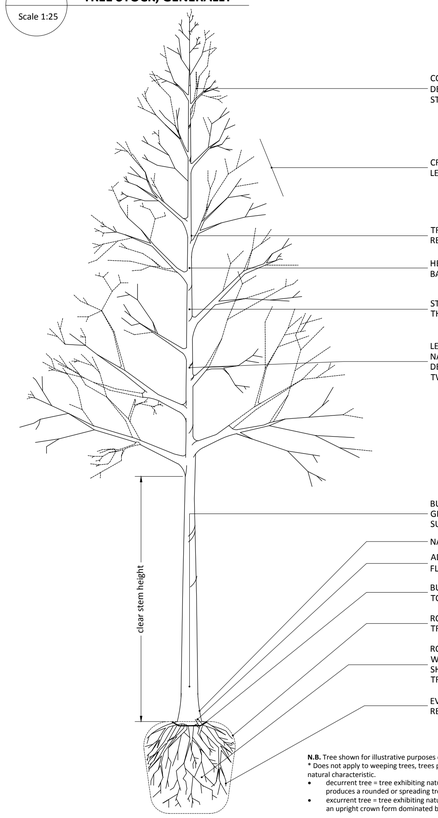
1. TREE STOCK, GENERALLY

Scale 1:25



CO-DOMINANT / CROSSING / INWARD GROWING / BROKEN OR DEAD / BARK WOUNDS / OTHERWISE HAZARDOUS, BRANCHES & STEMS: REMOVE OR SUBORDINATE IN ACCORDANCE WITH BS 3998

CROWN FORMATION: WELL BALANCED WITH STRAIGHT CENTRAL LEADER & LATERALS SUBORDINATED TO THAT LEADER

TREE TRUNK & BRANCH STRUCTURE: SELF-SUPPORTING, NO REQUIREMENT FOR CANES, STAKE OR OTHER METHOD OF SUPPORT

HEIGHT/STEM GIRTH RATIO: PROPORTIONATE, BALANCED & APPROPRIATE TO SPECIES

STEM TAPER: CLEARLY DEFINED, EVIDENT FROM CROWN THROUGH TO ROOT FLARE, APPROPRIATE TO SPECIES

LEADER*: STRAIGHT, WHETHER EXCURRENT OR DECURRENT IN NATURAL HABIT WITH EVEN, WELL-BALANCED BRANCHING SYSTEM. DECURRENT TREES SHOULD RETAIN LEADER UP TO AT LEAST TWO-THIRDS FULL HEIGHT

BUD & GRAFT UNIONS: NO WEAK UNIONS OR DISPROPORTIONATE GROWTH. REJECT SPECIMENS WITH BUD UNION SET BELOW SURFACE

NATURAL ROOT FLARE: VISIBLE AT ALL TIMES

ADVENTITIOUS FIBROUS ROOT GROWTH ABOVE ROOT FLARE: REMOVE / PRUNE OUT

BURLAP / WIRE CAGE: REMOVE / BREAK OPEN IN TREE PIT TO PREVENT GIRDLING

ROOTBALL: PROPORTIONAL SIZE TO STEM DIAMETER, TRANSPLANTED AT LEAST THREE TIMES ON NURSERY

ROOT SYSTEMS: WELL BALANCED, FIBROUS RADIAL ROOT SYSTEM WITH AT LEAST FOUR OBVIOUS & SUBSTANTIAL LATERAL ROOTS SHOWING OBVIOUS EVIDENCE OF ROOT PRUNING OR TRANSPLANTING, FREE FROM GIRDLING ROOTS

EVIDENCE OF ROOT GIRDLING: PRUNE OUT / REMOVE / REJECT IF SERIOUS

N.B. Tree shown for illustrative purposes only.
* Does not apply to weeping trees, trees produced as multi-stemmed specimens or other trees where a straight leader is not a natural characteristic.

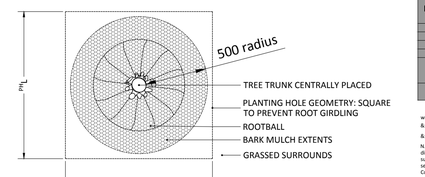
- decurrent tree = tree exhibiting natural growth habit characterized by strong lateral or branch dominance that eventually produces a rounded or spreading tree crown
- excurrent tree = tree exhibiting natural growth habit characterized by strong apical dominance that eventually produces an upright crown form dominated by one or a few central leading shoots

2. GENERAL TREE PLANTING PRINCIPLES

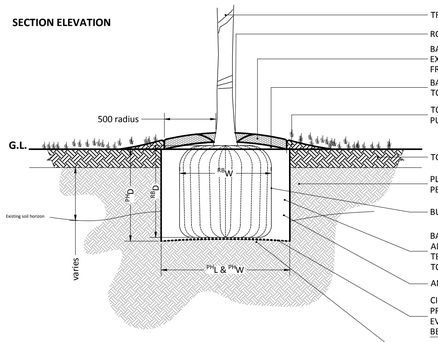
Scale 1:25

TREE SUPPORT SYSTEMS & IRRIGATION MEASURES OMITTED FOR CLARITY

TREE PIT: PLAN VIEW



SECTION ELEVATION



N.B. tree pit dimensions are a function of rootball size. Rootball dimensions are dependant on size of tree specified. Refer to Table 1.

N.B.

- BS 8545: 2014 states that, "*Sensible tree pit design begins with intention of doing as little as possible other than digging a pit, planting the tree, and using the existing soil, separated as subsoil and topsoil, as backfill. Each additional level of complexity added to the basic pit design can be related to the amelioration of a particular constraint*".
- Tree shown planted in open ground in optimal conditions with minimal site constraints.
- Tree support systems are omitted for clarity.
- Tree pit dimensions are a function of rootball size. Rootball dimensions are dependant on size of tree specified. Refer to table.

Table 1: TREE PIT DIMENSIONS

FORM	GIRTH	ROOTBALL DIMENSIONS (PHD)	ROOTBALL DEPTH (PHDP)	PLANTING HOLE DIMS (PHL)	PLANTING HOLE DIMS (PHW)	PLANTING HOLE DIMS (PHD)
LS	6-8	400	300	700	700	300
S	8-10	400	300	700	700	300
SSe	10-12	400	400	700	700	400
H	12-14	500	400	800	800	400
EH	14-16	600	500	900	900	500
	16-18	600	500	900	900	500
	18-20	600	500	900	900	500
SM	20-25	750	750	1050	1050	750
	30-35	1000	1000	1300	1300	1000

based on: **BS 4428: 1989 & BS 8545: 2014**, together with: **suppliers (James Coles) stated rootball dimensions**

where: PHD = Rootball diameter, PHDp = Rootball depth,
&: PHL = Planting Hole length, PHW = Planting Hole width, PHD = Planting Hole depth
&: LS = Light Standard, S = Standard, SSe = Selected Standard, H = Heavy Standard, EH = Extra Heavy Standard, SM = Semi Mature

N.B. Stated tree pit dimensions accommodate the rootball are a minimum. Rootball dimensions can, & do, vary to some variance a is to be expected naturally between species, tree stock, suppliers and season. In the event that the rootball exceeds the stated dimensions, the contractor shall seek advice from the Landscape Architect before commencing further. Thereafter, the Landscape Contractor shall excavate the hole (in Open Ground) to the advice given in BS 8545: 2014 with the exception of tree pit dimensions which shall be varied to achieve a minimum dimension of 150mm greater** than the rootball. Tree planting hole depth shall generally be no greater than the existing rootball or container depth. The Landscape Contractor shall take care not to damage any underground utilities &/or services.
* where root spread is taken to be rootball size.
**Section 10.5.10 of BS 8545:2014 states that, "Tree pits should have a diameter at least 75mm greater than that of the root system." However, this does not allow adequate space for firming in around the rootball by footfall.

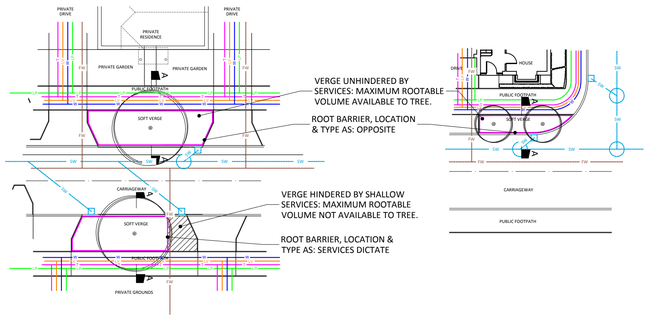
Notes
Information regarding '*Tree Planting in Open Ground, Generally*' on this sheet is derived from "*BS 8545: 2014 Trees: from nursery to independence in the landscape - recommendations*".

While every attempt is made to address the most salient points raised [within the BS], this list should not be considered exhaustive as it is presented in summary format only. For further information, the reader is referred back to the relevant British Standard.

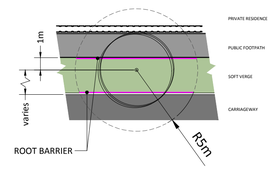
3. PROPOSED TREE PLANTING IN CONFINED SPACES &/OR VERGES NOT SUBJECT TO PEDESTRIAN / VEHICULAR OVERRUN BUT WITH POTENTIAL CONFLICTS TO ONE OR MORE SIDES

Scale 1:25

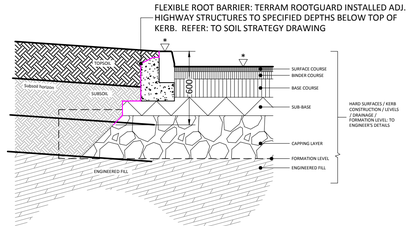
PLAN VIEW (NTS): TYPICAL TREES IN VERGES



PLAN VIEW (NTS): CALCULATION OF ROOT BARRIER EXTENTS FOR TREES IN VERGES &/OR ADJACENT HIGHWAYS



SECTION ELEVATION: ROOT BARRIER DEPTHS



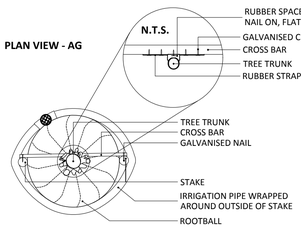


4. ABOVE GROUND (AG) SUPPORT DOUBLE STAKED WITH CROSSBAR (DstXB) TREES

Scale 1:25

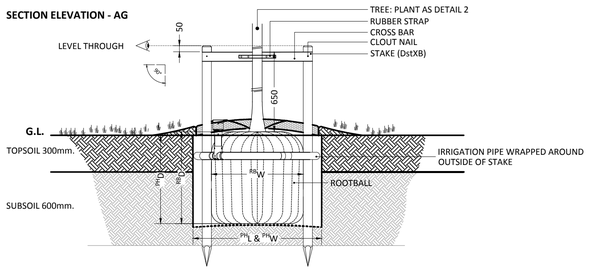
PLAN VIEW - AG





N.B. tree pit dimensions are a function of rootball size. Rootball dimensions are dependant on size of tree specified. Refer to Table 1, detail 1

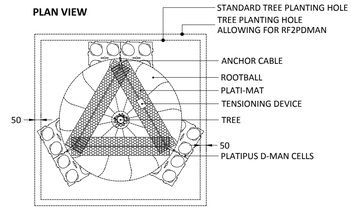
SECTION ELEVATION - AG



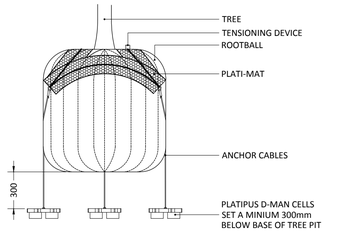
5. BELOW GROUND (BG) SUPPORT EARTH ANCHORING; HIGHWAY TREES IN VERGES: DISTURBED GROUND AND/OR UTILITIES

Scale 1:25

PLAN VIEW



SECTION ELEVATION



RF2PDMAN PLANTING HOLE DIMENSIONS (NTS)

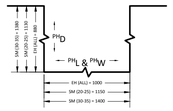
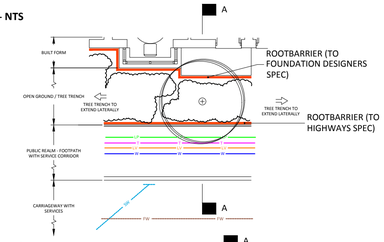


TABLE 2: VERGE GUYING SCHEDULE

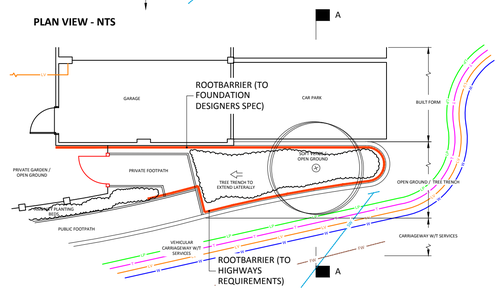
ITEMS	SPECIFICATION
EARTH ANCHORING SYSTEM:	UNDERGROUND GUYED
MANUFACTURER:	PLATIPUS
MODEL:	D-MAN
D-MAN CELL DIMENSIONS:	270x270x80mm (LxWxD)
CODE:	RF2PDMAN
SUITABLE FOR:	12-45cmg TREES
SYSTEM COMPRISING:	3no. Wire Chokes, 5m galvanised wire, 1no. ratchet tensioner, 3no. Plati-Mats, 6no. D-MAN cells (3 x 2no. cells connected).

N.B. Earth Anchoring Systems are to be installed to manufacturer's recommendations & requirements with a minimum of 3no. earth anchors & associated cables to be fitted per tree.
Although 16-18cmg trees are specified, the RF2PDMAN system has been preferentially selected over the RF1PDMAN system b/c of adverse site conditions (exposure, wind & ground conditions).

PLAN VIEW - NTS

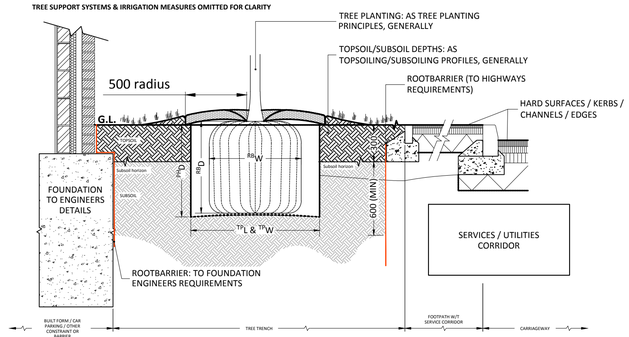


PLAN VIEW - NTS



SECTION ELEVATION

TREE SUPPORT SYSTEMS & IRRIGATION MEASURES OMITTED FOR CLARITY



N.B.

- Diagram shows an SM 20-25cmg tree.
- While the dimensions of the rootball hole varies to suit the form [of the tree] specified, the grading / topsoiling geometry/profile does not.
- Plans shown are examples only; rootable area/ geometry varies as dictated by site constraints.
- [Construction of] hard surfaces / Kerbs / Channels / Edges to Engineer's details.
- Tree support systems are omitted for clarity.

Table 3: TREE PLANTING ACCESSORIES INVENTORY

Planting Type:		AG TREES			BG TREES		
Form:		EH	SM	SM	EH	SM	SM
Girth / Height:		14-20	20-25	30-35	14-20	20-25	30-35
Planting Hole Dimensions (length, width, depth - mm):	L:	900	1050	1300	1000	1150	1400
	W:	900	1050	1300	1000	1150	1400
	D:	500	750	1000	880	1130	1380
Bark Mulch Dimensions radius & depth (mm):	R:	500	500	500	500	500	500
	D:	75	75	75	75	75	75
Tree Support System:		AG	AG	AG	BG	BG	BG
Tree Support Height (mm):		650	650	650	N.A.	N.A.	N.A.
Stake Type:		DstXB	DstXB	DstXB	N.A.	N.A.	N.A.
Stake Diameter (mm):		60	75	75	N.A.	N.A.	N.A.
Stake Length (m):		1.8	1.8	1.8	N.A.	N.A.	N.A.
Tree Tie Type:		BB	BB	BB	EA	EA	EA
Rubber Block Type:		RSB1	RSB2	RSB2	N.A.	N.A.	N.A.
Rubber Spacer Type:		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Rubber Belt Type:		S1	S2	S2	N.A.	N.A.	N.A.
Earth Anchoring Type:		N.A.	N.A.	N.A.	RF2PDMAN	RF2PDMAN	RF2PDMAN
Irrigation Systems:		RRCIVIC2	RRCIVIC 2	RRCIVIC 2	RRCIVIC 2	RRCIVIC 2	RRCIVIC 2

Form:
F = Feathered, LS = Light Standard, S = Standard, SSe = Selected Standard, H = Heavy Standard, EH = Extra Heavy Standard, SM = Semi Mature

Tree Support System:
AG = Above Ground, UG = Under Ground.

Tree Tie Type:
BB = Belt & Block, BS = Belt & Spacer, EA = Earth Anchoring

Rubber Block Type:
RSB1 = Standard Double Rounded Block 50mm x 35mm for use with 24mm belting.
RSB2 = Standard Double Rounded Block 65mm x 50mm for use with 35mm belting.

Spacer Type:
FBS1 = 25mm Slot, Standard Flat Back Block 50mm x 35mm for use with 24mm belting
FBS2 = 37mm Slot, Standard Flat Back Block 65mm x 50mm for use with 35mm belting

Belting Type:
SLV130 = 30m x 25mm for use with 24mm belting
SLV230 = 30m x 40mm for use with 35mm belting
SLV290 = 90m x 40mm for use with 35mm belting
S0 = 15mm x 2mm x length, standard reinforced rubber belting
S1 = 24mm x 2mm x length, standard reinforced rubber belting
S2 = 35mm x 2mm x length, standard reinforced rubber belting
S3 = 48mm x 2mm x length, standard reinforced rubber belting
HD2 = 35mm x 3mm x length, Heavy duty rubber belting
HD2 = 50mm x 3mm x length, Heavy duty rubber belting

Earth Anchoring:
RF2PDMAN = cabled large anchor system w/t deadmen composite anchors, webbing strap & ratchet tensioners. For trees up to 45cmg.

Irrigation System:
RRCIVIC 2 = Greenleaf RootRain Civic 2, 60mm Ø, 5m long, 80mm inlet, reducer & end cap, 60mm vertical pipe cut to suit onsite.

GENERAL TREE PIT PLANTING NOTES:

1. **SPECIFIED MATERIALS:** all to be installed in accordance with the manufacturer's recommendations and/or instruction.
2. **PLANTING GENERALLY:** Correct planting depth is critical for transplanting success, with over-deep planting identified as a common cause of failure. The Contractor shall therefore ensure that the natural root flare of the tree is clearly visible at proposed finished soiling surface. To ensure that correct final planting position / depth is achieved, the Contractor shall therefore take care to remove all:
 - soil placed above natural root flare during nursery packaging & production - rootballing, containerization, etc.
 - adventitious roots above the root flare,
 - wire encircling the main stem,
 - wire cage & burlap where possible. Otherwise, peel back and remove once the tree is in the planting pit.
3. **BACKFILL MATERIAL:** *Open ground & Verges*: select 'as dug' material to be reused taking care to match adjacent soil horizons (where suitability assured for tree growth); TBC onsite by Contractor. All 'as dug' topsoil material to conform to BS 3882:2015 General Purpose Topsoil & shall be reinstated to a depth of no more than 300mm). Remove all deleterious material arising (weeds, broken brick & large stones, etc). Backfill & lift in layers no greater than 150-230mm deep. Compact to between 1.5 - 2.0 mega pascals: tread down using footfall, paying particular attention to the planting hole edges and rootball extents to eliminate voids. Avoid over compaction.
4. **BACKFILL SOIL AMELIORANTS:** the Contractor shall satisy himself of the general suitability of the topsoil supplied for long term tree growth. Reason: to ensure the long term longevity of the tree supplied. Thereafter: to suit site conditions. Typically, this may comprise 0.5kg of broadleaf p4 or similar (pre-hydrated with water) thoroughly mixed with the topsoil until the medium is homogeneous.
5. **ARISINGS:** all deleterious material arising, shall be removed offsite to a licensed tip by the Contractor.
6. **TREE SUPPORT SYSTEMS:** Unless otherwise stated, all trees shall be supported as identified on the Softworks drawings which use the Double Stake with Crossbar (DstXB) method of tree support.
 - Tree support stakes to butt up against the rootball to help stabilise it.
 - Tree support height shall be as identified on Detail 4.
 - Stakes to be removed to a minimum 150mm below ground level with no sharp edges as soon as the developing root system is self-supporting & root firmness is proven.
 - Irrigation pipes to be installed around the AG tree support system & on top of the the UG tree support system.
7. **ROOT PROTECTION MEASURES:** supply & install permeable rootbarriers (Terram RootGuard, or equal & approved) to a min. depth of 600mm below ground. *Installation:* as per manufacturer's instruction. *Finished level:* top of barrier to be 10mm above G.L. *Zone of Deployment:* protection of hard surfacing / services lying within a min. 5m radius of the proposed tree and/or as dictated on plan.
8. **IRRIGATION:** *Open ground & Verges*: Create topsoil chaucer as Detail 1. Water at frequence necessary to ensure establishment & survival.
9. **DRAINAGE:** the contractor shall satisy himself that the tree pit is free draining. The contractor shall notify the Contract Administrator of any problem areas and await further instruction before proceeding further. Reason: to ensure the longevity & viability of the tree supplied. TBC onsite.
10. **BARK MULCH:** Amenity, 8-40mm particle size, mid dark brown, Rolawn (or equal & approved). *Coverage:* 75mm deep, 1m Ø around base of tree.

Notes

Related Drawings: This is a composite drawing based on information received from other consultants. DJA drawing information is based on information received from:
- INDICATIVE MASTERPLAN: Broadway Malyan
- INDICATIVE GENERAL HOUSING ARRANGEMENT: ISP
- SUDS BASINS & ASSOCIATED INFRASTRUCTURE: Campbell Reith (Engineers)
- PRIMARY STREET: Campbell Reith (Engineers)
- SECONDARY STREET & ASSOCIATED INFRASTRUCTURE: Campbell Reith & Peter Brett Associates (Engineers)
- COMMENTARY: Client & Local Planning Authority comments (various applications)
- SITE TOPOGRAPHY (EXISTING): CD Surveys, ncv'd from Campbell Reith 05/12/2016.
- SITE TOPOGRAPHY (PROPOSED): Campbell Reith (Engineers)

Issue: Drawn by David Jarvis Associates Limited (CROWN COPYRIGHT. ALL RIGHTS RESERVED 2023 LICENCE NUMBER 0100031). This drawing is for Planning purposes only. Do not use this drawing for Construction. The information contained in the drawing should be used as a guide to the final forms and finishes of the landscape scheme. Any revisions to be approved by the Client and Local Authority

Scaling: Do not scale this drawing. Use given dimensions only.

Setting out: refer to Engineers for information regarding setting out. In the event of discrepancy refer to Engineers in the first instance.

Survey: Original survey provided by the Client.

Services: Where possible these are identified on the drawings but, for the avoidance of doubt all service/utility locations should be considered indicative only. Contractor to fully investigate locations of all services prior to commencement of any excavation works. Contractor to obtain written confirmation and further information regarding easements. In the event of new services being installed refer to the appropriate Service Provider. It is recommended that hazard warning tape 'danger electric cable'/'danger services' to be installed over all service routes (to remain on site) to current BS guidelines (BS7671).

Construction Information: all detailed design (including, but not necessarily limited to), bond patterns, kerbing, edging, tactile crossing demarkation, highway structures, SUDS features, etc. to be undertaken by an appropriately qualified technical/highways/civil engineer to be appointed by the client for presentation to (and subsequent discharge from) the relevant supervising authority and/or body.

Lighting: Refer to lighting engineers drawings.

Planting: Plant species are selected and located in line with consideration of the site conditions, NHBC guidelines and discussions with the Local Authority and design team. All plants and planting procedure to conform to the David Jarvis Associates Limited Landscape Specification that will accompany the Construction issue drawings. No species or plant location is to be varied without prior consent of the Landscape Architect.

Tree Root Protection Measures: supply & install permeable rootbarriers (Terram RootGuard, or equal & approved) to a min. depth of 600mm below ground. *Installation:* as per manufacturer's instruction. Finished level: top of barrier to be 10mm above G.L. Zone of Deployment: protection of hard surfacing / services lying within a min. 5m radius of the proposed tree. To be increased to 1000mm depth where services / utilities require this - to be determined at Construction.

Foundations: Developers / Contractors to ensure that all foundations (buildings and external walling) are designed and constructed so as to take into account, at the time of maturity, any existing or proposed trees, hedgerows or other vegetation on the application site or existing vegetation on land adjacent to the site. Particular attention should be given to the effects of trees and hedgerows removed on or adjacent to the site during the previous 15 years. For this purpose the developers / contractors will submit all relevant details to the authority dealing with the Building Regulations Certificate.

Design Levels: Refer to Engineers where design levels are not shown.

COM: Drawings to be read in conjunction with Designers risk assessment. Potential risks above that of those associated with the general construction typical SI-TN drawing are identified below;

Drawing Revision

Rev.	Date	Description	DRN	CKD
P1	13/09/2023	First Issue based on Architects Site Plan 'P201 & P202', rcv'd: 07/09/2023 @ 07:37hrs.	MS	AC

Status

PLANNING

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Client

CREST NICHOLSON

Project

KILNWOOD VALE, CRAWLEY PHASE 3DEFG

Drawing Title

TYPICAL TREE PLANTING IN RESIDENTIAL / VERGE / PARKLAND AREAS

Scale	Sheet Size	Date
1:25	A1	SEPT 2023

Client Ref.	Drawing Ref.	Drawing No.	Status
3DEFG-DA	3015-4-5-1	DR-5500	S4-P1

0 500mm 1000mm 2000mm

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