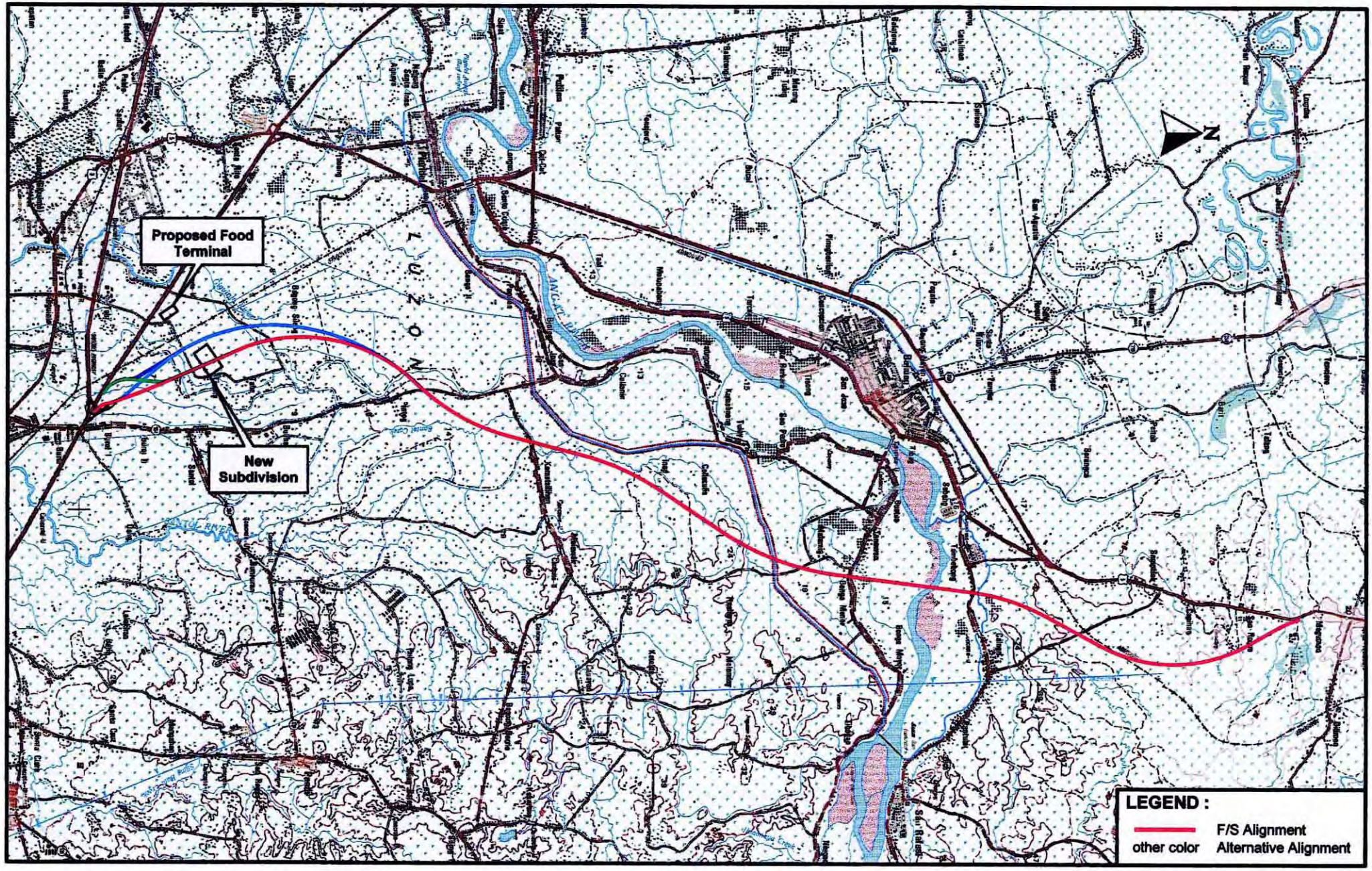

FIG. 4.1-1 ALTERNATIVE ALIGNMENTS FOR PLARIDEL BYPASS

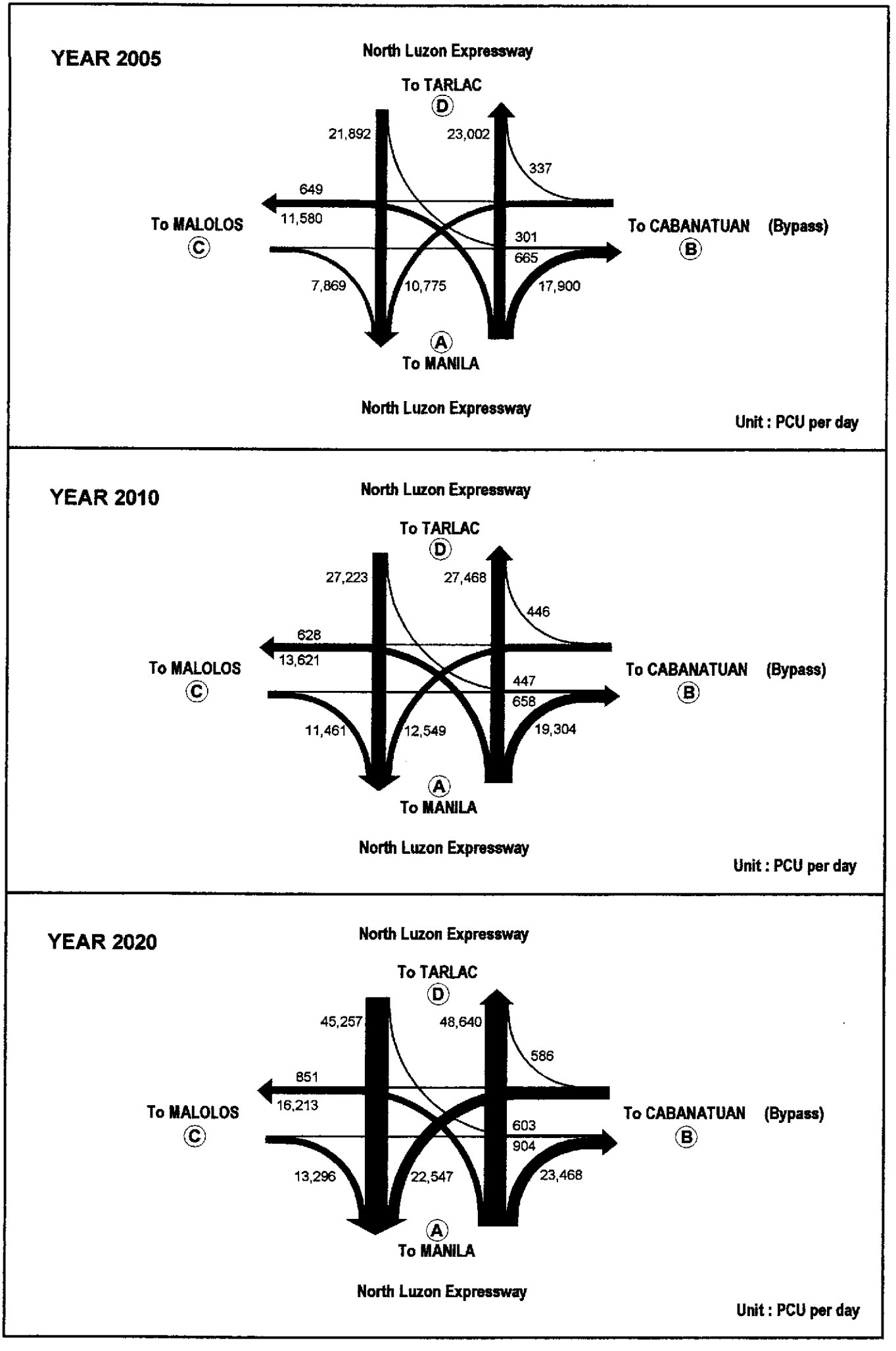

FIGURE 4.1-2 ESTIMATED TRAFFIC AT THE BUROL I/C

Following directions have very light traffic even in year 2020:

	Traffic in 2020
• From Cabanatuan (B) to Malolos (C)	851 pcu/day
• From Malolos (C) to Cabanatuan (B)	904 "
• From Cabanatuan (B) to Tarlac (D)	586 "
• From Tarlac (D) to Cabanatuan (B)	603 "

Traffic between the Bypass and Malolos is expected to use Sta. Rita Interchange. Traffic between the Bypass and Tarlac will use Sta. Rita Interchange or Pulilan Interchange, therefore traffic service between the Bypass and Malolos and between the Bypass and Tarlac is not significantly needed, therefore, ramps connecting these directions are not recommended to be provided under this Project.

Traffic service between Manila and Malolos is provided by the existing Burol Interchange. Thus, only traffic service between Manila and Cabanatuan (the Bypass) is required under this Project.

4) Type of Interchange

Two schemes shown in Figure 4.1-3 were studied. Four ramps are named as follows:

Ramp A	:	From Malolos to Manila	(Existing)
Ramp B	:	From Manila to Malolos	(Existing)
Ramp C	:	From Cabanatuan to Manila	(Ramp for the Bypass)
Ramp D	:	From Manila to Cabanatuan	(Ramp for the Bypass)

Scheme – 1 : To Connect with Existing Burol I/C

Ramps for the Bypass are connected with the existing Burol I/C ramps. Ramp C is merged with Ramp A and Ramp D is diverted from Ramp B.

Ramp traffic volume in year 2020 and required number of lanes will be as follows:

Ramps	Traffic Volume (PCU in 2020)	No. of Lanes
A + C	35,800	3
B + D	39,700	3

Through traffic lanes of NLE will be widened from the present 2-lane to 4-lane up to Burol I/C which was committed by PNCC/MNTC. Ramp (A+C) which needs to be 3-lane has to merge with 4-lane through traffic of NLE. This ramp terminal cannot be provided due to the overpass bridge along Provincial Road No. 334 which is located at about 240m Manila side from the ramp nose. Thus, this scheme was found not technically feasible, unless the overpass bridge is reconstructed.

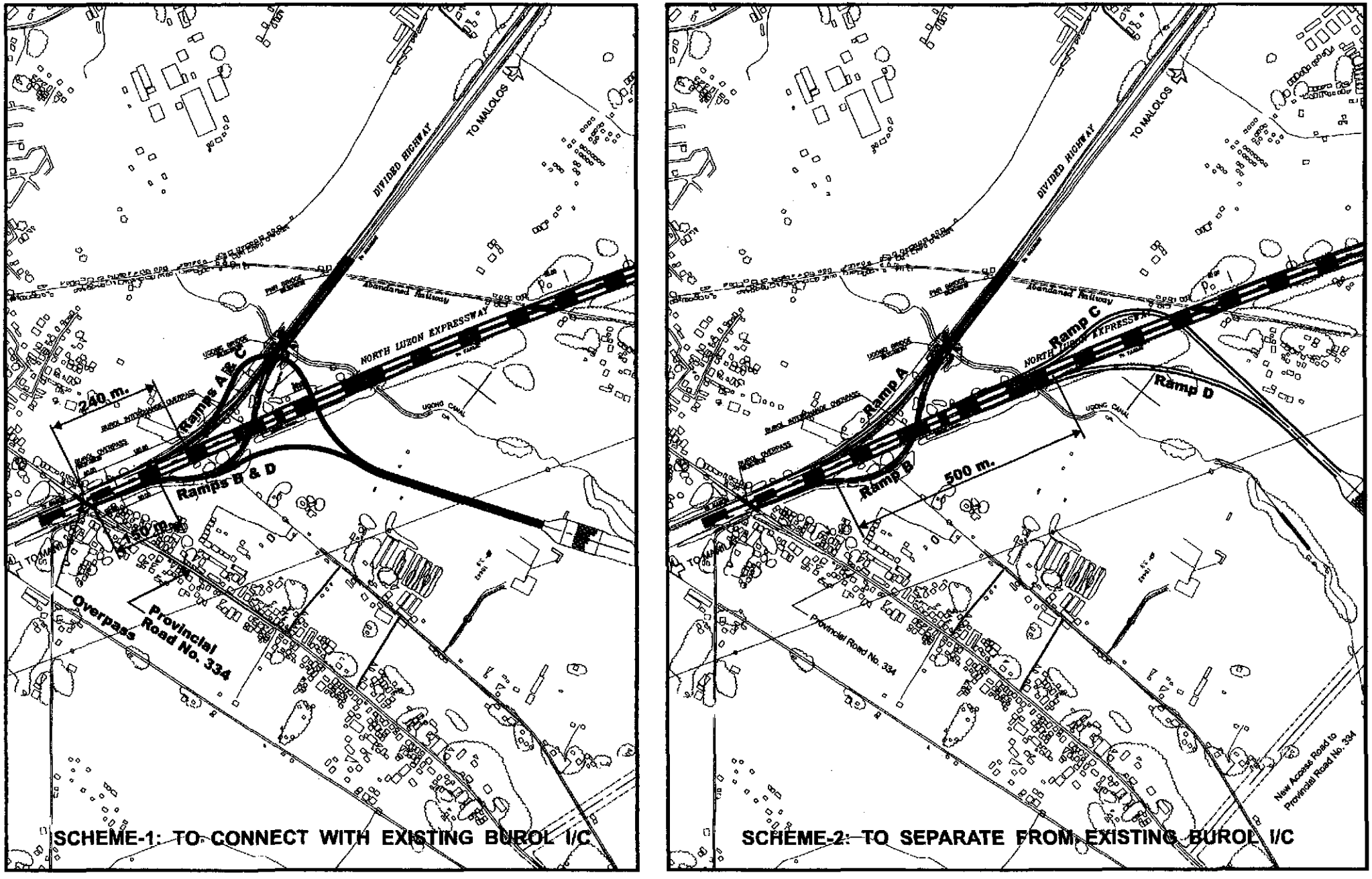

FIGURE 4.1-3 ALTERNATIVES OF INTERCHANGE TYPE

Scheme – 2 : To Separate from Existing Burol I/C

In order to solve the problems of Scheme-1, this scheme was proposed. Ramps related to the Bypass are constructed independently by locating about 500m away from the existing Burol I/C.

Ramp traffic volume in year 2020 and required number of lanes will be as follows:

Ramps	Traffic Volume (PCU in 2020)	No. of Lanes
A (Existing)	13,300	1 (2)
B (Existing)	16,200	1 (2)
C (This Project)	22,500	2
D (This Project)	23,500	2

Through traffic lanes of NLE at this section will be widened from the present 2-lane to 3-lane. Two-lane ramp terminals can be accommodated in this section, as the ramps are located at about 500 away from the existing Burol I/C.

It is recommended that Scheme-2 be selected for the interchange.

4.1.2 Alternative Alignments at New Subdivision

Two alternative alignments were studied as follows:

Alternative – 1 : To follow the F/S alignment which passes through the subdivision under construction. (Figure 4.1-4)

Alternative – 2 : To avoid for the alignment to hit the subdivision. (Figure 4.1-5)

Major difference between two alternatives are as follows:

	No. of Houses Affected	New Subdivision
Alternative – 1	14	Affected
Alternative - 2	25	Not affected

During the consultation meeting with LGUs and residents concerned, the Study Team presented the two Schemes. Residents strongly objected to the Alternative-2 which affects more houses than Alternative-1. The Study Team also discussed with the subdivision developer for the modification of their subdivision plan to meet with Alternative-1. The subdivision developer agreed if the bypass alignment passes through the eastern side, but not the center of the subdivision. It is recommended that Alternative-1 be selected.

4.1.3 Selected Alignment

The selected alignment for the Plaridel Bypass is shown in Figure 4.1-6.

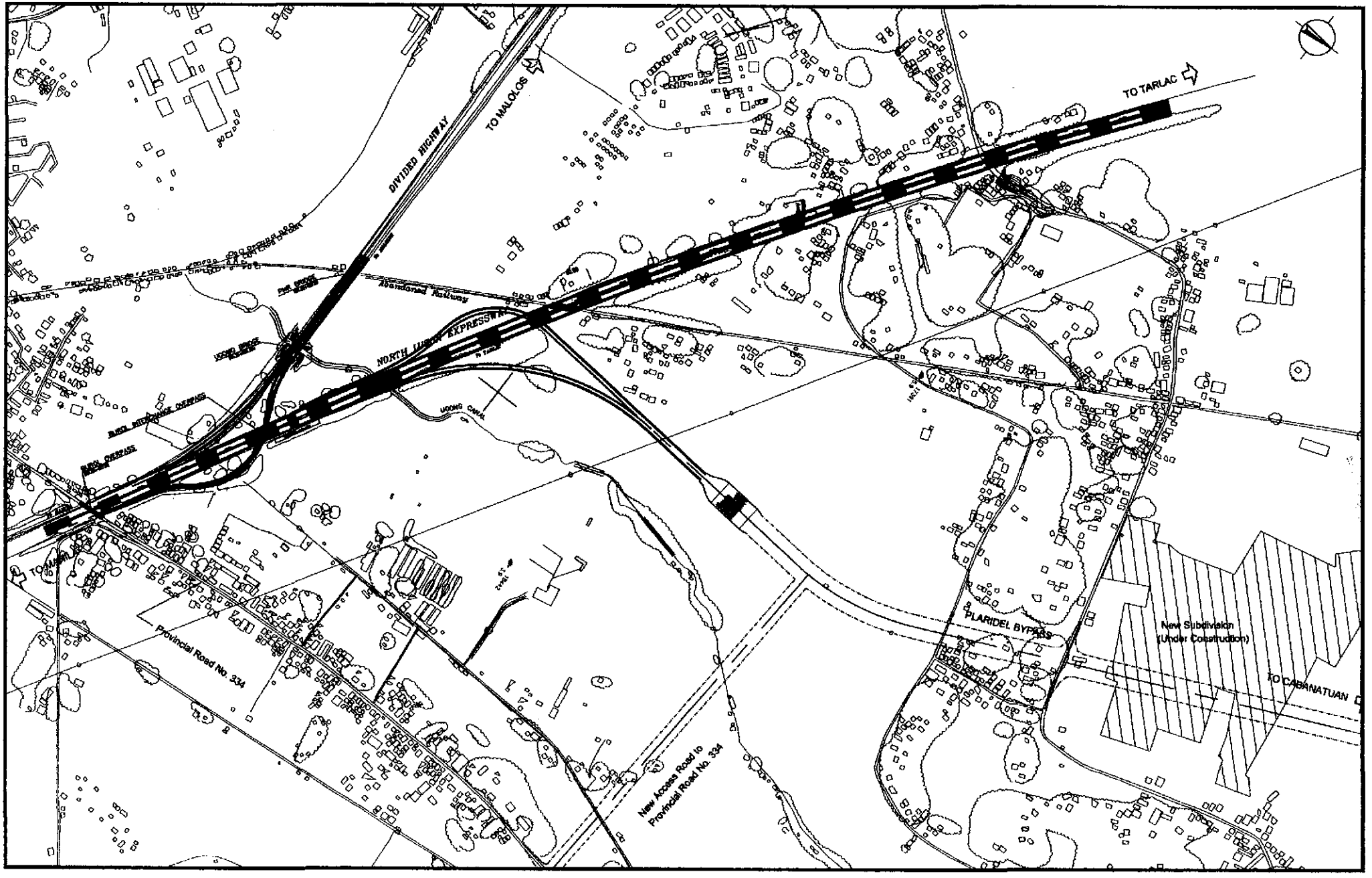

FIGURE 4.1-4 ALTERNATIVE 1

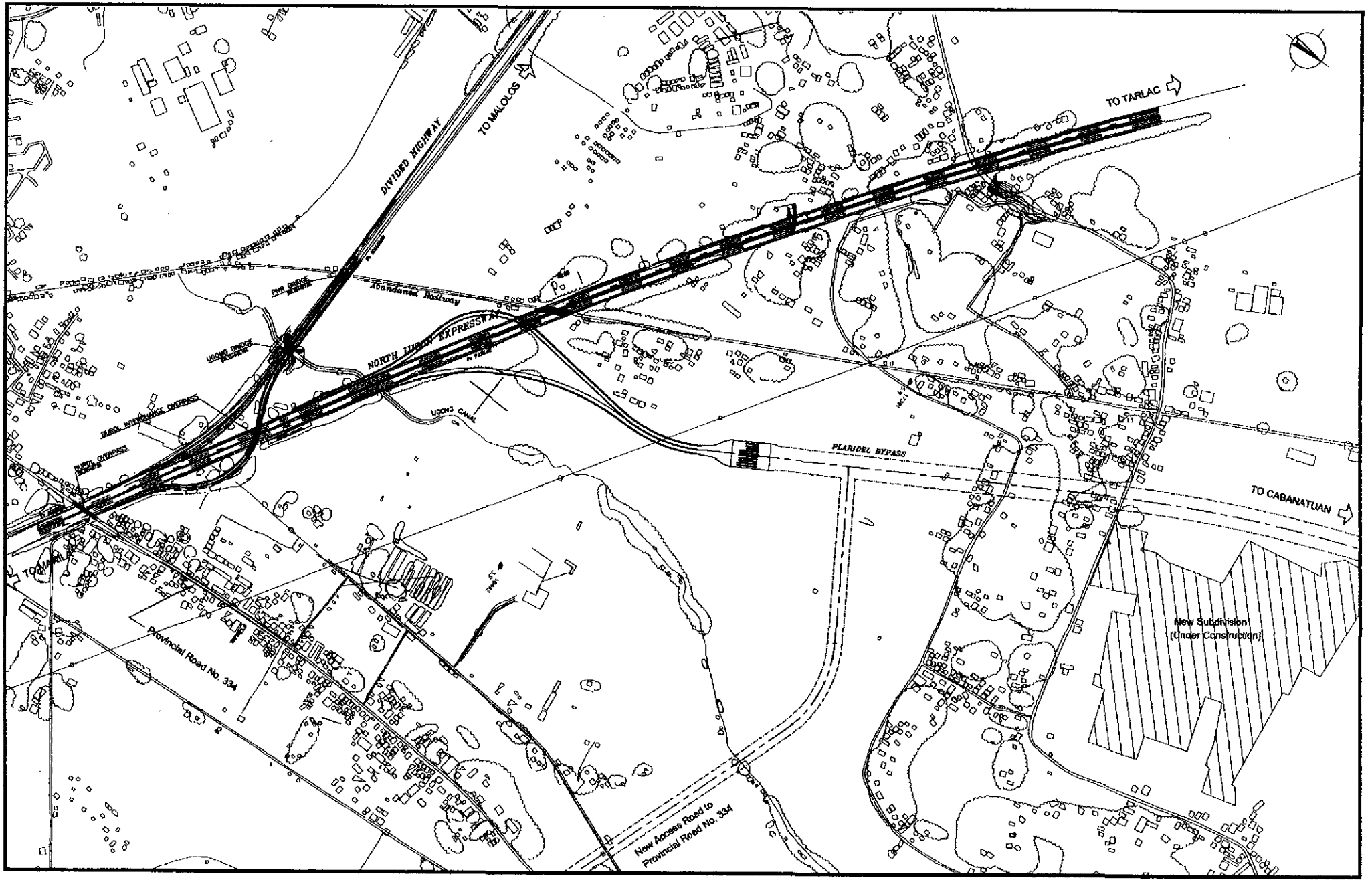

FIGURE 4.1-5 ALTERNATIVE 2

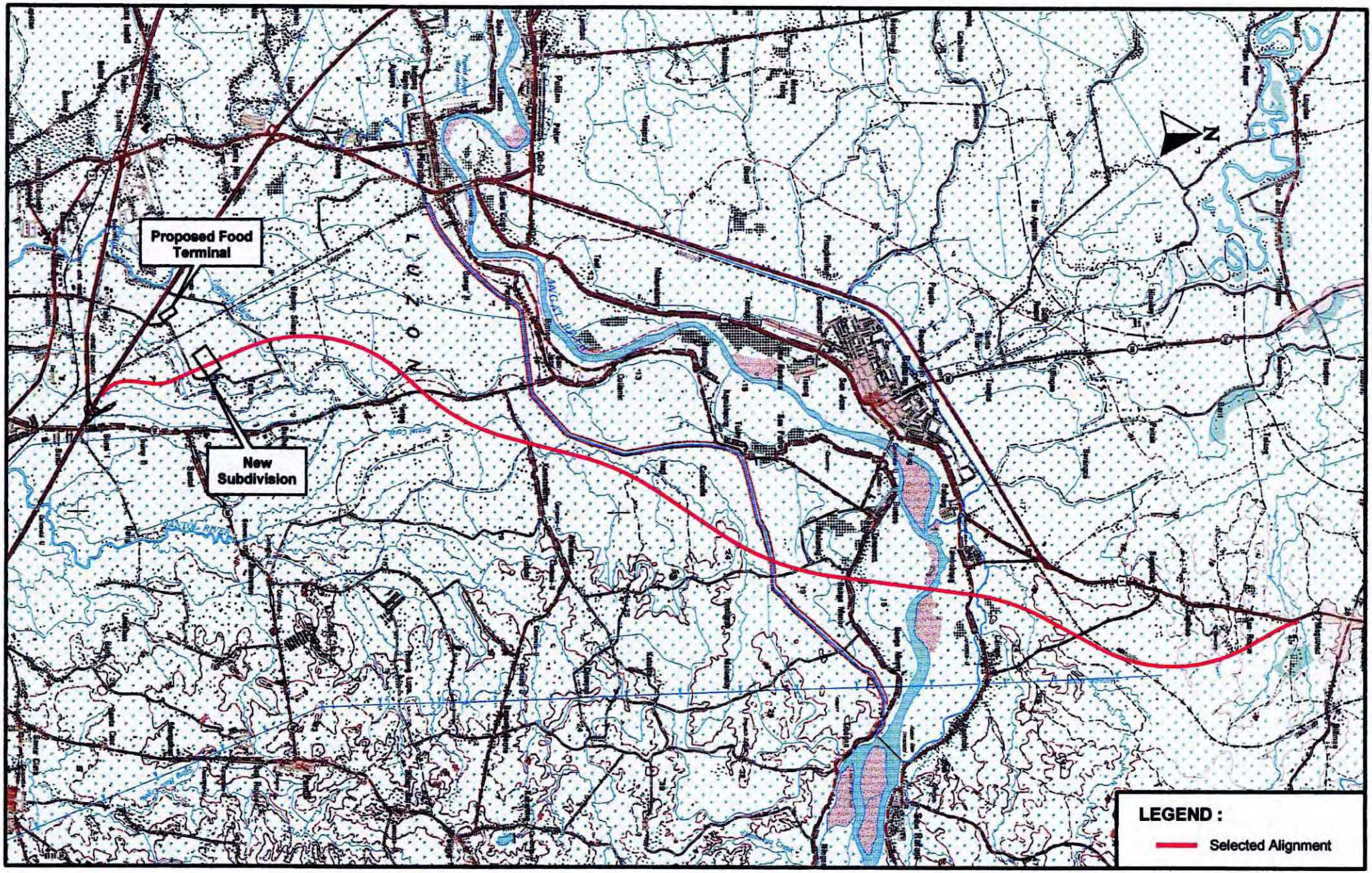

FIG. 4.1-6 SELECTED ALIGNMENT FOR PLARIDEL BYPASS