

Appendix B

Evaluation of Possible Alignment Options for the Bypass Culvert

Agreement No. CE 67/98 - Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai Drainage Improvement, Stage 1, Phase 2B (Secondary Drainage Channel KT13)

Table B1 - Detailed Consideration of Alternative Alignment Options for Bypass Section of Channel KT13

Item	Item Description	Proposed Alignment (Option 1) Open Cut along Alignment	Alternative Option 2	Alternative Option 3	Alternative Option 4
1	Length of the Bypass Section	Approximately 400m.	Approximately 530m. This option is the longest alignment amongst other options. The existing ground level is generally 0.5m to 2m higher than other options. The quantity of excavation is higher. This option would produce substantial C&D waste (approximately 5900 m ³ of additional surplus materials that cannot be re-used on site) that impose additional loading to the Public Filling Area. Also, it would cause additional traffic impact at the existing access road which is a single lane two way road.	Approximately 350m.	Approximately 420m.
2	Disturbance to Residential Houses	Working close to 10 residential houses at north bank of the alignment. No houses would be demolished.	Working close to 18 residential houses along the alignment in which 8 existing houses (all occupied) would need to be demolished (2 of them are new and in good condition). These 2 houses are owned by the family of the VR of Ma On Kong.	Working close to 8 residential houses along the alignment in which 3 existing houses (all occupied) would need to be demolished. This alignment would also need to demolish some temporary structures of the existing poultry farm.	Working close to 21 residential houses along the alignment in which 2 existing houses (all occupied) would need to be demolished
3	Private Land Resumption and Clearance	13 private lots need to be resumed (area around 5100m ²). Approximately 1850m ² of Government Land (GL). Percentage of GL is 26.6%.	18 private lots need to be resumed (area around 6900m ²). Approximately 2250m ² of Government Land. Percentage of GL is 24.6%.	18 private lots need to be resumed (area around 4600m ²). Approximately 700m ² of Government Land. Percentage of GL is 13.0%.	19 private lots need to be resumed (area around 5500m ²). Approximately 1800m ² of Government Land. Percentage of GL is 24.7%.
4	Impact to Existing Natural Streams and Ho Pui Egretty	A short section of the bypass culvert would encroach onto the existing stream. The affected stream portion will be re-constructed with gabion banks and original stream bed materials. The box culvert functions as by-pass channel to the stream and Egretty. Continuous stream flow similar to existing condition will be maintained.	This alignment does not pass through existing stream.	The alignment would pass through 2 sections of the existing stream. A total of approximately 80m are running along existing stream which would impose significant impact to the existing stream habitat.	The alignment would pass through existing stream. Approximately 90m of the alignment are running along existing stream which would impose significantly impact to the existing stream habitat.
5	Existing Grave(s)	Nil	Two existing graves (Qing Dynasty) are located very close to the alignment (about 4m clearance). It could attract substantial objections from local villagers.	Nil	An existing grave would be affected (about 3m). It would attract substantial objections from local villagers.
6	Existing Crossing(s) Affected	A total of 5 existing vehicular/pedestrian crossings would be affected.	A total of 4 existing vehicular/pedestrian crossings would be affected. A section of existing road (about 40m) need to be temporarily closed during construction period.	The existing pipe bridge near Ma On Kong and 1 existing crossing would be affected. Disturbance to the existing pipe bridge would generate severe traffic impact during construction period.	A total of 8 existing crossings would be affected. Due to the circumstance on site, two sections of existing access road (about 110m) need to be temporarily closed during construction period. Extra land resumption of private lots (300 m ²) is required for provision of temporary access during construction period.
7	Visual Impact	Based on item 2 above, visual impact would be the least when compared with other options.	Run close to large numbers of sensitive receivers at Ma On Kong Village.	Run close to large numbers of sensitive receivers at Ho Pui Village.	This alignment would cut the Ho Pui Village into two portions which would damage the integrity of the Ho Pui Village.
8	Interface with Small House Application	Nil	Nil	Nil	Affect 10 small house applications which are at the final application stage. It would attract substantial objections from local villagers.
9	Environmental Implications	Avoid majority of the Conservation Area (CA) zone consisting of woodland and grassland habitat and avoids completely Ho Pui Egretty. Partial encroachment of CA zone (grassland habitat) and stream section unavoidable. Further away from the main village areas therefore less villagers affected by construction noise and dust during construction.	Completely avoids CA zone and Ho Pui Egretty. Works are further away from Ho Pui Egretty. However, the alignment will cut across a woodland adjacent to the CA zone resulting in substantial tree felling. Close to Ma On Kong Village area, more villagers affected by construction noise and dust during construction.	Completely avoids the Ho Pui Egretty but with a small encroachment of the CA zone. However, works will still be close to Ho Pui Egretty and the stream section near the Egretty will be affected. Close to Ho Pui Village area, more villagers affected by construction noise and dust during construction.	Completely avoids the CA zone and Ho Pui Egretty. However, works will be close to Ho Pui Egretty and the stream section near the Egretty will be affected. Close to Ho Pui Village area, more villagers affected by construction noise and dust during construction.
10	Conclusions	This option essentially avoids the Ho Pui Egretty but with a small encroachment of the CA zone and stream section. On the other hand, it involves the least land resumption of private lots and no clearance of village houses is required hence less disturbance to the public. Also less environmental nuisance is expected during construction. Compensatory planting can be used to compensate for the habitat lost. Screen planting of bamboo can be used to screen disturbance and provide potential breeding sites for the Egretty. The fenced maintenance access of the bypass culvert could essentially act as a buffer to restrict access and development (from Ma On Kong) near the Egretty. As such, when compared to the other alternatives, this option is considered as the Preferred Option .	Although the CA zone can be avoided, the alignment will cut across a woodland, dividing it into 2 fragments. A Qing Dynasty grave will also be affected. More environmental nuisance is expected during construction. This option also requires land resumption of private lots and village houses involving lengthy time for processing with potential adverse opposition / objection from the affected villagers. As such, this option is Not Recommended .	A small portion of the CA zone as well as the existing stream near the Egretty will inevitably be affected. More environmental nuisance is expected during construction. This option also requires land resumption of private lots and village houses involving lengthy time for processing with potential adverse opposition / objection from the affected villagers. As such, this option is Not Recommended .	Although the CA zone can be avoided, it will inevitably affect a section of the existing stream near the Egretty. A section of the stream tributary will also be affected. Several village access roads in Ho Pui will be affected, re-provision will be needed both during construction and operation stages causing inconvenience to the public. More environmental nuisance is expected during construction. This option also requires land resumption of private lots and village houses involving lengthy time for processing with potential adverse opposition / objection from the affected villagers. This option is therefore Not Recommended .

LEGEND:

----- CURRENT ALIGNMENT OF THE PROPOSED KT13

▨ HO PUI EGRETRY

* EXISTING GRAVE SITES
(SITE A BELONGS TO QING DYNASTY)

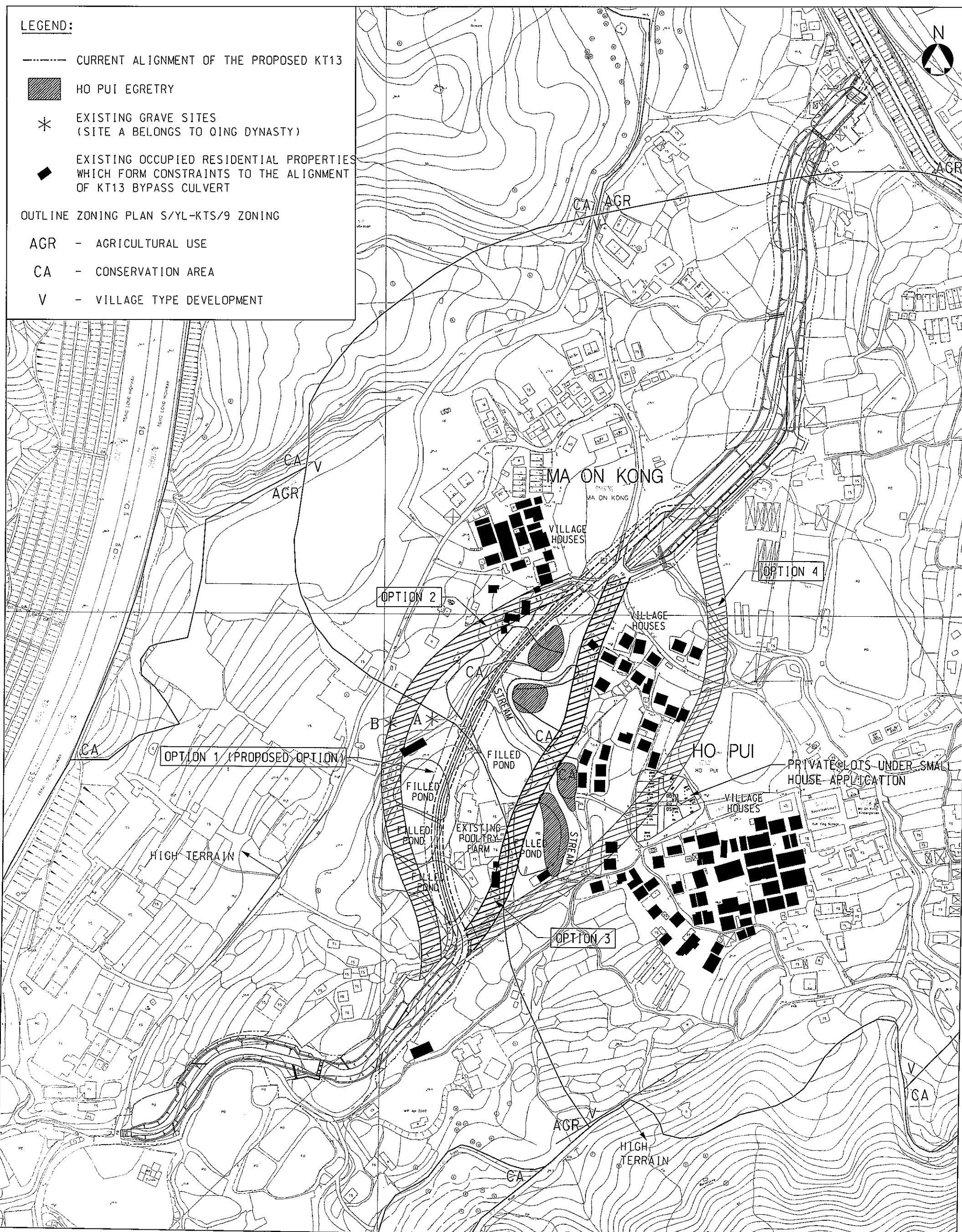
◆ EXISTING OCCUPIED RESIDENTIAL PROPERTIES
WHICH FORM CONSTRAINTS TO THE ALIGNMENT
OF KT13 BYPASS CULVERT

OUTLINE ZONING PLAN S/YL-KTS/9 ZONING

AGR - AGRICULTURAL USE

CA - CONSERVATION AREA

V - VILLAGE TYPE DEVELOPMENT



YUEN LONG, KAM TIN,
NGAU TAM MEI AND TIN SHUI WAI
DRAINAGE IMPROVEMENT, STAGE 1, PHASE 2B



BLACK & VEATCH HONG KONG LIMITED
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Title :

POSSIBLE ALTERNATIVE ALIGNMENTS
FOR THE BYPASS CULVERT AND
PHYSICAL AND PLANNING CONSTRAINTS

Figure No. B1	Revision 0
Reference -	File Name -
Prepared MC	Checked KIL
Date MAY. 2006	Scale 1 : 2500