



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications

GE PE DN CC OP AM RE

Standard Construction Details – Series 3000

May 2024

Standard Construction Details (SCDs) – Series 3000

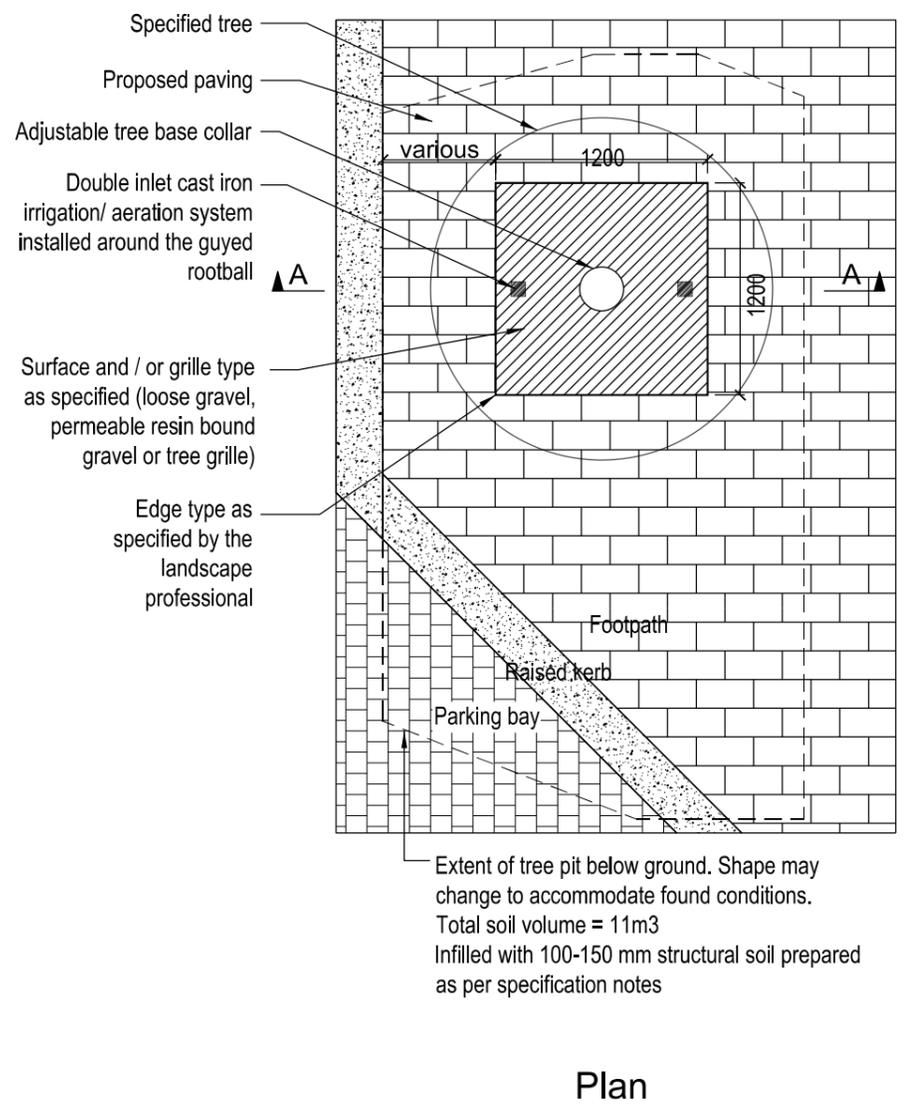
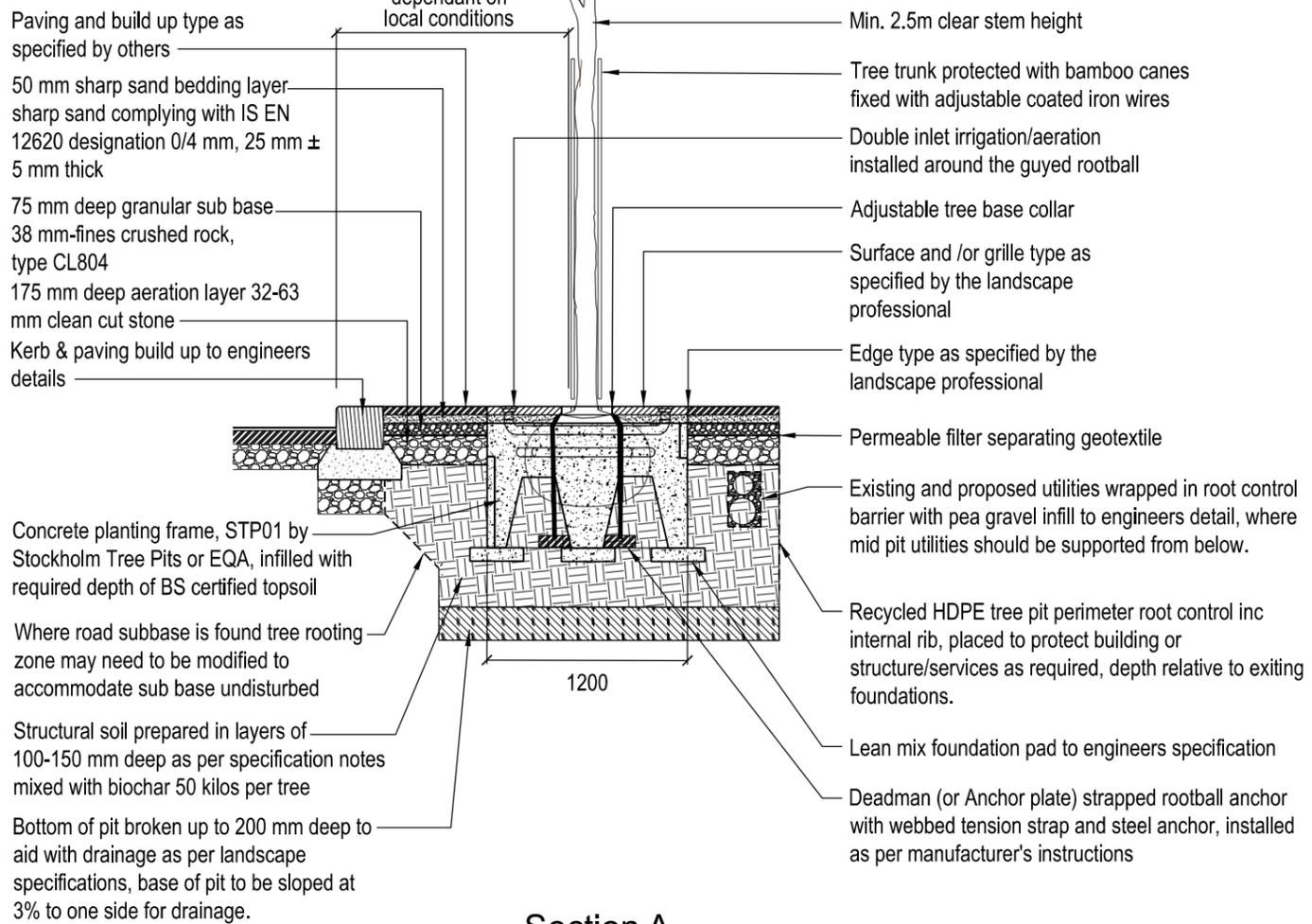
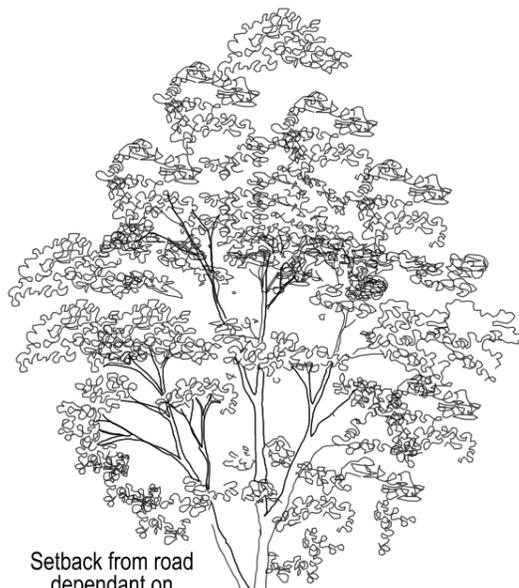
TII Publications contains Standard Construction Details (SCDs) for use on National Road schemes in Ireland. This composite document brings together all the Series 3000 SCDs from TII Publications current at the date of this document's publication, into a single location for convenience.

Every effort has been made to keep this composite document updated and available from the TII Publications website (<http://www.tiipublications.ie/>). Please note that the SCD drawings available from the TII Publications website (individually linked below) are the controlled versions for all SCDs.

The SCDs contained in this document are as follows:

Series 3000

CC-SCD-03001	Tree in Structural Soil
CC-SCD-03002	Tree in Soil Cells
CC-SCD-03003	Tree in Soft Landscape
CC-SCD-03004	Tree in Median
CC-SCD-03005	Tree Planting on Slope
CC-SCD-03006	Conifer Tree Planting
CC-SCD-03007	Transplant and Orchard Tree Planting
CC-SCD-03008	Whip/Notch Planting
CC-SCD-03009	Single Row Hedge Planting
CC-SCD-03010	Staggered Double Row Hedge Planting
CC-SCD-03011	Grassed Filter Strip
CC-SCD-03012	Grassed Dry Swale
CC-SCD-03013	Grassed Wet Swale
CC-SCD-03014	Low Fertility Bioretention in Ground Planter
CC-SCD-03015	Infiltration Basin
CC-SCD-03016	Engineered Soil For Perennial Scheme Low Fertility Planting
CC-SCD-03017	Concrete Tree Planting Frame for Structural Tree Pits



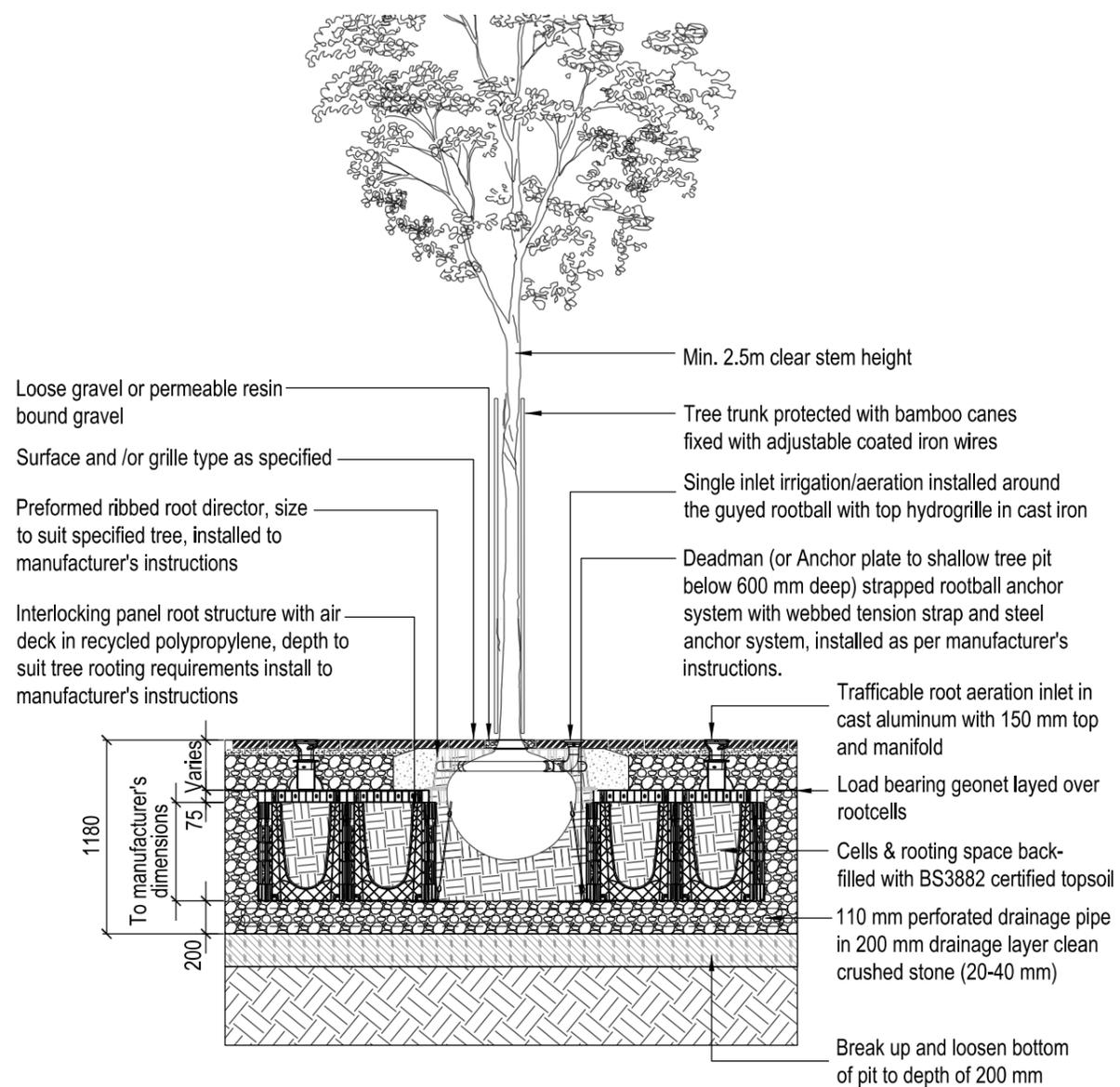
NOTES:

- Extent and shape of the tree pit dependant on site conditions and position of existing utilities but shall be a minimum 10 metres cubed of Structural soil and 1 metre cubed of certified topsoil for every tree.
- Tree pit infiltration subject to percolation test and possible additional drainage works maybe required. Where drainage is required a drainage pipe and connection to out fall will be provided, provision should be made for a network of trees to be connected in a linkage drainage chain.
- Structural Soil to be 80% crushed stone, 20% soil with 50 kilos biochar per tree.
- Where trees are adjacent to the carriageway or within vehicular sightlines, trees shall be selected to have a clear stem of 2.5m minimum, to avoid sightline interference.

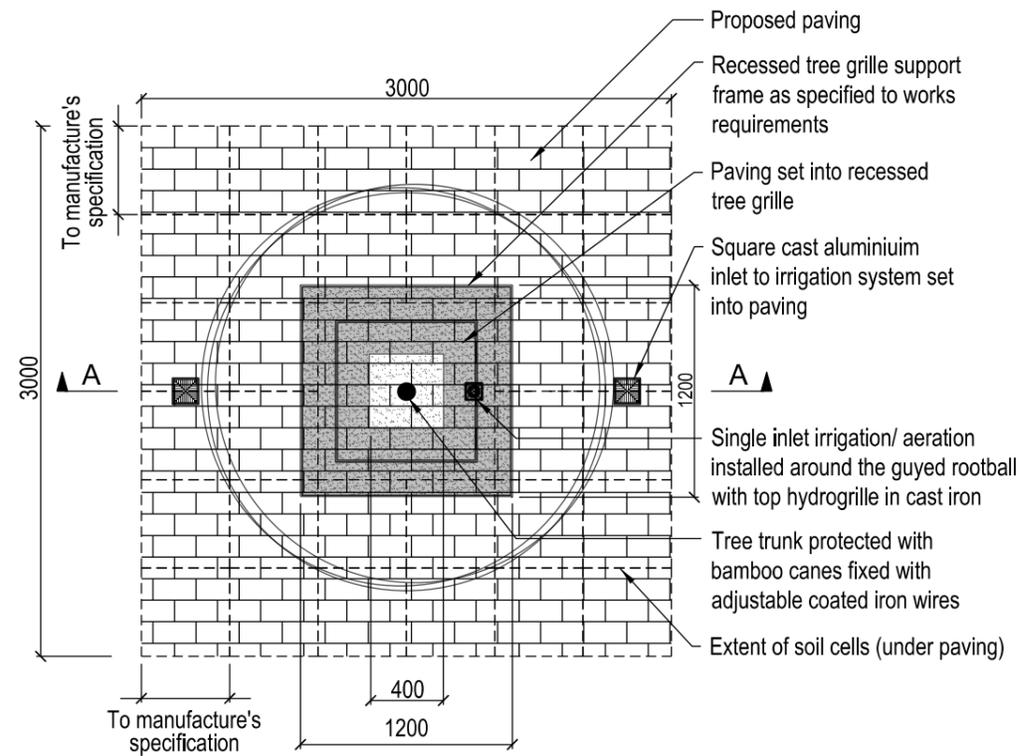


TREE IN STRUCTURAL SOIL

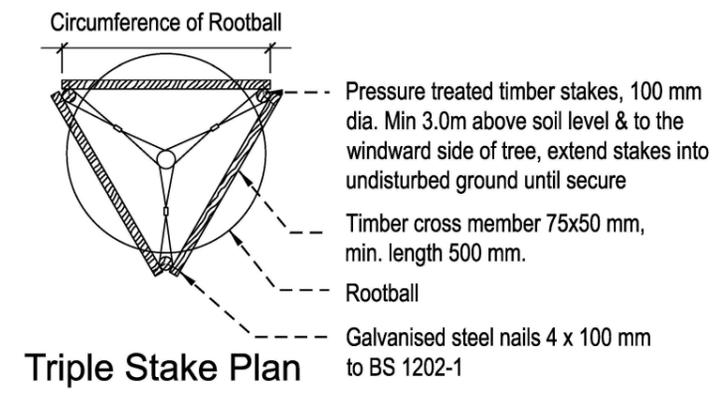
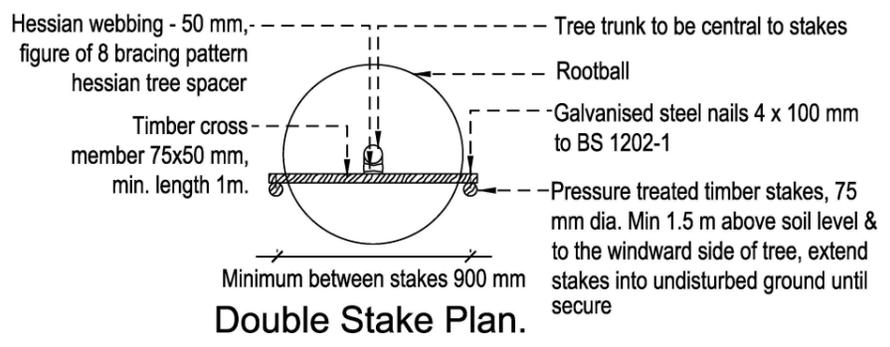
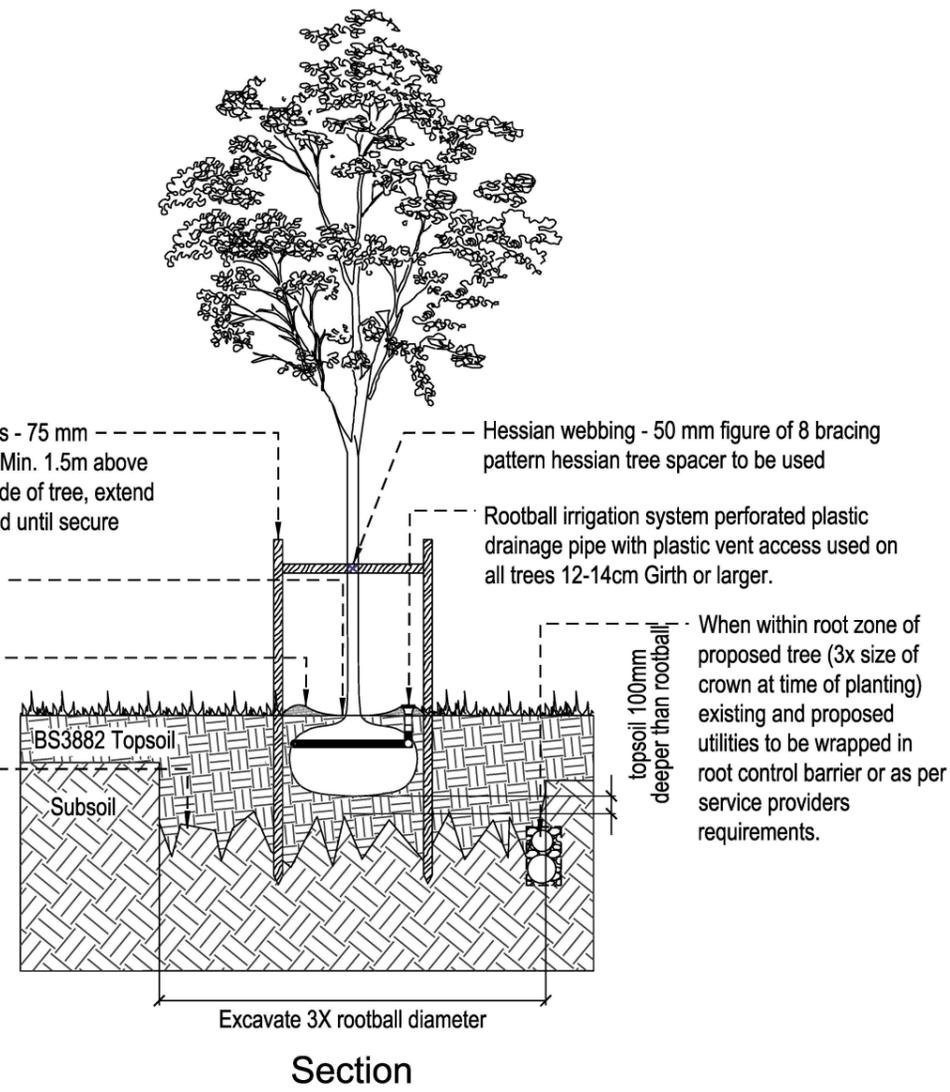
ACTIVITY		PUBLICATION TITLE			
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER
STANDARD CONSTRUCTION DETAIL (SCD)	A3	N/A	STANDARDS	MAY 2024	CC SCD 03001



Section A



Plan



Notes

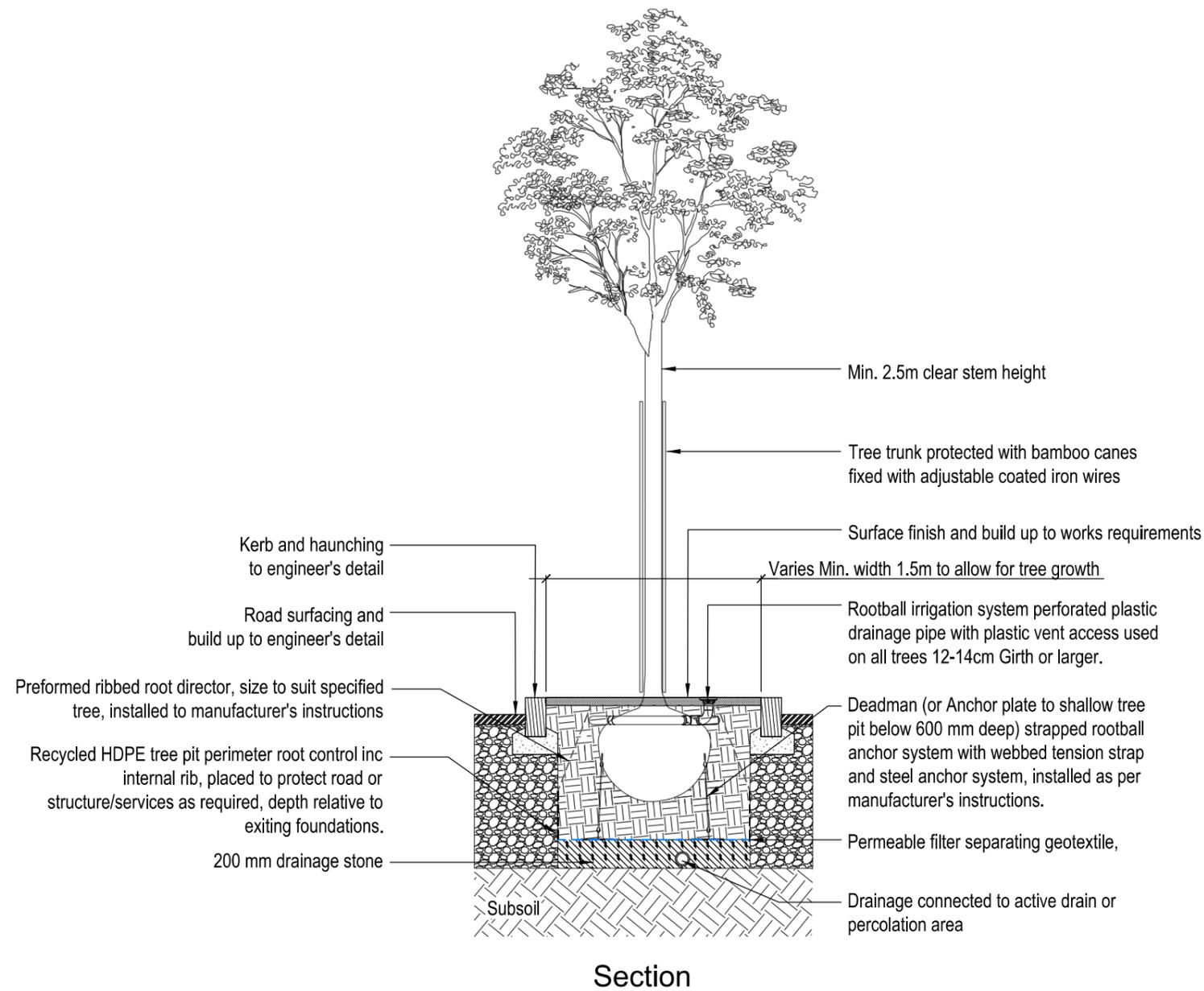
- Pit size and excavation relative to tree and rootball size, see Appendix of DN-ENV-03002
- Rootball size as per table 5.6 of DN-ENV-03001
- Tree pit to be filled with well composted and BS 3882 certified topsoil
- All trees up to heavy standard size to have double stake. Extra heavy standards and semi mature trees to have treble stakes. Remove all staking materials after 1 year. Remove fully or pull back rootball hessian and wire to expose half of the total rootball depth before backfilling.
- Deadman/below ground anchoring system is an acceptable tree planting method in soft landscape and is to be installed as per suppliers instructions
- Tree ties to be 50 mm or wider biodegradable Hessian. Spacer between the tree and stake shall be Hessian.
- Tree ties to be non abrasive and biodegradable and adjustable to allow 15 mm slack between tie and tree trunk.
- Zinc galvanized screws used to affix cross members, cross members to have pilot holes drilled to ensure a clean tight fit with stakes, to be fitted together off site to avoid damage to trees.



TREE IN SOFT LANDSCAPE

ACTIVITY	PUBLICATION TITLE	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER		
STANDARD CONSTRUCTION DETAIL (SCD)		N/A	STANDARDS	MAY 2024	ACTIVITY	STREAM	DRAWING NUMBER
					CC	SCD	03003

Note:
 -Minimum width for tree planting 1.5m
 -Minimum width for shrub /single hedge planting 0.8m
 -Minimum width for double hedge planting 1.2m



Section



PUBLICATION TITLE
 TREE IN MEDIAN

STREAM
 STANDARD CONSTRUCTION DETAIL (SCD)

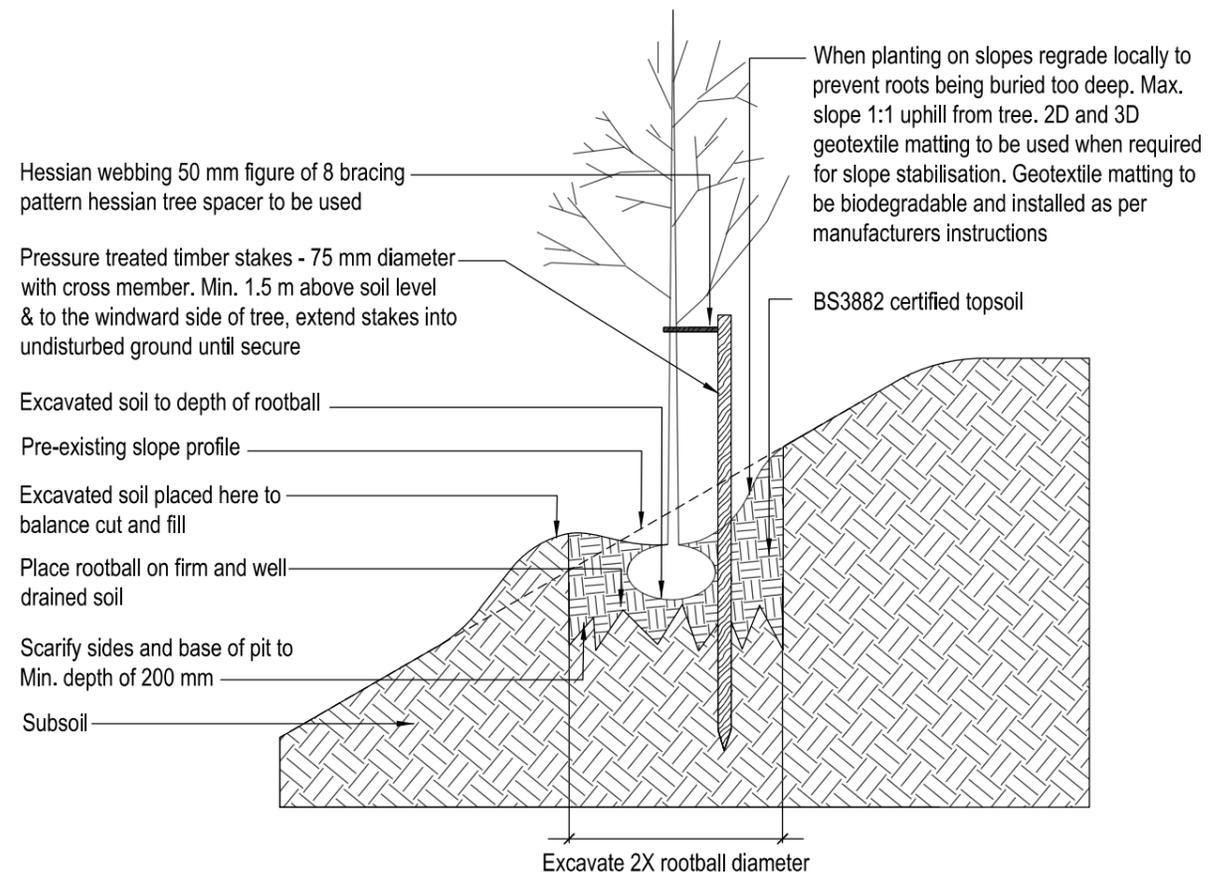
SHEET
 A3

HISTORICAL REFERENCE
 N/A

DOCUMENTATION SET
 STANDARDS

PUBLICATION DATE
 MAY 2024

PUBLICATION NUMBER		
ACTIVITY	STREAM	DRAWING NUMBER
CC	SCD	03004



Section

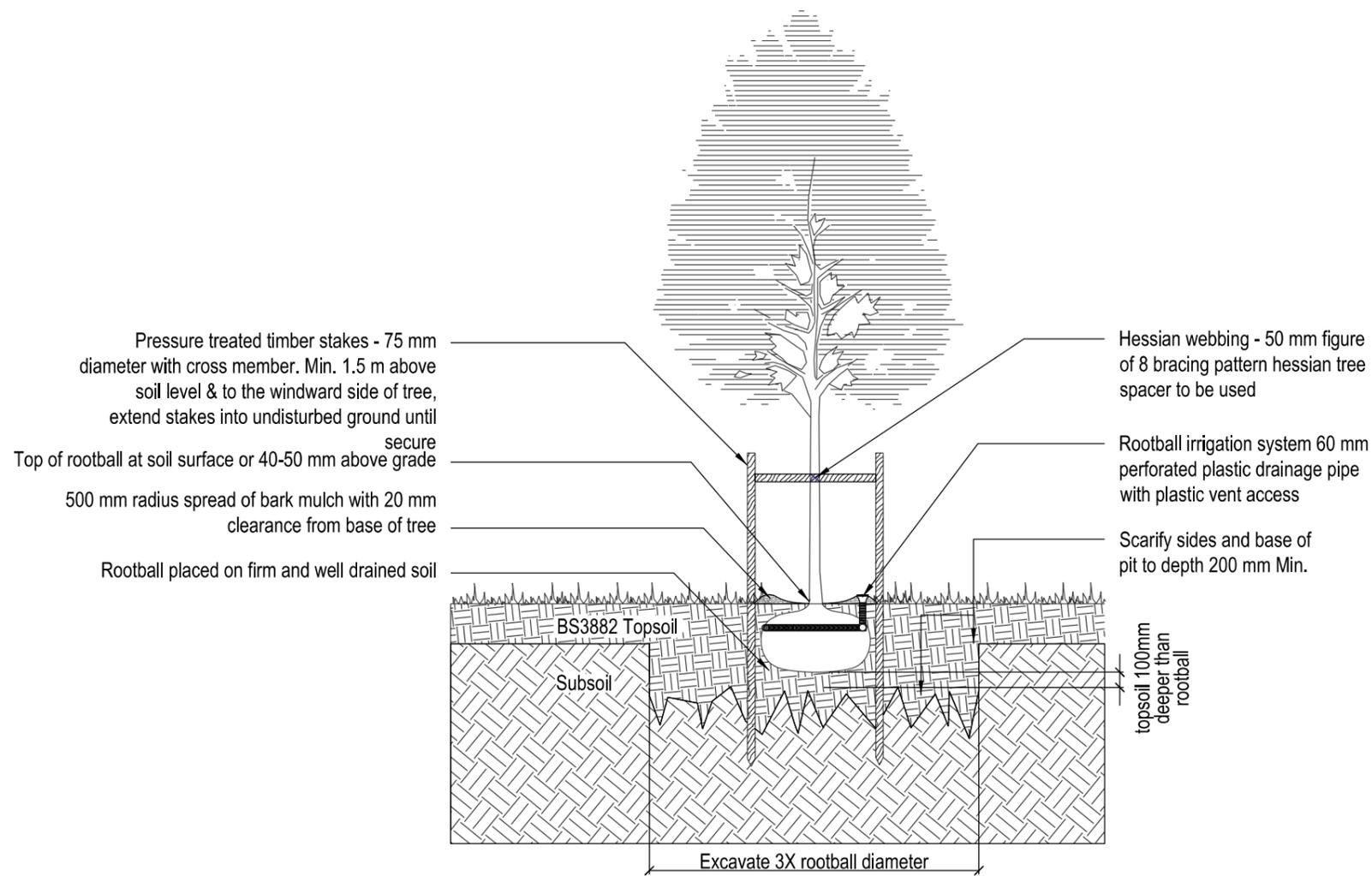
Notes

- Pit size and excavation relative to tree and rootball size, see Appendix of DN-ENV-03002
- Rootball size as per table 5.6 of DN-ENV-03001
- Tree pit to be filled with well composted and BS 3882 certified topsoil

All trees up to heavy standard size to have double stake. Extra heavy standards and semi mature trees to have treble stakes.

Remove all staking materials after 1 year.

Remove fully or pull back rootball hessian and wire to expose half of the total rootball depth before backfilling.



Pressure treated timber stakes - 75 mm diameter with cross member. Min. 1.5 m above soil level & to the windward side of tree, extend stakes into undisturbed ground until secure
 Top of rootball at soil surface or 40-50 mm above grade
 500 mm radius spread of bark mulch with 20 mm clearance from base of tree
 Rootball placed on firm and well drained soil

Hessian webbing - 50 mm figure of 8 bracing pattern hessian tree spacer to be used
 Rootball irrigation system 60 mm perforated plastic drainage pipe with plastic vent access
 Scarify sides and base of pit to depth 200 mm Min.

BS3882 Topsoil
 Subsoil
 topsoil 100mm deeper than rootball

Excavate 3X rootball diameter

Section

- Notes**
- Pit size and excavation relative to tree and rootball size, see Appendix of DN-ENV-03002
 - Rootball size as per table 5.6 of DN-ENV-03001
 - Tree pit to be filled with well composted and BS 3882 certified topsoil

All trees up to heavy standard size to have double stake. Extra heavy standards and semi mature trees to have treble stakes.

Remove all staking materials after 1 year.

Remove fully or pull back rootball hessian and wire to expose half of the total rootball depth before backfilling.

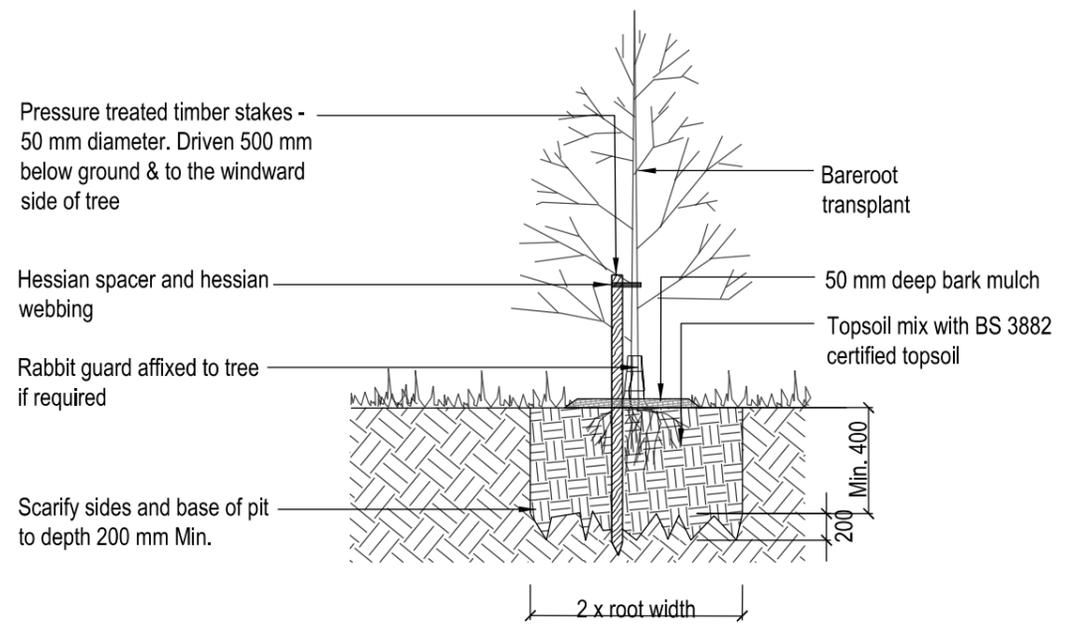
Times of year for planting conifers and evergreens: September/ October or April/ May.



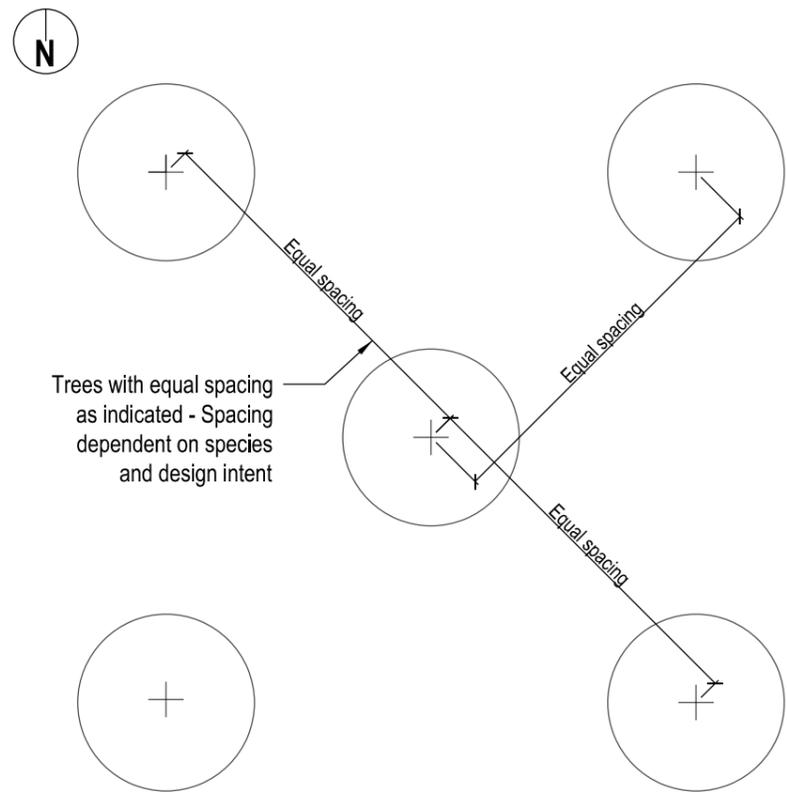
CONIFER TREE PLANTING

ACTIVITY		PUBLICATION TITLE		
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE
STANDARD CONSTRUCTION DETAIL (SCD)	A3	N/A	STANDARDS	MAY 2024
		PUBLICATION NUMBER		
ACTIVITY	STREAM	DRAWING NUMBER		
CC	SCD	03006		

Notes:
 Where available site excavated stored topsoil to be mixed with on site with PAS 100 compost, 50/50% mix.



Section



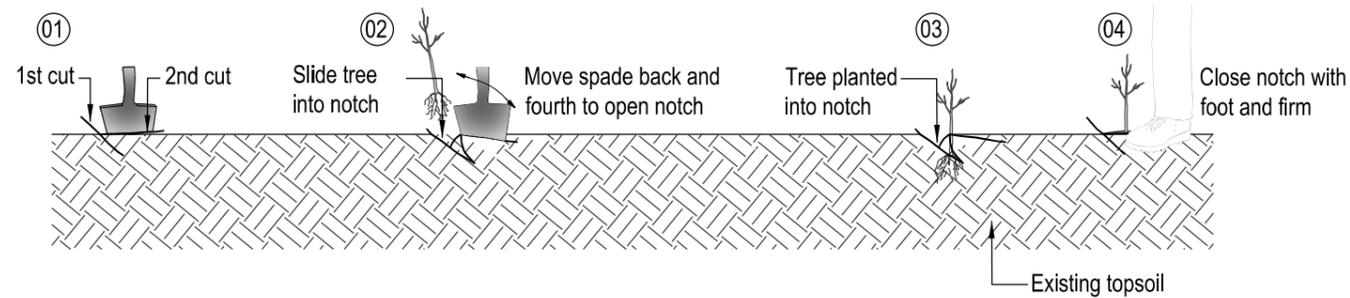
Plan view of quincunx planting arrangement/
 Regular arrangement of fruit trees



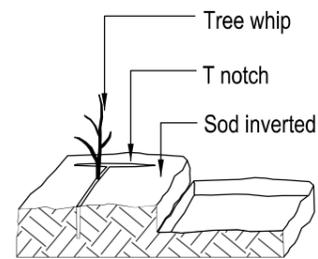
TRANSPLANT AND ORCHARD TREE PLANTING

ACTIVITY		PUBLICATION TITLE			PUBLICATION NUMBER		
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	ACTIVITY	STREAM	DRAWING NUMBER
STANDARD CONSTRUCTION DETAIL (SCD)	A3	N/A	STANDARDS	MAY 2024	CC	SCD	03007

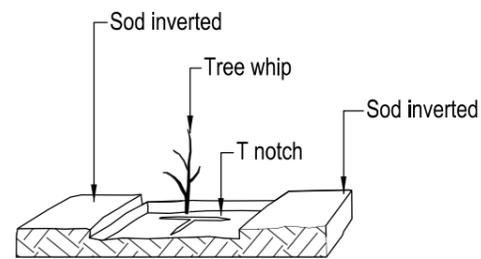
Notes:
 Existing ground/soil conditions to be inspected by a landscape professional prior to commencing works. Ground preparation works may be required to facilitate and enable healthy establishment. Spacing of whip planting as per design intent.



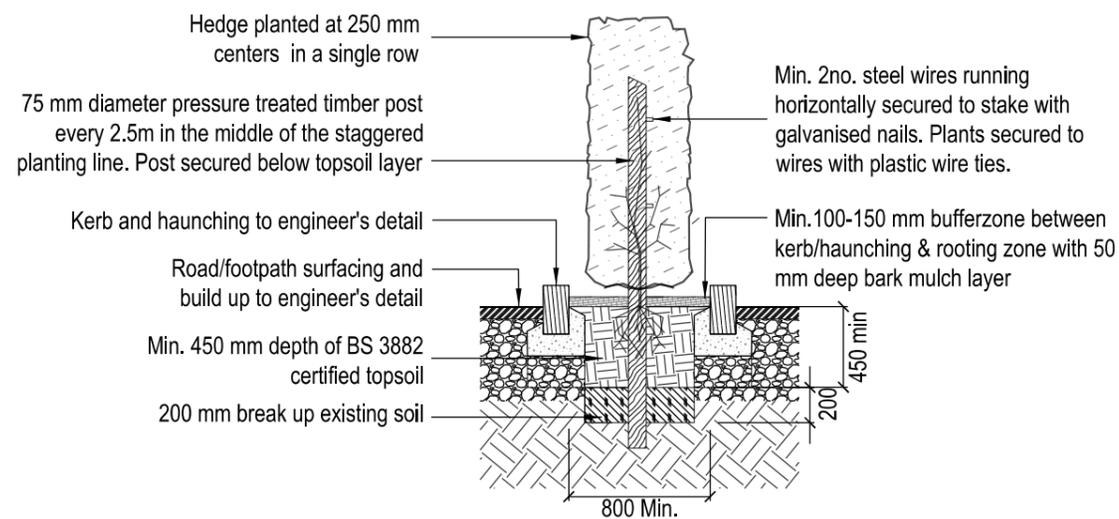
Whip planting in existing topsoil



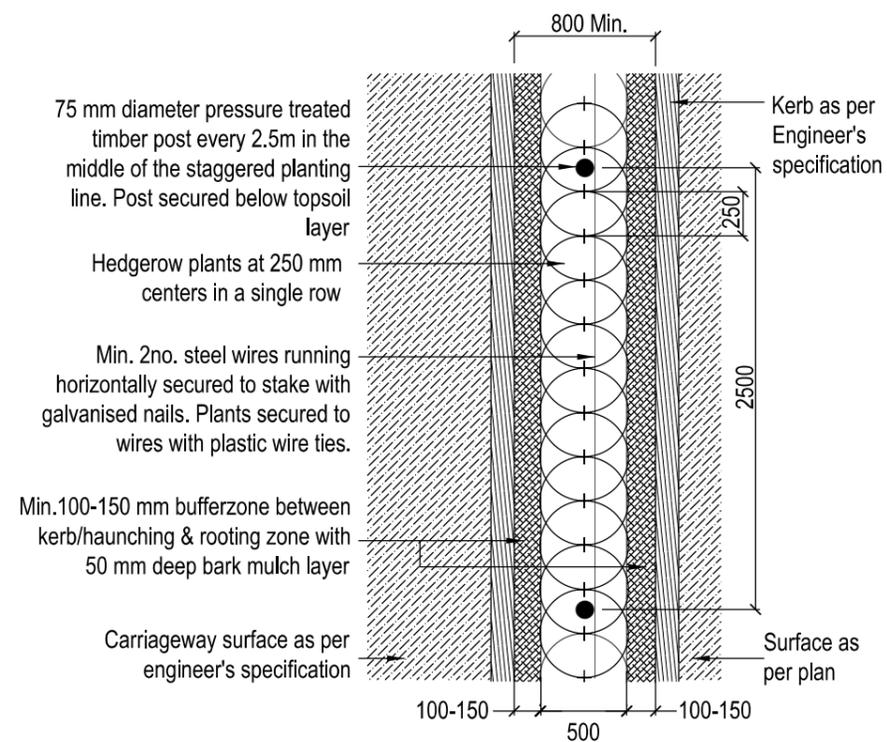
Whip planting in wet meadow



Whip planting in dry meadow



Detail of Single Row Hedge Planting
Shown planted into road median/verge
Section



Plan of Single Row Hedge
Planting

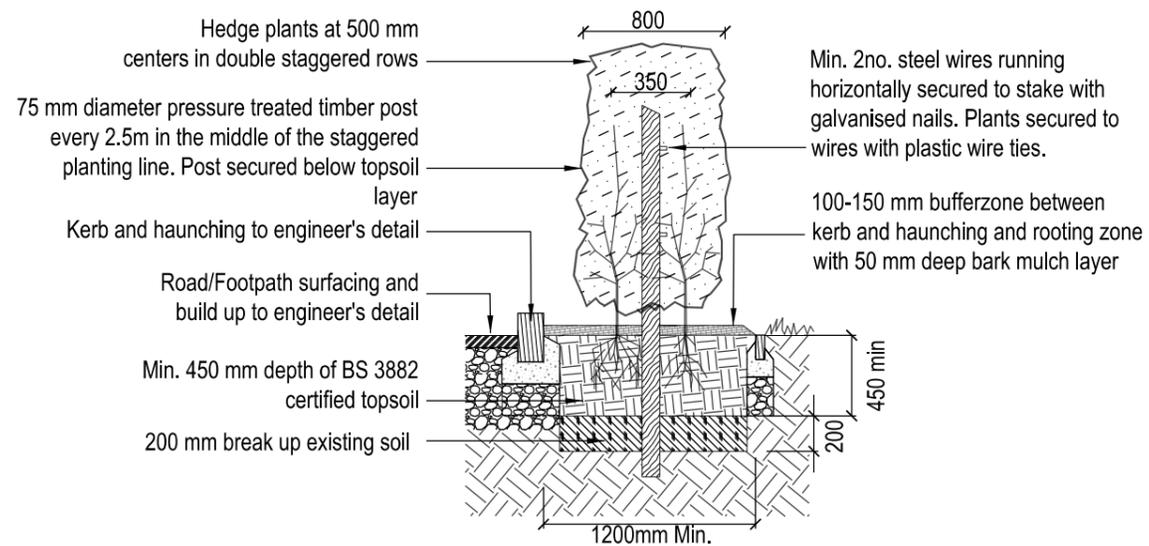
Notes:
Where available site excavated stored topsoil to be mixed with on site with PAS 100 compost, 50/50% mix.

Prepare the plants by: Pruning back any damaged roots to healthy growth; placing roots of waiting plants in water whilst planting; applying an approved mycorrhizal root-dip.

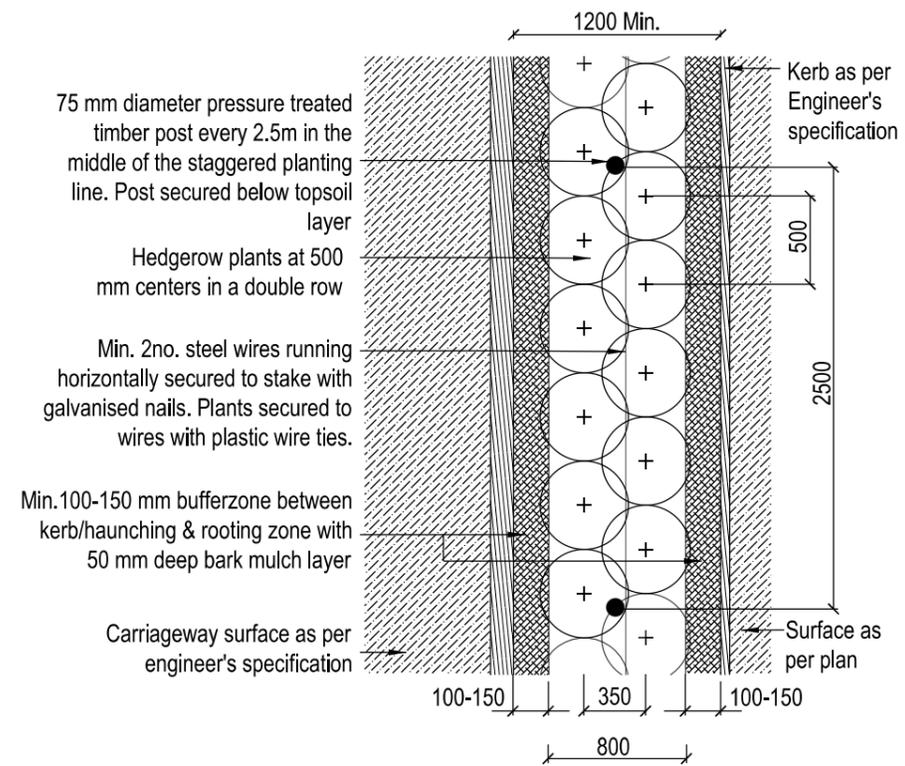
After placing the plants in the trench backfill the trench to half its depth and firm by treading. Once planting is complete backfill with the remaining soil and firm as before.

Topdress the planting area with 50 mm of bark mulch.

Total pit width may vary minimum 800 mm wide, pit size may vary depending on location and engineering constraints.



Detail of Staggered Double Row Hedge planting
For wider verge or as standalone hedge
Section



Plan of Staggered Double Row
Hedge planting

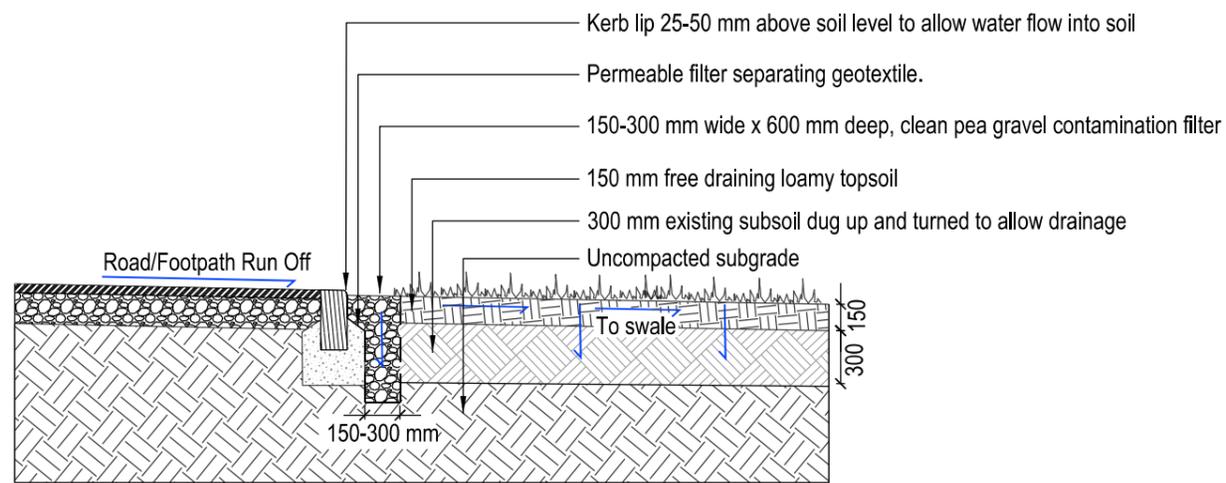
Notes:
Where available site excavated stored topsoil to be mixed with on site with PAS 100 compost, 50/50% mix.

Prepare the plants by: Pruning back any damaged roots to healthy growth; placing roots of waiting plants in water whilst planting; applying an approved mycorrhizal root-dip.

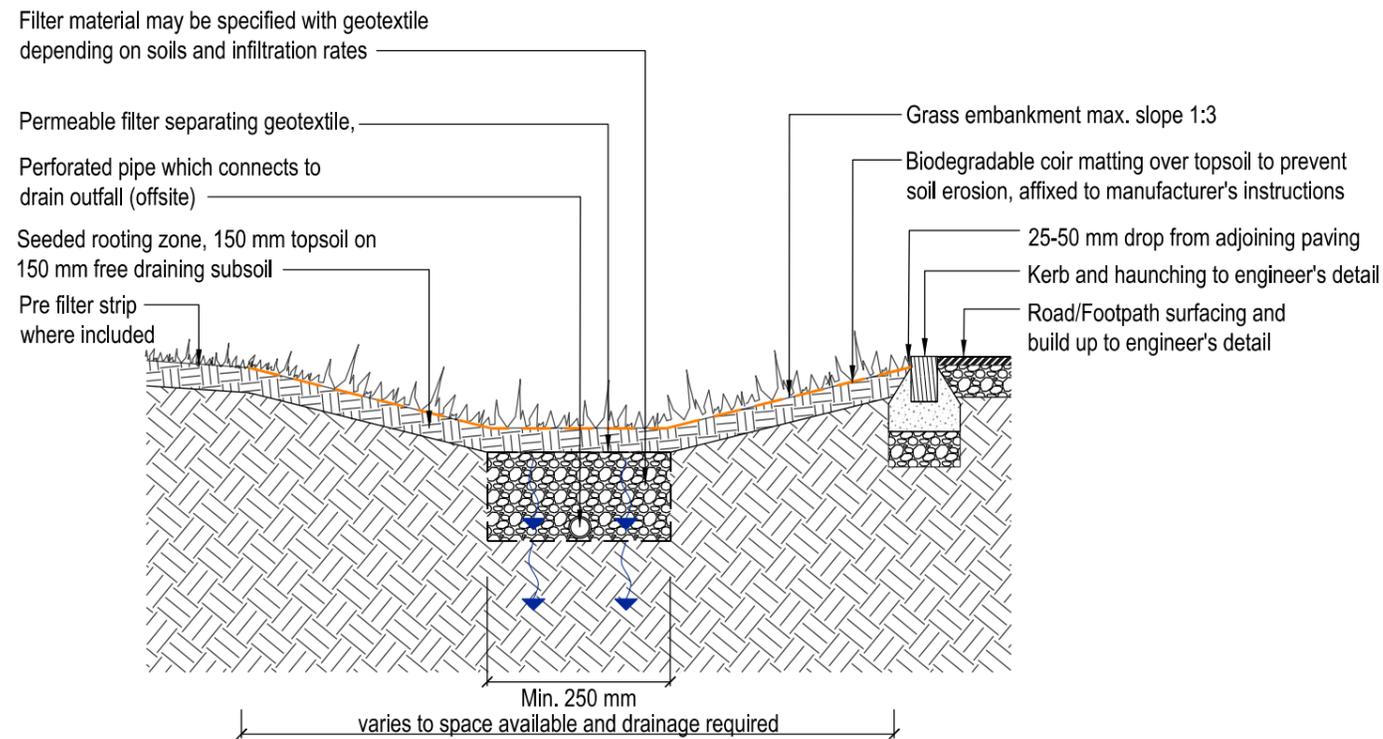
After placing the plants in the trench backfill the trench to half its depth and firm by treading. Once planting is complete backfill with the remaining soil and firm as before.

Top dress the planting area with 50 mm of bark mulch.

Total pit width to vary from 850 mm min to 1200 mm max, pit size to vary depending on location and engineering constraints.

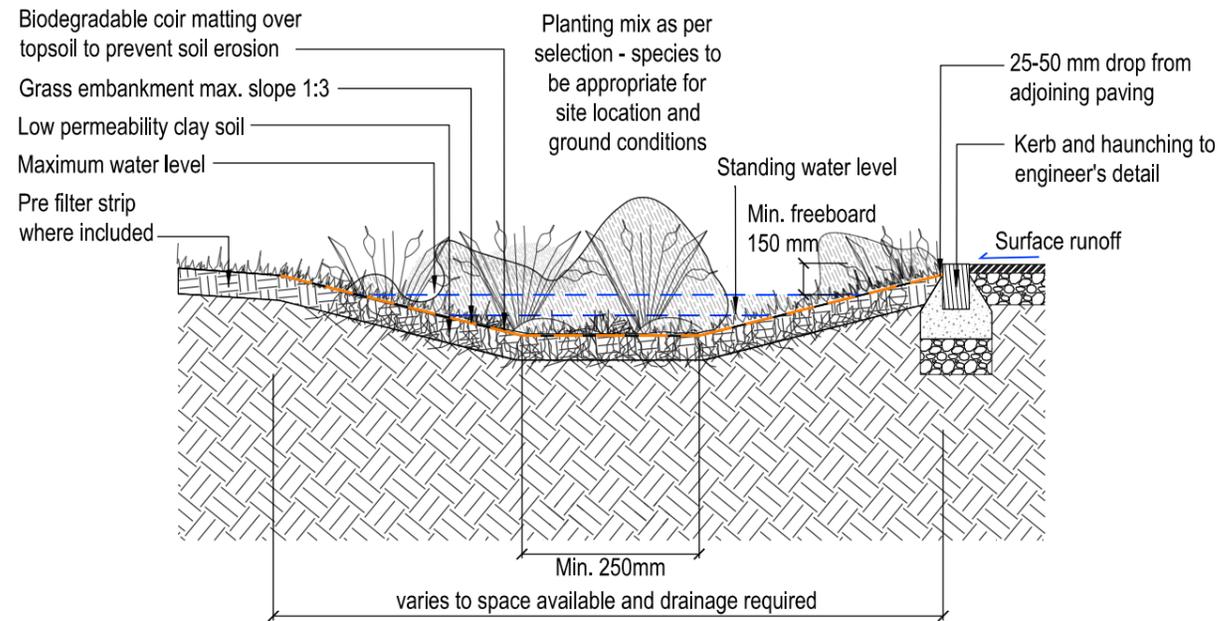


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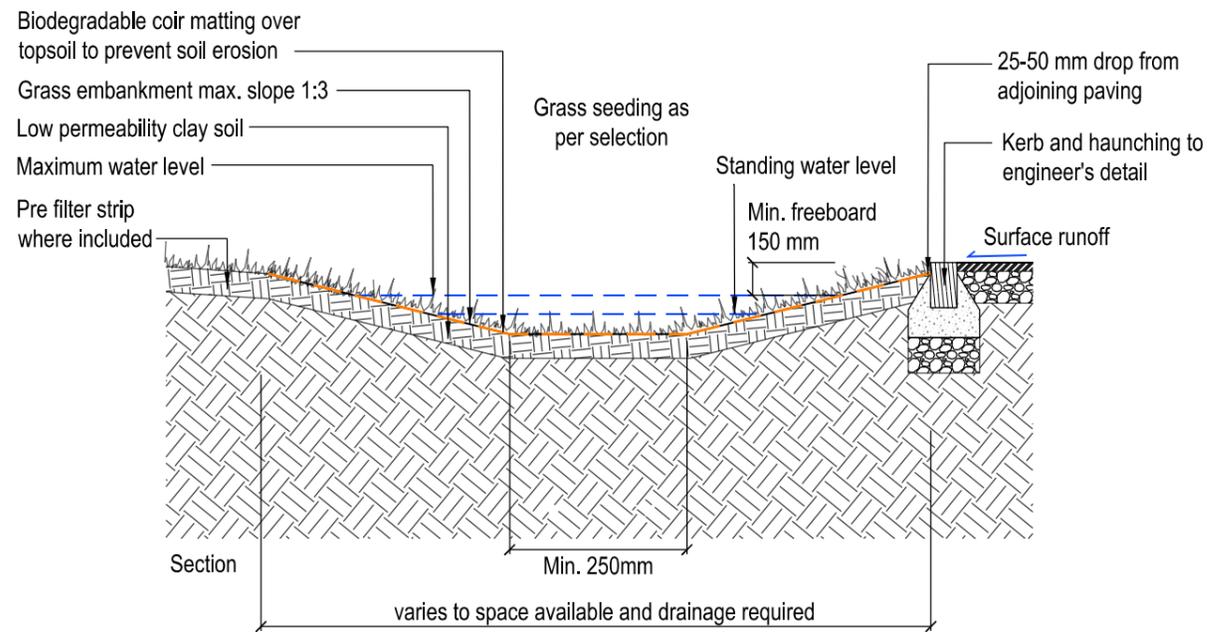


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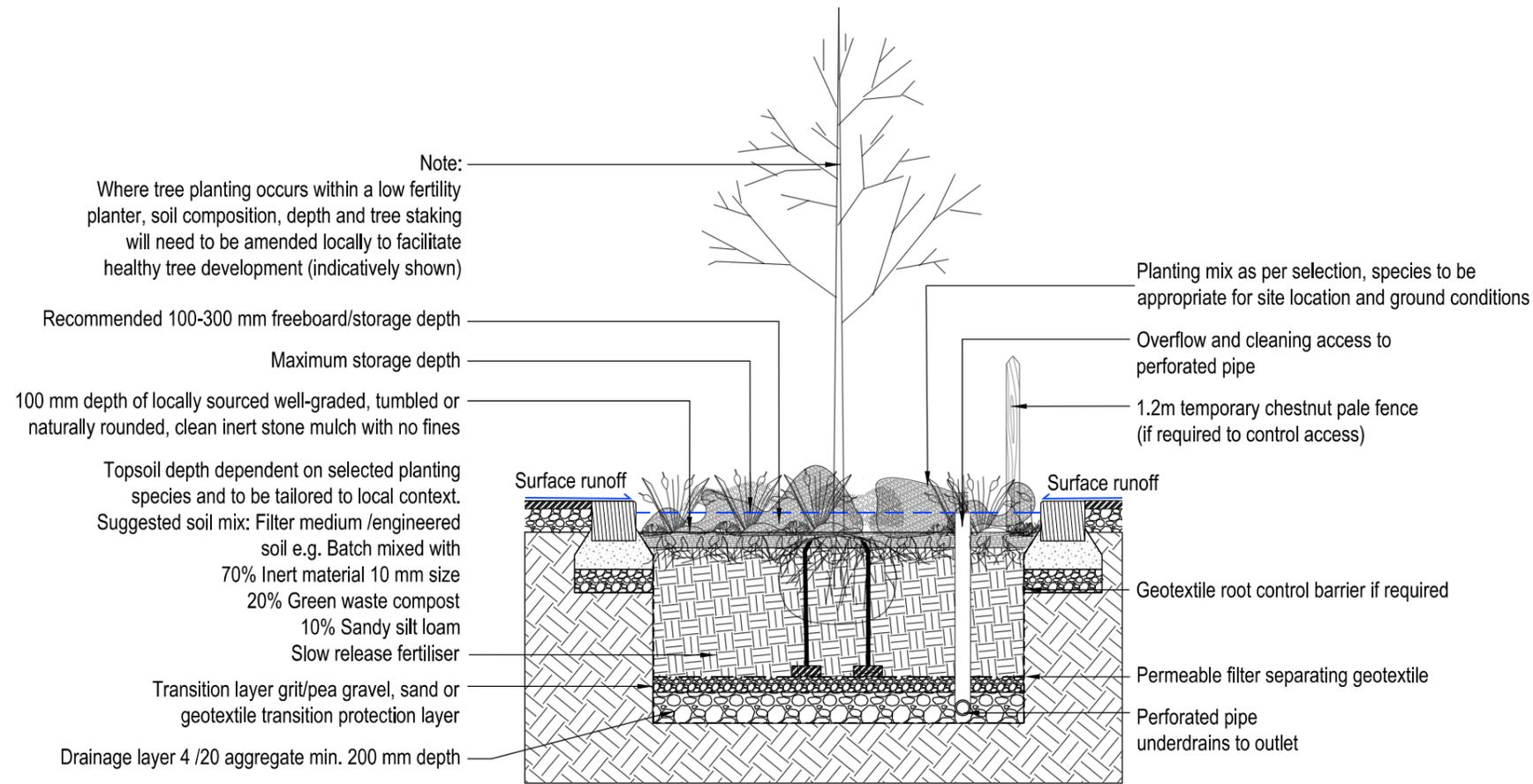
Notes:
 Overflow drain to be located at high water mark if required by drainage conditions



Section of Planted Wet Swale



Section of Grass Wet Swale



Notes:
 All planting to be carried out in accordance with BS 3936-1-11 : 1992.
 - Perennials and ornamental grasses in 2-3L pots planted at 5-7 plants per M2 with variance acceptable specific to species requirements, as outlined in the planting schedule.
 - Perennials and ornamental grasses in P9 pots planted at 10 plants per M2, used where rapid establishment is required reduced maintenance.

Trial planting pit shall be constructed and approved by the project team in advance of construction.

Engineered soil shall encourage reuse of existing materials.

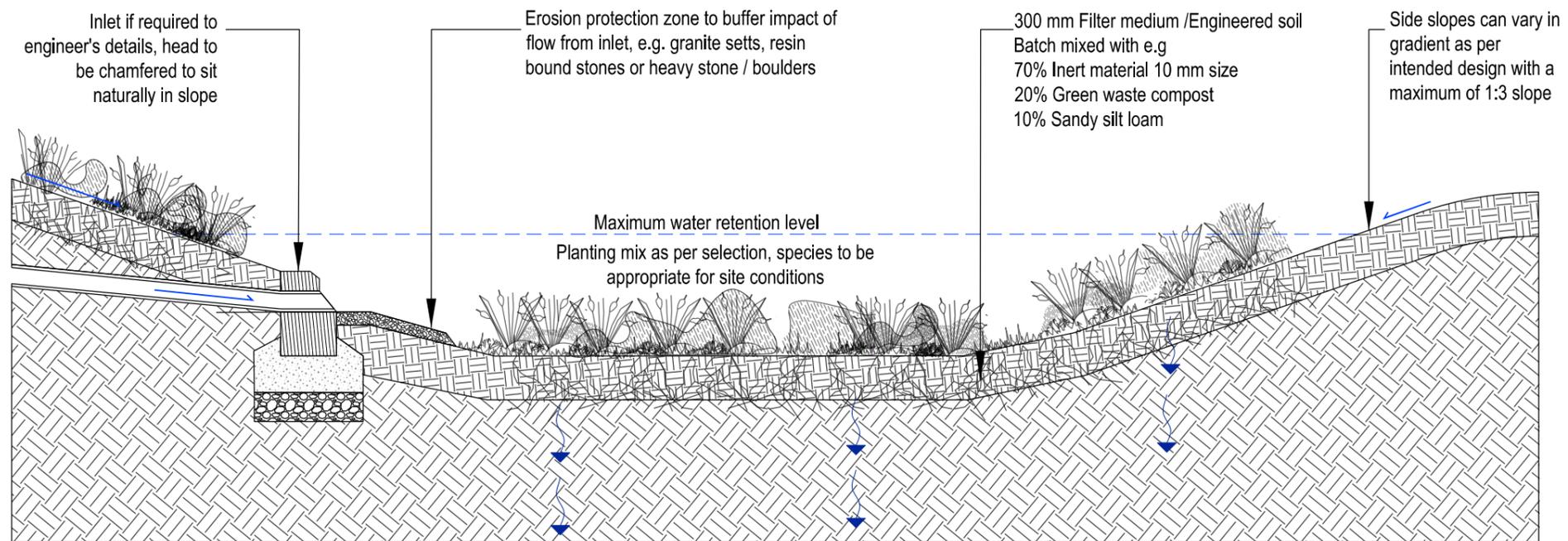
Engineered soil may be composed of
 - 70% Locally sourced inert material 10 mm size
 - 20% Green waste compost
 - 10% Sandy silt loam
 - Slow release fertiliser

Section

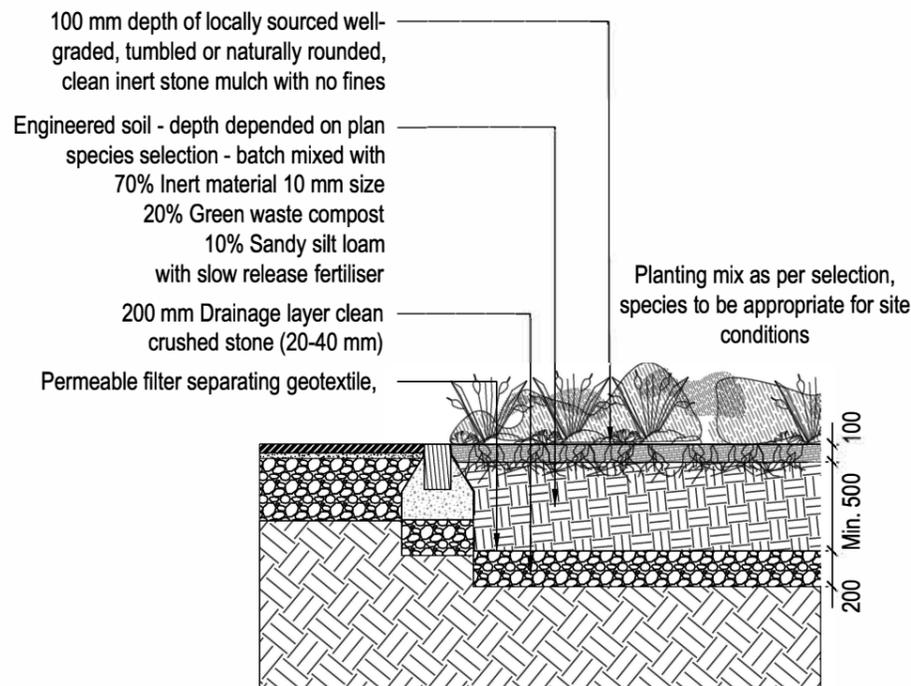


LOW FERTILITY BIORETENTION
 IN GROUND PLANTER

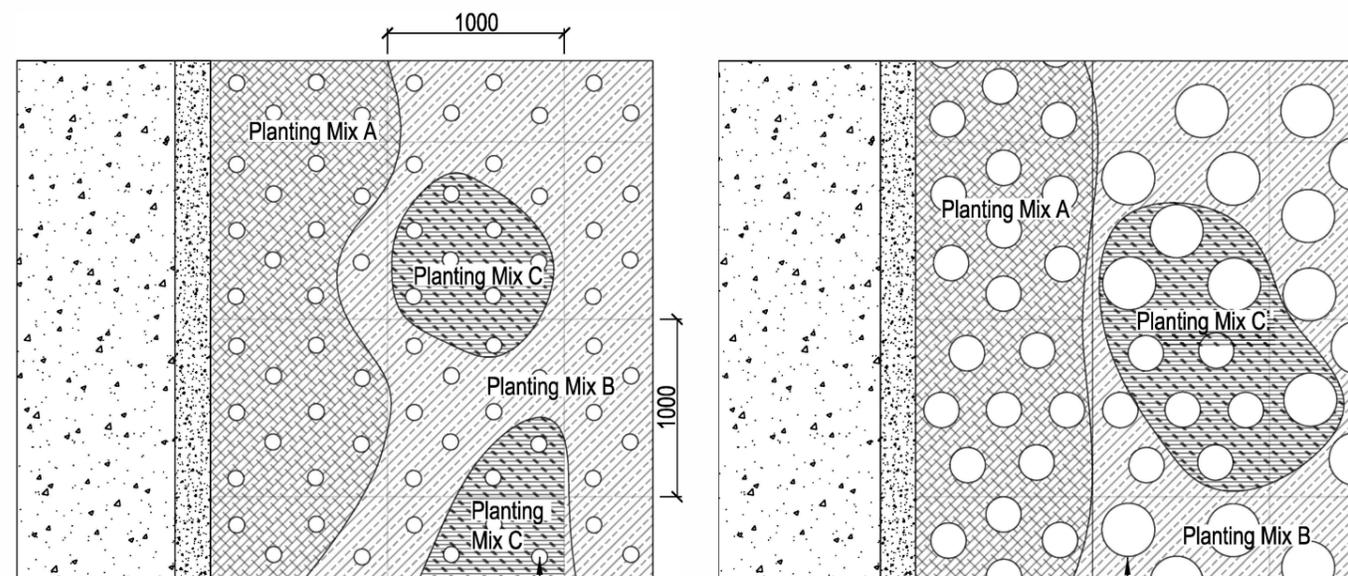
ACTIVITY		PUBLICATION TITLE		
STANDARD CONSTRUCTION DETAIL (SCD)		LOW FERTILITY BIORETENTION IN GROUND PLANTER		
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE
	A3	N/A	STANDARDS	MAY 2024
ACTIVITY		PUBLICATION NUMBER		
CC	SCD	DRAWING NUMBER		03014



Section



Section

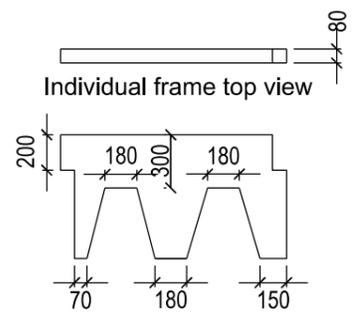


Plan

Notes:

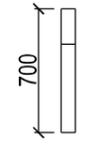
- All planting to be carried out in accordance with BS 3936-1-11 : 1992.
- Perennials and ornamental grasses in 2-3L pots planted at 5-7 plants per M2 with variance acceptable specific to species requirements, as outlined in the planting schedule.
- Perennials and ornamental grasses in P9 pots planted at 10 plants per M2, used where rapid establishment is required reduced maintenance.
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 - 20% Green waste compost
 - 10% Sandy silt loam
 - Slow release fertiliser

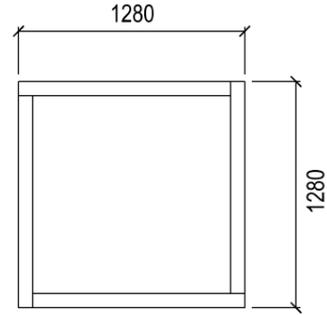


Individual frame top view

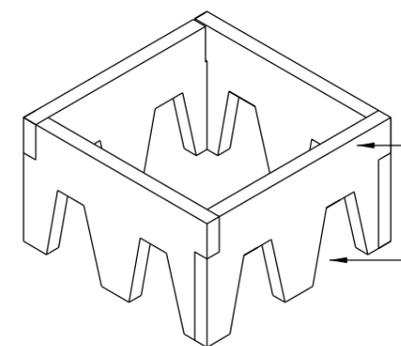
Individual frame front elevation



Individual frame side elevation



Plan section



Individual units reinforced with 5.5 mm diameter rebar
25 mm Min. concrete cover

Concrete tree planting frames to be fastened together with ratchet straps

4 frames, held together with ratchet straps (not shown)



CONCRETE TREE PLANTING FRAME FOR STRUCTURAL SOIL TREE PITS

ACTIVITY		PUBLICATION TITLE					
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	ACTIVITY	STREAM	DRAWING NUMBER
STANDARD CONSTRUCTION DETAIL (SCD)	A3	N/A	STANDARDS	MAY 2024	CC	SCD	03017



 Ionad Ghnó Gheata na Páirce,
Stráid Gheata na Páirce,
Baile Átha Cliath 8, D08 DK10, Éire

 Parkgate Business Centre,
Parkgate Street,
Dublin 8, D08 DK10, Ireland

 www.tii.ie

 info@tii.ie

 +353 (01) 646 3600

 +353 (01) 646 3601