4.0 TRAFFIC IMPACTS

4.1 Monaghan County Council's Comments and Requests

"In order to full assess the impacts of the proposed traffic movement stated in the EIS and reiterated in the response to the initial request for further information, please provide details of the dimensions (length, breath and height) of the proposed **HGVs** proposed to collect spent mushroom compost (SMC) and poultry litter (PL). Verify that these proposed vehicles are suitable sized to gain access to SMC and PL facilities for loading prior to transporting to the proposed facility.

1. Demonstrate how the bulk density of each of the proposed feedstocks was considered in determining traffic movements to the proposed facility

In your response to question 4 (b) of the Council's Notice of 2003 - the EIS proposes the upgrading of two minor roads from the N2 National Primary road, via the LPO1151, LPO1150 and LPO1160 for distances approximately 4 km to the site of the proposed development and from the Regional Road R186 via LP01133 and LS05142 for a distance of approximately 3 km to the proposed development. The upgrading and realignment of up to 7 kilometres of local road (including road junctions) to accommodate this proposed development may have significant environmental affect on the area. Details of the environment and other impacts, as well as associated costs, of upgrading the road infrastructure to accommodate the proposed development are required.

The discussion set out in the section 'road and traffic' in your response to the Council's notice of 2003 to the above question is totally inadequate. Reference is made to the Council's Non-National Road Restoration Programme in relation to road improvement works up until the year 2006. The purpose of this restoration programme is to extend the life of country roads by the provision of roadside drainage and strengthening of road pavement. The strengthening generally consists of overlay with stones and surface dressing or overlay with Dense Bitumen Macadam. There is no upgrading of the roads in terms of vertical or horizontal alignment and in particular there is no widening of the roads under this programme

Monaghan County Council are seeking a fully detailed submission prepared by a suitability qualified person outlining the road upgrading requirements to include the widening of the carriage way width and improvement to road surface quality as proposed in Section 7.6.3 of the EIS page 205. This submission must include the upgrading of two minor roads from the N2 National Primary road, via the LPO1151, LP1150 and LP1160 for distances approximately 4 km to the site of the proposed development and from the Regional Road R186 via LPQ1133 and LSO5142 for a distance of approximately 3 km to the proposed development including all road junctions.

2. The submission must detail all environmental and other impacts as well as associated costs for the upgrading of the road infrastructure stated to accommodate the proposed development traffic requirements for the council to fully assess the impact of this proposed development"

4.2 Response: Report prepared by QED Engineering Ltd and Malone O'Regan Consulting Engineers

In March/April 2005, Malone O' Regan Consulting Engineers and QED Engineering Ltd were commissioned to prepare a report addressing the requests as outlined above. The report overleaf, entitled "Additional Information on Traffic Impacts and Associated Road Improvements for P03/446" is based on detailed surveys of the sections of road in question. Appendix 1 (a) of the report contains a detailed photographic survey of the route, providing a clear and comprehensive representation of existing road conditions and improvements required. The report is accompanied by ***8*** drawings detailing the overall site layout, the proposed road layout, cross-sections and longitudinal sections of the road.

Development Strategy for the Construction Phase

The developer would intend that the road be improved to a 5.5 m carriageway width during the construction phase of the development to facilitate construction activities to take place at the site. In the longer term, it is goal of the developer to improve road surface quality and carriageway width to the standard proposed in the report overleaf. The developer would envisage that this standard would be achieved through dialogue and close consultation with the Roads Authority at Monaghan County Council, who will ultimately dictate the final road design standard acceptable for the section of road in question.

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APPENDIX 1

(a) Road Safety Report

(b) Photographs

SCHEDULE OF DRAWINGS

DRAWING NO.	TITLE	SCALE
05006-100	Overall Site Layout	1 : 10560
05006-101	Proposed Road Layout 50 kph – Sheet 1	1 : 2500
05006-102	Proposed Road Layout 50 kph – Sheet 2	1 : 2500
05006-103	Proposed Road Layout 50 kph – Sheet 3	1 : 2500
05006-104	Proposed Road Layout 50 kph – Sheet 4	1 : 2500
05006-105	Proposed Road Layout 50 kph – Sheet 5	1 : 2500
05006-106	Road Cross Sections	1 : 50
05006-107	Road Longitudinal Sections	1 : 2500

MONOPOWER BIOMASS CHP DEVELOPMENT

Response to request for further additional information on Planning Application P03/446

1 LENGTH, BREADTH AND HEIGHT OF TYPICAL 20 TONNE HGVs UTILISED FOR THIS TYPE OF ACTIVITY

The following information was provided by a certified haulier in the Monaghan area:

- Articulated vehicles will be used for the collection of SMC and PL with the dimensions of collecting trailers as follows: 10 m in length, 2.4 m in breadth and 2.2 m in height.
- These trailers generally hold 25 tonnes of either SMC or PL. The maximum capacity of these trailers is 30 tonnes. These vehicles are capable of gaining entry to mushroom and poultry farms. Trailers presently in use for the collection of live chickens are 13.4 m in length.

The HGV movement in the EIS are calculated on trailers containing 20 tonne loads. Therefore the HGV movements in the EIS may be looked at as a "worst case scenario" with maximum traffic volumes predicted where hauliers are not transporting SMC and PL volumes at the standard 25 tonne load of the trailer.

2 PREDICTED TRAFFIC VOLUMES IN RELATION TO SITE OPERATION AND BULK DENSITY OF PROPOSED FEEDSTOCKS TO BE TRANSPORTED

2.1 Predicted Traffic Volumes in relation to Site Operation

Predicted Traffic Volumes in relation to construction and operation of the site are detailed in Section 2.0 – Site Selection, of the overall submission of Further Additional Information requested for P03/446.

- SMC and PL have similar bulk densities.

2.2 Bulk Density of Proposed Feedstocks to be transported

Poultry Litter

The fuel as received has a moisture content range of approximately 3045%. Poultry litter consists of bedding, droppings, feathers and waste food particles. Bedding material, consisting of wood shavings, straw or paper, is spread over the solid floors within the poultry houses where chickens or turkeys are fattened.

Animal wastes, in the form of excrement, fall upon the litter and are absorbed. The litter can be handled as a bulk solid like wood chips and transported in bulkier lorries.

Spent Mushroom Compost

The fuel as received has a moisture content range of approximately 60-70% (this is seasonally dependent). The material can be collected on the farm in a bulk tipper and delivered to the combustion plant as a friable bulk solid with handling characteristics similar to chicken litter. The SMC is slightly compacted and entangled due to the partly decomposed wet straw, is sticky and has no particular odour. SMC is described as having a relatively low bulk density, high moisture content and high organic matter content (Teagasc, 2000).

3 REQUEST FOR ADDITIONAL INFORMATION ON PROPOSED WIDENING OF ROAD CARRIAGEWAY AND IMPROVEMENTS TO ROAD SURFACE QUALITY IN RESPECT OF PLANNING APPLICATION P03/446 MONOPOWER COMBINED HEAT AND POWER PLANT AT KILLYCARRAN, EMYVALE, CO MONAGHAN.

INTRODUCTION

General

The developer has consulted with the Planning Authority for some time on the proposed development and it was generally agreed that the proposed development would require road upgraded of two minor roads from the N2 National Primary Road, via the LPO1151, LP1150 and LP1160 for distances approximately 4 km to the site of the proposed development and from the Regional Road R186 via LPO1133 and LPO5142 for a distance of approximately 3 km to the proposed development including all road junctions.

In December 2004, Monaghan County Council requested Further Additional Information in respect of the above current Planning Application. This submission and associated drawings have been prepared by Malone O'Regan Consulting Engineers in response to Item 4.1 – Traffic Impacts – Page 5 of 15 of the request for Further Additional Information in respect "…. of the widening of the carriageway width and improvement to the road surface quality…".

During the preparation of this report, consultations were carried out with the Road Department of Monaghan County Council without any firm conclusions.

3.1 EXISTING ROAD INFRASTRUCTURE

3.1.1 Existing Road : Extent

The total length of the existing road included in the upgrading proposals is 7887 metres as shown on Drawing No. 05006/100 and includes:

Table 1 – Chainage References

COUNTRY ROAD	CHAINAGE FROM	CHAINAGE TO
LPO 1160	+ 0.00 (N2)	+ 2820.00
LPO 1150	+ 2820.00	+ 3070.00
LPO 1151	+ 3070.00	+ 4240.00
LSO 5142	+ 4240.00	+ 6280.00
LPO 1133	+ 6280.00	+ 7887.00 (R 186)

3.2 EXISTING ROADS

3.2.1 General

Appendix 1 of this submission shows the results of a detailed cross-section dimensional survey at 100 metre intervals along the road. In addition, road widths were also taken at particular sections such as bridge structures, junctions, etc. Appendix 1 also contains photographs taken at each 100 metre section.

3.2.2 Existing Widths

Generally, the road is defined by verges/banks with hedges/trees, i.e. typical rural country roads where the roads are masked from the countryside by the presence of verges/banks and hedges/trees. There are short sections of wire fences as roadside boundaries.

The available widths for possible road widening within the existing road width plus road verges are summarised below:

more than 6.0 metres	- **48** out 79 sections
more than 7.0 metres	- 26 out 79 sections
more than 8.0 metres	- 15 out 79 sections
more than 9.0 metres	- 9 out 79 sections

3.2.3 Vertical Alignment

The existing longitudinal section for the road is shown on Drawing 05006/107 with levels taken from the existing **O.S.** maps.

3.2.4 Surface Condition

The condition of the existing surface of the road was also inspected during the site inspection and recorded in the Survey Record Sheet in Appendix 1.

3.2.5 Existing Services

The following public services are known to exist alongside andlor within the existing roadway.

- Overhead electrical cables: any proposals for road widening/upgrading must include for permanent diversion of this existing service.
- An underground watermain runs for part of the length of the road. The precise location, depth, etc. of this service must be established so that the water main may be protected and/or diverted during any works to the road.
- In certain locations, there are surface water road gulleys. Where the road width is increased andlor the surface regraded, the location of these gullies must be changed to suit the new layout.
- whilst the presence of other public services such as foul sewers, E.S.B., gas , have not been identified, it is clearly understood that, if any such services do exist, they must be identified, located, protected and diverted if necessary.

3.3 PROPOSALS FOR UPGRADING: ROAD GEOMETRYMIIDTH

3.3.0 General

The proposed upgrading for the existing roadway must take account of a number of constraints which are summarised below:

- The roadway is public and will remain so after the upgrading. However, acquisition of any lands necessary for the upgrading must be carried out by the Local Authority, Monaghan County Council. It is therefore considered prudent that the extent of the lands to be acquired should be kept to a sensible minimum by:-

  (a) Using sensible new road widths where possible.
  (b) Employ road widening along one side of the road where possible.
  (c) Designate road junctions where possible to minimise acceptable curve radii rather than use road curves around junction areas which would require significant land acquisition.
  (d) Use dedicated road markings, signs, etc. to ensure safety in accordance with general good practice employed by the Local Authorities in Ireland including Monaghan Co. Co. in their direct upgrading of county and regional roads.

- There are 2 No. main bridge structures on the overall route:
  - one at Chainage + 1072.00
  - one at Chainage + 7082.00

  It is considered that both bridges contribute to the local cultural heritage and should not be subject to widening. In both cases, there are considerable physical difficulties in widening each bridge and it is proposed to provide a passing/waiting lay-by at each bridge to provide for safe single traffic across each bridge at any time.

- Where the existing road/verge width dimensions are clearly too narrow to be retained, it is logical to widen the roadway to one side only. This will reduce the amount of landowners affected by acquisition of new lands. It may, however, increase the extent of road upgrading civil works because full widening on one side of the roadway would involve more regrading of the final road cross-section than widening along both sides. Drawing No. 05006/106 shows typical cross-sections for both options for widening.

OVERALL DESIGN STRATEGY

3.3.1 Design Philosophy

The philosophy used for the geometric design is considered to be a sensible compromise between current good design standards, upgrading standards employed by Monaghan Co. Co. and other Local Authorities for similar type roads, reasonable land acquisition, and respect for the existing countryside environment. The key elements of the design philosophy are as follows:

1 The NRA DMRB has been used as the basis for the design. An alternative design standard may be able to be agreed with the County Council, *to* further reduce impacts
   Design speed - 50 kph
   Road width - Generally 6.0 m wide + 2 No. 1.0 m wide verges (i.e. reflecting the constraint).
   - 7.0 m wide + 2 No. 1.0 m wide verges over the first 2780 metres where the closeness of curves which require curve widening effectively means the full section of road must be widened.

2 Widening will occur only on one side of the existing road where possible to reduce landtake and minimise impacts on adjacent properties.

3 Desirable minimum curves have been used where there is a junction connecting into the existing carriageway on a curve.

4 One step relaxations in horizontal radius have been used where there are no junctions occurring. This may require widening of the verges to incorporate sight distances.

5 Short sections with numerous curves have been straightened to provide a predictable alignment (such as Ch. 250).

6 The junction at Chainage 2800 has been assumed that the Give Way is on the arm being upgraded. This will require localised junction improvement works.

7 The junction at Chainage 3000 is assumed as a Cross Roads, and will require junction improvements.

8 The junction at Chainage 4200 is assumed as a " T junction and will only require junction improvement works.

9 The junction at Chainage 6200 is assumed as a Cross Road, and will require junction improvements.

10 The junction at Chainage 7100 was assumed as a "T" junction. This is not currently the case, so a change in junction priority is proposed here, so that the straight on is the major arm. See Section 3.4.5.

11 The 2 No. main bridges will be retained as existing but passing lay-bys will be provided near each bridge structure.

12 Other structures on the route if they have sufficient width, and are of a reasonable state of repair, should be able to be maintained within the new alignment or maybe extended locally to satisfy the new widened road width.

13 Apart from local regrading associated with the general widening and surface upgrading of the road, no major regrading is proposed at local high points.

14 Strategic use of warning signs, road signs, road markings, etc. will be employed to ensure safety.

3.4 PROPOSED ROAD GEOMETRY/WIDTH IMPROVEMENTS BY SECTION

3.4.1 SECTION 1: LPO 1160 Chainage + 0.00 (N2) to + 2820.00
Ref. Drawing No. 05006/100, 101 and 102: Ref. Photos 1 to 32
Ref. Survey Record Sheets

EXISTING ROAD CONDITIONS

This section of existing road contains a number of curves close together, a significant bridge at chainage + 1072 m, a number of road junctions, dwellings and industrial premises.

PROPOSED ROAD IMPROVEMENTS

Connection to Existing N2 National Route

The proposed roundabout for the proposed N2 Emyvale Bypass is indicated on Drawing No. 05006/101. It is anticipated that, if the Bypass was constructed at or around the same time as the proposed road upgrading, then the proposed road upgrading would start at this roundabout, not the current location of the N2.

However, for the sake of this application (which assumes that the proposed road upgrading will precede the N2 Bypass) it is proposed to:

(a) Introduce on the N2 a deceleration lane 80 m. long for traffic travelling north.
(b) Introduce on the N2 a dedicated right turning facility for traffic travelling south.

This will involve some widening of the current N2 and some land acquisition.

- For almost the complete length of this roadway the new carriageway width needs to be 7.0 metres because the requirements of the DMRB where curves are close together impose extra width for verges if the road width is reduced below the 7.0 metre recommended width.

  Accordingly, upgrading of this section of road will have a 7.0 metre wide carriageway and 2 No. 1.0 metre verges.

- Near Chainage +500, the existing Grove Lough and the ground levels falling towards the Lough means that all new road widening must be confined to the other side of the existing road.
- Short sections with numerous curves (e.g. at Chainage +250) have been straightened to provide predictable alignment.
- It is proposed to retain the existing bridge structure at Chainage +1072 because widening of the existing relatively complication bridge structures would greatly change the character of the existing structure. A passing lay-by will be provided to facilitate safe traffic movement.
- The widening of the road near the existing dwelling at Chainage +2300 must be fully confined to the other side of the road (south side) and safety provisions must be provided adjacent to this dwelling (so close to the roadway).
- At the end of this roadway at Chainage + 2800, i.e. where LP01160 meets LP01150, the priority for the junctions shall be:

  A Give Way Sign shall be allocated to LP01160 and roadway works will be carried out to the junction to achieve acceptable junction curves.

3.4.2 SECTION 2 : LP01150, Chainage + 2820 to + 3070
Ref. Drawings 05006/100 and 102: Ref. Photographs 32 to 34
Ref. Survey Record Sheets

EXISTING ROAD CONDITIONS

This is generally a straight section of road with minor road cracks.

PROPOSED ROAD IMPROVEMENTS

- Generally, the new roadway will have a 6.0 metre carriageway with 2 No. 1.0 metre wide verges.
- The junction with LP01151 will be confirmed as a cross-roads with adequate designed junction radii and signage

3.4.3 SECTION 3: LP01151, Chainage + 3070 to + 4240
Ref. Drawings 05006/100 and 103: Ref. Photographs 35 to 48
Ref. Survey Record Sheets

EXISTING ROAD CONDITIONS

- This is a relatively straight section of road with relatively narrow carriageway and considerable trees/hedges.

PROPOSED ROAD IMPROVEMENTS

- To maintain as much as possible of the existing rural character of the area, it is proposed to minimise the effects/removal of the existing hedge. This is generally possible with a new 6.0 m wide carriageway, 2 No. 1.0 m verges and very little land acquisition because there are very few curves to be upgraded.
- The junction at Chainage +4200, i.e. with road LP05142 will be deemed to be a T-Junction and will require junction improvement works.

3.4.4 SECTION 4: LS05142 : Chainage +4240 to +6280
Ref. Drawings 05006/100, 103 and 104: Ref. Photographs 48 to 74
Ref. Survey Record Sheets

EXISTING ROAD CONDITIONS

- This is a relatively straight section of road with relatively narrow carriageway and considerable trees/hedges.

PROPOSED ROAD IMPROVEMENTS

- To maintain as much as possible of the existing rural character of the area, it is proposed to minimise the effects/removal of the existing hedge. This is generally possible with a new 6.0 m wide carriageway, 2 No. 1.0 m verges and very little land acquisition because there are very few curves to be upgraded.
- The junction at Chainage +4200, i.e. with road LS05142 will be deemed to be a T-Junction and will require junction improvement works.
- There are a number of farm entrances and dwelling house entrances all of which must be fully designed, signage , road markings, etc.
- The junction at Chainage + 6268 is deem3ed to be a cross road and will be upgraded by junction improvements.

3.4.5 SECTION 5: LP01133 Chainage + 6280 to + 7887
Ref. Drawings 05006/100, 104 and 105: Ref. Photographs 74 to 99.
Ref. Survey Record Sheets.

EXISTING ROAD CONDITIONS

This section of existing road has narrow carriageway and a substantial existing masonry bridge close to a sharp bend and an existing junction.

PROPOSED ROAD IMPROVEMENTS

- Generally, the new roadway will have a 6.0 metre carriageway with 2 No. 1.0 metre wide verges. This will involve some land acquisition because of the narrow existing roadway.
- It is considered necessary to change the priority of the junction at Chainage +7100 so that straight on is the major arm. **All** signs, road markings, etc. will be changed to achieve the change of priority. **A** section of the straight on section must be upgraded so that a rapid change in road characteristics does not occur and a predictable alignment is achieved.
- It is considered prudent not to widen the existing road width of the existing bridge because to do so would obviously alter the characteristics of the existing bridge but would still not allow compliance with the DMRBN even for the minimum curve of 180 metre radius for 50 kph. If required at the bridge area, then a new bridge off the existing line would be required, i.e. a very major change to the existing road network.

***To R186* Regional Route**

It is proposed to

(a) Introduce on the R186 a deceleration lane 25 m long for traffic travelling south.
(b) Introduce on the R186 a dedicated right turning facility for travelling north.

This will also involve some widening of the current R186 near the junction and some land acquisition.

4 PROPOSALS FOR UPGRADING : ROAD SURFACE QUALITY

4.0 General

Those sections of the existing road surface which have been identified as being suspect (See Appendix 1 : Survey Record Sheet) will be excavated to sound formation soil and replaced with acceptable new carriageway construction materials, e.g. Chainage 2500 to 3000 m, 4900 t0 5200, 5600 to 6000, 7200 to 7887 and other local sections.

New sections of roadway generated by road widening will also be constructed from sound formation soil with acceptable new carriageway construction materials.

The remaining areas of existing roadway which appear to be acceptable at present will be subjected to in-situ testing to establish the likely performance of the currently sound road surface under the proposed traffic loadings that will be generated by the development in current Planning Application P03/446.

4.1 Structural Design of Pavements

The structural design for the road pavements will be carried out in accordance with current good practice and will depend upon the results of soils investigation on site, laboratory testing, and analysis of the future traffic loading and choice of new materials all in conjunction with Monaghan County Council.

5 ROAD SAFETY AUDIT

In accordance with good practice, the road improvement proposals would be subject to an independent road safety audit. The final documentation for construction would incorporate the recommendations of the Safety Audit.

6 ASSOCIATED COSTS FOR UPGRADING OF THE ROAD

The costs for the proposed road upgrading are derived from a number of sources:

- Detailed road design and tender documentation.
- Consultation procedures, negotiations with all relevant parties.
- C.P.O. procedures and payments including specific accommodation works for particular land owners, etc.
- Actual construction of the works including all temporary diversions of roads, services, fences, etc., together with the actual construction and all reinstatements, services, signage, etc.

Many of the above issues cannot be firmed up in advance of agreements with Monaghan County Council.

However, it is likely the cost will not be less than €0.25 million per kilometre, i.e. around €2.0 million and may exceed this sum depending upon the final approved scheme

7 ENVIRONMENTAL IMPACTS OF ROAD IMPROVEMENT

The proposed road improvements will impact upon existing grass verges and, in places, on existing hedgerows and trees, e.g. (1) at Chainage +4000 – see Photographs **44** and 45S where the existing road width is 3.8 metres, 2.9. (2) at Chainage + 6100 – see Photograph 73 where the existing road width is 3.7 metres.

The proposals do seek to minimise such impacts by staying within the existing hedgerows where possible, by widening on only one side of the carriageway where possible, and by retaining 2 No, existing bridge structures. Impacts on existing watercourses would be kept to a minimum.

The impacts on other Environmental issues, e.g. archaeology, ecology, surface water quality, would be subject to professional assessment at the appropriate time.

In many respects, the impacts on the environment will be positive because the road safety will be improved, access to existing dwellings and businesses will be improved.

APPENDIX 1

(a) SURVEY RECORD SHEETS

MALONE O'REGAN

SURVEY RECORD SHEET

Location: N2 near Emyvale *to* R186 near Tydavnet

Carried out by: (edited by F. Moran) **Date:** 13.04.2005

Ch (m)	Photo Ref No	LHS Verge Width	Total C/way Width (LH + RH)	RHS Verge Width	TOTAL WIDTH	Condition of Pavement	Remarks
2100	24	1	5.6	0.6	7.2	√	
2200	25	-	-	-	-	-	
2300	26	1.1	6.2	0.35	7.65	√	
2400	27	1.1 B & V	5.3	2	8.4		
2500	29	0.7	5	0.8	6.5	cracks	
2600	30	No V-0.8 B	5.1	0.8 B-No V.	6.7	cracks	
2700	31	B & V 0.9	6	0.7	7.6	√	
2800	32	0.9	5.8	1.5	8.2	√	
2900	33	1	4.6	1.4	7.0	Potholes	
3000	34	1.5 T	4.55	0.7 B & V	6.75	LHS cracks	
3100	35	1 RB	5	1.7 R B and	7.7	New tar/chips	
3200	36	3.5 T. Hs.	4.3	1.3 V	9.1	"	
3300	37	0.6 B & V	4.2	0.8 B	5.6	"	
3400	38	0.6	4.5	No V.	5.1 +	"	
3500	39	0.8 B.V.	4.5	4.3 to H.	9.6	"	
3600	40	0.1 B V	4.4	0.7 B & V	5.2	"	
3700	41	0.9 B & V	4.5	0.7 B & V	6.1	"	
3800	42	1.5 B- 0.7 V	4.8	0.6 V	7.6	"	
3900	43	0.6 V & B	4.4	0.5 V & B	5.5	"	
4000	44,45,S	0.3	3.8	0.6	4.7	"	
4100	46,47 S	0.8 -No V.	4.5	0.95 Tar	6.25	"	
4200	48	0.8 V.B.	4.75	0.9 H.	6.4	cracks	
4300	49	No V-0.85 B V	4.3	0.75 B & V	5.9	√	
4400	50,51 S	0.6 B-0.9 V	4.10	0.7 B & V	5.4	√	
4500	52	1.1 V	4.10	0.9 V-0.8 B	6.1	√	
4600	53,54 S	0.6 V-0.7B	4.3	1.6 V.	6.5	some ruts	

Legend: **B** = Bund, **BL** = Belmouth, **B & V** = Bund and Verge, **CF** = Chain Link Fence, **D** = Ditch, **F** = Fence, **FA** = Farm Access **FY** = Farmyard, **G** = Grass, **GH** = Gate of House, **GV** = Grass Verge, **H** = Hedge, **HF** = Hedge to Field, **Hs** = House, **R** = Road, **RB** = Raised Bund, **RF** = Ranch Style Fence, **T** = Tarmac, **V** = Verge, **W**= Wall

MALONE O'REGAN

SURVEY RECORD SHEET

Location: N2 near Emyvale to R186 near Tydavnet

Carried out by: (edited by F. Moran)

Date: 13.04.2005

Ch (m)	Photo Ref No	LHS Verge Width	Total C/way Width (LH + RH)	RHS Verge Width	TOTAL WIDTH	Condition of Pavement	Remarks
4700	55,56 S	2 T.	3.9	1.15 B & V	7.05	√	
4800	57,58 S	No V - B&V 0.9	4.3	1.2 B & V	6.4	√	
4900	59,60,S	1.3 B & V	3.9	1.6 B & V	6.8	lhs cracks	
5000		-	4.1	0.8 V & B	4.9	badly rutted	
5100	62/63 S	4 V to Bndry of H.	3.5	1.5 B & V	9.0	badly rutted	
5200		1.150	3.6	0.800 B.	5.55	badly rutted	
5300	64,65 S	1.400	3.4	0.700 B	5.5	√	
5400	66	1.6	3.4	2.8	7.8	√	
5500	67	1	3.4	0.7 B & V	5.1	√	
5600	68	V-0.9 B-0.7	3.3	0.9 B & V	5.1	rutted lhs	
5700	69	BL to FA	3.8	1.1 B & V	4.9 +	rutted lhs	
5800	70	2	3.7	1.2 B & V	6.9	rutted	
5900	71	1.7	3.7	1 B & V	6.4	cracks lhs	
6000	72	1.2	3.9	1.3 B & V	6.4	rutted	
6100	73	1.1	3.7	0.750 V – 0.850 B	5.55	√	
6200	74	0.9	3.7	0.5 V – 0.8 B.	5.1	√	
6300	76	0.9	4.6	0.5 B - No V.	5.8	√	
6400	77	0.5	4.2	0.5	5.2	√	
6500	78	0.7	4.1	0.6 V. - 0.4 B.	5.4	√	
6600	79	1.5	4.5	0.750 B&V	6.75	√	
6700	80/81 S	0.8 B & V	4.8	1.2 T. V.	6.8	√	
6800	82	0.9 B & V	4.7	0.9 V.	6.5	√	
6900	83	0.650 V /0.4 B	4.8	0.3 V/ 0.5 B	5.75	√	

Legend: **B** = Bund, **BL** = Belmouth, **B & V** = Bund and Verge, **CF** = Chain Link Fence, **D** = Ditch, **F** = Fence, **FA** = Farm Access **FY** = Farmyard, **G** = Grass, **GH** = Gate of House, **GV** = Grass Verge, **H** = Hedge, **HF** = Hedge to Field, **Hs** = House, **R** = Road, **RB** = Raised Bund, **RF** = Ranch Style Fence, **T** = Tarmac, **V** = Verge, **W**= Wall

MDR MALONE O'REGAN

SURVEY RECORD SHEET

Location: N2 near Emyvale to R186 near Tydavnet
arried out by: {edited by F. Moran) **Date:** 13.04.2005

Ch (m)	Photo Ref No	LHS Verge Width	Total C/way Width (LH + RH)	RHS Verge Width	TOTAL WIDTH	Condition of Pavement	Remarks
7000	84	0.5 B/No V.	4.9	0.7 B & V	6.1	√	
7100	88	-	-	-			
7200	89	1 V & B	3.9	1.2 V & B	6.1	rutted	
7300	90	0.5 V	3.9	0.3 V	4.7+	pot holes	
7400	91,92 S	0.9 V.	3.7	0.4 V/ 0.4 a.	5.0	rutted and pot holes	
7500	93	0.4 V.	3.6	0.8 V	4.8	"	
7600	94/95 S	0.5 V.	3.3	0.6 V/ 0.5 B		"	
7700	96	1.3 V	3.5	1.1 V	5.9	"	
7800	97/98 S	0.4 V	3.1	0.7 V	4.2	"	
7887	99					"	

N.B. All dimensions in metres
√ Road Surface **appears** sound.

Legend: B = Bund, BL = &lmouth, B & V = Bund and Verge, CF = Chain Link Few, D = *Ditch*, F = Fence, FA = Farm Access PI = Farmyard, G = Grass, GH = Gate of House, GV = Grass Verge, H = Hedge, HF = Hedge to Field, Hs = House, R = Road, RB = Raised Bund, RF = Ranch Style Fence, T = Tarmac, V = Verge, W = Wall

SURVEY RECORD SHEET
Miscellaneous Sheet

Location: N2 neat Emyvale to R186 near Tydavnet
Carried out by: (edited by F. Moran)

Date: 13.04.2005

Ch (m)	Photo Ref No	LHS Verge Width	Total C/way Width (LH + RH)	RHS Verge Width	TOTAL WIDTH	Condition of Pavement	Remarks
1062	11						start of Bridge
1072	12	0.7	4.2	0.7			Middle of Bridge
1085	13		5.55	-			End of Bridge
1500	16/17 S						
2293		1.5	6.2	0.7 m			
2464							
2475	28						
2821							
2880							New pavement laid ends 2880
3073							Centre line of junction
3773							
4242							
4480							
5560							
5375							
6282							
6268	75	1.4 B/ 0.5 V	4.1 m	0.450 m V			
7059	85	W	5.15 m	0.5 & 1.15 W			Start of Bridge
7082	86	W	5.25	0.5 and 0.950 m W.			NE Elevation of Bridge
7105	87	W	5.4 m	0.5 and 0.950 W			End of Bridge
7424							
7665							
7887			5.7				Centre line T-Junction R186

Legend: B = Bund, BL = Belmouth, B & V = Bund and Verge, CF = Chain Link Fence, D = Ditch, F = Fence, FA = Farm Access FY = Farmyard, G = Grass, GH = Gate of House, GV = Grass Verge, H = Hedge, MF = Hedge to Field, Hs = House, R = Road, RB = Raised Bund, RF = Ranch Style Fence, T = Tarmac, V = Verge, W= Wall

SURVEY RECORD SHEET

Location: N2 near Emyvale to R186 near Tydavnet
Carried out by: (edited by F. Moran)

Date: 13.04.2005

Ch (m)	Photo Ref No	LHS Verge Width	Total C/way Width (LH + RH)	RHS Verge Width	TOTAL WIDTH	Condition of Pavement	Remarks
0 (N2)							
100	1	1.7	4.8	1.7	8.2	√	
200	2	4.4	5.5	1.5	11.4		
300	3	1.8	5.2	2.5 G	9.5	√	
400	4	1 G V	4.95	1 G	6.95	√	
500	5	1.4	4.8	1.3	7.5	√	
600	6	1.4	4.7	1	7.1	√	
700	7	1.2	4.9	2	8.1	√	
800	8	0.9	4.4	1.3	6.6	√	
900	9	1.7	4.7	0.9	6.5	√	
1000	10	-	5 m	0.7	5.7	√	
1100	14	11 G	4.9	0.8	18.7	√	
1200		-	-	-			
1300	15	3.1 G	5.5	0.9	9.7	Slight cracks	
1400		0.3	4.9	1	6.2	√	
1500	16,17 S	8.5 H	5.5	1.6	15.6	√	
1600	18,19 S	1.4	4.8	0.7	6.9	√	
1700	20	2.3	4.5	1.0	7.8	√	
1800	21	3.5	5.8	BL to R	9.3	√	
1900	22	3.4	5.9	0.8	10.1	√	
2000	23	1.0	5.6	Farm Access	6.6+	√	

N.B. All dimensions in metres
√ **Road** Surface appears sound.

Legend: **B** = Bund, **BL** = Belmouth, **B & V** = Bund and Verge, **CF** = Chain Link Fence, **D** = Ditch, **F** = Fence, **FA** = Farm Access **FY** = Farmyard, **G** = Grass, **GH** = Gate of House, **GV** = Grass Verge, **H** = Hedge, **HF** = Hedge to Field, **Hs** = House, **R** = Road, **RB** = Raised Bund, **RF** = Ranch Style Fence, **T** = Tarmac, **V** = Verge, **W**= Wall