

Manly Council

PAVING DESIGN GUIDELINES

**FINAL REPORT
APRIL 2000**

**AMENDED REPORT
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Introduction

This document has been prepared in order to establish a limited and replicable palette and hierarchy of paving materials for use throughout the pedestrian areas of Manly CBD and its environs, North and South Steyne, East and West Esplanade and the neighbourhood shopping centers of Balgowlah, Balgowlah Heights, Fairlight and Seaforth.

The main purpose of the document is to provide Council with a tool for controlling the on going and gradual process of repairing and replacing the existing pedestrian pavements throughout these areas, in order to prevent an ad-hoc collection of various unrelated and uncoordinated pavement types.

The document is divided into three sections.

Section one records the existing paving types within each of the study areas, by way of annotated photographic record and in map form.

Section two considers various alternatives possible within each area in relation to existing conditions and, in the case of the Manly CBD, the current paving recommendations for The Corso, Manly Interchange and the Ocean Beach Promenade and provides recommendations on relevant paving types and hierarchy where applicable. The recommendations for each area are then scheduled and mapped for ease of reference.

Section three is a series of guideline details describing typical, general paving layouts and arrangements and also typical arrangements in relation to corners and other junctions, footpath widening, kerb crossings, street trees and street furniture.

This document is essentially a guideline document for reference purposes, it is not a construction manual. For any given situation or problem requiring reference to this document, consideration must be given to the particular site conditions and circumstances that may effect any decision or choice. It is intended that this document be continually reviewed and updated by Council as required to suit Council's needs.

SECTION 1 Existing Pavement Types Within Manly

There are a number of differing pavement types used throughout each of the study areas, which vary significantly in quality and condition. The predominant pavement types are:-

- Concrete
- Asphalt
- Clay unit paving
- Concrete unit paving

The following map, schedule and photos summarize the materials and patterns which have been used throughout the study areas.

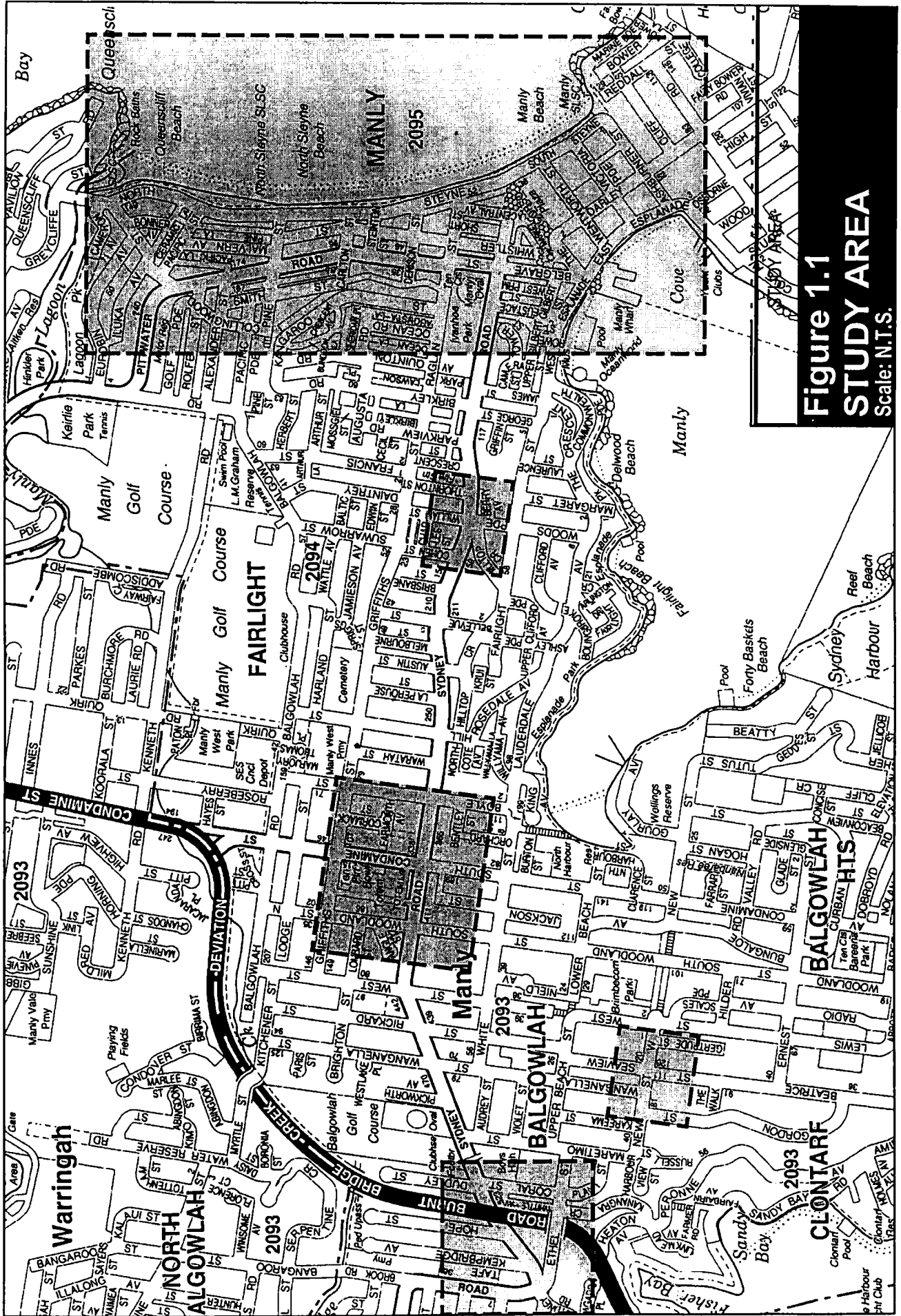


Figure 1.1
STUDY AREA
 Scale: N.T.S.

Table 1.1 EXISTING PAVING TYPES – MANLY

STREET	PAVING TYPE					
	1	2	3	4	5	6
THE CORSO - Belgrave St. to South Steyne					■	
NORTH STEYNE - Raglan St. to Steinton St – West				■		
NORTH STEYNE - Steinton St to Carlton St – West	■					
NORTH STEYNE - Steinton St Intersection						■
NORTH STEYNE – Carlton St to Pine St- West	■					
NORTH STEYNE – Pine St to Pacific St- West	■					
NORTH STEYNE – Pine St Intersection						■
NORTH STEYNE – Pacific St to Ceramic Lane – West	■					
NORTH STEYNE – Ceramic Lane to Mid Block – West		■				
NORTH STEYNE – Mid Block – West	■					
NORTH STEYNE – Mid Block to Collingwood St – West						■
SOUTH STEYNE (East Side) - Ashburner St. to Raglan St.					■	
SOUTH STEYNE (West Side)- Ashburner St to Raglan St				■		
EAST ESPLANADE –The Corso to Wentworth St						■
EAST ESPLANADE – Wentworth St to Ashburner St	■					
WEST ESPLANADE- The Corso to Eustace St – East						■
WEST ESPLANADE -The Corso to Eustace St – West					■	
BELGRAVE ST - West Esplanade to Sydney Road - East				■		
BELGRAVE ST - West Esplanade to Sydney Road - West						■
BELGRAVE ST - Sydney Road to Raglan St				■		
PITTWATER ROAD - Raglan St to Pine St - East	■					
PITTWATER ROAD – Pine St to Collingwood St - East				■		
PITTWATER ROAD – Carlton St to Alexander St - West	■					
PITTWATER ROAD –Raglan St to Carlton St - West	■					
PITTWATER ROAD –Midblock between Raglan St & Denison St, & Denison St and Steinton St						■

Paving Types:

1. Bitumen;
4. Interlocking Concrete Pavers;

2. Concrete/Grass;
5. Special Paving area;

3. Concrete;
6. Other Paving .

Table 1.1 EXISTING PAVING TYPES – MANLY (Continued)

STREET	PAVING TYPE					
	1	2	3	4	5	6
SYDNEY ROAD- Belgrave St to Central Ave						6
SYDNEY ROAD - Central Ave to The Corso					5	
RAGLAN STREET (North) - Belgrave St to North Steyne	1					
RAGLAN STREET (South) - Belgrave St to Central Ave	1					
RAGLAN STREET – Central Ave to North Steyne				4		
WENTWORTH STREET - East Esplanade to Darley St	1					
WENTWORTH STREET – Darley St to South Steyne						6
WENTWORTH STREET - South Steyne Intersection						6
WHISTLER ST – The Corso to Raglan St				4		
WHISTLER ST (West) – Raglan St to Denison St				4		
WHISTLER ST (East) – Raglan St to Denison St –	1					
WHISTLER ST (East) – Denison St to Pine St –			3			
WHISTLER ST (West) – Denison St to Pine St	1					
DARLEY ROAD - The Corso to Ashburner St				4		
VICTORIA PARADE - East Esplanade to Darley Rd	1					
VICTORIA PARADE – Darley St Intersection						6
VICTORIA PARADE – Darley St to South Steyne	1					
VICTORIA PARADE –South Steyne Intersection						6
ASHBURNER STREET- East Esplanade to South Steyne	1					
EUSTACE STREET (West) – West Esplanade to Sydney Rd						6
EUSTACE STREET (East) – West Esplanade to Gilbert St						6
EUSTACE STREET (East) – Gilbert St to Sydney Rd	1					
WEST PROMENADE - Gilbert St to Sydney Rd	1					
GILBERT STREET - Eustace St to West Promenade	1					
GILBERT STREET – West Promenade to Belgrave St						6
CENTRAL AVENUE - Sydney Rd to Raglan St						6
SHORT STREET - Sydney Rd to Raglan St					5	

Paving Types:

- | | | |
|----------------------------------|-------------------------|-------------------|
| 1. Bitumen; | 2. Concrete/Grass; | 3. Concrete; |
| 4. Interlocking Concrete Pavers; | 5. Special Paving area; | 6. Other Paving . |

Table 1.1 EXISTING PAVING TYPES – MANLY (Continued)

DENISON STREET - Pittwater Rd to Whistler St	■					
DENISON STREET – Whistler St to North Steyne				■		
STEINTON STREET - Pittwater Rd to Whistler St	■					
STEINTON STREET (South) - Whistler St to North Steyne						■
STEINTON STREET (North) - Pittwater Rd to North Steyne	■					
CARLTON STREET – Pittwater Rd to Whistler St	■					
CARLTON STREET (North) - Whistler St to North Steyne	■					
CARLTON STREET (South) - Whistler St to North Steyne						■
PINE STREET – Pittwater Rd to Malvern Lane		■				
PINE STREET – Malvern Lane to North Steyne						■
MALVERN AVENUE- Pine St to Pacific St		■				
PACIFIC STREET - Collingwood St to North Steyne		■				
CERAMIC LANE - Collingwood St to North Steyne		■				
BONNER AVENUE - Ceramic Lane to Collingwood St		■				
COLLINGWOOD STREET - Pittwater Road to North Steyne		■				

Paving Types:

- | | | |
|----------------------------------|-------------------------|-------------------|
| 1. Bitumen; | 2. Concrete/Grass; | 3. Concrete; |
| 4. Interlocking Concrete Pavers; | 5. Special Paving area; | 6. Other Paving . |

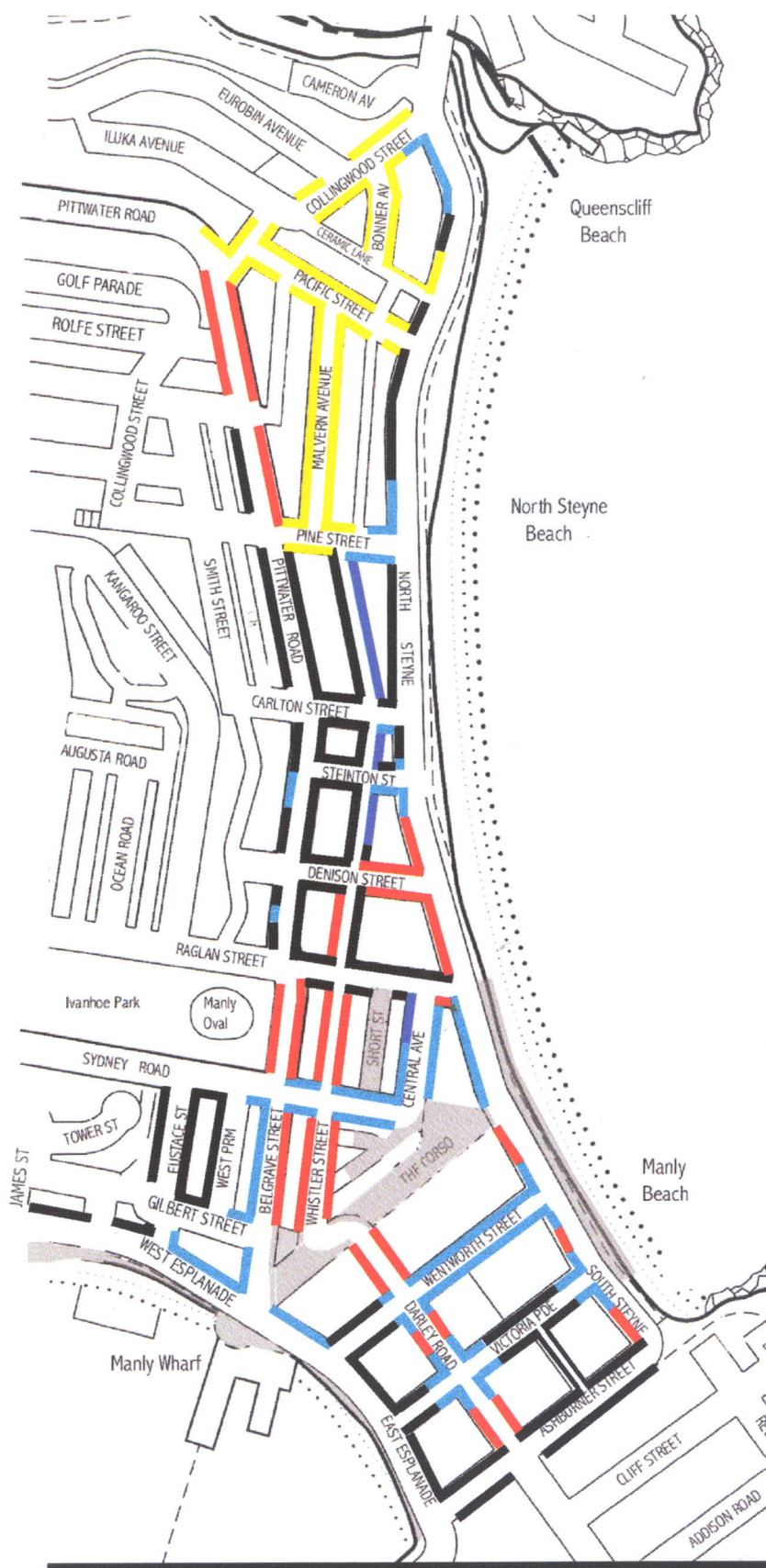








Figure 1.2
**EXISTING PEDESTRIAN
 PAVEMENTS**
 Scale: N.T.S.



LEGEND

-  BITUMEN PAVING
-  CONCRETE / GRASS
-  CONCRETE
-  INTERLOCKING CONCRETE PAVING
-  SPECIAL PAVING AREA
-  OTHER PAVING "tru-Pave", Clay, and Cobblestone Pavers

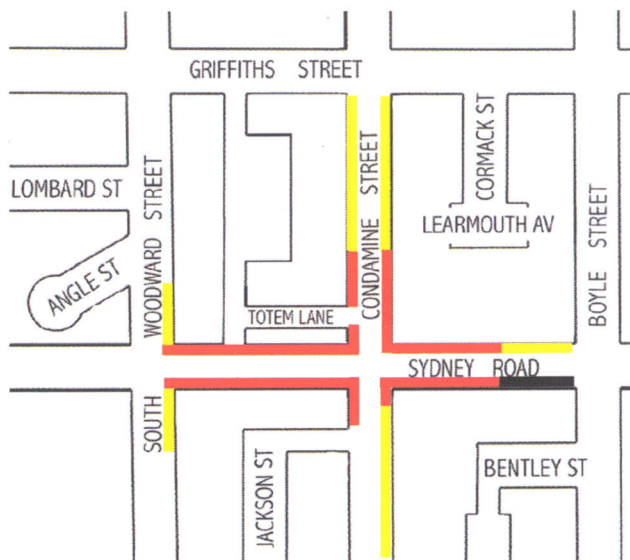
MANLY

Table 1.2 EXISTING PAVING TYPES – BALGOWLAH, BALGOWLAH HEIGHTS, FAIRLIGHT & SEAFORTH.

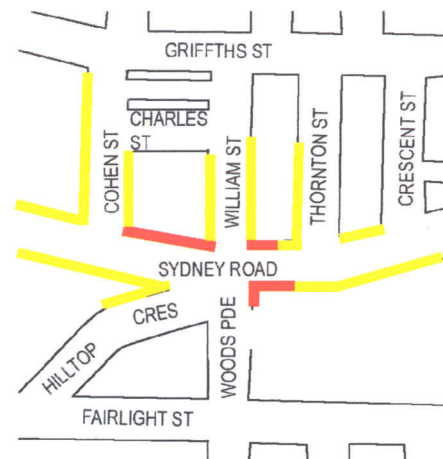
STREET	PAVING TYPE					
	1	2	3	4	5	6
BALGOWLAH						
SYDNEY ROAD – South Woodward St to Boyle St				■		
SOUTH WOODWARD ST - Griffiths St to White St		■				
CONDAMINE STREET- Griffiths St to Totem Development		■				
CONDAMINE STREET- Totem Development to Jackson St				■		
CONDAMINE STREET- Jackson St to White St		■				
BALGOWLAH HEIGHTS						
NEW STREET – Gordon St to Wanganella St		■				
NEW STREET – Wanganella St to Seaview St				■		
NEW STREET – Seaview St to Gertrude St		■				
BEATRICE STREET - New Street to End of commercial area				■		
BEATRICE STREET – End of commercial area to The Walk		■				
FAIRLIGHT						
SYDNEY ROAD (North) -Cohen St to William St				■		
SYDNEY ROAD (North) -William St to mid block				■		
SYDNEY ROAD (North) - mid block to Thornton St		■				
SYDNEY ROAD (South) –Woods Pde to Thornton St				■		
SEAFORTH						
HOPE STREET – Sydney Rd to end of Street		■				
KEMPBRIDGE AVENUE – Sydney Rd to end of Street		■				
ETHEL STREET – Sydney Rd to Burnt Bridge Ck				■		
ETHEL STREET – Burnt Bridge Ck Deviation Bridge			■			
SYDNEY ROAD - Burnt Bridge Ck Deviation to French's Forest road				■		
SYDNEY ROAD – intersection with Kempbridge Ave						■

Paving Types:

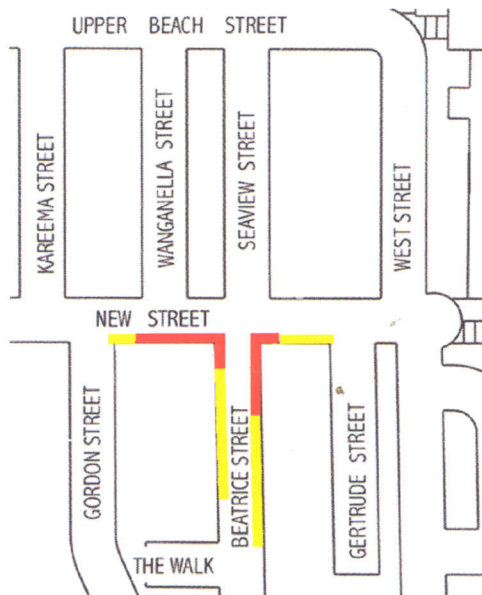
- | | | |
|----------------------------------|-------------------------|-------------------|
| 1. Bitumen; | 2. Concrete/Grass; | 3. Concrete; |
| 4. Interlocking Concrete Pavers; | 5. Special Paving area; | 6. Other Paving . |



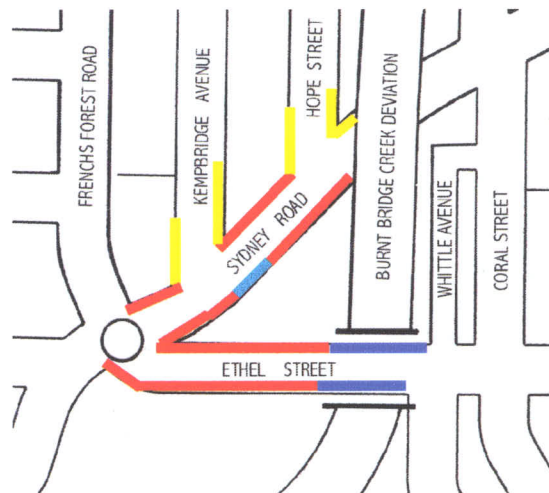
BALGOWLAH



FAIRLIGHT



BALGOWLAH HEIGHTS









SEAFORTH



Figure 1.3
EXISTING PEDESTRIAN PAVEMENTS

Scale: N.T.S.

LEGEND

- | | | | |
|---|----------------|---|-----------------------|
|  | BITUMEN |  | CONCRETE/GRASS |
|  | CONCRETE |  | INTERLOCKING CONCRETE |
|  | SPECIAL PAVING |  | PAVING |
| | | | OTHER PAVING |



Manly - The Corso

- Concrete unit paving , 230mm x 180mm cobblestones, laid in a stretcher bond pattern.



Manly - Market Lane

- Concrete unit paving, 225mm x 110mm Rocla 'Tru-pave', colour: 'Antique', laid in curved stack bond pattern



Manly - Manly Wharf

- Patterned concrete paving with clay brick unit paving inlays



Manly - South Steyne

- Concrete unit paving-
-225mm x 110mm interlocking paver, in background, laid in basket weave pattern.
Note, pattern angle is unrelated to building line or kerb line.



Manly - North Steyne (near Collingwood St.)

- 225mm x 110mm Rocla 'Tru-pave', colour: 'Antique' laid in herringbone pattern. Note awkward junction between header margins around pit cover and kerb ramp.



Manly - North Steyne

- Clay unit paving 225mm x 110mm, note colour variation between paving in foreground and paving in background.



Manly - North Steyne (north of Ceramic Lane)

- Concrete path adjacent kerb with grass verge adjacent property boundary. Very successful treatment.



Manly - North Steyne – (south of Ceramic lane)

- Asphalt footpath for full width of pathway



Manly - Eurobin Ave

- Concrete footpath with grass verge adjacent kerb and property boundary. Very successful treatment. The use of buffalo grass has proved more successful than couch adopted in other streets.



Manly - Bonner Street

- Concrete footpath adjacent property boundary with grass verge adjacent kerb



Manly - Pittwater Road - North of Raglan St

- Concrete unit paving, 230mm x 180mm 'Cobblestone' pavers laid in stretcher bond pattern parallel to property boundary outside new development. Remainder of footpath is asphalt



Manly - Pittwater Road.

- Asphalt is the dominant paving treatment for much of Pittwater Road.



Manly - Whistler St

- Asphalt paving for full width of pathway.



Manly - Whistler St

- Concrete paving for full width of footpath. Concrete and asphalt are the predominant paving types in Whistler Street.



Balgowlah Heights - New St

- Concrete interlocking unit pavers laid in basket weave pattern.



Balgowlah Heights – Intersection of New St and Beatrice St

- Concrete interlocking unit pavers laid in basket weave pattern.



Balgowlah – Intersection Condamine St. and Sydney Rd.

- Concrete interlocking unit paving laid in basket weave pattern with concrete kerb ramps



Balgowlah - Condamine St.

- Concrete interlocking unit paving laid in a basket weave pattern adjoining verge.
- Verge shows evidence of trampling indicating insufficient footpath width.



Seaforth - Sydney Road

- Newer Rocla 'Tru-pave' pavers laid in a herringbone pattern adjacent to older pavement of concrete interlocking pavers laid in basket weave Pattern.



Seaforth – Ethel St.

- Concrete interlocking unit pavers with street tree planting.



Manly – Intersection of The Corso and Darley Street

SECTION 2 Recommendations

Generally

The recommendations made in this section are made on the basis of 'working with the existing conditions' as much as possible in order to minimise the magnitude of potential change. Essentially this means maintaining paving types that are currently working well in terms of general appearance, durability and replacing those that do not work well.

Another important consideration is continuity of materials. Footpaths and pedestrian areas in general are unifying elements in the overall streetscape and street pattern where people, buildings, vehicles, signage, lights, trees and various other elements provide general colour, movement and variation. In this regard simplicity and continuity of treatment is essential in order to clearly identify footpaths and pedestrian areas. To gain maximum benefit from paving improvements it is important to have a continuity of footpath dimensions, levels, and most importantly materials.

The relative advantages and disadvantages of the paving types currently in use are discussed below.

Materials

Asphalt

This is the predominant material used outside the CBD in many of the residential areas. In most of the areas it is in poor condition, showing the accumulated effects of trenching and patching for services installation.

Asphalt is a perfectly good paving material, providing a good paving surface and also capable of being worked easily into pavements of complex shapes without any elaborate detailing requirements. It is also a relatively good material, in terms of 'matching-up' with existing similar pavements, when installed properly. The main problem in this regard is the inevitable localised patching that occurs following services repairs or installations.

The main issue however in design terms is one of appearance. The use of asphalt is predominantly associated with roads and vehicles and so, where it is also used on the adjoining footpath unrelieved by other materials it can appear monotonous.

Concrete

In general terms concrete pavements form some of the better footpaths in Manly, primarily in the northern streets such as Malvern Avenue. As a streetscape element the use of concrete for footpaths, provides a logical visual separation from the adjoining road surface and is a logical match with adjoining concrete kerbs and gutters. In most existing situations it is used in conjunction with a grass verge where space permits.

As with asphalt it is relatively good at 'matching-up' with existing similar pavements, when installed properly, but it suffers problem of patching following services repair or installation.

Concrete Unit Paving

Concrete unit paving has been used extensively throughout the various study areas over many years and in general terms and continues to perform well as a paving treatment. It is easily replicated and matched in terms of colour and shape, and is recommended for continued use, within a limited range.

Clay Unit Paving

A number of different types of clay unit pavers have been used throughout Manly. The use of such a wide range of different types of paving has led to a lack of continuity in paving types. Whilst clay unit pavers are a perfectly fine material, they are difficult to replicate in terms of colour consistency. This is particularly evident on North Steyne, where the same paver has been used in front of two adjoining developments, and there is a significant colour variation between the two.

In a situation such as Manly where footpaths are being replaced incrementally over time, it is impossible to create footpaths which are uniform and consistent in appearance surface condition.

Recommendations

The following recommendations are based on building on and expanding existing treatments that work well rather than creating a new range of paving types.

In-situ concrete and concrete unit pavers are recommended as the paving types for all of the study areas.

Four main paving types have been nominated. These have been developed to reflect the hierarchy of use and to achieve a consistency in approach throughout the municipality, using in-situ concrete and concrete unit pavers. Each type is described below.

Special use areas such as the Corso, Manly Interchange and the Ocean Beach have established their own identity using varying sizes, colours, finishes of precast concrete units. These areas due to their significance as tourist destinations and to the local community have been the subject of detailed design commissions to ensure their continued suitability for the users of these areas. Their pavement treatment is therefore not covered in detail in this report.

Pavement Type 1

Type 1 indicates 'special' design* treatments involving site specific design solutions. This treatment type applies to the following areas:

- The Corso;
- The Manly Wharf interchange; and
- The Ocean Beach Promenade

All these areas are subject of specific design solutions. In order for some consistency to be achieved, common colours, paving sizes etc have been adopted which form a common thread between the specific zones.

Paving Type 2

Type 2 paving applies to all commercial/ shopping centre areas. The pavement to be adopted is Rocla 'Tru-pave', colour 'Antique'. This paver is 225mm x 110mm and is currently being used for a number of improvement projects within the Manly CBD. This pavement is to be laid in a herringbone pattern, set at 45 degrees to the building alignment with a single 230mm wide header course behind the kerb and along the face of the building alignment. In a number of recent installations it has been laid in a 90 degree herringbone pattern. Where these installations run for the entire length of the street or major portion of the street it is not recommended that they be changed, however smaller installations should be changed to adopt the 45 degree herringbone pattern.

Pavement Type 3

Type 3 paving occurs in the residential precinct where development is largely freestanding dwellings. This consists of a plain concrete path with a grass verge typical of many residential subdivisions. The arrangement of this treatment may vary depending on the width of the verge. Two treatments are presently successfully used with in the residential areas.

- i) A pathway adjoining the property boundary with a grass verge between pathway and kerb. This treatment is generally used in narrower streets where kerb to property boundary width is less than 2800mm.
- ii) A grass verge adjoining both kerblines and property boundary and split by a concrete pathway. This treatment is generally used in wider streets where kerb to property boundary width is greater than 2800mm.

Pavement Type 4

Type 4 paving is located only along the western edge of North Steyne. This adopts a concrete path located adjacent to the kerb with a grass verge placed along the property boundary. The concrete pathway should be no greater than 2000 with the grass verge a minimum of 800mm. Where the existing width between kerb will not permit a grass verge of the concrete path should extend the full width between kerb and boundary.

Pavement Type 5

This retains the asphalt surface.

Type 5 paving is located at selected areas along Pittwater Road, generally in conjunction with Type 2 paving at key points. All new tree planting to include header course surround of Rocal Tru Pavé – Refer to detail.

The recommended paving types are indicated in the following photographic summary. The extents of the various paving types are identified on the following map and schedule.

Photographic Summary of Recommended Paving Types: -



PAVINGTYPE 1: Special Paving



PAVING TYPE 2 - Rocla 'Tru-Pave'

Photographic Summary of Recommended Paving Types:
(continued)



PAVING TYPE 3 – RESIDENTIAL PRECINCT – Concrete and grass verge.
(Treatment 2 illustrated)

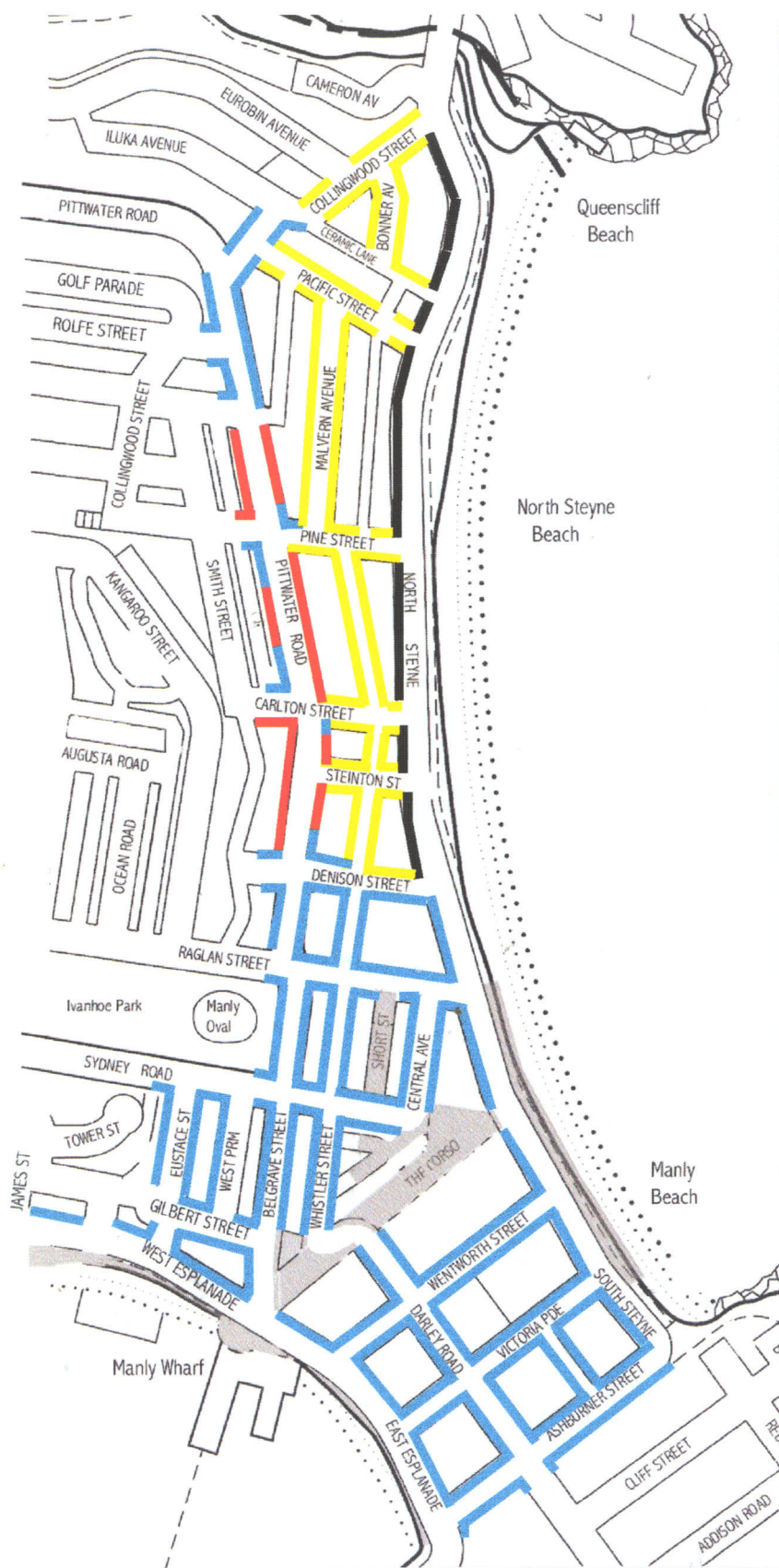


PAVING TYPE 4 - North Steyne – Concrete and grass verge.

**Photographic Summary of Recommended Paving Types:
(continued)**



PAVING TYPE 5 – Pittwater Road – Bitumen.



MANLY

Figure 2.1
**PROPOSED PEDESTRIAN
 PAVEMENT TYPES**
 Scale: N.T.S.



LEGEND






-  **PAVEMENT TYPE 1**
Special
-  **PAVEMENT TYPE 2**
Roca 'Tru-Pave'
-  **PAVEMENT TYPE 3**
Residential Precinct -
Concrete & grass verge.
-  **PAVEMENT TYPE 4**
North Steyne -
Concrete & grass
(Grass verge only where
space permits)
-  **PAVEMENT TYPE 5**
Pittwater Rd- Bitumen
(Asphalt)
Refer to Fig. 2.1A-2.1B &
2.1C

Table 2.1 PROPOSED PAVING TYPES – MANLY

STREET	PAVING TYPE				
	1	2	3	4	5
THE CORSO - Belgrave St. to South Steyne	■				
NORTH STEYNE - Raglan St. to Pine St.				■	
NORTH STEYNE – Pine St. to Collingwood St.				■	
SOUTH STEYNE (East Side) - Ashburner St. to Raglan St.	■				
SOUTH STEYNE (West Side)- Ashburner St to Raglan St		■			
EAST ESPLANADE - The Corso to Ashburner St		■			
WEST ESPLANADE- The Corso to Rowe St – East		■			
WEST ESPLANADE -The Corso to Rowe St – West	■				
BELGRAVE ST - West Esplanade to Raglan Street		■			
PITTWATER ROAD - Raglan St to Collingwood St		■			
SYDNEY ROAD- Belgrave St to Central Ave		■			
SYDNEY ROAD - Central Ave to The Corso	■				
RAGLAN STREET - Belgrave St to North Steyne		■			
WENTWORTH STREET - East Esplanade to South Steyne		■			
WHISTLER ST - Corso to Denison St		■			
WHISTLER ST - Denison St to Pine St			■		
DARLEY ROAD - The Corso to Ashburner St		■			
VICTORIA PARADE - East Esplanade to South Steyne		■			
ASHBURNER STREET- East Esplanade to South Steyne		■			
EUSTACE STREET- West Esplanade to Sydney Rd		■			
WEST PROMENADE - Gilbert St to Sydney Rd		■			
GILBERT STREET - Eustace St to Belgrave St		■			
CENTRAL AVENUE - Sydney Rd to Raglan St		■			
SHORT STREET - Sydney Rd to Raglan St	■				
DENISON STREET - Pittwater Rd to North Steyne – South		■			
DENISON STREET- Pittwater Rd to North Steyne – North			■		

Paving Types:

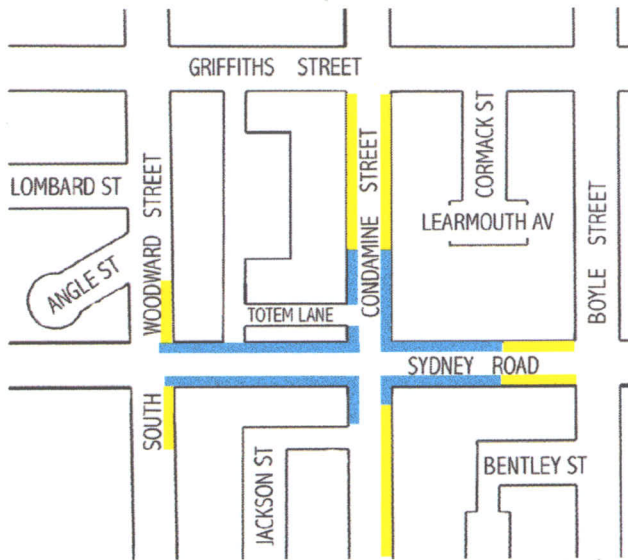
1. Pavement Type 1: Special;
2. Pavement Type 2: Rocla "Tru-pave";
3. Pavement Type 3: Residential Precinct – Concrete and grass
4. Pavement Type 4: North Steyne – Concrete and grass (Grass verge only where space permits)
5. Pavement Type 5: Pittwater Road – Bitumen (Asphalt)

Table 2.1 PROPOSED PAVING TYPES – MANLY (continued)

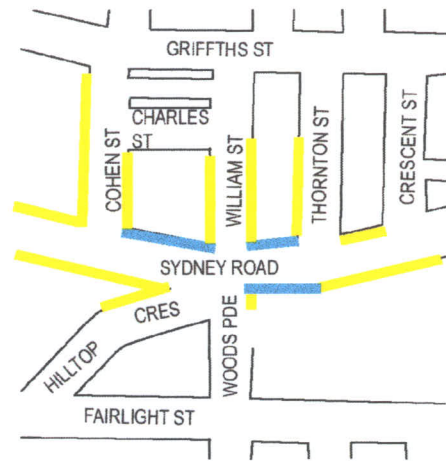
STREET	PAVING TYPE				
	1	2	3	4	5
STEINTON STREET - Pittwater Rd to North Steyne					
CARLTON STREET - Pittwater Rd to North Steyne					
PINE STREET - Pittwater Rd to North Steyne					
PINE STREET - Intersection with North Steyne					
MALVERN AVENUE - Pine St to Pacific St					
PACIFIC STREET - Collingwood St to North Steyne					
CERAMIC LANE - Collingwood St to North Steyne					
BONNER AVENUE - Ceramic Lane to Collingwood St					
COLLINGWOOD STREET - Pittwater Road to North Steyne					
PITWATER ROAD – Reglan St to Denison St					
PITWATER ROAD – Denison St to Carlton St					
PITWATER ROAD – Carlton St to Pine St					
PITWATER ROAD – Pine St to Rolfe St					
PITWATER ROAD – Rolfe St to Collingwood					

Paving Types:

1. Pavement Type 1: Special
2. Pavement Type 2: Rocla "Tru-pave";
3. Pavement Type 3: Residential Precinct – Concrete and grass
4. Pavement Type 4: North Steyne – Concrete and grass (Grass verge only where space permits)
5. Pavement Type 5: Pittwater Road – Bitumen (Asphalt)



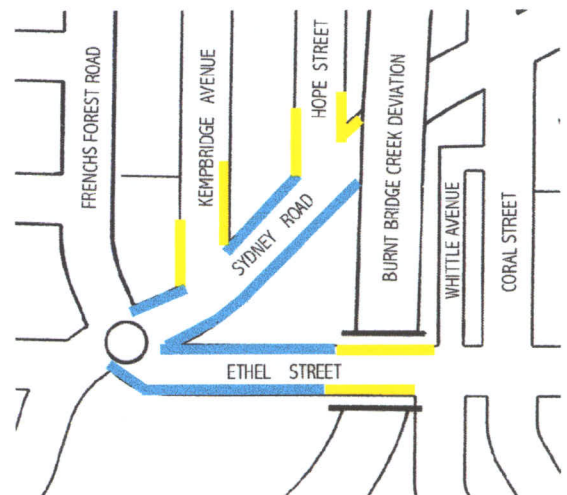
BALGOWLAH



FAIRLIGHT



BALGOWLAH HEIGHTS



SEAFORTH

Figure 2.2
PROPOSED PEDESTRIAN PAVEMENT
TYPES Scale: N.T.S.

LEGEND



PAVEMENT TYPE 2
Rocla 'Tru-Pave'



PAVEMENT TYPE 3
Residential Precinct:
Concrete & grass verge.
(Grass verge only where
space permits)

Table 2.2

PROPOSED PAVING TYPES – BALGOWLAH, BALGOWLAH HEIGHTS, FAIRLIGHT AND SEAFORTH.

STREET	PAVING TYPE			
	1	2	3	4
BALGOWLAH				
SYDNEY ROAD – South Woodward St to Boyle St				
SOUTH WOODWARD ST - Griffiths St to White St				
CONDAMINE STREET- Griffiths St to Totem Development				
CONDAMINE STREET- Totem Development to Jackson St				
CONDAMINE STREET- Jackson St to White St				
BALGOWLAH HEIGHTS				
NEW STREET – Gordon St to Wanganella St				
NEW STREET – Wanganella St to Seaview St				
NEW STREET – Seaview St to Gertrude St				
BEATRICE STREET - New Street to End of commercial area				
BEATRICE STREET – End of commercial area to The Walk				
FAIRLIGHT				
SYDNEY ROAD (North) Between Cohen St & Thornton St				
SYDNEY ROAD (South)				
SYDNEY ROAD (South) Between Woods and Thornton St				
SEAFORTH				
HOPE STREET – Sydney Rd to end of Street				
KEMPBRIDGE AVENUE – Sydney Rd to end of Street				
ETHEL STREET – Sydney Rd to Burnt Bridge Ck Deviation				
ETHEL STREET – Burnt Bridge Ck Deviation Bridge				
SYDNEY ROAD - Burnt Bridge Ck Deviation to French's Forest road				

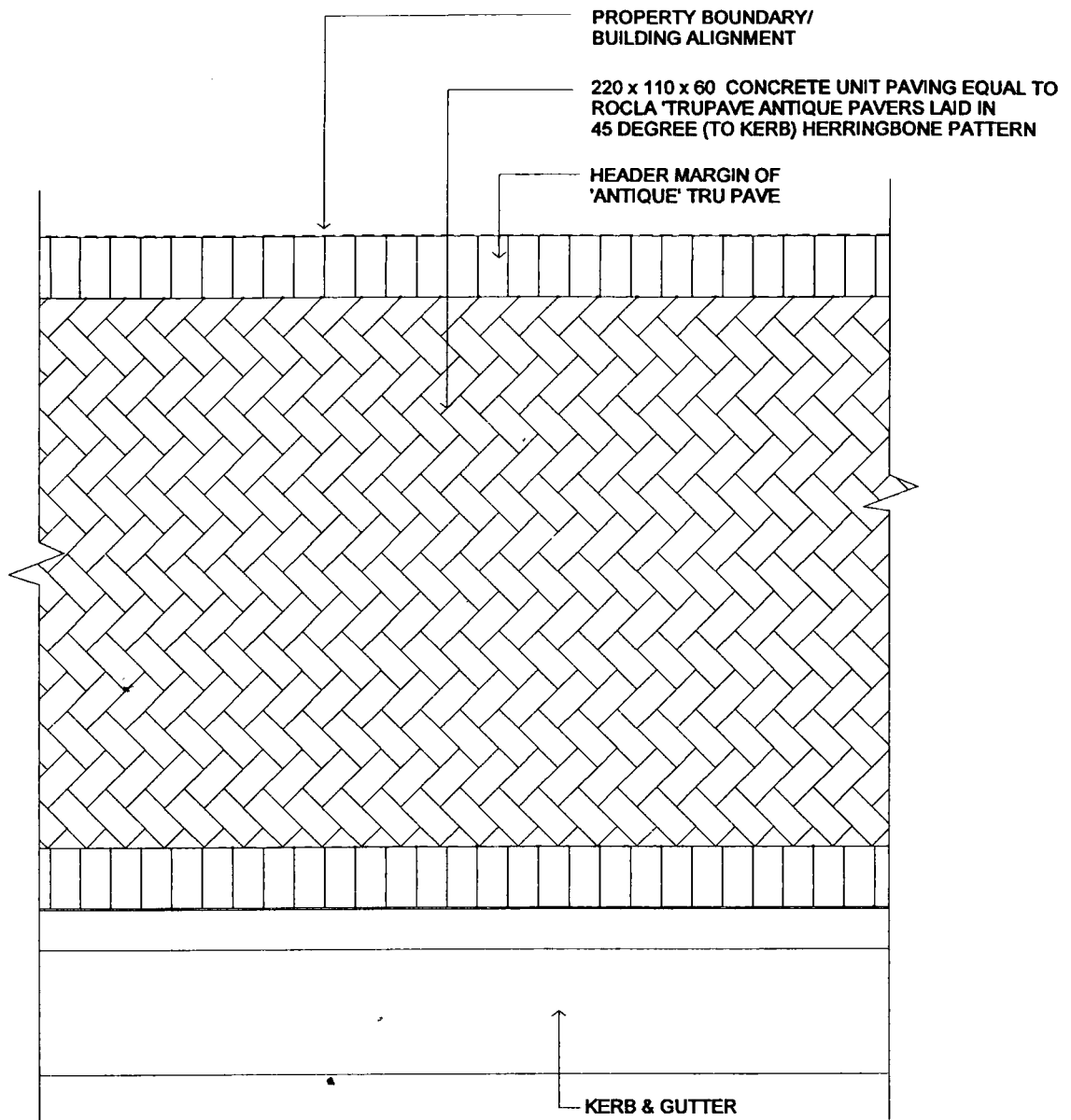
Paving Types:

1. Pavement Type 1: Special;
2. Pavement Type 2: Rocla "Tru-pave";
3. Pavement Type 3: Residential Precinct – Concrete and grass
4. Pavement Type 4: North Steyne – Concrete and grass (Grass verge only where space permits)

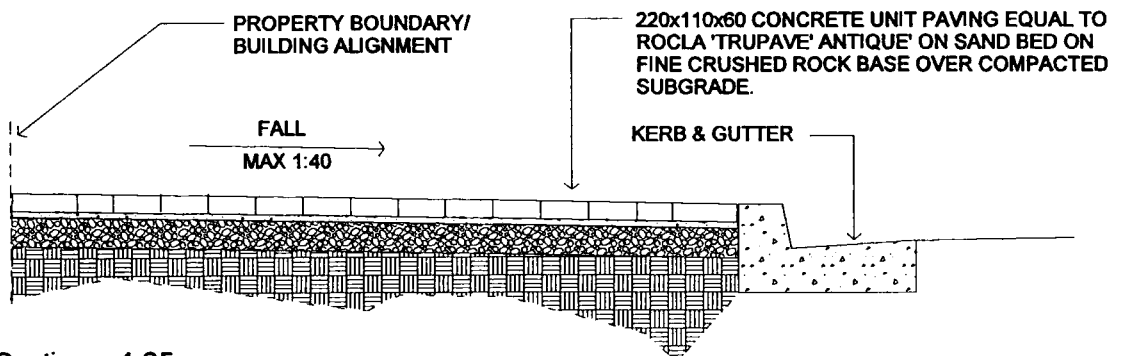
SECTION 3 Typical Paving Design Details

Typical Details

Type 2 Paving -Typical Plan & Section
Type 3 Paving -Typical Plan & Section
Type 4 Paving -Typical Plan & Section
Typical Kerb Ramp
Typical Kerb Blister
Typical Service Pit Cover
Typical Kerb Vehicle Crossing – Type 2 Paving
Typical Kerb Vehicle Crossing – Type 3 Paving
Typical Paving Treatment – Pittwater Road

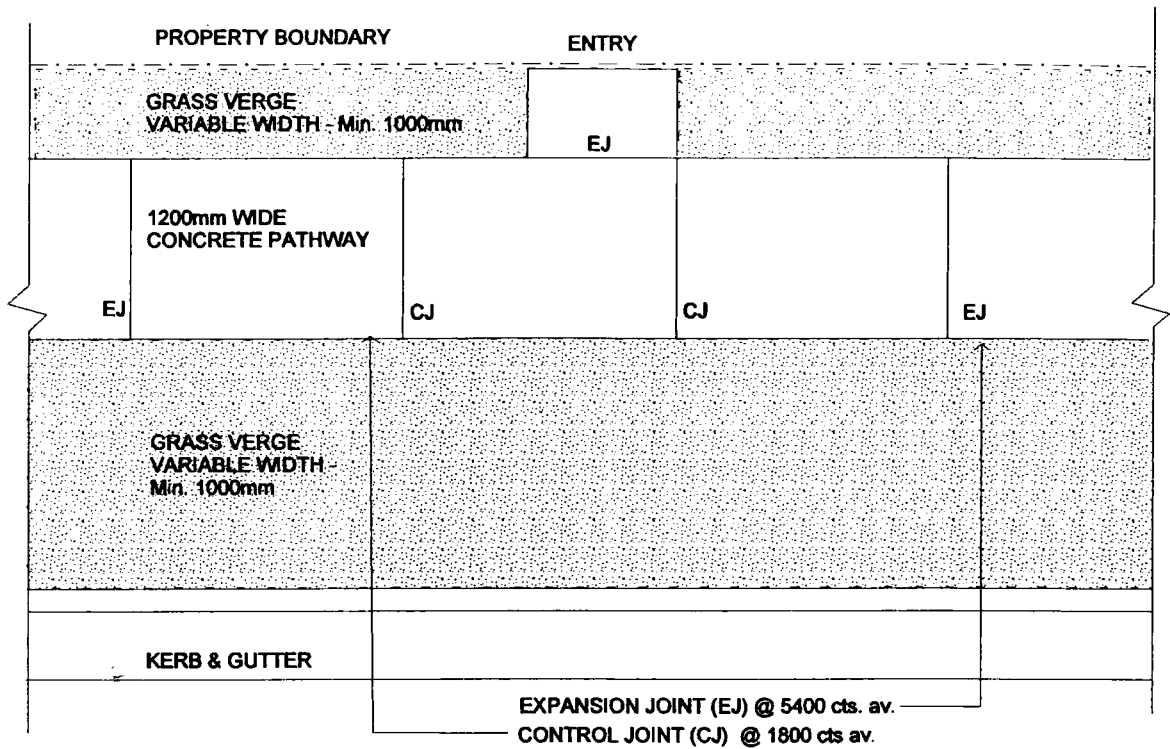


Plan 1:25

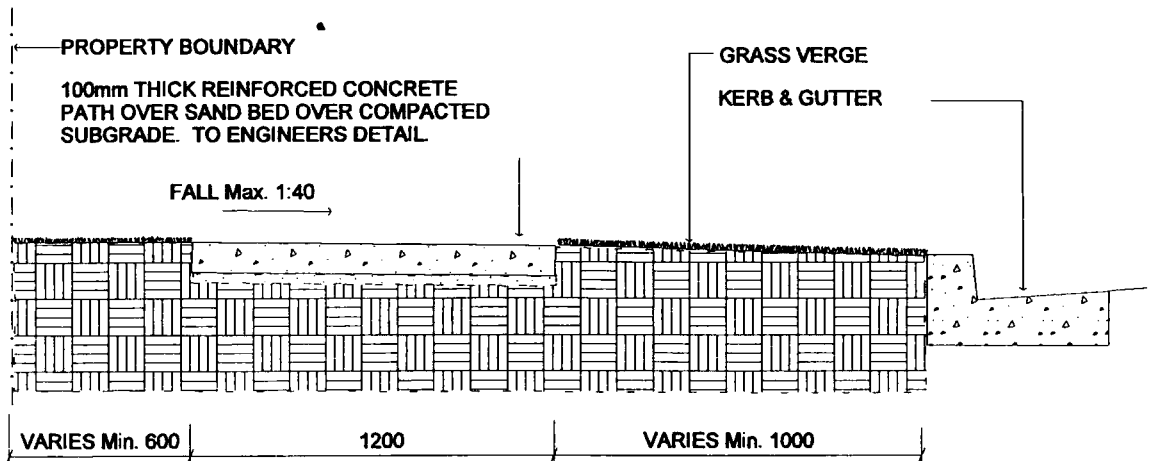


Section 1:25

PAVING TYPE 2 - TYPICAL PLAN AND SECTION

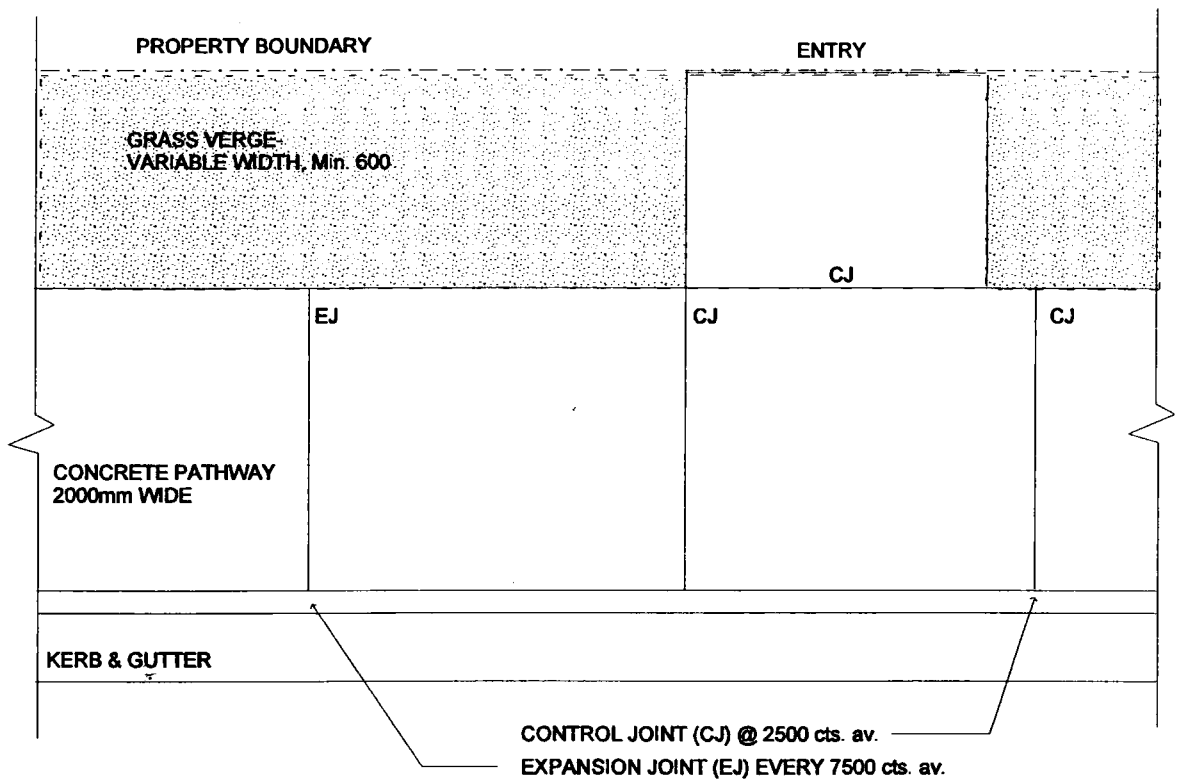


Plan 1:50

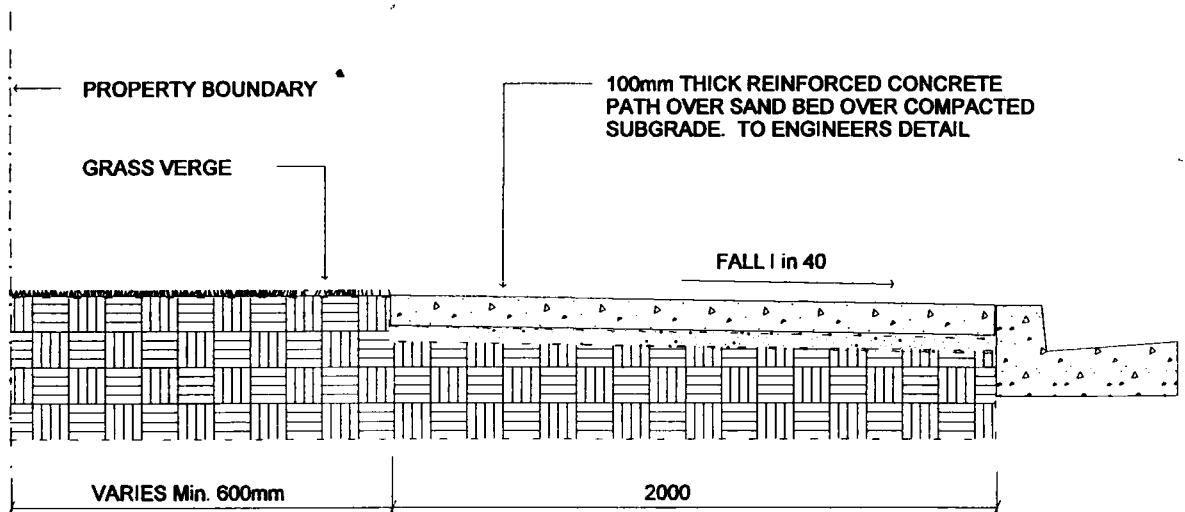


Section 1:25

PAVING TYPE 3 - TYPICAL PLAN & SECTION

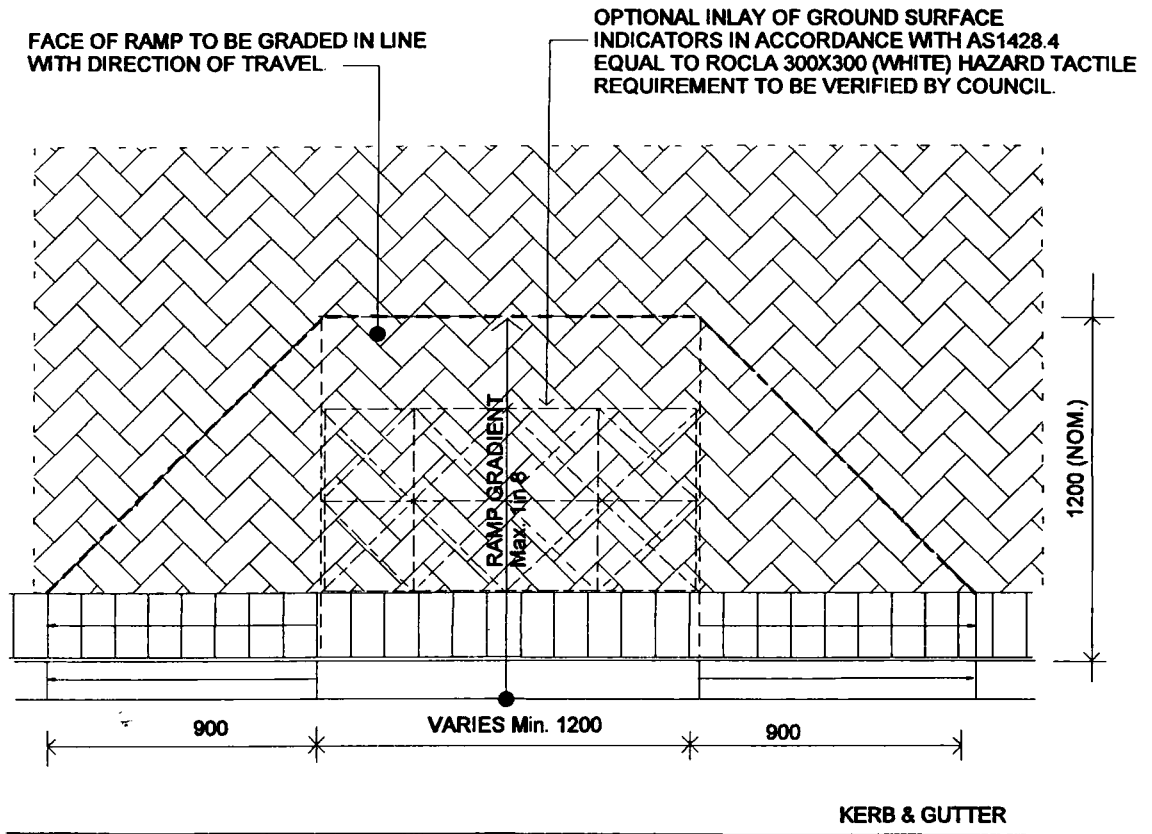


Plan 1:50

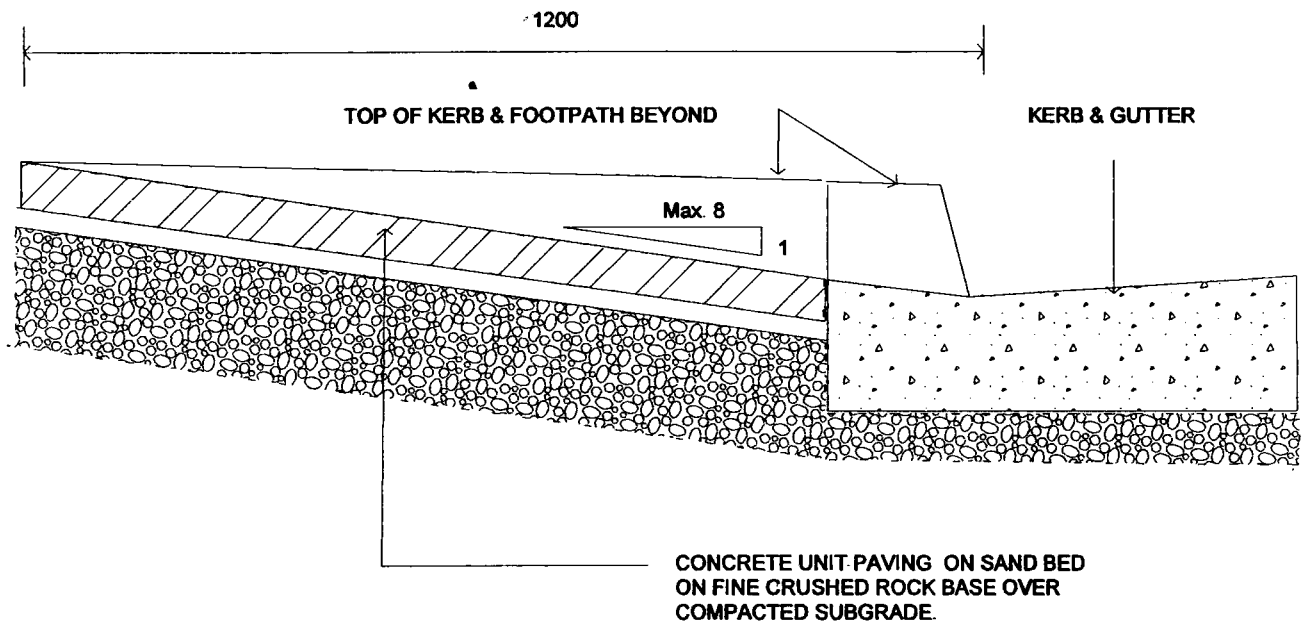


Section 1:25

PAVING TYPE 4 - TYPICAL PLAN & SECTION



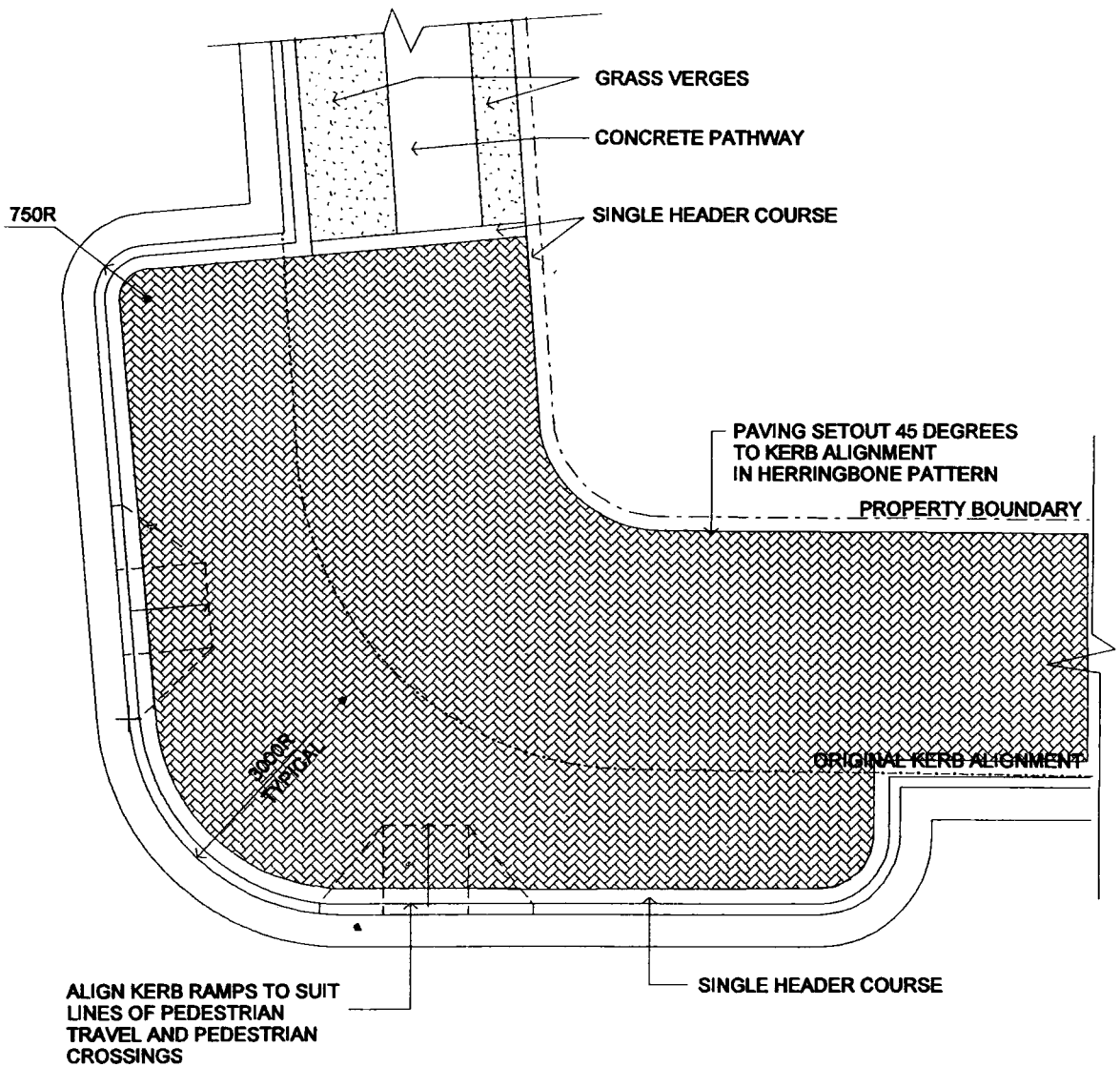
Plan 1:25



Section 1:10

NOTE: KERB RAMPS FOR PAVING TYPES 3 & 4 SIMILAR

TYPICAL KERB RAMP - TYPE 2 PAVING (TYPE 1 SIMILAR)



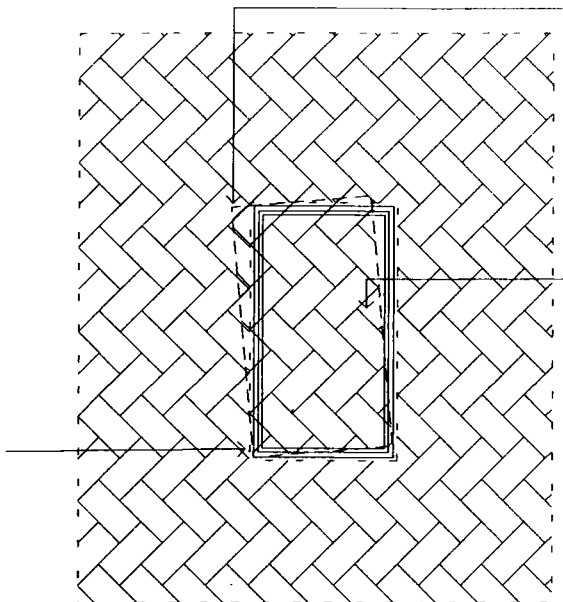
Plan 1:100

TYPICAL KERB BLISTER - TYPE 2 PAVING

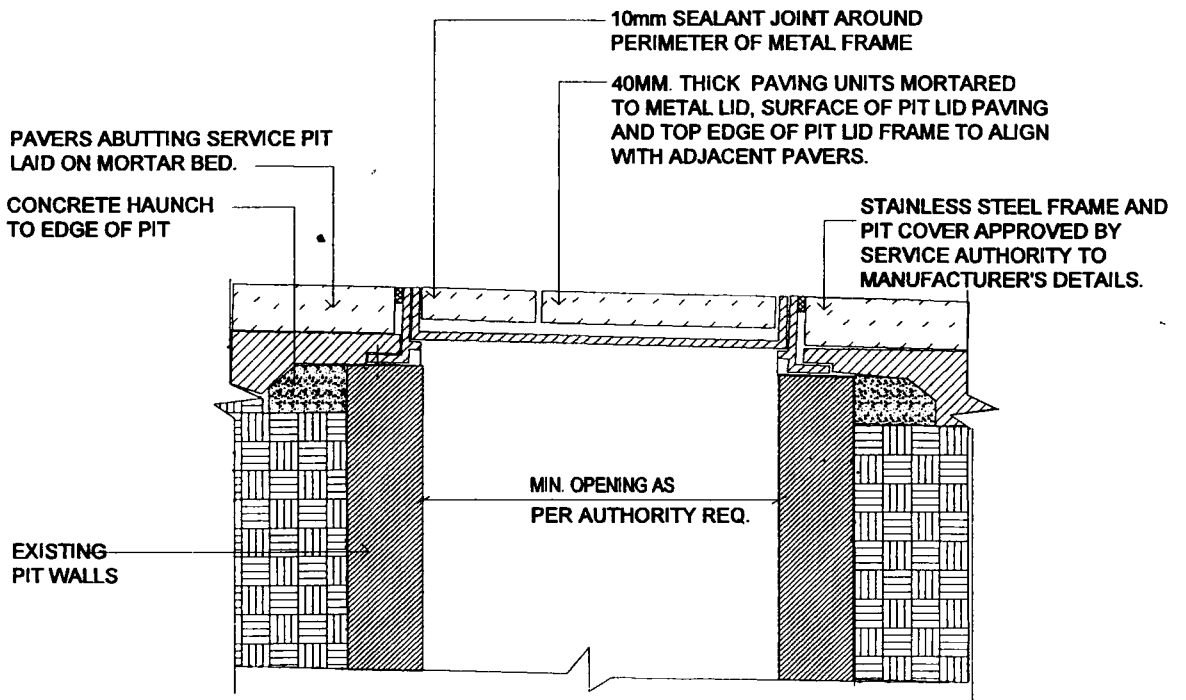
NOTE:
 WHERE POSSIBLE REALIGN
 EXISTING PIT COVER TO
 MATCH NEW PAVING
 PATTERN. MAXIMUM
 REALIGNMENT TO BE
 10 DEG. OBTAIN APPROVAL
 FROM AUTHORITY FOR
 COVER REALIGNMENT.

**CUT PAVERS TO FIT INTO
 METAL PIT LID TO CONTINUE
 PATTERN OF SURROUNDING
 PAVING. LOCATION OF PIT
 COVER IN RELATION
 TO PAVING PATTERN VARIES.
 NOTE: IF SOLID STEEL COVER
 RETAIN**

**10mm SEALANT JOINT
 AROUND PERIMETER
 OF METAL FRAME
 SEALANT TO BE:
 1 PART, HIGH
 PERFORMANCE
 POLYURETHANE,
 NON-STAINING
 AND COLOUR
 MATCHED TO
 PAVERS.**

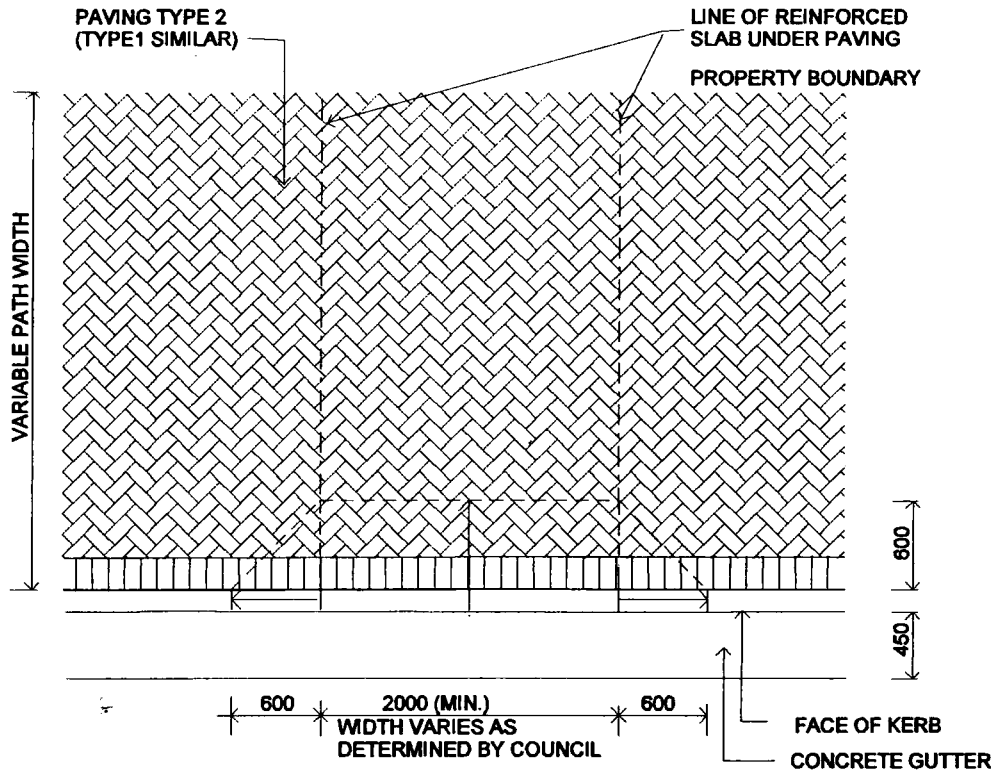


Plan 1:20

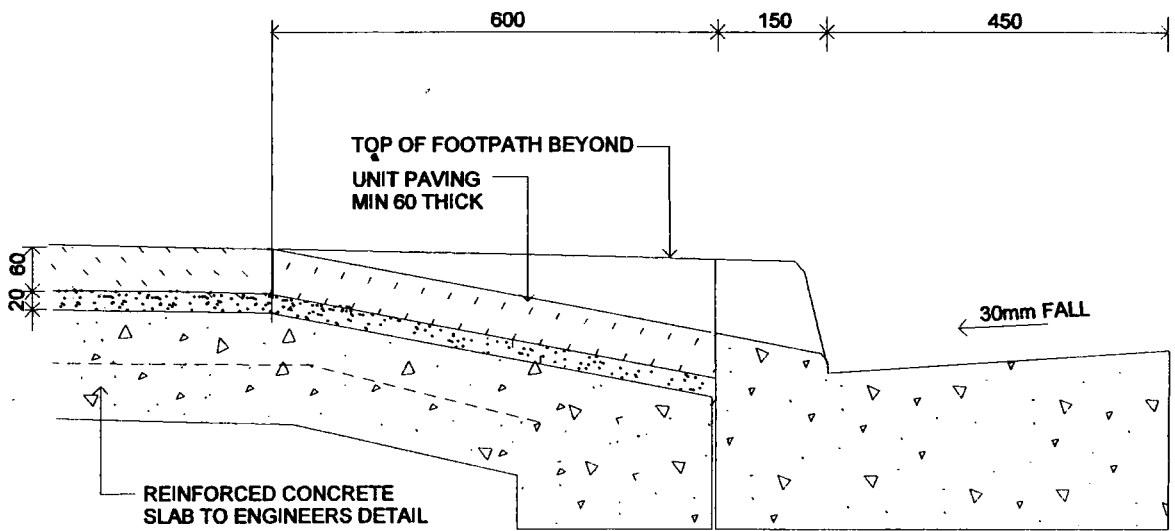


Section 1:10

TYPICAL SERVICE PIT COVER (TWO PART COVER SIMILAR)

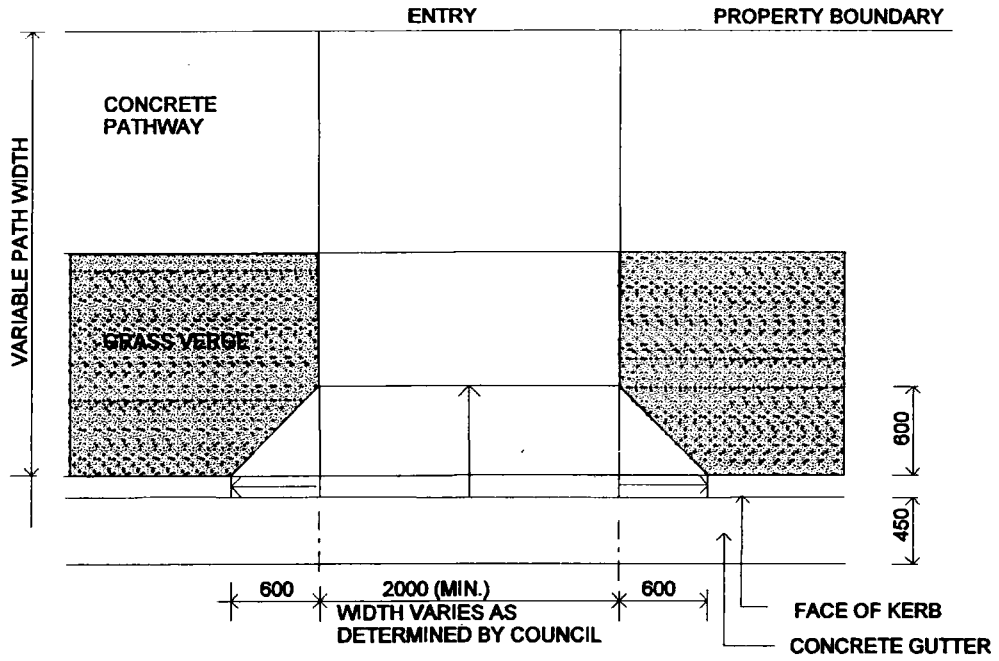


Plan 1:50

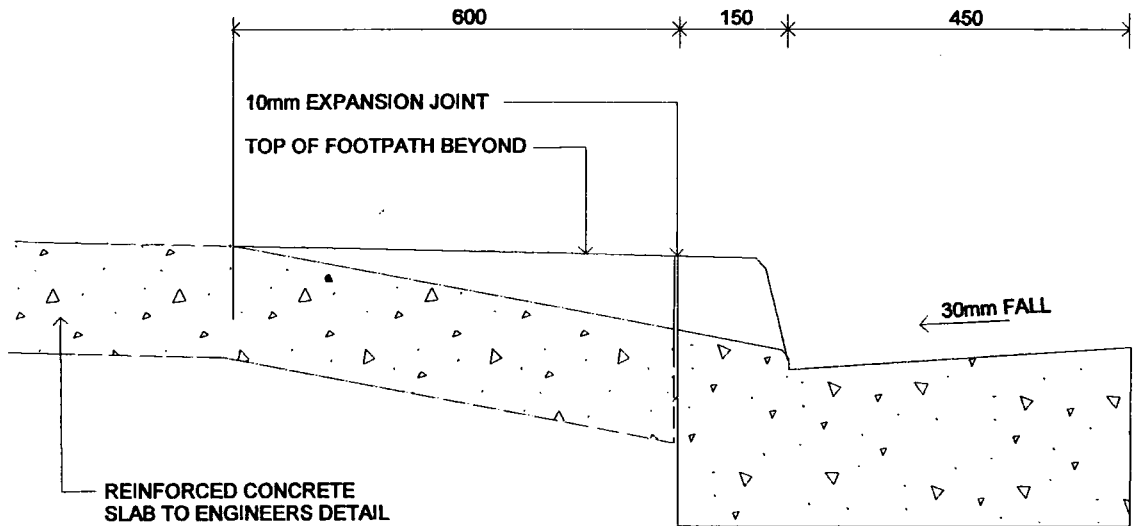


Section 1:10

**TYPICAL KERB VEHICLE CROSSING - TYPE 2 PAVING
(TYPE 1 SIMILAR)**

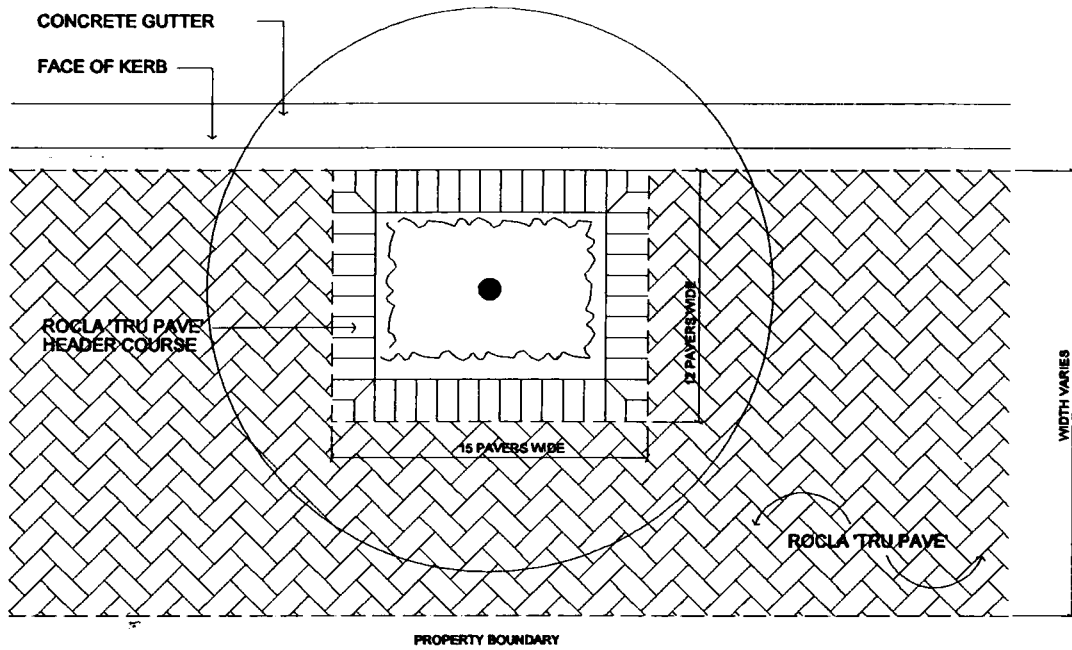


Plan 1:50



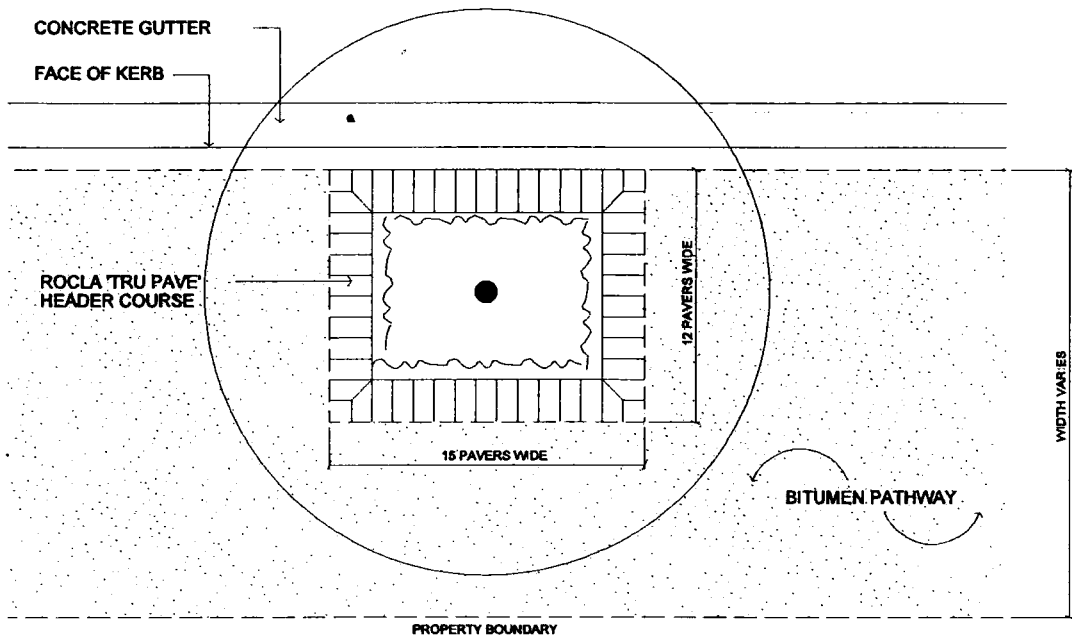
Section 1:10

**TYPICAL KERB VEHICLE CROSSING - TYPE 3 PAVING
(TYPE 4 SIMILAR)**



PAVING TYPE 2 - ROCLA 'TRU PAVE' LAID IN HERRINGBONE PATTERN

Plan 1:50



PAVING TYPE 5 - BITUMEN PAVING

Plan 1:50

TYPICAL PAVING TREATMENT - PITTWATER ROAD

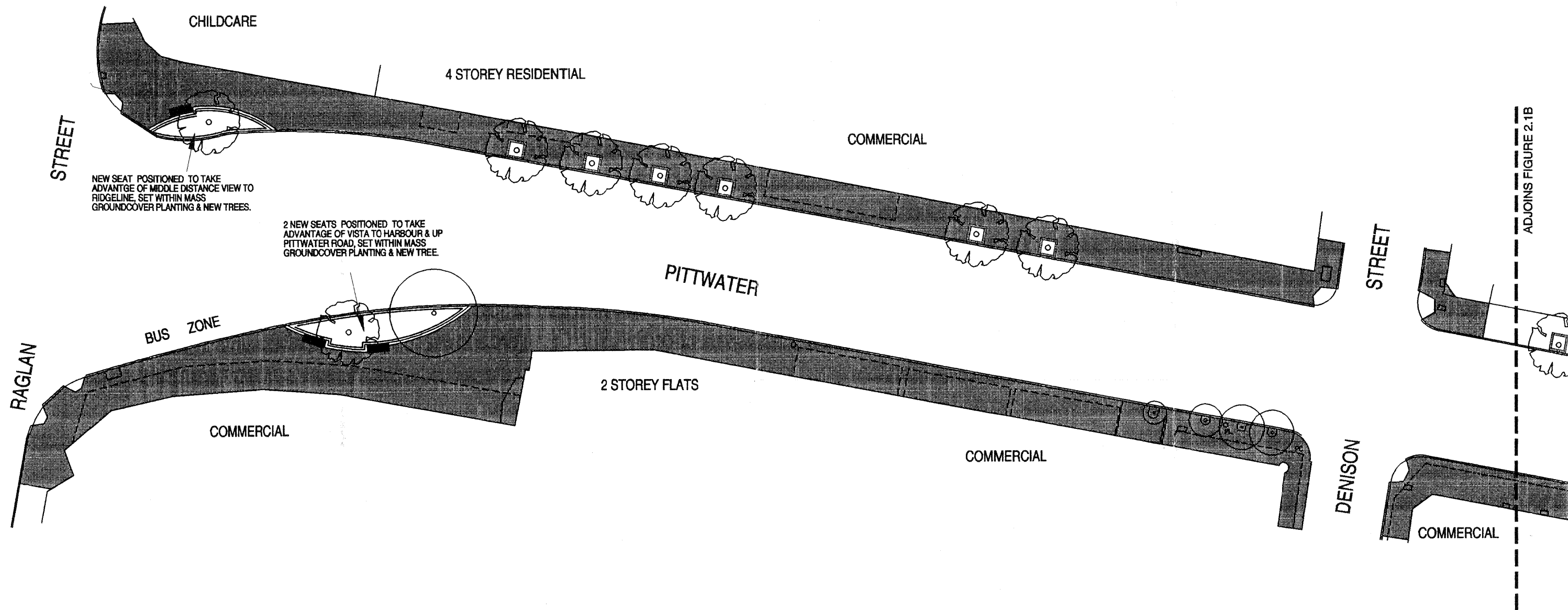


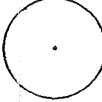
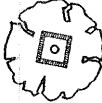



Figure 2.1A

PITTWATER ROAD STREET TREE PLANTING MASTERPLAN






Raglan Street to Collingwood Street - Nts

Refer to Council drawing - Street Tree Masterplan for further details

LEGEND

- 
 EXISTING TREE TO BE RETAINED (where no new tree is indicated) OR REMOVED (where new tree is superimposed over) Refer to notes on plan for each existing street tree.
- 
 PROPOSED NEW TREE
- 
 PROPOSED NEW SEAT
- 
 PAVING TYPE 2 - ROCLA 'TRU PAVE'
- 
 PAVING TYPE 5 - BITUMEN (ASPHALT)

LEGEND

-  EXISTING TREE TO BE RETAINED (where no new tree is indicated) OR REMOVED (where new tree is superimposed over) Refer to notes on plan for each existing street tree.
-  PROPOSED NEW TREE
-  PROPOSED NEW SEAT
-  PAVING TYPE 2 - ROCLA 'TRU PAVE'
-  PAVING TYPE 5 - BITUMEN (ASPHALT)

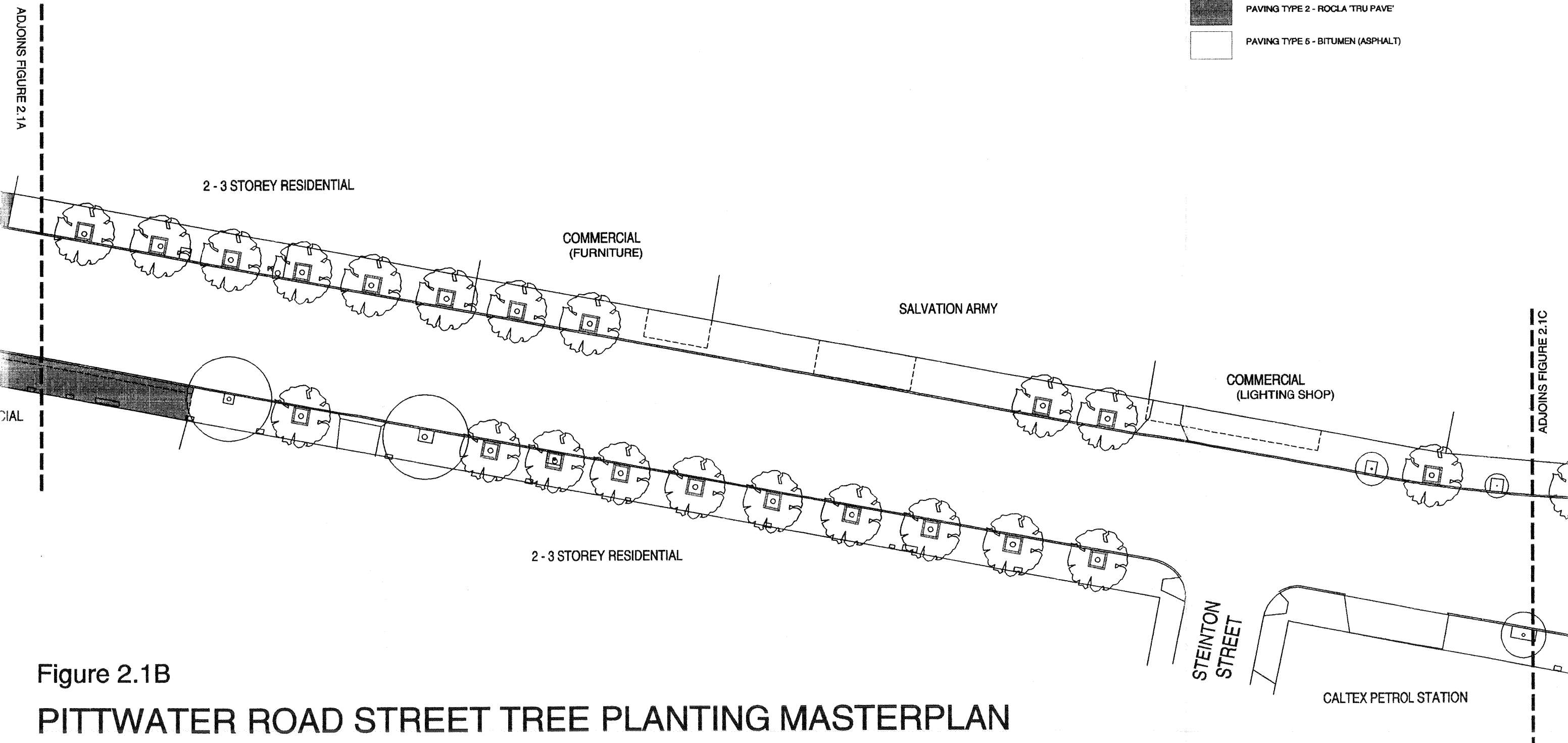
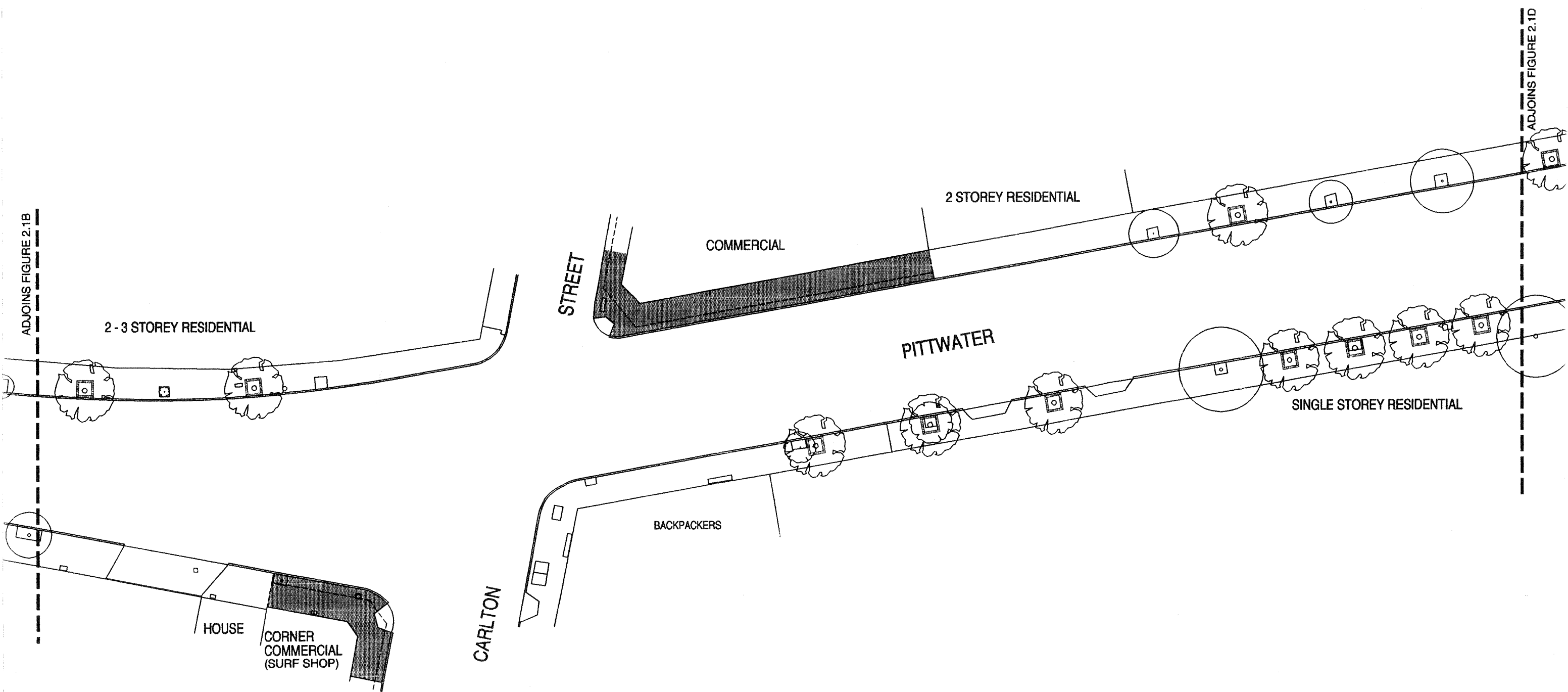


Figure 2.1B
PITTWATER ROAD STREET TREE PLANTING MASTERPLAN

Raglan Street to Collingwood Street - Nts

Refer to Council drawing - Street Tree Masterplan for further details



ADJOINS FIGURE 2.1B

ADJOINS FIGURE 2.1D

LEGEND

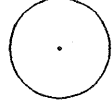
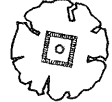



- 
 EXISTING TREE TO BE RETAINED
 (where no new tree is indicated)
 OR REMOVED (where new tree is superimposed over)
 Refer to notes on plan for each existing street tree.
- 
 PROPOSED NEW TREE
- 
 PROPOSED NEW SEAT
- 
 PAVING TYPE 2 - ROCLA 'TRU PAVE'
- 
 PAVING TYPE 5 - BITUMEN (ASPHALT)

Figure 2.1C

PITTWATER ROAD STREET TREE PLANTING MASTERPLAN

Raglan Street to Collingwood Street - Nts

Refer to Council drawing - Street Tree Masterplan for further details

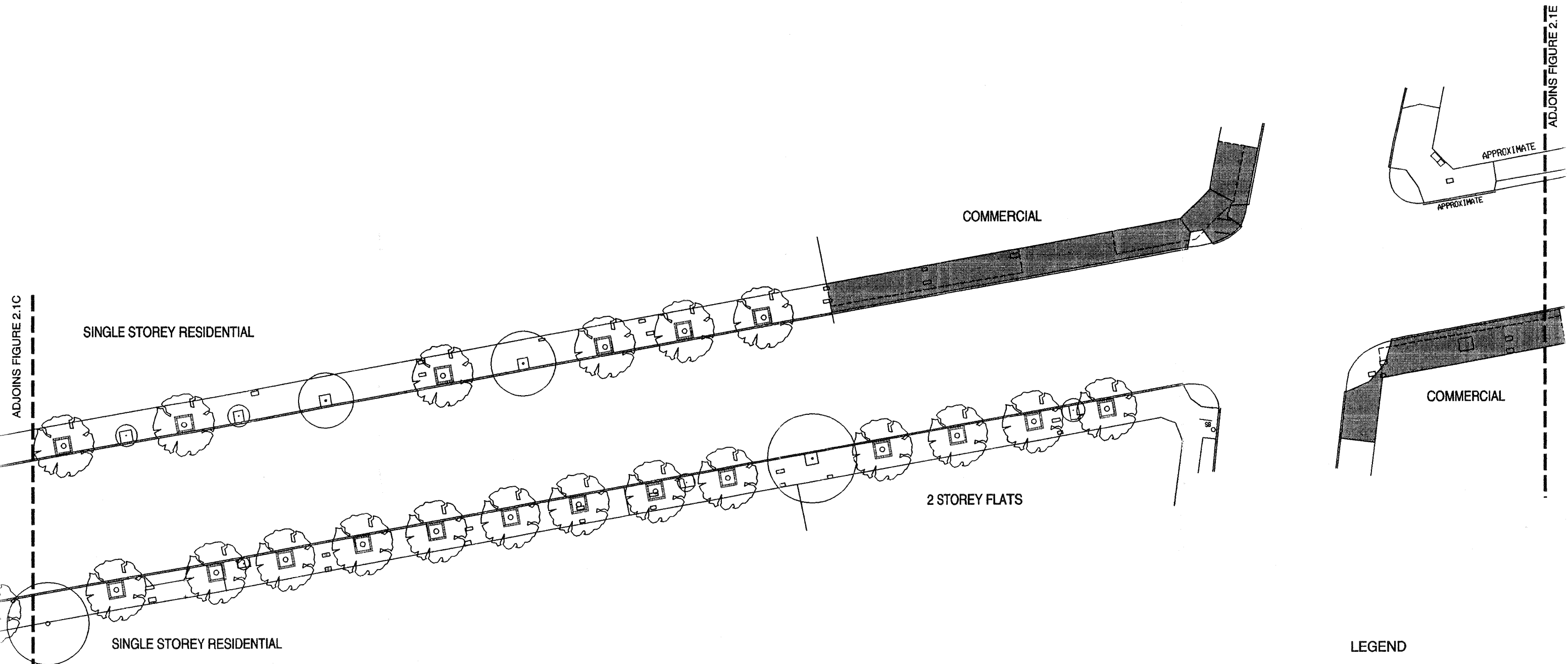
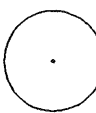






Figure 2.1D

PITTWATER ROAD STREET TREE PLANTING MASTERPLAN

Raglan Street to Collingwood Street - Nts

Refer to Council drawing - Street Tree Masterplan for further details

- LEGEND**
-  EXISTING TREE TO BE RETAINED (where no new tree is indicated) OR REMOVED (where new tree is superimposed over) Refer to notes on plan for each existing street tree.
 -  PROPOSED NEW TREE
 -  PROPOSED NEW SEAT
 -  PAVING TYPE 2 - ROCLA TRU PAVE
 -  PAVING TYPE 5 - BITUMEN (ASPHALT)

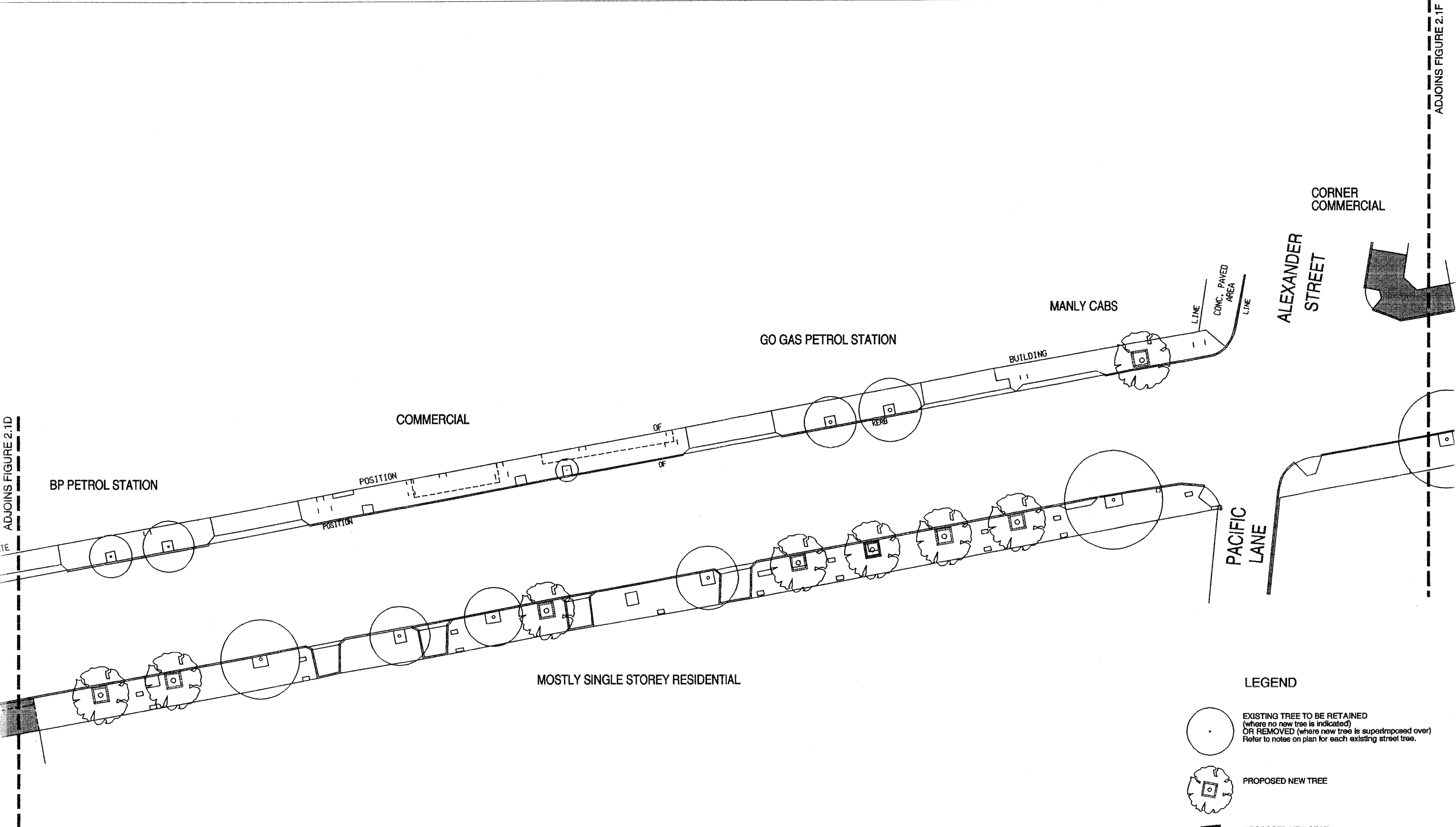







Figure 2.1E

PITTWATER ROAD STREET TREE PLANTING MASTERPLAN






Raglan Street to Collingwood Street - Nts

Refer to Council drawing - Street Tree Masterplan for further details

LEGEND

-  EXISTING TREE TO BE RETAINED (where no new tree is indicated) OR REMOVED (where new tree is superimposed over) Refer to notes on plan for each existing street tree.
-  PROPOSED NEW TREE
-  PROPOSED NEW SEAT
-  PAVING TYPE 2 - ROCLA 'TRU PAVE'
-  PAVING TYPE 5 - BITUMEN (ASPHALT)

LEGEND

-  EXISTING TREE TO BE RETAINED
(where no new tree is indicated)
OR REMOVED (where new tree is superimposed over)
Refer to notes on plan for each existing street tree.
-  PROPOSED NEW TREE
-  PROPOSED NEW SEAT
-  PAVING TYPE 2 - ROCLA 'TRU PAVE'
-  PAVING TYPE 5 - BITUMEN (ASPHALT)

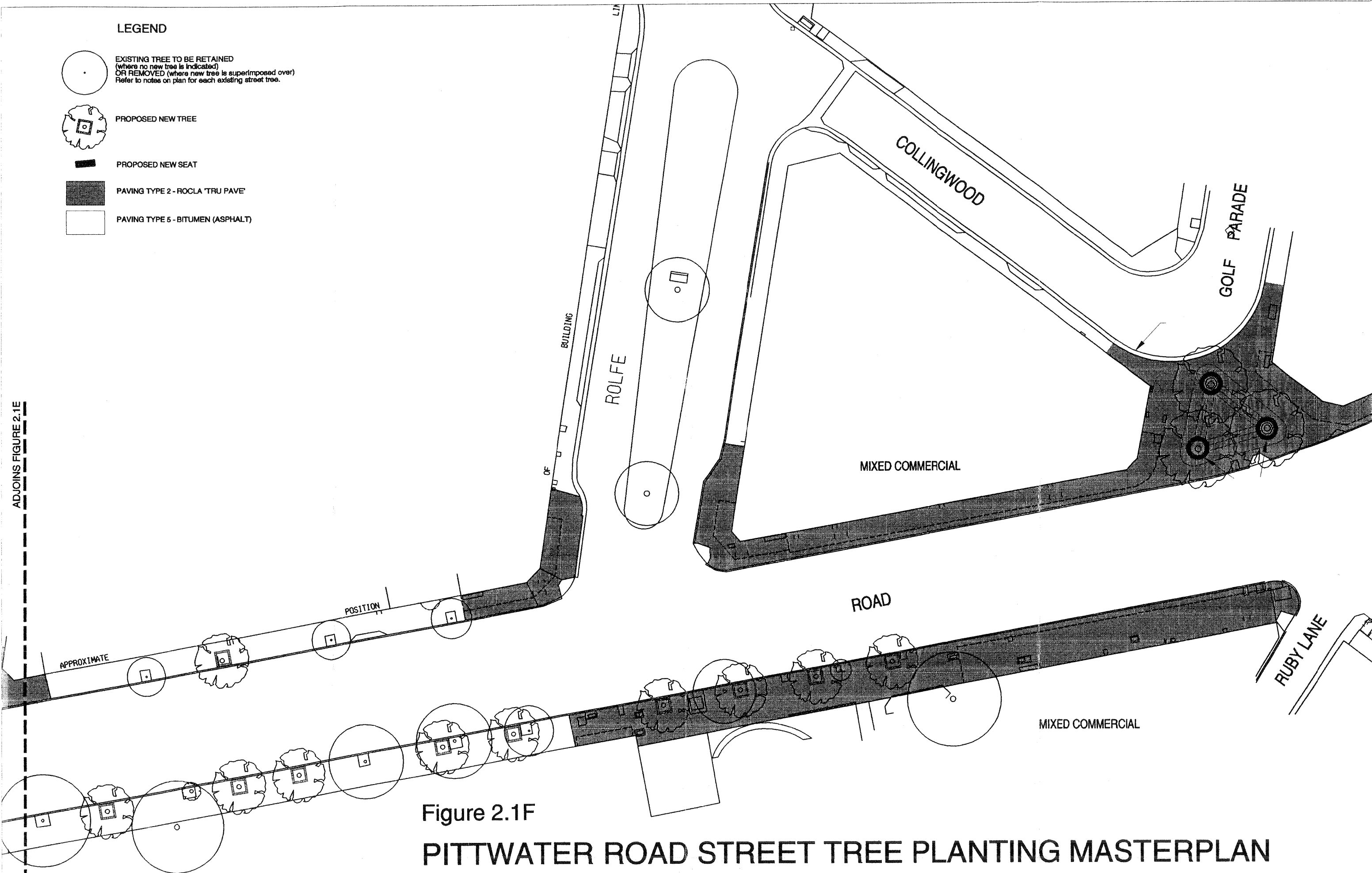


Figure 2.1F

PITTWATER ROAD STREET TREE PLANTING MASTERPLAN

Raglan Street to Collingwood Street - Nts

Refer to Council drawing - Street Tree Masterplan for further details