

EIA/004.2/88

Hong Kong Government
Highways Department



**Route 5
Section Between
Shek Wai Kok and Chai Wan Kok**

**Environmental Impact Assessment
Final Report
Volume II - Figures**

Mott MacDonald Hong Kong Ltd.
in association with
EBC Hassell Limited

February 1995 -

214-0162/88

HK 40/12



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Environmental Impact Assessment

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Environmental Impact Assessment

Final Report Volume II - Figures

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Figure 2.1
Alignment of Route 5

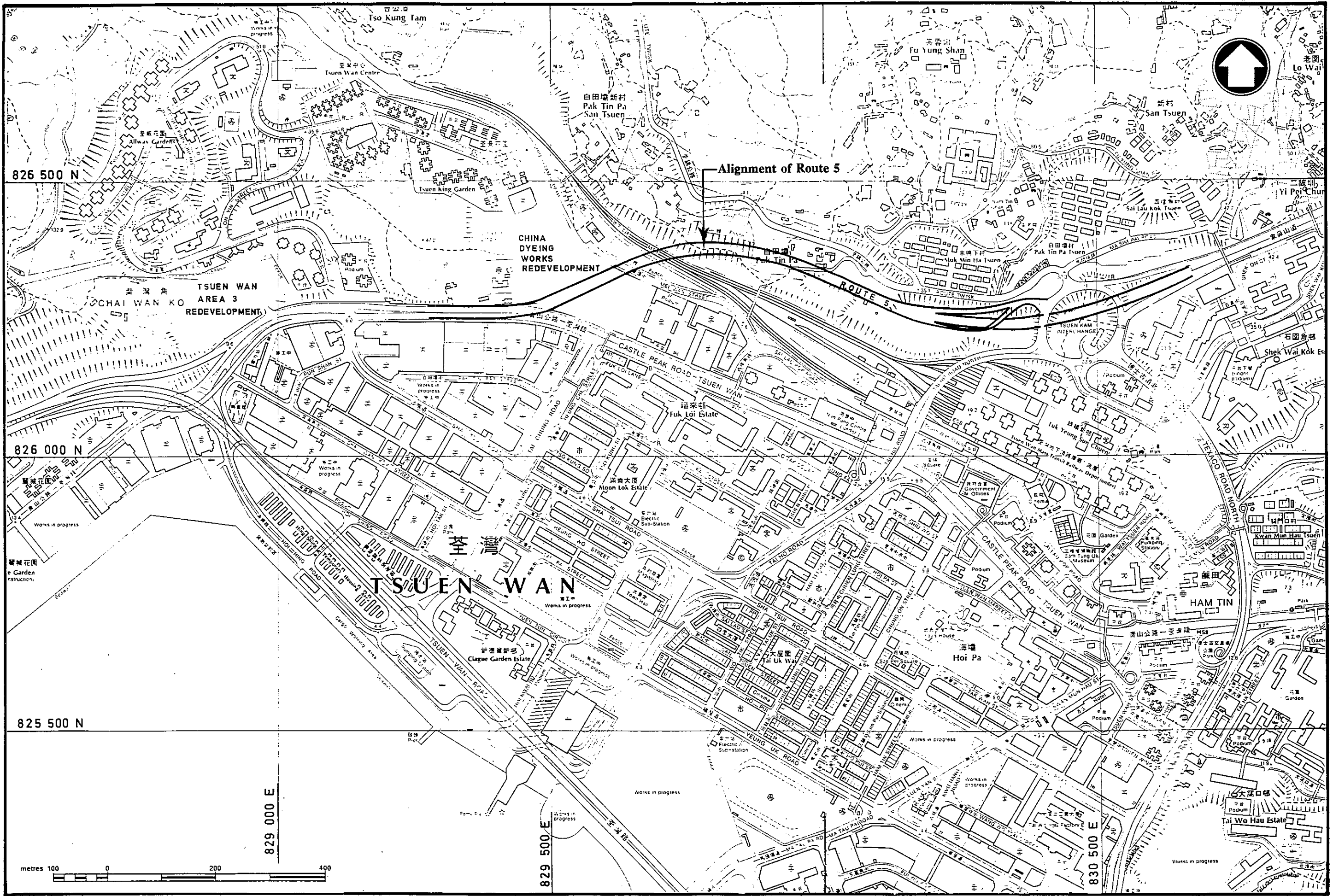


Figure 3.1
Population Census Area

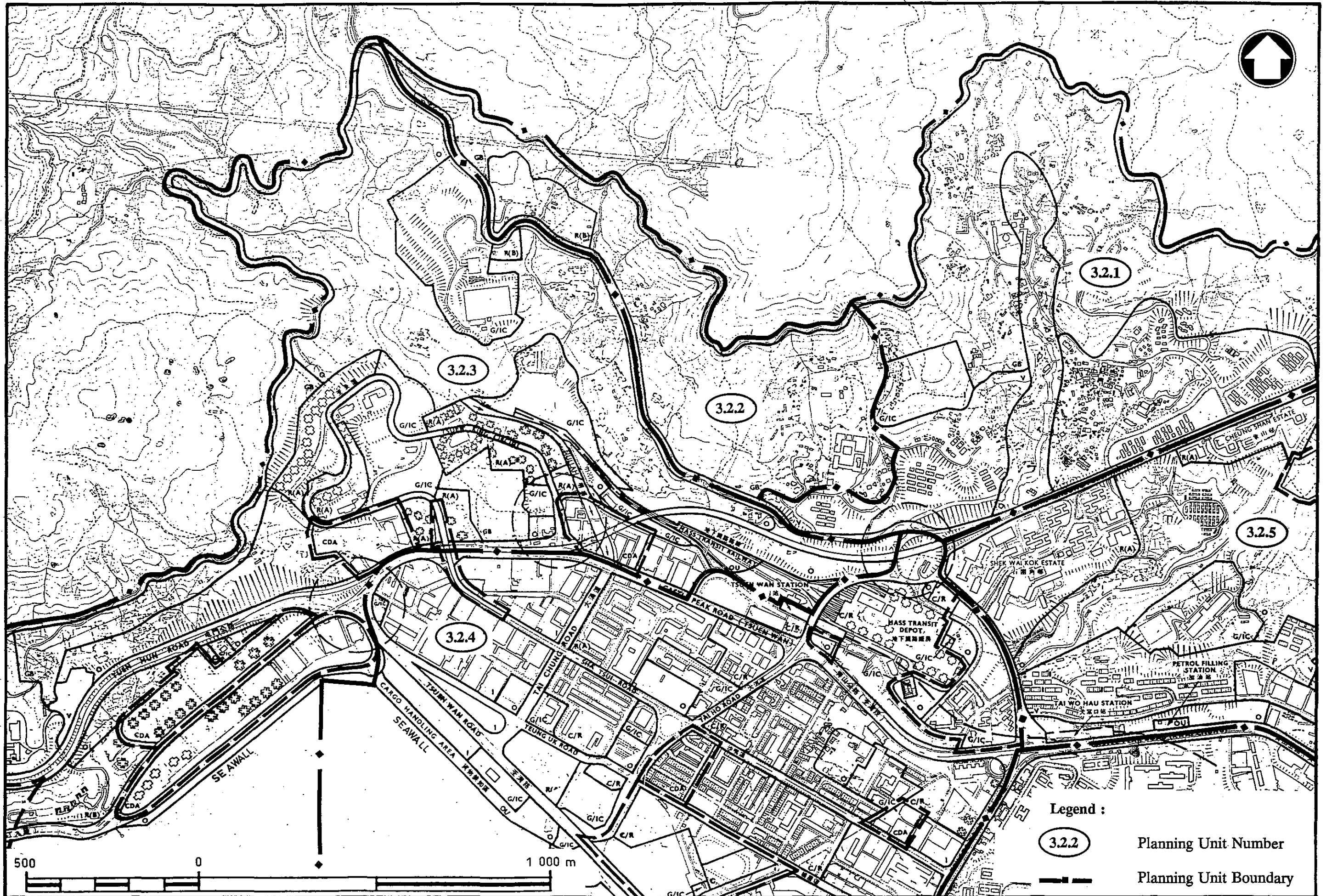


Figure 3.3
Air/Noise Sensitive Receivers

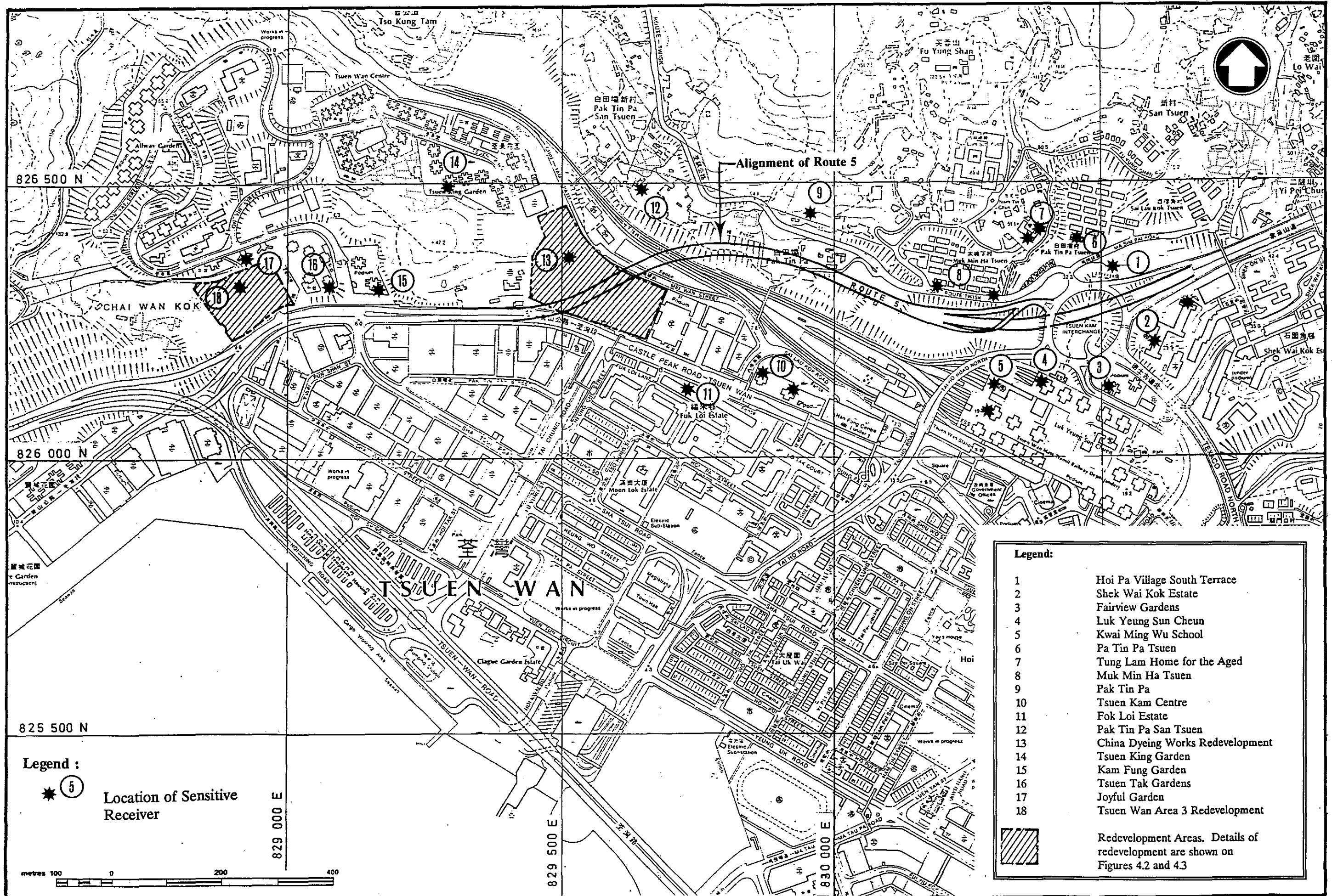


Figure 4.1
Noise Sensitive Receivers

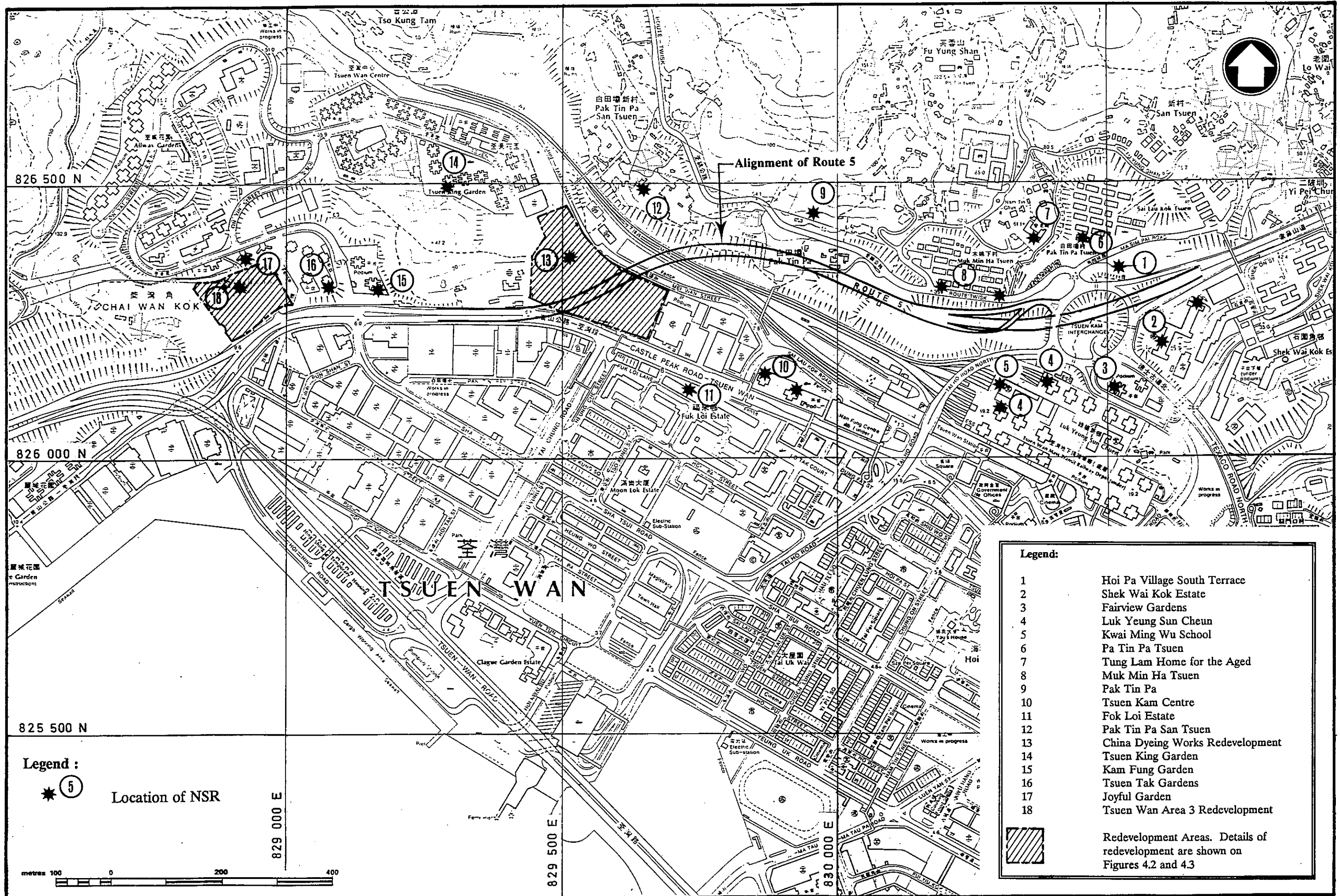


Figure 4.2
Noise Sensitive Receivers:
China Dyeing Works Redevelopment

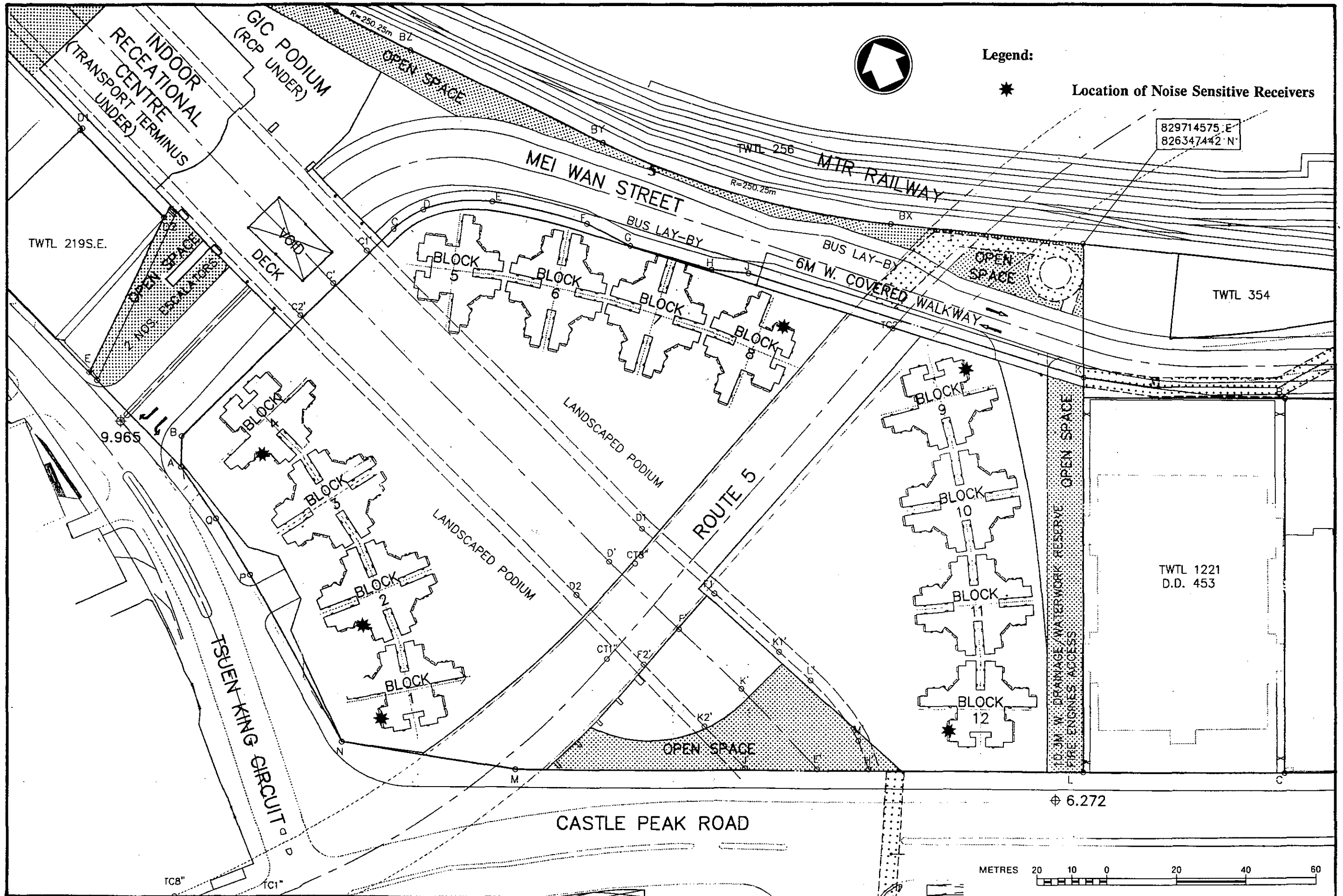
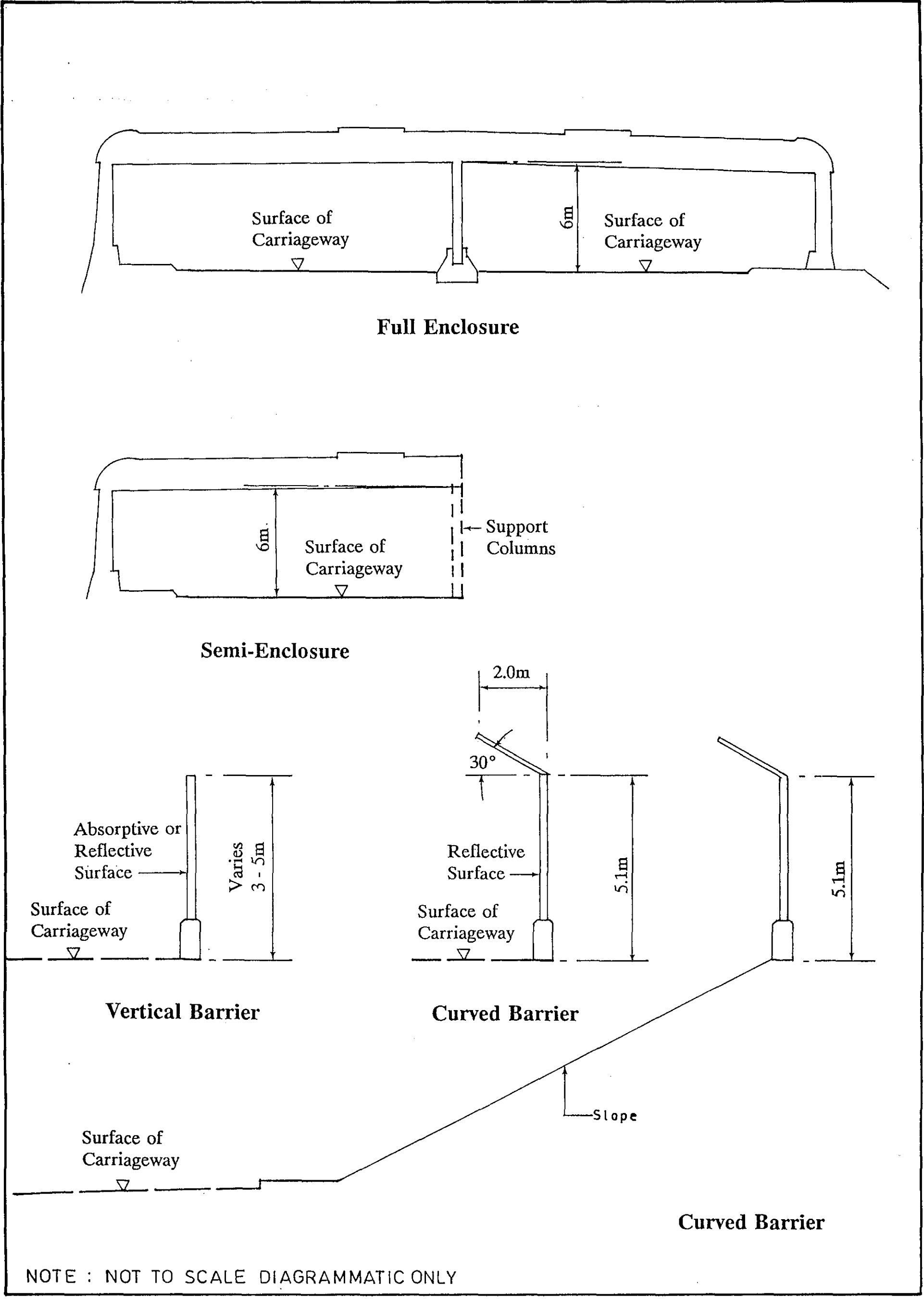


Figure 4.4
Noise Barriers and Enclosures



NOTE : NOT TO SCALE DIAGRAMMATIC ONLY

Figure 4.3
 Noise Sensitive Receivers:
 Tsuen Wan Area 3 Redevelopment

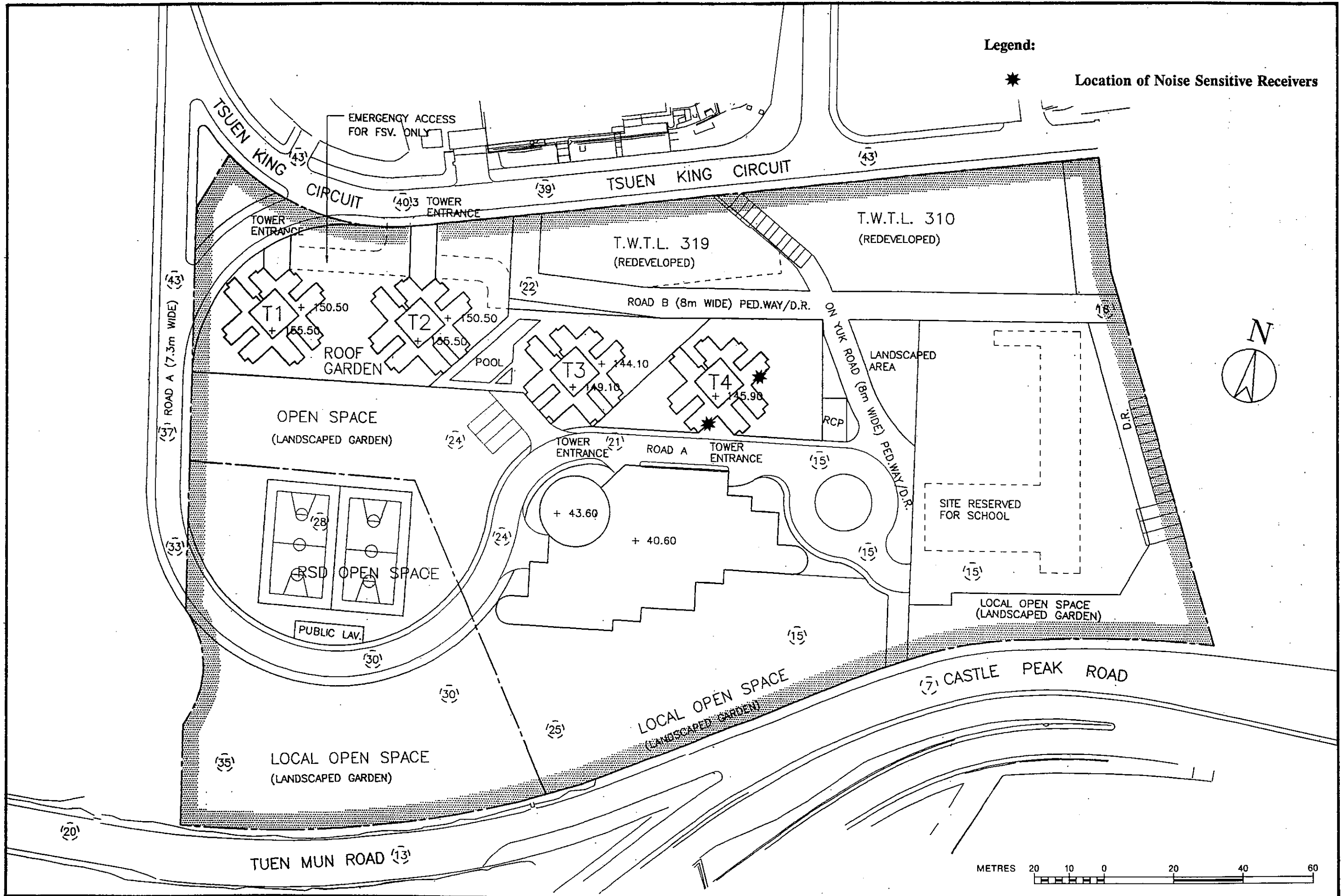


Figure 4.5
Location of Low Noise Road Surfacing

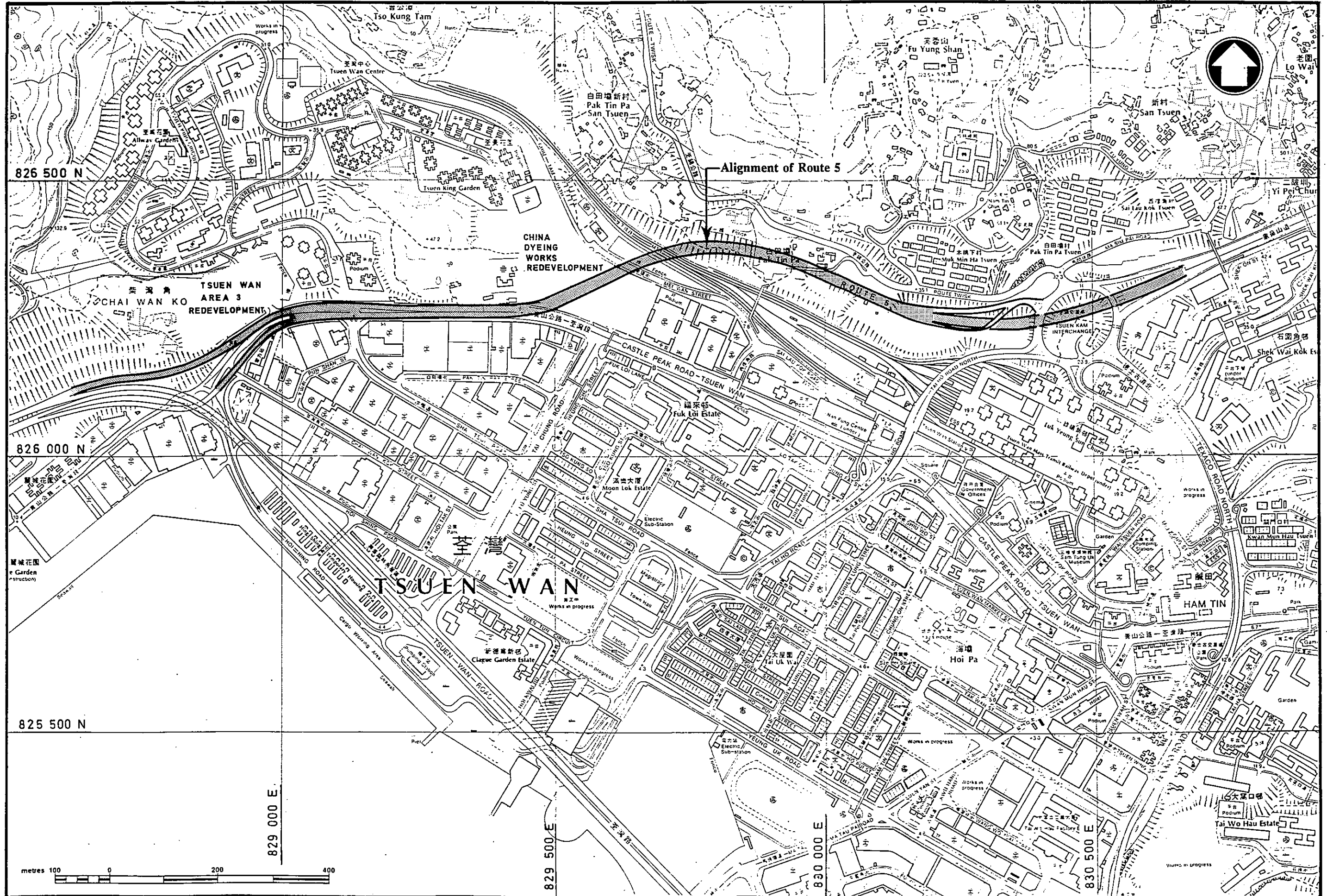
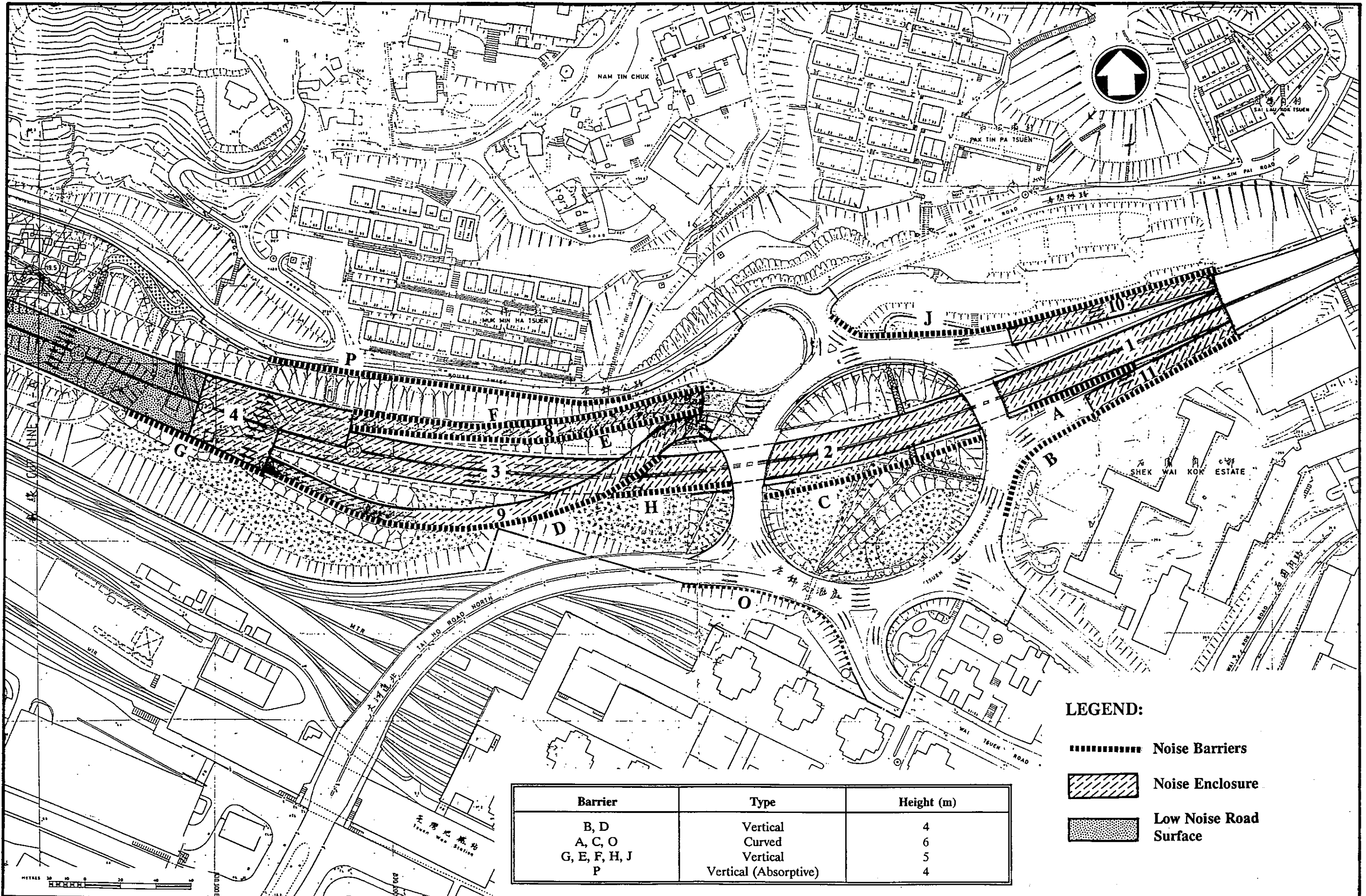


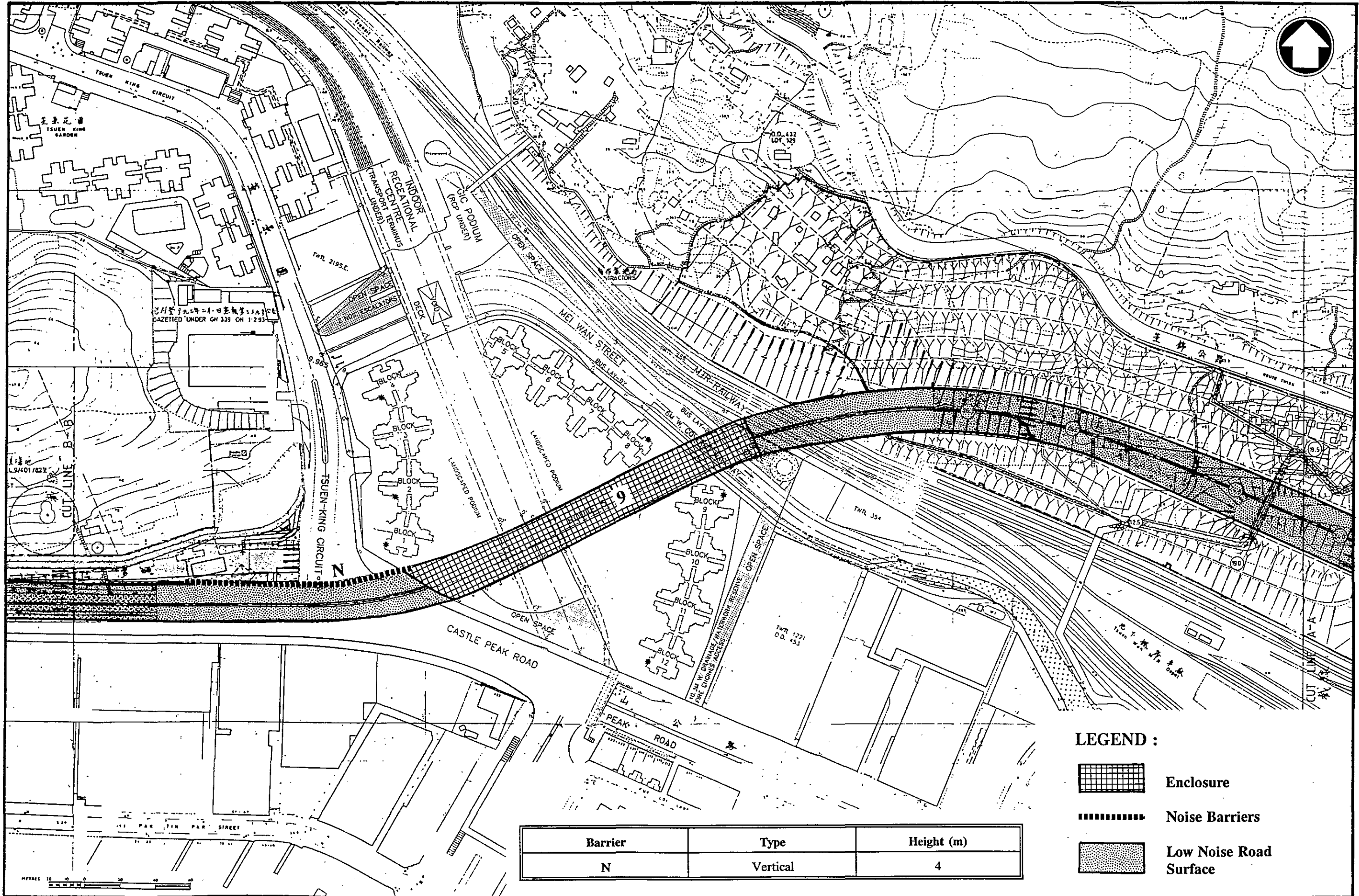
Figure 4.6
Location of Noise Mitigation
 (Sheet 1 of 3)



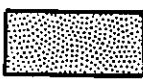


- LEGEND:**
- ▬▬▬▬▬▬▬▬▬▬▬▬ Noise Barriers
 - ▨▨▨▨▨▨▨▨▨▨▨▨ Noise Enclosure
 - ▩▩▩▩▩▩▩▩▩▩▩▩ Low Noise Road Surface

Barrier	Type	Height (m)
B, D	Vertical	4
A, C, O	Curved	6
G, E, F, H, J	Vertical	5
P	Vertical (Absorptive)	4

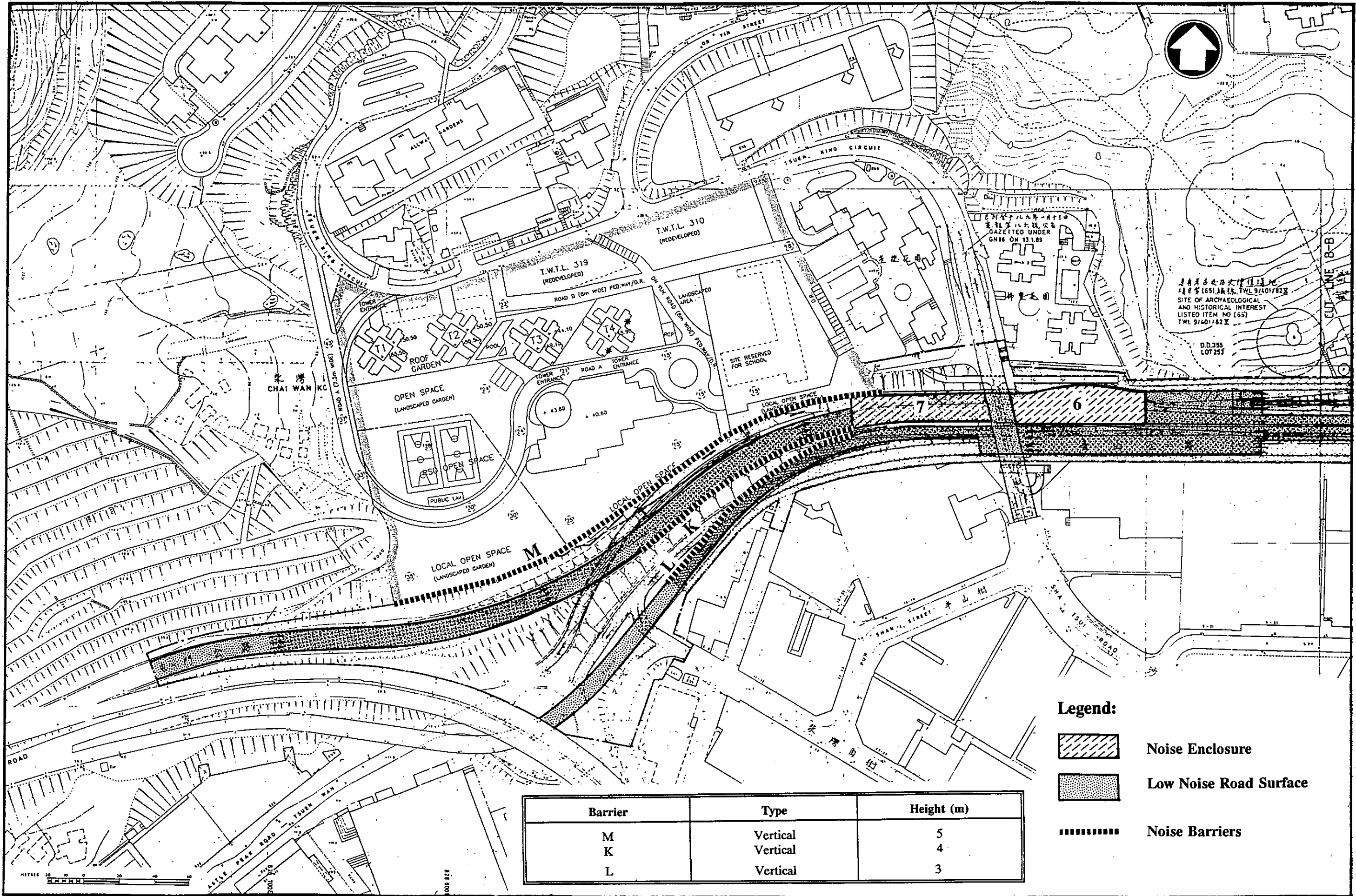
Figure 4.6
Location of Noise Mitigation
 (Sheet 2 of 3)






- LEGEND :**
-  Enclosure
 -  Noise Barriers
 -  Low Noise Road Surface

Barrier	Type	Height (m)
N	Vertical	4

Figure 4.6
Location of Noise Mitigation
(Sheet 3 of 3)

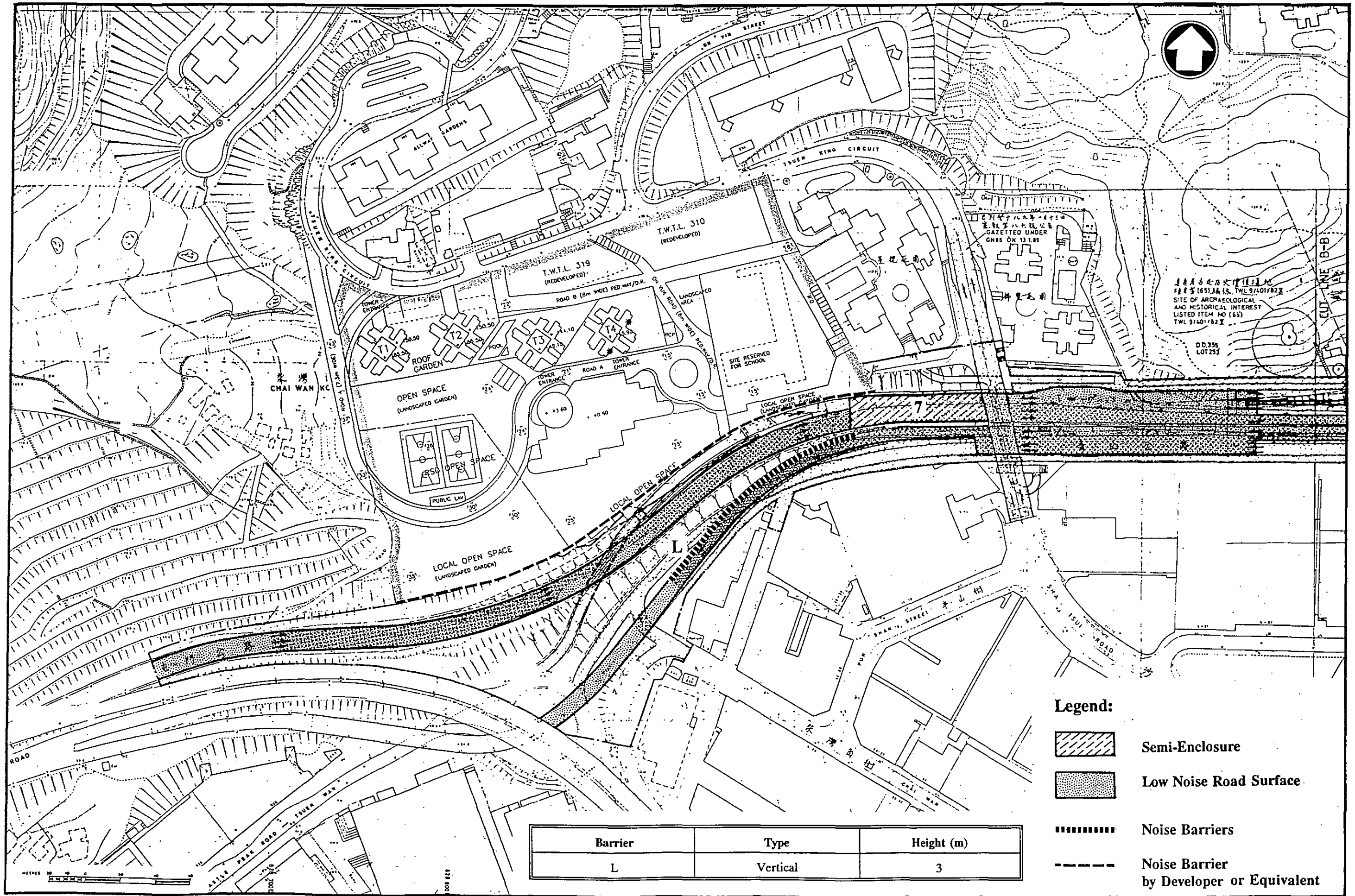


- Legend:**
-  Noise Enclosure
 -  Low Noise Road Surface
 -  Noise Barriers





Barrier	Type	Height (m)
M	Vertical	5
K	Vertical	4
L	Vertical	3

METRES 0 10 20 30

Figure 4.7
Recommended Noise Mitigation
West of China Dyeing Works Redevelopment



Legend:

-  Semi-Enclosure
-  Low Noise Road Surface
-  Noise Barriers
-  Noise Barrier by Developer or Equivalent

Barrier	Type	Height (m)
L	Vertical	3

Figure 4.8
Recommended Noise Mitigation
China Dyeing Works Redevelopment

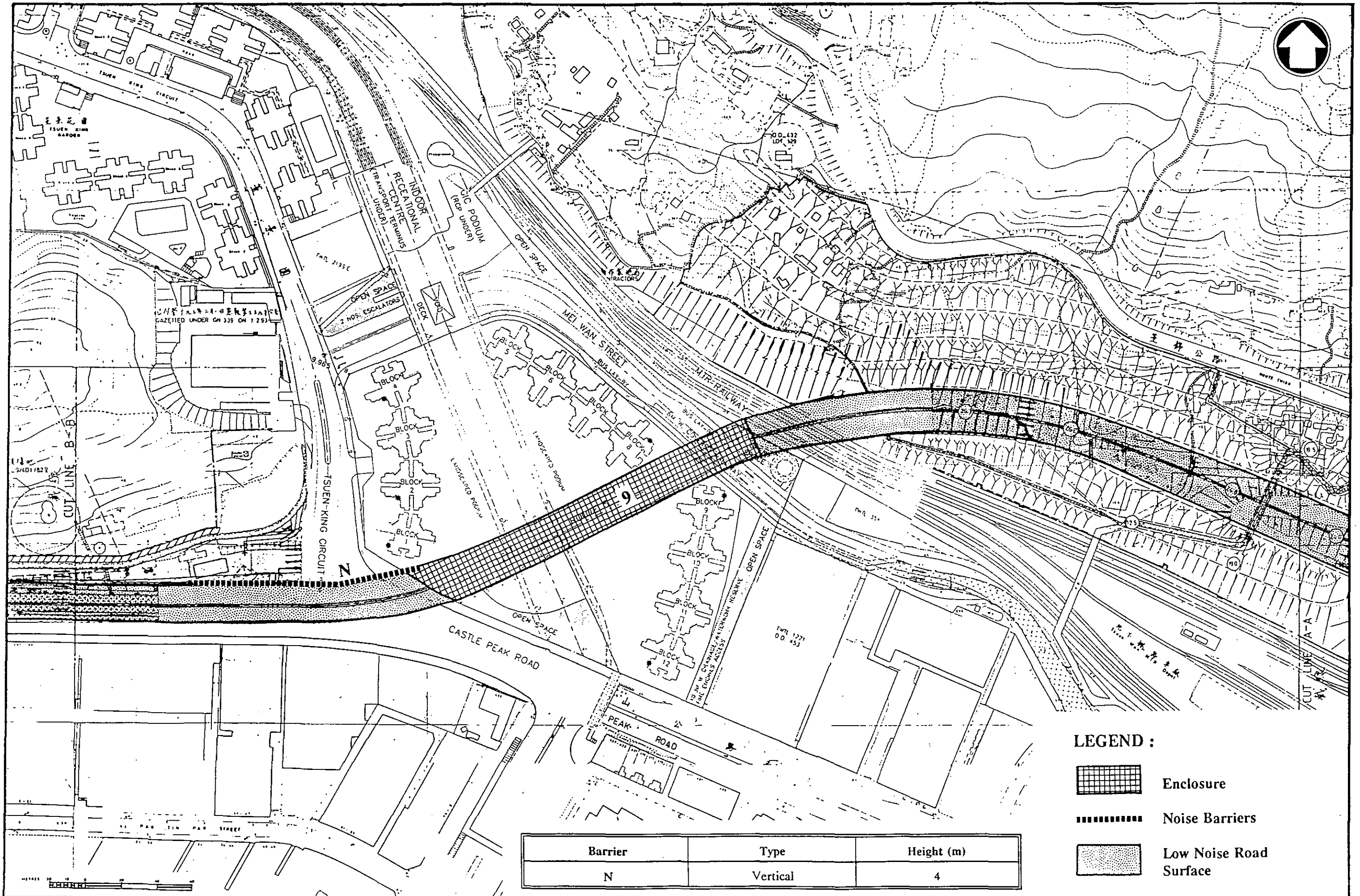
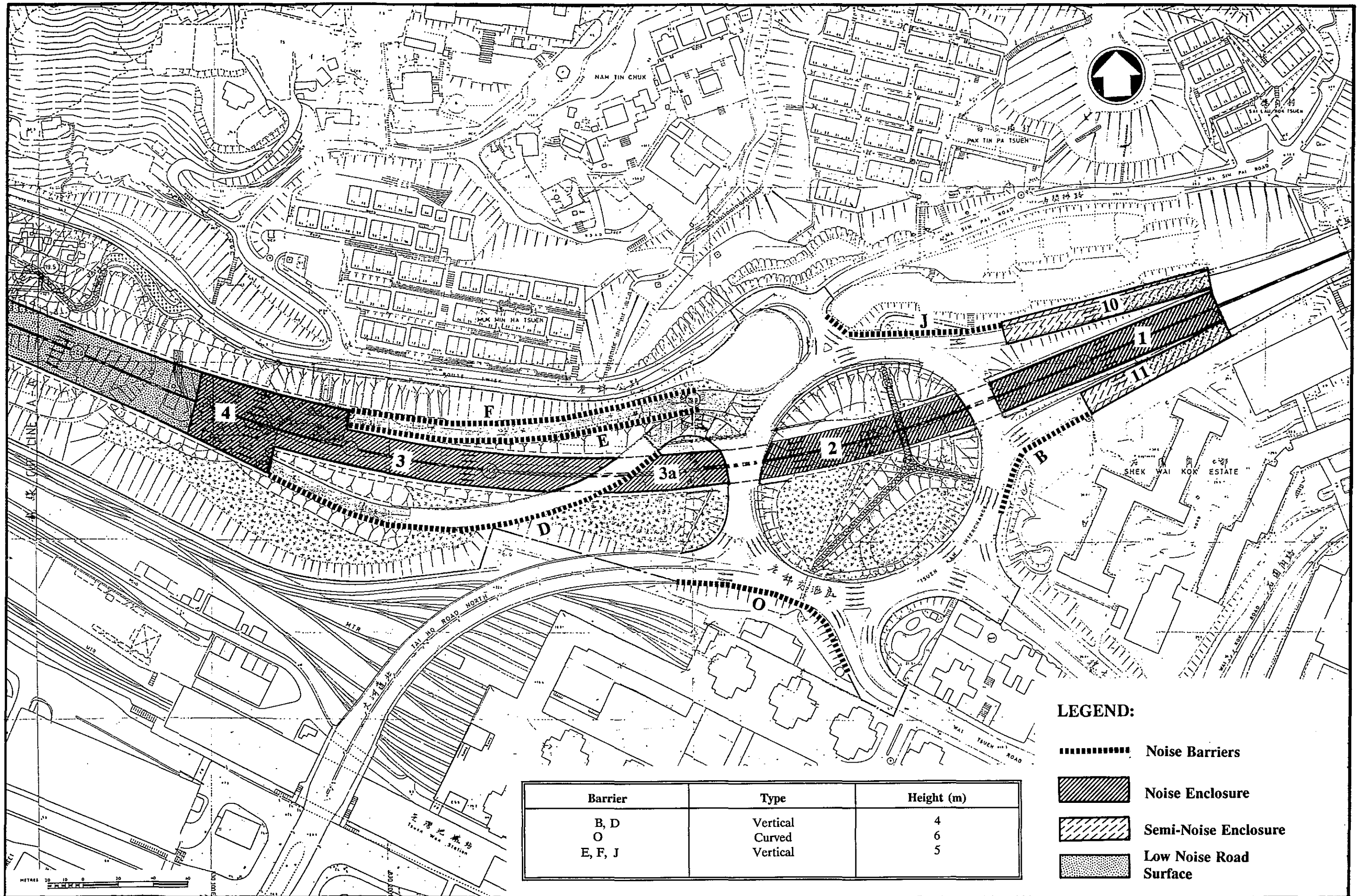


Figure 4.9
Scheme 1 Barriers and Enclosures



LEGEND:

- Noise Barriers
- ▨ Noise Enclosure
- ▧ Semi-Noise Enclosure
- ▩ Low Noise Road Surface

Barrier	Type	Height (m)
B, D	Vertical	4
O	Curved	6
E, F, J	Vertical	5

Figure 4.10
Scheme 2 Barriers and Enclosures

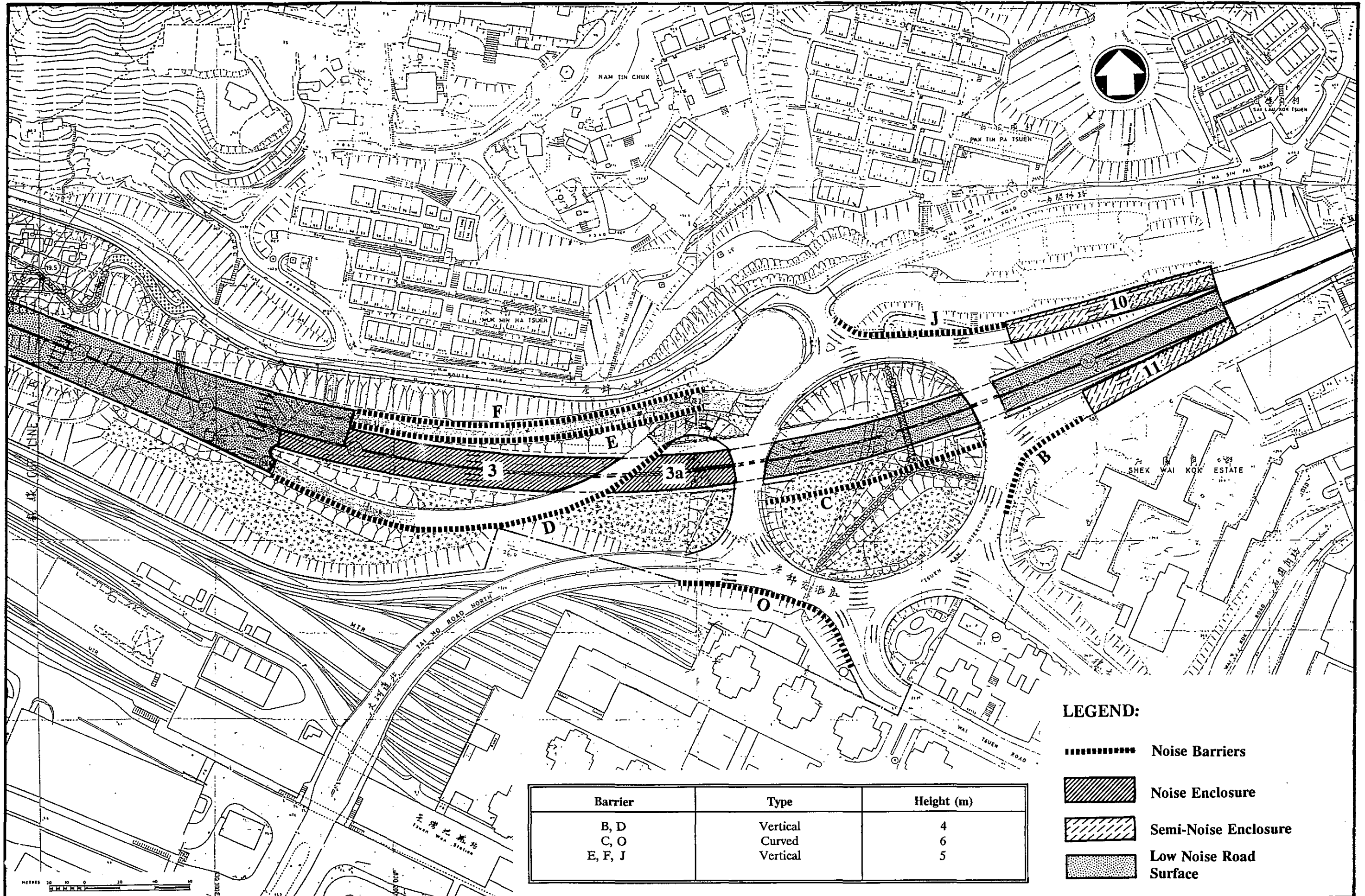
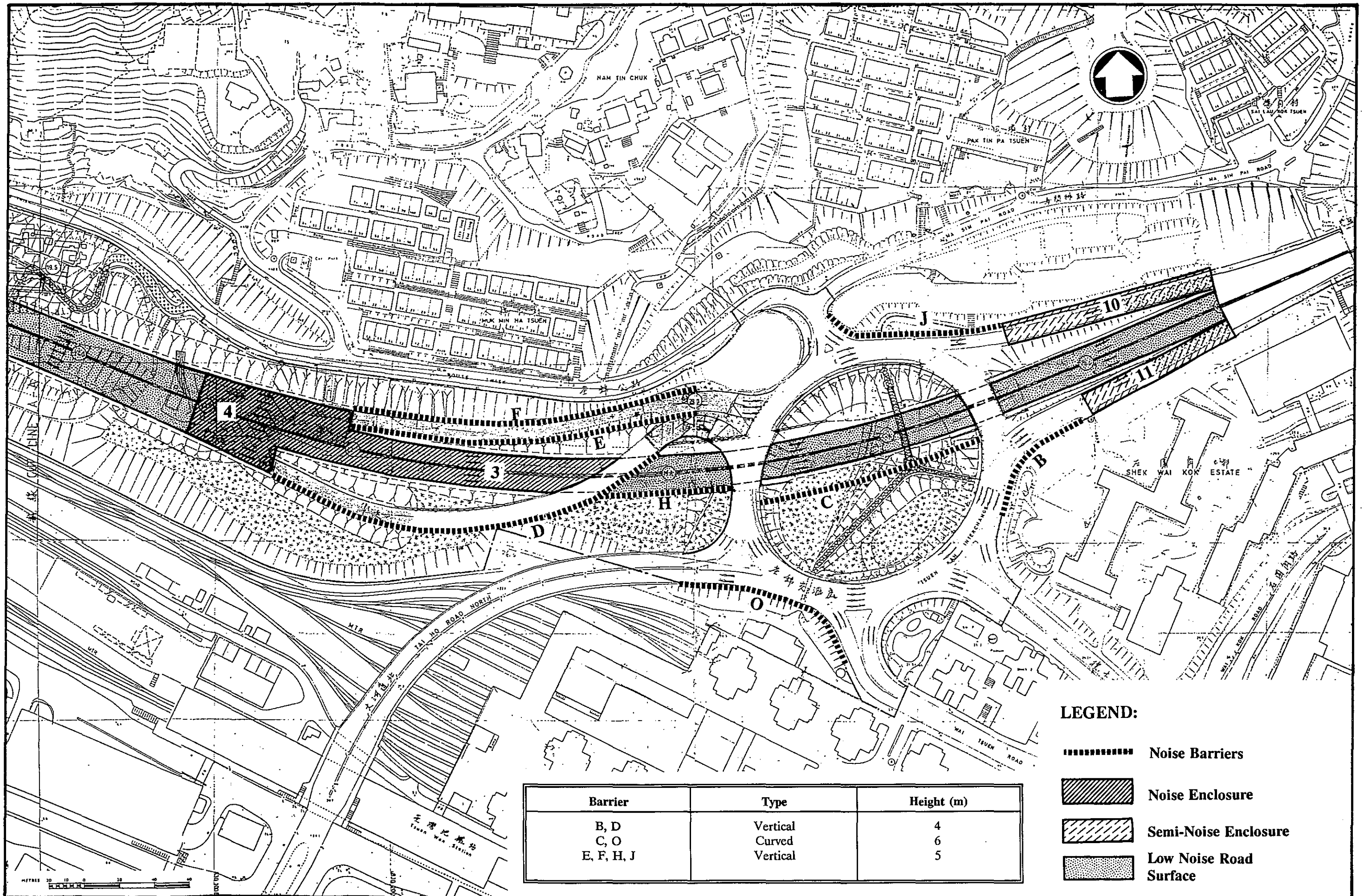






Figure 4.11
Scheme 3 Barriers and Enclosures



LEGEND:

-  Noise Barriers
-  Noise Enclosure
-  Semi-Noise Enclosure
-  Low Noise Road Surface

Barrier	Type	Height (m)
B, D	Vertical	4
C, O	Curved	6
E, F, H, J	Vertical	5

Figure 4.12
Scheme 4 Barriers and Enclosures

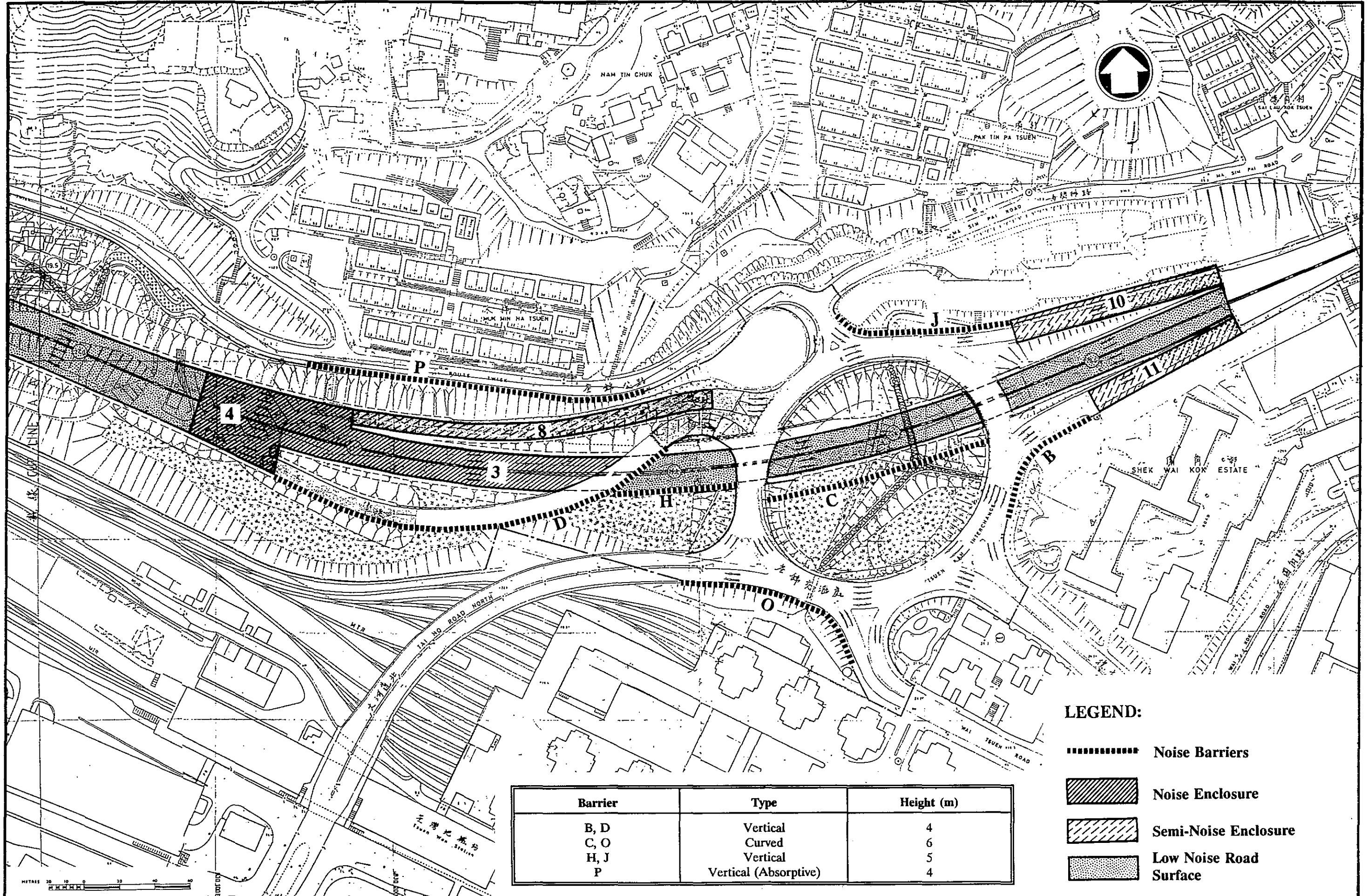
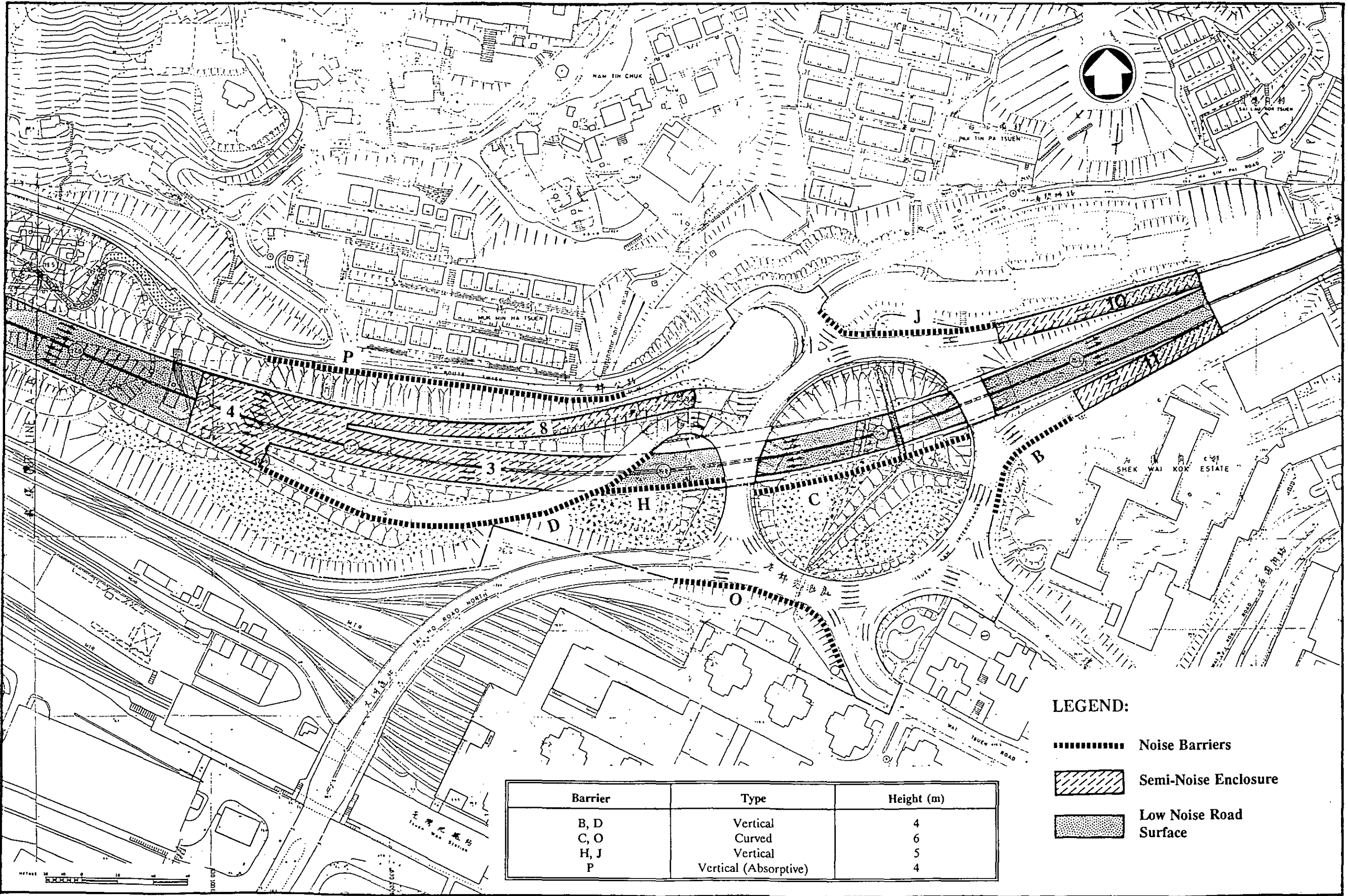


Figure 4.13
Recommended Noise Mitigation
East of China Dyeing Works Redevelopment



LEGEND:

- Noise Barriers
- ▨ Semi-Noise Enclosure
- ▤ Low Noise Road Surface

Barrier	Type	Height (m)
B, D	Vertical	4
C, O	Curved	6
H, J	Vertical	5
P	Vertical (Absorptive)	4

Figure 4.14
Benefit of Noise Mitigation
West of China Dyeing Works Redevelopment

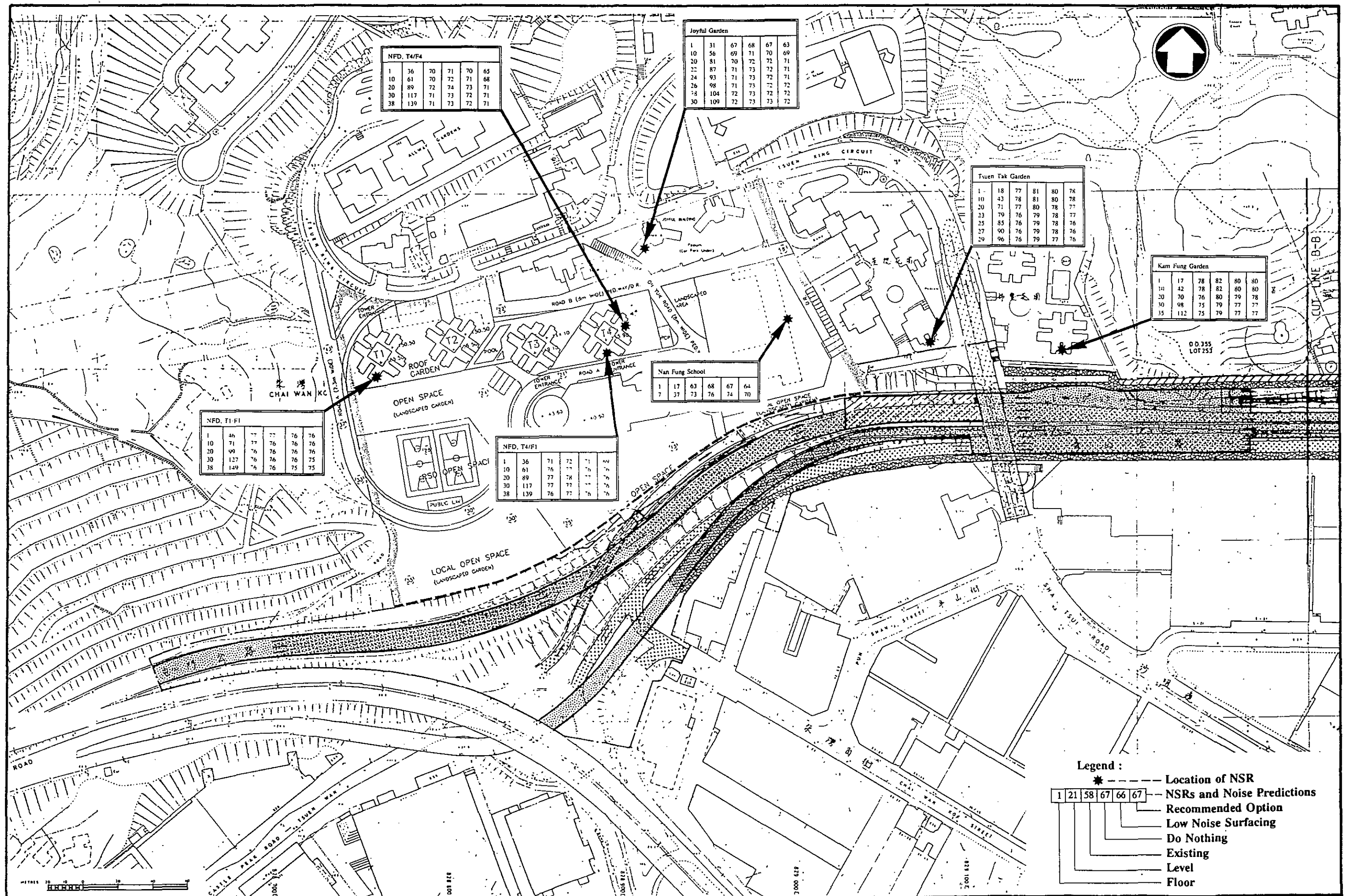


Figure 4.15
Benefit of Noise Mitigation
China Dyeing Works Redevelopment

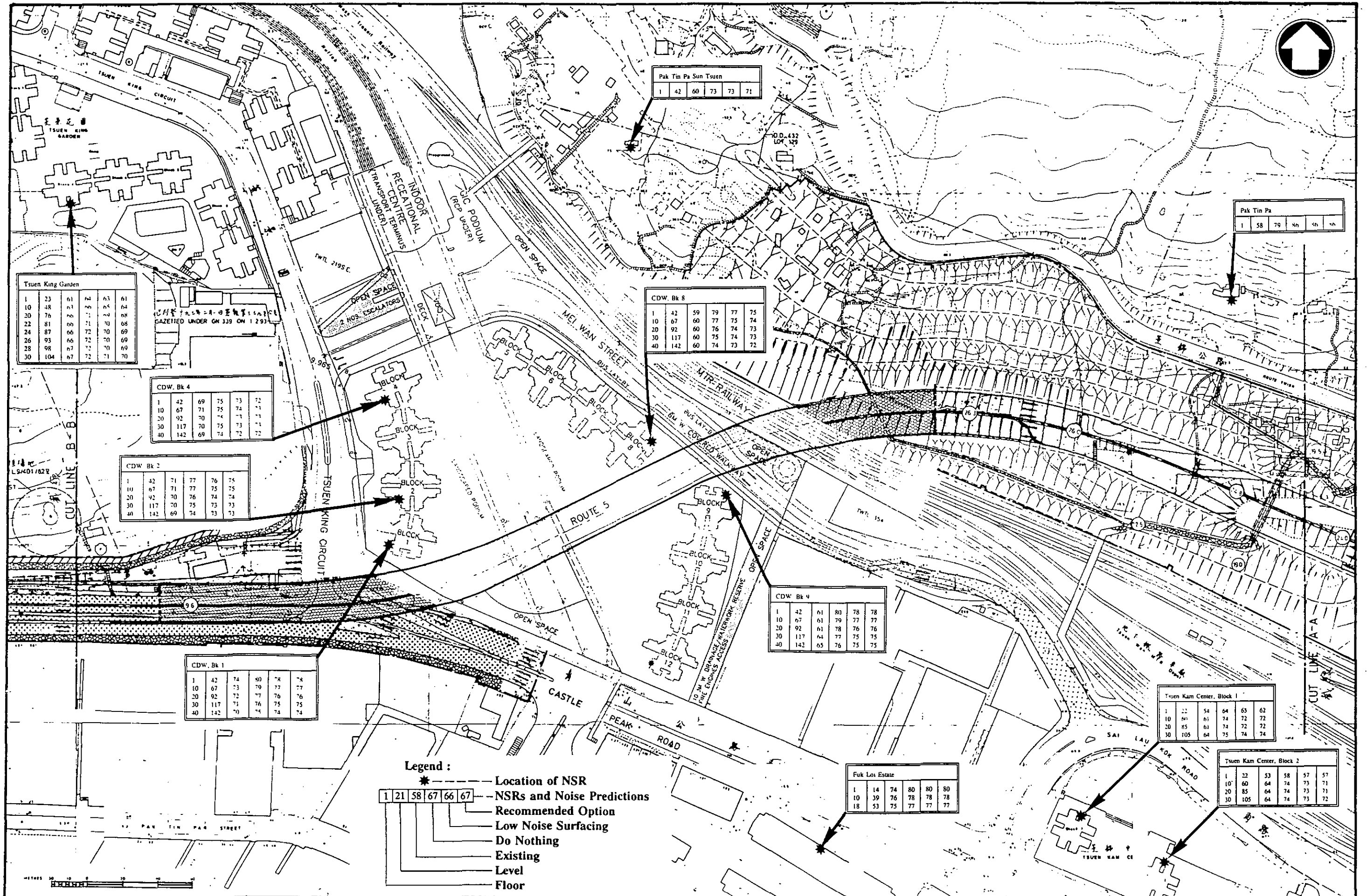
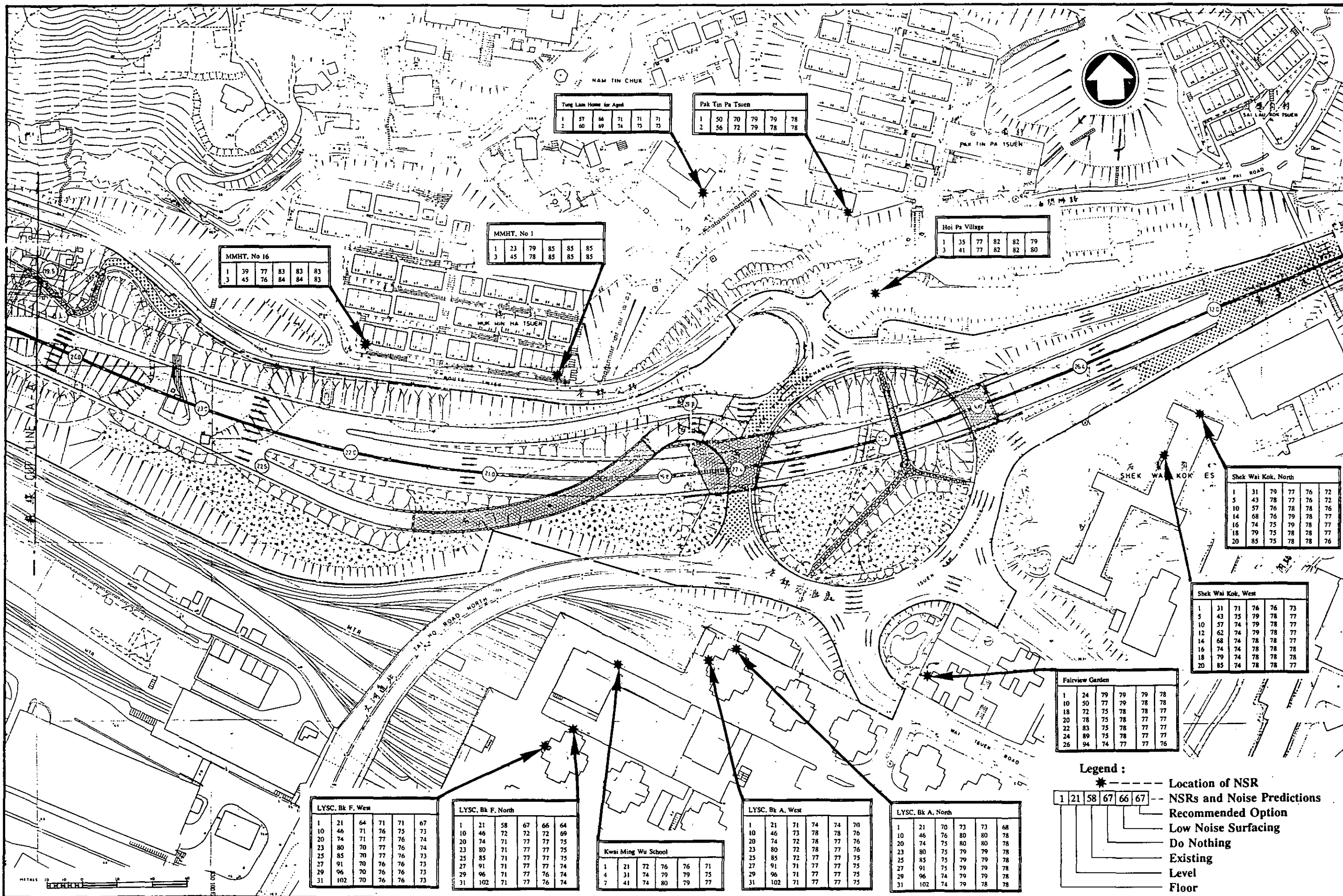
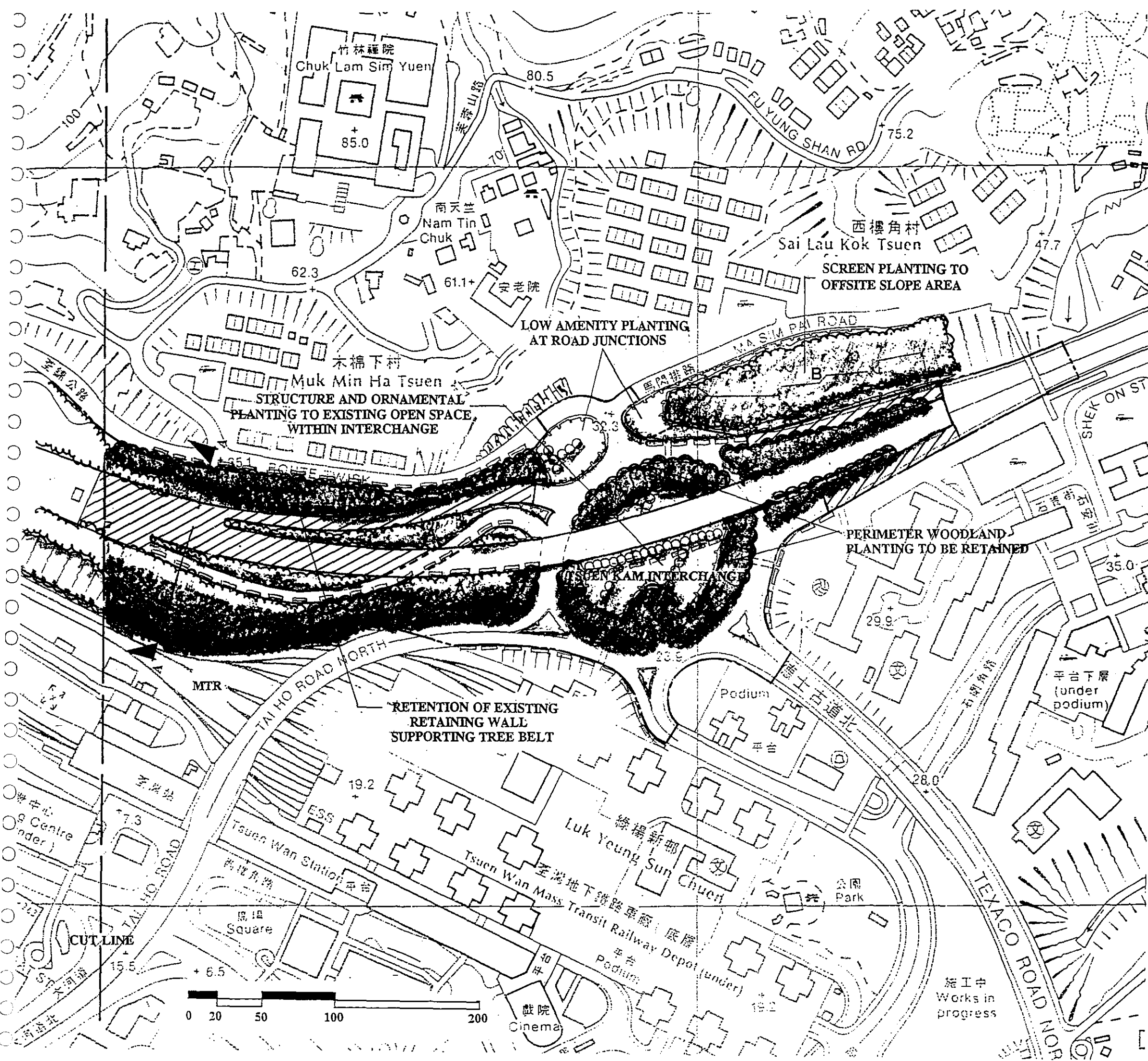


Figure 4.16
Benefit of Noise Mitigation
East of China Dyeing Works Redevelopment



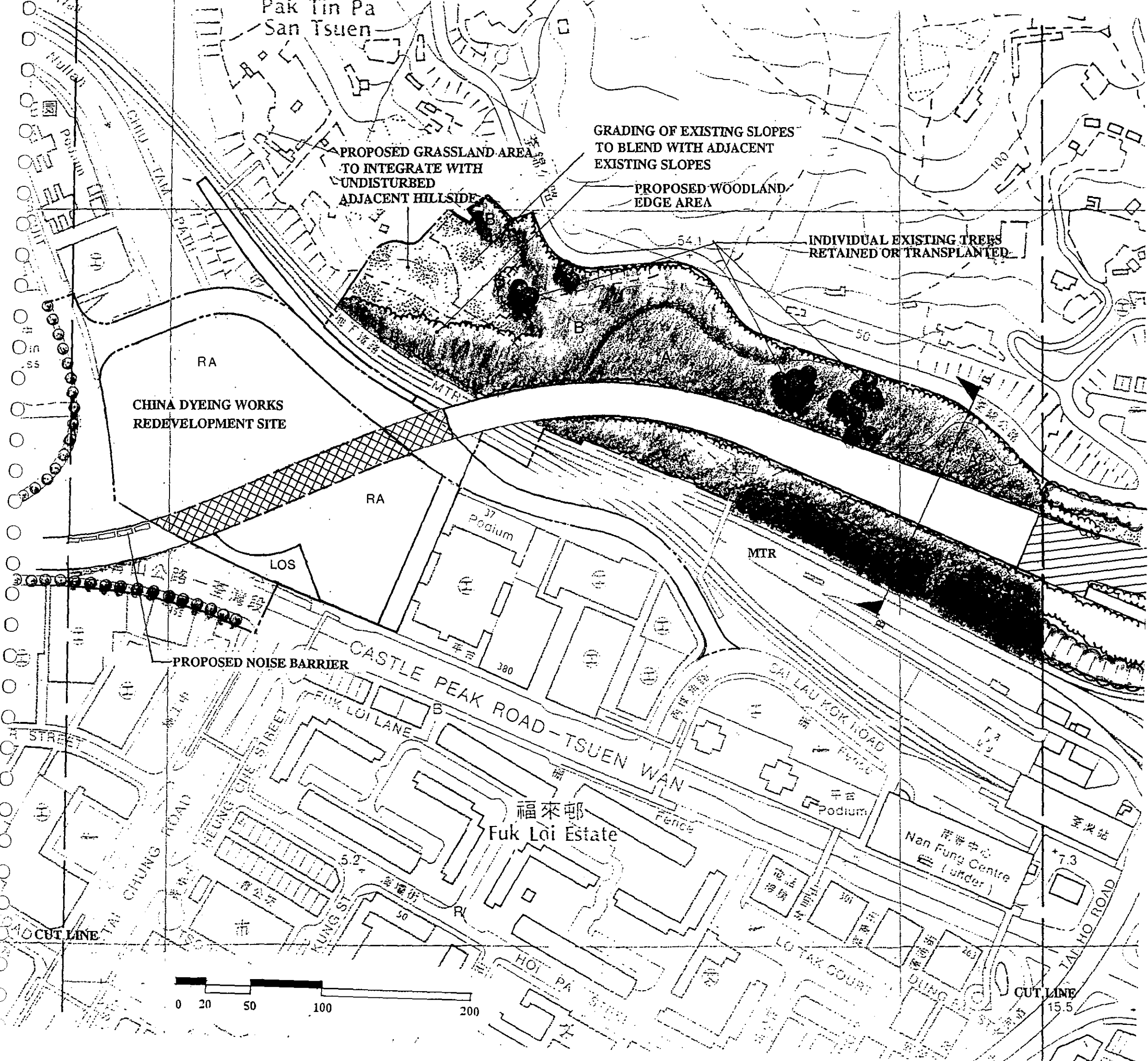


- LEGEND**
- EXISTING RETAINED TREE BELTS
 - PROPOSED SLOPE PLANTING & HYDROSEEDING (MIX A OR B)
 - PROPOSED STREET TREE PLANTING
 - PROPOSED AMENITY PLANTING
 - PROPOSED HYDROSEEDING TO SLOPES
 - REDEVELOPMENT AREA - RESIDENTIAL (BEYOND SCOPE OF ROUTE 5 WORKS)
 - ALLOCATED LOCAL OPEN SPACE (BEYOND SCOPE OF ROUTE 5 WORKS)
 - RETAINING WALL
 - NOISE BARRIERS (REFER TO FIGURES 9.1 - 9.3)
 - SEMI-NOISE ENCLOSURE (REFER TO FIGURES 9.1 - 9.3)
 - ENCLOSURE BY DEVELOPER (REFER TO FIGURES 9.1 - 9.3)
 - TYPICAL SECTIONS (REFER TO SHEETS 4 & 5)
 - SITE BOUNDARY

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Figure 7.1A
 ROUTE 5 - SECTION BETWEEN SHEK WAI KOK & CHAI WAN KOK

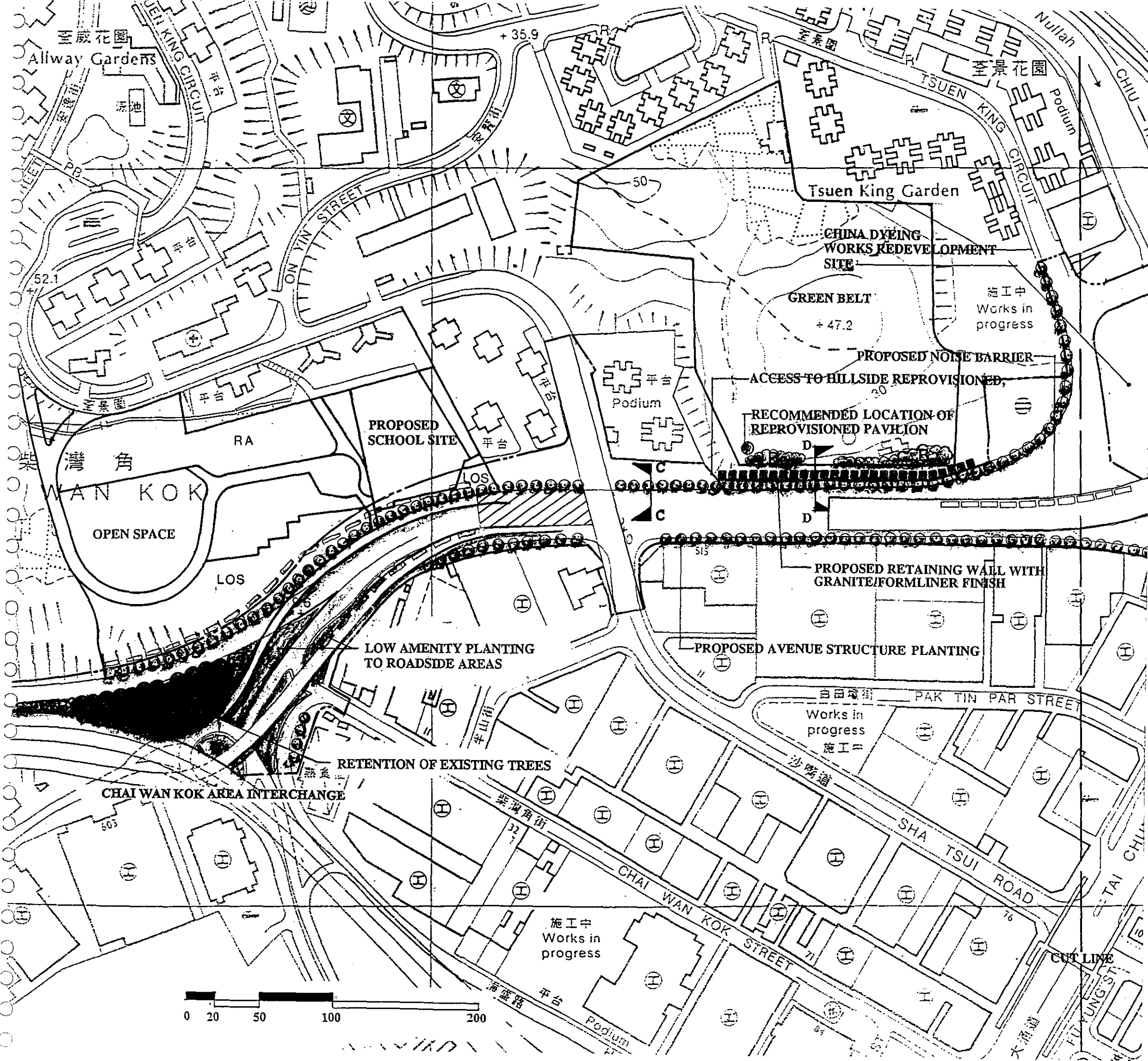
SKETCH LANDSCAPE DESIGN



- LEGEND**
- EXISTING RETAINED TREE BELTS
 - PROPOSED SLOPE PLANTING & HYDROSEEDING (MIX A OR-B)
 - PROPOSED STREET TREE PLANTING
 - PROPOSED AMENITY PLANTING
 - PROPOSED HYDROSEEDING TO SLOPES
 - REDEVELOPMENT AREA - RESIDENTIAL (BEYOND SCOPE OF ROUTE 5 WORKS)
 - ALLOCATED LOCAL OPEN SPACE (BEYOND SCOPE OF ROUTE 5 WORKS)
 - RETAINING WALL
 - NOISE BARRIERS (REFER TO FIGURES 9.1 - 9.3)
 - SEMI-NOISE ENCLOSURE (REFER TO FIGURES 9.1 - 9.3)
 - ENCLOSURE BY DEVELOPER (REFER TO FIGURES 9.1 - 9.3)
 - TYPICAL SECTIONS (REFER TO SHEETS 4 & 5)
 - SITE BOUNDARY

DRAFT

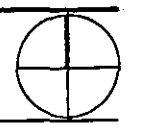
Figure 7.1A
 ROUTE 5 - SECTION BETWEEN
 SHEK WAI KOK & CHAI WAN KOK

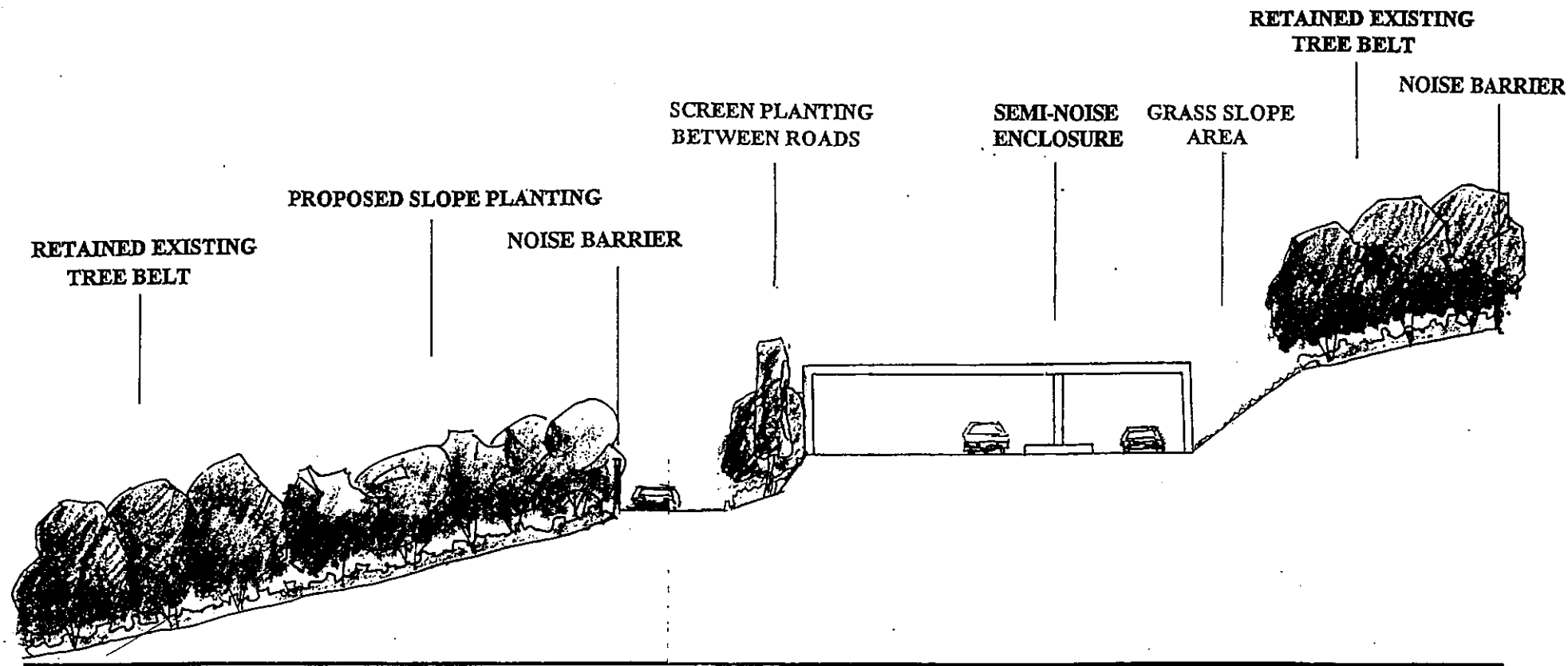


- LEGEND**
- EXISTING RETAINED TREE BELTS
 - PROPOSED SLOPE PLANTING & HYDROSEEDING (MIX A OR B)
 - PROPOSED STREET TREE PLANTING
 - PROPOSED AMENITY PLANTING
 - PROPOSED HYDROSEEDING TO SLOPES
 - RA REDEVELOPMENT AREA - RESIDENTIAL (BEYOND SCOPE OF ROUTE 5 WORKS)
 - LOS ALLOCATED LOCAL OPEN SPACE (BEYOND SCOPE OF ROUTE 5 WORKS)
 - RETAINING WALL
 - NOISE BARRIERS (REFER TO FIGURES 9.1 - 9.3)
 - SEMI-NOISE ENCLOSURE (REFER TO FIGURES 9.1 - 9.3)
 - ENCLOSURE BY DEVELOPER (REFER TO FIGURES 9.1 - 9.3)
 - TYPICAL SECTIONS (REFER TO SHEETS 4 & 5)
 - SITE BOUNDARY

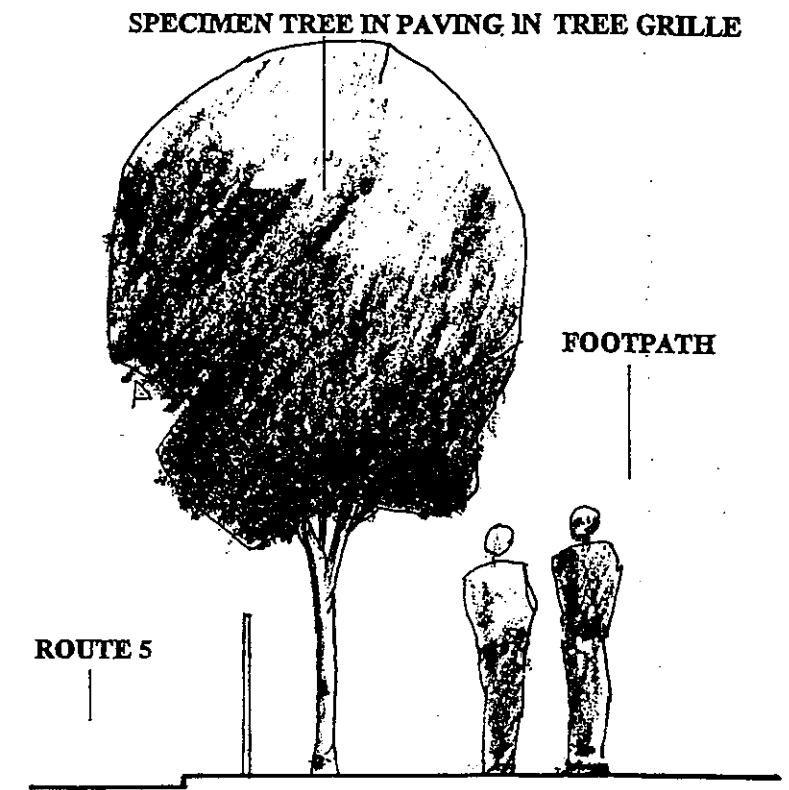
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Figure 7.1A
 ROUTE 5 - SECTION BETWEEN SHEK WAI KOK & CHAI WAN KOK
 SKETCH LANDSCAPE DESIGN
 AREA C SHEET 3 OF 3

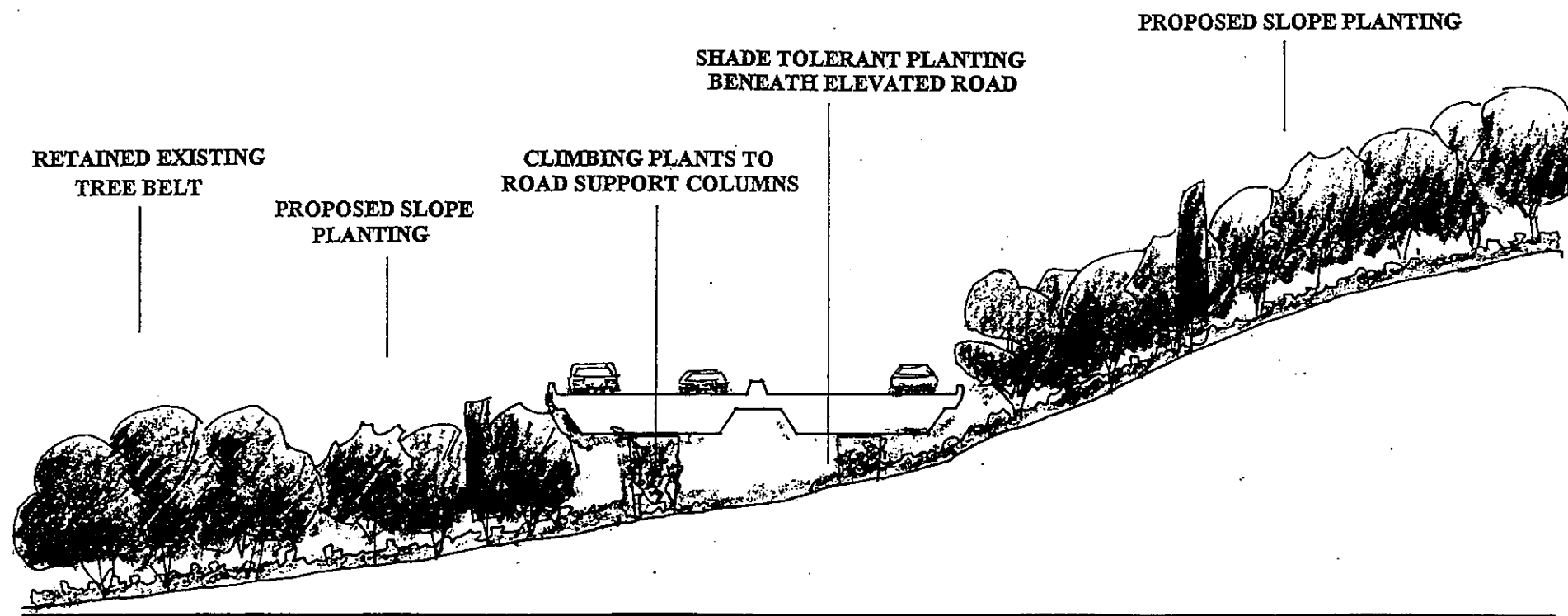




TYPICAL SECTION THROUGH SLOPE AND ROAD
SECTION A - A SCALE 1:500



STREET TREE PLANTING
SECTION C - C SCALE 1:5

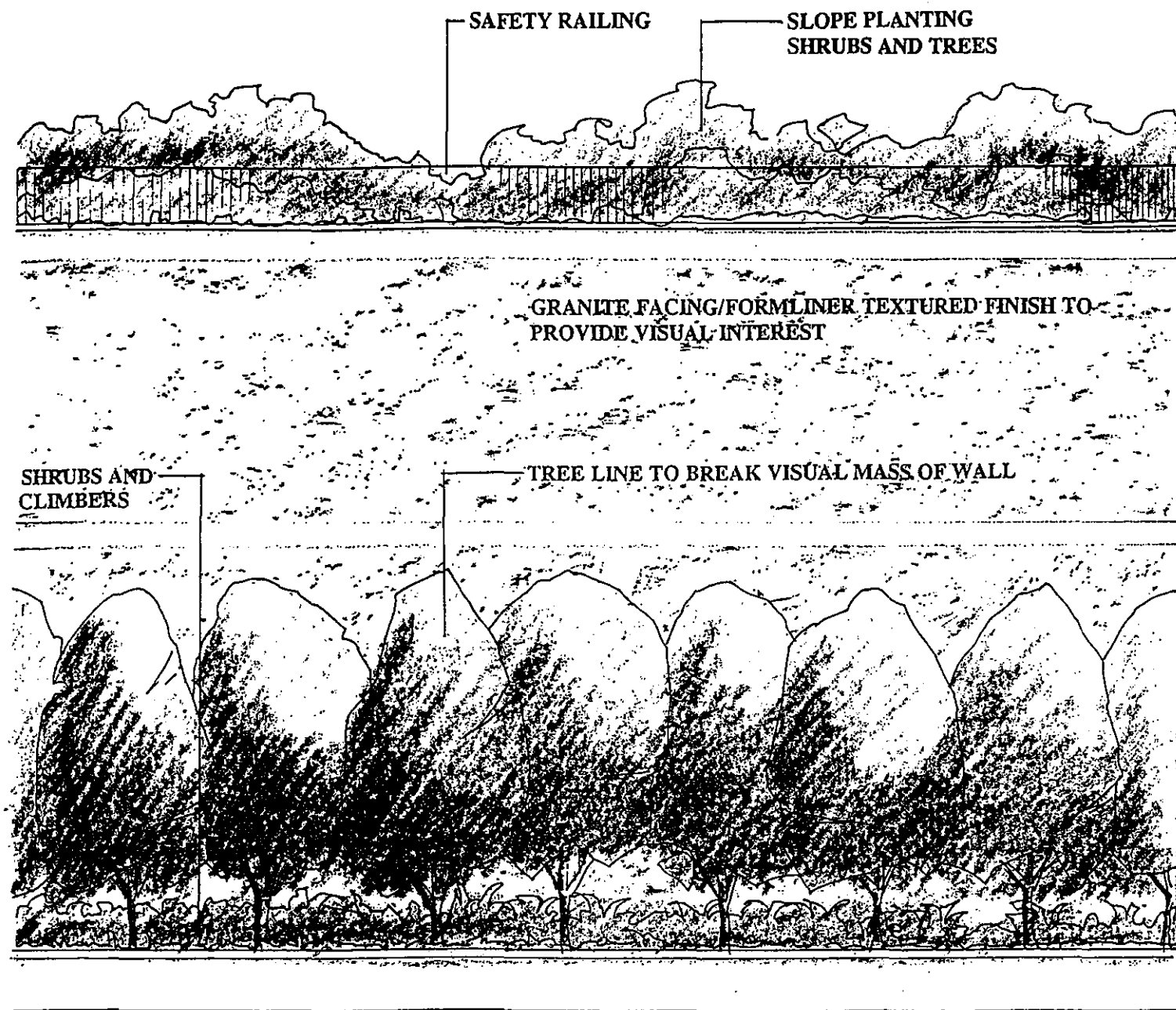


TYPICAL SECTION THROUGH SLOPE AND ELEVATED ROAD
SECTION B - B SCALE 1:500

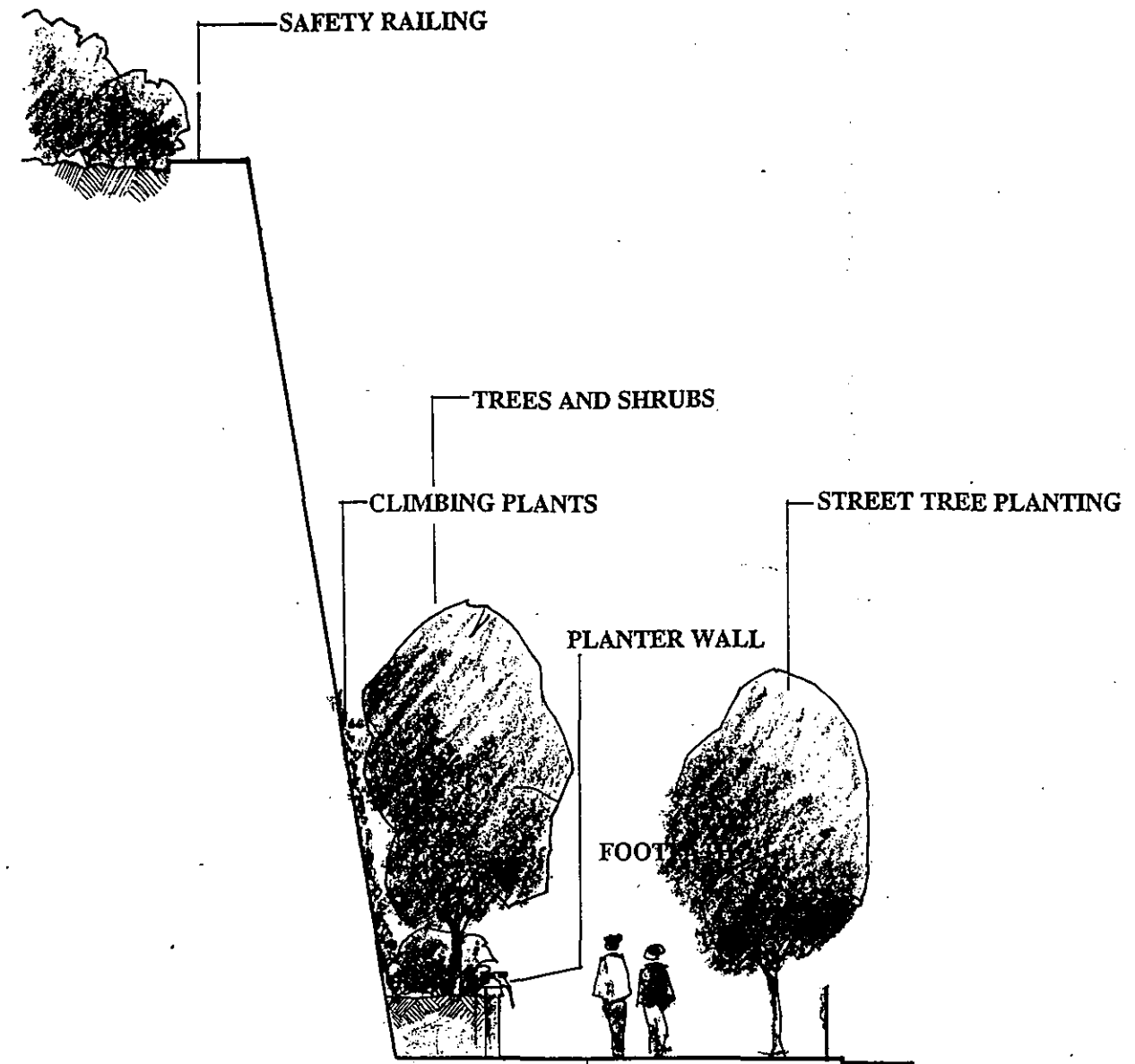
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Figure 7.1B
ROUTE 5 - SECTION BETWEEN
SHEK WAI KOK & CHAI WAN KOK

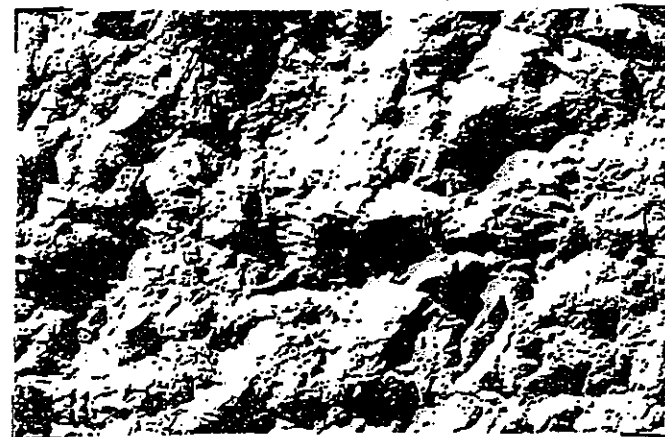
TYPICAL SECTIONS



ELEVATION OF RETAINING WALL



SECTION THROUGH RETAINING WALL
SECTION D - D



ELEVATION AND SECTION THROUGH FORMLINER

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Figure 7.1C

ROUTE 5 - SECTION BETWEEN
SHEK WAI KOK & CHAI WAN KOK

TYPICAL DETAIL OF
RETAINING WALL

Figure 8.1
Aerial View of Works Area

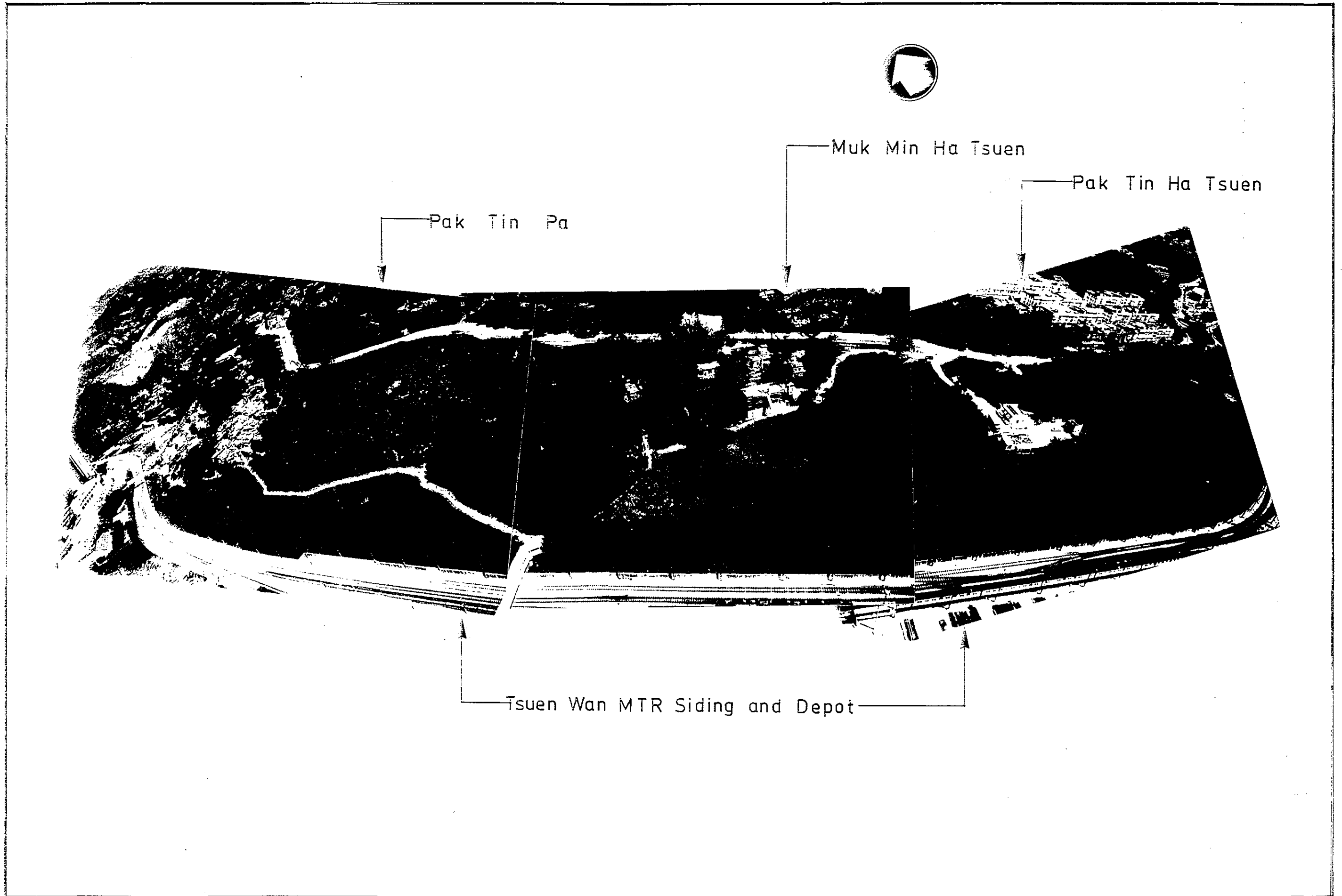


Figure 8.2
Habitat Map of Works Areas

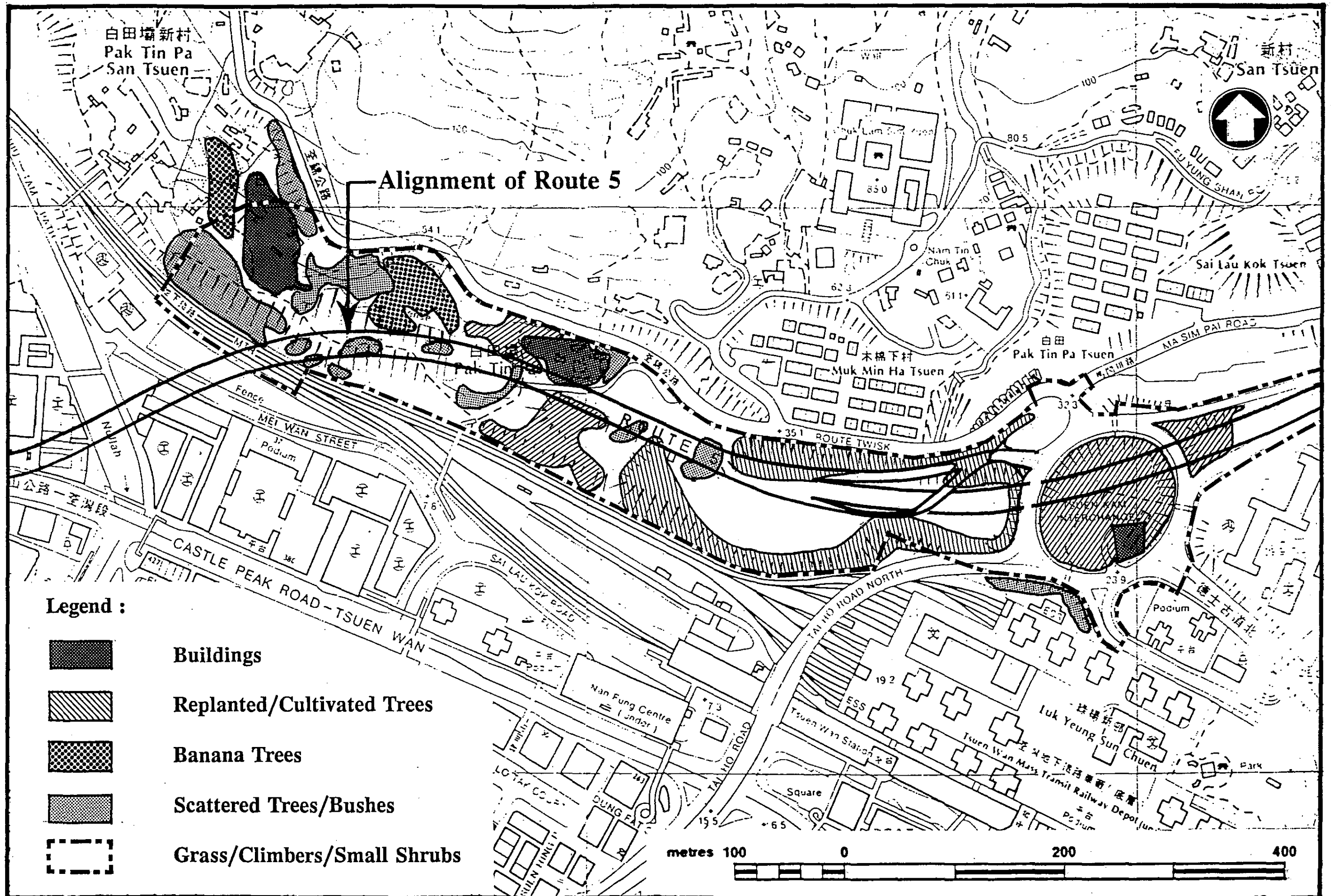


Figure 9.1
Location of Noise Mitigation Measures
Tsuen Kam Interchange

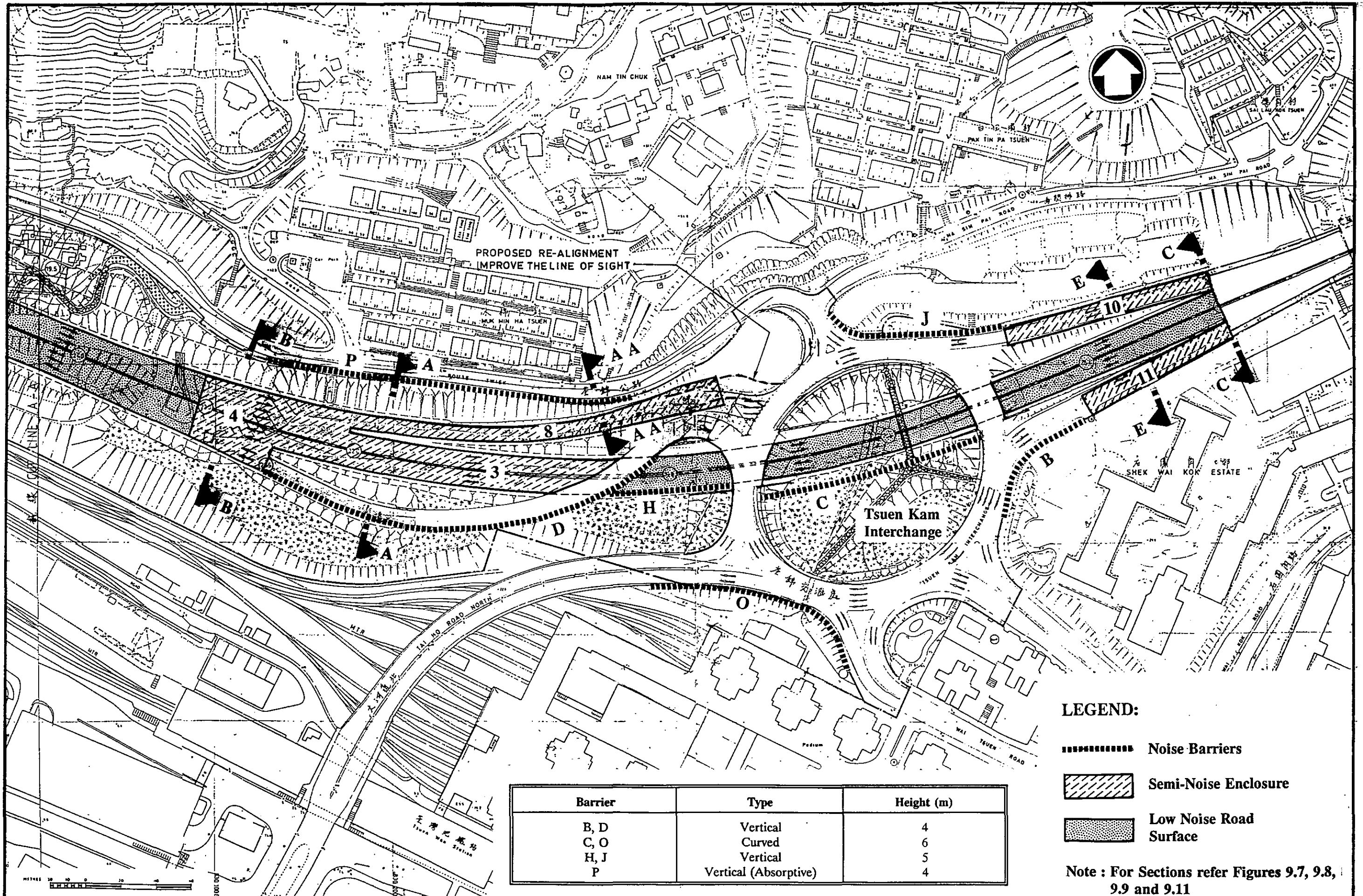
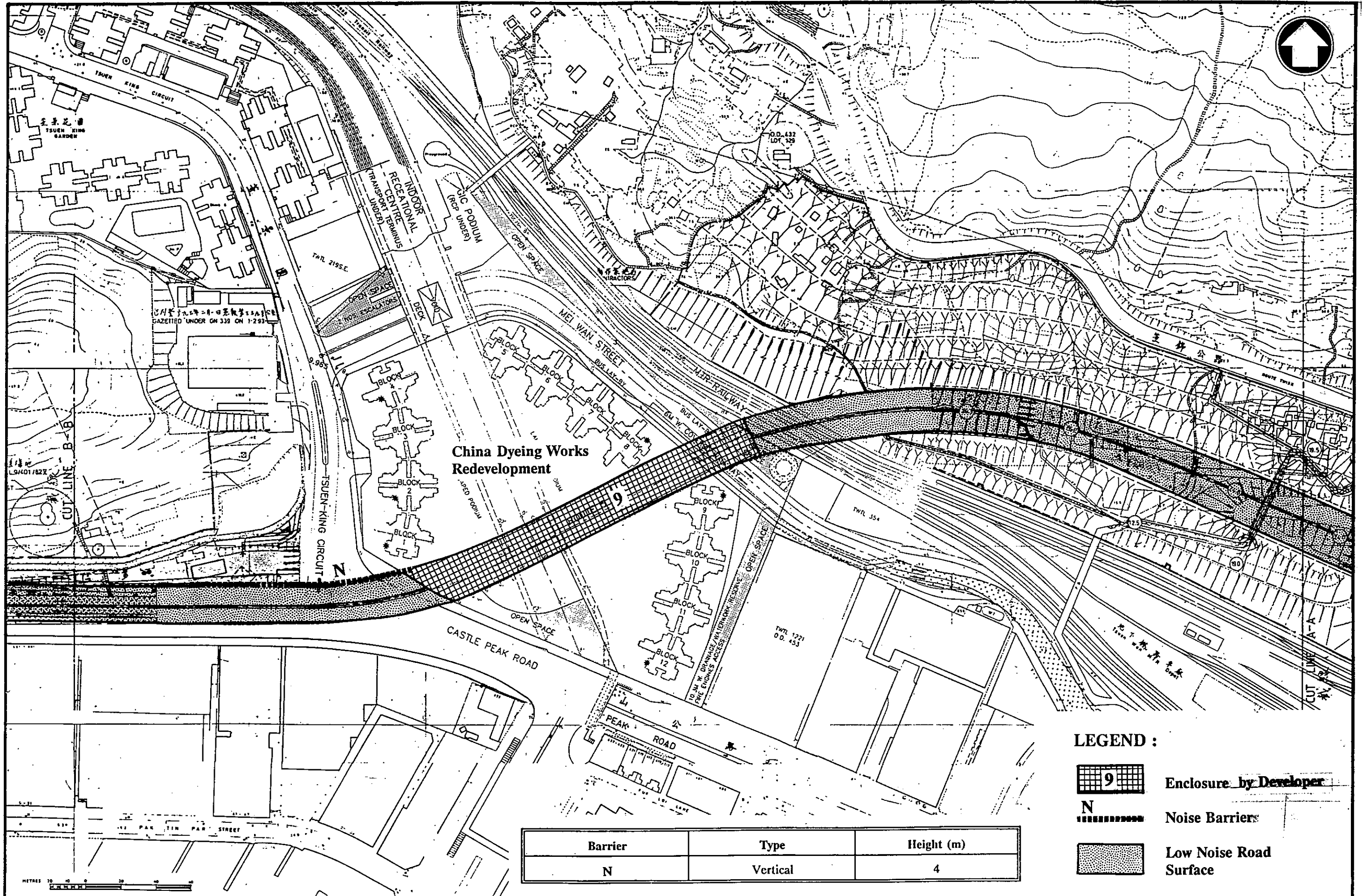
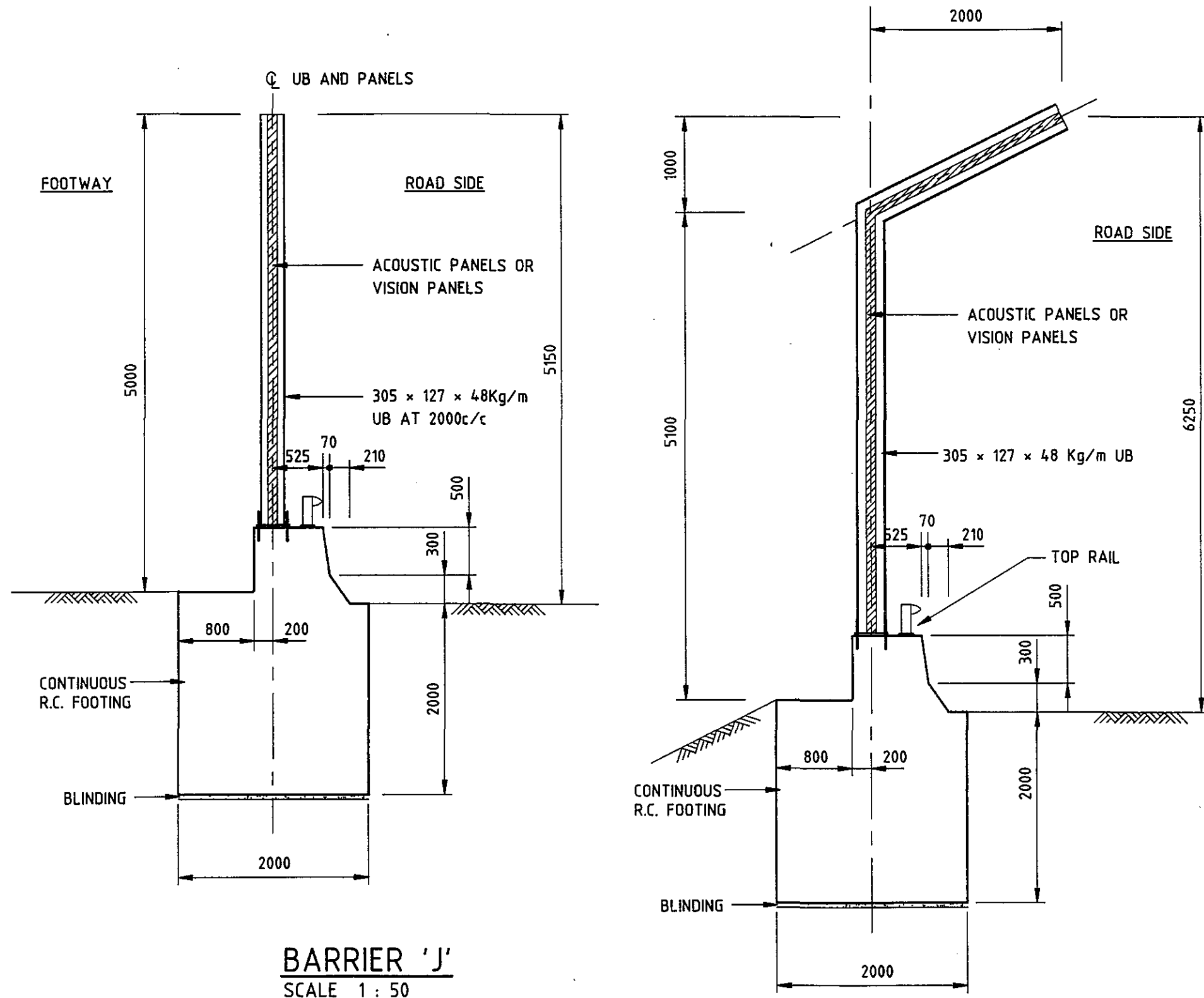


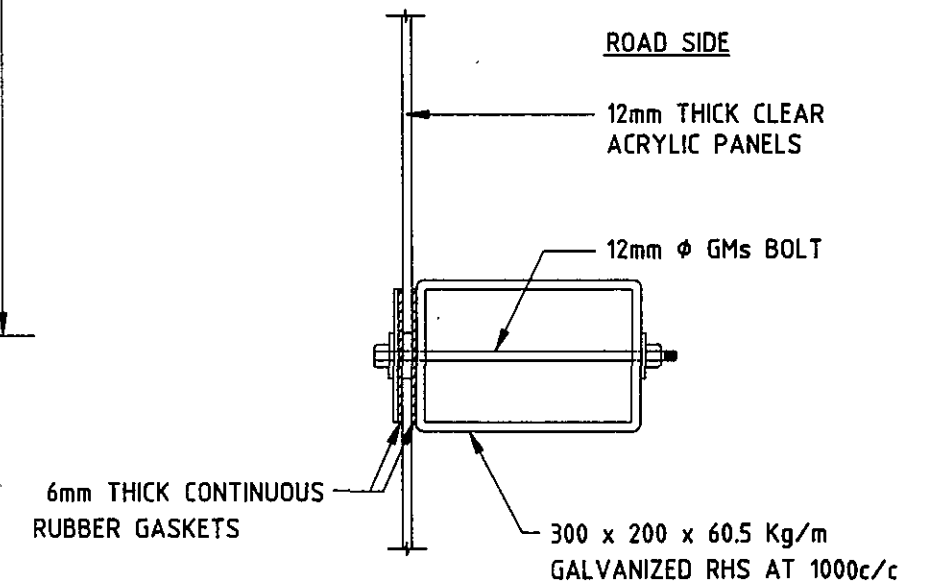
Figure 9.2
Location of Noise Mitigation Measures
China Dyeing Works



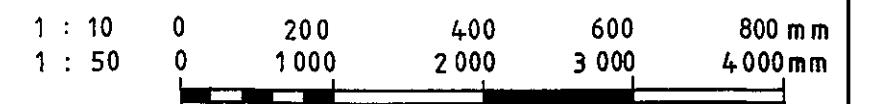


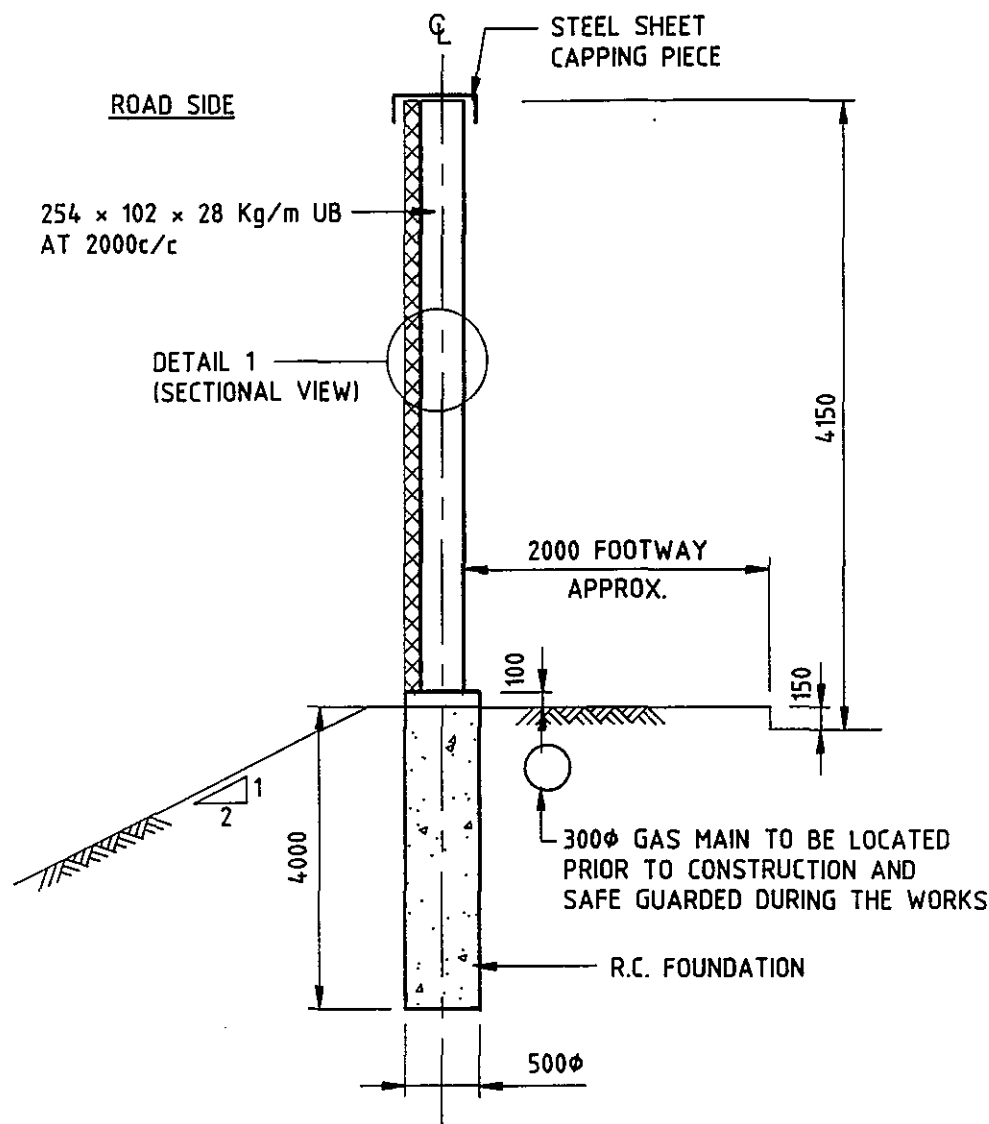
NOTES :

1. FOR LOCATION OF BARRIER'S REFER FIGURES 9.1 AND 9.3.
2. ALL STEELWORK SHALL BE GRADE 43.
3. ALL STEELWORK SHALL BE HOT DIP GALVANISED TO BS729.
4. REINFORCED CONCRETE SHALL BE GRADE 30D/20.
5. BLINDING SHALL BE 50mm THICK PLAIN CONCRETE GRADE 20D/20.
6. ACOUSTIC PANELS ASSUMED TO BE 100mm THICK WOOD FIBRE CONCRETE OR SIMILAR UNLESS OTHERWISE NOTED.
7. KERB HEIGHT ASSUMED TO BE 150mm.

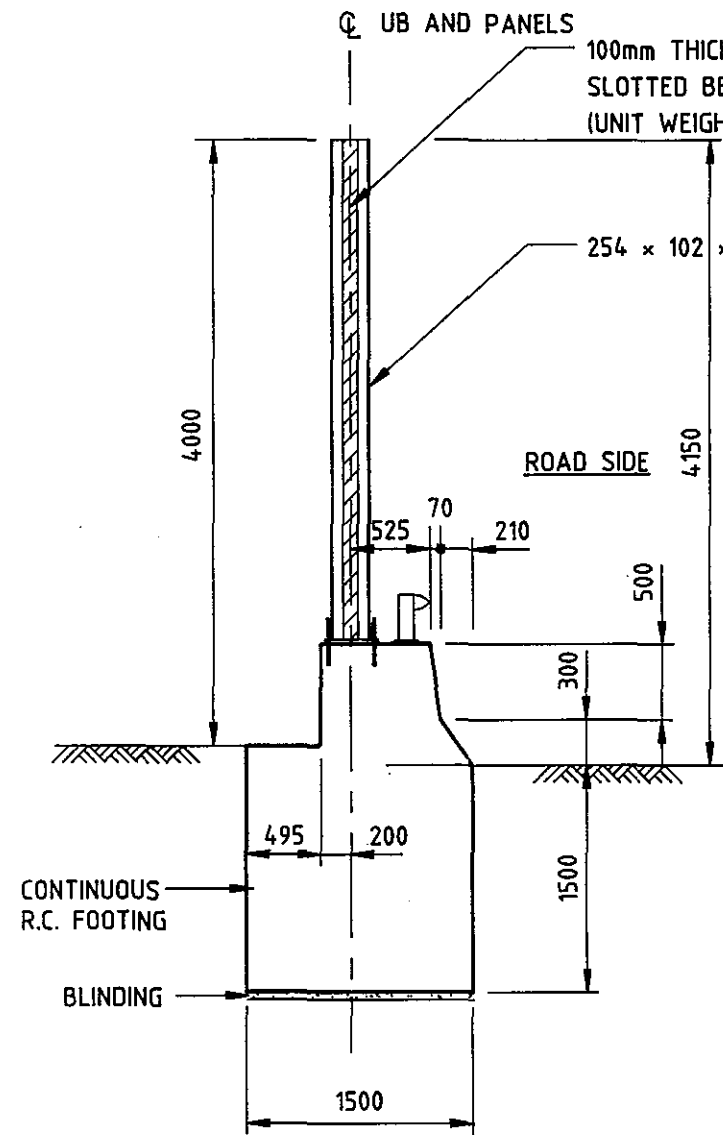


TYPICAL VISION PANEL DETAILS
SCALE 1 : 10

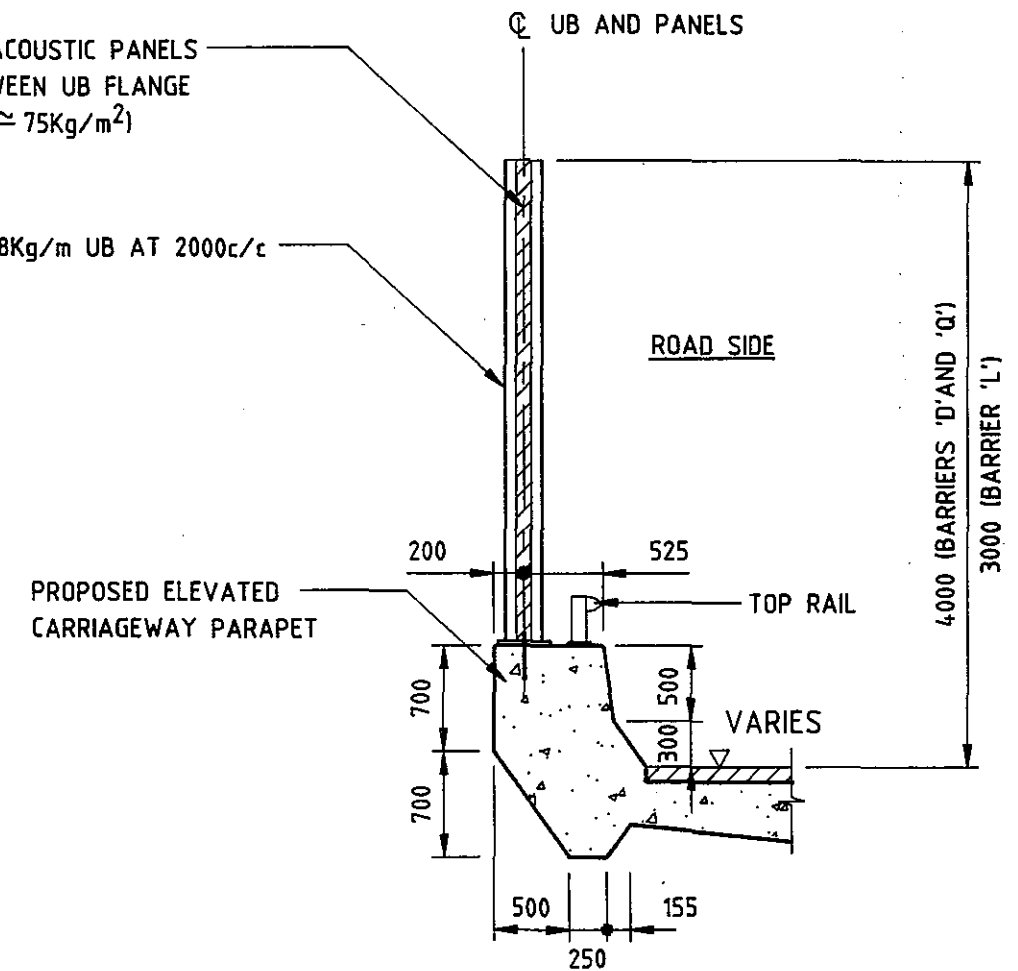




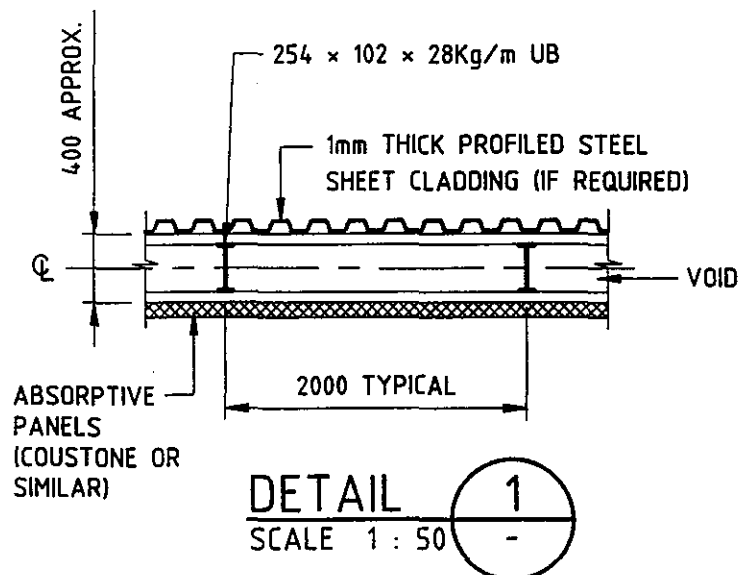
BARRIER 'P'
SCALE 1 : 50



BARRIER 'B'
SCALE 1 : 50

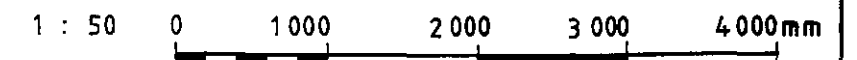


BARRIER 'D' (ON ELEVATED STRUCTURE)
BARRIERS 'Q' AND 'L' SIMILAR
SCALE 1 : 50



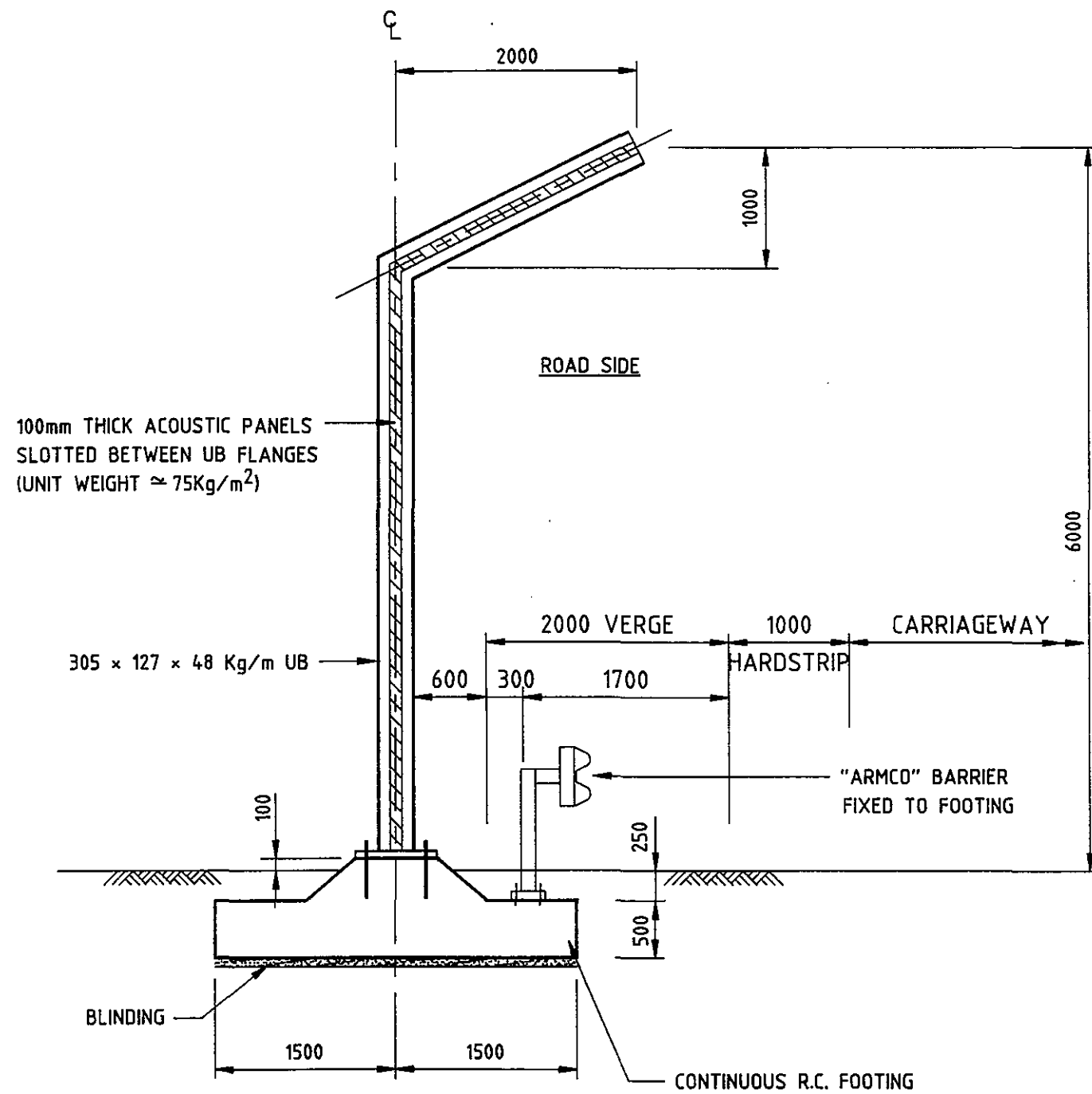
NOTES:

1. FOR NOTES REFER FIGURE 9.4.

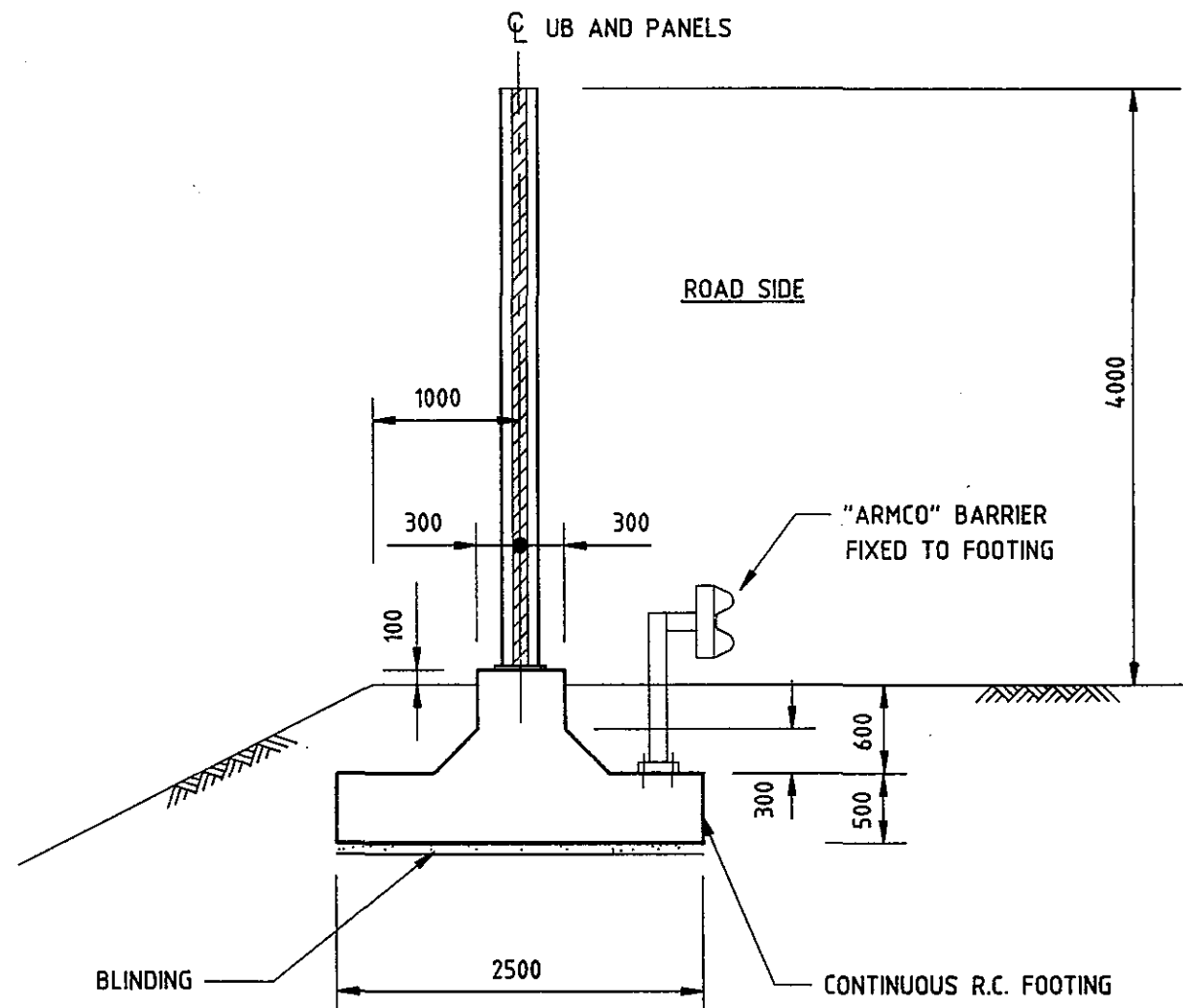


NOTES :

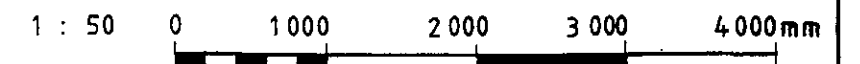
1. FOR NOTES REFER FIGURE 9.4



BARRIER 'C'
BARRIER 'H' SIMILAR BUT
WITH NO OVERHANG
SCALE 1 : 50

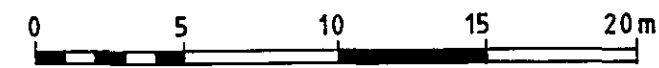
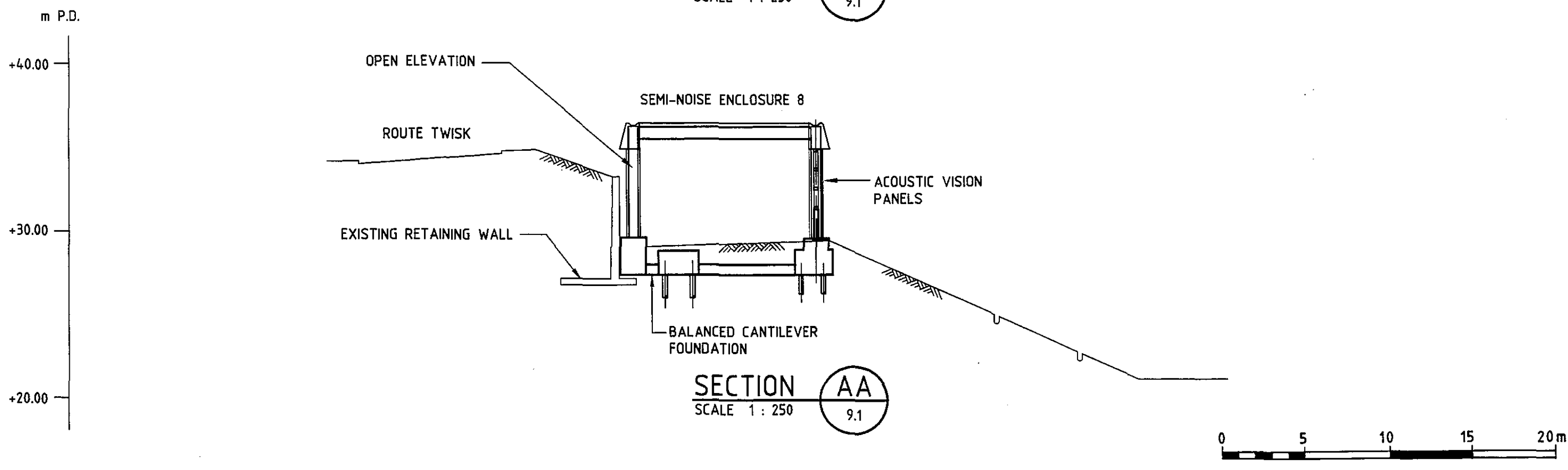
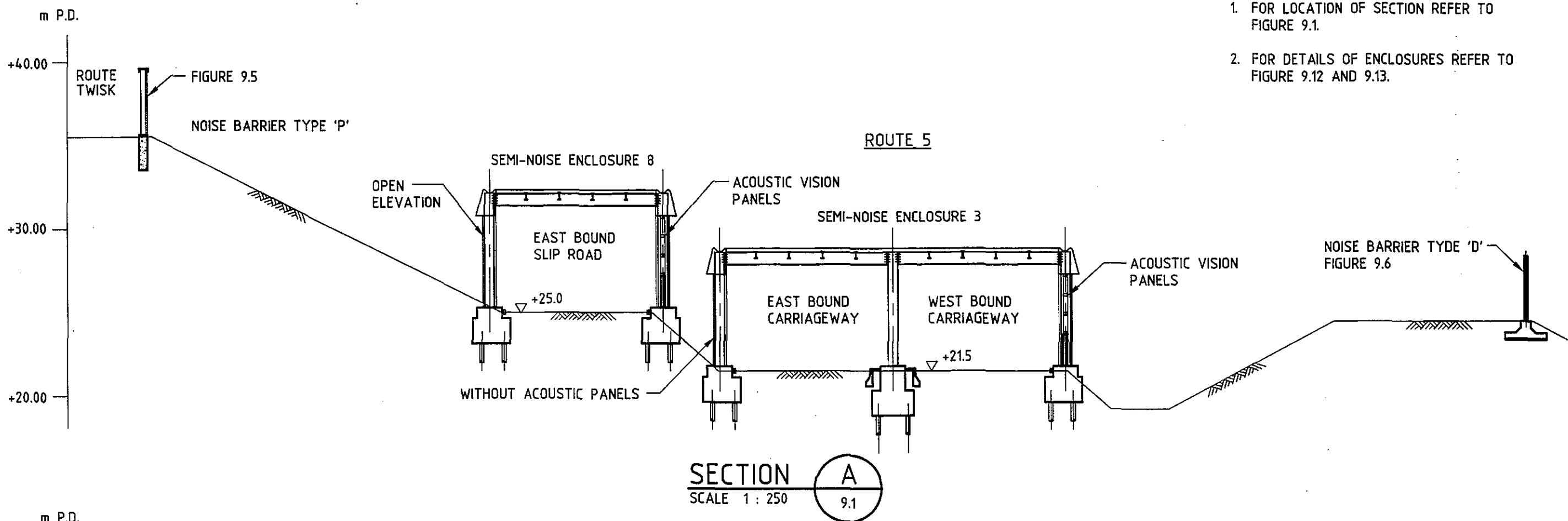


BARRIER 'D' (ON EMBANKMENT)
SCALE 1 : 50



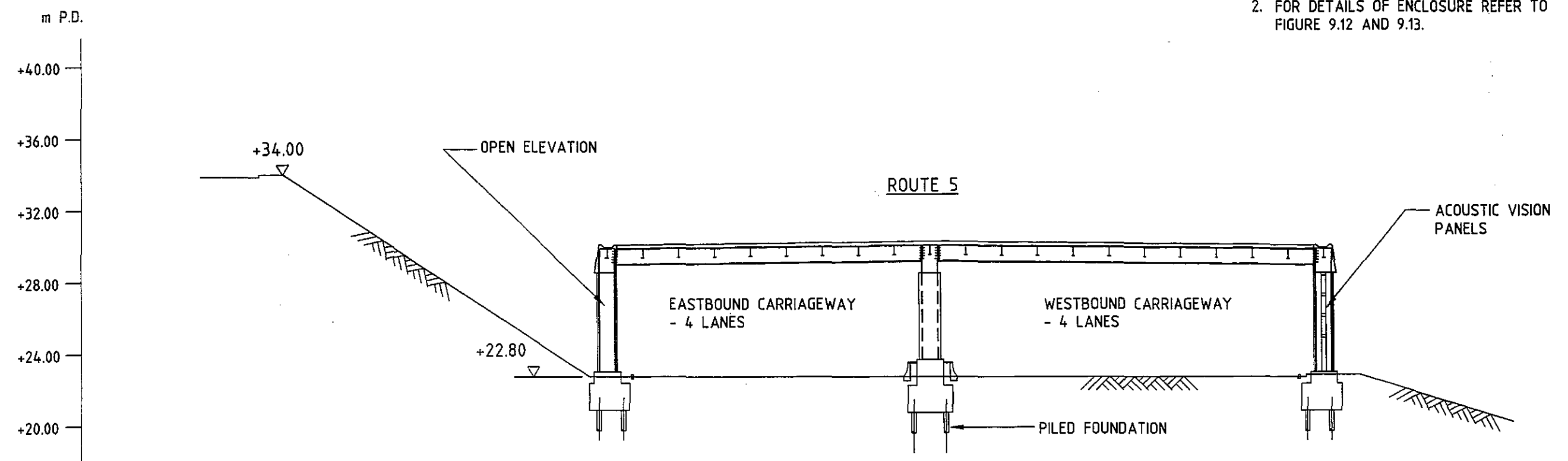
NOTES :

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.1.
2. FOR DETAILS OF ENCLOSURES REFER TO FIGURE 9.12 AND 9.13.



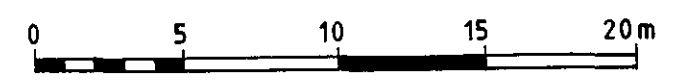
NOTES :

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.1.
2. FOR DETAILS OF ENCLOSURE REFER TO FIGURE 9.12 AND 9.13.



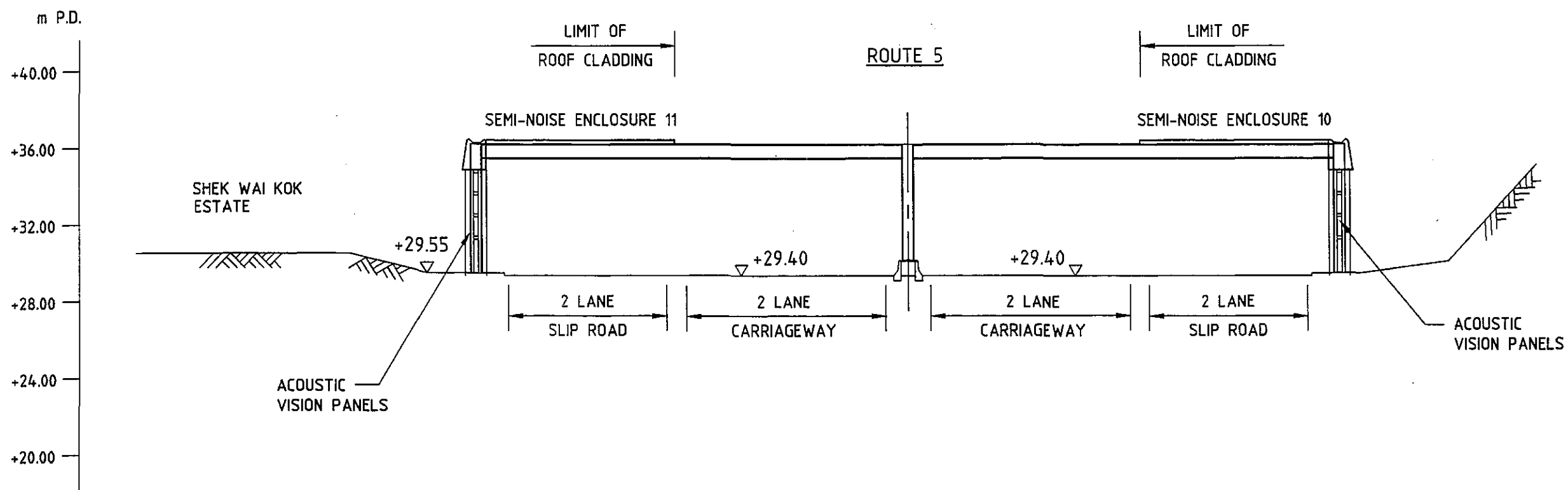
SECTION **B**
 SCALE 1 : 250

NOTE:
 CENTRAL SUPPORTS MAY BE OMITTED WHERE CARRIAGEWAYS MERGE. ROOF CONSTRUCTION WOULD THEN HAVE TO BE SPACE FRAME OR TRUSSED DESIGN NECESSITATING HEAVIER EXTERNAL SUPPORT COLUMNS AND FOUNDATIONS.

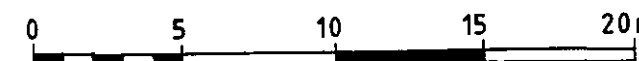


NOTES:

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.1.
2. FOR ENCLOSURE DETAILS REFER TO FIGURE 9.14.

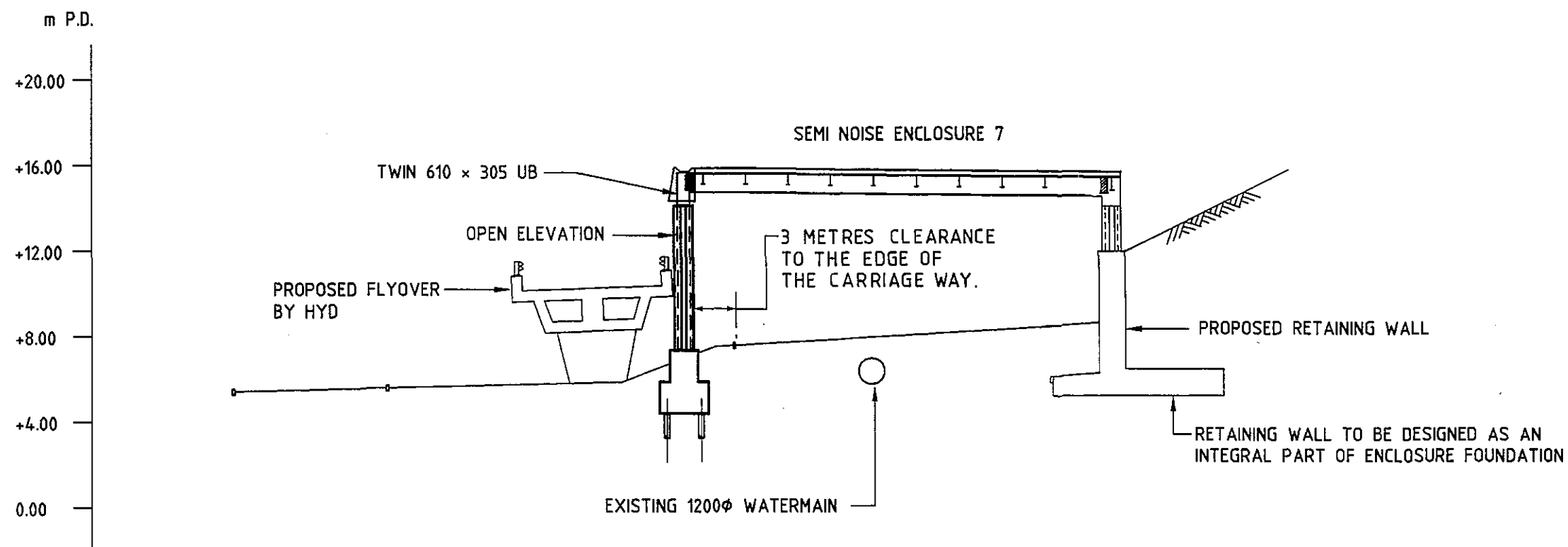


SECTION C
SCALE 1 : 250 9.1



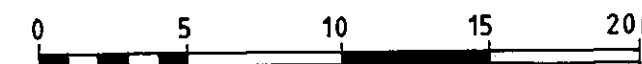
NOTES :

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.3.
2. FOR DETAILS OF ENCLOSURE REFER TO FIGURE 9.14.



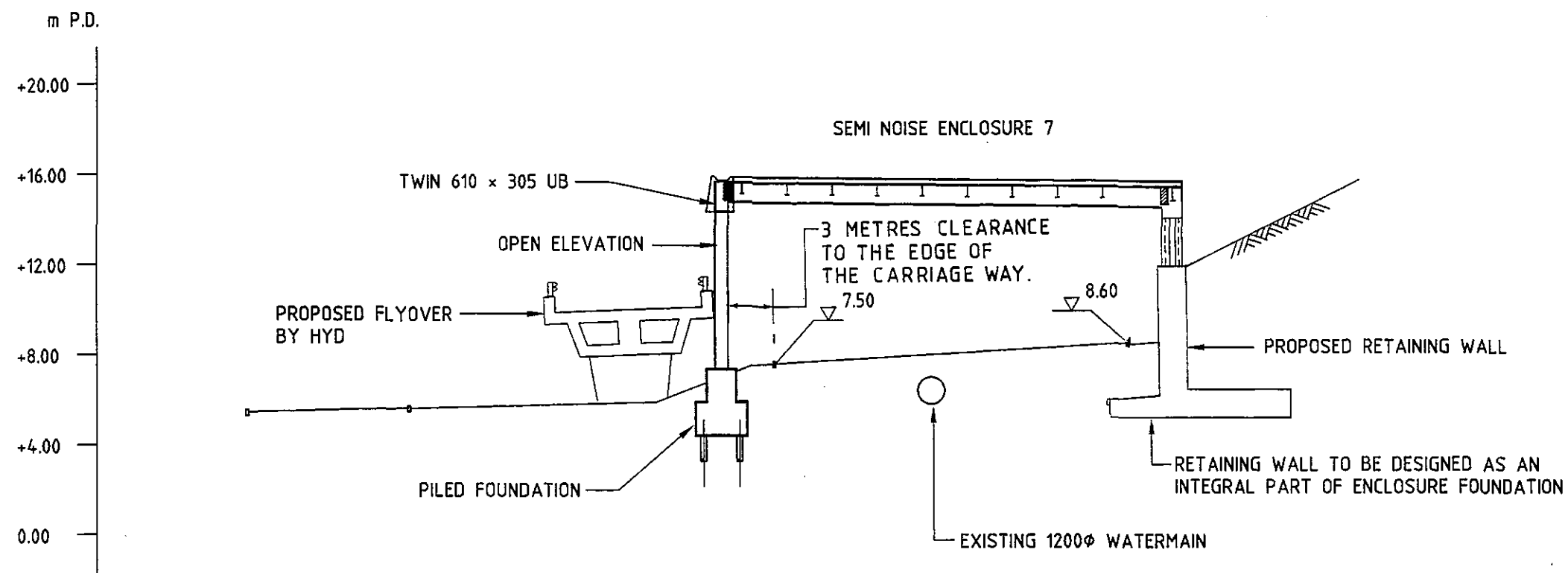
SECTION **F**
SCALE 1 : 250 9.3

N.B.
NEW ENCLOSURE TO BE
CONSTRUCTED AS CLOSE TO
FLYOVER BY HYD AS POSSIBLE
TO IMPROVE SIGHT LINES ON
EASTBOUND CARRIAGEWAY



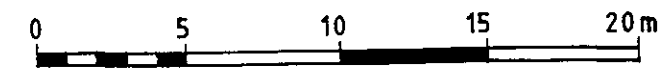
NOTES :

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.3.
2. FOR DETAILS OF ENCLOSURE REFER TO FIGURE 9.14.



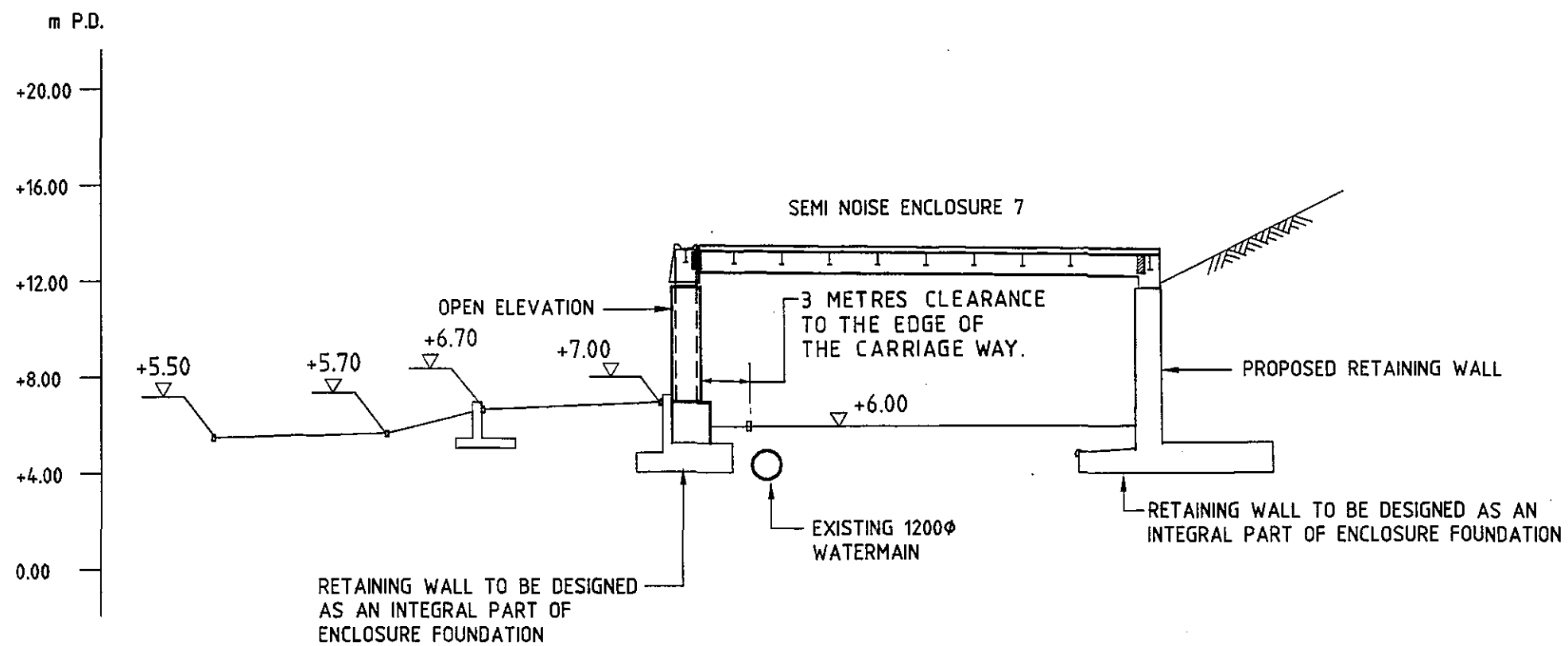
SECTION **G**
SCALE 1 : 250

N.B.
NEW ENCLOSURE TO BE
CONSTRUCTED AS CLOSE TO
FLYOVER BY HYD AS POSSIBLE
TO IMPROVE SIGHT LINES ON
EASTBOUND CARRIAGEWAY

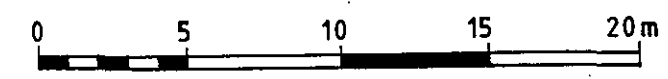


NOTES :

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.3.
2. FOR DETAILS OF ENCLOSURE REFER TO FIGURE 9.14.

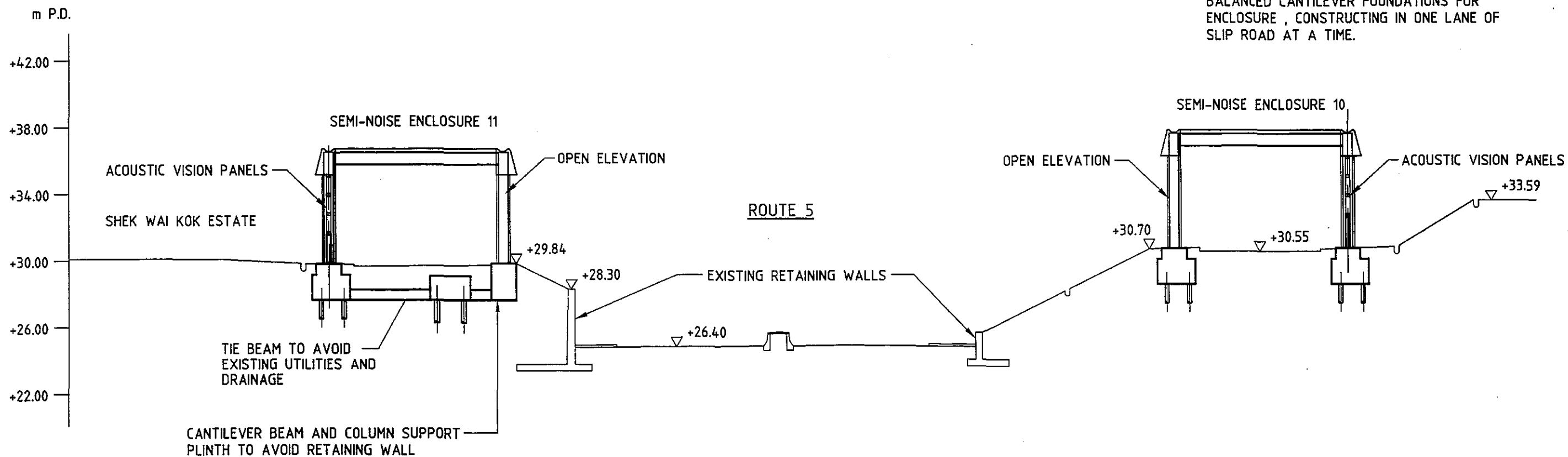


SECTION **D**
 SCALE 1 : 250

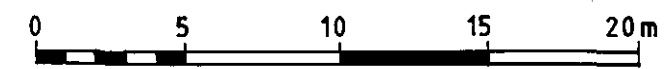


NOTES :

1. FOR LOCATION OF SECTION REFER FIGURE 9.1.
2. FOR DETAILS OF ENCLOSURE REFER FIGURE 9.14.
3. WHERE ENCLOSURE FOUNDATIONS CLASH WITH EXISTING RETAINING WALL EITHER :-
 - a) WHERE WALL HEIGHT $>15m$, DEMOLISH WALL AND RECONSTRUCT AS INTEGRAL PART OF ENCLOSURE OR
 - b) WHERE WALL HEIGHT $>15m$, CONSTRUCT BALANCED CANTILEVER FOUNDATIONS FOR ENCLOSURE , CONSTRUCTING IN ONE LANE OF SLIP ROAD AT A TIME.

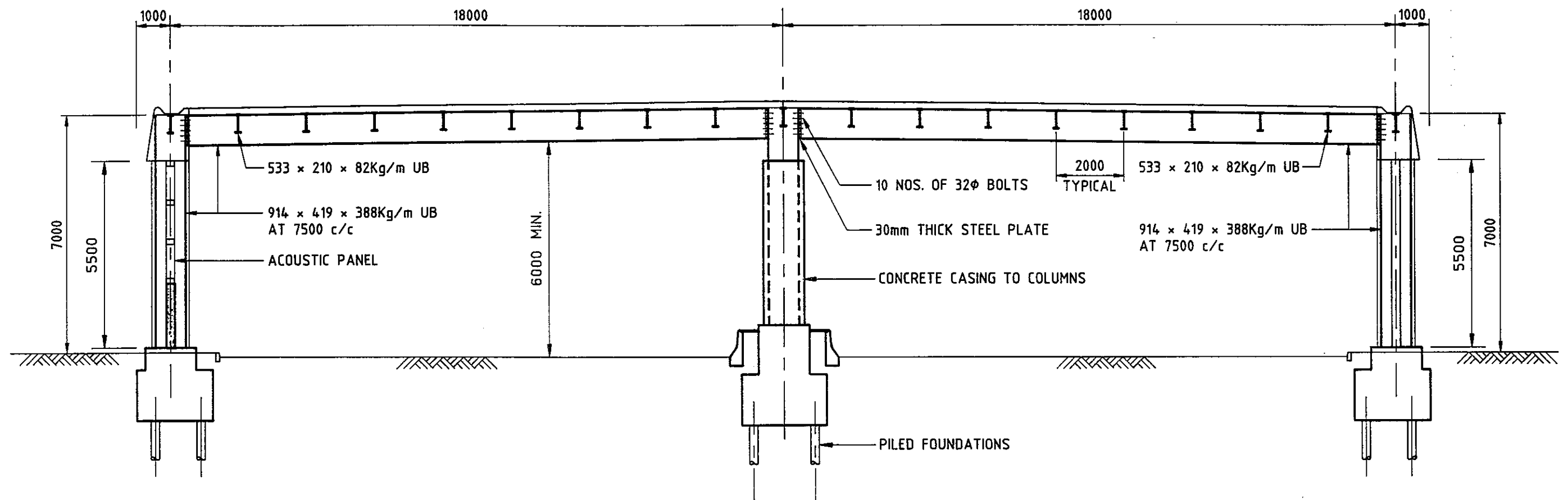


SECTION E
SCALE 1 : 250 9.1



NOTES :

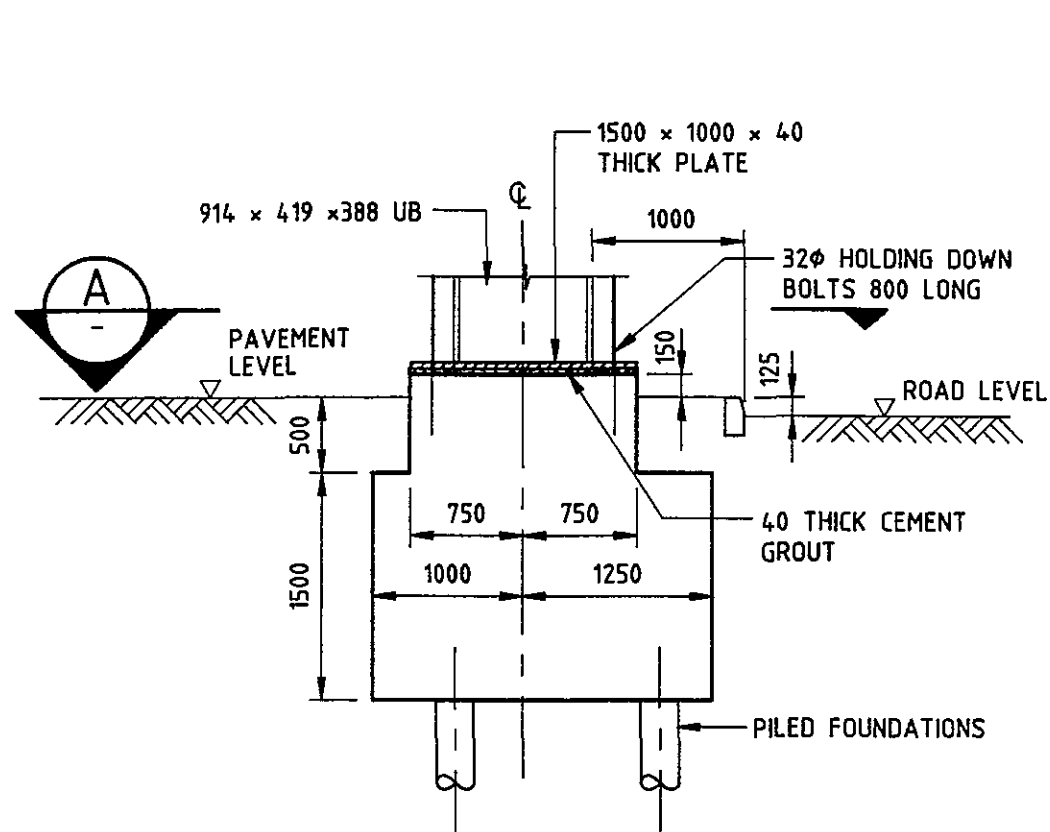
1. FOR NOTES AND DETAILS REFER FIGURE 9.13.



TYPICAL ENCLOSURE FOR 4-LANE CARRIAGEWAY
ENCLOSURE TYPES 3 AND 4

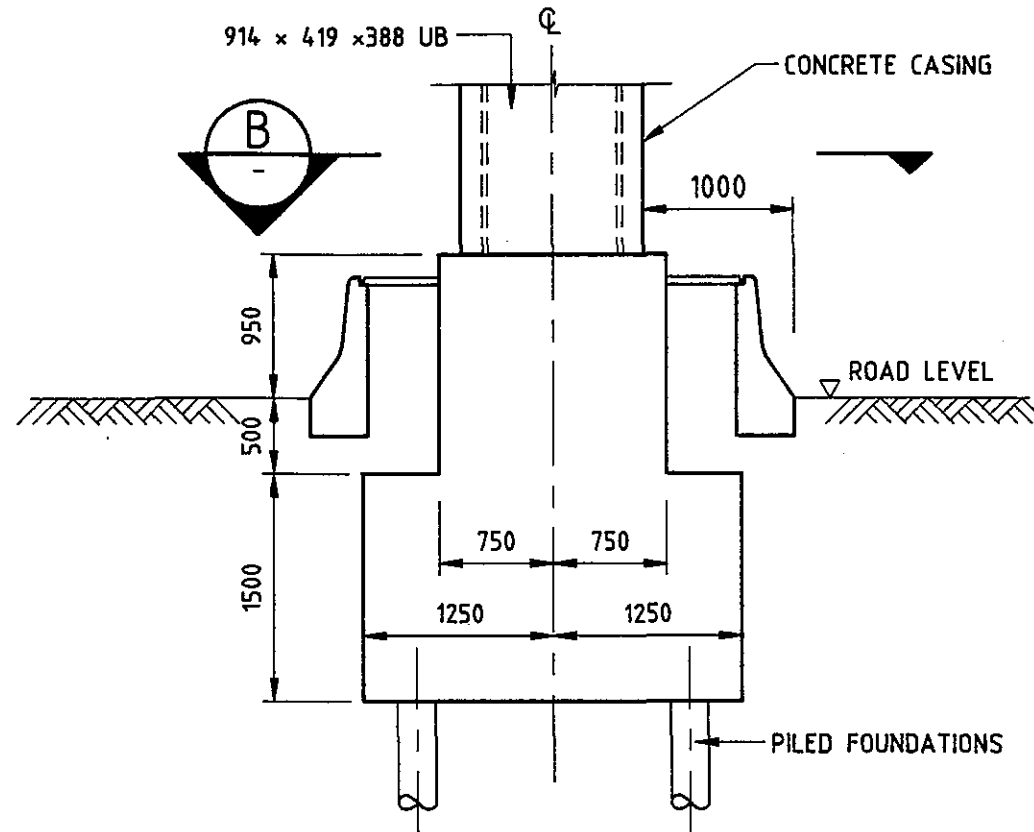
SCALE 1 : 125





TYPICAL EXTERNAL COLUMN FOUNDATION

SCALE 1 : 50

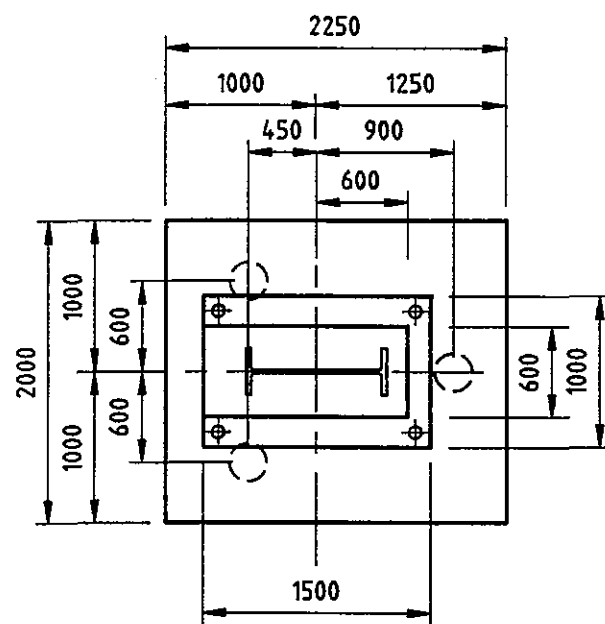


TYPICAL INTERMEDIATE COLUMN FOUNDATION

SCALE 1 : 50

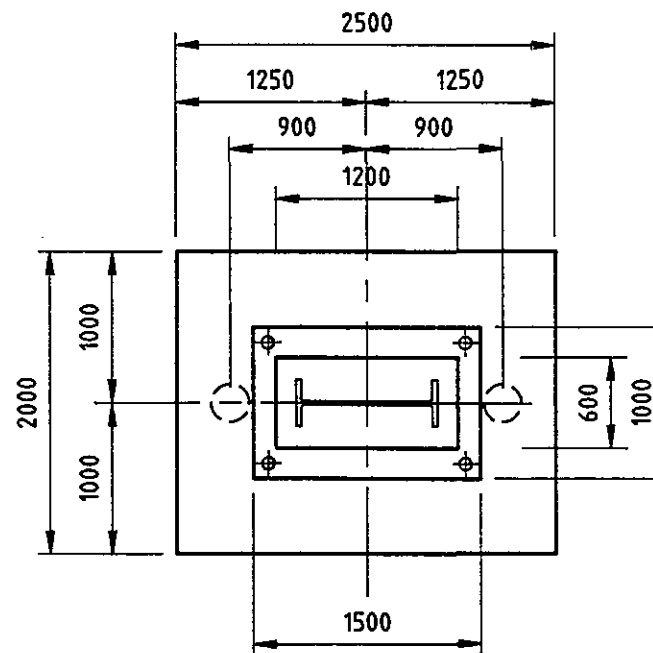
NOTES :

1. ALL STRUCTURAL STEEL SHALL BE GRADE 43.
2. ALL BLACK BOLTS ARE OF GRADE 8.8.
3. ALL ROOF STRUCTURAL STEEL SHALL BE HOT DIP GALVANISED AND PAINTED WITH INTUMESCENT PAINT TO GIVE 1 HR. F.R.P.
4. REINFORCED CONCRETE SHALL BE GRADE 30D/20.
5. BLINDING SHALL BE 50mm THICK PLAIN CONCRETE GRADE 20D/20.



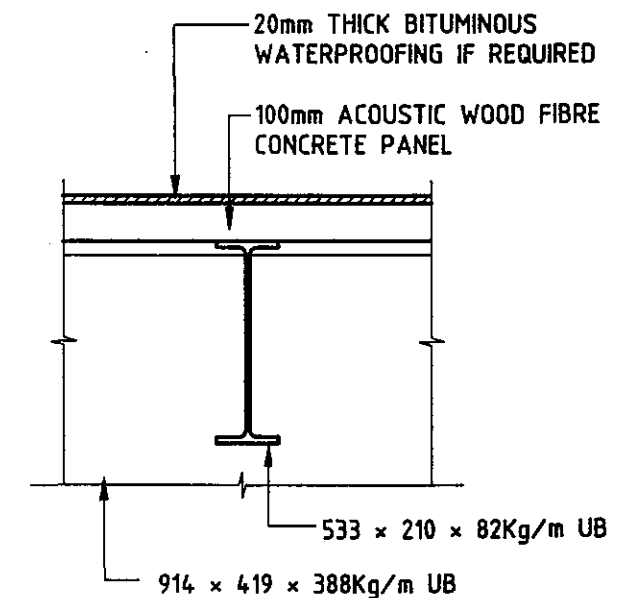
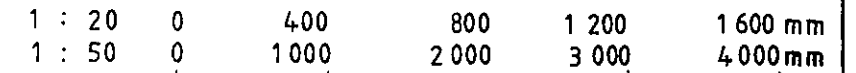
SECTION A

SCALE 1 : 50



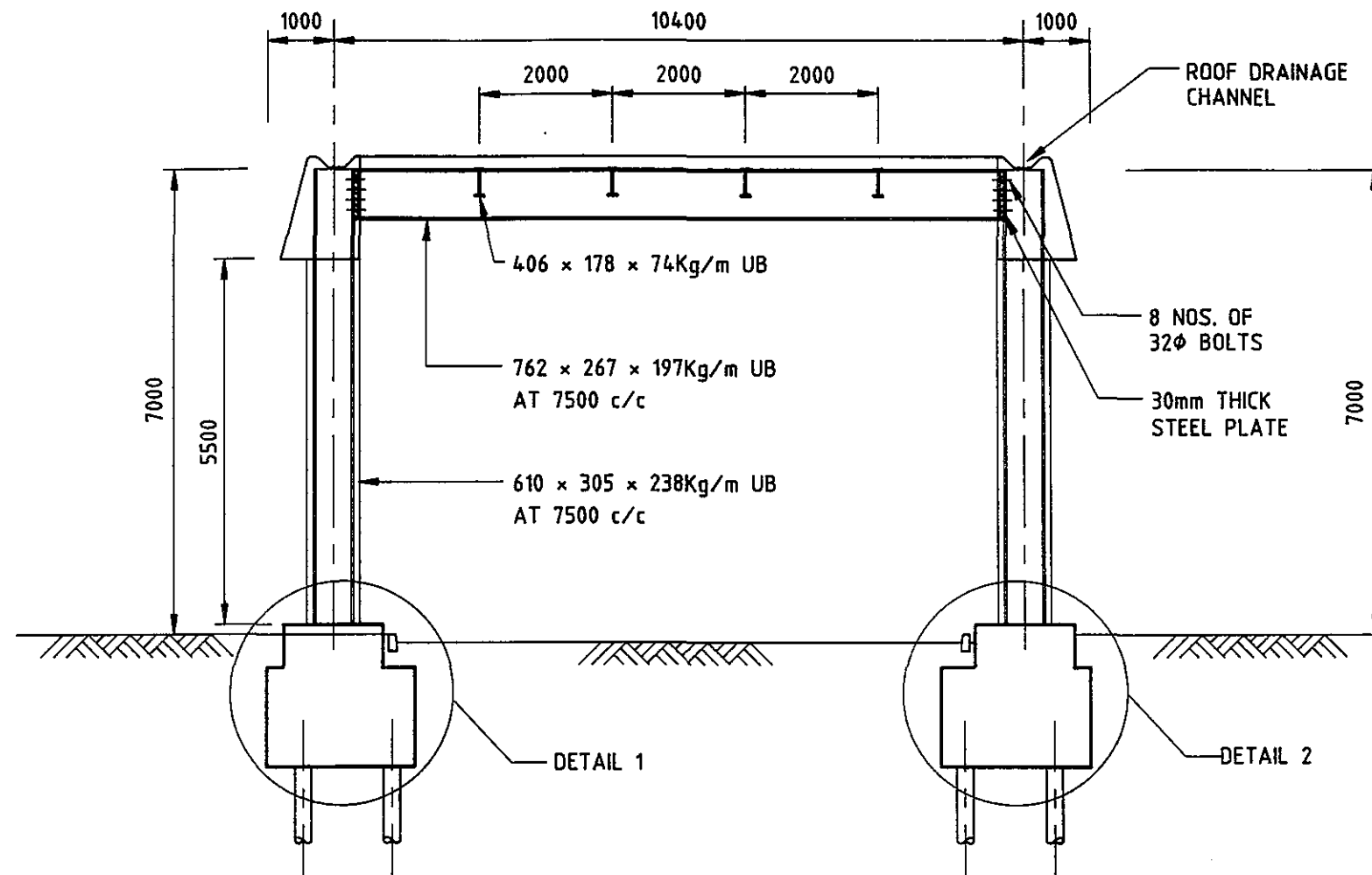
SECTION B

SCALE 1 : 50



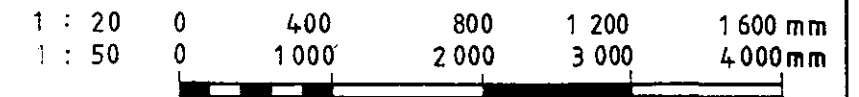
TYPICAL ROOF DETAIL

SCALE 1 : 20



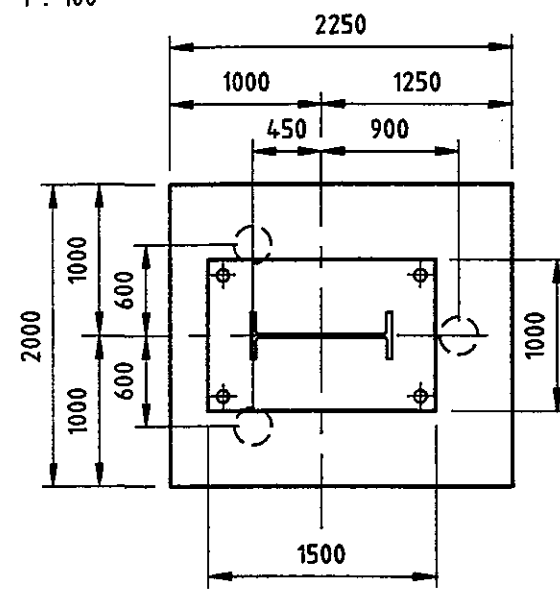
NOTES :

1. ALL STRUCTURAL STEEL SHALL BE GRADE 43.
2. ALL BLACK BOLTS ARE OF GRADE 8.8.
3. ALL STRUCTURAL STEEL SHALL BE HOT DIP GALVANISED AND PAINTED WITH INTUMESCENT PAINT TO GIVE 1 HR. F.R.P.
4. REINFORCED CONCRETE SHALL BE GRADE 30D/20.
5. BLINDING SHALL BE 50mm THICK PLAIN CONCRETE GRADE 20D/20.

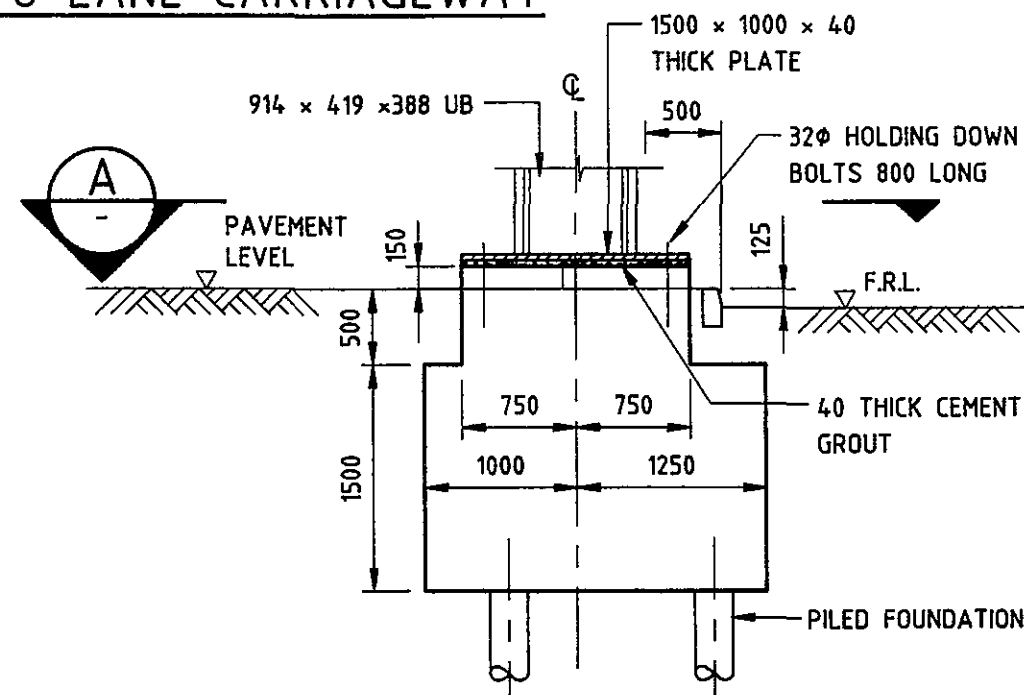


**TYPICAL ENCLOSURE SECTION FOR TWO-LANE CARRIAGEWAY
ENCLOSURE TYPES 7,8,10 & 11**

SCALE 1 : 100

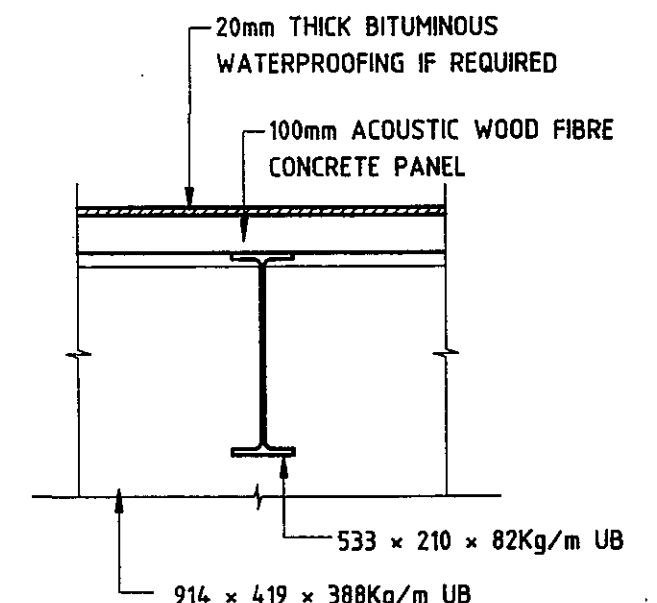


SECTION A
SCALE 1 : 50

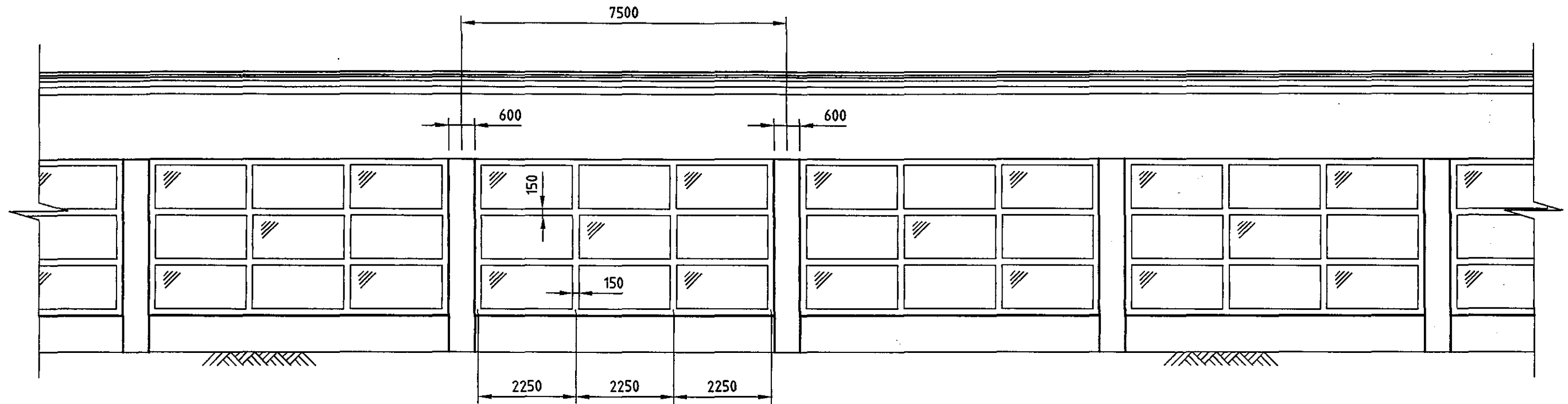


DETAIL 1
SCALE 1 : 50

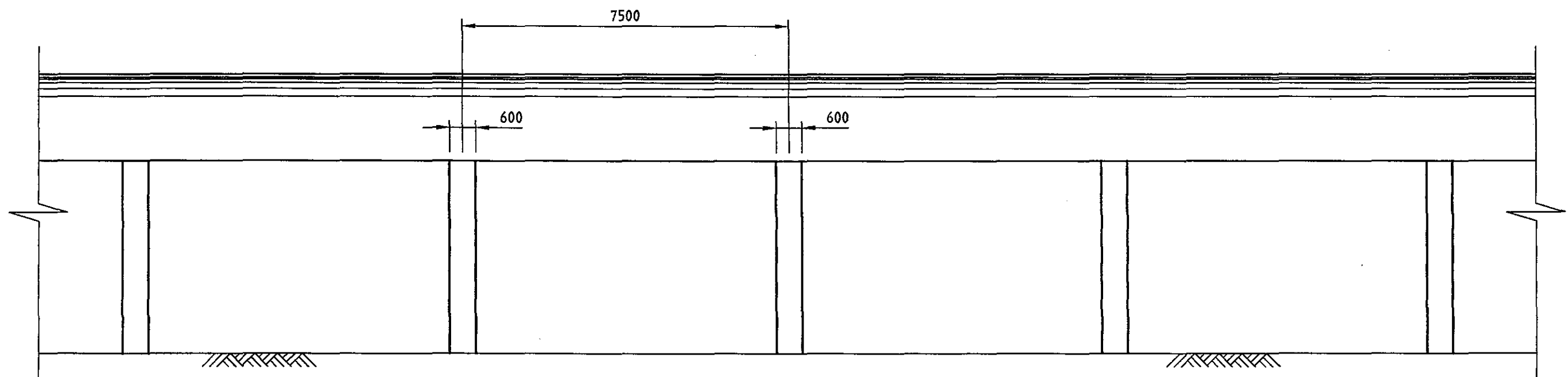
DETAIL 2 SIMILAR BUT HANDED



TYPICAL ROOF DETAIL
SCALE 1 : 20



TYPICAL ELEVATION WITH ACOUSTIC VISION PANELS
SCALE 1 : 100



TYPICAL OPEN ELEVATION
SCALE 1 : 100

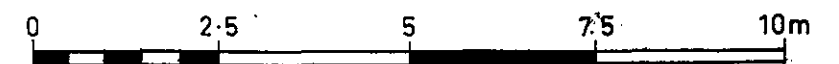


Figure 9.3
Location of Noise Mitigation Measures
Tsuen King Circuit

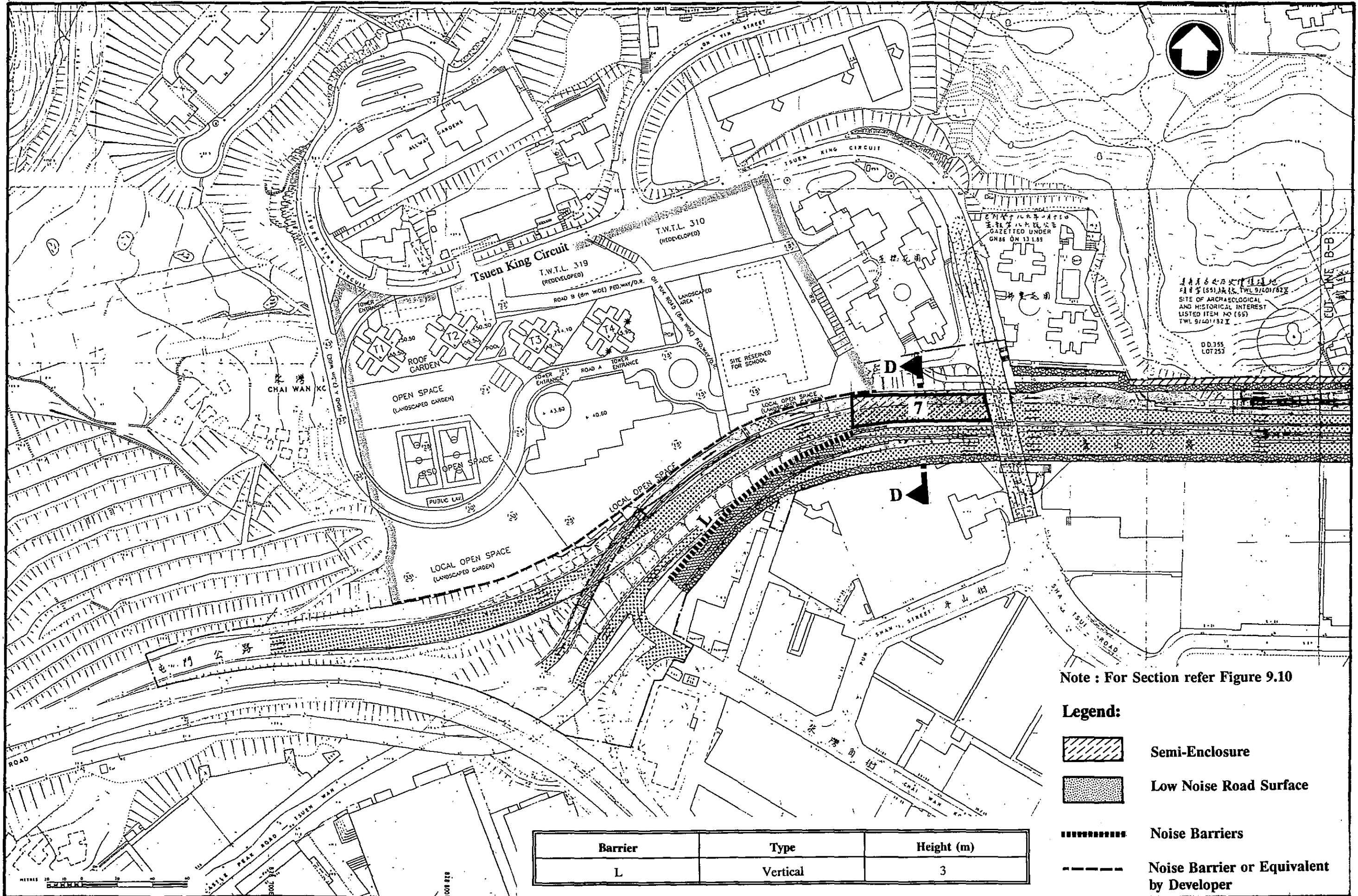


Figure 9.16
Visibility/Sight Distances

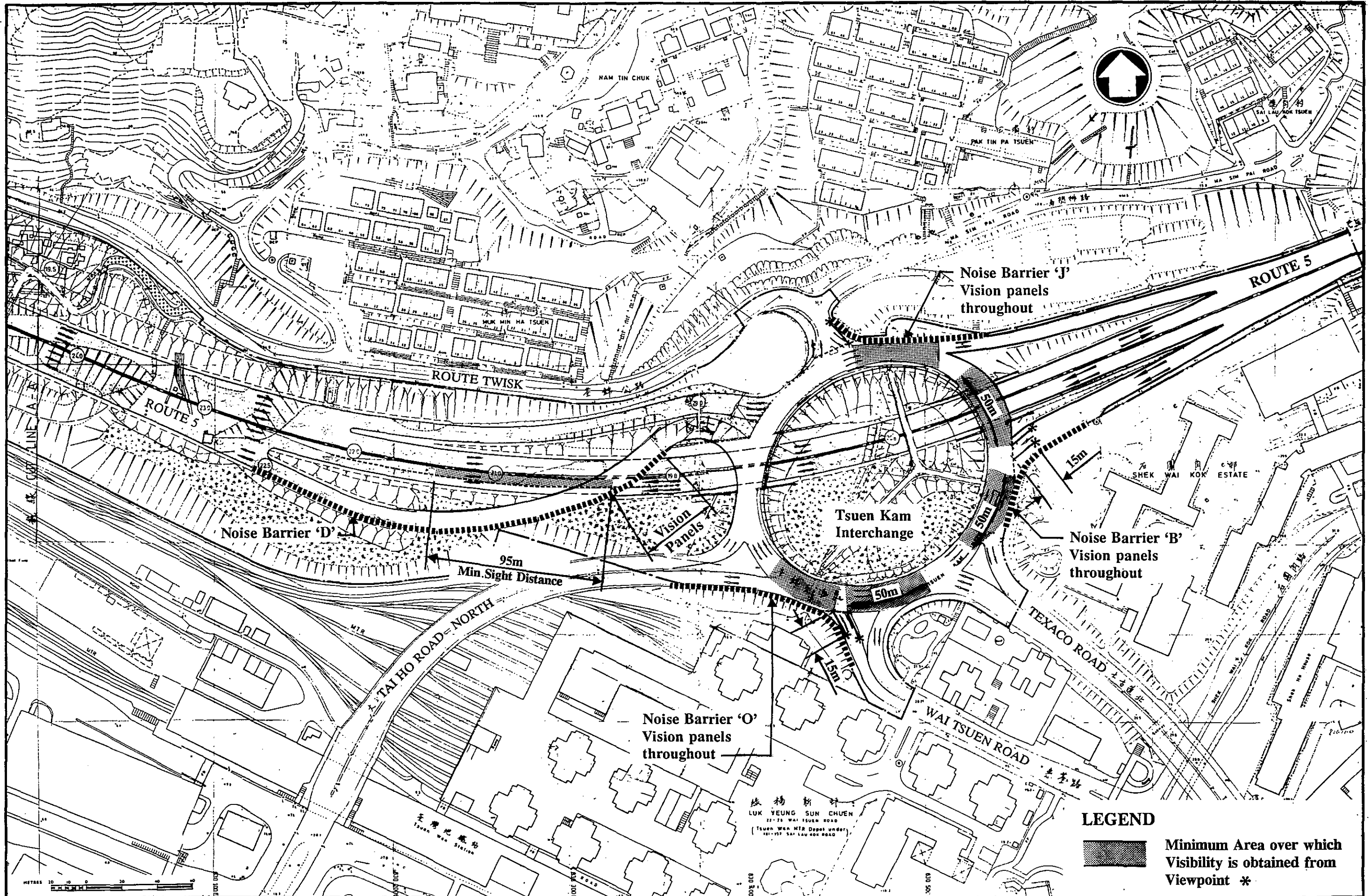
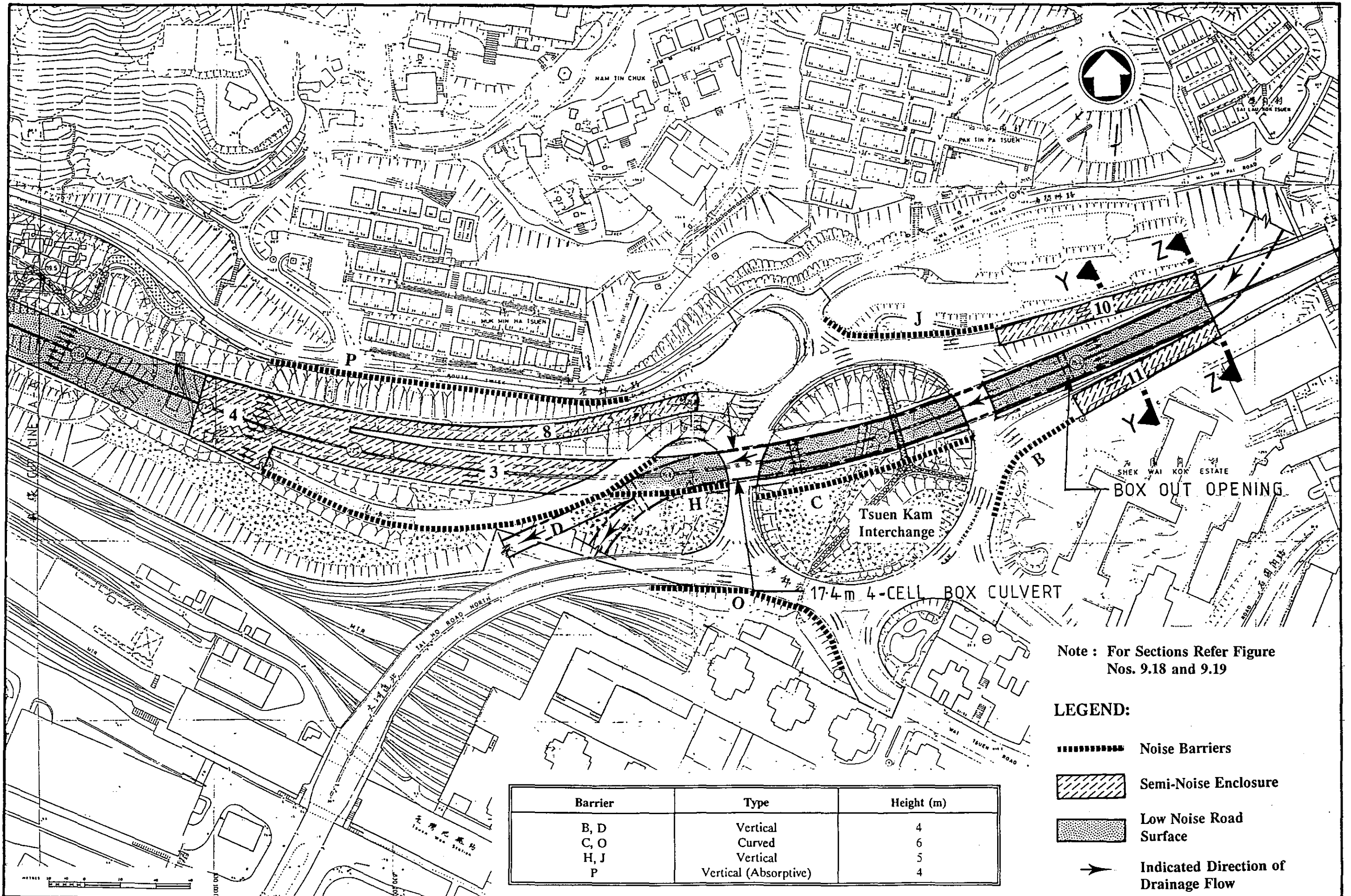






Figure 9.17
Location of Drainage Culvert



Note : For Sections Refer Figure Nos. 9.18 and 9.19

LEGEND:

-  Noise Barriers
-  Semi-Noise Enclosure
-  Low Noise Road Surface
-  Indicated Direction of Drainage Flow

Barrier	Type	Height (m)
B, D	Vertical	4
C, O	Curved	6
H, J	Vertical	5
P	Vertical (Absorptive)	4

17.4m 4-CELL BOX CULVERT

SHEK WAI KOK ESTATE
BOX OUT OPENING

Tsuen Kam Interchange

TAI HO ROAD NORTH

NAM TIN CHUK

PAK TIN PA TSUEN

MUK MIN HA TSUEN

WAI TAI

WAI TAI

WAI TAI

WAI TAI

WAI TAI

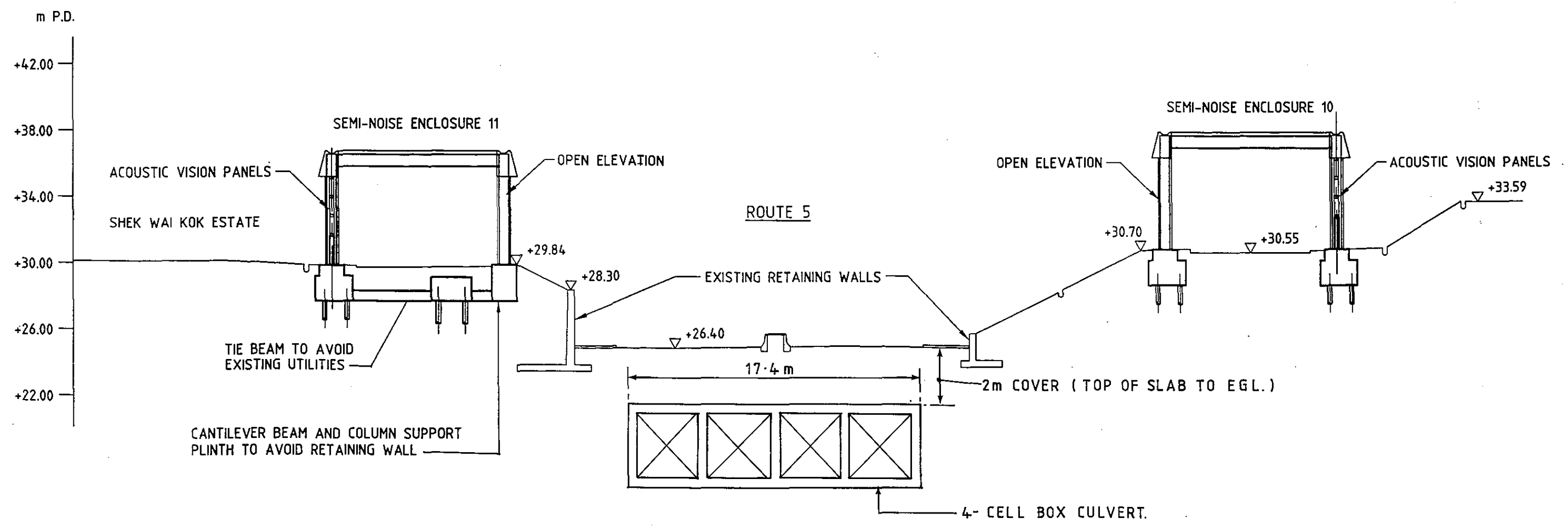
WAI TAI

WAI TAI

Figure 9.18
Drainage Culvert Details

NOTES :

1. FOR LOCATION OF SECTION REFER FIGURE 9.17
2. FOR DETAILS OF ENCLOSURE REFER FIGURES 9.12 TO 9.15



SECTION Y
SCALE 1 : 250 9.17

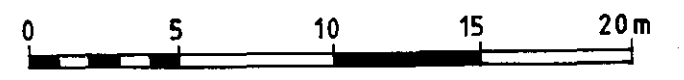
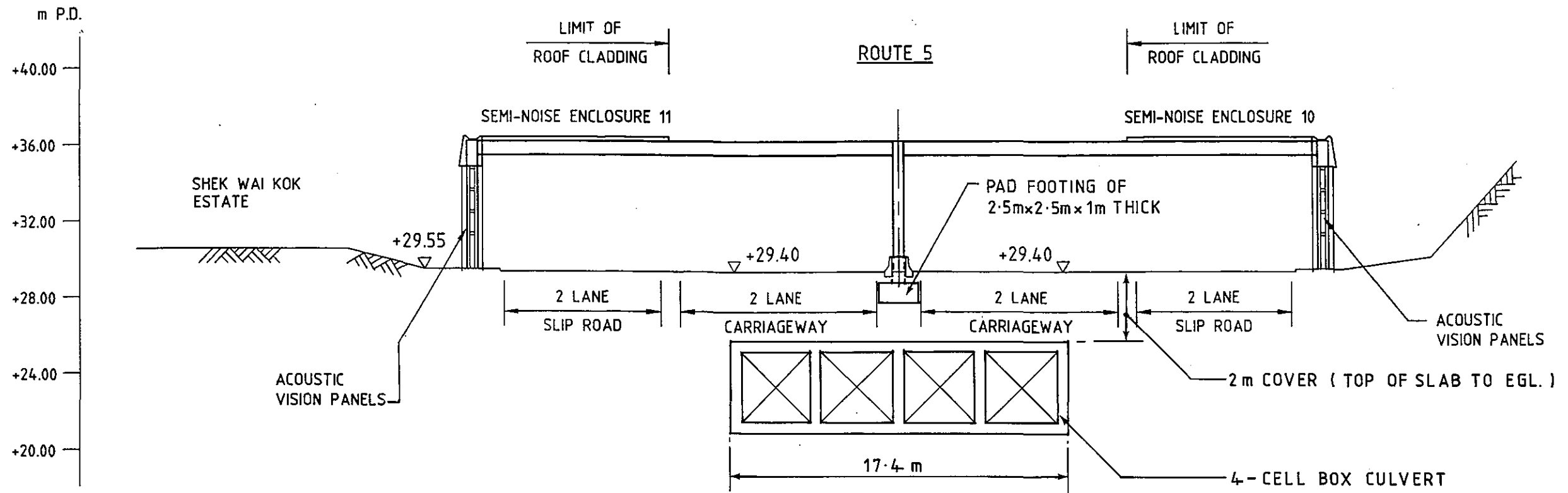


Figure 9.19
Drainage Culvert Details

NOTES:

1. FOR LOCATION OF SECTION REFER TO FIGURE 9.17
2. FOR ENCLOSURE DETAILS REFER TO FIGURES 9.12 TO 9.15



SECTION **Z**
SCALE 1 : 250 9.17

