

LAND SOUTH OF A259 ANGMERING (ACCESS ROAD)

ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT



Ecology
Archaeology
Arboriculture

for

REDROW HOMES
LTD

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1. Introduction

- 1.1. ACD Environmental was instructed in September 2020 to prepare the following Arboricultural Impact Assessment and Method Statement by Redrow Homes Ltd. Reference should be made to the appended Tree Protection Plan (RED23031-03 Access).
- 1.2. This report is based off of a previously commissioned report for the wider development proposals for the Land South of A259, Angmering, (ACD ref: RED23031AIA_AMSB)
- 1.3. This Method Statement is to be made available to all operatives on site during the construction process, so that they understand the scope and importance of the measures set out for tree protection. Implementation of the protection methods and other details within this report are integral to ensuring protection for the retained trees.
- 1.4. For details of trees to be retained, and locations and types of special protection methods, reference should be made to the latest revision of the corresponding Tree Protection Plan (ref: RED23031-03 Access), which should be displayed prominently on site for all staff to see.
- 1.5. To ensure accuracy and avoid future costly adjustments, the Tree Protection Fence must be set out by a surveyor/engineer with all node points being marked clearly on site for the fencing contractor to work to. The AutoCAD version of the Tree Protection Plan is available on request.
- 1.6. This report is based on the recommendations given in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- 1.7. The controlling authority is Arun District Council who can be contacted at:
Email: planning@arun.gov.uk
Office 01903737500
- 1.8. We have been instructed to contact the Local Authority and investigate the presence of any statutory protection on trees on, or adjacent to the site. Our investigation showed no statutory protection to any of the trees onsite or adjacent to the site boundaries.
- 1.9. Any questions relating to the content of this report should be directed in the first instance to: ACD Environmental, 4 & 5 The Old Mill, Fry's Yard, Bridge Street, Godalming, Surrey GU7 1HP, 01483 425714, quoting the site address and report reference number.
- 1.10. The following abbreviations have been used throughout this document:
 - Root Protection Area – RPA
 - Construction Exclusion Zone- CEZ
 - Tree Protection Plan – TPP
 - Tree Protection Fencing – TPF

2. Arboricultural Impact Assessment

- 2.1. The site is currently an open field to the South of the A259. The proposed development is the construction of an access road using the existing Eastern connection to the nearby roundabout and creating a new junction onto the Westbound carriageway of the A259 Roundstone bypass.
- 2.2. This impact assessment is intended to evaluate the direct and indirect impacts on the trees on the site in relation to the proposed development. Any potential tree impacts are identified as per BS5837:2012 section 5.4, and details are given of proposed mitigation.
- 2.3. Any potentially damaging activities proposed in the vicinity of retained trees are identified, such that mitigation to significantly reduce or avoid this impact can be detailed in the Arboricultural Method Statement and Tree Protection Plan as recommended in BS5837:2012 section 5.4.2.
- 2.4. The development proposals are in accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'. Adequate protection can be provided to ensure all retained trees are protected throughout the development.
- 2.5. The tree survey for the site is at Appendix 2 of the Tree Report for the site ACD reference RED23031tr.
- 2.6. This assessment is based upon the supplied drawing by i-Transport, drawing reference: ITB16357-GA-008

2.7. Evaluation of impact of proposed tree losses

- 2.7.1. Those trees which are to be removed are shown with a red dashed canopy outline on the Tree Protection Plan, ACD reference RED23031-03 Access.
- 2.7.2. T17, T18 and T19 are trees on the Northern boundary to be removed as a direct result of the development proposals. They are in the two lower categories (C & U) and as such it is judged that they are not of a quality that should present any constraint to development of the site.
- 2.7.3. Additional removals of individuals specimens from the Northern boundary groups H21, H10, and x4 individuals from G9 are also specified for removal to implement the design proposal.
- 2.7.4. Although the removal of 'B' category trees is not ideal, specimens from G9 are part of dense boundary planting consistent with having been planted as part of the landscaping for the current site layout, and as such it is felt that any loss of amenity cause by their removal will be short term and any voids in the foliage structure of the remaining groups will recover adequately within three growth cycles.

- 2.7.5. Removal of G4 has been proposed; this fast-growing, non-native group, although having Landscape value as being visually prominent on the site boundary, has lost the majority of its screening potential due to lapsed management. It is also acknowledged that due to the characteristics of the species within this group, mediative pruning is not realistic, and it is judged that a result better visual value could be achieved through replacement planting.
- 2.7.6. T5 is a Monterey Pine proposed for removal and is located on the Western end of G6 along the Northern boundary. Due to the high number of these Monterey Pines on site, it is judged that the removal of this single specimen will not cause excessive long term amenity loss to the area.
- 2.7.7. It is further acknowledged that all 'B' category trees specified for removal have value in their current context on the site frontage - however, given the proposed redevelopment of site, their retention is not feasible, and attempting to incorporate the trees into the design would be likely to result in an awkward layout design in regards to access and future maintenance, it is therefore judged that the loss of Landscape value provided by the specimens of this group could be acceptably mitigated by providing replacement trees as part of the wider landscaping theme.
- 2.7.8. In relation to the conception and design of development proposals, BS5837:2012 section 5.1.1 states: The constraints imposed by trees, both above and below ground should inform the site layout design, although it is recognised that the competing needs of development mean that trees are only one factor requiring consideration. Certain trees are of such importance and sensitivity as to be major constraints on development or to justify its substantial modification. However, care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal.
- 2.7.9. It is therefore deemed acceptable to remove all the listed trees and, as part of the detailed landscape design for the scheme, include suitable and sustainable replacements as and where appropriate.

2.8. Trees to be pruned

At this time, the following tree surgery works are proposed.

Tree/Group Number	Species	Operation
H21	Multiple	Hedge-cut Northern face to facilitate construction of proposed junction and pathway where required.

- 2.8.1. Should further works become necessary, it should comply with BS3998:2010 Tree Work or more recently accepted arboricultural good practice and be approved by the LPA and prior to commencement.

2.9. Protection for retained trees

- 2.9.1. BS5837:2012 section 6.2.1. states: 'All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. A specification for protective fencing is given on the Tree Protection Plan. This consists of interlocking weld-mesh panels (e.g. heras) well braced by attachment to scaffold pole uprights driven firmly into the ground. Should any alternative method of barrier construction be proposed the design should be approved by the local planning authority.
- 2.9.2. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed (see 3.6). As such, protection for all retained trees is shown on the Tree Protection Plan according to these specifications.

2.10. Ground protection

- 2.10.1. In certain areas, space required to construct buildings will require encroachment into RPAs. Potential damage caused by foot traffic and associated works can be mitigated by the use of ground protection as specified in BS5837:2012 section 6.2.3. To ensure the ongoing survival of the retained trees, this is detailed in the Arboricultural Method Statement and indicated on the Tree Protection Plan where required.
- 2.10.2. The existing hard surfacing along the North-western access road will be used as adequate ground protection for retained specimens of H6 until a new road surface is installed.

2.11. Groundworks

- 2.11.1. To ensure damage does not occur to trees highlighted for retention, tree protection measures must be installed prior to ANY plant machinery entering site whatsoever.

2.12. RPA Incursions

- 2.12.1. The proposed alterations to the roadside pedestrian path North of G9 create a 9.7% incursion of hard surfacing into the soft ground within the retained RPA of a single constituent specimen of this group. As per the guidance stipulated in BS5837 this incursion is less than 20% and with an abundance of potential additional rooting space located directly South of this specimen, it is deemed that this encroachment will not have a significant detrimental impact to the vitality of this specimen.

2.13. **Services**

It is fundamental to tree protection that infrastructure design is sensitively approached, as trenching close to trees may damage roots and affect tree health and stability. Details of services have not been provided at the time of writing. The Tree Protection Plan, showing the constraints posed by retained trees will be passed to the infrastructure engineers to inform their design, ensuring that all services avoid areas of potential conflict. As per BS5837:2012 Figure 1, once further details become available as part of the detailed/technical design for the site, the TPP and AMS will be revised to incorporate these details for services for inclusion in the Tender documentation.

2.14. **Levels and Landscaping**

Full details of any changes in ground levels on site remain to be finalised. Any alterations to levels close to trees may damage roots and affect tree health and stability. Unless no-dig methodology is proposed for installation of surfaces within RPAs the original levels in these areas must be noted, retained, and integrated into the engineering design of the site. Landscaping operations within the RPAs of retained trees must be carried out in a sensitive manner and be subject to a detailed method statement and arboricultural supervision.

2.15. **Boundaries**

All plot boundaries will need to be designed, positioned and installed to avoid damage to retained trees. When within RPAs, this will include hand excavation of all post holes, and the lining of any post holes with a non-porous membrane to stop leachates from the concrete damaging tree roots.

3. Arboricultural Method Statement

TO BE READ IN CONJUNCTION WITH THE LATEST REVISION OF THE
APPENDED TREE PROTECTION PLAN REFERENCE: RED23031-03 Access

3.1. Phasing of operations for tree protection

3.1.1. Implementation of tree protection measures on the site must be carried out in the following order

- 1) Tree removals and tree surgery
- 2) Line of tree protection fence to be set out to node points by surveyor
- 3) Accurate erection of tree protection fence and ground protection
- 4) Site accessible to construction/demolition traffic
- 5) Demolition/site clearance
- 6) Construction
- 7) Removal of tree protection fencing
- 8) Remedial tree surgery (if required)

3.1.2. The above phasing must not be changed without approval from the project arboriculturist and agreement with the Council.

3.2. Restrictions within tree protection areas

3.2.1. Inside the exclusion area of the fencing, the following shall apply:

- No mechanical excavation whatsoever
- No excavation by any other means without arboricultural site supervision
- No hand digging without a written method statement having first been approved by the project arboriculturist.
- No lowering of levels for any purpose (except removal of grass sward using hand tools)
- No storage of plant or materials
- No storage or handling of any chemical including cement washings
- No vehicular access
- No fire lighting

3.2.2. In addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builders sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees
- No fire shall be lit such that flames come within 5m of tree foliage.

3.3. Avoiding damage to stems and branches

- 3.3.1. Care shall be taken when planning site operations in proximity of retained trees to ensure that wide or tall loads, or plant with booms, jibs and counterweights, can operate without coming into contact with retained trees. Such contact can result in serious injury to them and might make their safe retention impossible.
- 3.3.2. Consequently, any transit or traverse of plant in proximity of trees shall be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is at all times maintained. In some circumstances, it may be impossible to achieve this without pruning works known as 'access facilitation pruning'.
- 3.3.3. Access facilitation pruning shall be kept to the barest minimum necessary to facilitate development and shall be carried out in strict accordance with the guidance below (Tree Surgery). Under no circumstances shall construction personnel undertake any tree pruning operations.

3.4. Tree protection fencing

- 3.4.1. The Tree Protection Plan (see the latest revision of: RED23031-03) shows the alignment of Tree Protection Fencing (TPF), which is to be installed prior to any of the following taking place:
- Demolition
 - Plant and material delivery
 - Soil stripping
 - Utility installation
 - Construction works
 - Landscaping
- 3.4.2. Stages for installation of TPF:
- 1) Hand clearance of any vegetation to allow clear working access.
 - 2) Setting out of fencing points
 - 3) Fencing erected
 - 4) Site accessible to demolition/construction traffic
- 3.4.3. To ensure accuracy and avoid future costly adjustments, the Tree Protection Fence must be set out by a surveyor with all node points being marked clearly on site for the fencing contractor to work to.
- 3.4.4. Once erected, all TPF will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project arboriculturist and approval of the local planning authority.
- 3.4.5. The typical TPF construction is suitable for areas of high intensity development, and shall comprise of interlocking weld-mesh panels, well braced to resist impacts by attachment to a scaffold framework that is set firmly into the ground. A detailed specification can be found on the TPP.

- 3.4.6. Should any alternative method of barrier construction be proposed, consultation with the project arboriculturist will be obtained to clarify the efficacy of the revised design prior to informing the local planning authority and obtaining their consent.
- 3.4.7. Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence.
- 3.4.8. All weather notices should be erected on the barriers (for example see figure below).

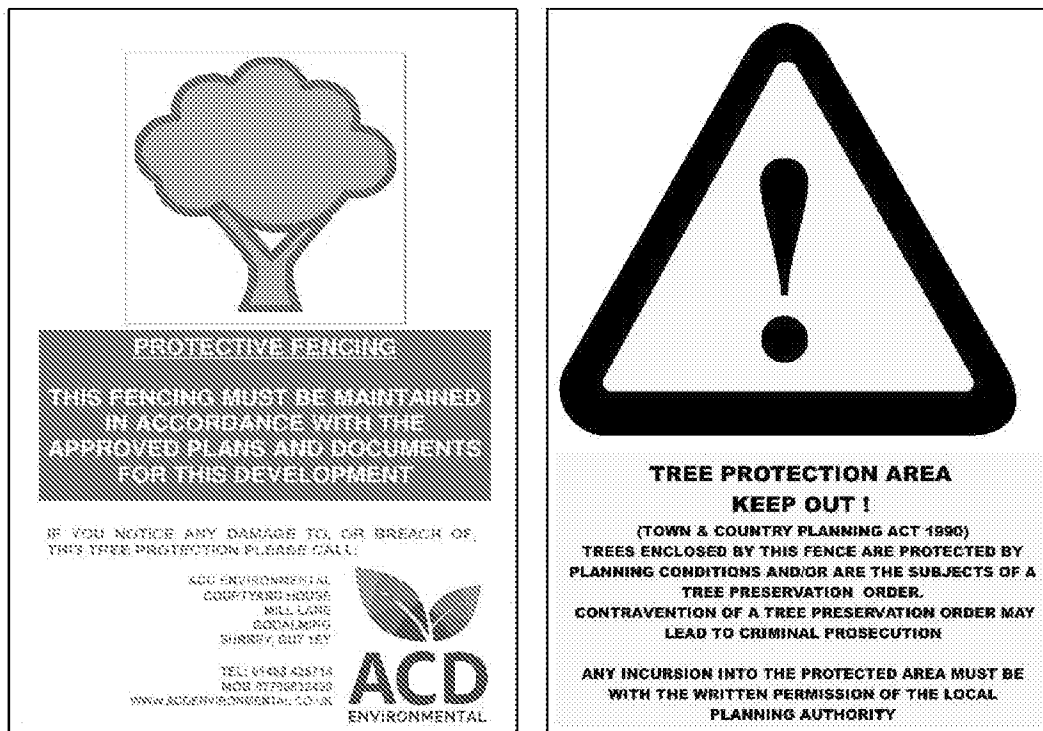


Figure 1: Tree Protection Sign (digital copies available for download at: www.acdenvironmental.co.uk)

3.5. Site storage, parking, welfare facilities

- 3.5.1. The site will require provision for; site storage, contractor parking, welfare facilities, temporary services/drainage, material drop of points, etc.
- 3.5.2. No details of these provisions are available at the time of writing of this report.
- 3.5.3. None of the above provisions will be sited within RPAs of retained trees without the input or the project arboriculturist and the consent of the Local Authority.

3.6. Ground protection

- 3.6.1. Any specification to be installed must be capable of supporting the expected loads and avoiding rutting, compaction and damage to the soil. As advised in BS5837:2012 section 6.2.3:
- 3.6.2. New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. The ground protection might comprise one of the following:
- a) for pedestrian movements only;** a single thickness of scaffold boards placed either on top of a driven scaffold frame to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100 mm depth of woodchip), laid onto a geotextile membrane.
 - b) for pedestrian-operated plant up to a gross weight of 2t;** proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g., 150 mm depth of woodchip), laid onto a geotextile membrane.
 - c) for wheeled or tracked construction traffic exceeding 2 t gross weight;** an alternative system (e.g., proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.
- 3.6.3. Stages for ground protection installation¹:

No plant machinery to be used in the area of ground protection for whatever reason

- 1) Discuss procedure with project arboriculturist
 - 2) Dismantle primary TPF and re-erect in secondary location as shown on TPP
 - 3) Any shrubs, saplings or trees to be removed, are to be cut, or ground out to just below ground level rather than grubbed or winched out, which can damage roots of retained trees.
 - 4) Lay woven geotextile over existing ground surface by hand
 - 5) Cover the area with compressible layer, woodchip for example, using hand tools only
 - 6) Cover compressible layer with side butting scaffold boards or plywood boards
 - 7) Confirm surface is acceptable for use with project arboriculturist
 - 8) Area ready for construction access
- 3.6.4. To ensure accuracy and avoid future costly adjustments, the Ground Protection must be set out by a surveyor with all node points being marked clearly on site for the fencing contractor to work to.
- 3.6.5. There is to be no-excavation within ground protection area whatsoever. This includes installation of services and associated utilities.

¹For protection from foot traffic only

3.7. Tree surgery and removal

3.7.1. Those trees which are to be removed are shown with a red dashed canopy outline on the latest revision of the Tree Protection Plan, ACD reference RED23031-03.

3.7.2. The following surgery works are to be carried out:

Tree/Group number	Species	Operation
G4	Monterey Pine, Leyland Cypress	Remove to ground level and grind out remaining stumps.
T5	Monterey Pine	Remove to ground level and grind out remaining stump.
G9	Monterey Pine	Remove x 4 trees to ground level and grind out remaining stumps to facilitate access construction.
H10	Multiple	Remove/trim specimens as shown on TPP to ground level and grind out stumps to facilitate access construction.
G21	Multiple	Hedge-cut Northern face to facilitate construction of proposed junction and pathway where required. Remove/trim specimens as shown on TPP to ground level and grind out stumps to facilitate access construction.
H29	Privet	Pruning and removal of sections as shown on TPP to facilitate construction of sub-station, surfacing and SUD
G30	Multiple	Remove section indicated on TPP to ground level to facilitate construction of surfacing and access.

3.7.3. If any further tree surgery works are required, a proposed specification will be submitted to, and approved by the Local Planning Authority before any works are carried out.

3.7.4. All work will be carried out in accordance with BS 3998:2010 Recommendations for Tree Work, industry best practice and in line with any works already agreed with the Council.

3.7.5. The tree surgery contractor is responsible for carrying out any relevant health and safety risk assessment, and insurance, prior to any work being carried out.

3.7.6. The statutory protection afforded by the Wildlife and Countryside Act and Countryside and Rights of Way Act will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.

3.7.7. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either; cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.

3.7.8. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

3.8. Installation of underground services within RPAs

3.8.1. If for whatever reason installation within RPAs is required the project arboriculturist and local authority must be notified prior to any tree protection barrier removal and the following details adhered to.

3.8.2. Stages for installing services within tree protection areas:

No plant machinery to be used in the area for whatever reason

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
 - 2) Remove just enough tree protection fencing to allow access to area and facilitate trenching.
 - 3) Remove any surface vegetation or existing hard surfaces using hand tools.
 - 4) Excavate the trench using hand tools only, keeping to minimum dimensions required.
 - 5) Roots below 25mm should preferably be retained, however if required can be cut cleanly using secateurs or hand saw.
 - 6) Roots over 25mm diameter will be retained and kept damp by covering with hessian (re-wetted as required).
 - 7) Feed in services.
 - 8) Back fill trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported top-soil (to BS3882:2015), firming down with heels
 - 9) Repeat step 7 until trench is filled.
 - 10) Re-erect tree protection fencing as per approved plan.
- 3.8.3. An alternative to the method of excavation above, for trenching within RPA's, is by using an 'air-spade' or similar. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. ACD can provide details of contractors supplying air-spade services if required.
- 3.8.4. Alternatively, trenchless technology such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on roots of the subject tree. As no access/thrust pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.
- 3.8.5. Reference can be made to National Joint Utilities Group publication Volume 4 (NJUG Vol4) for guidance, but any approach must be approved by the project arboriculturist.

3.9. Hard surface removal

3.9.1. Stages for hard surface removal within tree protection areas:

No plant machinery to be sited on any exposed rooting area

- 1) Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work
- 2) Dismantle fencing as required to access area
- 3) Plant machinery to run only on existing hard surfaces with consent from arboriculturist
- 4) Plant may be used to carefully peel up existing tarmac and concrete
- 5) Other surfaces are to be removed by hand (paving etc.)
- 6) Where any sub base is not likely to contain roots, and only on approval from project arboriculturist, it may also be carefully removed.
- 7) Underlying ground levels to be retained. No excavation to occur
- 8) Any exposed roots² and surrounding newly exposed areas to be covered with up to 100mm of topsoil, from elsewhere on site, or imported top-soil (to BS3882:1984). Soil may be placed in area by plant but must be spread by hand.
- 9) Tree protection fencing to be erected in final position as shown on plan

3.9.2. If the area around the retained trees is to be left following the removal of the existing hard surface, before a new hard surface is laid or soft landscaping implemented, then the line of protective fencing **MUST** be correctly re-established immediately the hard surface removal work has been completed.

3.9.3. If, for whatever reason there is a delay before the area is left exposed prior to awaiting a new surface, then a temporary surface must be implemented, or the area fenced off.

²Should any roots over 25mm diameter, have grown above the final soil level and be a hindrance to any new surface installation, their removal will only be carried out under arboricultural supervision and with the approval of the LPA.

3.10. Resurfacing/repair of existing roads

3.10.1. Tree protection measures will remain in place until work commences and when removed all personnel to be working within the area are to be made aware of the extent and nature of the area.

3.10.2. All work within protected areas to be supervised at all times by project arboriculturist.

3.10.3. Stages for repair/replacement of existing hard surface within tree protection areas:

No plant machinery to be sited on any exposed rooting area

- 1) Remove TPF to allow access to area.
- 2) Plant machinery to run only on existing tarmac surface
- 3) Plant may be used to carefully peel up existing tarmac
- 4) Other hard landscape features are to be removed by hand (paving etc.) or carefully lifted with plant
- 5) Sub-base to be retained.
- 6) Sub-base to be enhanced if required
- 7) New tarmac surface to be installed

3.10.4. Should any roots over 25mm diameter be encountered during deconstruction of the old profile, their removal will only be carried out under arboricultural supervision and with the approval of the LPA.

3.10.5. Any new kerbing must be installed within the current hard construction profile.

3.10.6. No new excavation closer to the tree will be permitted.

Henry Pinn
Arboriculturist

21 July 2021

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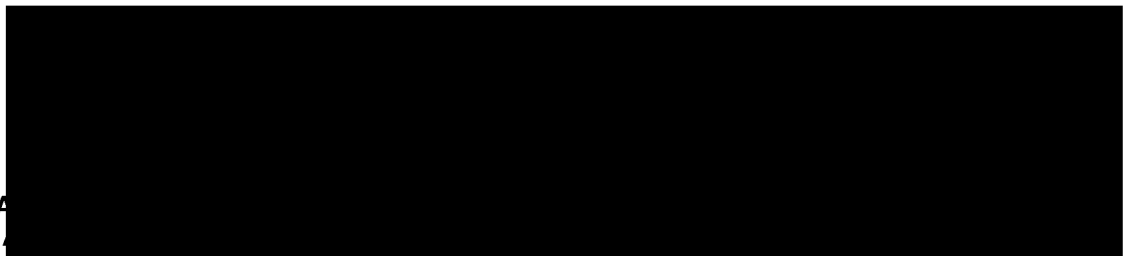
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