

Interim Pavement Design and Construction Guidelines

CITY OF SYDNEY
September 1998

To be read in conjunction with
Central Sydney Paving Design Policy, 1996



City of Sydney - Interim Pavement Design and Construction Guidelines

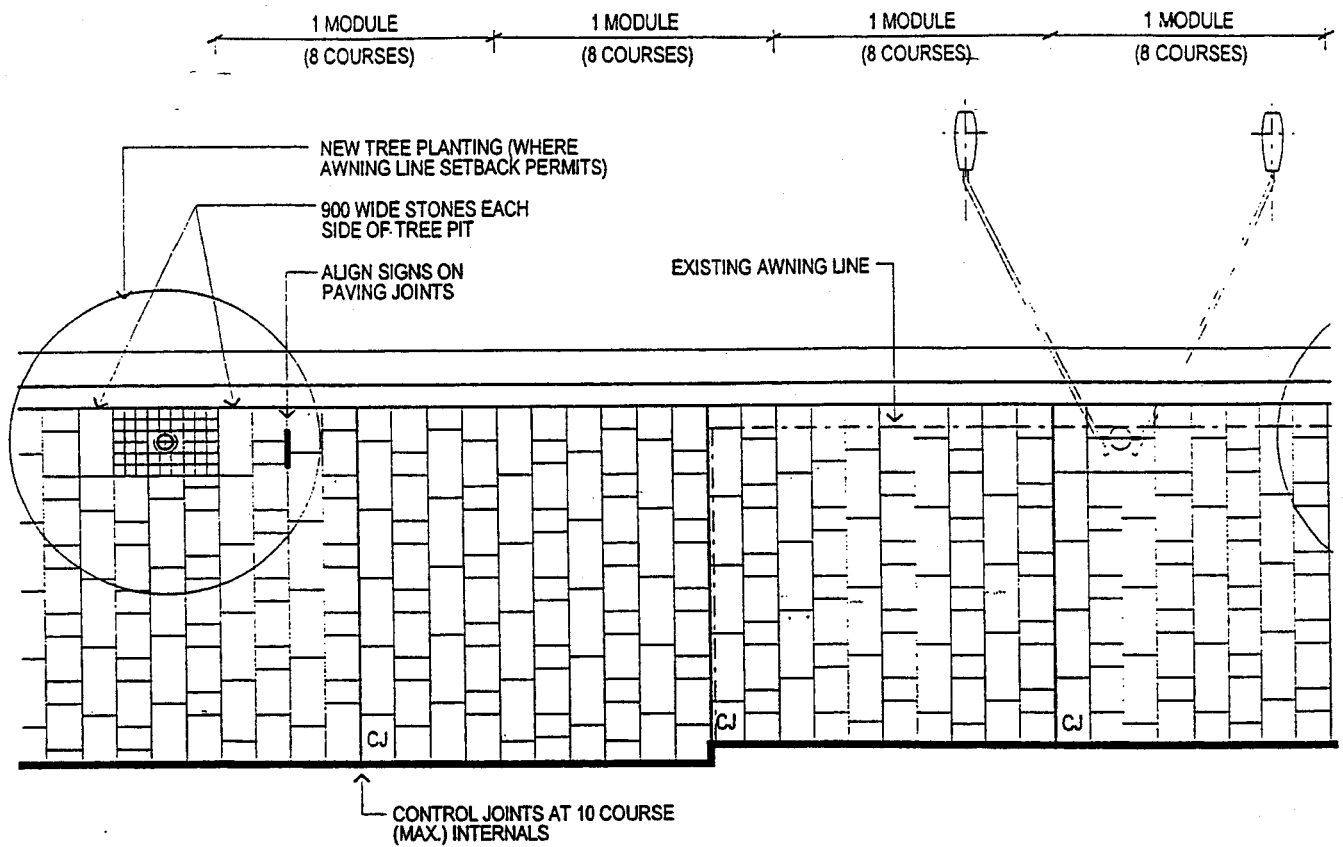
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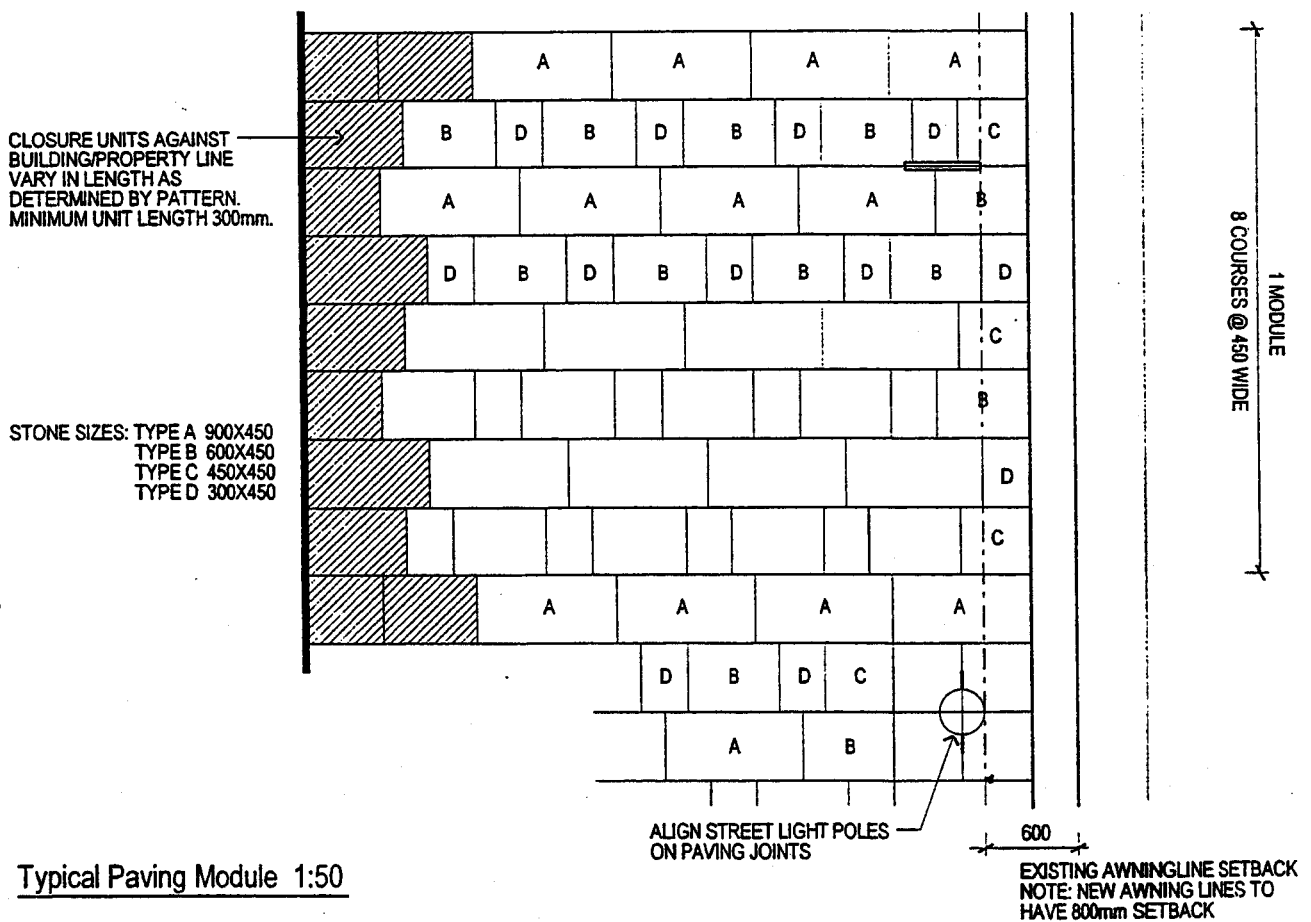
Specification Notes

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Note 2	Existing Tree Planting in Paving (1 sheet)
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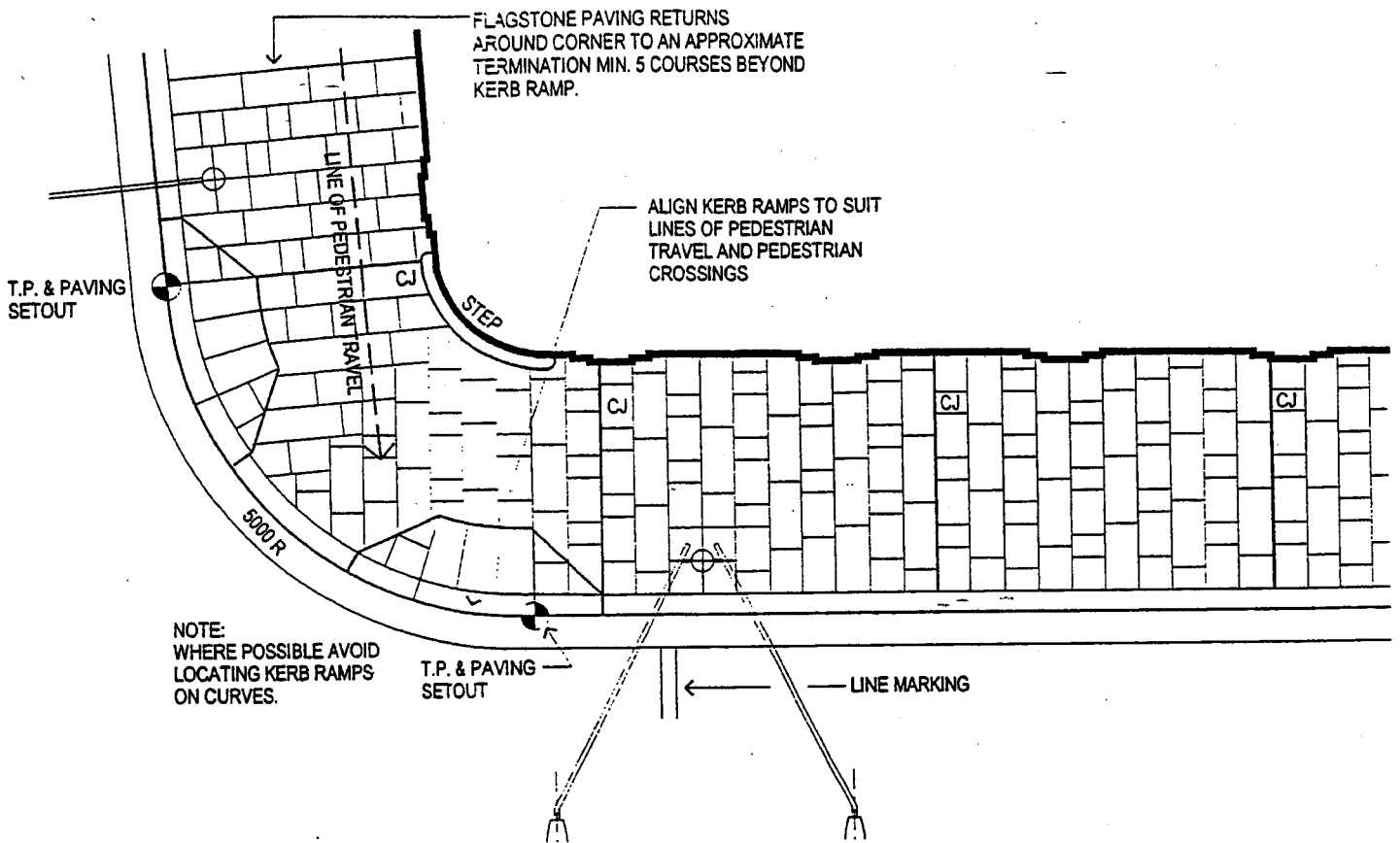


Plan 1:100

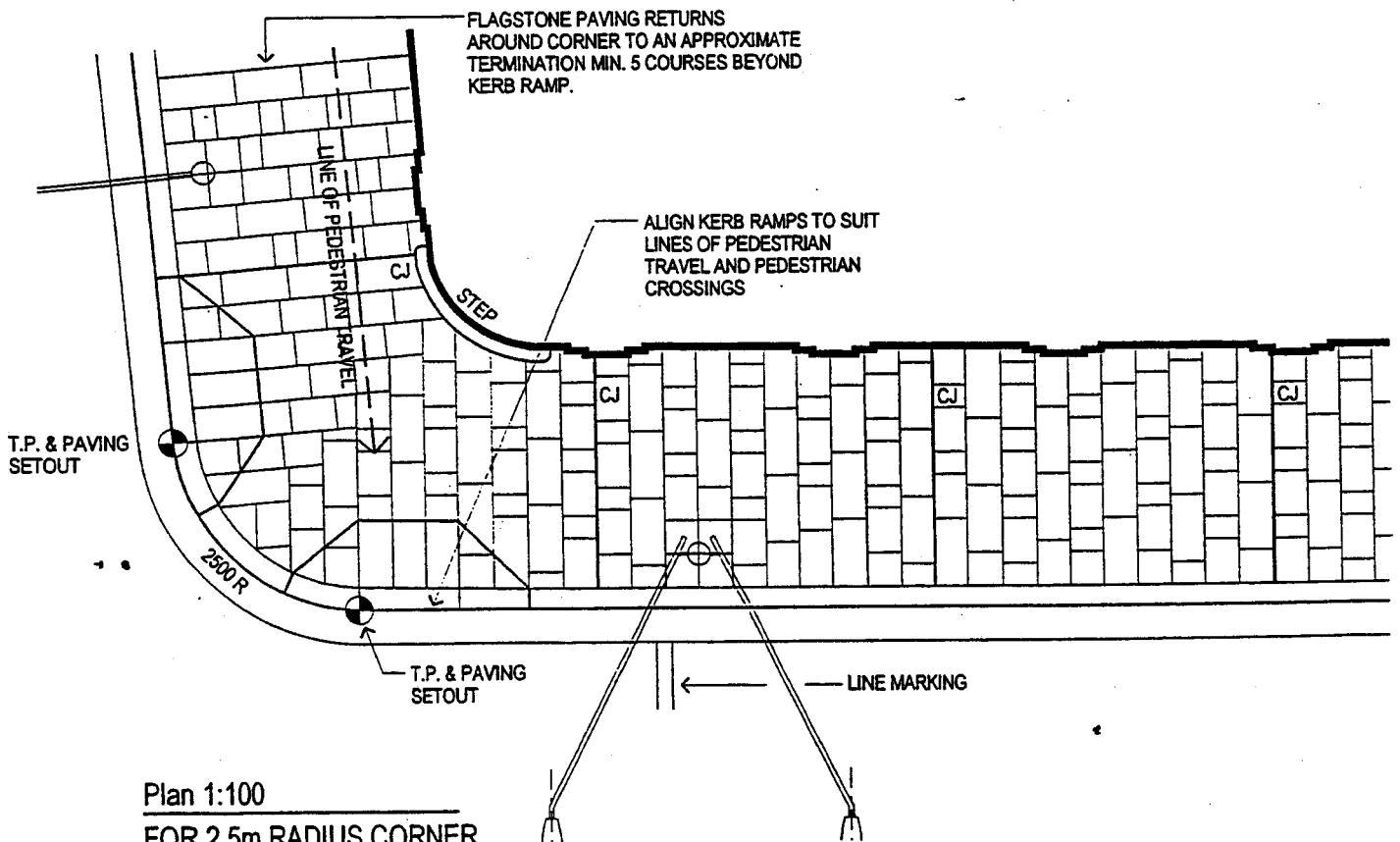


Typical Paving Module 1:50

TYPE 2 PAVING GENERAL ARRANGEMENT
DETAIL No. 1

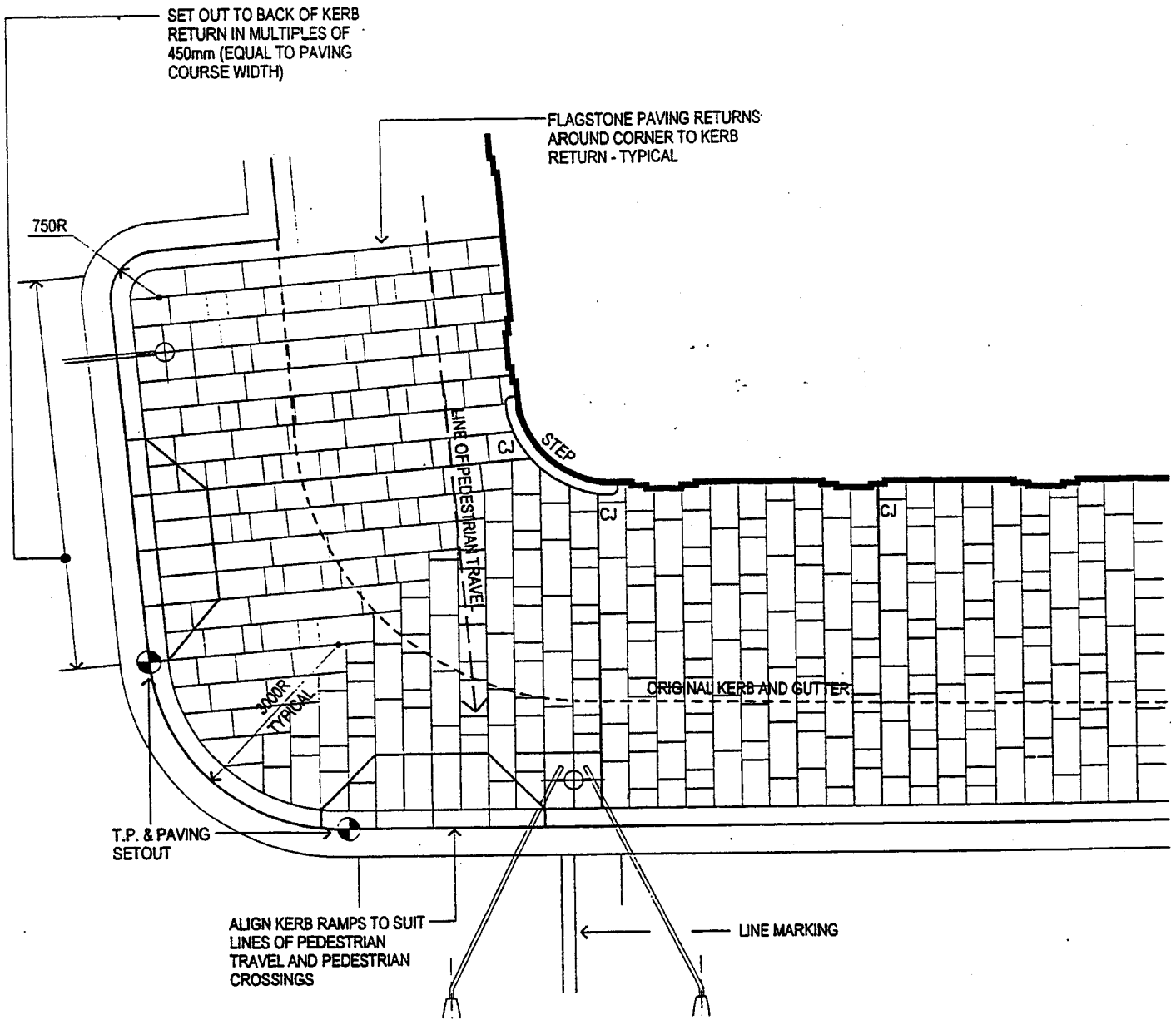


Plan 1:100
FOR 5m RADIUS CORNER



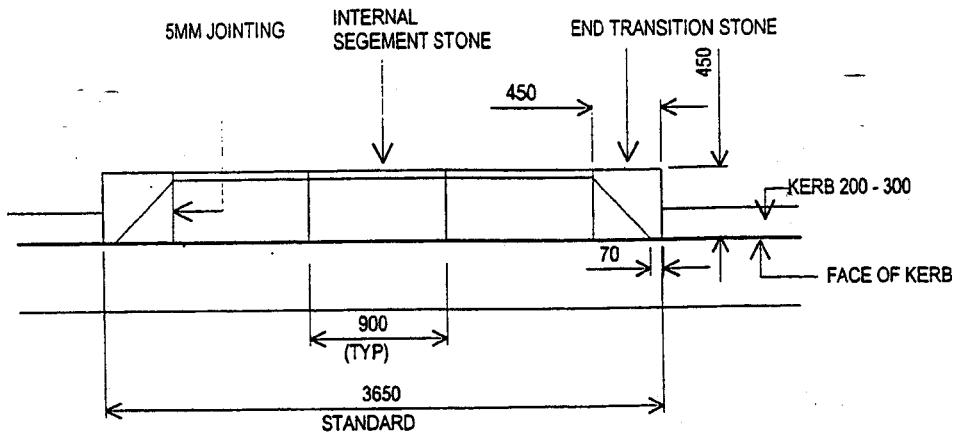
Plan 1:100
FOR 2.5m RADIUS CORNER
(3m RADIUS CORNER SIMILAR)

TYPE 2 PAVING GENERAL ARRANGEMENT - CORNER WITH ORIGINAL KERB ALIGNMENT
DETAIL No. 2

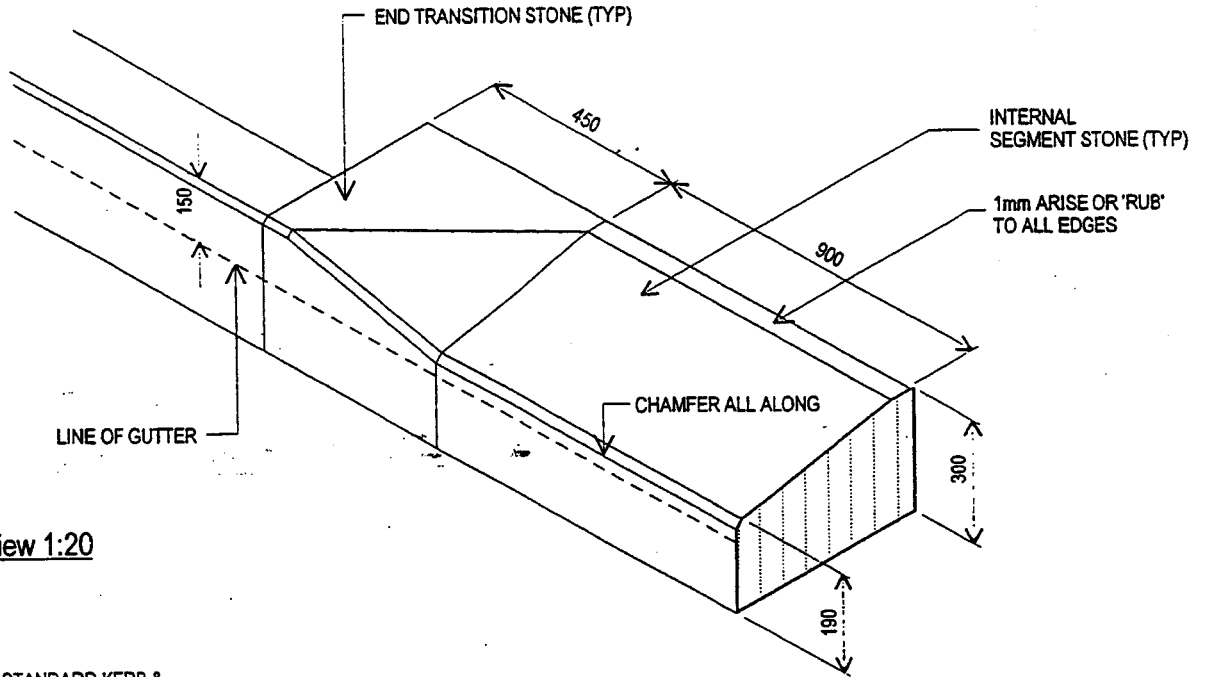


Plan 1:100

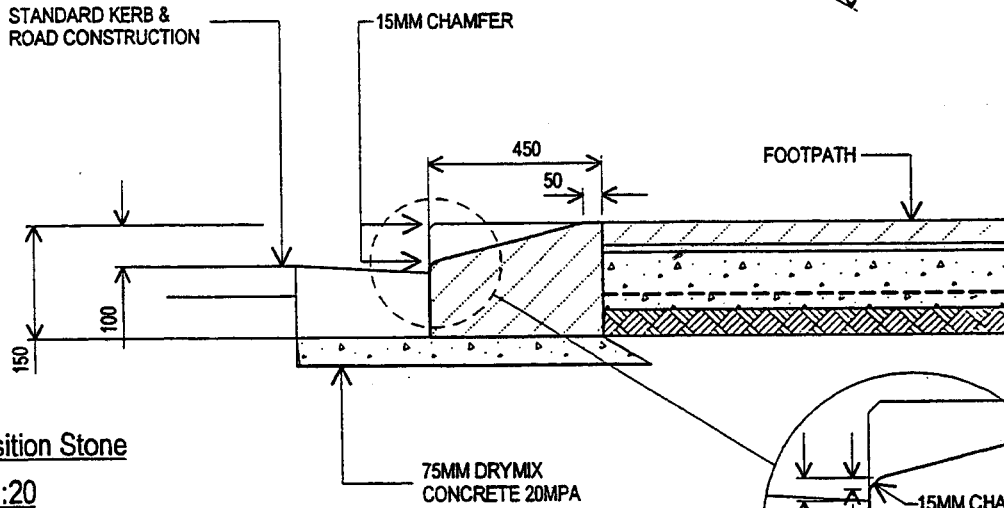
GENERAL ARRANGEMENT - CORNER - WITH PATH WIDENING
 DETAIL No.3



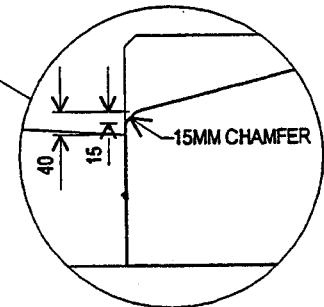
Plan View 1:50



Isometric View 1:20



End Transition Stone
Section 1:20

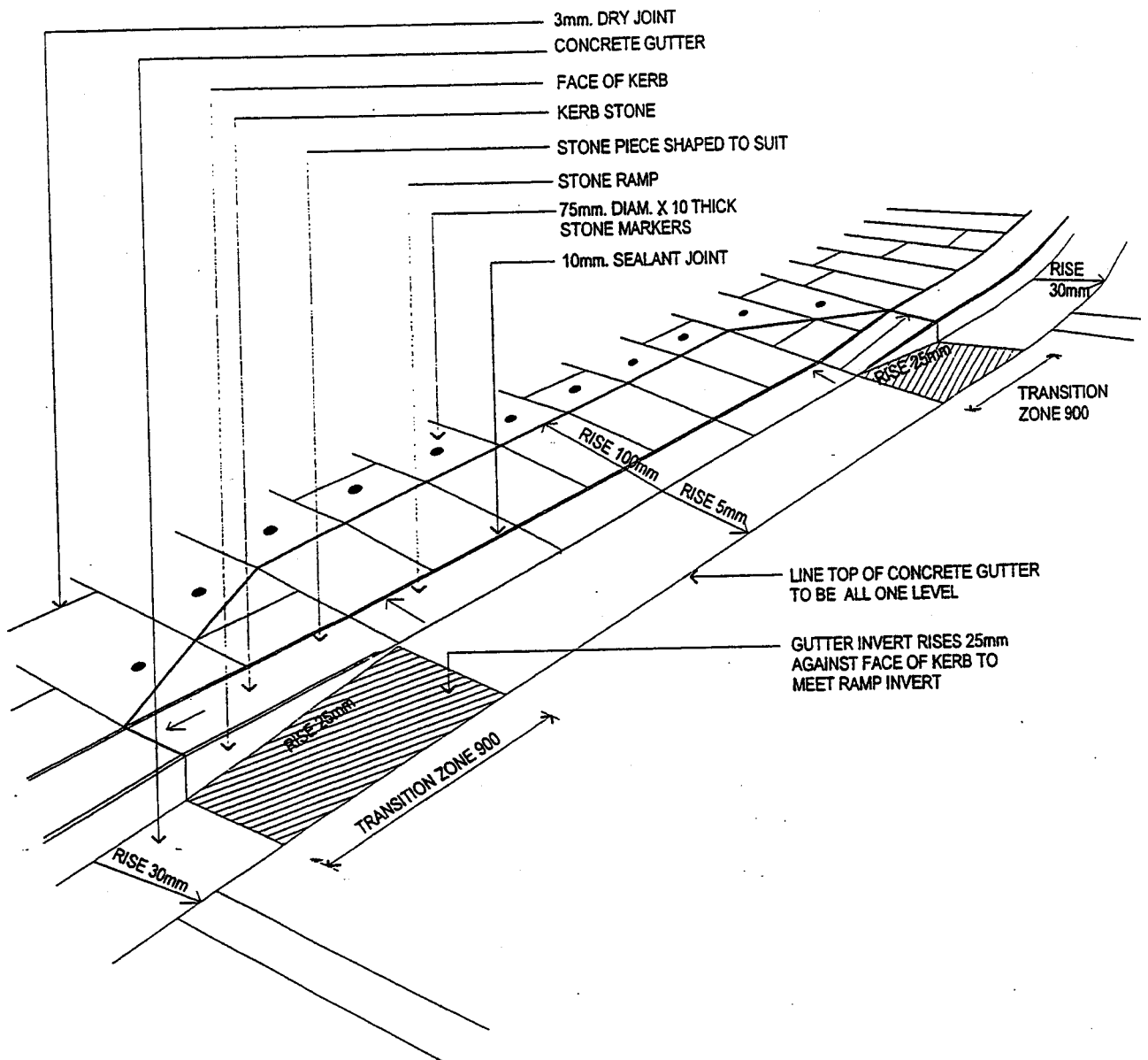


Detail Chamfer 1:10

NOTE:
GENERALLY TRACHYTE TO MATCH EXISTING.
FOR USE TO ALLOW EMERGENCY VEHICLE ACCESS(eg. STREET CLOSURES)
OR SERVICE VEHICLE ACCESS ACROSS A FOOTPATH. FOR USE WHERE A VEHICLE
CROSSOVER (FOR REGULAR TRAFFIC) IS NOT APPROPRIATE. TYPICALLY USED
ON PATHS LESS THAN 3 METRES WIDE.

TYPICAL LAYBACK KERB
DETAIL No. 5

DETAIL No. 6 - NOT USED

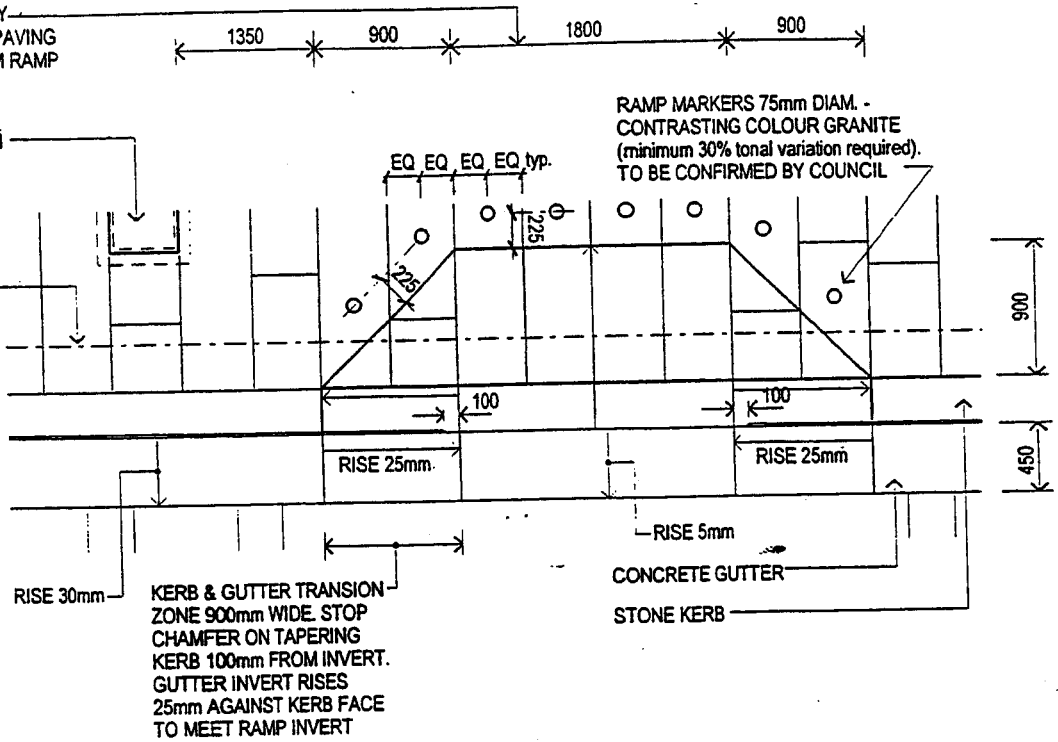


SKETCH VIEW - TYPICAL PEDESTRIAN CROSSING - 150 KERB - FLUSH INVERT
 DETAIL No. 7

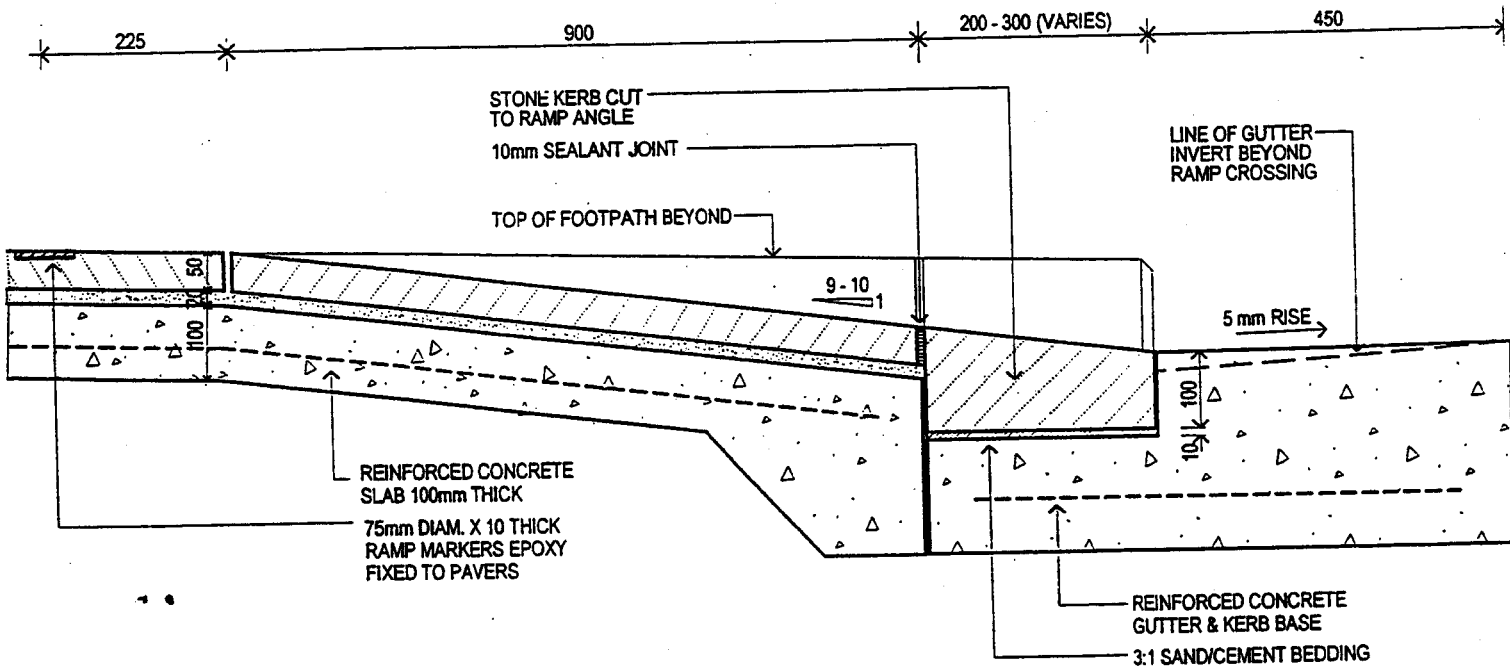
RAMP WIDTH MAY VARY BY INCREMENTS OF 450mm (PAVING COURSE WIDTH). MINIMUM RAMP WIDTH 1350mm.

RTA PIT WITH 450 X 450MM STONE COVER (TYPICAL)

EXISTING AWNING LINE ABOVE



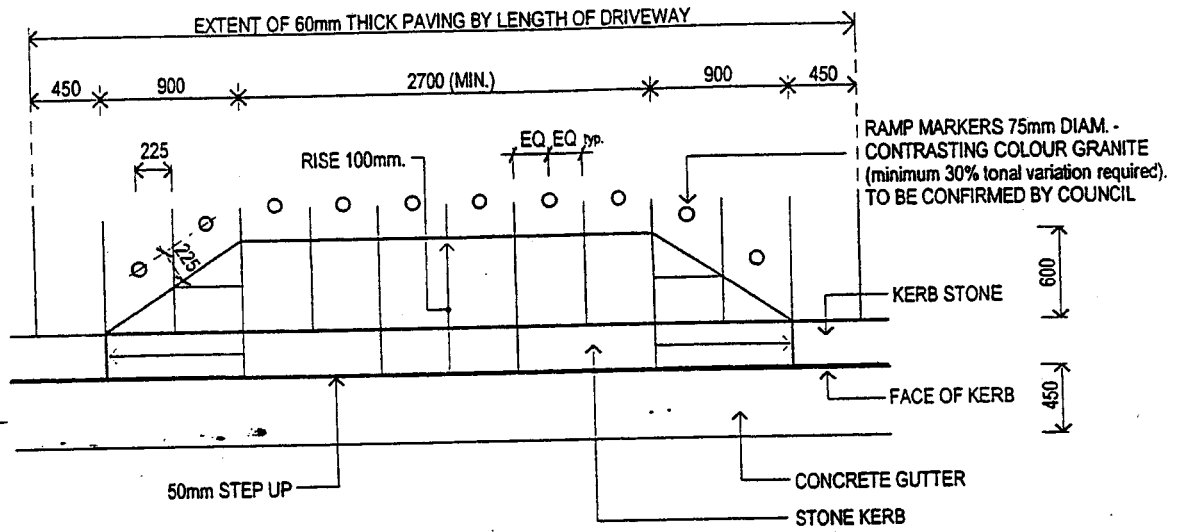
Plan 1:50



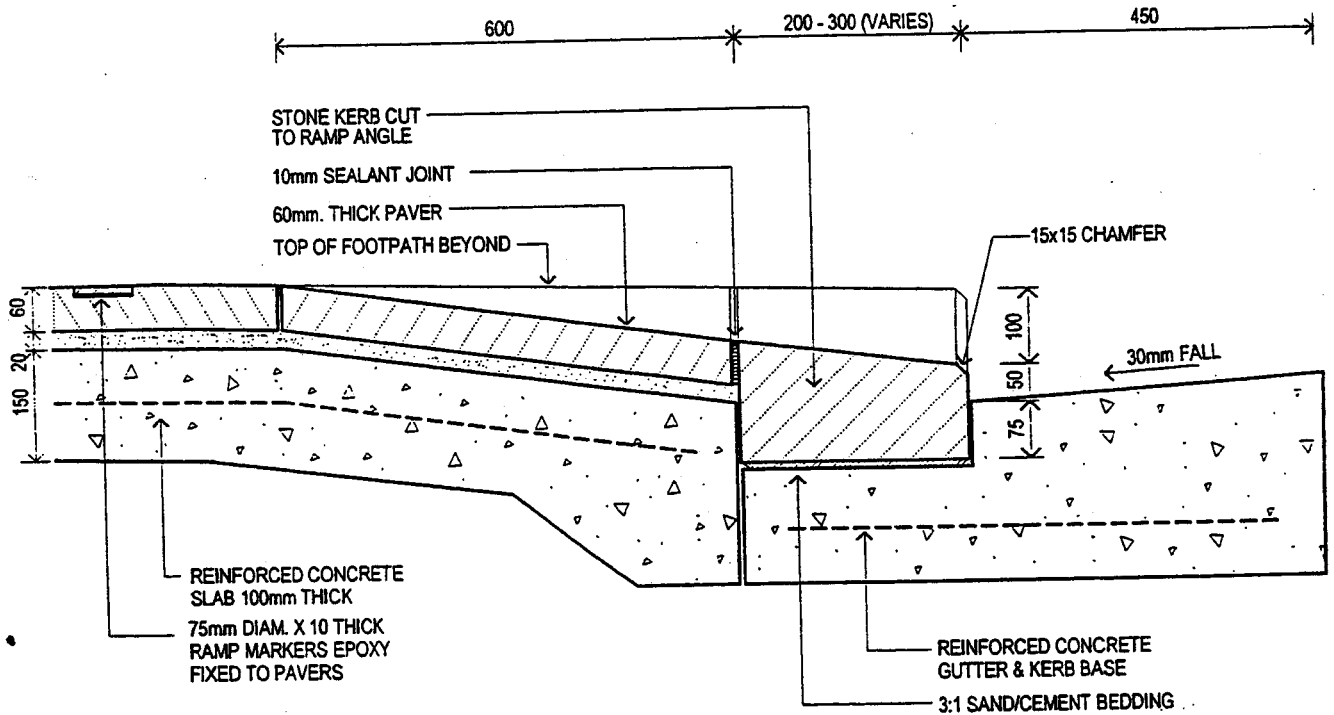
Section 1:10

150 KERB PEDESTRIAN CROSSING - WITH FLUSH INVERT
DETAIL No. 8

NOTE: CROSSING WIDTH MAY INCREASE BY INCREMENTS OF 450mm (PAVING COURSE WIDTH)

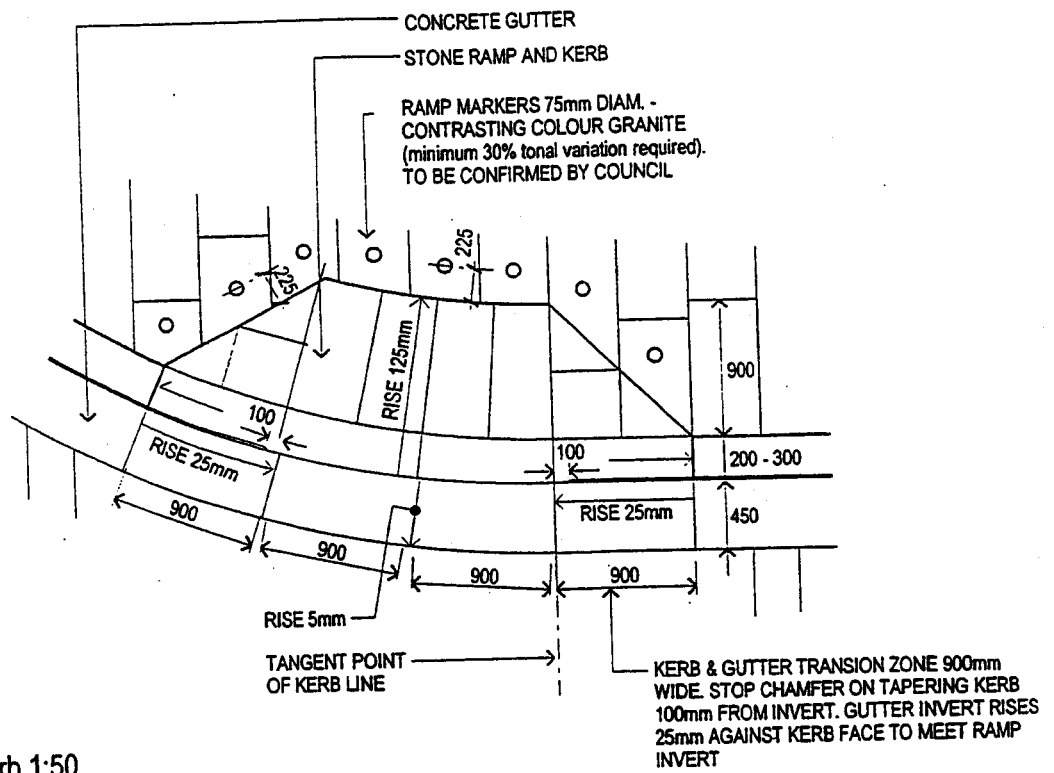


Plan 1:50



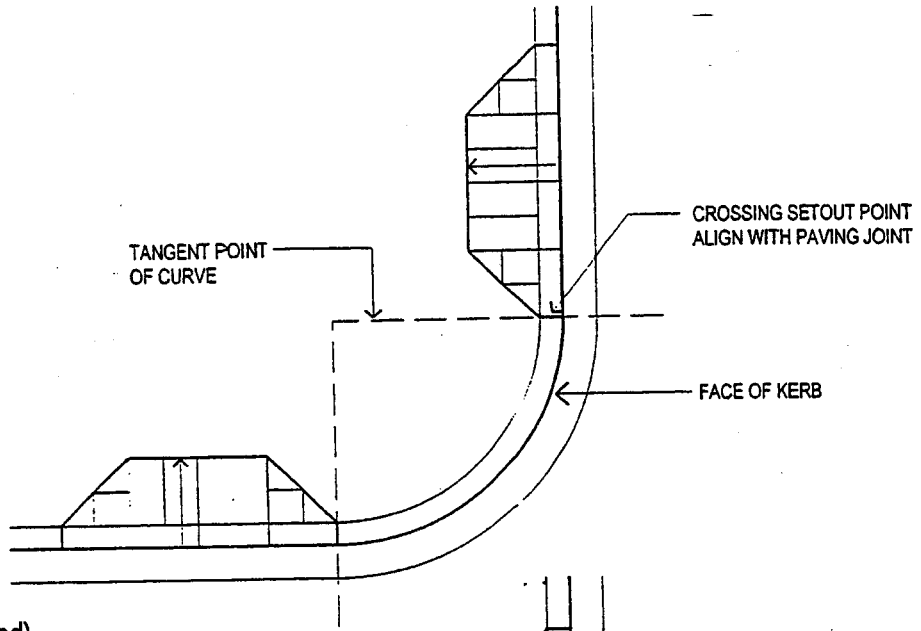
Section 1:10

150 KERB VEHICLE CROSSING - 2700 WIDE (minimum)
DETAIL No. 9

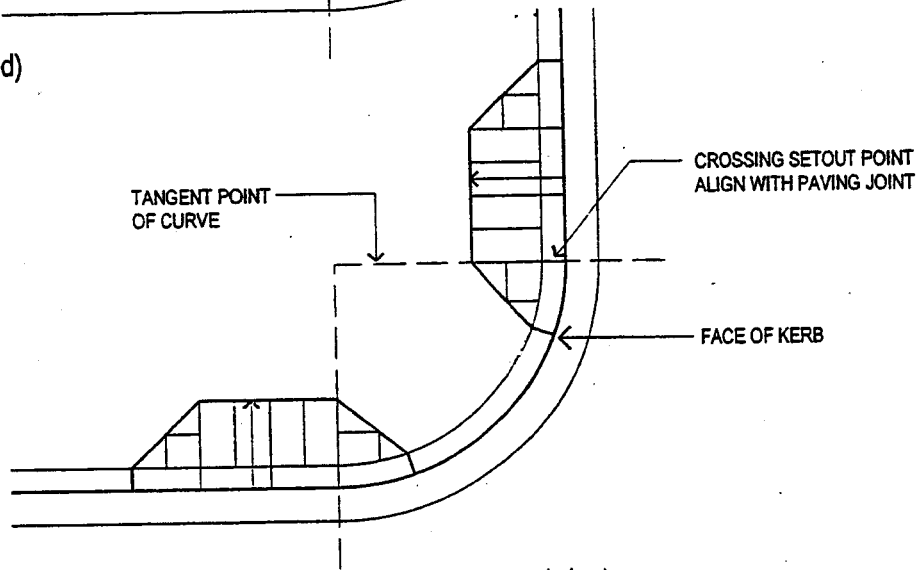


Plan - 150 Kerb 1:50

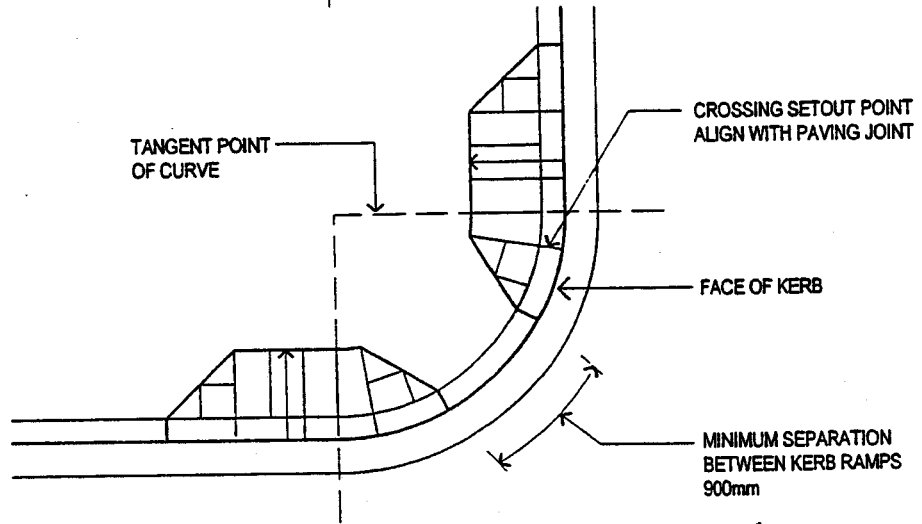
TYPICAL KERB PEDESTRIAN CROSSING ON CURVE - WITH FLUSH INVERT
DETAIL No. 10



Option 1 - (Preferred)



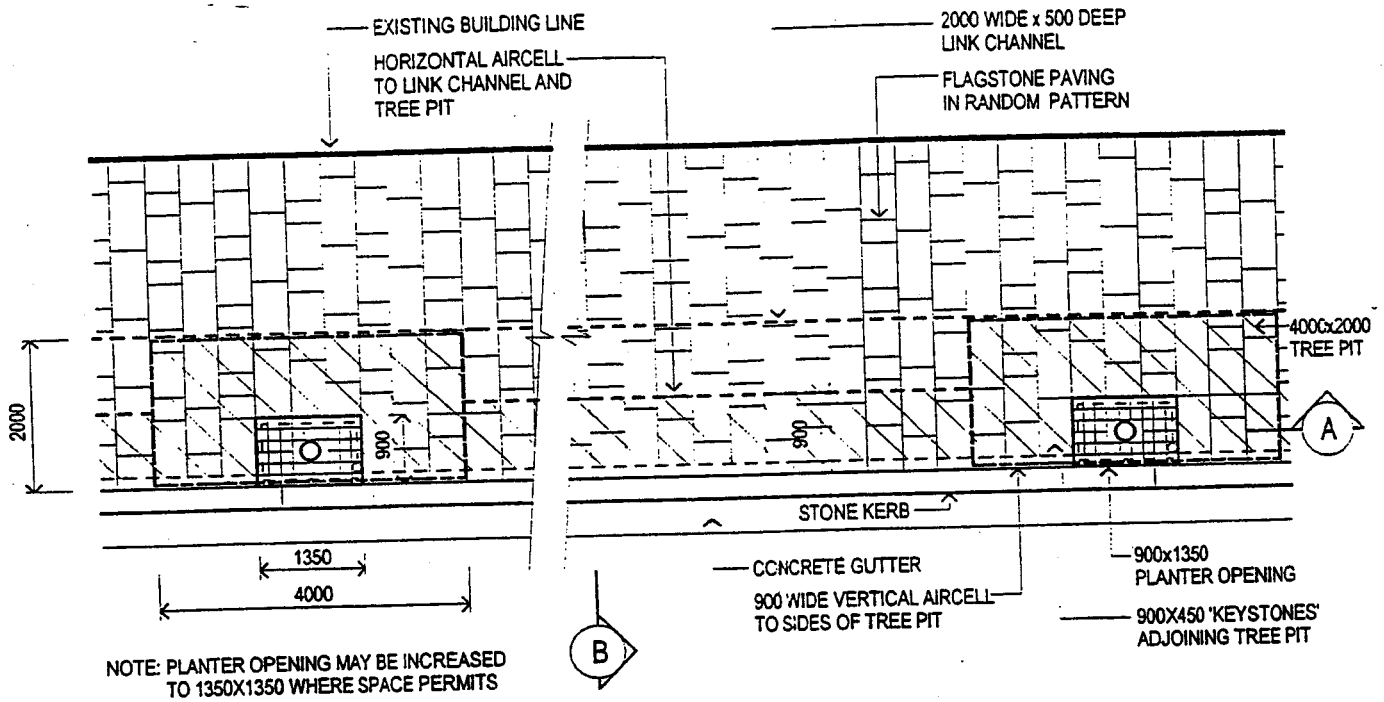
Option 2



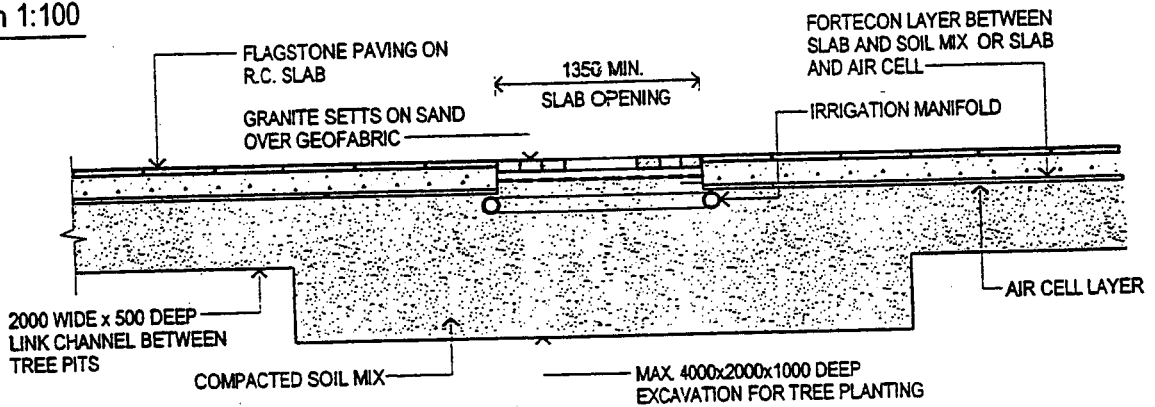
Option 3

Typical plans 1:100

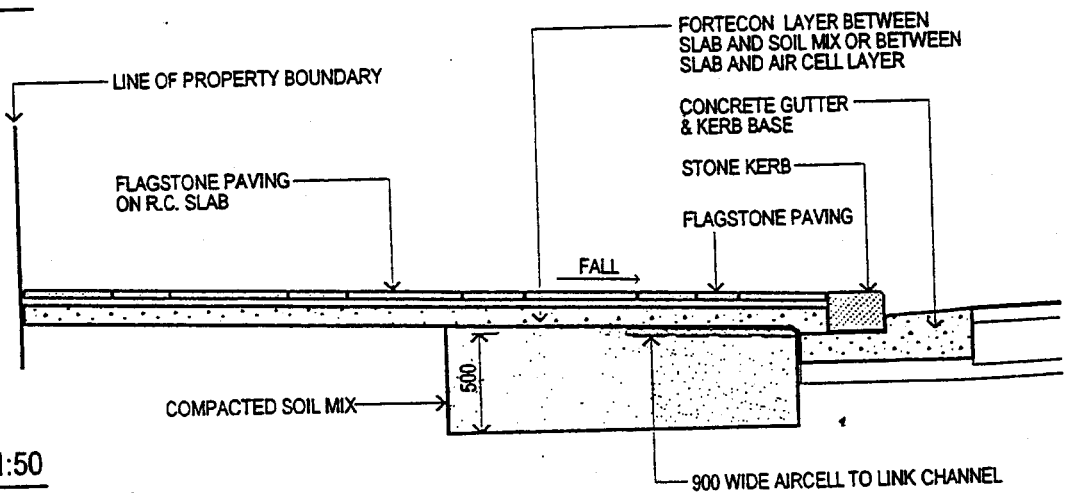
TYPICAL KERB PEDESTRIAN CROSSINGS ON CURVES - OPTIONAL SETOUTS
 DETAIL No. 11



Plan 1:100



Section A 1:50



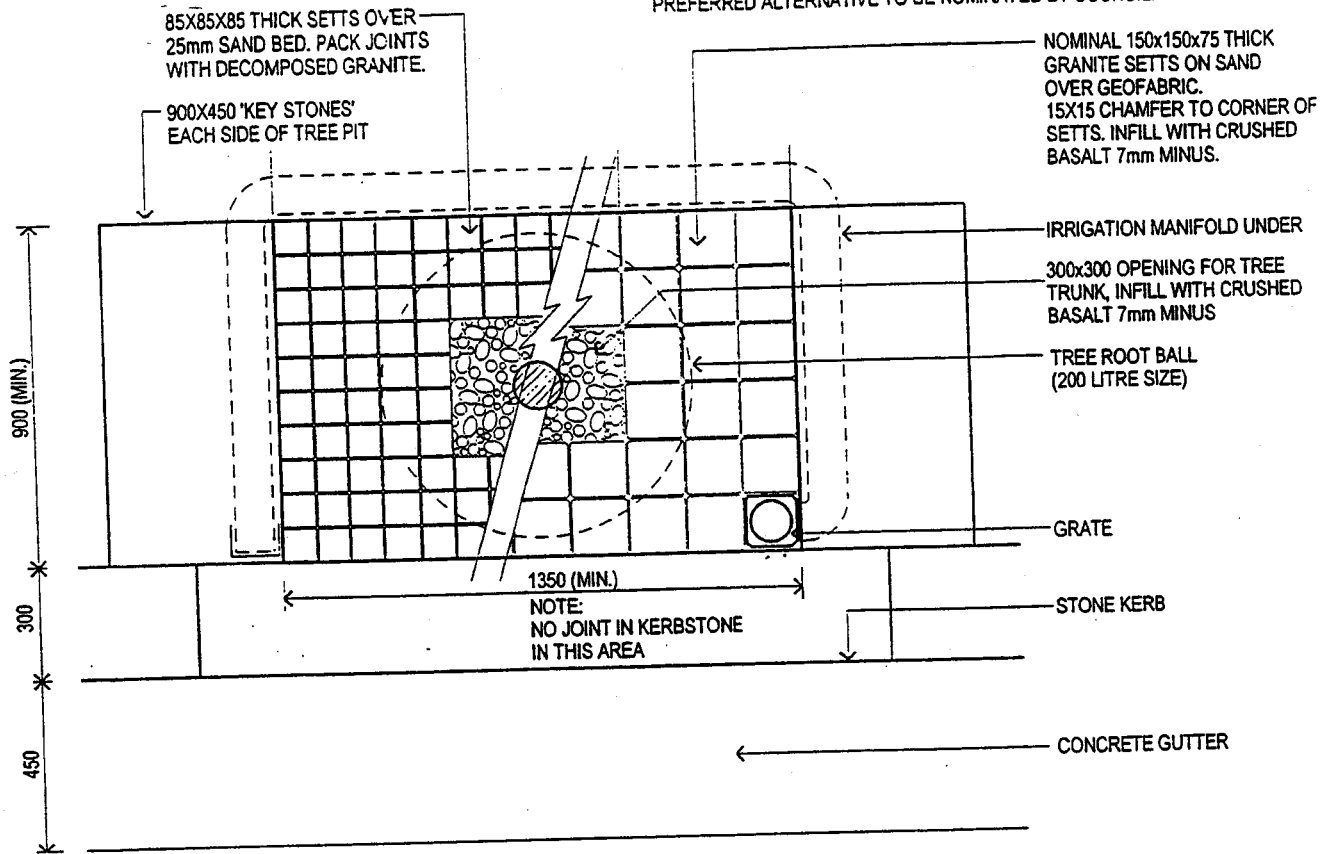
Section B 1:50

(Through Link Channel)

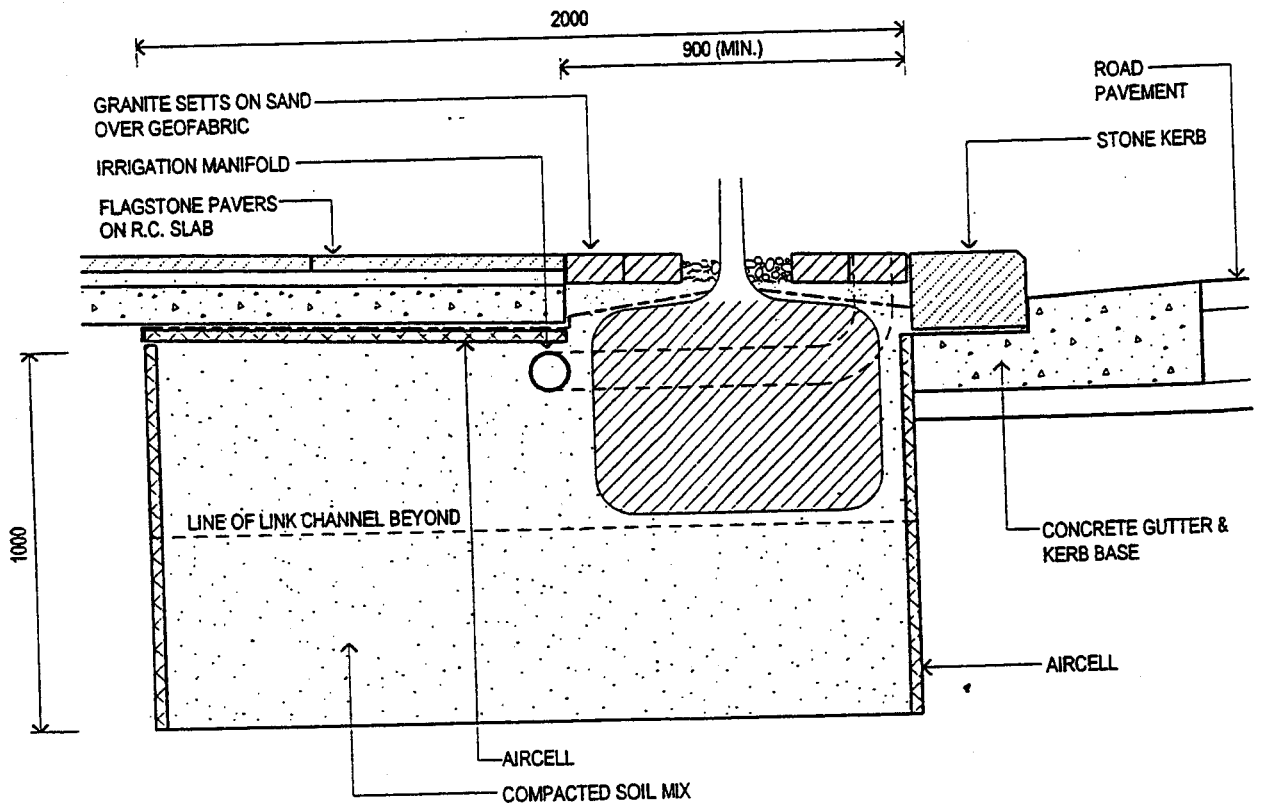
Note: Link channel only required for avenue plantings, where trees are spaced at 12 metre intervals or less.

TYPICAL TREE PLANTING - TYPE 2 PAVING AREAS - GENERAL ARRANGEMENT
DETAIL No.12

NOTE:
TWO ALTERNATIVE INFILL SETT TREATMENTS SHOWN.
PREFERRED ALTERNATIVE TO BE NOMINATED BY COUNCIL.



Plan 1:20



Section 1:20

TYPICAL TREE PLANTING - TYPE 2 PAVING AREAS - DETAILS
DETAIL No.13

SPECIFICATION NOTES -

NOTE 1 NEW TREE PLANTING IN PAVING -(Applies to all paving types)

Sheet 1 of 2

Excavation For Tree Pits

Excavate tree planting pits and link channels to the required depths. Remove all excavated material from site. Do not disturb services, excavate by hand around services.

Excavation depths :

Tree pits: 1000mm from underside of concrete base slab

Link channels : 500mm from underside of concrete base slab

Subgrade Preparation

Confirm that excavated tree pit is free draining, if not install sub-soil drainage lines and connect to available stormwater system.

Test sub-grade soils for suitability to support plant growth, incorporate any additives that may be required. Manually cultivate subgrade to base of tree pit and link channel excavations to a depth of 150mm. During cultivation, thoroughly mix in any materials required to be incorporated into the subsoil.

Structural soil mix

- Structural soil mix shall be a thoroughly combined mix of 5 parts aggregate to 1 part filler soil as described below.

Filler Soil shall be a thoroughly combined mix of 1 part sandy loam to 1 part dolerite and 5% by volume of composted green waste, screened to less than 12mm, with the following properties.

Organic Matter	< 1% by weight
pH in water	5.5 - 6.5
Electrical Conductivity	<1.2 dS/m
Ammonium	20-200mg/kg
Phosphorous	10-50mg/kg

Additives

To the above filler soil components, the following additions are required (to be confirmed during testing of samples for approval).

Magrilime or a 50/50 Lime/Dolomite mix	to bring pH to 5.5 - 6.5
Trace Element Mix	100g/ cubic metre
Potassium Nitrate	300g/ cubic metre
Nitram (ammonium nitrate)	300g/ cubic metre
Superphosphate	300g/ cubic metre
Iron Sulphate	500g/ cubic metre
Controlled Release Fertiliser	1.5kg/ cubic metre
Gypsum	300g/ cubic metre
Magnesium Sulphate (Epsom Salts)	150g/ cubic metre

These additives must be mixed with the filler soil and tested for compliance prior to blending with the crushed aggregate

Aggregate shall be 40mm crushed Nepean River gravel or crushed basalt. Gravel shall be clean and free from clay and other matter. The aggregate shall be of the following particle size distribution:

A.S Sieve	Percent Passing
53.0	100
37.5	90-100
26.5	0-75
19.0	<15
13.2	<2
9.5	<2
6.7	<2
4.75	<2

NOTE 1 NEW TREE PLANTING IN PAVING -(Applies to all paving types) cont.

Sheet 2 of 2

Transporting

Soil mixes must be delivered to site pre-blended. The soil mix must be transported in a moist condition to prevent segregation of components.

Contamination

Where diesel oil, cement or other phytotoxic material has been spilt on the subsoil or soil mix, excavate the contaminated material, dispose of it off the site, and replace it with new soil mix, as directed, to restore design levels.

Placing Soil Mix

Backfill and compact soil mix in tree pits and link channels between tree pits in layers 150mm maximum thickness. The soil mix components must remain in a thoroughly blended composition and be kept moist during backfilling and compaction to prevent segregation of soil mix components. Watering in of the mix is not permitted. If any segregation of the aggregate and filler soil occurs, excavate the segregated material and re-mix the material to an even and uniform consistency prior to continuing with backfilling and compaction.

Compaction of Soil Mix

Thoroughly and evenly consolidate each layer to achieve a uniform density of not less than 95% maximum dry density as determined by AS 1289.5.1.1 at design levels.

Air Cell Panels

Air cell panels for sides of tree pits and underside of concrete paving slabs over tree pits and link channels shall be assembled from a 300mm x 300 mm x 40mm thick polypropylene cellular drainage tile fully wrapped in a non-woven needle punched geotextile fabric equivalent to the 'Atlantis' product code No. 10001 or Approved equivalent

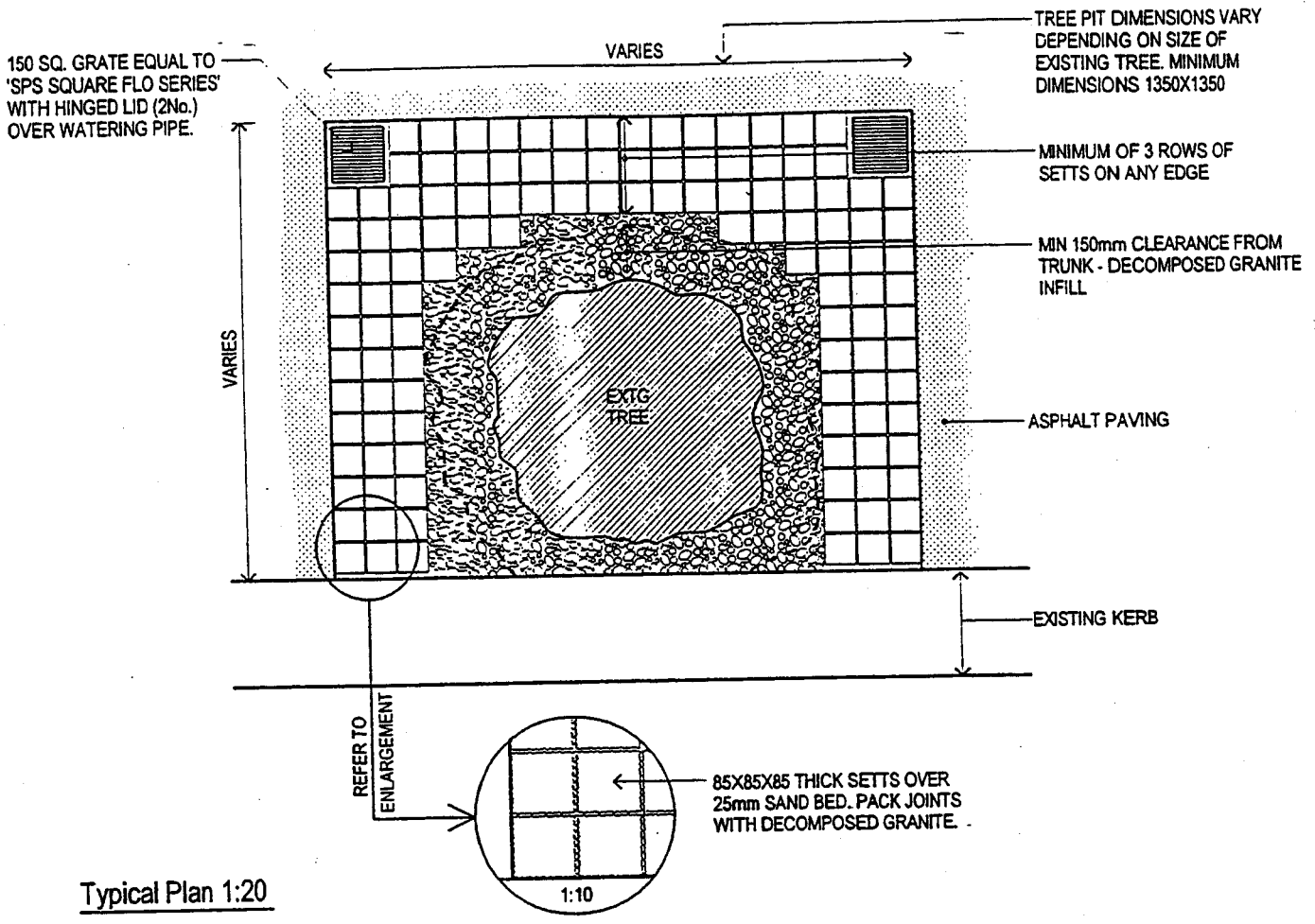
Separation Layer

Install a single layer of polymeric film underlay, 200microns thick (Fortecon) over all horizontal air cell panel and soil mix surfaces prior to installation of concrete paving slabs, to prevent contamination of placed soil mix. Lap joints at least 200mm and seal with waterproof adhesive tape.

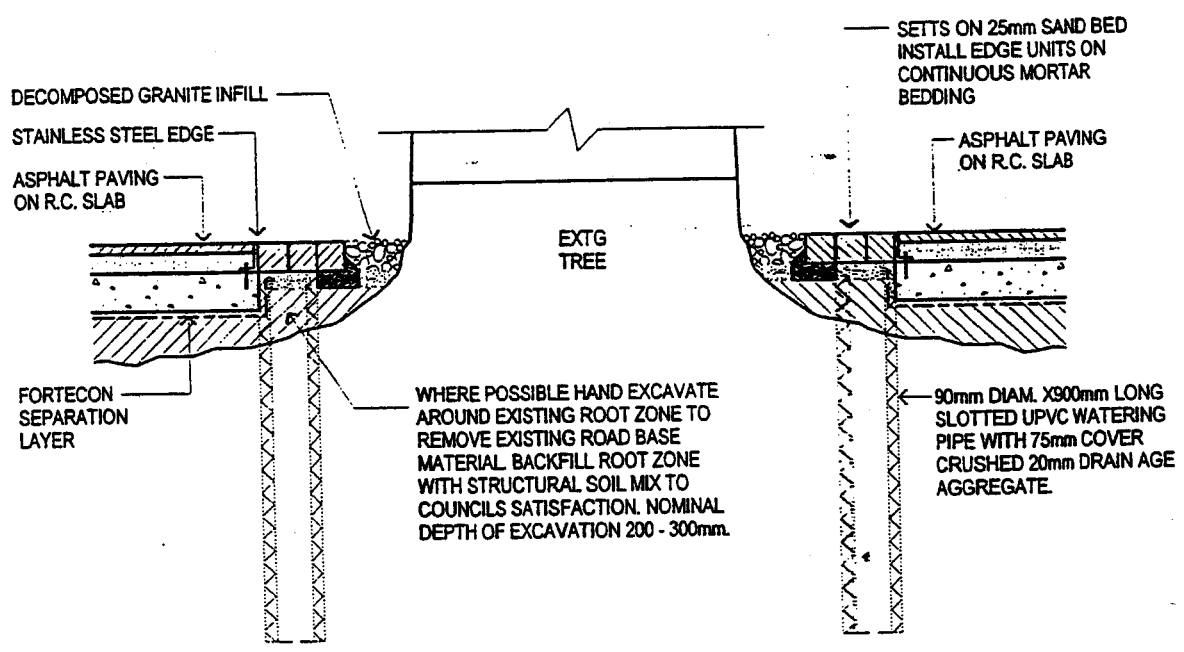
Watering Points / Irrigation

Install tree irrigation manifolds at each tree planting point. Construct manifolds from 90mm diameter rigid slotted UPVC fitted with filter sock and set in a true horizontal position to enable an even distribution of water around the tree root zone. Fit upturns at nominated locations and connect to pavement inspection/ inlet grates. The grates shall be a 150 mm x 150mm hinged grate in nickel bronze finish equal to 'SPS Squareflo series 150' with 'no-hub' coupling for connection to slotted UPVC pipe. Finish grates flush with adjoining pavement levels.

Where possible install automatic irrigation system using Approved flood bubbler outlets located within inlet grate. Irrigation systems and components subject to Council approval.

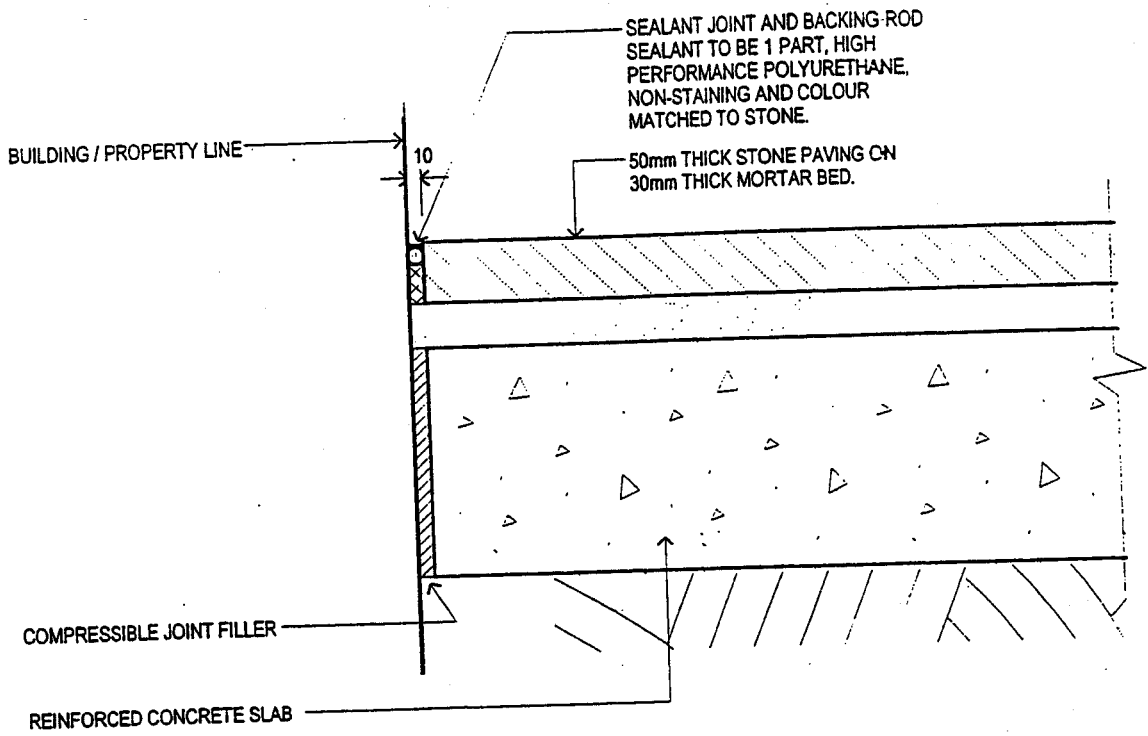


Typical Plan 1:20

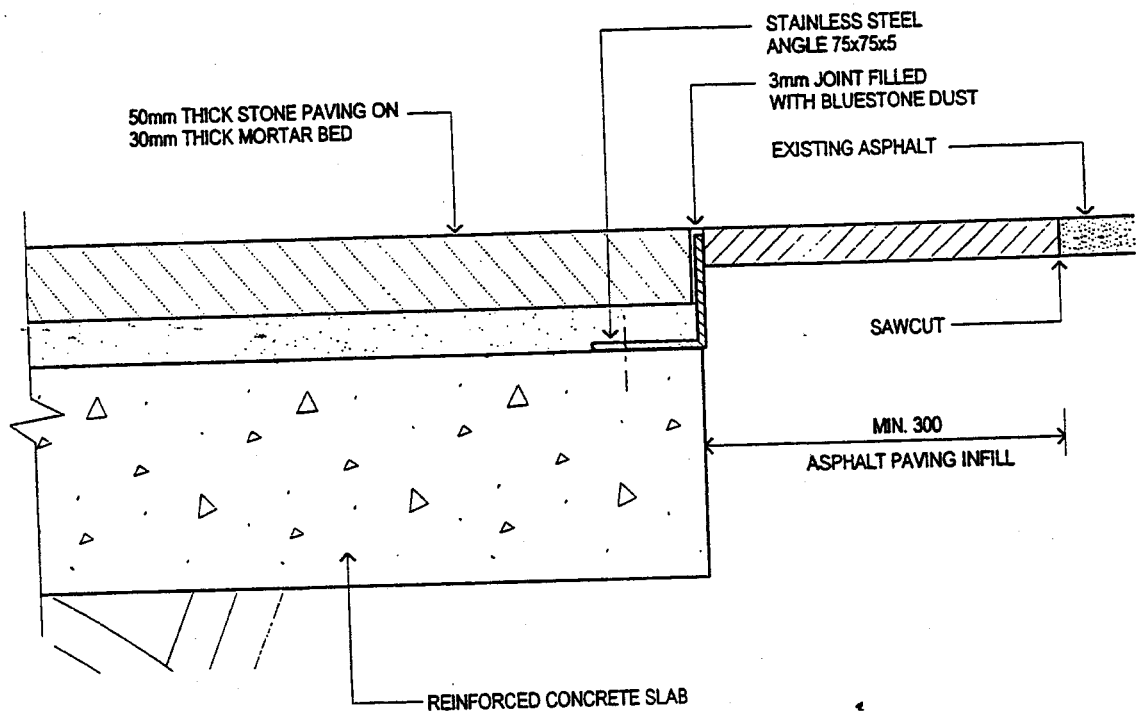


Section 1:20

EXISTING TREES IN TYPE 3 AND 4 PAVING AREAS
 DETAIL No. 15

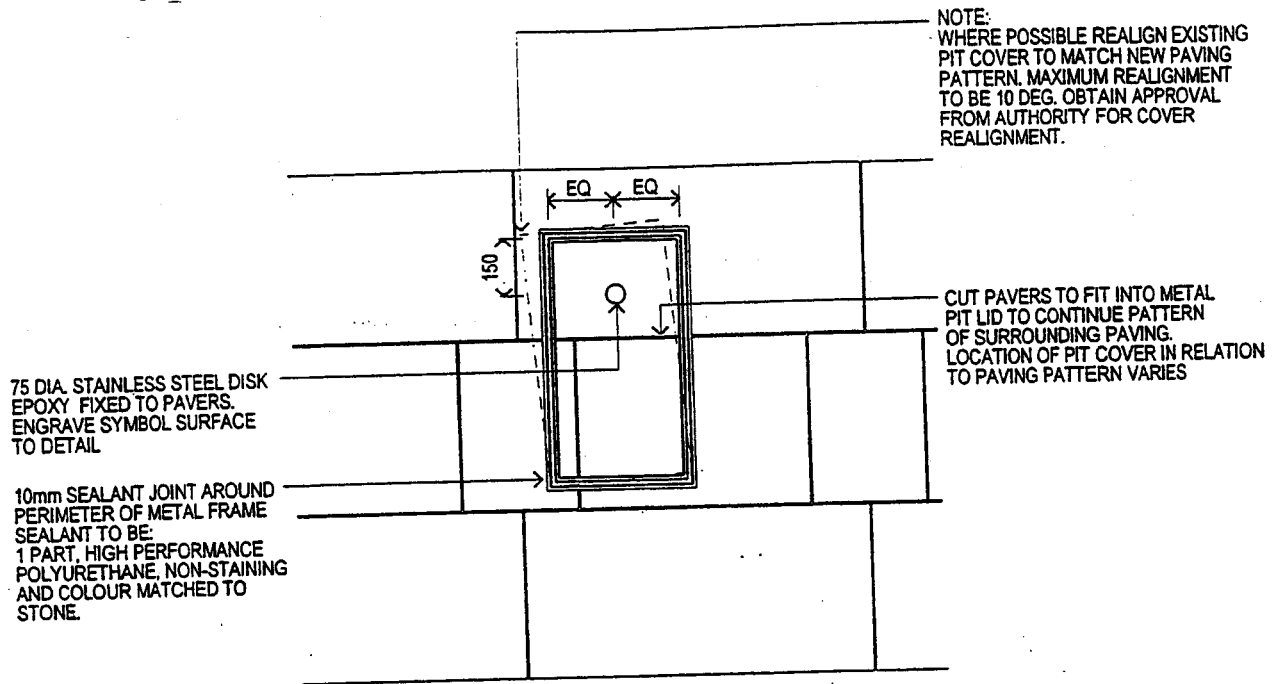


Section 1:5
Junction with building

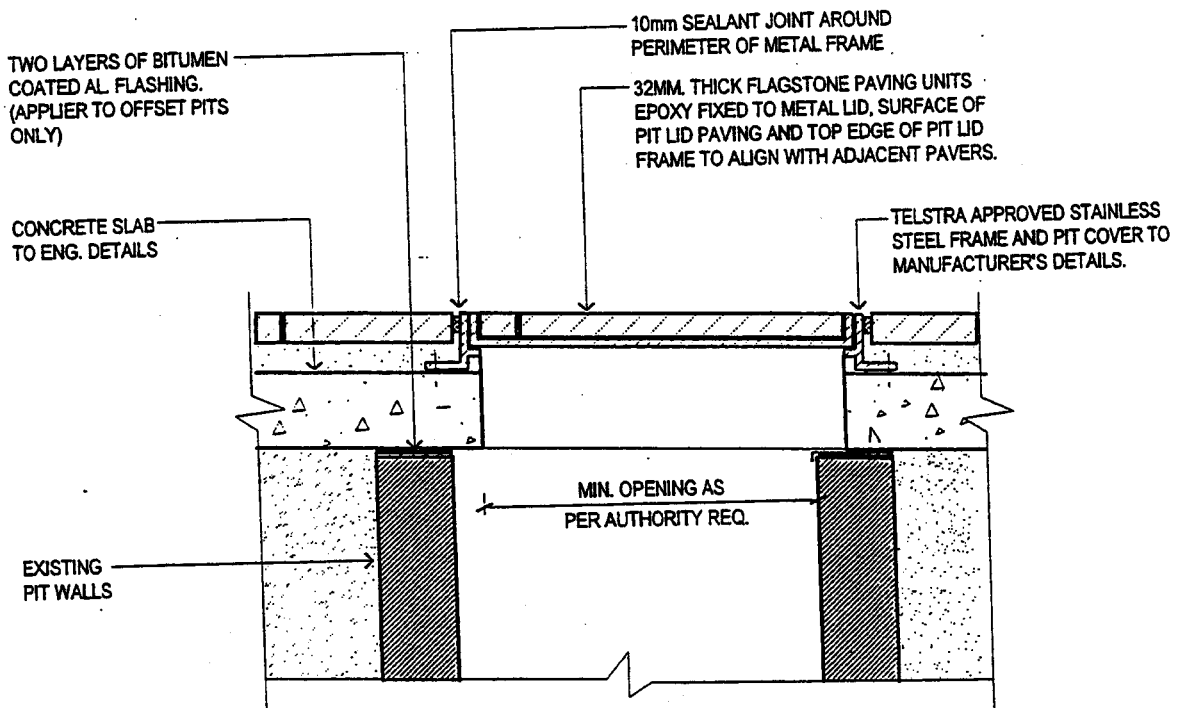


Section 1:5
Junction with existing paving

TYPICAL PAVING JUNCTIONS
DETAIL No. 16

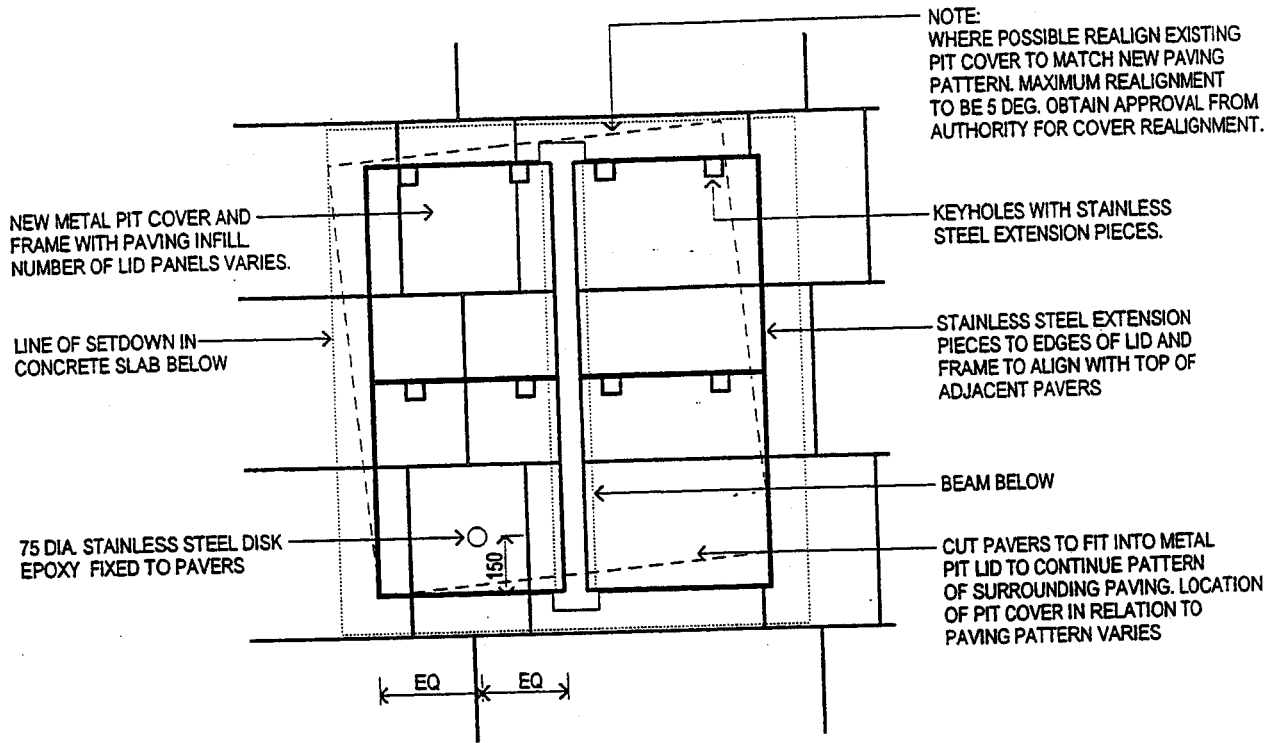


Plan 1:20

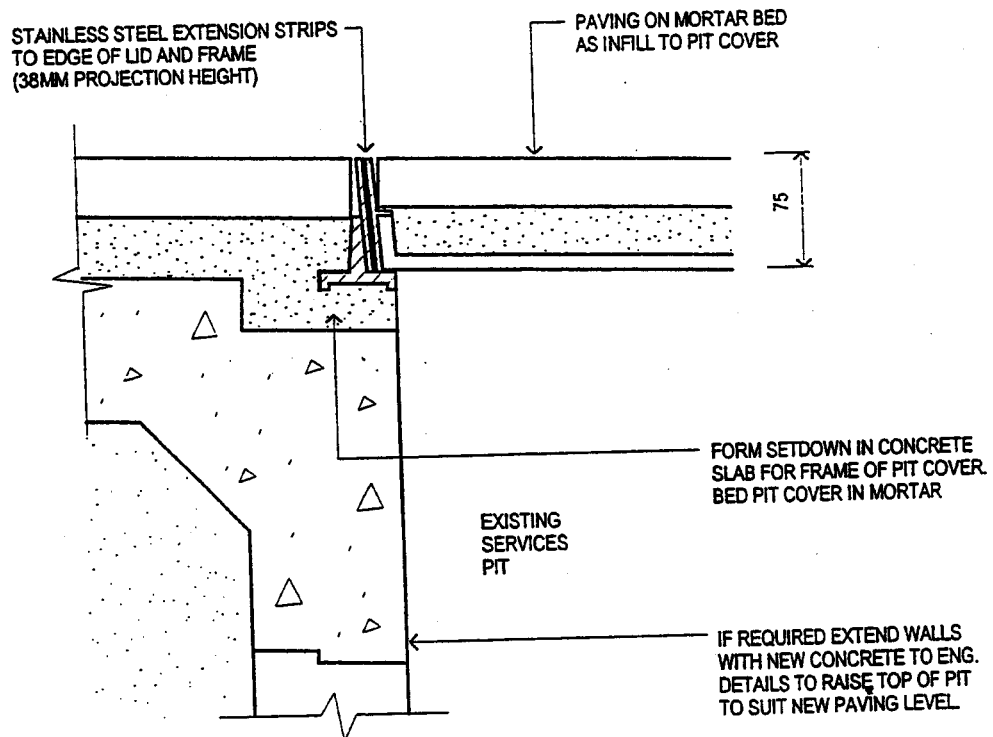


Section 1:10

TYPICAL ONE PART TELSTRA PIT COVER (TWO PART COVER SIMILAR)
DETAIL No. 17



Plan 1:20



Section 1:5

TYPICAL MULTI PART COVER
DETAIL No. 18

NOTE 2 EXISTING TREE PLANTING IN PAVING -(Applies to paving types 3 & 4)

Sheet 1 of 1

Ground Preparation

Carefully excavate by hand existing site fill and base course material away from the root zone of the existing trees to a maximum depth of 300mm or as much as site conditions allow. Do not disturb or sever any root material. Excavation work around these trees shall be undertaken in the presence of a qualified horticulturalist or arboriculturist. Remove all excavated material from the site

Only commence excavation work around existing trees when backfilling of structural soil mix can commence immediately on completion. Where tree roots are exposed in an excavation cover with hessian and keep permanently moist by regular application of water. Tree roots must not be allowed to dry out.

Structural soil mix

Refer to 'New Tree Planting in Paving' for structural soil mix composition, delivery to site, placement and compaction.

Air Cell Panels

Install air cell panels over placed structural soil mix to underside of concrete paving slabs over. Air cell panels shall be assembled from a 300mm x 300 mm x 40mm thick polypropylene cellular drainage tile fully wrapped in a non-woven needle punched geotextile fabric equivalent to the 'Atlantis' product code No. 10001 or Approved equivalent.

Separation Layer

Install a single layer of polymeric film underlay, 200microns thick (Fortecon) over all horizontal air cell panel and soil mix surfaces prior to installation of concrete paving slabs, to prevent contamination of placed soil mix. Lap joints at least 200mm and seal with waterproof adhesive tape.

Watering Points / Irrigation

Install tree watering points at each tree location. Pipe shall be 90mm diameter rigid slotted UPVC fitted with filter sock. Connect to pavement inspection/ inlet grates. Inlet grates shall be a 150 mm x 150mm hinged grate in nickel bronze finish equal to 'SPS Squareflo series 150' with 'no-hub' coupling for connection to slotted UPVC pipe. Finish grates flush with adjoining pavement levels.

NOTE 3 REINSTATEMENT OF ASPHALT PAVING

Sheet 1 of 1

Generally

This note relates only to reinstatement of asphalt paving associated with new installations of street furniture and tree planting.

Extent of Reinstatement

Reinstatement of asphalt paving shall occur in module lengths of 4metres for the full width and depth of the existing pavement and must extend beyond the ends of any street furniture element a minimum distance of 1.0 metre. For example, a 2metre long seat will require reinstatement of 1 module width, centred about the seat extending 1 metre beyond the ends of the seat. The table below indicates reinstatement requirements for various elements.

Element	No. of 4metre Reinstatement Modules
Seat (2000mm long)	1 module
Litter Bin	1 module
Freestanding Payphone & Emergency Video	1 module
Automatic Public Toilet	To be confirmed by Council
Large Kiosk	To be confirmed by Council
Small Kiosk	To be confirmed by Council
Bus shelter (Cox 4)	2 modules
Bus shelter (Cox 5)	2 modules
Bus shelter (Cox 8)	3 modules
Service Pit Covers (up to 2m long)	1 module
Service Pit Covers (over 2m long)	2 modules
New Tree Planting (with 4m x 2m tree pit)	2 modules

Reinstatement Sequence

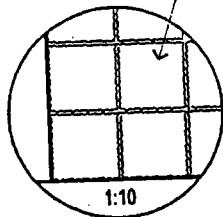
Where possible complete reinstatement of asphalt paving for all street furniture elements following installation of concrete footings and any support posts prior to attaching other above ground components.

Installation

Install asphalt paving in accordance with Council's relevant specifications and AS2734 - 1984 Asphalt (Hot Mixed) Paving - Guide to Good Practice.

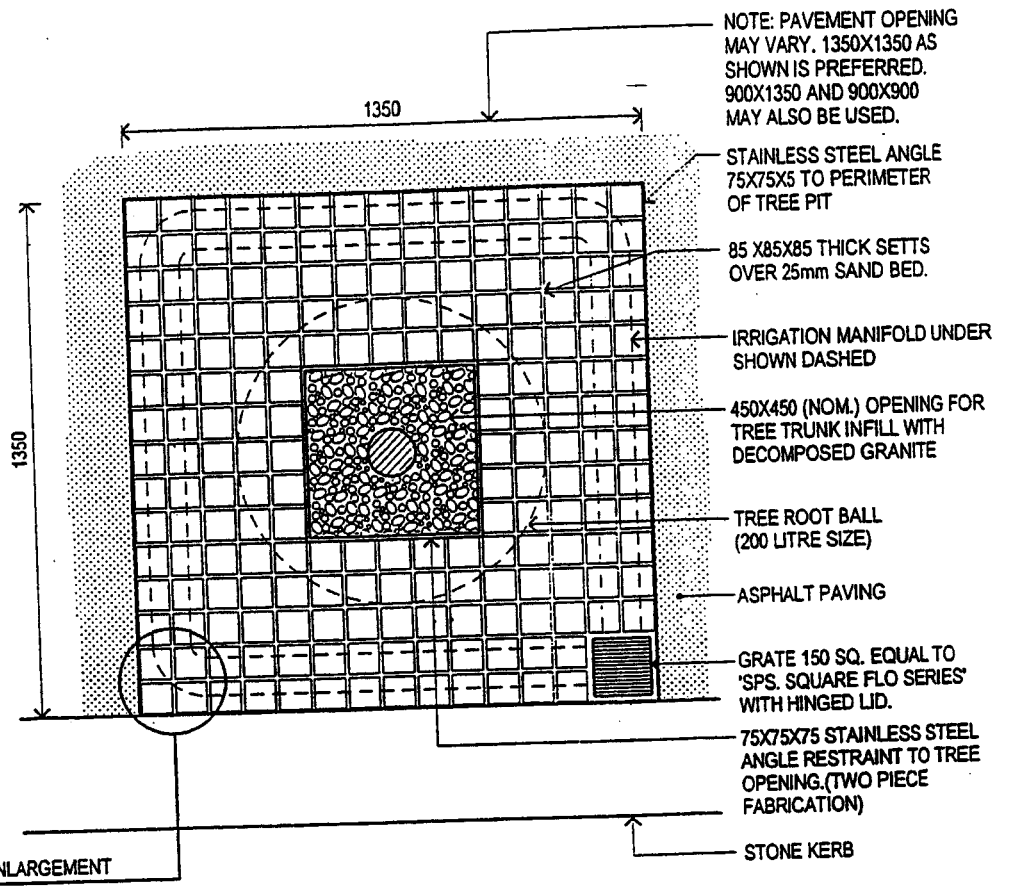
Provide neat and accurate sawcut edge between existing and new asphalt paving. The sawcut must be at right angles to the kerb and absolutely straight.

85X85X85 THICK SETTS OVER 25mm SAND BED. PACK JOINTS WITH DECOMPOSED GRANITE.



1:10

REFER TO ENLARGEMENT



NOTE: PAVEMENT OPENING MAY VARY. 1350X1350 AS SHOWN IS PREFERRED. 900X1350 AND 900X900 MAY ALSO BE USED.

STAINLESS STEEL ANGLE 75X75X5 TO PERIMETER OF TREE PIT

85 X85X85 THICK SETTS OVER 25mm SAND BED.

IRRIGATION MANIFOLD UNDER SHOWN DASHED

450X450 (NOM.) OPENING FOR TREE TRUNK INFILL WITH DECOMPOSED GRANITE

TREE ROOT BALL (200 LITRE SIZE)

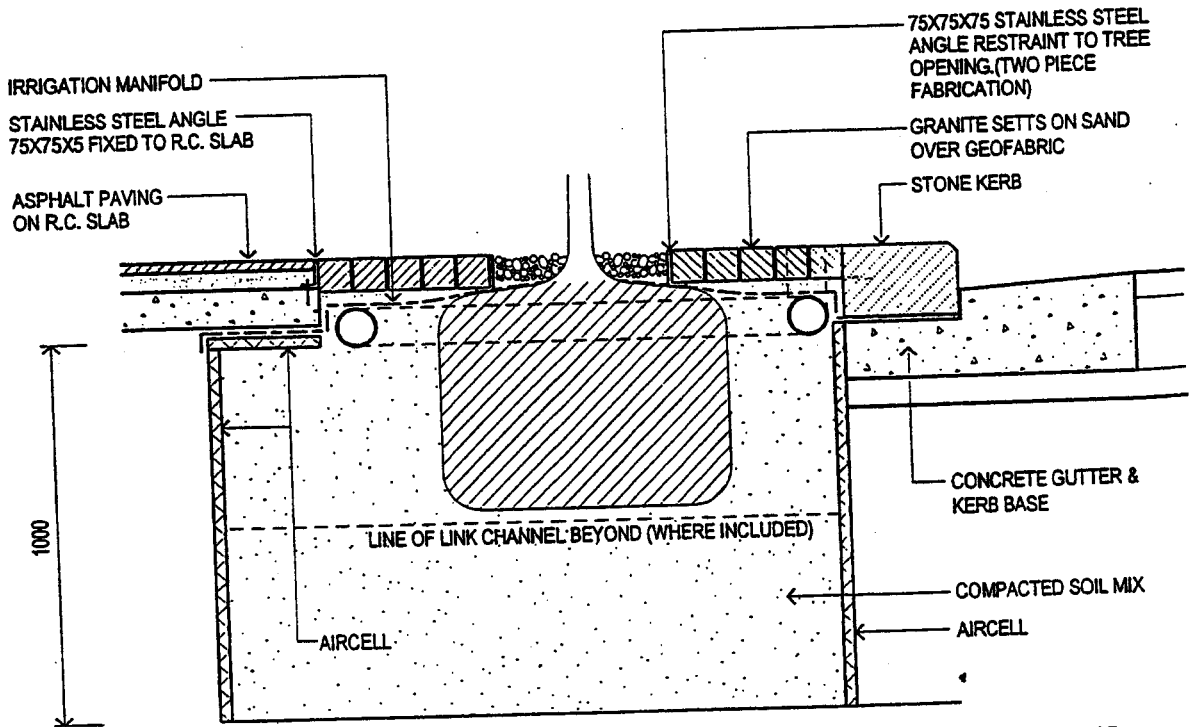
ASPHALT PAVING

GRATE 150 SQ. EQUAL TO 'SPS. SQUARE FLO SERIES' WITH HINGED LID.

75X75X75 STAINLESS STEEL ANGLE RESTRAINT TO TREE OPENING.(TWO PIECE FABRICATION)

STONE KERB

Plan 1:20



NOTE: GENERAL ARRANGEMENT AND DIMENSIONS OF TREE PIT AND LINK CHANNEL AS FOR 'TYPE 2' PAVING AREAS.

Section 1:20

TYPICAL TREE PLANTING - TYPE 3 AND 4 PAVING AREAS
DETAIL No. 14

