

# Agricultural Land Classification Report

Church Commissioners for England- Hoo St. Werburgh, Kent

#### Prepared for:

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# 1. Summary

A Soil and Agricultural Land Classification Survey has been undertaken by James Bairstow of Strutt & Parker on behalf of Lichfields who are acting for the Church Commissioner's for England- the site surveyed is East of Hoo St. Werburgh, Kent.

The area of land assessed totalled 156.07 ha.

The survey was carried out in December 2022.

The agricultural land on the site has been classified as mainly medium textured silty loam and clay loam topsoil's with a range of drainage capacity subsoils. Due to the soil properties and climactic conditions; a combination of droughtiness and soil wetness class limits the quality of land over the area to Agricultural Grade 2- 102.36 ha (66%) and Agricultural Grade 3a- 53.71 ha (34%).

# 2. Background

Strutt & Parker were instructed by Lichfields on behalf of the Church Commissioners for England to determine the Agricultural Land Classification (ALC) of an area of land near Hoo St. Werburgh, Kent.

Due to the size of the site, two centre grid reference points have been used.

Site Centre Point 1: Grid Reference TQ 79502 73501

Site Centre Point 2: Grid Reference TQ 80360 73227

This is necessary when determining the climactic conditions of the site and using two centre points with ensure accuracy when doing so. Centre point locations can be found on the survey map in Appendix E.

The land in question covers 156.07 hectares (ha) and is currently in agricultural use (farmed under an arable rotation).

This area shall be known as 'the site' hereon in.

A site plan and study area can be found below in Figure 1.

Appendix G shows the the architectural plan for the proposed site development. N.B- The land to the West of Ropers Lane was not surveyed.





Published information states the soil predominantly belonging to the Ratsborough 5.72 seriescomprising dark greyish brown, slightly stony silty clay loam over clayey soils with slowly permeable subsoils and slight seasonal water logging positioned centrally and to the West of the site.

There is a secondary soil type found to the East & South of the site belonging to the Park Gate 8.41 series.

Soil Type 1: Series: 5.72 Ratsborough (rT)

Definition

| Major soil<br>group: | 05 brown soils                       | With dominantly brownish or reddish subsoils and no prominent mottling or greyish colours (gleying) above 40 cm depth. They are developed mainly on permeable materials at elevations below about 300 m.0.D. Most are in agricultural use. |
|----------------------|--------------------------------------|--|
| Soil Group:          | 7 argillic brown earths              | Loamy or clayey with an ordinary clay-enriched subsoil.  |
| Soil<br>Subgroup:    | 2 stagnogleyic argillic brown earths | (faintly mottled with slowly permeable subsoil)  |
| Soil Series:         |                                      | medium silty over clayey drift with siliceous stones   |

These soils are typically found centrally and to the West of the site.

#### Soil Type 2: Series: 8.41 Park Gate (Pz)

#### Definition

| Major soil<br>group: | 08 ground-water gley soils    | Seasonally waterlogged soils affected by a shallow fluctuating groundwater-table. They are developed mainly within or over permeable material and have prominently mottled or greyish coloured horizons within 40 cm depth Most occupy low-lying or depressional sites. |
|----------------------|-------------------------------|---|
| Soil Group:          | 4 argillic gley soils         | With a distinct topsoil and a clay-enriched subsoil.  |
| Soil<br>Subgroup:    | 1 typical argillic gley soils | (with loamy topsoil)  |
| Soil Series:         |                               | silty stoneless drift   |

These Soils are typical found more to the East and South of the site.

A full detailed description of the soil series description and soil type areas can be found Appendix A and Appendix E, including maps, positioning and boundary plans in relation to the site.

# 3. Methodology

Before the site visit, a desktop study of the location and climatological data associated with the land was undertaken. The climate data was obtained from the Met Office publication; Climatological Data for Agricultural Land Classification (1989) and was used to determine overriding site limitations and interactions with soil parameters.

The site visit took place on the 08/12/22 where a total of 141 soil auger borings were extracted to a depth of 120cm (where possible) and 12 examination pits were dug to make a detailed assessment of the soil profile and sub-soil structure. Soil auger boring and soil pit locations were carried out on a 100 x 100 m grid at a density of one per hectare to ensure an unbiased and logical gathering of data. A copy of the location of auger borings and soil pits are shown in Appendix E.

Soil texture was assessed by the consultant carrying out the survey, however, samples were sent for independent laboratory analysis to support the assessment. The results of this analysis are fully detailed in Appendix C.

# 4. Land Classification

The ALC assessment is undertaken in accordance with the Agricultural Land Classification for England and Wales; Revised Guidelines on Criteria for Grading the Quality of Agricultural Land 1988 and the final grade is determined by the most limiting factor present.

The MAFF Agricultural Land Classification (1988) system splits land into 5 classification grades numbered 1 to 5, with sub-grades allocated to grade 3 (Grade 3a and 3b).

The main limiting factors used in the ALC system, which influence the grade of land are:

- -Climatic limitations
- -Site limitations
- -Soil limitations
- -Interactive limitations

#### 4.1 Climatic Conditions

The climatological data for the site has been interpolated from Meteorological Office (1989) data and is shown below in Table 1, the full workings are detailed in Appendix B. It shows the interpolated adjustment for altitude, average annual rainfall, accumulated temperature, field capacity days and the moisture deficit for wheat and potatoes for the site.

| Table 1 – Climatological Data for Site Point A (TQ 79502 73501) & Site Point B (TQ 80360 73227) |             |                                |                                |  |  |  |  |  |
|---|-------------|--------------------------------|--------------------------------|--|--|--|--|--|
| at Hoo St.Werburgh, Kent  |             |                                |                                |  |  |  |  |  |
|   |             |                                |                                |  |  |  |  |  |
| Climatological Factor   | Units       | Value Site A<br>TQ 79502 73501 | Value Site B<br>TQ 80360 73227 |  |  |  |  |  |
| Altitude  | m           | 20                             | 9                              |  |  |  |  |  |
| Average Annual Rainfall (AAR)   | mm          | 599                            | 568                            |  |  |  |  |  |
| Accumulated Temperature (AT0)   | day º C     | 1476                           | 1488                           |  |  |  |  |  |
|   | (Jan – Jun) |                                |                                |  |  |  |  |  |
| Field Capacity Days   | day         | 115                            | 108                            |  |  |  |  |  |
| Moisture Deficit – Wheat  | mm          | 127                            | 129                            |  |  |  |  |  |
| Moisture Deficit - Potatoes   | mm          | 124                            | 127                            |  |  |  |  |  |

Based on the Average Annual Rainfall and Accumulated Temperature, the grade according to climate at this site should be no less than **ALC Grade 1**.

### 4.2 Site Limitations

The assessment of site factors is primarily concerned with the way in which the topography influences the use of agricultural machinery and hence the potential cropping of the land.

### 4.2.1 Gradient

This can influence the ALC of a site, due to it affecting the type of machinery which can be safely and efficiently operated. Grades 1 to 3A have a gradient limit of 7 degrees. Grade 3B has a limit of 11 degrees. The gradient of Land at the site does not exceed 7 degrees and therefore, based on gradient this site should be classified no less than **ALC Grade 1**.



Image 1- Topography and Micro-relief of Land at Hoo St.Werburgh, Kent

### 4.2.2 Micro-relief

Complex changes to slope angle and direction over short distances, or the presence of boulders or rock considerably limits the use of agricultural machinery. The micro-relief across the site is not a limiting factor in assessing the ALC of this site (Image 1).

#### 4.2.3 Flooding

The risk of flooding is minimal and therefore is not a limiting factor when assessing the ALC of this site.

Risk of summer flooding as a frequency would be classed as 'very rare' for a short period of timetherefore maintaining the **ALC Grade at Grade 1**.

#### 4.3 Soil Limitations

A detailed soil quality assessment was made over the site through a 100m x 100m grid (as detailed in Appendix E). 141 auger borings to a depth of 120cm (where possible) were taken and 12 soils pits to a depth of 120cm were dug to observe details around soil quality, drainage capacity and structural composition.

Soils did vary across the site however they could roughly be classed into two main soil groups.

#### 4.3.1 Clay Loam Topsoil over Clay Loam Types

These types of soils are of the majority over the site. They are found more Westerly (Block S) and Easterly (Block NE) within the site.

A typical observation profile of this type can be seen below:

Boring B16- Appendix C & E

| 0-40cm     | Brown/dark brown (10YR 2/2) clay loam; stoney; moderately developed single grain structure; firm; non-<br>calcareous; smooth clear boundary to: |
|------------|---|
| 40-60cm    | Brown (10YR 4/4) clay loam yellowish brown (10YR 5/6) mottles; stoney; weakly developed single grain; firm; smooth gradual boundary to:         |
| 60-120+ cm | Brown (10YR 4/4) clay; stoney; weakly developed coarse prismatic structure  |

These are typically draining/imperfectly draining and of soil wetness class II with a moderate capacity to absorb excess winter rainfall.



Image 2- Soil Pit 3. Clearly showing the different silty clay loam horizons, slowly permeable layers and therefore imperfect drainage ability indicating wetness as a trigger for ALC grading.

#### 4.3.2 Silty Clay Loam Topsoil over Clay Loam Types

These types of soils are of the majority over the site. They are found more Northerly and Central-Southerly within the site (Block B).

A typical observation profile of this type can be seen below:

Boring B92- Appendix C & E

| 0-32cm     | Brown/dark brown (10YR 2/2) silty clay loam; slightly stoney; moderately developed single grain structure; firm; non-calcareous; smooth clear boundary to: |
|------------|--|
| 32-60cm    | Brown (10YR 4/4) clay loam yellowish brown (10YR 5/6) mottles; stoney; weakly developed single grain; firm; smooth gradual boundary to:                    |
| 60-120+ cm | Brown (10YR 4/4) clay; weakly developed coarse prismatic structure   |

These are typically draining/imperfectly draining and of soil wetness class II with a moderate capacity to absorb excess winter rainfall.

#### 4.3.3 Soil Depth

The depth of soil can be a limiting factor within ALC, however the site had soil depths in excess of 60cm and therefore can be graded no less than **ALC Grade 1**.

#### **4.3.4 Chemical Limitations**

Sites can be graded according to chemical limitations however it is not a limiting factor for this site.

#### 4.3.5 Soil Stone Content

Another limiting factor is stoniness, which assesses the percentage (volume) of hard stones in the top 25cm of soil, which can impact on crop growth, cultivations and harvesting.

The soil stone content of the site is consistently c.5% hard stones larger than 20mm. Therefore based on this assessment the ALC grading can be no higher than **Grade 2.** There are areas towards the south of the site with higher stone content but nothing consistently over 15% stone larger than 2cm in the top 25cm of soil. However some areas of the site did have stone content above 10% which was a key factor in downgrading some of the site to ALC Grade 3a.

### 4.4 Interactive Limitations

Interactive limitations are the physical limitations which result from interactions between climate, site and soil (MAFF, 1988). Within this, soil wetness, droughtiness, irrigation and soil erosion are assessed.

#### 4.4.1 Soil Wetness

The soil wetness class of the site is classed as Wetness Class II. Therefore, the ALC grade based on wetness class, considering that the site has topsoil textures of clay loam, silty clay loam and field capacity days of 115 & 118 (Table 1), should be higher than **ALC Grade 2**.

### 4.4.2 Soil Droughtiness

Droughtiness needs to be assessed as available and adequate soil moisture is vital to a crop achieving its full yield potential. Two crops, a shallow and a deep rooting crop are used to provide an average drought risk assessment of the soil. Stoniness of the soil, soil type and soil structure are all used to determine the moisture balance (crop adjusted available water capacity *less* moisture deficit).

Soil droughtiness is calculated on the crops continual demand for moisture throughout the growing season and the capacity of the soil type in order to retain that moisture. Droughtiness is most likely to be a significant limitation to crop growth in areas with relatively low rainfall or high evapotranspiration. The ALC system method to calculate droughtiness is based on work by Thomasson (1979). This is based on the average soil moisture balance using a) crop-adjusted water capacity of the soil profile and b) moisture deficit.

The soil droughtiness calculations have found to be variable based on soil types, horizon depths and stone content. The area in question is one of very low Average Annual Rainfall for England and therefore drought potential is of real consideration for this ALC.

Moisture balances for Wheat ranged between +25 (ALC Grade 2) and -16 (ALC Grade 3a).

Moisture balances for Potatoes ranged between -1 (ALC Grade 2) and -23 (ALC Grade 3a).

Therefore parts of the site can be graded no higher than **ALC Grade 2** whereas other parts of the site can be graded no higher than **ALC Grade 3a** based on this being the most limiting factor. A full breakdown of the grading areas can be found in Appendix F.

### 4.4.3 Soil Erosion

Soil erosion is a factor to consider when grading agricultural land. Given the presence of silty clay loams and clay loams, which are not susceptible to wind blow and the sheltering effect of many hedgerows and tree belts; soil erosion is not considered significant enough to downgrade the site.

# 5. Conclusion

Prior to carrying out this report, the survey site at Hoo St.Werburgh, Kent was classified by Natural England in their pre 1988 Agricultural Land Classification Map as on the boundary of ALC Grade Grade 1, as shown in Appendix D.

Drawing on the climatological data, site limitations, soil limitations and interactive limitations investigated in the report thus far, the 156.07 ha survey site should receive the following agricultural land classification:

|                  | ALC Grade for Land at Hoo St. Werburgh, Kent |          |                              |  |  |  |  |  |
|------------------|--|----------|------------------------------|--|--|--|--|--|
| ALC Grade        | Area (ha)                                    | Area (%) | Limiting Factor              |  |  |  |  |  |
| 1                | -  | -        | -                            |  |  |  |  |  |
| 2                | 102.36                                       | 66%      | Soil<br>Wetness/Droughtiness |  |  |  |  |  |
| За               | 53.71  | 34%      | Drougtiness/Stone<br>Content |  |  |  |  |  |
| 3b               | -  | -        | -                            |  |  |  |  |  |
| 4                | -  | -        | -                            |  |  |  |  |  |
| Non Agricultural | -  | -        | -                            |  |  |  |  |  |

#### **Results Discussion**

#### Grade 2- 'Blue shading on map'

There are 102.36 hectares of Grade 2 soils on the site. This is predominantly made up of silty clay loams over varying clay/sandy clay subsoils with a medium texture topsoil. These soils are imperfectly draining and hold wetness class of II. Stone content in these areas is slightly less than parts of the site between 0-10% 2cm hard stones in the top 25cm of soil.

These soils are generally considered good for cereal production and in some cases root crop production, due to their ability to hold nutrients, establish crops and inherent fertility. However, lower than average rainfall for England here does reduce the viability of root crop production in some areas and supplementary irrigation is generally required to make these crops viable. Therefore droughtiness is also considered in some parts of the Grade 2 area as a limitation along with Soil Wetness Class.

The final ALC grade map for these soils can be found in Appendix F.

#### Grade 3a- 'Green shading on map'

There are 53.71 hectares of Grade 3a soils on the site. This is predominantly made up of clay loams over varying clay subsoils with a medium texture topsoil. These soils are imperfectly draining and

hold wetness class of II. Drougtiness and stone content are the limiting factors. Annual Average Rainfall for the area is extremely low for England, coupled with presence of stone in the topsoil, it renders available water to consistently grow root crops lower than required and therefore difficult to grow these crops.

Workability of these types of soils is likely to be restricted to Autumn or Spring cultivations. Coupled with the sites low average annual rainfall and imperfectly draining soils, this limits its Agricultural use mainly to cereal rotation. The relatively dry climate does lend itself to extended agricultural use in the autumn however. Potatoes would not receive enough natural rainfall coupled with the reasonable drainage capacity of the field. Potatoes or other root crops would generally need supplementary irrigation to grow crops in this part of the country. Hence the limiting factor on the grading criteria. The stone content also plays a factor in the ability to grow root crops as well as the effect this has on crop interaction.

The final ALC grade map for these soils can be found in Appendix F.

#### **Further Remarks**

Should the site be developed, these types of soils are very prone to compaction exaggerated with heavy machinery resulting in the soil being even less permeable and therefore a reduced ability to drain. Therefore care would be advised in the use of heavy machinery. If heavy machinery is used, thought should be taken to loosen subsoil compaction before the spreading for topsoil.

Care should be taken in soil selection for landscape use. The imperfectly draining subsoils soils would be poor choice in reclamation of undeveloped areas of the site. The topsoil however would be good quality and should be stored in separate bunds recommended no higher than 3m. In order to protect them as a topsoil resource they should be kept free of vegetation and compaction.

Ideal times for workability for these types of soils should be between April and September and care should be taken to work these soils during and after heavy rainfall.

# 6. References

Ministry of Agriculture, Fisheries and Food, 1988, Agricultural Land Classification of England and Wales

Meteorological Office, 1989, Climatological Data for Agricultural Land Classification

Munsell Colour Chart

Cranfield University- LandIS- Land Information System

Risk of Flooding from Rivers and Sea: 1:15 000. Environment Agency

Soil Survey Field Handbook. Technical Monograph No.5. Soil Survey of England and Wales 1976.

Soil Map of England and Wales: 1:250 000. Soil Survey of England and Wales.

Butler, B E. Soil Classification for Soil Survey Monographs on Soil Survey (1980) Clarendon Press, Oxford

Soils and Their Use in Eastern England. Soil Survey of England and Wales,

Agricultural Land Classification Map 1:250 000. MAFF 1983.

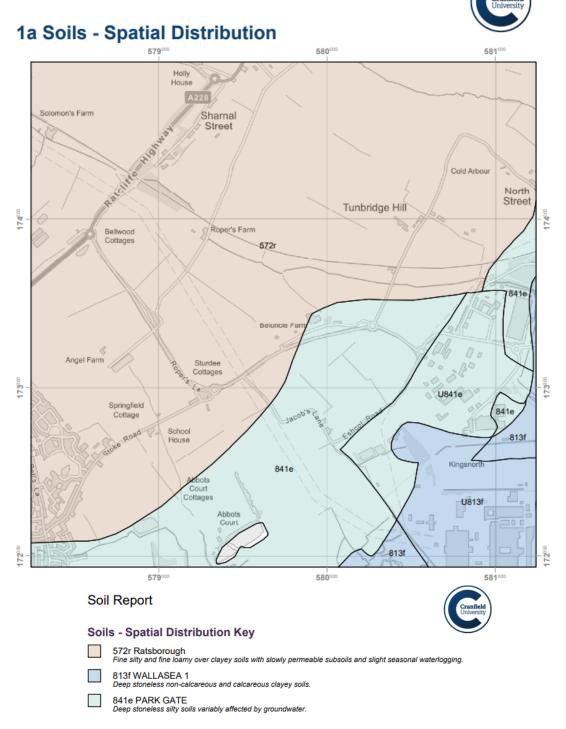
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# 7. Statement of Competence

The agent carrying out the report is JWE Bairstow BSc (Hons). He holds a second class, upper division honours degree from Harper Adams University, Shropshire. He graduated in 2008, managed two 4000 ha farming businesses from 2009-2021 and joined Strutt & Parker in 2021. He specialises in land use management and advises private clients on the profitable and sustainable operational practice of their land. He farms in his own right on a 300 acre grassland farm on the edge of the Yorkshire Dales. He is a fully qualified agronomist (holding both FACTS and BASIS qualifications).

He is qualified through the British Association of Soil Scientists to carry out Agricultural Land Classification Surveys and has acted for a number of high profile clients in these matters. His academic credentials and experience in the industry with this particular field makes him more than suitably qualified to prepare this report. **Appendix A- Soil Series Information** 

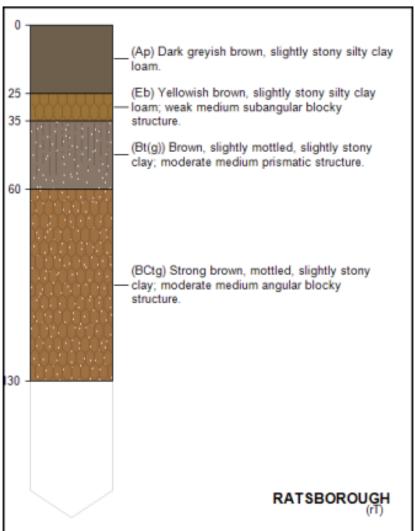
### Soil Report



#### SOIL ASSOCIATION DESCRIPTION

Soil Associations represent a group of soil series (soil types) which are typically found occurring together, associations represent a group of soil series (soil types) which are typically found occurring together, associated in the landscape (Avery, 1973; 1980; Clayden and Hollis, 1984). Soil associations may occur in many geographical locations around the country where the environmental conditions are comparable. For each of these soil associations, a collection of soil types (or soil series) are recorded together with their approximate proportions within the association. Soil associations have codes as well as textual names, thus code '554a' refers to the 'Frilford' association. Where a code is prefixed with 'U', the area is predominantly urbanised (e.g. 'U571v'). The soil association bescriptions.

Fine silty and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging.

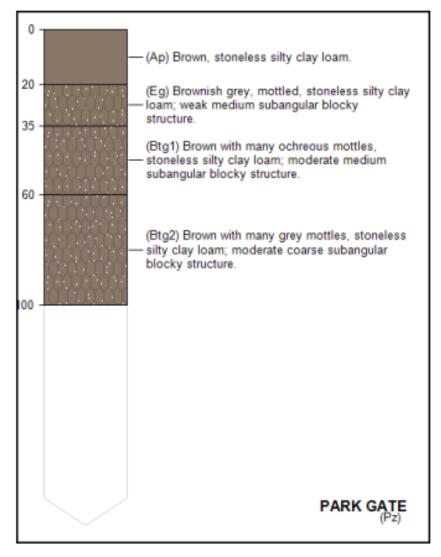


# d. Ratsborough Component Series Profiles

# PARK GATE (841e)

Deep stoneless silty soils variably affected by groundwater.

# d. PARK GATE Component Series Profiles



## Appendix B- Interpolated Climate Calculations

#### Master Triangulation Data for Site

|             | SQ       | Easting | Northing |            | Alt       | Lapse | AAR | AT0  | FCD | MD-Wheat | MD- Potatoes |
|-------------|----------|---------|----------|------------|-----------|-------|-----|------|-----|----------|--------------|
| Point 1     | TQ       | 750     | 750      |            | 10        | 0.7   | 637 | 1487 | 109 | 128      | 126          |
| Point 2     | TQ       | 750     | 700      |            | 18        | 0.6   | 574 | 1480 | 125 | 124      | 121          |
| Point 3     | TQ       | 800     | 750      |            | 28        | 0.9   | 570 | 1465 | 106 | 127      | 125          |
| Point 4     | TQ       | 800     | 700      |            | 0         | 1.4   | 600 | 1500 | 118 | 127      | 125          |
| Master Data |          |         |          |            |           |       |     |      |     |          |              |
|             | Site     | m       | Easting  | Northing   |           |       |     |      |     |          |              |
|             | Altitude | 9       | 80360    | 73227      |           |       |     |      |     |          |              |
|             |          |         | Tri      | angulation | Point Dat | а     |     |      |     |          |              |
|             | SQ       | Easting | Northing |            | Alt       | Lapse | AAR | AT0  | FCD | MD-Wheat | MD- Potatoes |
| Point 1     | TQ       | 850     | 750      |            | 3         | 1.3   | 537 | 1493 | 99  | 131      | 130          |
| Point 2     | TQ       | 850     | 700      |            | 0         | 1.1   | 564 | 1498 | 110 | 132      | 131          |
| Point 3     | TQ       | 800     | 750      |            | 28        | 0.9   | 570 | 1465 | 106 | 127      | 125          |
| Point 4     | TQ       | 800     | 700      |            | 0         | 1.4   | 600 | 1500 | 118 | 127      | 125          |

#### AAR Calculation

| Equation                         | Reference: |   |  |  |  |  |
|----------------------------------|------------|---|--|--|--|--|
| AARa= AARg+LR_AARg (ALTs - ALTg) |            | AARa is the altitude adjusted gridpoint value of AAR (mm)                                 |  |  |  |  |
|                                  |            | AARg is the gridpoint value of AAR obtained from the dataset (mm)                         |  |  |  |  |
| Point 1                          | 644.00     | LR_AARg is the gridpoint value for the lapse rate of AAR obtained from the dataset (mm/m) |  |  |  |  |
| Point 2                          | 575.20     | ALTs is the altitude of the site (m)  |  |  |  |  |
| Point 3                          | 562.80     | ALTg is the altitude of the gridpoint obtained from the dataset (m)                       |  |  |  |  |
| Point 4                          | 628.00     |   |  |  |  |  |

#### AT0 Calculation

|           |                         | AT0a is the altitude adjusted gridpoint value of AT0 (day °C)         |  |  |  |  |  |  |
|-----------|-------------------------|---|--|--|--|--|--|--|
| Equation  | Reference:              | AT0g is the gridpoint value of AT0 obtained from the dataset (day °C) |  |  |  |  |  |  |
| AT0a = AT | 0g + 1.14 (ALTg - ALTs) | 1.14 is the lapse rate of AT0 (day °C/m)                              |  |  |  |  |  |  |
|           |                         | ALTg is the altitude of the gridpoint obtained from the dataset (m)   |  |  |  |  |  |  |
|           |                         | ALTs is the altitude of the site (m)                                  |  |  |  |  |  |  |
| Point 1   | 1475.60                 |   |  |  |  |  |  |  |
| Point 2   | 1477.72                 |   |  |  |  |  |  |  |
| Point 3   | 1474.12                 |   |  |  |  |  |  |  |
| Point 4   | 1477.20                 |   |  |  |  |  |  |  |
|           |                         |   |  |  |  |  |  |  |

#### FCD Calculation

| Equation I | Reference:                                  |  |  |  | FCDa is th   | e altitude a  | adjusted g  | ridpoint va | lue of FCE   | ) (day)    |           |            |        |
|------------|---|--|--|--|--|---------------|-------------|-------------|--------------|------------|-----------|------------|--------|
| FCDa = FC  | Da = FCDg + 0.1446 [LR_AARg (ALTs - ALTSg)] |  |  |  | FCDg is a gridpoint value of FCD obtained from dataset (day) |               |             |             |              |            |           |            |        |
|            |   |  |  |  | LR_AARg i  | s the gridp   | oint value  | of the lap  | se rate of a | AAR obtain | ed from t | he dataset | (mm/m) |
|            |   |  |  |  | ALTs is the  | altitude o    | of the site | (m)         |              |            |           |            |        |
|            |   |  |  |  | ALTg is the  | altitude o    | of the grid | ooint obtai | ned from     | the datase | t (m)     |            |        |
| Point 1    | 110.01                                      |  |  |  |  |               |             |             |              |            |           |            |        |
| Point 2    | 125.17                                      |  |  |  | when FCD   | a is > 365, t | take FCDa   | to be 365   |              |            |           |            |        |
| Point 3    | 104.96                                      |  |  |  |  |               |             |             |              |            |           |            |        |
| Point 4    | 122.05                                      |  |  |  |  |               |             |             |              |            |           |            |        |

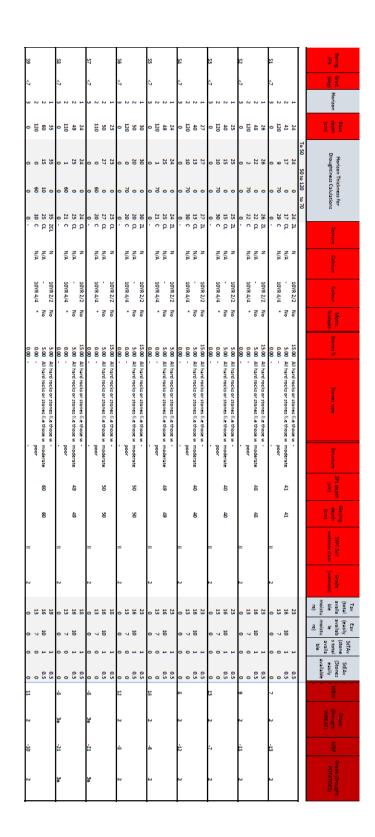
## Altitude Adjustment Calculation

| Altitude Adjusted Valu | ies                            |        |        |           |  |
|------------------------|--------------------------------|--------|--------|-----------|--|
| Equation Reference:    |                                |        |        |           | Dsg is the computed distance between site and gridpoint              |
| Dsg = 🗸 (EASTg - EAS   | Ts) <sup>a</sup> • (NORTHg - I | VORTHS | ľ      |           | EASTg is the National Grid easting for the gridpoint                 |
|                        |                                |        |        |           | EASTs is the National Grid easting for the site                      |
|                        |                                |        |        |           | NORTHg is the National Grid northing for the gridpoint               |
|                        | calc.1                         | calc.2 | calc3. | Sq        | NORTHs is the National Grid northing for the site                    |
| Point 1                | 6201877504                     | 5E+09  | 1E+10  | 107212.80 |  |
| Point 2                | 6201877504                     | 5E+09  | 1E+10  | 107246.74 |  |
| Point 3                | 6194004804                     | 5E+09  | 1E+10  | 107176.08 |  |
| Point 4                | 6194004804                     | 5E+09  | 1E+10  | 107210.03 |  |
|                        |                                |        |        |           |  |
| Inverse Square         |                                |        |        |           | Wg is the inversed distance squared factor for the gridpoint         |
| Equation Reference:    |                                |        |        |           |  |
| Vg = (1/Dsg)*          |                                |        |        |           | Dsg is the computed distance between the site and grid point         |
| Point 1                | 0.0000000001                   |        |        |           |  |
| Point 2                | 0.0000000001                   |        |        |           |  |
| Point 3                | 0.0000000001                   |        |        |           |  |
| Point 4                | 0.0000000001                   |        |        |           |  |
| Sum of Inverse S       | 0.0000000003                   |        |        |           |  |
| Distance Factor        |                                |        |        |           | Wp is the distance weighting factor for the grid point               |
| Equation Reference:    |                                |        |        |           |  |
| Vp = Vq / Vt           |                                |        |        |           | Wg is the inverse distance squared factor for the gridpoint          |
|                        |                                |        |        |           | Wt is the sum of Wg values for all reference gridpoints for the site |
| Point 1                | 0.249993474                    |        |        |           |  |
| Point 2                | 0.249835295                    |        |        |           |  |
| Point 3                | 0.250164813                    |        |        |           |  |
| Point 4                | 0.250006417                    |        |        |           |  |

#### **Moisture Deficit Calculations**

| Wheat             |         |         |         |
|-------------------|---------|---------|---------|
|                   | Calc 1. | Calc 2. | Calc 3. |
| Point 1           | 0.49    | -1.026  | 128.54  |
| Point 2           | 0.084   | -0.2052 | 124.12  |
| Point 3           | -0.504  | 1.0728  | 126.43  |
| Point 4           | 1.96    | -2.052  | 127.09  |
|                   |         |         |         |
| Potatoes          |         |         |         |
|                   | Calc 1. | Calc 2. | Calc 3. |
| Point 1           | 0.63    | -1.368  | 126.74  |
| Point 2           | 0.108   | -0.2736 | 121.17  |
| Point 3           | -0.648  | 1.0944  | 124.55  |
| Point 4           | 2.52    | -2.736  | 125.22  |
|                   |         |         |         |
| Interpolated Data | mm      |         |         |
| MD Wheat          | 126.55  |         |         |
| MD Potatoes       | 124.42  |         |         |

# Appendix C- Auger Boring and Soil Pit Information including Wetness & Droughtiness Assessment



| <u> </u>   |  | Г  |  |   |  |   |  |   |   |   |
|--|--|--|--|---|--|---|--|---|---|---|
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| 62<br>120  | 34<br>55<br>120  | 24<br>45<br>0  | 35<br>60<br>120  | 52<br>64<br>120   | 36<br>65<br>120  | 35<br>66<br>120   | o <mark>i8</mark> % ⊠  | 0 <mark>1</mark> 0 48 11  | 65<br>120   | 60<br>120   |
|  | <b>س</b> در  | 24<br>5<br>0   | 0<br>0   | 22<br>0<br>0  | 36<br>14<br>0  | 0   | 0 0 23   | 21<br>27<br>0   |   | H 10  |
| 0 0 13 37  | 0054   | 4 4 0 0  | 0 0 35   | 0082  | 0<br>0<br>0  | 0055  | 0 0 27 23  | 21<br>27<br>2<br>2  | 0<br>0  | 0053  |
| 0 <sup>58</sup> 0  | 0 5 5 0  | 0000   | 0 <sup>60</sup> 0  | 0<br>14<br>0  | 0<br>55<br>0   | 16<br>54  | o <sup>45</sup> v o  | 0 × 0 0   | 0<br>55<br>0  | 0 6 6 0   |
| 0 C C C  | 34 CL<br>0 · C   | 24 ZCI<br>21 CL<br>25 C  | 35 CL<br>10 C  | 22 ZCL<br>42 CL<br>6 C  | 36 CL<br>9 CL<br>0 -   | 35 CL<br>4 C  | 0.<br>12.0<br>23.0   | 21 CL<br>27 CL<br>22 C  | 38 CL<br>27 CL<br>0 -   | 0 - C   |
|  |  | ° ≃ p  |  | Υ P P   |  | ЧЧ  |  |   |   | b   |
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| 10/1   | 1071   | 10/0<br>10/0   | 10V1   | 10V1<br>-<br>10V1   | 10V1<br>10V1   | 10Y1<br>10Y1  | 10/1   | 10/1  | 10/7<br>-<br>10 Y   | 10Y1<br>-<br>10 Y   |
| 10YR 2/2 No<br>- No<br>10YR 5/4 *  | 10YR 2/2 No<br>- No<br>10YR 4/4 No   | 10YR 2/2 N<br>- N<br>10YR 4/4 *  | 10YR 2/2 N<br>- Ni<br>10YR 4/4 *   | 10YR 2/2 N<br>- N<br>10YR 4/4 *   | 10YR 2/2 N<br>- N<br>10YR 4/4  | 10YR 2/2 No<br>- No<br>10YR 4/4 *   | 10YR 2/2 N<br>- N<br>10YR 4/4  | 10YR 2/2 No<br>- No<br>10YR 4/4 *   | 10YR 2/2 N<br>- N<br>10 YR 5/4  | 10YR 2/2 No<br>- No<br>10 YR 5/4 *  |
| • <sup>8</sup> 8   | • N N  | • N N  | • No<br>No   | • No<br>No<br>No  | • No   | • No<br>No  | • N N  | • N N   | • No  | • No No   |
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| 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10YR 4/4                        | 10YR 2/2<br>-<br>10 YR 4/4<br>10YR 2/2<br>-<br>10YR 4/4  | 10YR 2/2<br>-<br>10YR 4/4                        | 10YR 2/2<br>-<br>10YR 4/4<br>10YR 2/2<br>-<br>10YR 4/4  | 10YR 2/2<br>-<br>10YR 4/4<br>10YR 2/2<br>-<br>10 YR 5/4   | 10YR 2/2<br>-<br>10 YR 5/4<br>10YR 2/2<br>-<br>10YR 4/4   |
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| N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N/A<br>N/A  | N N/A<br>N/A  | N<br>N/A<br>N/A<br>N/A   | N<br>N/A<br>N/A<br>N/A<br>N/A   |
| 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10YR 4/4<br>10YR 2/2   | 10YR 2/2<br>-<br>10YR 4/4<br>10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10 YR 5/4<br>10YR 2/2<br>-<br>10YR 4/4   |
| • No No   | • No  | • N N   | • N N • 2   | N0 * N0   | • N • • N •  | • N 0<br>• N 0  |
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| those w -<br>those w moderate<br>poor   | those w -<br>poor<br>-  | those w -<br>those w moderate<br>poor   | poor<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-<br>-  | those w -<br>poor<br>-<br>those w -<br>those w moderate   | those w -<br>those w moderate<br>poor<br>those w -<br>those w moderate<br>poor<br>-  | those w -<br>moderate<br>, moderate<br>, those w -<br>those w moderate<br>, poor  |
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| 19<br>13  | 0<br>0  | 0 13 0  | 13 16 19 0 13 1   | 19<br>0<br>15   | 19<br>0<br>17<br>13  | 0 13<br>0 15  |
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| 0.5   | 0 0 0.5   | o o <sup>0,</sup> 0, 0  |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 0.5<br>0.5   | 0.5<br>0.5  |
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| 8      |          |       |          |     |      |   |   | m     |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   |       |           |  |   |      |          |  |   |       |      |   |                                       |        |          |  |   |      |
|--------|----------|-------|----------|-----|------|---|---|-------|-----------|---|---|------|-----------|--|---|-------|-----------|--|---------------------------------------|-------|------|--|---------------------------------------|------|----------|--|---|-------|-----------|--|---|------|----------|--|---|-------|------|---|---------------------------------------|--------|----------|--|---|------|
| B26 -  |          |       |          | 825 |      |   |   | B24 . |           |   |   | B23  |           |  |   | B22 . |           |  |                                       | B21 . |      |  |                                       | 8    |          |  |   | B19 . |           |  |   | 18 . |          |  |   | B17 . |      |   |                                       | B16 .  |          |  |   | B15  |
| <7     |          |       |          | 4   | '    |   |   | 9     |           |   |   | <7   |           |  |   | <7    |           |  |                                       | <7    |      |  |                                       | 2    |          | 2  |   | 2     |           |  |   | 0    |          |  |   | 7     |      |   |                                       | <7     |          |  |   | 4    |
| Ű      | 2        | 2     | -        | Ĩ   |      | 2   | -                                       | Ű     | 2         | 2   | -                                       | Ĩ    | 2         | 2  | -                                       | ω     | 2         | 2  | 1                                     | w     | 2    | 2  | -                                     | Ĩ    | 2        | 2  | -                                       | Ĩ     | 2         | 2  | -                                       | w    | 2        | 2  | -                                       | 3     | 2    | 2   | 1                                     | w      | 2        |  |   | Ű    |
| •      | 120      | 61    | 4        | •   | •    | 120   | 56                                      | •     | 120       | 8   | 8                                       | •    | 120       | S  | 30                                      | •     | 120       | 86   | 50                                    | •     | •    | 120  | 8                                     | •    | 120      | 8  | 37                                      | •     | •         | 120  | 45                                      | •    | •        | 120  | 50                                      | •     | •    | 120   | 5                                     | •      | 120      | 8 /  | 6   | •    |
| 0      | •        | 9     | 41       |     |      | •   | 50                                      | 0     | •         | 15  | 35                                      | •    | •         | 20   | 30                                      | 0     | 0         | 0  | 50                                    | 0     | •    | 10   | 40                                    | 0    | •        | 13   | 37                                      |       | •         | 4  | 46                                      | 0    | •        | •  | 50                                      | 0     | 0    | 5   | 45                                    |        | •        | i  | 5   | •    |
|        |          |       |          |     |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   |       |           |  |   |      |          |  |   |       |      |   |                                       |        |          |  |   |      |
| 0      | 59       | =     | •        | °   | •    | 76  | φ.                                      | •     | 8         | 10  | •                                       | •    | 67        | w  | •                                       | •     | ¥4        | 36   | •                                     | •     | •    | 70   | •                                     | •    | 60       | 10   | •                                       | •     | •         | 70   | •                                       | •    | •        | 70   | •                                       | •     | •    | 70  | •                                     | •      | 60       | 10 0   | •   | •    |
| •      | 9<br>C   | 20 CL | 41 01    | •   | •    | 14 SC   | 56 ZCL                                  | •     | 10 SC     | 25 SC   | 35 CL                                   | •    | 17 SC     | 23 CL  | 30 ZCL                                  | •     | o sc      | 20 CL  | 50 ZCL                                | •     | •    | 30 C   | 40 ZC                                 | •    | 10 C     | 23 ZCL   | 37 ZC                                   | •     | •         | 24 CL  | 46<br>CL                                | •    | •        | 20 CL  | 50 CL                                   | 0.    | •    | 25 C  | 45 ZCL                                | •      | 10 C     | 18 f   | 2   | •    |
|        |          |       |          |     |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   |       |           |  |   |      |          |  |   |       |      |   | Ì                                     |        |          |  |   |      |
|        | N/A      | N/A   | Z        |     | N/A  | N/A   | Z                                       |       | N/A       | N/A   | Z                                       |      | N/A       | N/A  | z                                       |       | N/A       | N/A  | Z                                     |       | N/A  | N/A  | z                                     |      | N/A      | N/A  | Z                                       |       | N/A       | N/A  | z                                       |      | N/A      | N/A  | Z                                       |       | N/A  | N/A   | Z                                     |        | N/A      | N/A  | z   |      |
|        | 10YR 4/4 | •     | 10YR 2/2 |     |      | 10 YR 5/4   | 10YR 2/2                                |       | 10 YR 5/4 | •   | 10YR 2/2                                |      | 10 YR 5/4 | •  | 10YR 2/2                                |       | 10 YR 5/4 | ł  | 10YR 2/2                              |       |      | 10YR 4/4                                       | 10YR 2/2                              |      | 10YR 4/4 | •  | 10YR 2/2                                |       | 10 YR 5/4 | •  | 10YR 2/2                                |      | 10YR 4/4 | •  | 10YR 2/2                                |       |      | 10YR 4/4  | 10YR 2/2                              |        | 10YR 4/4 | •  | 10VB 2/2                                  |      |
|        | 4/4 .    | No    |          |     |      | 5/4 No  | 2/2 No                                  |       | 5/4 .     | No  | 2/2 No                                  |      | 5/4 .     |  | 2/2 No                                  |       | 5/4 .     | No   | 2/2 No                                |       |      |  |                                       |      | 4/4 .    | No   | 2/2 No                                  |       | 5/4 .     |  | 2/2 No                                  |      | 4/4 .    |  | 2/2 No                                  |       |      | 4/4 No  |                                       |        | 4/4 .    |  | 2/2 No.                                   |      |
|        |          | Č     | Ĭ        |     |      | Č   | Ĭ                                       |       |           | Č   | Ů                                       |      |           | Č  | Č                                       |       |           | Č  | Č                                     |       |      | Ů  | Č                                     |      |          | Č  | Č                                       |       |           | Ů  | Č                                       |      |          | Č  | Ĭ                                       |       |      | Č   | Č                                     |        |          |  | Ί   |      |
| 0.00 - |          | Б     | G        |     | 0.00 | 5.00  | 5.00                                    | 0.00  | 0.00      | 5.00  | 10.00                                   | 0.00 | 0.00      | 5.00   | 10.00                                   | 0.00  | 0.00      | 5.00   | 10.00                                 | 0.00  | 0.00 | 5.00   | 10.00                                 | 0.00 | 0.00     | 5.00   | 5.00                                    | 0.00  | 0.00      | 5.00   | 14.00                                   | 0.00 | 0.00     | 5.00   | 10.00                                   | 0.00  | 0.00 | 5.00  | 5.00                                  | 0.00   | 0.00     | 5.00   | 58  | 0.00 |
| •      |          |       |          |     | ľ    | 5.00 All hard rocks or stones (i.e those w moderate | All hard                                | 1     | 1         | All hand  | All hard                                | '    | 1         | All hard                                       |   | 1     | 1         | All hard                                       | All hard                              | •     | ľ    | All hard                                       | All hard                              | ľ    | 1        | All hard                                       |   |       | 1         | All hard                                       | All hard                                | 1    | 1        | All hard                                       |   | 1     | 1    | All hard  |                                       | '      | 1        | All hard                                       | 5 00 All hard motor stones (i a those w - | 1    |
|        |          | Ļ     | þ        |     |      | rocks or  | All hard rocks or stones (i.e those w - |       |           | mektor  | All hard rocks or stones (i.e those w - |      |           | rocks or                                       | All hard rocks or stones (i.e those w - |       |           | rocks or                                       | All hard rocks or stones (i.e those w |       |      | rocks or                                       | All hard rocks or stones (i.e those w |      |          | rocks or                                       | All hard rocks or stones (i.e those w - |       |           | rocks or                                       | All hard rocks or stones (i.e those w - |      |          | rocks or                                       | All hard rocks or stones (i.e those w - |       |      | rocks or  | All hard rocks or stones (i.e those w |        |          | rocks or                                       | molecor                                   |      |
|        |          | (     | <u>ج</u> |     |      | stones (i   | stones (i                               |       |           | etnnes fi   | stones (i                               |      |           | stones (i                                      | stones (i                               |       |           | stones (i                                      | stones (i                             |       |      | stones (i                                      | stones (i                             |      |          | stones (i                                      | stones (i                               |       |           | stones (i                                      | stones (i                               |      |          | stones (i                                      | stones (i                               |       |      | stones (i                                       | stones (i                             |        |          | stones (i                                      | stones (i                                 |      |
|        |          | 6     | €        |     |      | e those v   | e those v                               |       |           | - those v   | e those v                               |      |           | e those v                                      | e those v                               |       |           | e those v                                      | e those v                             |       |      | e those v                                      | e those v                             |      |          | e those v                                      | e those v                               |       |           | e those v                                      | e those v                               |      |          | e those v                                      | e those v                               |       |      | e those v                                       | e those v                             |        |          | e those  | those                                     |      |
| •      |          |       |          |     | ŀ    | v moder   | •                                       | •     | moderate  | All hard make or stones (i.e. those will moderate |   | ľ    | moderate  | All hard rocks or stones (i.e those wimoderate |   | •     | moderate  | All hard rocks or stones (i.e those w moderate | •                                     | •     | 1    | All hard rocks or stones (i.e those wimoderate | •                                     | ľ    | poor     | All hard rocks or stones (i.e those wimoderate |   | •     | moderate  | All hard rocks or stones (i.e those wimoderate | -                                       | •    | poor     | All hard rocks or stones (i.e those wimoderate | -                                       | •     | ľ    | All hard rocks or stones (i.e those wilmoderate | •                                     | '      | poor     | All hard rocks or stones (i.e those wimoderate |   | 1    |
|        |          |       | 2 /      |     |      | ate   |   |       | ž         | ate   |   |      | ate       | ate  |   |       | ž         | đ  |                                       |       |      | ate  |                                       |      |          | ate  |   |       | ate       | ate  |   |      |          | it.  |   |       |      | äte   |                                       |        |          | ä  |   |      |
|        |          |       | 7        |     |      | 56  |   |       |           | 6   |   |      |           | S  |   |       |           | 86   |                                       |       |      | 40   |                                       |      |          | 6  |   |       |           | 46   |   |      |          | 8  |   |       |      | 45  |                                       |        |          | 8  |   |      |
|        |          | (     | D<br>Đ   |     |      | 56  |   |       |           | 8   |   |      |           | 8  |   |       |           | 86   |                                       |       |      | 8  |                                       |      |          | 8  |   |       |           | <del>8</del>                                   |   |      |          | 8  |   |       |      | 8   |                                       |        |          | 8  |   |      |
|        |          | 6     | Ð        |     |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   |       |           |  |   |      |          |  |   | _     |      |   |                                       |        |          |  |   |      |
|        |          | 5     | -        |     |      |   |   | -     |           |   |   | ſ    |           |  |   | -     |           |  |                                       | ſ     |      |  |                                       | Γ    |          |  |   |       |           |  |   | Ī    |          |  |   | -     |      |   |                                       |        |          |  |   | -    |
| 2      |          | Ľ     | <b>\</b> |     |      |   |   | 2     |           |   |   | 2    |           |  |   | 2     |           |  |                                       | 2     |      |  |                                       | ~    |          |  |   | 2     |           |  |   | 2    |          |  |   | 2     |      |   |                                       | 2      |          |  |   | 2    |
|        |          |       |          |     |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   |       |           |  |   |      |          |  |   |       |      |   |                                       |        |          |  |   |      |
|        |          |       |          | L   |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       | L    |          |  |   |       |           |  |   |      |          |  |   |       |      |   |                                       |        |          | 16 1   | 20  | •    |
|        |          | 10    |          | L   | •    |   |   |       |           | 10  |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       | L    |          | 10   |   | •     |           |  |   | •    |          |  |   |       | •    |   |                                       |        |          | 10 1   |   | •    |
|        |          |       |          | L   |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   |       |           |  |   |      |          |  |   |       |      |   |                                       |        |          |  |   |      |
| 9      | •        | 5     | 5        | •   | •    | 5   | 1.5                                     | 0     | •         | 5   | 5                                       | 0    | •         | 5  | .5                                      | 0 25  | •         | 5  | 5                                     | 0 10  | •    | .5   | 5                                     | •    | •        | 5  | 5                                       | 0 15  | •         | ).5  | 5                                       | 0 21 | •        | 5  | 5                                       | 0 15  | •    | 5   | 5                                     | 0<br>9 | •        | 0.5  | ~   | 0    |
| Ĺ      |          |       |          | ľ   |      |   |   | ſ     |           |   |   | ľ    |           |  |   |       |           |  |                                       | ľ     |      |  |                                       | ſ    |          |  |   | ſ     |           |  |   | ſ    |          |  |   | ľ     |      |   |                                       | ſ      |          |  |   |      |
| 2      |          |       |          | ••• |      |   |   | 2     |           |   |   | 2    |           |  |   | 2     |           |  |                                       | 2     |      |  |                                       | ~    |          |  |   | 2     |           |  |   | 2    |          |  |   | 2     |      |   |                                       | 2      |          |  |   | 2    |
| ÷      |          |       |          | ىن  |      |   |   | -16   |           |   |   | -12  |           |  |   | ÷     |           |  |                                       | ė     |      |  |                                       | -1   |          |  |   | -16   |           |  |   | -12  |          |  |   | 4     |      |   |                                       | -12    |          |  |   | έs   |
|        |          |       |          |     |      |   |   |       |           |   |   |      |           |  |   |       |           |  |                                       |       |      |  |                                       |      |          |  |   | 2     |           |  |   |      |          |  |   |       |      |   |                                       |        |          |  |   |      |
| 2      |          |       |          | ľ   |      |   |   | 2     |           |   |   | 2    |           |  |   | 2     |           |  |                                       | 2     |      |  |                                       | ٢    |          |  |   | 3     |           |  |   | 2    |          |  |   | 2     |      |   |                                       | 2      |          |  |   | 2    |

| <b>B</b> 37                                 | 836  | 835  | <b>B</b> 34   | 833   | 832   | 831  | 829   | B 26  | B27  |
|---|--|--|---|---|---|--|---|---|--|
| 4   | 4  | 4  | 4   | 4   | 4   |  |   | 4   | 4  |
| 3 2 1                                       | 3 2 2 1  | 3 2 2 1  | 3 2 2 1   | 2 2 1   | 1<br>2<br>3   | 4  | 2 2 3   | 1<br>2<br>3   | 1<br>2<br>3  |
| 55<br>120                                   | 55<br>120<br>0   | 0 120<br>0 120   | 0 120<br>0  | 0 0 12 14   | 42<br>120   | 0 120<br>0 120<br>0 120  | 40<br>0   | 40<br>120   | 60<br>120  |
|   |  |  |   |   |   |  |   |   |  |
| 0013  | 0000   | 0 0 8 <sup>2</sup>   | 4000  | 4 0 0 0   | 0082  | 0 0 0 0 9 1<br>0 0 0 9 1   | 00106   | 0 0 10 0  | 9<br>9<br>0  |
| 0 5 4 0                                     | o 49 66 0  | 56<br>0  | 0<br>57<br>0  | 0000  | 0<br>59<br>0  | 0<br>55<br>0<br>55<br>0<br>51<br>0<br>51<br>0<br>51<br>0<br>51<br>0<br>51<br>0<br>51   | 0 0 0   | 0<br>0  | 0 5 5 0  |
| 0 C C C                                     | 55 ZCL<br>0 C  | 42 ZCL<br>52 CL<br>0 -   | 41 ZCL<br>7 SC<br>0 -   | 44 ZCL<br>26 C<br>0 -   | 42 CL<br>9 CL<br>0 ·  | 41 CL<br>9 SC<br>5 SC<br>9 SC  | 40 ZCL<br>30 C  | 40 CL<br>20 CL<br>10 C  | 41 CL<br>19 CL   |
| N<br>N/A<br>N/A                             | N<br>N/A<br>N/A  | N<br>N/A<br>N/A  | N<br>N/A<br>N/A   | N<br>N/A  | N<br>N/A<br>N/A   | N<br>N/A<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A  |
|   |  |  |   |   |   |  |   |   |  |
| 10YR 2/2<br>-<br>10YR 4/4                   | 10YR 2/2<br>-<br>10YR 4/4  | 10YR 2/2<br>-<br>10YR 4/4  | 10YR 3/2<br>10YR 5/4  | 10YR 2/2<br>10YR 4/4  | 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10 YR 5/4<br>10YR 2/2<br>-<br>10 YR 5/4   | 10YR 2/2<br>10YR 4/4  | 10YR 2/2<br>-<br>10YR 4/4   | 10YR 2/2<br>-<br>10YR 4/4  |
| • N N                                       | • N N  | • N N  | • N   | • N   | • No  | • <sup>0</sup> • <sup>0</sup> • <sup>0</sup>   | • N   | • No  | • N N  |
|   | 10.00<br>5.00<br>0.00  | 5.00<br>0.00   | 0.00 5.00   | 5.00 /<br>0.00 -  | 10.00<br>0.00   | 0.00<br>0.00<br>0.00   | 0.00<br>0.00  | 5.00 A<br>0.00 -  | 10.00<br>0.00  |
| 5.00 All hard rocks or atoms file, those an | 10.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 | 5.00 All hard rocks or stones file those w -<br>5.00 All hard rocks or stones file those w moderate<br>0.00 - moderate | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - | 10.00 All hand rocks or stones (i.e those w -<br>5.00 All hand rocks or stones (i.e those w moderate<br>0.00 - poor<br>0.00 |  | 8.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 | 5.00 All hard rocks or stones file those w -<br>5.00 All hard rocks or stones file those w moderate<br>0.00 -<br>0.00 - | 10.00 All hard rocks or stones file those w -<br>5.00 All hard rocks or stones file those w moderate<br>0.00 |
|   | rocks or s   | All hard rocks or stones fi.e those w<br>All hard rocks or stones fi.e those w r<br>-                                  | rocks or s  | All hard rocks or stones (i.e those w<br>All hard rocks or stones (i.e those w n<br>-                         | rocks or s  | All hard rocks or stones (i.e those w -<br>All hard rocks or stones (i.e those w -<br>-<br>-<br>-<br>All hard rocks or stones (i.e those w -<br>All hard rocks or stones (i.e those w -<br>- | All hard rocks or stones (i.e those w<br>All hard rocks or stones (i.e those w<br>-                         | All hard rocks or stones (i.e those w -<br>All hard rocks or stones (i.e those w n<br>-<br>-                            | rocks or s   |
| $\Theta$                                    | tones fi.e t   | tones (i.e.t   | tones fi.e t<br>tones fi.e t  | tones fi.e t<br>tones fi.e t  | tones fi.e t<br>tones fi.e t  | tones (i.e t<br>tones (i.e t<br>tones (i.e t   | tones fi.e t<br>tones fi.e t  | tones (i.e t<br>tones (i.e t  | tones fi.e t<br>tones fi.e t   |
| ()<br>()                                    | those w n  | those w n  | those w n   | those w n   | those w -<br>p  | those w n<br>those w n<br>those w n  | those w n   | those w -<br>p  | those w -<br>those w n<br>-  |
| 2   | moderate   | moderate   | moderate  | noderate  | moderate<br>poor  | . moderate<br>   | noderate  | -<br>moderate<br>poor   | moderate<br>poor   |
| 77  | 71   | 64   | 8   | 44  | 61  | 65 61  | 40  | 60  | 6  |
| • C   7/                                    | נל   | 2  | 8   | 4   | 61  | 8 £  | 8   | 8   | 8  |
| Ð   |  |  |   |   |   |  |   |   |  |
| 2   | =  | =  | =   | =   | =   | = =  | =   | -   | =  |
|   | 2  | 2  | 2   | 2   | 2   | 2 2  | 2   | 2   | 2  |
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| N/A<br>N/A<br>N/A                               | N<br>N/A<br>N/A<br>N/A   | N/A<br>N/A<br>N/A  | N<br>N/A<br>N/A<br>N/A<br>N/A   | N/A<br>N/A<br>N/A  | N N/A N/A N/A N/A N/A N/A  |
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| 10YR 2/2<br>10 YR 5/4<br>10YR 2/2<br>-<br>10YR 4/4  | 10YR 2/2<br>10 YR 5/4<br>10YR 2/2<br>10YR 2/2   | 10YR 2/2<br>10 YR 5/4  | 10YR 3/2<br>-<br>10 YR 5/4<br>-<br>10YR 2/2<br>-<br>10 YR 4/4   | 10'R 3/2<br>-<br>10 YR 5/4<br>10'R 3/2<br>-<br>10 YR 5/4   | 10YR 3/2<br>-<br>10 YR 5/4<br>10YR 3/2<br>-<br>10 YR 5/4  |
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| 0 0 13 37                  | 0 0 15 35   | 0 0 22  | 0 0 13 13  | 0013  | 0054  | 00128   | 0008  | 0008   | 00133  | 0 0 <del>5</del> 8   |
| 0 <sup>32</sup> 0          | 0<br>59<br>0  | o 48 12 o   | o <sup>6</sup> 7 ₩ 0   | 0<br>57<br>0  | 0 5 5 0   | o <sup>5]</sup> 13 o  | 0 0 % ö   | e 67   | 0<br>54<br>0   | 0 48 C   |
| 37 CL<br>0 SC              | 35 ZCL<br>9 C   | 28 CL<br>8 4 CL<br>9 5 5 5  | 25 CL<br>17 SC   | 0 - 0<br>7 C<br>30 Ct<br>33 ZCI   | 34 ZCL<br>26 CL<br>10 C   | 38 ZCI<br>7 SC<br>0 -   | 0 - 0<br>0 - 1<br>70 ZCL  | 59 ZCL   | 37 ZC<br>29 CL<br>4 C  | 0 0 0 0<br>0 0 0 0   |
|                            |   |   |  |   |   |   |   |  |  |  |
| N<br>N/A<br>N/A            | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A  | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A  | N<br>N/A<br>N/A  | N<br>N/A<br>N/A  |
| 10YR 2/2<br>-<br>10 YR 5/4 | 10YR 2/2<br>-<br>10 YR 4/4  | 10YR 3/2<br>-<br>10 YR 5/4  | 10YR 3/2<br>-<br>10 YR 5/4   | 10YR 2/2<br>-<br>10 YR 4/4  | 10YR 2/2<br>-<br>10 YR 4/4  | 10YR 2/2<br>-<br>10 YR 5/4  | 10YR 2/2  | 10YR 2/2<br>10 YR 5/4  | 10YR 2/2<br>-<br>10 YR 4/4   | 10YR 2/2<br>-<br>10 YR 5/4   |
| 2 No<br>/4 *               | 2 No<br>14 *  | 2 No<br>14 .  | 2 No<br>/4 *   | 2 No<br>/4 *  | 2 No<br>/4 *  | 2 No<br>/4 *  | No<br>No  | /4 No  | 2 No<br>/4 *   | 2 No<br>14 *   |
|                            |   |   |  |   |   |   |   |  |  |  |
| D9 🏅                       | 5.00 AII<br>5.00 AII<br>0.00 -<br>0.00 -  | 13.00 All hard rocks or stones (i.e those w -<br>10.00 All hard rocks or stones (i.e those w moderate<br>0.00 - | 15.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w n<br>0.00 -<br>0.00 -    | 5.00 AII<br>5.00 AII<br>0.00 -  | 5.00 AII<br>5.00 AII<br>0.00 -  | 5.00 AII<br>5.00 AII<br>0.00 -  | 10.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w n<br>0.00 -<br>0.00 - | 5.00 All<br>5.00 All<br>0.00 -   | 5.00 All<br>5.00 All<br>0.00 -   | 5.00 All<br>5.00 All<br>0.00 -   |
|                            | hard rocks  | hard rocks  | hard rocks   | hard rocks  | hard rocks  | hard rocks  | hard rocks  | hard rocks   | hard rocks   | hard rocks   |
|                            | All hard rocks or stones fi.e those w -<br>All hard rocks or stones fi.e those w n<br>-                             | All hard rocks or stones fi.e those w<br>All hard rocks or stones fi.e those w                                  | or stones  | All hard rocks or stones (i.e those w -<br>All hard rocks or stones (i.e those w n<br>-<br>-                        | All hard rocks or stones fi.e those w<br>All hard rocks or stones fi.e those w r<br>-                                   | All hard rocks or stones (i.e those w<br>All hard rocks or stones (i.e those w<br>-                         | or stones   | All hard rocks or stones (i.e those w<br>All hard rocks or stones (i.e those w<br>-            | All hard rocks or stones file those w<br>All hard rocks or stones file those w r<br>-                                      | All hard rocks or stones (i.e those w -<br>All hard rocks or stones (i.e those w n<br>-                                      |
| ()<br>()                   | (i.e those<br>(i.e those  | fi.e those<br>fi.e those  | fi.e those<br>fi.e those   | fi.e those<br>fi.e those  | fi.e those<br>fi.e those  | (i.e those<br>(i.e those  | fi.e those<br>fi.e those  | fi.e those<br>fi.e those   | fi.e those<br>fi.e those   | fi.e those<br>fi.e those   |
|                            | 5.00 All hard rocks or stones like those w -<br>5.00 All hard rocks or stones (ike those w poor<br>0.00 -<br>0.00 - | w -<br>w moderate<br>moderate   | 1500 All hard rocks or stones (i.e those w -<br>500 All hard rocks or stones (i.e those w moderate<br>000 -<br>000 - | 500 All hard rocks or stones file those w -<br>500 All hard rocks or stones file those w moderate<br>000 -<br>000 - | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 -<br>0.00 - | 5.00 All hard rocks or stones lite those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 | 1000 All hard rocks or stones file those w -     5.00 All hard rocks or stones file those w moderate     0.00 -   | All hard rocks or stones fi.e those w -<br>All hard rocks or stones fi.e those w moderate<br>- | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - poor<br>0.00 | 5.00 All hard rocks or stornes (i.e those w -<br>5.00 All hard rocks or stornes (i.e those w moderate<br>0.00 - poor<br>0.00 |
| 3 / 7                      |   |   |  |   |   |   |   |  |  |  |
|                            | 61  | 55  | S  | 8   | 8   | 8   | 70  | 59   | 66   | 72   |
| ()<br>⊕                    | 61  | 5   | 8  | 8   | 8   | 8   | 6   | 59   | 8  | 72   |
| Ð                          | =   | =   | =  | =   | =   | =   | =   | =  | =  | =  |
| ۳.                         |   |   |  |   |   |   |   |  |  |  |
|                            | 2   | 2   | N  | 2   | 2   | 2   | 2   | 2  | 2  | 2  |
| 0 13 16 18                 | 19<br>13  | 0 15 16 18  | 0 13 16  | 0 13 19   | 0 13 19   | 0 13 16 19  | 0 0 16  | 0 0 15 19  | 0 13 16  | 0 13 16 18   |
| o ∞ 10                     | 10<br>7   | 0 10 10   | o ∞ ti   | 10<br>7   | 10<br>7   | o ∞ 5   | 005   | 0 0 Ö  | 10<br>7  | o ∞ 10   |
| 0 0 1 1                    | 0 0 1 1   | 0011  | 0011   | 0011  | 0011  | 0011  | 0 0 1 1   | 0011   | 0 0 1 1  | 0 1 1  |
|                            | 0.5   | 0 0 5   | 0 0 5 5  | 0.5   | 0 0 5 5   | o o <sup>0</sup> 5 5  | 0.0   |  | 0 0 0 0<br>0   | o o <sup>0</sup> 0 0   |
| 15                         | ø   | 5   | 45   | ø   | 00  | 6   | 6   | 37   | <b>д</b>   | 4  |
| 2                          | 2   | 2/3a  | ¥  | 2   | 2   | 2   | <b>1</b>  | <b>••</b>  | 2  | 2  |
| ti                         | -12   | -22   | -24  | -12   | ÷   | ÷   | -7  | 4  | ά.   | ά  |
| 2/3a                       | 2/3a  | w   | ¥  | 2/3.  | 2/3   | 2   | 2   | 2  | 2/3  | 2/3•   |
| <u> </u>                   |   |   |  |   |   |   |   |  |  | -<br>-   |

| B91                                | 89  | 889  | BSS   | <b>B</b> 87   | 886   | 885  | <b>B</b> 84  | 883  | B82   | B81  |
|------------------------------------|---|--|---|---|---|--|--|--|---|--|
| 4                                  | 4   | 4  | 4   | 4   | 4   | 4  | 4  | 4  | 4   | 4  |
| 3 2 2 1                            | 3 2 2   | 2 2 1  | 3 2 2 1   | 3 2 2 1   | 3 2 2 1   | 3 2 2 1  | 3 2 2 1  | 3 2 2 1  | 1<br>2<br>3   | 1<br>2<br>3  |
| 62<br>120                          | 51<br>0<br>0  | 45<br>120<br>0   | 67<br>120<br>0  | 60<br>120   | 32<br>65<br>120   | 31<br>72<br>120<br>0   | 0 0 50   | 64<br>120  | 37<br>62<br>120<br>0  | 31<br>65<br>120  |
|                                    |   |  |   |   |   |  |  |  |   |  |
| 0053                               | 0005  | 00vů   | 0000  | 0053  | 32<br>0   | 0<br>0<br>0  | 0005   | 00 - 47  | 37<br>0   | 31<br>19<br>0  |
| 0 <sup>58</sup> 0                  | 0 0 7 4   | o 48 22 O  | -17<br>87<br>0  | 0 8 5 0   | 0510  | 0 48 22 0  | 0000   | 0 5 4 0  | 0<br>58<br>0  | 0<br>55<br>0   |
| 35 CL<br>8 SC                      | 51 ZCL<br>0 -   | 45<br>0 C<br>0 C   | 67 ZCL<br>0 -   | 0.<br>10.20<br>52.01<br>32.01   | 0 C C C   | 0 - 0<br>32 0<br>31 Ct<br>31 Ct  | 0 - 50 ZCL   | 47 ZCL<br>6 CL<br>0 -  | 37 ZCL<br>8 C<br>0 -  | 31 ZCL<br>34 ZCL<br>5 SC<br>0 -  |
| N<br>N/A<br>N/A                    | N<br>N/A<br>N/A   | N<br>N/A<br>N/A  | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A   | N<br>N/A<br>N/A  | N<br>N/A<br>N/A  | N<br>N/A<br>N/A  | N<br>N/A<br>N/A   | N<br>N/A<br>N/A  |
| 10YF<br>10 Y                       | 10YF  | 10YR 2/2<br>-<br>10 YR 4/4   | 10YF<br>10 Y  | 10YF<br>-<br>10 Y   | 10YF  | 10YF<br>10 Y   | 10YF   | 10YF<br>10 Y   | 10YF<br>-<br>10 Y   | 10YF<br>-<br>10 Y  |
| 10YR 2/2 No<br>- No<br>10 YR 5/4 * | 10YR 2/2 No<br>10YR 4/4 *   | 10YR 2/2 No<br>- No<br>10 YR 4/4 *   | 10YR 2/2 No<br>10YR 4/4 *   | 10YR 2/2 No<br>- No<br>10 YR 4/4 *  | 10YR 3/2 No<br>- No<br>10 YR 4/4 *  | 10YR 3/2 No<br>- No<br>10 YR 5/4 *   | 10YR 2/2 No<br>10 YR 5/4 *   | 10YR 2/2 No<br>- No<br>10 YR 4/4 *   | 10YR 2/2 No<br>- No<br>10 YR 4/4 *  | 10YR 2/2 No<br>- No<br>10 YR 5/4 *   |
|                                    | Ů   |  | Ů   |   |   |  | Ŭ  |  |   |  |
| ß                                  | 10.00 A<br>5.00 A<br>0.00 -   | 5.00 A<br>5.00 A<br>0.00 -   | 5.00 A<br>0.00 -<br>0.00 -  | 5.00 A<br>5.00 A<br>0.00 -  | 10.00 A<br>5.00 A<br>0.00 -   | 15.00 A<br>10.00 A<br>0.00 -   | 5.00 A<br>0.00 -   | 5.00 A<br>0.00 -   | 5.00 A<br>5.00 A<br>0.00 -  | 5.00 A<br>5.00 A<br>0.00 -   |
|                                    | 10.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w -<br>0.00 - | 5.00 All hard meters times (i.e. those w<br>5.00 All hard rocks or stones (i.e. those w moderate<br>0.00 | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 -<br>0.00 - | 10.00 All hard rocks or stones file those w -<br>5.00 All hard rocks or stones file those w moderate<br>0.00 All hard rocks or stones file those w poor<br>0.00 - | 10.00 All hard rocks or stones (i.e those w -<br>10.00 All hard rocks or stones (i.e those w moderate<br>0.00 - poor<br>0.00 - | 5.00 All hard rocks or stones like those w -<br>5.00 All hard rocks or stones like those w -<br>0.00 - | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - poor<br>0.00 | 5.00 All hard rocks or stones fi.e those w -<br>5.00 All hard rocks or stones fi.e those w moderate<br>0.00 | 5.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - poor<br>0.00 |
|                                    | ks or stone<br>ks or stone  | ks or stone  | ks or stone<br>ks or stone  | ks or stone<br>ks or stone  | ks or stone<br>ks or stone  | ks or stone<br>ks or stone   | ks or stone<br>ks or stone   | ks or stone<br>ks or stone   | ks or stone<br>ks or stone  | ks or stone<br>ks or stone   |
| ()<br>()                           | s (i.e thos<br>s (i.e thos  | s file that  | es (i.e thos<br>es (i.e thos  | s (i.e thos<br>s (i.e thos  | is file thos<br>is file thos  | ts fi.e thos<br>to fi.e thos   | es (i.e thos<br>s (i.e thos  | is file thos<br>is file thos   | es (i.e thos<br>es (i.e thos  | es (i.e thos<br>es (i.e thos   |
|                                    | ew -<br>ew mode   | e w mode<br>poor   | ew -  | ew -<br>poor  | ew mode<br>poor   | ew mode<br>poor  | ew mode  | ew -<br>poor   | e w -<br>e w moderate<br>moderate   | ew -<br>poor   |
| 3 /                                | ate   | ate  | ate   | ate   | ate   | at .   | a te   | at a   | ate   | rate   |
| 7                                  | 51  | 72   | 67  | 8   | 5   | 72   | 8  | 54   | 62  | 5  |
| ●<br>④                             | 51  | 72   | 67  | 8   | 5   | 72   | ß  | 2  | 8   | 6  |
| <b>(+)</b>                         | =   | =  | =   | =   | =   | =  | =  | =  | =   | =  |
| 2,                                 |   |  |   |   |   |  |  |  |   |  |
|                                    | 2   | 2  | 2   | 2   | ~   | 2  | 2  | 2  | 2   | 2  |
| 0 15 18                            | 0 0 16 19   | 18<br>13   | 0 0 1 9   | 0 13 6  | 13<br>13  | 0 13 15 18   | 0 0 15 19  | 19<br>12   | 19<br>16<br>0   | 19<br>13   |
| 0 5 5                              | 0 0 <del>0</del>  | 10<br>7  | 0 0 Ö   | o ∞ 5   | 10<br>7   | o ∞ 5  | 0 0 Ö  | 10<br>7  | o ∞ 5   | 0 8 10   |
|                                    |   |  | 0011  |   |   |  |  | 0011   | 0011  | 0 1 1  |
| 0.5<br>0.5<br>2                    | 0.5<br>0.5<br>2   | 0.5<br>0.5   | 0.5   | 0 0 5<br>1  | 0 0 5 5   | 0 0 5 5  | 0.5<br>0.5<br>2  | 0 0 0 5<br>1   | 0.5<br>0.5  | 0.5<br>0.5<br>0  |
| w                                  | UI .  | 0  | 24  | -   | [   | [  | eri  | ۵<br>۵   | on  | o,   |
| 2                                  | 2   | 2  | -   | 2   | 2/3a  | 2/3a   | 2  | 2  | 2   | 2  |
| -14                                | 10  | -12  | <u>1</u>  | <u>-16</u>  | -18   | -26  | ÷  | de   | ė   | ė  |
| 2/3a                               | 2   | 2  | 2   | 2/3a  | w.  | w.   | 2  | 2  | 2   | 2  |
|                                    |   |  |   |   |   |  |  |  |   |  |

|   | NES    |                 |   |  | NE4    |             |   |  | NB     |             |   |   | NE2         |             |   |   | NE1         |             |   |  | B95  |                 |   |  | B94  |        |   |  | B93    |             |   |   | B92  |             |   |  |
|---|--------|-----------------|---|--|--------|-------------|---|--|--------|-------------|---|---|-------------|-------------|---|---|-------------|-------------|---|--|------|-----------------|---|--|------|--------|---|--|--------|-------------|---|---|------|-------------|---|--|
|   | 4      |                 |   |  | <7     |             |   |  | 4      |             |   |   | 4           |             |   |   | 4           |             |   |  | <7   |                 |   |  | <7   |        |   |  | 4      |             |   |   | 4    |             |   |  |
| 1<br>2<br>2   | w      | 2               | 2   | 1  | ω      | 2           | 2   | •  | w      | 2           | 2   | 1   | w           | 2           | 2   | 1   | w           | 2           | 2   | •  | ω    | 2               | 2   | -  | ω    | 2      | 2   | -  | w      | 2           | 2   | •   | w    | 2           | 2   | •  |
| 18<br>50<br>120   | •      | 100             | 5   | 27   | •      | 120         | S   | 26   | •      | 120         | 76  | 25  | 120         | 70          | 5   | 29  | 120         | 70          | 5   | 8  | •    | 120             | 62  | 8  | •    | •      | 120   | 2  | •      | 120         | 50  | 8   | •    | 120         | 60  | 32   |
| 18<br>32  | 0      | •               | 23  | 27   | 0      | •           | 24  | 26   | 0      | 0           | 25  | 25  | 0           | 0           | 21  | 29  | 0           | 0           | 17  | 33   | 0    | •               | 10  | 40   | 0    | •      | •   | 50   | 0      | 0           | 20  | 30  | 0    | 0           | 18  | 32   |
| 70<br>70  | •      | 5               | •   | •  | 0      | 5           | 15  | •  | •      | 4           | 26  | •   | 8           | 20          | •   | •   | 50          | 20          | •   | •  | •    | 58              | 12  | •  | •    | •      | 84  | -14  | •      | 70          | •   | •   | •    | 6           | 10  | •  |
| 18 CL<br>32 CL<br>20 SC   | 0.     | 20 SC           | 23 CL   | 27 CL  | 0.     | 5 C         | 39 CL   | 26 CL  | •      | O SC        | 45 CL   | 25 ZCL  | 0 SC        | 20 CL       | 21 CL   | 29 ZCL  | 0 C         | 20 C        | 17 CL   | 33 MSZL                                      | •    | 8 SC            | 22 CL   | 40 ZCL                                       | •    | •      | 6 CL  | 64 ZCL                                       | 0.     | 20 C        | 20 CL   | 30 CL                                       | •    | 10 C        | 28 CL   | 32 ZCL                                       |
| N<br>N/A<br>N/A   |        | N/A             | N/A   | N  |        | N/A         | N/A   | z  |        | N/A         | N/A   | z   |             | N/A         | N/A   | z   |             | N/A         | N/A   | z  |      | N/A             | N/A   | z  |      | N/A    | N/A   | z  |        | N/A         | N/A   | z   |      | N/A         | N/A   | z  |
| 10YR 2/2 No<br>- No<br>10 YR 5/4 *  |        | 10 YR 5/4 *     | - No  | 10YR 2/2 No                                  |        | 10 YR 4/4 * | - No  | 10YR 2/2 No                                  |        | 10 YR 5/4 • | - No  | 10/R 2/2 No                                   |             | 10 YR 5/4 • | - No  | 10YR 2/2 No                                   |             | 10 YR 4/4 * | - No  | 10YR 2/2 No                                  |      | 10 YR 5/4 *     | - No  | 10YR 2/2 No                                  |      |        | 10 YR 4/4   | 10YR 2/2 No                                  |        | 10 YR 4/4 . | - No  | 10YR 3/2 No                                 |      | 10 YR 4/4 * | - No  | 10YR 2/2 No                                  |
| 7.00 All hard rocks or stones (i.e those w -<br>5.00 All hard rocks or stones (i.e those w moderate<br>0.00 - | 0.00 - | 0.00 - moderate | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - | 0.00 - poor | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - | 0.00 - poor | 5.00 All hard rocks or stones (i.e those w moderate | 10.00 All hard rocks or stones (i.e those w - | 0.00 - poor | 0.00 - poor | 5.00 All hard rocks or stones (i.e those w moderate | 10.00 All hard rocks or stones (i.e those w - | 0.00 - poor | 0.00 - poor | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 | 0.00 - moderate | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 | 0.00 - | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - | 0.00 - poor | 5.00 All hard rocks or stones (i.e those w moderate | 15.00 All hard rocks or stones (i.e those w | 0.00 | 0.00 - poor | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - |
| 50  |        |                 | 50  |  |        |             | 5   |  |        |             | 76  |   |             |             | 50  |   |             |             | 50  |  |      |                 | 62  |  |      |        | <b>6</b> 4  |  |        |             | 50  |   |      |             | 6   |  |
| 50  |        |                 | 8   |  |        |             | 8   |  |        |             | 76  |   |             |             | 8   |   |             |             | 8   |  |      |                 | <b>6</b> 2  |  |      |        | 2   |  |        |             | 8   |   |      |             | 8   |  |
|   | =      |                 |   |  | =      |             |   |  | =      |             |   |   | =           |             |   |   | =           |             |   |  | =    |                 |   |  | =    |        |   |  |        |             |   |   | =    |             |   |  |
|   | 2      |                 |   |  | 2      |             |   |  | 2      |             |   |   | 2           |             |   |   | 2           |             |   |  | 2    |                 |   |  | 2    |        |   |  | 2      |             |   |   | 2    |             |   |  |
| 18<br>16  | •      | 5               | 16  | 18   | 0      | 5           | 16  | 18   | •      | 13          | 16  | 19  | 13          | 12          | 16  | 19  | 13          | 13          | 16  | 19   | 0    | 15              | 16  | 19   | 0    | •      | 16  | 19   | •      |             | 16  | 18  | •    | 13          | 16  | 19   |
| s 10  | •      | 10              | 10  |  | 0      | 7           | 10  |  | •      | 60          | 10  |   | •••         | 7           | 10  |   | 7           | 7           | 10  |  | •    | 10              | 10  |  | •    | •      | 10  |  | •      | 7           | 10  |   | •    | 7           | 10  |  |
| 0 1 1   | •      | •               | •   | 1  | 0      | •           | 1   | 1  | •      | •           | 1   | 1   | •           | •           | -   | 1   | •           | •           | -   | •  | •    | •               | 1   | -  | •    | •      | 1   | -  | •      | •           | •   | 1   | •    | •           | 1   | 1  |
| o 0.5   | •      | 0               | 0.5   | 0.5  | 0      | •           | 0.5   | 0.5  | •      | •           | 0.5   | 0.5   | •           | •           | 0.5   | 0.5   | •           | •           | 0.5   | 0.5  | 0    | •               | 0.5   | 0.5  | •    | •      | 0.5   | 0.5  | •      | •           | 0.5   | 0.5   | •    | •           | 0.5   | 0.5  |
|   | 2      |                 |   |  | 5      |             |   |  | 2      |             |   |   | -           |             |   |   | <b>б</b>    |             |   |  | 28   |                 |   |  | 41   |        |   |  | ىن     |             |   |   | 00   |             |   |  |
|   | ٣      |                 |   |  | 2/38   |             |   |  | ~      |             |   |   | ~           |             |   |   | 2           |             |   |  | 2    |                 |   |  | 1    |        |   |  | ٣      |             |   |   | 2    |             |   |  |
|   | -16    |                 |   |  | -16    |             |   |  | ż,     |             |   |   | -21         |             |   |   | ίs          |             |   |  | 9-   |                 |   |  | ż    |        |   |  | -24    |             |   |   | ė    |             |   |  |
|   | ä      |                 |   |  | ٣      |             |   |  | ٣      |             |   |   | ٣           |             |   |   | ¥           |             |   |  | 2    |                 |   |  | 2    |        |   |  | ä      |             |   |   | 2    |             |   |  |

| z      |             |       |          | N        |           |   |  | z      |           |   |   | z      |           |   |                                       | z      |           |   |  | z      |           |   |   | z       |           |   |  | z      |           |   |  | _      |           |   | ٦  | ~     |           |   |   | 2      |           |   |  | 2      |
|--------|-------------|-------|----------|----------|-----------|---|--|--------|-----------|---|---|--------|-----------|---|---------------------------------------|--------|-----------|---|--|--------|-----------|---|---|---------|-----------|---|--|--------|-----------|---|--|--------|-----------|---|--|-------|-----------|---|---|--------|-----------|---|--|--------|
| NE17 . |             |       |          | NE16 .   |           |   |  | NE15 . |           |   |   | NE14 . |           |   |                                       | NE13   |           |   |  | NE12 . |           |   |   | NE11 .  |           |   |  | NE10 . |           |   |  | NE9    |           |   |  | NES . |           |   |   | NE7    |           |   |  | NE6    |
| 4      |             |       |          | 4        |           |   |  | 47     |           |   |   | 4      |           |   |                                       | 47     |           |   |  | 4      |           |   |   | 2       |           |   |  | 9      |           |   |  | 4      |           |   |  | 4     |           |   |   | 4      |           |   |  | 4      |
| Ĩ      |             |       |          | Ĩ        |           |   |  | Ĩ      |           |   |   | Ĩ      |           |   |                                       | Ĩ      |           |   |  | Ĩ      |           |   |   | Ĩ       |           |   |  | Ĩ      |           |   |  | Ĩ      |           |   |  | Ĩ     |           |   |   | Ĩ      |           |   |  | Ĩ      |
| •      | 120         | 66    | 31       | •        | 120       | 55  | 32   | •      | 120       | S   | 28                                      | •      | 120       | 5   | 29                                    | •      | 120       | 5   | 25   | •      | 120       | 58  | 35  | •       | 120       | 52  | S  | •      | 120       | 50  | 8  | •      | 120       | 4   | 27   | •     | 120       | 52  | 24                                      | •      | 120       | 60  | 28   | •      |
| •      | •           | 19    | 31       | 0        | •         | 18  | 32   | 0      | 0         | 22  | 28                                      | •      | •         | 21  | 29                                    | •      | 0         | 25  | 25   | •      | •         | 15  | 35  | •       | 0         | 5   | 5  | •      | •         | 20  | 30   | •      | 9         | 14  | 27   | 0     | 0         | 26  | 24                                      | •      | •         | 22  | 28   | 0      |
| •      | 52          | 18    | 0        | 0        | 65        | 5   | 0  |        | 65        | 5   | •                                       |        | 65        | 5   | •                                     |        | 55        | 15  | •  | •      | 62        | 80  | •   |         | 58        | 12  | •  | •      | 70        | 0   | 0  | •      | 70        | •   |  | 0     | 68        | 2   | •                                       | •      | 60        | 10  | 0  | 0      |
|        |             |       |          |          |           |   |  |        |           |   |   |        |           |   |                                       |        |           |   |  |        |           |   |   |         |           |   |  |        |           |   |  |        |           |   |  |       |           |   |   |        |           |   |  |        |
| •      | 2 50        | 37 CL | 31 ZCL   | •        | 15 C      | 23 CL   | 32 CL  | •      | 15 C      | 27 CL   | 28 MSZL                                 | •      | 15 C      | 26 CL   | 29 CL                                 | •      | 5<br>C    | 40<br>CL  | 25 CL  | •      | 12 C      | 23 CL   | 35 MSZL                                       | •       | 80<br>C   | 27 CL   | 2  | •      | 20 C      | 20 CL   | S0 CL  | •      | 29 C      | 14 CL   | 27 CL  | •     | 18 SC     | 28 CL   | 24 CL                                   | •      | 10 C      | 32 CL   | 28 CL  | 0 -    |
|        | N/A         | N/A   | N        |          | N/A       | N/A   | N  |        | N/A       | N/A   | z                                       |        | N/A       | N/A   | z                                     |        | N/A       | N/A   | z  |        | N/A       | N/A   | z   |         | N/A       | N/A   | z  |        | N/A       | N/A   | N  |        | N/A       | N/A   | z  |       | N/A       | N/A   | z                                       |        | N/A       | N/A   | N  |        |
|        |             |       | 1        |          |           |   | 1  |        |           |   |   |        |           |   |                                       |        |           |   |  |        |           |   |   |         |           |   |  |        |           |   |  |        |           |   |  |       |           |   |   |        |           |   |  |        |
|        | 10 YR 5/4 * |       | 10YR 2/2 |          | 10 YR 4/4 |   | 10/R 2/2                                     |        | 10 YR 4/4 |   | 10/R 2/2                                |        | 10 YR 4/4 |   | 10YR 2/2                              |        | 10 YR 4/4 |   | 10/R 2/2                                     |        | 10 YR 4/4 |   | 10/R 2/2                                      |         | 10 YR 4/4 |   | 10YR 2/2                                     |        | 10 YR 4/4 |   | 10/R 2/2                                     |        | 10 YR 4/4 |   | 10/R 2/2                                     |       | 10 YR 5/4 |   | 10YR 2/2                                |        | 10 YR 4/4 |   | 10YR 2/2                                     |        |
|        | •           | No    | No       |          | •         | No  | No   |        | •         | No  | No                                      |        | •         | No  | No                                    |        | •         | No  | No   |        | •         | No  | No  |         | •         | No  | No   |        | •         | No  | No   |        | •         | No  | No   |       | •         | No  | No                                      |        | •         | No  | No   |        |
| 0      | 0           |       |          |          |           | ,   | 5  | 0.00   | 0         | yı.   | 5                                       | 0      | 0         | 5   | 5.00                                  | 0.     | 0         | 5   | yı.  | 0      | 0         | 5   | 10  | 0       | 0         | yı  | yı,  | 0      | 0         | 5   | 5  | 0      | 0         | 5   | 5  | 0     | 0         | 5   | 5                                       |        | 0         | 5   | 5  | 0      |
| 0.00 - | 0.00        |       |          | 5        |           | 5.00 All hard rocks or stones (i.e. those w. moderate | 5.00 All hard rocks or stones (i.e those w - |        | 0.00      | 5.00 All hard marks or stones (i = those w moderate | 5.00 All ha                             | 0.00 - | .00       | 5.00 All hard rocks or stones (i.e those w moderate | 00 All ha                             | 0.00 - | 0.00 -    | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - | 0.00 -    | 5.00 All hard rocks or stones (i.e those w moderate | 10.00 All hard rocks or stones (i.e those w - | 0.00 -  | 0.00      | 5.00 All hard rocks or stones (i.e those wimoderate | 5.00 All hard rocks or stones (i.e those w - | .00    | 0.00 -    | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - | 0.00 -    | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | .00   | 0.00 -    | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All ha                             | 0.00 - | .00       | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - |
|        |             |       | Ę        | I,       |           | d melso   | rd rocks o                                   |        |           | rd mekso  | rd rocks o                              |        |           | rd rocks o  | rd rocks o                            |        |           | rd rocks o  | rd rocks o                                   |        |           | rd rocks o  | rd rocks o                                    |         |           | rd rocks o  | rd rocks o                                   |        |           | rd rocks o  | rd rocks o                                   |        |           | rd rocks o  | rd rocks o                                   |       |           | rd rocks o  | rd rocks o                              |        |           | rd rocks o  | rd rocks o                                   |        |
|        |             |       | (        | <u>ج</u> | -         | r stones (i   | r stones (i                                  |        |           | r etnnes fi   | All hard rocks or stones (i.e those w - |        |           | r stones (i   | All hard rocks or stones (i.e those w |        |           | r stones (i   | r stones (i                                  |        |           | r stones (i   | r stones (i                                   |         |           | rstones (i  | rstones (i                                   |        |           | rstones (i  | r stones (i                                  |        |           | rstones (i  | r stones (i                                  |       |           | r stones (i   | All hard rocks or stones (i.e those w - |        |           | rstones (i  | r stones (i                                  |        |
|        |             |       | 6        | €        | )         | e those w   | e those w                                    |        |           | - three w   | e those w                               |        |           | e those w   | e those w                             |        |           | e those w   | e those w                                    |        |           | e those w   | e those w                                     |         |           | e those w   | e those w                                    |        |           | e those w   | e those w                                    |        |           | e those w   | e those w                                    |       |           | e those w   | e those w                               |        |           | e those w   | e those w                                    |        |
| ľ      | moderate    |       |          |          |           | moderat   | •  | ľ      | poor      | moderat   | '                                       | '      | poor      | moderat   | •                                     | ľ      | poor      | moderat   | •  | ľ      | poor      | moderat   | •   | '       | poor      | moderat   | 1  | '      | poor      | moderat   | •  | 1      | poor      | moderat   | •  | 1     | poor      | moderat   | •                                       | ľ      | poor      | moderat   | 1  | '      |
|        | ň           |       |          | 4 / 7    |           |   |  |        |           |   |   |        |           |   |                                       |        |           |   |  |        |           |   |   |         |           |   |  |        |           |   |  |        |           |   |  |       |           |   |   |        |           |   |  |        |
|        |             |       |          |          |           | 71  |  |        |           | 66  |   |        |           | 60  |                                       |        |           | 5   |  |        |           | 60  |   |         |           | 62  |  |        |           | 50  |  |        |           | 41  |  |       |           | 52  |   |        |           | 60  |  |        |
|        |             |       | (        | Ð<br>Ð   | )         | 71  |  |        |           | 8   |   |        |           | 8   |                                       |        |           | 8   |  |        |           | 8   |   |         |           | R   |  |        |           | 50  |  |        |           | 4   |  |       |           | 52  |   |        |           | 8   |  |        |
| =      |             |       | (<br>_   | t        | -         |   |  | =      |           |   |   | =      |           |   |                                       | =      |           |   |  | =      |           |   |   | _       |           |   |  | -      |           |   |  | -      |           |   |  | =     |           |   |   | =      |           |   |  | =      |
|        |             |       | 1        | ١,       |           |   |  |        |           |   |   |        |           |   |                                       |        |           |   |  |        |           |   |   |         |           |   |  |        |           |   |  |        |           |   |  |       |           |   |   |        |           |   |  |        |
| 2      |             |       |          |          |           |   |  | 2      |           |   |   | 2      |           |   |                                       | 2      |           |   |  | 2      |           |   |   | ~       |           |   |  | ~      |           |   |  | 2      |           |   |  | 2     |           |   |   | 2      |           |   |  | 2      |
| •      | 5           | 16    | 19       | 0        | 13        | 16  | 18   | •      | t3        | 16  | 19                                      | •      | 5         | 16  | 18                                    | •      | t         | 16  | 18   | •      | t         | 16  | 19  | •       | 13        | 16  | 18   | •      | 5         | 16  | 18   | •      | t         | 16  | 18   | •     | 5         | 16  | 18                                      | •      | 13        | 16  | 18   | •      |
| •      | 10          | 10    |          | •        | 7         | 10  |  | •      | 7         | 10  |   | •      | 7         | 10  |                                       | •      | 7         | 10  |  | •      | 7         | 10  |   | •       | 7         | 10  |  | •      | 7         | 10  |  | •      | 7         | 10  |  | •     | 60        | 10  |   | •      | 7         | 10  |  | •      |
| •      | •           | •     | 1        | •        | •         | •   | 1  | •      | •         | •   | 1                                       | •      | •         | •   | •                                     | •      | •         | -   | -  | •      | •         | 1   | •   | •       | •         | •   | •  | •      | •         | •   | 1  | •      | •         |   | -  | •     | •         | 1   | •                                       | •      | •         | •   | 1  | •      |
| •      | •           | 0.5   | 0.5      | •        | •         | 0.5   | 0.5  | 0      | •         | 0.5   | 0.5                                     | •      | •         | 0.5   | 0.5                                   | •      | •         | 0.5   | 0.5  | •      | •         | 0.5   | 0.5   | •       | •         | 0.5   | 0.5  | •      | •         | 0.5   | 0.5  | •      | •         | 0.5   | 0.5  | •     | •         | 0.5   | 0.5                                     | •      | •         | 0.5   | 0.5  | •      |
| 25     |             |       |          | 4        |           |   |  | 5      |           |   |   | 5      |           |   |                                       | 5      |           |   |  | 5      |           |   |   | 5       |           |   |  | 2      |           |   |  | ÷      |           |   |  | 60    |           |   |   | 4      |           |   |  | 6      |
| 2      |             |       |          | 2        |           |   |  | 2/38   |           |   |   | ٣      |           |   |                                       | 2/38   |           |   |  | 2/38   |           |   |   | ~       |           |   |  | ٣      |           |   |  | ٣      |           |   |  | 2/38  |           |   |   | 2/38   |           |   |  | 2/3a   |
| ÷      |             |       |          | -18      |           |   |  | -16    |           |   |   | -18    |           |   |                                       | -17    |           |   |  | -16    |           |   |   | ÷,      |           |   |  | -19    |           |   |  | -22    |           |   |  | -20   |           |   |   | -17    |           |   |  | -22    |
|        |             |       |          |          |           |   |  |        |           |   |   |        |           |   |                                       |        |           |   |  |        |           |   |   |         |           |   |  |        |           |   |  |        |           |   |  |       |           |   |   |        |           |   |  |        |
| 2      | _           |       |          | 2        |           |   |  | å      | _         | _   |   | 3      |           |   |                                       | ÿ      |           | _   | _  | 8      |           | _   |   | <i></i> | _         | _   | _  | ď      |           |   |  | 2      |           | _   |  | 2     | _         | _   |   | å      |           |   |  | 3      |
|        | -           | _     | _        | -        | -         | -   | _  | _      | -         | -   | -                                       | -      | _         | _   | _                                     | -      | -         | -   | _  | -      | _         | _   | -   | -       | -         | -   | -  |        | -         | -   | _  | -      | -         | _   | -  | _     | -         | -   | -                                       |        | -         | -   | _  | _      |

| NE20   |             |   |  | NE19   |             |   |  | NE18    |           |   |  |
|--------|-------------|---|--|--------|-------------|---|--|---------|-----------|---|--|
| 4      |             |   |  | <7     |             |   |  | NE18 <7 |           |   |  |
| w      | 2           | 2   | 1  | w      | 2           | 2   | 1  | w       | 2         | 2   | -  |
| •      | 120         | 66  | 36   | •      | 120         | 70  | ¥  | •       | 120       | 5   | 31   |
| •      | •           | 14  | 36   | •      | •           | 16  | 34   | •       | •         | 19  | 31   |
| •      | <b>5</b> 4  | 16  | •  | •      | 50          | 20  | •  | •       | 55        | 15  | •  |
| •      | 4 CL        | 30 CL   | 36 ZCL                                       | 0 -    | 000         | 36 CL   | 34 ZCL                                       | 0.      | S SC      | 34 CL   | 31 ZCL                                       |
|        | N/A         | N/A   | z  |        | N/A         | N/A   | z  |         | N/A       | N/A   | z  |
|        | 10 YR 4/4 . | •   | 10YR 2/2 No                                  |        | 10 YR 4/4 . | •   | 10YR 2/2 No                                  |         | 10 YR 5/4 | •   | 10/R 2/2                                     |
|        | 4           | No  | 2 No   |        | •           | No  | 2 No   |         | 4         | No  | 2 No   |
| 0.00 - | 0.00 -      | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 - | 0.00 -      | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - | 0.00 -  | 0.00 -    | 5.00 All hard rocks or stones (i.e those w moderate | 5.00 All hard rocks or stones (i.e those w - |
|        | poor        | tes (i.e those wilmoderate                          | tes (i.e those will                          |        | poor        | ies (i.e those wilmoderate                          | nes (i.e those will-                         |         | poor      | nes (i.e those wilmoderate                          | nes (i.e those will                          |
|        |             | 66  |  |        |             | 70  |  |         |           | 5   |  |
|        |             | 66  |  |        |             | 70  |  |         |           | 5   |  |
| =      |             |   |  | -      |             |   |  | =       |           |   |  |
| 2      |             |   |  | 2      |             |   |  | 2       |           |   |  |
| •      | 12          | 16  | 19   | •      | 13          | 16  | 19   | •       | 5         | 16  | 19   |
| •      | 7           | 10  |  | •      | 7           | 10  |  | •       | 60        | 10  |  |
| •      | •           | -   | 1  | •      | •           | -   | 1  | •       | •         | 1   | -  |
| •      | •           | 0.5   | 0.5  | •      | •           | 0.5   | 0.5  | •       | •         | 0.5   | 0.5  |
| Ħ      |             |   |  | Ħ      |             |   |  | 14      |           |   |  |
| 2      |             |   |  | 2      |             |   |  | 2       |           |   |  |
| ÷      |             |   |  | ÷      |             |   |  | ÷       |           |   |  |
|        |             |   |  |        |             |   |  |         |           |   |  |

#### Appendix C - Soil Laboratory Test Results



#### Laboratory Analysis Report

Date 03.01.2023 Customer: James Bairstow - Strutt and Parker Livelab Manton Road Brooke Oakham, LE15 8DF T: 01572 756543 F: 01572 759399 www.livelab.co.uk

Laboratory Reference Number: SOL-2022358-106 Date of Analysis: 12.2022 Customer Reference: Pit 11 – Top Soil Material: Soil

| Clay <0.002 mm           | 13.20% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 60.95% |
| Fine Sand 0.06 mm-0.2 mm | 13.28% |
| Medium Sand 0.2-0.6 mm   | 7.18%  |
| Coarse Sand 0.6-2.0 mm   | 3.02%  |
| Organic Matter           | 1.81%  |

Laboratory Reference Number: SOL-2022358-107 Date of Analysis: 12.2022 Customer Reference: Pit 10 – Top Soil Material: Soil

| Clay <0.002 mm           | 11.71% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 66.32% |
| Fine Sand 0.06 mm-0.2 mm | 12.04% |
| Medium Sand 0.2-0.6 mm   | 5.39%  |
| Coarse Sand 0.6-2.0 mm   | 3.02%  |
| Organic Matter           | 1.15%  |

Laboratory Reference Number: SOL-2022358-108 Date of Analysis: 12.2022 Customer Reference: Pit 9 – Top Soil Material: Soil

| Clay <0.002 mm           | 18.35% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 51.09% |
| Fine Sand 0.06 mm-0.2 mm | 18.47% |
| Medium Sand 0.2-0.6 mm   | 5.52%  |
| Coarse Sand 0.6-2.0 mm   | 4.70%  |
| Organic Matter           | 1.50%  |

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### Laboratory Analysis Report

Date 03.01.2023 Customer: James Bairstow - Strutt and Parker

Laboratory Reference Number: SOL-2022358-109 Date of Analysis: 12.2022 Customer Reference: Pit 8 – Top Soil Material: Soil

| Clay <0.002 mm           | 14.50% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 58.74% |
| Fine Sand 0.06 mm-0.2 mm | 13.16% |
| Medium Sand 0.2-0.6 mm   | 7.29%  |
| Coarse Sand 0.6-2.0 mm   | 4.60%  |
| Organic Matter           | 1.48%  |

Laboratory Reference Number: SOL-2022358-110 Date of Analysis: 12.2022 Customer Reference: Pit 11 – Sub Soil Material: Soil

| Clay <0.002 mm           | 22.19% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 38.51% |
| Fine Sand 0.06 mm-0.2 mm | 17.30% |
| Medium Sand 0.2-0.6 mm   | 14.66% |
| Coarse Sand 0.6-2.0 mm   | 6.08%  |
| Organic Matter           | 0.90%  |

Laboratory Reference Number: SOL-2022358-111 Date of Analysis: 12.2022 Customer Reference: Pit 10 – Sub Soil Material: Soil

| Clay <0.002 mm           | 81.25% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 8.97%  |
| Fine Sand 0.06 mm-0.2 mm | 5.33%  |
| Medium Sand 0.2-0.6 mm   | 2.59%  |
| Coarse Sand 0.6-2.0 mm   | 1.40%  |
| Organic Matter           | 0.10%  |

Document Serial No. 20230103001 Abigail MacCartney



Livelab Manton Road Brooke Oakham, LE15 8DF T: 01572 756543 F: 01572 759399 www.livelab.co.uk



### Laboratory Analysis Report

Date 03.01.2023 Customer: James Bairstow - Strutt and Parker

Laboratory Reference Number: SOL-2022358-112 Date of Analysis: 12.2022 Customer Reference: Pit 9 – Sub Soil Material: Soil

| Clay <0.002 mm           | 52.80% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 19.67% |
| Fine Sand 0.06 mm-0.2 mm | 17.30% |
| Medium Sand 0.2-0.6 mm   | 7.81%  |
| Coarse Sand 0.6-2.0 mm   | 2.29%  |
| Organic Matter           | 0.60%  |

Laboratory Reference Number: SOL-2022358-113 Date of Analysis: 12.2022 Customer Reference: Pit 8 – Sub Soil Material: Soil

| Clay <0.002 mm           | 34.27% |
|--------------------------|--------|
| Silt 0.002-0.06 mm       | 47.55% |
| Fine Sand 0.06 mm-0.2 mm | 15.18% |
| Medium Sand 0.2-0.6 mm   | 1.39%  |
| Coarse Sand 0.6-2.0 mm   | 0.90%  |
| Organic Matter           | 0.50%  |

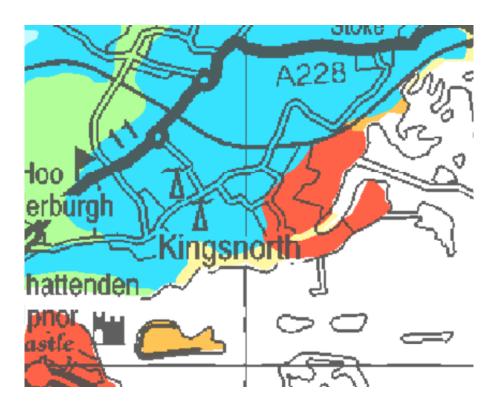
#### Comments:

The test results relate only to the sample supplied. This report must not be reproduced except in full without prior written authority from the Laboratory.

Document Serial No. 20230103001 Abigail MacCartney

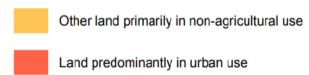


Livelab Manton Road Brooke Oakham, LE15 8DF T: 01572 756543 F: 01572 759399 www.livelab.co.uk Appendix D– Pre-1988 Agricultural Land Classification Map of Land at Hoo St. Werburgh, Kent





#### Non-Agricultural Land



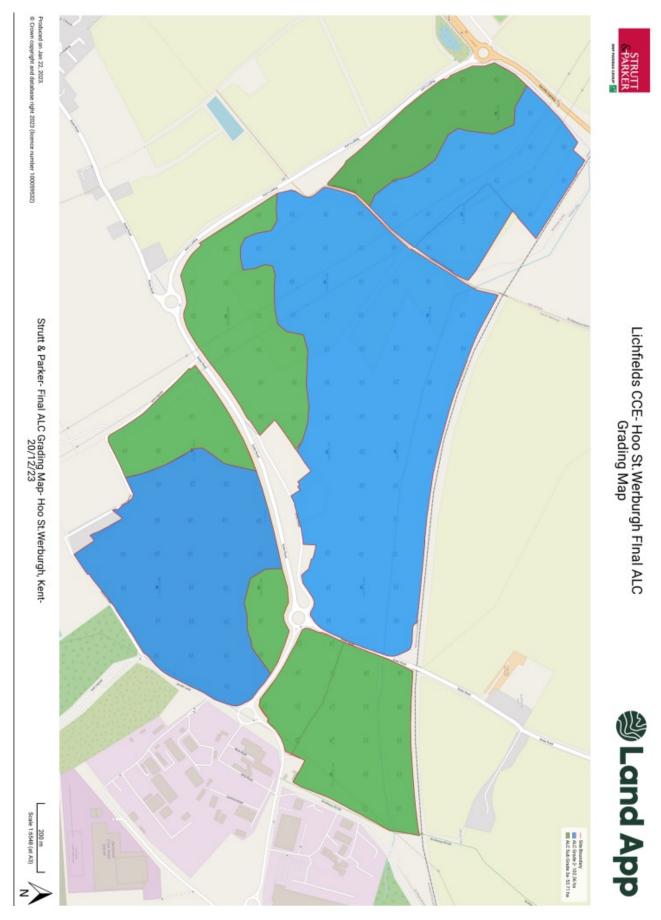


### Appendix E - Site Survey Map with Auger Boring and Soil Pit Locations



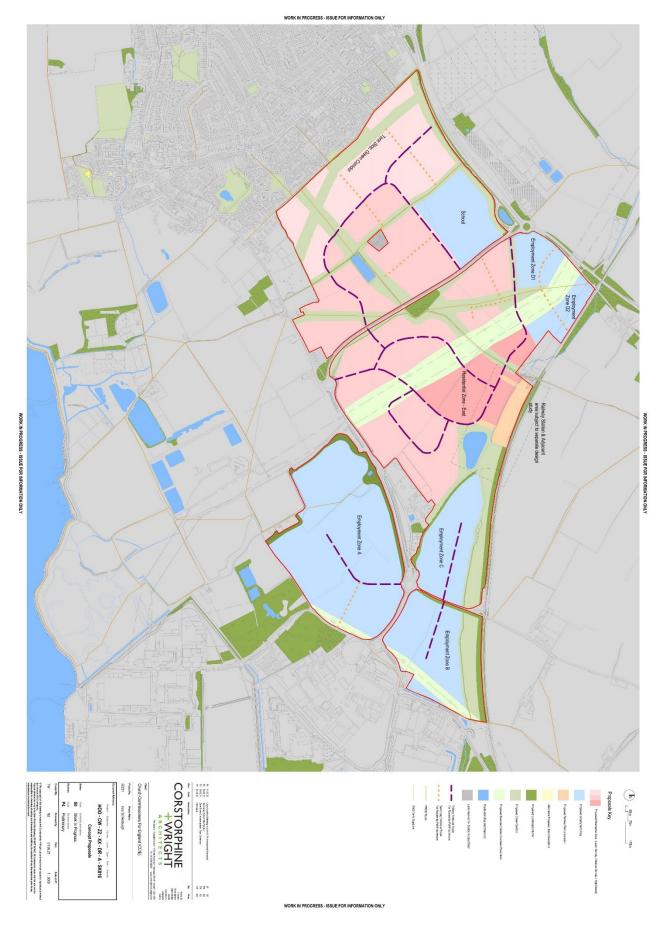
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Appendix G- Architectural Development Plan

