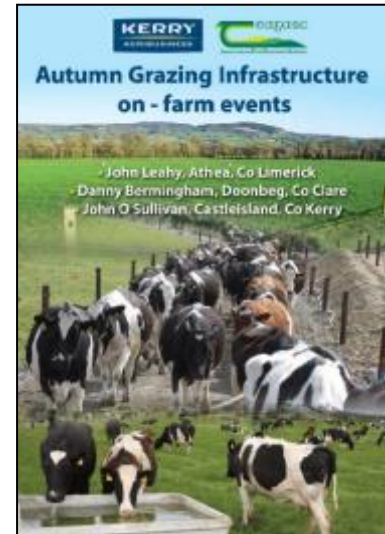


Heavy Soils Programme Review Jan. 30th 2019

Grazing Infrastructure



- An audit of infrastructure carried out on HSP farms during 2018
- The audit looked at grazing infrastructure under a number of headings, namely;
 - **Paddock size, shape and access**
 - **Extent, quality and condition of the farm roadway network**
 - **The supply of water to paddocks**
- A number of issues were apparent on all farms.
- These issues create difficulties with grassland management and utilisation, animal performance and labour input
- Plans in place to focus on correcting these issues in 2018 and the coming years
- Infrastructure focused Events held on 3 farms in September/October



Infrastructure Audit

| | % Adequate | % Needs Attention | % Not fit for purpose |
|---------------------|------------|-------------------|-----------------------|
| Paddocks | | | |
| Size | 75 | 25 | 0 |
| Access | 66 | 34 | 0 |
| Drainage | 70 | 21 | 9 |
| Fragmentation | 72 | 24 | 4 |
| Roadways | | | |
| Sufficient | 83 | 10 | 7 |
| Width | 81 | 19 | 0 |
| Cow flow/quality | 59 | 29 | 12 |
| Spurs | 74 | 19 | 7 |
| Water Supply | | | |
| Source/pressure | 67 | 33 | 0 |
| Pipe network | 79 | 21 | 0 |
| Troughs no & size | 69 | 30 | 1 |

Main Issues

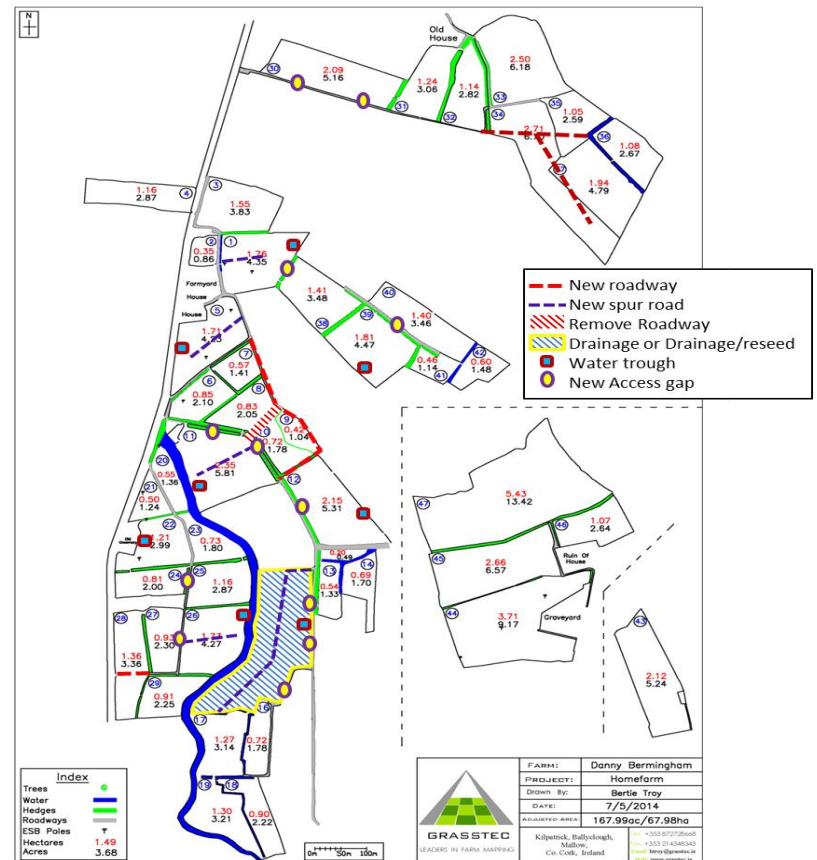
- Paddocks
 - Inadequate sizes
 - Access-too far from roadway network or too few gaps
 - Poor use of spur roads in larger paddocks

- Roadways
 - Large variations in surface condition
 - Inadequate width
 - Poor layout/configuration in places

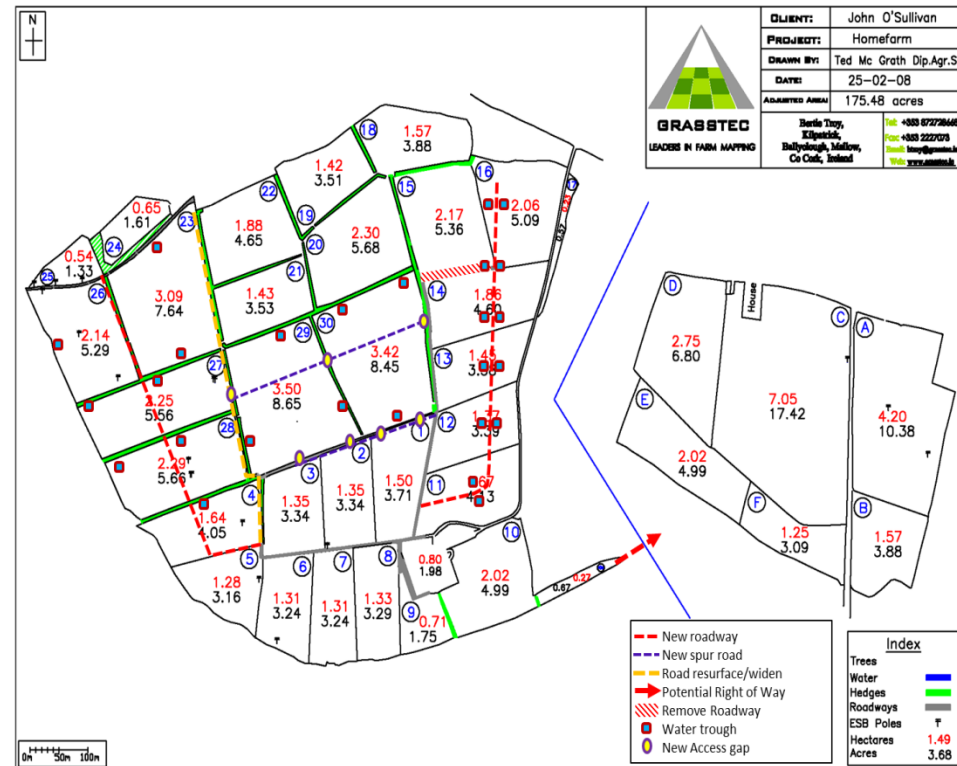
- Water supply
 - Not enough troughs
 - Poor flow rates



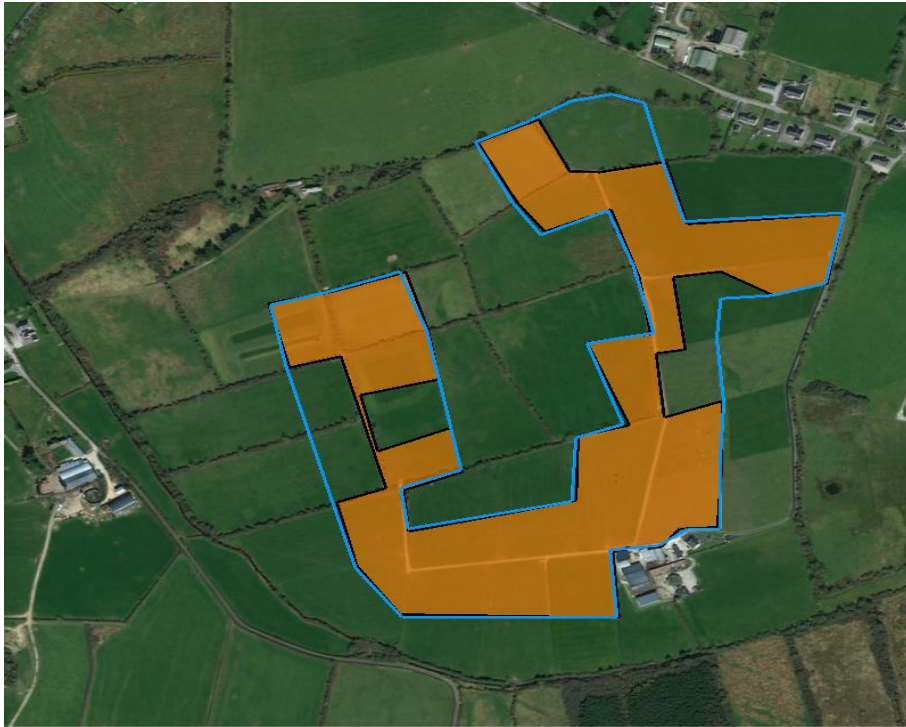
- Drainage of Paddock 15. 1,900 m of drains, spur roadways, reseeding and fencing
- Re-alignment and re-surfacing of 300 meters of roadway
- Spur roadways to be installed in Paddocks 1, 5, 11 and 26
- Additional water troughs
- Enhanced paddock access-installing bridges on open drains, gaps in ditches etc.
- During 2017, 9.3Ha were reconfigured, serviced by a new road, water troughs and fencing with multiple access



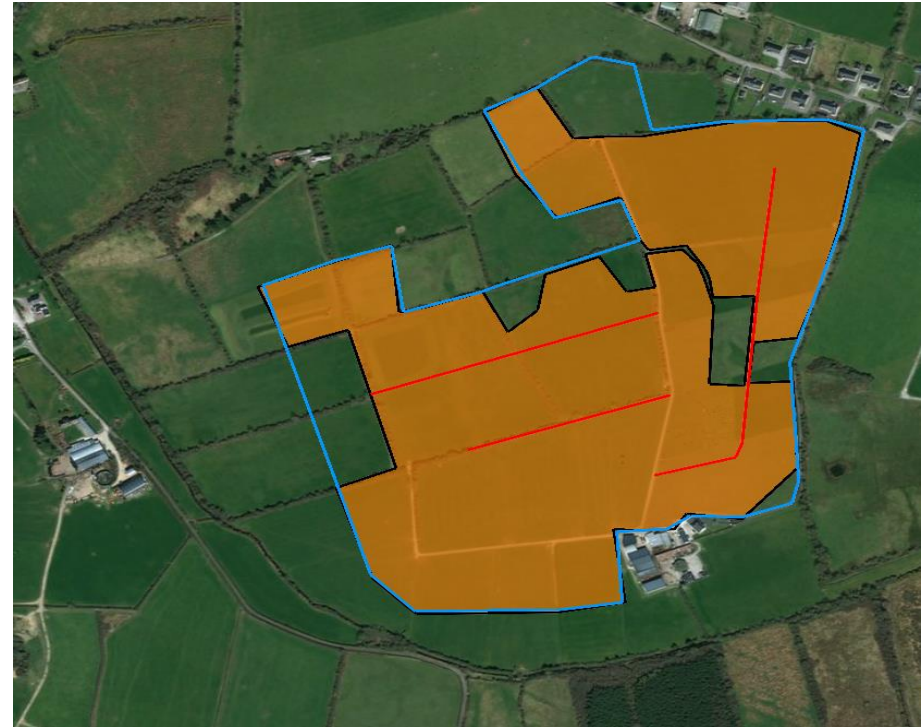
- 570 m of roadway (Paddocks 11 – 16) plus fencing
- Additional water troughs
- 615 m of spur roadways
- Additional gaps through boundary ditch (rented ground)
- Road surfaces and gaps, particularly those on rented ground need attention.
- 550 meters of new roadway to service rented ground planned
- Potential access to nearby out-block, 320 m away (Right of way)



Previously

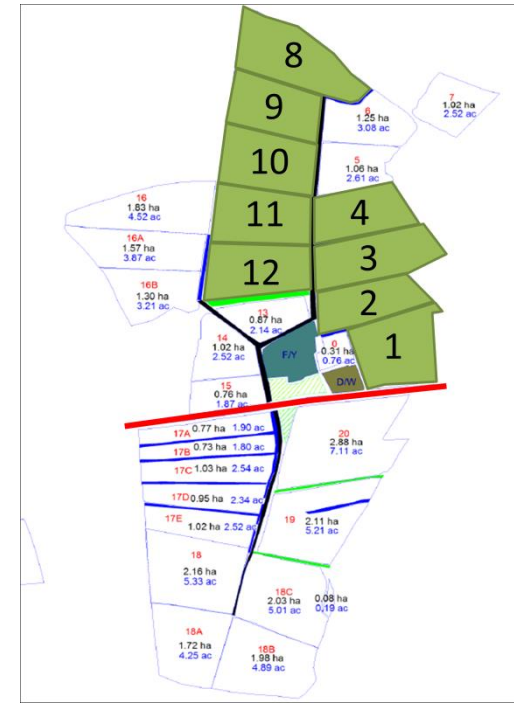


Currently



March Grazing Planner

| March | Rainfall (mm) | Paddock | No. of Cows | Hours Grazing | Silage Fed (bales) | kg Meal Offered | Damage (Yes, No, Moderate) |
|-------|---------------|---------|-------------|---------------|--------------------|-----------------|----------------------------|
| 1 | am | 0.0 | | | | | |
| 1 | pm | | | | | | |
| 2 | am | 0.0 | | | | | |
| 2 | pm | | | | | | |
| 3 | am | 9.6 | | | | | |
| 3 | pm | | | | | | |
| 4 | am | 6.8 | | | | | |
| 4 | pm | | | | | | |
| 5 | am | 0.0 | | | | | |
| 5 | pm | | | | | | |
| 6 | am | 1.2 | | | | | |
| 6 | pm | | | | | | |
| 7 | am | 1.8 | 1 | 80 | 3 | 4 | Yes |
| 7 | pm | | | | | | |
| 8 | am | 1.4 | | | | | |
| 8 | pm | | | | | | |
| 9 | am | 2.8 | 2 | 82 | 3 | 4 | Mod |
| 9 | pm | | | | | | |
| 10 | am | 3.0 | 2 | 82 | 3 | 4 | Mod |
| 10 | pm | | | | | | |
| 11 | am | 0.2 | | | | | |
| 11 | pm | | | | | | |
| 12 | am | 2.4 | | | | | |
| 12 | pm | | | | | | |
| 13 | am | 0.2 | 11 | 85 | 3 | 4 | Mod |
| 13 | pm | | | | | | |
| 14 | am | 11.0 | | | | | |
| 14 | pm | | | | | | |
| 15 | am | 12.6 | | | | | |
| 15 | pm | | | | | | |
| 16 | am | 1.4 | | | | | |
| 16 | pm | | | | | | |
| 17 | am | 0.0 | | | | | |
| 17 | pm | | | | | | |
| 18 | am | 0.4 | | | | | |
| 18 | pm | | | | | | |
| 19 | am | 0.2 | 11 | 88 | 3.5 | | Mod |
| 19 | pm | | 11 | 88 | 3 | 1.5 | 4 |
| 20 | am | 0.0 | 12 | 88 | 4.5 | | Mod |
| 20 | pm | | 11 | 88 | 3 | 1 | 4 |
| 21 | am | 0.0 | 12 | 89 | 4.5 | | Mod |
| 21 | pm | | 12 | 89 | 3 | 1 | 3 |
| 22 | am | 2.4 | 8 | 91 | 3.5 | | |
| 22 | pm | | 8 | 91 | 3 | 1 | 4 |
| 23 | am | 4.2 | 8 | 91 | 3.5 | | |
| 23 | pm | | 8 | 91 | 3 | 1 | 4 |
| 24 | am | 0.4 | 8 | 93 | 3 | 3 | 5 |
| 24 | pm | | | | | | |
| 25 | am | 0.0 | 4 | 93 | 3 | 3 | 5 |
| 25 | pm | | | | | | |
| 26 | am | 6.8 | 4 | 93 | 2.5 | 3 | 5 |
| 26 | pm | | | | | | |
| 27 | am | 1.8 | 4 | 94 | 2.5 | 3 | 5 |
| 27 | pm | | | | | | |
| 28 | am | 4.6 | | | | | |
| 28 | pm | | | | | | |
| 29 | am | 0.0 | 3 | 96 | | | |
| 29 | pm | | | | | | |
| 30 | am | 0.2 | 3 | 96 | | | |
| 30 | pm | | | | | | |
| 31 | am | 0.8 | 3 | 96 | | | |
| 31 | pm | | | | | | |



Grazing strategies

- Aggressive On/off grazing
- 2.5-4.5 hour periods
- Use of spur roadways
- What level of damage is acceptable?
- Dictated by ground conditions
- Underpass will allow flexibility across whole platform