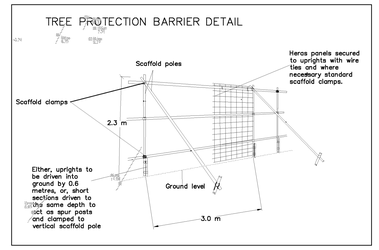
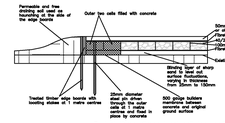
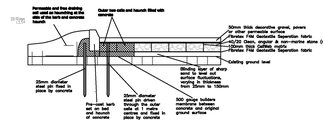


TREE PROTECTION BARRIER DETAIL





Typical three dimensional cellular confinement system design with timber retaining boards and reinforced edges.
Drawn by Mark Carter.
All dimensions are illustrative and subject to engineer's specifications
© MJC Tree Services Limited



Typical three dimensional cellular confinement system design with no dig kerbs and reinforced edges.
Drawn by Mark Carter.
All dimensions are illustrative and subject to engineer's specifications
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Tree Protection Plan & Arboricultural Method Statement.

1.0 The proposed development will be carried out in strict accordance with the following Tree Protection Plan and Arboricultural Method Statement, and in the following sequence of events. This plan and statement will cover the following heads of terms, see separate notes below for the specific tree protection measures and methodologies for each head of terms:
1.1 Appointment of the responsible person:
1.2 Agreement of the arboricultural monitoring timetable:
1.3 Distribution of Tree Protection Plan and Arboricultural Method Statement:
1.4 General measures, including access, storage of materials etc.:
1.5 Tree works:
1.6 Tree protection barrier erection:
1.7 Stump grubbing out:
1.8 to 1.11 Construction works:
1.8 Hard surface construction in the hard surface retentions areas:
1.9 Underground service installations:
1.10 Fencing works in the RPA of retained trees:
1.11 Soft landscaping in the RPA of retained trees.

1.1 Appointment of the responsible person.
1.1.1 Before any site works, including site clearance, take place, a person will be made responsible for the correct and full implementation of the plan and statement (the responsible person). The responsible person will typically be the project manager or site manager, but whoever is appointed they will be responsible for the full and correct implementation of this plan and statement, and will be deemed liable for any failure to correctly and fully implement this plan.
1.1.2 When appointed, the responsible person will inform the Local Planning Authority and the project Arboriculturist of their appointment and will supply both with a full set of contact details.

1.2 Agreement of the arboricultural monitoring timetable.
1.2.1 Before any site works, including site clearance, take place, a site meeting will be held with the responsible person, the site/project manager, the Local Planning Authority's Tree Officer and the project Arboriculturist. The purpose of this meeting will be to confirm the tree protection measures required by the Tree Protection Plan & Arboricultural Method Statement, a timetable of ongoing site monitoring and reporting to be carried out by the project Arboriculturist.
1.2.2 Further arboricultural monitoring and reporting will be carried out by the project Arboriculturist in accordance with the timetable agreed at the above meeting.
1.2.3 A brief letter report will be produced by the project Arboriculturist following each site visit and a copy of this letter supplied to the responsible person and the Local Planning Authority's tree officer.

1.3 Distribution of tree protection plan and arboricultural method statement.
1.3.1 It is the responsibility of the responsible person to ensure that all staff and contractors working on the development are aware of and abide by this Tree Protection Plan & Arboricultural Method Statement.
1.3.2 A scale copy of this plan will be attached to the site office notice board. Copies of this plan will always be available for taking out on site as necessary.
1.3.3 Reference to this Tree Protection Plan & Arboricultural Method Statement will form part of the standard induction briefing for all personnel coming onto site.

1.4 General measures, including access, storage of materials etc..
1.4.1 The following measures and restrictions will apply at all times.
1.4.2 No construction vehicles, materials or equipment will be permitted onto the site until the tree works are completed and the tree protection barriers have been erected. The only exception to this is vehicles, materials and equipment specifically required to erect the tree protection barriers, and this will avoid the unsurfaced root protection area (RPA) of the retained trees.
1.4.3 All construction traffic access will be via the existing road off the main road, and the proposed site entrance off that road.
1.4.4 When any large and/or tall and/or jibbed vehicles/equipment are operating or manoeuvring close to the crowns of trees to be retained, a specific banksperson will be employed to ensure that no branches are damaged or broken due to accidental contact by the cranes of these trees through impact.
1.4.5 All activities usually carried out in the compound area, eg. the storage of materials and equipment, the mixing of concrete and mortar, the siting of rest cabins and the site office etc., will take place outside and down slope from the construction exclusion zones created by the tree protection barriers.
1.4.6 Any facilities for the storage of oils, fuels or chemicals shall be located at least 5 metres outside and down slope from the construction exclusion zones created by the tree protection barriers, in tanks on impervious bases and surrounded by impervious bund walls. The volume of the bund compound shall be at least equivalent to the capacity of the tank plus 10%. If there is a multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks, plus 10%. All filling points, vents, gauges and sight glasses shall be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipework shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.
1.4.7 All underground services will be carefully routed so as to avoid crossing the RPA of all the retained trees.
1.4.8 No fires will be permitted within 50 metres of the crown edge of any retained tree.

1.5 Tree Works.
1.5.1 Before any construction works commence, and before any construction vehicles, equipment and materials are delivered to site, the following tree works will be carried out.
1.5.1.1 Group no. G2 & tree no. T4 – Crown lift and/or reduce as necessary in order to create a 5.5 metre clearance over the proposed road and tracks.
1.5.1.2 Group no. G3 – Remove the south western end of this group and associated hedge, and crown lift and/or reduce the remaining group and associated hedge as necessary in order to create a 5.5 metre clearance over the proposed road and tracks, all as illustrated with a red crown margin in this plan i.e. the red crown margin illustrates the crown to be removed, the green crown margin illustrates the crown to be retained after cutting back.
1.5.1.3 Tree no. T5 – Fell.
1.5.1.4 Scrub growth and scrubby hedges in the vicinity of the site entrance – Cut back as necessary in order to clear the proposed road, pavement and tracks, as illustrated with red crown margins in this plan.
1.5.1.5 Hedge small section of continuous sections of hedge immediately to the south east of the existing access road near the entrance – Remove (not identified on drawing) & replant.
1.5.1.6 Group no. G21 – Cut back as illustrated i.e. the red crown margin illustrates the crown to be removed, the green crown margin illustrates the crown to be retained after cutting back.
1.5.1.7 Group no. G22 – Fell.
1.5.1.8 Hedge no. H27 – Remove a 5.5 metre length of this hedge from the north western end, as illustrated with a red crown margin.
1.5.1.9 Hedge along south eastern boundary between this site and the immediately neighbouring development site – Remove three sections as illustrated with red crown margins in this plan.
1.5.2 All tree works will be carried out in accordance with the following stipulations.
1.5.2.1 All tree works will be carried out in accordance with BS3998:2010 or whereer that Standard is applicable.
1.5.2.2 All works will be carried out in accordance with all applicable health & safety and environmental protection legislation.
1.5.2.3 All works will be carried out in accordance with the principles of good practice to ensure that all trees to be retained.
1.5.2.4 All cut logs will be cleared off site unless otherwise instructed by the client or site manager.
1.5.2.5 The resulting stumps may be mechanically grubbed out, but this grubbing out may only take place after the tree protection barriers have been erected.

1.6 Tree protection barrier erection
1.6.1 After the tree works are completed, but before any stumps are grubbed out, and before any construction works commence, and before any construction vehicles, equipment and materials (other than vehicles, materials and equipment specifically required to erect the tree protection barriers) are delivered to site, the tree protection barriers will be erected on the positions illustrated in this plan.
1.6.2 These barriers will either comply with the recommendations in BS5837:2012 i.e. as a first choice the illustration in this plan, or where this design of barrier is not feasible, i.e. where the barrier is to be erected over an existing hard surface, the barrier will comply with the following specification.
1.6.2.1 The barrier will comprise a minimum 2m tall welded mesh fence panels on rubber or concrete feet secured with ground pins.
1.6.2.2 Fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence.
1.6.2.3 The distance between the fence couplers should be at least 1m and should be uniform throughout the fence.
1.6.2.4 The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins.
1.6.2.5 Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray.
1.6.3 The barrier will have on A3 size informative/warning notice attached on the construction site side, at approximately 1.6 metres above ground level, and at no more than 6 metre intervals. An example of a suitable notice follows this plan.
1.6.4 No construction accesss whatsoever will be permitted in the construction exclusion zones formed by the tree protection barriers.
1.6.5 The tree protection barriers will be retained in place and intact until all construction activities have been completed and all construction materials, equipment and vehicles have been removed from the site.
1.6.6 The barriers may only be inspected by the project Arboriculturist after erection and no further site works may be carried out until the barriers have has been approved by the project Arboriculturist.

1.7 Stump grubbing out.
1.7.1 After the tree protection barriers have been erected, the tree stumps may be mechanically grubbed out.
1.7.2 This work must be completed before the tree protection barriers are removed.
1.7.3 No access into the construction exclusion zones formed by the tree protection barriers will be permitted as part of this work.

1.8 to 1.11 Construction works.

1.8 Hard surface construction in the 'hard surface retention' areas.
1.8.1 The new hard surface will be constructed on top of the existing hard surfaces wherever possible.
1.8.2 If it is necessary to replace the existing hard surface, this work will be carried out in accordance with the following methodology.
1.8.2.1 The existing hard surface and its sub base will be broken up carefully, either by hand using hand tools, or mechanically.
1.8.2.2 If the surface is to be broken up mechanically, a hand held breaker or jb mounted digger breaker will be used. The hand held breaker operator and/or the mini digger will always stand/be located on the intact hard surface or outside the RPA facing the tree. The operator/digger will move backwards away from the tree as the surface is broken up making sure they/it remains either on the existing hard surface or outside the RPA at all times. Great care must be taken to ensure that there is no penetration into the underlying soil.
1.8.2.3 The broken up surface and sub base will be carefully removed by hand. Great care will be taken to ensure that any roots present below the hard surface and sub base are not grazed, cut or otherwise damaged by these works.
1.8.2.4 No vehicular or machinery access across the ground exposed by this removal will be permitted. All vehicular and machinery access will be restricted to either the retained hard surface or another route that avoids the RPA.
1.8.2.5 If the new hard surface is to form an adopted road, it will be constructed in accordance with the Hampshire County Council (HCC) supplied design enclosed with this report, and the following methodology.
1.8.2.5.1 Absolutely no vehicular access or storage of materials will be permitted on the soil surface exposed by the removal of the existing hard surface.
1.8.2.5.2 The trench for the load bearing concrete beam to be cast in place will be excavated to the required depth using an 'Airspade' or similar compressed air soil excavation tool. Any woody roots encountered that are over 25mm in diameter will be carefully excavated round and left in place and undamaged. Any roots that are less than 25mm in diameter will be carefully cut back to the edge of the trench using a pair of sharp secateurs.
1.8.2.5.3 When they are fully exposed, all retained roots will be covered by three layers of Hessian or similar material to avoid desiccation or frost damage.
1.8.2.5.4 Prior to casting the load bearing concrete beam, the retained roots will be placed in ducts as per the HCC specification, and the sides and floor of the trench will be lined by a continuous impermeable membrane. This measure is intended to reduce the risk of potentially harmful concrete leachate entering into the soil and coming into contact with the roots.
1.8.2.6 If the new hard surface is NOT to be adopted, it will be constructed using a three dimensional cellular confinement sub base and in accordance with the following methodology.
1.8.2.6.1 The precise design of this sub base will need to be supplied by either an engineer or the sub base manufacturer, but it must meet the following standards of design, performance and installation.
1.8.2.6.2 Absolutely no vehicular access or storage of materials will be permitted on the soil surface exposed by the removal of the existing hard surface.
1.8.2.6.3 The exposed ground surface will be covered by a permeable and pollution control geotextile membrane.
1.8.2.6.4 In order to create a level surface to work from, the area of the hard surface will be levelled up by adding a blinding layer of sharp sand that is non marine in origin. Grading down of the soil surface will not be permitted.
1.8.2.6.5 The sub base must be designed to indefinitely support the anticipated traffic loads whilst preventing the underlying soil becoming compacted to the point that it loses its ability to support roots.
1.8.2.6.6 The crushed stone fill to be used in the three dimensional cellular confinement sub base must be non marine in origin, between 20 and 40 millimetres in size, contain no fines, and be sufficiently durable, as defined in British Standard 812–110:1990 'Testing aggregates. Methods for determination of aggregate crushing value', to indefinitely support the expected traffic loads without breaking up. MOT Type 1 road stone is not acceptable for this use.
1.8.2.6.7 In order to provide support to the sub base, timber side boards with retaining timber pegs or kerbs will be used. Examples of such designs are illustrated in this plan NB. these examples are illustrative only and are not to be used as a substitute for sub base and kerb designs supplied by a competent engineer or the sub base manufacturer.
1.8.2.6.8 All vehicular and machinery access to the area of work will either be via the new hard surface i.e. a 'roll out' method of construction, or by another route that does not cross the exposed RPA of any retained tree.
1.8.2.6.9 The new hard surface must be permeable to both air and water throughout its depth.
1.8.2.6.10 If it is necessary to harmonise the surface level of the new hard surface with the existing abutting hard surfaces, the existing hard surfaces will be built up to meet the new hard surface.

1.9 Underground service installation.
1.9.1 All underground services, drains, soakaways, attenuation tanks etc will be located outside the RPA of all the retained trees.

1.10 Fencing in the RPA of retained trees.
1.10.1 Where fences are to be erected in the RPA of retained trees they will be installed as follows.
1.10.1.1 The fences will be erected as part of the post construction soft landscaping works.
1.10.1.2 Post holes will be excavated by hand. If a significant root is encountered i.e. a root over 25mm in diameter, the post hole must be re-positioned so that it avoids the root.
1.10.1.3 Any roots encountered that are less than 25mm in diameter will be carefully cut back to the edge of the excavation using either a sharp pruning saw or sharp secateurs.
1.10.1.4 The post can be secured with either rammed earth or concrete. If concrete is to be used, the post hole must first be lined with an impermeable and continuous membrane to prevent the leaching of toxic compounds into the root zone.
1.10.1.5 Mechanical augers and excavators will not be used within the RPA's.
1.10.1.6 No vehicular access across the RPA will be permitted as part of these works beyond the existing or new hard surfaces.

1.11 Soft landscaping in the RPA of retained trees.
1.11.1 Where soft landscaping works are to be carried out in the RPA of retained trees, they will be carried out as follows.
1.11.1.1 The soft landscaping works will be carried out as part of the post construction soft landscaping works.
1.11.1.2 Excavations for landscaping works within the RPA will be carefully carried out with hand tools only, and with no cultivations below 300mm. If significant roots are encountered i.e. roots over 25mm in diameter, these will be dug around and left undamaged.
1.11.1.3 Powered cultivators will not be used in the RPA.
1.11.1.4 No vehicular access across the root protection areas will be permitted as part of these works beyond the existing or new hard surfaces.

MJC TREE SERVICES LIMITED

Site:
Land east of Drove Lane, Main Road, Topsham, Axminster, EX13 0ED.

TREE PROTECTION PLAN & ARBORICULTURAL METHOD STATEMENT

Plan no. MJC–19–0213–03 rev1

Sheet 06

This is based on the Cadmap topographical survey plan no. CM/19798 and the Carlton layout plan no. PLN–1–1101, amended by MJC on 08/07/2020.

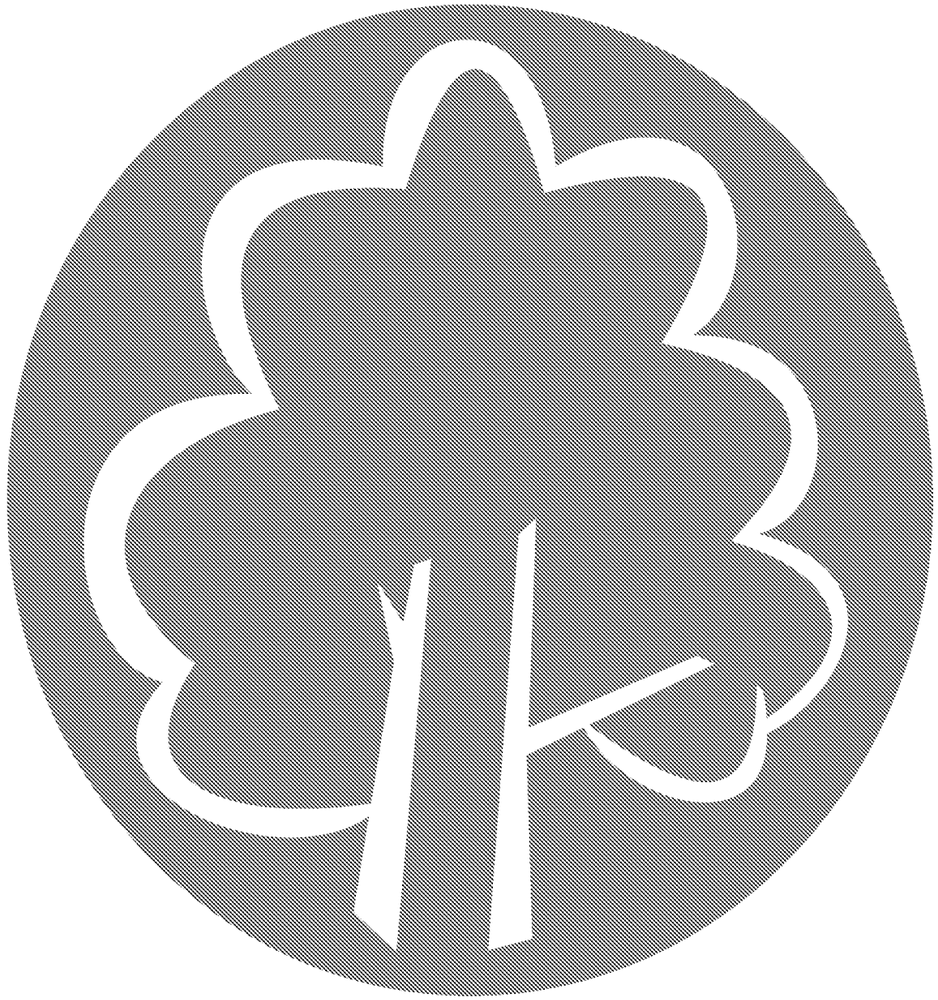
This plan was produced in colour. A monochrome version must not be relied upon.

KEY

- Existing site layout in grey
- Proposed site layout in colour
- Category U tree or group and ref' no'
- Category A tree or group and ref' no'
- Category B tree or group and ref' no'
- Category C tree or group and ref' no'
- Trees in a group which have been collectively surveyed and recorded.
- Crown spread of surveyed trees to be retained, amalgamated for groups
- Hedges and scrub vegetation to be retained
- Crown spread of surveyed trees to be removed, amalgamated for groups
- Hedges and scrub vegetation to be removed
- Crown spread of surveyed trees and groups to be pruned back i.e. red margin indicates crown to be removed, green margin indicates crown retained after pruning
- Indicative root protection area (RPA) of retained trees, amalgamated for groups
- Tree protection barriers
- Existing hard surface retention areas

SCALE
1:250 @ A0

8.0 Tree Protection Barrier Sign



PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.



TREE PROTECTION AREA

KEEP OUT !

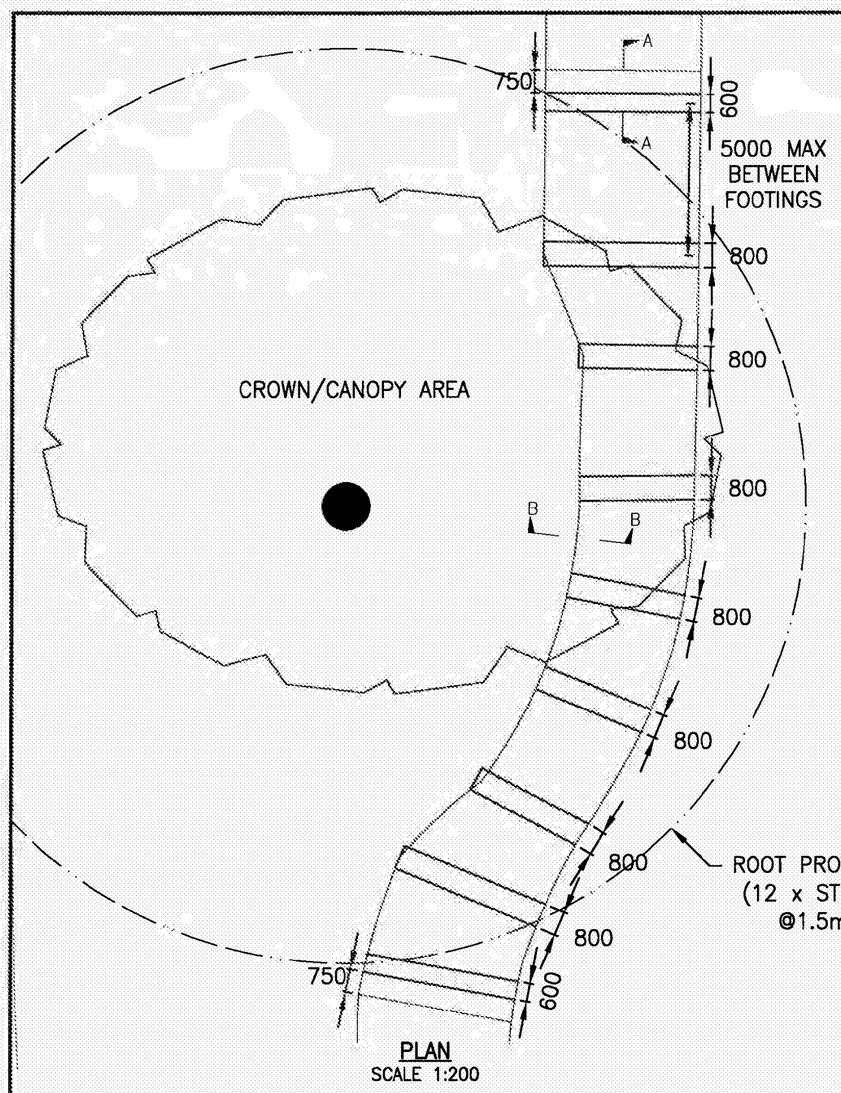
(TOWN & COUNTRY PLANNING ACT 1990)

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.

CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

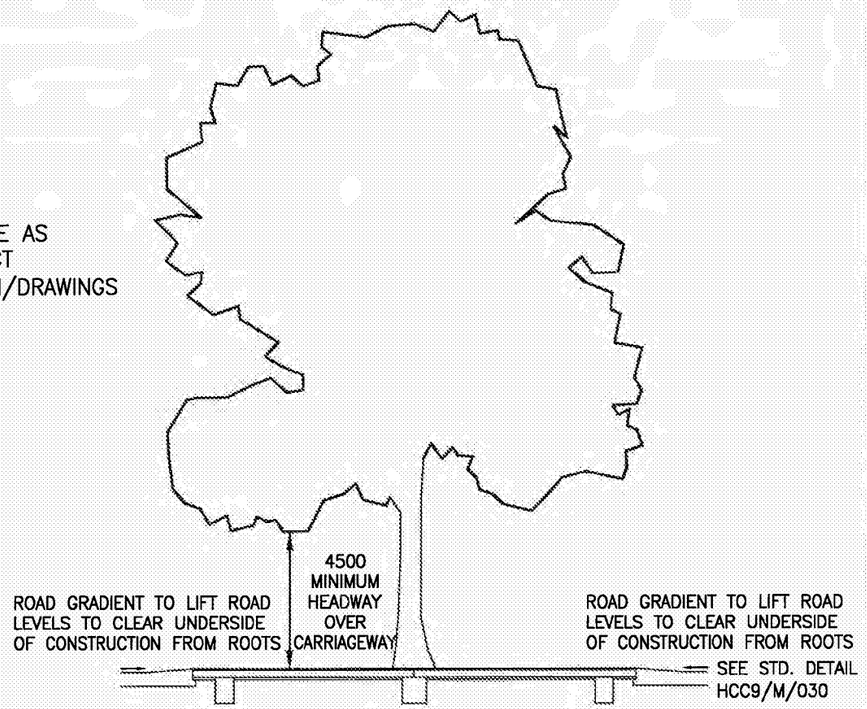
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

9.0 Hampshire County Council Road Construction Design

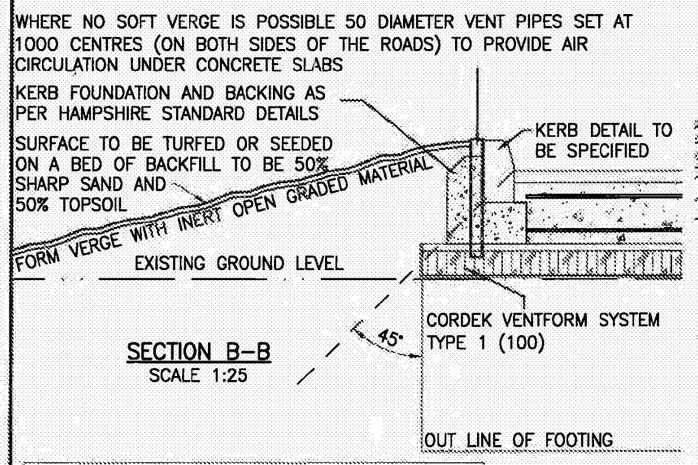


PLAN
SCALE 1:200

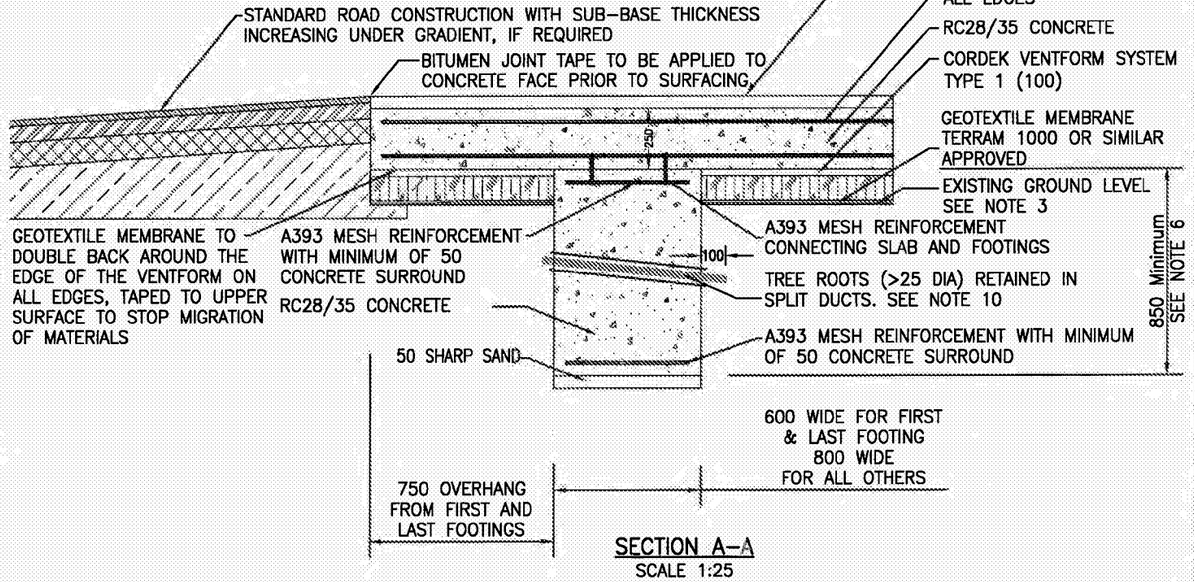
WIDTHS TO BE AS
PER CONTRACT
SPECIFICATION/DRAWINGS



CROSS SECTION
SCALE 1:200



SECTION B–B
SCALE 1:25



SECTION A–A
SCALE 1:25

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NOTES:

1. WHERE APPROPRIATE, GROUND VEGETATION ALONG LINE OF PROPOSED ROAD TO BE TREATED WITH A TRANSLOCATED HERBICIDE (GLYPHOSATE) AS ADVISED BY HIGHWAYS ARBORICULTURALIST.
2. ALL EARTHWORKS WITHIN THE ROOT PROTECTION AREA OF RETAINED TREES TO BE HAND EXCAVATED IN ACCORDANCE WITH BS 5837:2005.
3. UNLESS OTHERWISE STATED IN APPENDIX 30/10 GROUND PREPARATION WITHIN THE ROOT PROTECTION AREA OF RETAINED TREES TO BE RESTRICTED TO THE REMOVAL OF THE LOOSE TOPSOIL/HUMUS LAYER ONLY. ANY MAJOR HOLLOWS TO BE FILLED WITH INERT NO–FINES AGGREGATE TO PROVIDE A LEVEL SURFACE.
4. FOOTINGS TO BE LAID OUT IN AN ESSENTIALLY RADIAL PATTERN AT RIGHT ANGLES TO ROAD CENTRELINE BUT POSITIONS CAN BE MOVED SLIGHTLY TO AVOID MAJOR ROOTS
5. EXACT LOCATION OF ALL EXCAVATION TO BE AGREED ON SITE.
6. FOOTINGS REQUIRE DEEPENING TO 1150mm. WHERE CBR IS <5%.
7. FOR SITES WITH A CROSSFALL, FOOTINGS SHALL BE PROFILED TO ACHIEVE THE DESIRED ROAD SURFACE PROFILE
8. INDIVIDUAL FOOTINGS TO BE DUG BY HAND IN ONE OPERATION WITH LOOSE SOIL REMOVED TO ENSURE GOOD AND SMOOTH SIDES AND BASE. CONCRETE TO BE POURED INTO FOOTINGS AS SOON AFTER EXCAVATION AS POSSIBLE.
9. ALL TREE ROOTS, GREATER THAN 25MM IN DIAMETER, TO BE RETAINED AND WORKED AROUND.
10. RETAINED ROOTS WITHIN THE FOOTINGS TO BE ENCASED IN SPLIT DUCTING OF AN APPROPRIATE DIAMETER TO GIVE 5 TO 20mm CLEARANCE AROUND THE ROOT. DUCTING TO EXTEND A MINIMUM OF 100mm BEYOND THE FOOTING ON EITHER SIDE. DUCTING TO BE TAPED TOGETHER AFTER PLACEMENT.
11. ALL CONCRETE TO BE DESIGNATED MIX RC 28/35 WITH CONSISTENCE CLASS S2.
12. CONCRETE TO BE COMPACTED USING INTERNAL VIBRATION.
13. WHERE SERVICES MUST BE PLACED WITHIN THE ROOT PROTECTION AREA, THEY SHOULD BE POSITIONED TO AVOID FOOTINGS WITH REFERENCE TO NJUG GUIDANCE AND DUCTED TO AVOID FUTURE DISTURBANCES.
14. CORDEK VENTFORM SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
15. ALL DIMENSIONS IN MILLIMETRES.

	AMENDMENT	DATE	DRAWN	CHKD	APPD
A	NOTES AMENDED.	DEC. 11	MT		

CONSULTANT

Hampshire County Council Engineering Consultancy Certificate No. FS 21845

STUART JARVIS BSc. DipTP FCIHT MRTPI, DIRECTOR OF ENVIRONMENT, THE CASTLE, WINCHESTER.

SCHEME

STANDARD DETAILS

DRAWING TITLE

CARRIAGEWAY DETAIL FOR CONSTRUCTION WITHIN THE ROOT PROTECTION AREA OF RETAINED TREES

HCC CADplot 12.Jul.2012 at 3:06pm

DRAWN	CHECKED		SCALE @ A3
TL	TL	TL	VARIES
CAD	APPROVED		DATE
LMH	PS	PS	JULY 2010
DRG No.			REVISION
HCC9/C/155			A

HCC CADfile: K:\Eng\Standard\AutoCAD\Standard Details (Secure) As Updated Dec 2011\C Series\C_155a.dwg
ARUN DISTRICT COUNCIL Y78.20/REG

10.0 References

Lonsdale 1999	=	Lonsdale, D. (1999) *Principles of Tree Hazard Assessment and Management*. In: Forestry Commission, Department of Transport Local Government Regions; Research for Amenity Trees. TSO, England. 355.
BS5837:2012	=	British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
BS3998:2010	=	British Standard 3998:2010 'Tree work – Recommendations'.