

From: Marian Healy [mailto:MarianHealy@offalycoco.ie]
Sent: 20 May 2009 17:07
To: Breen Higgins
Subject: Derryclure Landfill WL 29-2

Dear Breen

Further to your inspection in relation to the Waste Licence Review application earlier this year. I would like to advise you that since your inspection further works have been completed in relation to the gas extraction and segregation on the site.

Gas Extraction:

The installation of eighteen vertical gas wells was completed in December 2008. This work resulted in a significant increase in the volume of gas being collected and flared-off, and therefore had a positive impact on odours generated from the site. This work was extended further in early 2009 with horizontal gas extraction pipes installed along the cell perimeter. This situation will continue to be monitored and gas extraction infrastructure extended, as waste is deposited. Filling has now moved to cell 1C and horizontal gas extraction pipes will be installed as filling progresses. These works have resulted in a 75% increase in the volume of gas being flared from c. 400 m³/hr to a current rate of 670 - 700 m³/hr.

Complaints:

With regard to complaints received by the facility, the table below outlines the trend:

Month	2008	2009
January	2	18
February	1	2
March	0	4
April	2	6
May	0	2
June	0	
July	0	
August	0	
September	5	
October	5	
November	8	
December	38	

It should be noted that the dramatic increase in complaints in December 2008 also co-incided with the submission for the Review application for intensification of the activity on the site.

Green & C&D

We have established separate management systems for the following:

1. Green waste - diverted to a designated area, beside the Public Waste Reception Area to the front of the site. This waste is removed off-site for recovery.
2. C&D waste - diverted to a designated area, adjacent to the fines storage area to the rear of the site.

I attach a copy of a submission to An Bord Pleanala on 14 May in response to a request for further information, which may assist you in your assessment.

Regards

Marian

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*****Offaly Local Authorities*****

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Tá an t-eolais san ríomhphost seo, agus in aon ceanglái leis, faoi phribhléid agus faoi rún agus le h-agmaigh an seolaí amháin. D'fhéadfadh ábhar an seoladh seo bheith faoi phribhléid profisiúnta nó dlíthiúil. Mura tusa an seolaí a bhí beartaithe leis an ríomhphost seo a fháil, tá cosc air, nó aon chuid de, a úsáid, a chóipeáil nó a scaoileadh. Má tháinig sé chugat de bharr dearmad, téigh i dteagmháil leis an seoltóir agus scríos an t-ábhar ó do ríomhaire le do thoil.

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ENVIRONMENTAL BALANCE IN DESIGN AND CONSTRUCTION

RESPONSE TO RFI – INTENSIFICATION OF WASTE INTAKE AT DERRYCLURE LANDFILL

OFFALY COUNTY COUNCIL



MAY 2009



RESPONSE TO RFI – INTENSIFICATION OF WASTE INTAKE AT DERRYCLURE LANDFILL

OFFALY COUNTY COUNCIL

User is Responsible for Checking the Revision Status of This Document

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Client: Offaly County Council.

Keywords: intensification, capacity, traffic, waste management plan for the midlands region, sightlines, traffic data

Abstract: This document forms the response to the request for further information from an Bord Pleanála in relation to application reference 19.JA0013.

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1. INTRODUCTION

Further to a planning application, Reference 19.JA0013, by Offaly County Council, in relation to the intensification of waste acceptance at Derryclure Landfill, An Bord Pleanála (ABP) has issued a request for further information so that a full and proper evaluation of the application may be carried out.

The proposed intensification entails increasing the tonnage of waste currently accepted at the site from 40,000 tonnes per annum to 100,000 tonnes per annum resulting in the shortening of the life of the landfill. It is currently estimated that there remains approximately 954,000 tonnes of landfill capacity if the landfill is developed to the full extent allowable under the current waste licence. Intensification would reduce the remaining lifespan of the facility from 24 years to 9.5 years.

Fehily Timoney & Company (FTC) prepared the initial planning application and accompanying Environmental Impact Statement. FTC was further retained by Offaly County Council to prepare a response to this request for further information.

Information was requested in relation to eight specific issues:

1. The future potential capacity of Kyletalesha landfill
2. The need for the development having regard to the submission of Laois County Council
3. An apparent discrepancy between the remaining capacity at Derryclure
4. A proposition in relation to a 2.5 metre sightline setback and information relating to adjoining lands
5. Explanation re the proposed 120 metre sightlines with respect to the NRA Design Manual for Roads and Bridges
6. The age of traffic data
7. The requirement for a Road Safety Audit
8. The planning status and planning history of the currently licenced activity
9. Concerns in relation to environmental issues at the site

This submission will focus on the following key points with respect to the proposed development:

- The need for the proposed development in context of the Midland Waste Management Region and National Policy.
- Outline why some surplus landfill capacity positively benefits an open waste market and how the intensification will allow Offaly County Council to achieve the

economies of scale to continue to operate long-term

- Outline the road improvements that have taken place at the entrance to the facility on the N80 since the submission of the application in November 2008
- Outline the mitigation measures that Offaly County Council have put in place to improve the overall environmental performance of the site

The responses to the issues raised are outlined in the following sections.

2. CAPACITY OF KYLETALESHA

ABP has requested that the applicant comment on the following:

- *The likelihood that the Kyletalesha Landfill, near Portlaoise, has a future potential capacity of 1,500,000 tonnes and not 377,379 tonnes as stated in the Environmental Impact Statement (Table 1.1)*

2.1. Applicant Response

The stated remaining capacity of Kyletalesha landfill in the Waste Management Plan for the Midlands Region 2005 – 2010 (WMPMR) was identified as 565,288 tonnes (in 2005) with an expected year of closure of 2015.

The figure of remaining capacity of 377,379 tonnes presented in Table 1.1 of the Environmental Impact Statement is an extrapolation of the 2005 figure based on the annual licenced intake capacity. The applicant considers the use of licenced capacity for calculating remaining capacities as the most appropriate approach to take, as it considers the maximised use of the existing waste infrastructure.

The identification of a capacity of 1,500,000 tonnes at Kyletalesha landfill appears to have its origin in the Strategic Assessment Report (2005) submitted as part of the response received from Laois County Council in relation to the proposed development. This capacity appears to be at odds with the identified capacity indicated in the regional Waste Management Plan for the Midlands Region 2005 – 2010 which was prepared only a year before the assessment Report. In addition, this Strategic Assessment Report was circulated to each of the regional County Managers and its recommendations were rejected by the County Managers.

This report identifies that this capacity (and other identified regional landfill capacities) is based on the *'absolute potential development capacity of the existing land banks'* at each of the regional landfill facilities.

It is acknowledged that the development of further landfill cells within the footprint of the Kyletalesha site is possible and permitted under Waste Licence W0026-2. However, the development of this capacity is by no means guaranteed and will be dependant on a number of factors, not least the economics of this development.

The Applicant notes that the remaining capacity identified in the Waste Management Plan for the Midland's Region 2005 – 2010 for Derryclure landfill is also contrary to that identified in the Environmental Impact Statement of 945,000 tonnes. This issue is answered in more detail in response to Issue 3 of the request for further information.

It is evident that both Derryclure and Kyletalesha landfills are in the same position in terms of potential further development of capacity.

Given the closure of both Ballydonagh (Westmeath) and Ballaghveny (North Tipperary) in 2010/11 and 2012/13 respectively, Derryclure and Kyletalesha will be the two remaining facilities in the region after 2012/13. The combined 90,000 tonnes of licenced capacity at these facilities will be required to be increased and with the closure of Ballydonagh in the near future, the applicant is taking decisive steps through this application to be in a position to provide this required capacity.

The waste generation projections presented in Figures 1-4 to 1-6 of the EIS (and reproduced further in this report) estimate the closure of Kyletalesha in 2015 (based on current built and tendered capacity) with Derryclure remaining open until 2018 if intensification proceeds.

Providing some surplus capacity in the market place ensures that there will be capacity in the Region in the event that unforeseen issues may arise at other facilities within or outside the Region that would prevent that acceptance of waste. In addition, the intensification will provide the economics of further development while allowing Offaly County Council better compete in the open waste market.

Given the current economic situation, the applicant believes that local authority operated landfill facilities require economies of scale in order to fund the further development of capacity, to contribute to restoration and aftercare costs and to ensure that these facilities remain competitive in the open waste market that exists in Ireland. The funds received from an intensification of waste acceptance at Derryclure will ensure the potential capacity can be developed to meet the demand for landfill disposal in the region, while allowing Offaly County Council to set a competitive gate fee to compete in the open waste market minimising waste management costs while adhering to the "Polluter Pays Principle". In the context of more recent landfill developments seeking a waste acceptance of 100,000 tonnes is not excessive.

The applicant also believes that Kyletalesha Landfill may have to obtain Planning Permission and will have to seek a revision to the sites waste license, if it is Laois County Council's intention to intensify waste acceptance at this site. There is no guarantee that Kyletalesha Landfill will successfully obtain the necessary statutory consents, if sought, to facilitate intensification waste acceptance at this facility. Nor is it known at present the timeframe associated with any potential plans to intensify waste acceptance at the facility.

To this end, the applicant is the first facility in the region to move on this issue and thus is ensuring the future viability of the facility in meeting the waste disposal requirements of the region.

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3. NEED FOR THE DEVELOPMENT

The applicant has been asked to comment on the need for the development, having regard to the submission from Laois County Council, in particular:

1. *The permitted licence capacity of 360,000 tonnes per annum at the Drehid landfill near Newbridge in County Kildare, which is not acknowledged in Section 1.5 of the Environmental Impact Statement*
2. *The allegation that while the four Midland landfills have a licenced capacity of 177,100 tonnes per annum, their actual intake is much lower – amounting to 141,784 tonnes per annum (per Waste Management Plan for the Midlands Region, 2005 – 2010, Table 10.1). Your response should make reference to the most recent statistics available, including the National Waste Report, if relevant*
3. *The residual capacity within the Midlands Region as set out in the current Waste Management Plan for the region*
4. *The apparent ability of the existing landfill capacity to meet the regional landfill requirement of 56,966 tonnes in 2018 at current licenced deposition rates, even if only Kyletalesha and Derryclure landfills remain open by this time*

3.1. Applicant Response

3.1.1. Drehid Landfill

The permitted licence capacity of 360,000 tonnes per annum at the Drehid landfill near Newbridge in County Kildare, which is not acknowledged in Section 1.5 of the Environmental Impact Statement

It is acknowledged that an extension and intensification of waste acceptance at Drehid landfill has, at time of writing, received full planning permission and waste licence. This intensification allows waste acceptance of 360,000 tonnes per annum until 2015 after which waste acceptance will revert back to 120,000 tpa.

However, at the time of preparation and submission of the EIS, a final decision had not been made by the Agency. This final decision was not published until 09/04/09 – incidentally the same date as the request for information letter from ABP to Offaly County Council.

As this facility had not received full statutory consent at time of EIS submission and, more importantly, as this facility is outside the Midlands Waste Management Region, it was not considered

within the needs assessment section of the EIS (Section 1.5).

While it is acknowledged that the presence of capacity at Drehid may impact on the amount of waste from outside the region being accepted at Derryclure, it is envisaged that the excess capacity at Drehid may be consumed by the flow of waste from Arthurstown landfill which is due to close in late 2009 early 2010. Arthurstown landfill is permitted to accept 600,000 tpa.

Nevitt Landfill which is proposed within the functional area of Fingal County Council is intended as the replacement landfill for the Dublin Region post-closure of Arthurstown Landfill. Applications for permission and for a waste licence are being considered by ABP and the EPA at present with a proposed decision having being issued by the EPA. An oral hearing with respect to the planning application has recently been held which looked at the suitability of the site in terms of archaeology and groundwater issues. The necessity to conducting a second oral hearing in relation to this development will impact significantly on the delivery programme.

Given the period of intensification of waste acceptance at Drehid is until 2015, this capacity may consume a portion of the waste that had been directed to Arthurstown. In addition, Drehid Landfill provides capacity for the disposal of residual waste generated in the Kildare Waste Management Region.

To this end, the applicant does not believe that the intensification of waste acceptance at Drehid landfill will significantly decrease the demand or need for landfill capacity in the Midlands region in the future given the likelihood that Drehid Landfill is most likely to attract its intake from the Greater Dublin Area and Kildare when Arthurstown landfill closes.

3.1.2. Midland Landfill Capacity

As identified in the Waste Management Plan for the Midland Region 2005 – 2010 (Table 10.1), waste disposal in 2003 fell short of licenced landfill capacity in the region. However, the period 2003/2004 represented a low point in the rate of disposal of municipal solid waste to landfill nationally as shown in the following table.

Table 3-1 MSW Generation and Disposal

Year	MSW Generated	MSW Landfilled
2001	2,297,603	1,992,050
2002	2,389,769	1,901,864
2003	2,559,387	1,832,625

2004	2,703,603	1,818,536
2005	2,779,097	1,883,330
2006	3,100,310	1,980,618
2007	3,174,565	2,014,797

(Source: National Waste Report 2007)

It can be seen that between 2004 and 2007, the amount of municipal solid waste disposed of to landfill increased by 196,172 tonnes with municipal solid waste (MSW) to landfill in 2007 amounting to 2,014,797 tonnes. This is in keeping with the trend of increasing MSW generation observed nationally since 2003 and may be attributed to population growth and increased economic activity over this period. There is no reason to suggest that this is not the case in the Midland region.

Indeed, in 2008, the following was the amount of waste landfilled at the four regional landfill facilities.

Table 3-2 Landfill Disposal 2008

Landfill	Disposal 2008 (tonnes)	Licensed Capacity (tonnes)
Derryclure	55,572	40,000
Kyletalesha	49,000	47,100
Ballydonagh	53,000	60,000
Ballaghaveny	32,000	30,000
Total	189,572	177,100

(Source: Personal Communication with each Local Authority)

The applicant therefore totally refutes the statement in the Laois County Council submission that *'these predicted tonnages do not stand up when compared to the actual tonnages of waste being accepted in the landfills in the Midland region in recent years'* and *'any increase in waste disposal to the landfill since 2003 is due to waste being accepted from outside the region'*.

It is evident that, not only have volumes of waste disposed in landfill increased nationally, in 2008 demand for landfill capacity in the Midland region exceeded supply (as indicated in Figure 1-4 of the EIS).

Table 3-2 also indicates that Derryclure Landfill accepted the most waste for landfill, indicating the demand for Derryclure in particular, in the region. It is acknowledged that this volume exceeded licence capacity but this is the case in two of the other three landfills in the region. This exceedence is noted by the Agency and a waste licence review has been prepared in conjunction with this application.

This evident demand for Derryclure is **the** driving factor in this application for intensification of waste acceptance. It highlights Derryclure as the

most active landfill in the region and this activity will result in the accelerated development of the remaining approved capacity at the facility.

In addition, post closure of Ballaghveny and Ballydonagh, the 90,000 tonnes of licenced capacity at these facilities will require landfilling in the region.

Derryclure landfill currently accepts approximately 10,000 tonnes per annum of waste which is derived from the Connaught Region. Similarly Ballydonagh landfill accepts some 24,000 tpa of waste from the Connaught Region. With the completion of the M6 next year, the demand for capacity at Derryclure could in fact increase.

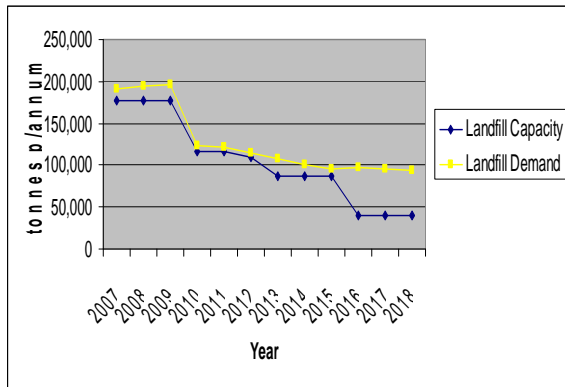
The central location of Derryclure Landfill within the Midlands Region is another factor that increases its attractiveness as a preferred landfill to waste collectors. In fact, following the closure of both Ballydonagh and Ballaghaveny Landfill, this landfill will be the closest remaining landfill to the centre of gravity of waste arisings in the Midlands Region.

Figure 3-1 (Figure 1.4 of the EIS reproduced below) indicates the demand for landfill in the Midland Waste Management Region based on:

- predicted waste generation as calculated using predicted waste growth based on ESRI ISUS figures
- Regional allocations of BMW (and treatment of residual waste) based on population figures from the CSO.

This scenario assumes adherence of the Region to the Landfill Directive Biodegradable Municipal Waste (BMW) allowances and hence indicates an instant achieving of the requirements of the Directive in 2010. In reality, it is more likely that both the landfill capacity and landfill demand figures graphed will reduce in a more gradual slope as the required infrastructure for the achievement of these targets is provided. Therefore there will be a reliance on landfill until such time as the necessary recycling and recovery facilities are constructed.

Figure 3-1 (Figure 1-4 of EIS)



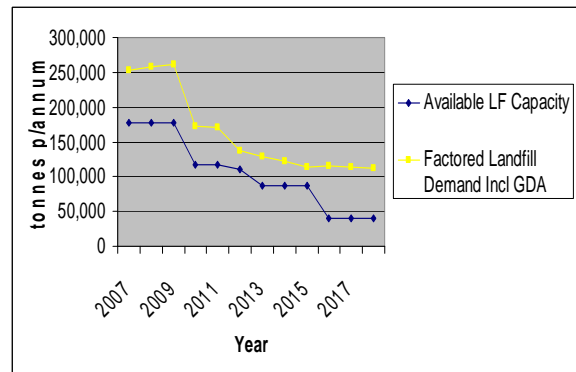
It is also stated in the Laois County Council submission that 'the licenced limits for the Region (177,000 tonnes in total) appears to be equated to Landfill Demand'.

Again, the applicant refutes this statement on the following basis:

- Figure 3-1 clearly displays a deficit of regional capacity in all years modelled based on current capacity, especially in the years beyond 2015, after which Kyletalesha could close (based on constructed capacity)
- This deficit is in the range of 15,000 to 20,000 tonnes between 2007 and 2010 and is approximately 5,000 tonnes between 2010 and 2013 – as stated previously, demand and capacity is likely to be greater between the first (2010) and second (2013) target years of the Landfill Directive. This is further evidenced by the data in Table 3-2.
- Figure 3-1 of the EIS describes the baseline situation of demand and capacity based on waste generation in the Midland region alone and does not take account of the highly likely acceptance of waste from outside the Midlands Region including the Greater Dublin and Connaught Regions and the requirement for a safety factor

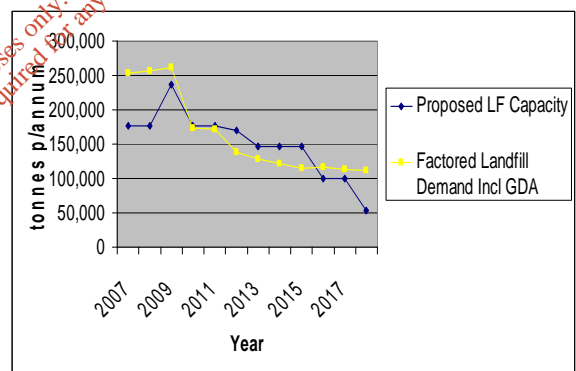
A second figure presented in the EIS, Figure 1-6, presents the anticipated demand for landfill capacity in the region in conjunction with an acceptance of 25,000 tonnes per year of waste material from the Greater Dublin Area. The figure of 25,000 is based on the tonnage of material that was accepted at Derryclure Landfill from the Dublin Region in 2007/2008.

Figure 3-2 (Figure 1-6 of the EIS)



The Applicant believes the scene presented in the above figure accurately represents the likely demand for landfill in the region in the coming years. The intensification of waste acceptance activities at Derryclure will result in a regional capacity provision as indicated in the flowing figure (Figure 1-7 of the EIS).

Figure 3-3 (Figure 1-7 of the EIS)



3.1.3. Residual Capacity in the Midlands Region

Post the achievement of the recycling targets identified in the Waste Management Plan for the Midlands Region, the remaining residual MSW will require further treatment and disposal, driven primarily by the requirements of the Landfill Directive 99/31/EC.

The options for the further treatment and disposal of residual municipal solid waste have been identified in the Waste Management Plan for the Midlands Region as mechanical biological treatment, thermal treatment and landfill.

The specific policies relating to these treatment methods, as laid down in the Waste Management Plan for the Midlands Region, are;

Thermal Treatment**Policy**

In order to support an integrated approach to waste management in the Region, after waste prevention and minimisation, and maximum recycling measures have taken place, non-hazardous residual waste (municipal, industrial and agri) from the region shall be directed to thermal treatment in preference to landfill in line with the EU waste Hierarchy. It is estimated that a minimum capacity of 150,000 tpa will be required.

Objectives

A thermal treatment facility is required for the Region in order to meet the Plan targets. The Local Authorities shall facilitate the provision of thermal treatment in the Region.

To date, the Midland Region has made no progress with the implementation of the provision of thermal treatment capacity within the Region. It is also noted that in the objectives of the plan that 'account shall be taken of thermal developments in the neighbouring regions'.

Given that the Waste to Energy facility at Poolbeg in the Dublin region began a site selection process in 1999 and has only recently fully completed the statutory consent process, this indicates the timelines which must be considered when developing thermal capacity.

The neighbouring South East Waste Management region thermal plant has only recently been sanctioned by the DoEHLG as a Public Private Project (PPP) and is therefore only entering into the early stages of the PPP procurement process despite the region having taken first steps in the process over 5 years ago.

A merchant thermal facility near Naas which may have provided capacity that could have been utilised by the Midland Region was recently refused permission by ABP on traffic and potential health concerns.

To this end, and given the current review of national waste policy that is being carried out and the potential impact this may have on the utilisation of thermal treatment on a national basis, it can be considered at this stage unlikely that thermal treatment will play a significant role in the treatment of residual MSW in the Midland Region in the short to medium term.

Mechanical Biological Treatment**Policy**

It shall be a policy that the pre-treatment of mixed municipal and industrial waste shall be required prior to landfilling in the Region in the short term to comply with the EU Landfill Directive pending the development of a Waste to Energy Facility.

Objective

Local Authorities shall ensure that waste collectors pre-treat mixed municipal and residual waste collected in the Region prior to disposal to landfill from 2007 onwards.

As identified, the likelihood of thermal treatment capacity being developed in the Region in the short to medium term appears slim. This also renders the policy with respect to mechanical biological treatment as unlikely to occur as the output from mechanical biological treatment will require a combination of thermal treatment and/or landfilling. The ongoing review of national waste policy is likely to promote mechanical biological treatment as the preferred residual waste treatment method, in line with the current Programme for Government 2007.

In this scenario, it is likely that mechanical biological treatment (MBT) will play a greater role in residual municipal solid waste treatment in the Midland Region in the medium to long term than envisaged in the current Waste Management Plan for the Midlands Region.

However, mechanical biological treatment configurations are likely to require landfill capacity to dispose of the stabilised organic fraction of the residual wastestream, as is practice in Germany and Austria. This material is unlikely to find outlet in any significant land application. This requirement for landfill capacity for mechanical biological treatment and/or thermal treatment (estimated at 25% of input waste) has been included in the modelling carried out as part of the needs assessment and is reflected in the figures presented in the EIS.

It should also be identified that, to date, no mechanical biological treatment facility has been developed within the Midlands Region. The policy objectives of the Plan place the onus for development of such facilities with the private waste collectors.

Landfill Disposal

Policy

The Local Authorities will continue to pursue a policy of regional landfill rationalisation in the long term whilst continuing to operate and maintain landfill facilities to satisfy regional demand, to the highest international standards in accordance with waste licences issued by the EPA.

Objectives

The local authorities will continue to ensure they are compliant with all relevant legislation and regulation with respect to landfill disposal.

The Applicant believes that the intensification of waste acceptance at Derryclure Landfill is consistent with policy of the Waste Management Plan for the Midlands as identified and as is necessary given the delays observed in relation to the implementation of policies for thermal treatment and MBT in the Region.

At present, four landfill facilities operate in the Midland region. It is envisaged that Ballydonagh Landfill will close in 12 - 24 months with Ballaghveny Landfill closing in 2012/13. From this time on, landfilling operations within the Midland Region will be rationalised with only two landfills, Derryclure and Kyletalesha, operating. This represents a rationalisation of the landfill capacity from 4 facilities to 2 in the next 3-4 years.

3.1.4. Ability to meet capacity

In their submission, Laois CC state that *'the EIS states that the quantity of MSW that can be landfilled in the Region in 2018 is 45,573 tonnes and that a further 25% of this amount (11,393 tonnes) in respect of fly ash, contaminated materials etc will also require to be landfilled, leading to a total landfill requirement of 56,996 tonnes in the Midland Region in 2018.*

The Laois CC submission goes on to say that *'this landfill demand can easily be accommodated within the existing landfill capacity, even if only two landfills remain open in the Region by 2018. Based on current waste intake from the counties in the region and the predicted reduction in this intake between 2008 and 2018, landfill capacity will remain adequate during this period'.*

The applicant believes that the figures and wording presented in the EIS have been misinterpreted by Laois CC.

The ESRI ISUS waste projection figures predict that by 2018 there will be 263,061 tonnes of residual waste for treatment/disposal following achievement of recycling targets. Of this figure, only 45,573 tonnes of **untreated** MSW will be allowed to go to landfill, based on regional application of national BMW allowance from 2016 onwards.

This will then require the treatment of 190,495 tonnes of MSW through MBT/thermal or a combination of both. Assuming 25% of this amount requires landfilling as ash or stabilised biowaste etc, this amounts to 47,624 tonnes for landfilling.

The combined total for waste to landfill is then 93,197 tonnes to which a factor of safety of 1.2 has been applied resulting in a waste volume of approximately 110,000 tonnes of waste for landfilling. This figure relates to waste arising in the Midlands Region and does not address waste from other areas.

The Applicant also reiterates that fact that Kyletalesha landfill will also need to intensify waste acceptance at its facility to achieve economies of scale and has shown no indication to date in doing so.

To this end, it is envisaged that Derryclure landfill, operating at a waste acceptance of 100,000 tonnes will provide adequate capacity for the amount of MSW generated and treated in the region in 2018.

3. *The Apparent discrepancy between the remaining capacity of the facility, estimated at 120,000 tonnes in the applicant's annual return to the Environmental Protection Agency in 2008, and the 954,000 tonnes capacity, now estimated*

The reference to 120,000 tonnes relates to the existing constructed capacity. As previously stated OCC has received full statutory consent for the construction of an additional 9 no. cells to the north, east and south of the existing site. The existing constructed capacity and the capacity of the 9 no. cells gives a total capacity of 954,000 tonnes.

The basis of this application is for the intensification of the site, to provide the economies of scale for the continued operation of the site. If the intensification application is granted, the construction of the 9 no. cells will be accelerated to accommodate the additional waste intake.

4. TRAFFIC RELATED ISSUES

An Bord Pleanála requested that the following be addressed as part of the RFI submissions:

4. *Please supply the authority for the proposition that a 2.5 metre sightline setback would be sufficient for the intensified landfill. In the event of an increased setback being required, please confirm that the adjoining lands, essential to the sightlines, are under the control of Offaly County Council, or alternatively, please provide evidence of the agreement of the adjoining landowner(s) connecting to the necessary measures to achieve and maintain 215 metre sightlines to the north and south along the N80 national Secondary Route*
5. *The inadequacy of the 120 meter sightlines along the N80 (EIS page 73) be reference to paragraph 1.26 of the NRA Design Manual for Roads and Bridges which states that "relaxations below Desirable Minimum in stopping sight distance...are not permitted on the immediate approaches to the junctions, because the majority of accidents occur in the vicinity of junctions"*
6. *The age of the traffic data used to estimate existing traffic flows*
7. *The failure to submit a Road Safety Audit*

4.1. Applicants Response

In addition to the points raised by the Board, FTC has also reviewed the traffic related issues raised by the NRA and Greenstar and have prepared the following response:

Please supply the authority for the proposition that a 2.5 metre sightline setback would be sufficient for the intensified landfill. In the event of an increased setback being required, please confirm that the adjoining lands, essential to the sightlines, are under the control of Offaly County Council, or alternatively, please provide evidence of the agreement of the adjoining landowner(s) connecting to the necessary measures to achieve and maintain 215 metre sightlines to the north and south along the N80 national Secondary Route

In the Environmental Impact Statement for the for the Intensification of the Derryclure Landfill the visibility to the N80 from the entrance was assessed against the requirements of the NRA standard for access onto National Roads (NRA DMRB standard TD 41-95 Vehicular Access to All-Purpose Trunk Roads). This standard recommends a minimum setback distance of 4.5 m for an access with an AADT flow of up to 500

vehicles, however a relaxation to 2.4 m can be provided in difficult circumstances. The assessment in the EIS showed that the **required visibility splay of 215 m from the access is achieved at present with a 2.4 m setback**; however the required visibility splay of 215 m with a 4.5 m setback will be obstructed by the existing fence and hedge located along the N80. It is recommended in the EIS that some consideration should be given to improving the visibility in the vicinity of the entrance by trimming back the hedge and moving the fence line back from the N80 carriageway.

In January 2009 the NRA published a revised standard titled "TD41-42-09: Geometric Design of Major/Minor Priority Junctions and Vehicular Access to National roads". This new standard supersedes the standard TD 41-95 Vehicular Access to All-Purpose Trunk Roads. One key difference is that new accesses onto National Roads are now required to be "Stop" junctions instead of "Yield" junctions. The setback requirements have also been updated; it is now required to provide a minimum setback of 3.0 m for "Stop" junctions and to provide a minimum setback of 9.0 m for "Yield" junctions. If a setback of 3.0 m is applied to the junction, significantly less land will be acquired to achieve the 215 m sightlines.

Considering the requirement of this new standard a "Stop" Junction will be provided and the minimum visibility provided at the junction will be a visibility splay of 215 m from the entrance with a 3 m setback as required in NRA TD41-42-09.

Offaly County Council are progressing the revision of the facility entrance to provide a 215 m sightline with the required setback. If required, the Council can purchase these lands under the Compulsive Purchase Order (CPO) route.

The inadequacy of the 120 meter sightlines along the N80 (EIS page 73) by reference to paragraph 1.26 of the NRA Design Manual for Roads and Bridges which states that "relaxations below Desirable Minimum in stopping sight distance...are not permitted on the immediate approaches to the junctions, because the majority of accidents occur in the vicinity of junctions"

In the Environmental Impact Statement the visibility along the N80 was assessed against the requirements of the NRA standard for National Roads (NRA DMRB standard TD 09-07 Vehicular Access to All-Purpose Trunk Roads). This standard requires a minimum Stopping Sight Distance (SDD) on a national road with a design speed of 100 kph of 215 m. A one-step relaxation to 160 m or a two-step relaxation to 120 m can be provided in difficult circumstances.

The assessment of the southern approach to the landfill entrance showed that the SSD is approximately 120 m which is a two-step relaxation in accordance with TD9/07. One of the mitigation measures proposed in the EIS was that a widened verge be provided on the southern approach to provide visibility in accordance with NRA standards.

Offaly County Council recently completed the construction of the right turn lane junction at the entrance to the Derryclure Landfill and a widened verge on both the southern and northern approaches.

The sight distance has been measured by Offaly County Council at the entrance location and it was determined that a visibility of 215 m is provided to the junction. This road improvement scheme will greatly improve the safety at the entrance to the Derryclure Landfill as noted on page 9 of the Road Safety Audit carried out on this scheme (Refer to Appendix 1 for Road Safety Audit). The provision of a right turn lane will ensure that stationary vehicles turning right into the landfill are not stopped on the northbound lane of the N80. The road lighting scheme proposed as part of the junction upgrade will also greatly enhance safety at the junction.

In order to further enhance safety at the junction Offaly County Council will look at the potential (in conjunction with the NRA) to reduce the speed limit in the vicinity of the junction from 100 kph to 80 kph.

The NRA have approved the road improvement scheme as a minor works scheme that will improve safety further once the junction is modified. A copy of the confirmation letter is included in Appendix 2.

The age of the traffic data used to estimate existing traffic flows

Two sources of traffic data are assessed in the EIS in order to estimate the existing traffic flows on the road network in the vicinity of the site, namely the "National Roads and Traffic Survey Reports for the period 2003 to 2004" and the "2001 peak-hour flows and turning counts for the Clonminch Roundabout" which is located close to the landfill site.

The National Roads and Traffic Survey Reports for the period 2003 to 2004 were published by the NRA so that the traffic data contained in these reports could be used by developers and local authorities to assess the Annual Average Daily Traffic (AADT) flows on the National Roads network. In order to allow the traffic data contained in these survey reports to be used for

assessments in years subsequent to 2003/2004 the NRA published a document entitled "Future Traffic Forecasts 2002 – 2040", this document provides growth indices which can be used to factor the base data up to the required year. As this data is provided by the NRA for the purpose of assessing traffic flows and is used in the EIS in accordance with the recommendations of the relevant guidelines it is considered to be reliable. The AADT flows calculated from the National Roads and Traffic Survey Reports are shown in Table 3.11 of the EIS; these values are calculated from the 2004 data in the traffic survey reports.

The second source of data used in the EIS is the "2001 peak-hour flows and turning counts for the Clonminch Roundabout". The relevant document provided by the NRA to convert short period traffic data into Annual Average Daily Traffic (AADT) flows is "RT201 – Expansion Factors for Short Period Traffic Counts" and the calculations carried out in the EIS are done in accordance with the recommendations of this document. The AADT flows calculated on the N80 from the Clonminch Roundabout peak-hour flows are shown in Table 3.13 of the EIS. Examination of Tables 3.11 and 3.13 shows that very similar AADT's flows were calculated from the Clonminch Roundabout peak-hour traffic data and the NRA traffic data. The fact that these two independent data sources correlate well indicates that data used in the EIS is reliable.

The failure to submit a Road Safety Audit

During the scoping process of the EIS, the NRA was invited to make a submission (Letter dated 22nd July 2008) on the proposed development. A response was received from the Authority on the 5th August 2009 in which they outlined a number of recommendations including assessing whether a Road Safety Audit was required.

In response to the NRA's submission, the EIS did include a detailed traffic assessment of the existing and proposed development. In addition, a Stage 1/2 Road Safety Audit was conducted by ORS Transportation Consultants in August 2008 but was not submitted with the EIS. The reason for this is that the upgrading of the junction was taking place regardless of whether the intensification application was successful or not. A copy of the audit is included in Appendix 1.

Offaly County Council are currently in the process of acquiring the additional lands for the new entrance layout, these lands can also be acquired under the Compulsory Purchase Order process if required. These lands will be used to improve the turning circles at the site entrance as well.

The majority of the comments on the road safety audit relate to visibility and improvements to the entrance layout. Offaly County Council have designed a revised entrance which is shown on the drawings included in Appendix 3.

Offaly County Council are currently in the process of acquiring the additional lands for the new entrance layout, these lands can also be acquired under the Compulsory Purchase Order process if required.

The Applicant would also like to take the opportunity to respond to the NRA comment that

"The Authority are thus concerned that a Traffic and Transport Assessment was not undertaken for this proposal due to its nature and location and refers the Board to Section 2 of the Authority's Traffic and transport Assessment Guidelines in regards to this guidance"

4.1.1. NRA Traffic and Transportation Guidelines 2007

The "NRA Traffic and Transportation Guidelines 2007" are the relevant guidelines which outline the requirements in relation to traffic impact assessments in Ireland. The guidelines provide guidance on the need for a Traffic and Transportation Assessment (TTA) by defining thresholds at which studies are recommended as part of the planning process. The requirements for a TTA are outlined in Section 4.3 of these guidelines; the requirements for a TTA are generally equivalent to the requirements for a traffic impact assessment done in accordance with the document "Guidance for Traffic Impact Assessment (1994) published in the UK by the Institution of Highways and Transportation.

As part of the preparation of the EIS for the Intensification of the Derryclure Landfill the NRA Traffic and Transportation Guidelines 2007 were reviewed and the recommendations of these guidelines in relation to the preparation of Traffic and Transportation Assessments (TTA) were fully adhered to. Section 2 of the Traffic and Transportation Guidelines describes the thresholds at which a Traffic and Transportation assessment is required. These thresholds are identified in Tables 2.1 and 2.2 on pages 7 and 8 of the guidelines and were reviewed in Section 3.5.6 of the EIS. The thresholds relevant to the landfill at Derryclure are as follows:

- More than 100 trips (in/out combined) in the peak hour
- Development traffic exceeds 10% of two-way traffic flow on adjoining road or 5%

of two-way traffic flow on adjoining road if congestive or sensitive

The assessment that was carried out in Section 3.5.6 of the EIS outlined that the peak hour trips generated the intensified landfill are significantly below the threshold of 100 trips set out in the Traffic and Transportation Guidelines and that the traffic generated by the proposed development is significantly below the thresholds of 5% or 10% of two-way traffic on the N80. Considering the methodology outlined in the NRA's Traffic and Transportation Guidelines for deciding on whether a TTA is required it is clear that a TTA is not required in this instance.

It should be noted that there is no criteria in the NRA Traffic and Transportation Guidelines 2007 which requires a TTA to be carried out when a development has direct access to a national road where the speed limit of 100kph applies, indeed there is no threshold in the guidelines which relates to the speed limit of the national road.

Section 2.2 of the NRA Traffic and Transportation Guidelines 2007 outlines the criteria that may require a TTA to be requested for a particular development even though the thresholds described in Section 2.1 of the guidelines are not exceeded, these criteria are known as the "Sub-threshold Criteria for a TTA" and are listed in Table 2.3 of the guidelines. In Table 2.3 of the guidelines eight criteria are identified and it is recommended in the guidelines that a TTA should be requested if two or more of the criteria are met. Considering the eight sub-threshold criteria the only one which could apply to the Derryclure landfill is the criterion relating to "a significant concern on the development's effect on road safety", as only one sub-threshold criteria is met a full TTA is not required.

In section 3.5.7 of the EIS the issues which would cause concern on the effect on road safety were assessed. The design standards used in this assessment was the NRA Design Manual for Roads and Bridges (DMRB). The three safety issues identified were as follows:

- Vehicles turning right into the site
- The visibility provided for vehicles exiting the landfill
- The visibility provided for vehicles travelling along the N80 in the vicinity of the landfill entrance

In the EIS all of these safety issues are assessed and recommendations are made, the following mitigation measures are also identified in Section 3.5.8 of the EIS.

- All HGV traffic will be instructed primarily to use the Tullamore Bypass when construction is complete where possible.
- A right-turn lane and widened verge on the southern approach in accordance with NRA standards will be provided.
- Visibility in the vicinity of the entrance will be improved by trimming back the hedge and moving the fence line back.
- Advance signing for the entrance on all major approach roads to the facility to avoid traffic inadvertently entering Tullamore will be provided.
- Road markings will be in accordance with the DoE Traffic Signs Manual

Since the submission of the planning application, Offaly County Council has undertaken a number of improvements works. These include:

- A right-hand turning lane was completed as part of an NRA minor improvement works scheme in later 2008
- The verges were widened both north and south of the landfill entrance.
- There now exists greater than 215m Stopping Sight Distance on the approaches to the landfill entrance from both south and north directions as a result of the completion of the scheme.
- A stage 1/2 Road Safety Audit was completed and recommendations from the Auditor were incorporated into the design.

A copy of the drawings showing the extent of completed works is included in Appendix 3.

It is clear that the critical issues in relation to the Derryclure landfill related to road safety on the N80 and not to the volume of traffic generated on the N80 as the volume of traffic generated by the facility is not significant.

Section 4.3 of the NRA Traffic and Transportation Guidelines 2007 lists the content that should be included in a TTA and it should be noted that the EIS for the Intensification of the Derryclure landfill contains all the required content relating to road safety that is required for a TTA which is carried out in accordance with the NRA Traffic and Transportation Guidelines 2007.

5. PLANNING

An Bord Pleanála have asked that the following is clarified in relation to the planning status of the existing development:

8. *The Planning Status and planning history of the currently licensed activity. In this regard, it appears to the Board that the existing development may already have undergone an extension of the type quoted in the Environmental Impact Statement (page 1), by reference to the 25,000 tonne threshold set out in the European Communities (Environmental Impact Assessment) regulations, 1989 and accordingly, may have required the preparation of an Environmental Impact Statement*

5.1. Applicants Response

A summary of the waste licensing and planning status of Derryclure landfill to-date is:

- Commenced landfilling operations at Derryclure in October 1976.
- SI No 133 of 1997 Waste Management (Licensing) Regulations came into force in 1997.
- Offaly County Council applied to the EPA for a waste licence in November 1998 under the Waste Management Act 1996. This application included the preparation and submission of an EIS to the EPA. The application focused on the historical landfill area and on continuing operations until 2000.
- Licence 29-01 granted on the 16th November 1999 for 40,000 tonnes per annum.
- In November 2001, a waste licence review application including an EIS was submitted to the EPA.
- Application included:
 - Continuation of landfilling in the historical site at a rate of 40,000 tpa
 - Development of waste recovery & recycling facilities on site
 - Development of supporting infrastructure, inc. leachate lagoon, weighbridge, flare etc
 - Development of new engineered lined cells, ref drawing BEN45098A/004 rev A.
- EPA granted licence 29-02 on 23rd July 2003.
- EPA approved Specified Engineering Works (SEW's) for cells 1A & 1B and associated infrastructure.

- EPA approved CQA documentation permitting use of cells 1A & 1B & leachate lagoon in June 2006
- EPA approved Specified Engineer Works (SEW's) for capping proposals of historical cell in 2007.
- EPA approved SEW's for new civic amenity in 2007.
- EPA approved SEW's for temporary gas extraction in cells 1A & 1B in 2008.
- Offaly County Council applied for an Intensification of its Waste Licence in October 2008 to the EPA.
- OCC submitted an EIS to An Bord Pleanála under Strategic Infrastructure Act as part of an application to intensify its waste operation.

The site is currently licensed by the EPA (licence register number is W029-02). The licence was sealed by the seal of the Agency on the 23rd day of July, 2003. The licence application (accompanied by an environmental impact statement) was lodged with the EPA on November 30th 2001.

S.I. 599 of 2001 (Planning and Development Act, 2000 (Commencement) (No 3) Order 2001 brought certain provisions of the Planning and Development Act (PDA) 2000 into use.

Specifically, on 11th March 2002 the Local Government (Planning and Development) Regulations, 1994 to 2001 were revoked. Other aspects of the PDA 2000 and the Planning and Development Regulations 2001 (S.I. 600 of 2001) came into use prior to 11th March 2002.

In effect, prior to March 11th 2002, where a local authority was developing a landfill that required an EIS, it was appropriate that the EIS be submitted to the EPA in support of the waste licence application (S.I. 261 of 1977).

After March 11th 2002, the EIS was to be submitted to ABP for certification (local authority only). Subsequently, the Strategic Infrastructure Act required both local authorities (all EIA proposals) and private applicants (where the private proposal was deemed to be strategic) submit the EIS directly to An Bord Pleanála thus, once the licence was issued, the local authority had planning permission.

The 2001 application was, in tonnage terms, for a site accepting 40,000 tonnes of municipal waste per annum. Prior to that, the site was also licensed to accept 40,000 tonnes per annum. The 2001 application was needed because extra cells were envisioned.

From time to time, when other facilities in the region were closed or restricted by the EPA from

receiving waste, the waste intake at the site increased. Specifically, in 2007, waste intake into Kyletalesha was severely restricted and the waste intake to Derryclure temporarily increased. Derryclure is the nearest landfill to Kyletalesha, within the Midlands region and notwithstanding the licenced limit, increased tonnage was accepted as an interim 'emergency;' measure. Such an increase would have warranted the preparation of an EIS however it would not have been possible to do an EIA while at the same time facilitating the solution to what was an upset event. The intake to Derryclure fell as soon as Kyletalesha intake restriction was lifted. The increased intake was reported to the EPA.

If permissions are granted in this instance, the site will be in a position to react to such events without exceeding the intake-limits set in either the licence or planning permission.

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6. ENVIRONMENTAL ISSUES

9. *Having regard to the fact that Section 175(10)9b) of the Planning and Development Act, 2000 allows the Board to refuse permission where it considers that a development, notwithstanding the licensing of the activity, would be unacceptable on environmental grounds, having regards to the proper planning and sustainable development of the area, you are requested to comments on the concerns raised by local residents in relation to ongoing nuisance arising from emissions and odours, deposition of waste in land drains, failure to cover landfill and failure to ensure bird control*

6.1. Applicants Response

The submissions by the local residents largely make reference to the findings of the EPA audit which was conducted on the site in October 2008. The audit report raises a number of issues in relation to the operation of the site. A response was submitted to the Agency on 23rd October addressing the points raised. A summary of these responses are outlined below:

1. Exceedances of Annual Tonnage

Offaly County Council met with the EPA on 26 April 2008 at which time they agreed to substantially reduce the intake of waste at the facility and to notify the Agency of the monthly progress to achieve appropriate reductions. Monthly tonnage figures were submitted to the EPA for the remainder of 2008, which illustrated the tonnages being accepted and Offaly County Council's adherence with the agreement from the April meeting. In Offaly County Council's submission to the Agency in October 2008, they advised the Agency that a waste license review application was being submitted. This review application for an increase in tonnage from 40,000 tpa to 100,000 tpa was lodged with the Agency in October 2009.

2. Waste Acceptance/Inspection

Additional training was subsequently provided to all landfill staff on the correct procedures for the inspection of material at the active face together with the identification of material which is unsuitable for landfilling.

Offaly County Council also contacted the contractor in question to highlight the Agency's concerns. The contractor was informed that all of the wastes delivered to the site would be subject to rigorous inspection procedures and that unsuitable loads would be rejected from the site.

In addition, a new system has been established on-site whereby C&D waste is stockpiled in a designated area, away from the working face. It is subsequently used for haul road construction.

Green waste is also managed as a segregated waste stream, collected and diverted off site for recovery.

3. Incident Reporting

OCC have since brought the Agency up-to-date with all incidents at the site and will ensure that all future incidents are reported to the Agency in accordance with the licence.

4. Basal Lining System

The breach in the liner was repaired by a specialised FLI Ltd on 17 October 2008. A detailed assessment of the lining system was also undertaken and no further breaches were recorded.

5. Landfill Gas Management & Control of Odour Emissions

The Council acknowledge that odour has been an issue at intervals at the site, particularly during periods of foggy and very cold weather. In response to this, Offaly Council has undertaken significant engineering works to improve gas collection efficiency through the extension for the landfill gas management system. These works have included the following:

- The completion of the restoration and aftercare programme for the original cell (unlined portion of the site) with a fully engineered permanent cap incorporating extensive gas collection network
- The installation of gas extraction wells in the active cell area

The restoration and aftercare programme for the historical landfill cell was completed in August 2008.

In relation to the current active working cells, 18 vertical gas extraction wells were installed in these cells in December 2008 with extracted gas going to the on-site flare. This work resulted in a significant increase in the volume of gas being collected and flared and therefore having a positive impact on odours generated at the site. This work was extended further in early 2009 with horizontal gas extraction pipes installed along the cell perimeter. This situation will continue to be monitored and gas extraction infrastructure extended, as waste is deposited.

Daily odour monitoring patrols are undertaken daily by landfill staff - records of which are maintained on site and are available for inspection as required. Patrols are also initiated in the event of an odour complaint being received at the facility.

The engineering works outlined above have resulted in a reduction in odour emission emanating from the site. The Council acknowledge that a significant amount of complaints received in December 2008 and January 2009 coincided with this application. The engineering works has resulted in a 75% increase in the volume of gas being flared from c. 400 m³/hr to a current rate with a throughput of 670 - 700 m³/hour.

6. Covering of Waste

The application of cover on the waste deposited is a daily practice on site, and at no time has Offaly County Council failed to apply cover. Cover is placed over the waste, with 150 mm depth on a daily basis and 300 mm at weekends. The cover comprises of a mix of peat and fines (European Waste Code EWC 19 12 12), soil is used when available. Hessian is only used on-site in exceptional circumstances.

7. Civic Waste Facility

The EPA had raised some concerns in relation to the management of the Civic Amenity. Since June 2008, the civic waste facility is now operated by the private sector on behalf of the Council. This departure along with the change in operating practices on-site did result in a number of issues which required considerable management input to solve these teething problems. A reporting system has been put in place and regular review meetings are held between both parties to discuss any concerns or issues that have arisen.

8. Bird Control

The Bird Control Measures on the site are reviewed on a regular basis, to assess the effectiveness of the measures in place. The note in the EPA audit that "There were no bird control measures in operation" is misleading and did not reflect the situation on site.

Offaly County Council has maintained bird control measures on an on-going basis, varying these as necessary to ensure maximum effectiveness. These measures include a falcon visiting the site, random operation of a hand held flare gun, and a fixed bird stress caller and banger, which operate at irregular intervals.

9. Surface Water Monitoring

This issue arose because a number of surface water monitoring points were dry when the scheduled quarterly monitoring took place. Offaly County Council have given an undertaking to the Agency to carry out repeated sampling if the surface water bodies in the vicinity of the site are dry at the time of quarterly sampling.

10. Deposition of waste in land drains

Waste is deposited at the working face, and at no time is waste deposited in the vicinity of land drains on the site. All waste is deposited within the engineered lined cells, and all traffic is directed to this area. The waste that was photographed by local residents was in fact windblown litter. OCC have a number of procedures in place to manage and minimise windblown litter. These include:

- Mobile litter fencing around the active area of the landfill
- Regular litter patrols by landfill site staff

The Applicant would also like to take the opportunity to respond to a number of issues raised in the submission by Greenstar

Contrary to National Waste Policy

Changing Our Ways does set out a policy for the "rationalisation of municipal waste landfills, with progressive and sustained reductions in numbers, leading to an integrated network of some 20 state-of-the-art facilities incorporating energy recovery and high standards of environmental protection"

Derryclure landfill is a modern engineered landfill. While the old parts of the site were based on the concept of dilute and disperse, this area has been fully capped and restored in agreement with the EPA. The proposed intensification activities will take place in engineered cells operating on the barrier principal which has landfill gas, surface water and leachate control management systems. It was not the policy that 20 new state of the art facilities would be established throughout the County but that some existing sites would be rationalized so that they would meet the requirements of the Landfill Directive and are licenced by the EPA. Derryclure is one such site.

This point is further enforced by subsequent National Policy (Waste Management - Taking Stock Moving Forward 2004) where it is stated in Key Point 11:

"Landfill, subject to rigorous licensing, will have a continued role as a waste management tool but it will progressively change to a residual role, in

accordance with its place at the bottom of the waste hierarchy”

Energy Recovery

The existing site at Derryclure does not produce sufficient landfill gas to support utilisation and electrify generation. At present the landfill gas collected on-site is flared. As part of this proposed development, the increase in the annual waste intake will result in an increase in the production rate of landfill gas and the peak generation of landfill gas will occur sooner for an intensified waste intake.

The overall quantity of landfill gas produced will not be significantly (less than 1%) altered by the intensification of filling activities but the efficiency of extraction and the economics of utilisation will be increased. This is due to the fact that cells will be filled and capped at a faster rate which will improve the efficiency of the gas collection system. This will not only increase the possibility of landfill gas utilisation at the site but also the efficiency of destruction of methane increases thus reducing the potential for more harmful greenhouse gasses and odourous compounds to be emitted to the atmosphere.

A detailed feasibility study on potential energy utilisation at the facility will be carried out if intensification proceeds.

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7. CONCLUSIONS

2008 waste acceptance figures indicate the demand for waste capacity in the region, in particular for Derryclure landfill. However, further development at Derryclure to satisfy this demand requires the economies of scale to fund such development and to allow Offaly County Council to compete in the open waste market.

This application for intensification for development is made on the back of the demonstrated demand for Derryclure and the requirement to fund further development to meet this demand.

The applicant believes that Derryclure will represent the most strategic location for provision of landfill services in the region post closure of Ballydonagh and Ballaghveny landfills.

Apart from providing the capacity that will be removed by the closure of these facilities, Derryclure is a centrally located facility in terms of the designated gateway town of Tullamore, Athlone and Mullingar while also being central in providing landfill capacity to the principal towns of Longford, and Nenagh. Given the imminent completion of the M6 and the Tullamore by-pass, the facility will well be placed to serve the region and wider areas.

In terms of national waste policy, the current international review of Irish policy is still ongoing and without pre-empting its outcomes, it is likely to be MBT centric in terms of residual waste treatment. MBT of residual waste produces an organic material that is limited in its potential uses with best practice being its stabilisation followed by landfilling, as in Germany and Austria. The requirement for landfill capacity to accompany MBT residual waste treatment has been modelled in figure presented in this document and the EIS.

The impact of the Landfill Directive 99/31/EC, in terms of requirements on the amount of biodegradable waste that can be landfilled, will require the development of infrastructure to achieve these targets.

It is widely accepted that Ireland will have great difficulty in achieving the requirement of its 2010 and even 2013 targets while this infrastructure is being developed. The requirement for landfill capacity pre, during and post the development of this infrastructure will remain.

The presence of landfill capacity cannot be seen as a hindrance to the achievement of the Landfill Directive and other recycling targets if the correct initiatives and, if necessary, enforcement

mechanisms are put in place to ensure maximising of waste management processes higher up the waste hierarchy.

As evident in Figure 1-6 of the EIS, the applicant has modelled the impact of waste capacity provision in terms of expected waste generation, impact on waste movement from other regions and the addition of a factor of safety. This results in an excess of capacity in some years followed by deficit of capacity in others.

The Applicant believes that a period of excess capacity in a region should not be viewed negatively but rather as a means to ensure competition between facilities in the open waste management market resulting ultimately in positive financial implications for the consumer.

It is felt that this application for intensification of waste acceptance at Derryclure landfill represents Offaly County Council taking decisive action in order to provide the future required landfill capacity for the region and within the region in line with the stated policy of the Waste Management Plan for the Midlands Region.

In relation to the traffic issues, Offaly County Council has carried out significant works on the N80 since the submission of the planning application in November 2009. These works have been carried out in agreement with the National Roads Authority. In addition, the Council will continue to improve the N80 junction layout in accordance with the details outlined earlier and with the prior agreement of the NRA.

Appendix 1

Road Safety Audit

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Consulting Engineers
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Stage 1/2 Road Safety Audit

Proposed Junction Upgrade
N80 Derryclure, Co.Offaly.

August 2008

<i>Client</i>	<i>Revision</i>	<i>Date</i>	<i>Compiled</i>	<i>Checked</i>	<i>Approved</i>
<i>Offaly County Council, County Buildings Tullamore, Co. Offaly</i>	<i>D3</i>	<i>29/08/2008</i>	<i>D. Mc Cormack</i>	<i>DMC</i>	

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- 2.0 ITEMS RAISED IN THE STAGE 1/2 SAFETY AUDIT
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 - 3.2 General Safety Problems in relation to proposed design.
- 4 AUDIT TEAM STATEMENT

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Appendices:

- Appendix A – Inspected Plan
- Appendix B – NRA Letter of Approval
- Appendix C– Photographs
- Appendix D– Designer Response Feedback Form

1.0 Introduction

- 1.1 This report comprises of a Stage 1/2 Road Safety Audit carried out to assess the proposed upgrading of the N80 Right turn lane junction into the existing Derryclure Landfill site. The proposed expansion of the landfill will result in additional volumes of traffic using the junction, which is already experiencing high volumes of traffic. The junction upgrade will be carried out by Offaly County Council.
- 1.2 The Audit was carried out in the Mullingar offices of ORS Transportation Consultants on the 26th and 27th August 2008. The audit team visited the site on the afternoon of the 20th August 2008.
- 1.3 The audit comprised an examination of the documents provided by Offaly County Council and are listed in Appendix A.
- 1.3 The Audit Team comprised of the following people:

Team Leader:

David McCormack BEng(Hons), Dip Eng, AMIEI, MIHT

Team Member:

John Brennan BE MIEI

Team Observer:

Peter Dunne HCert Eng AMIEI

- 1.4 During the visit the weather was dry and cloudy, however the road was wet in patches and the traffic was quite heavy and gave a good representative indication to typical traffic conditions in this area. It was noted that quite a high proportion of vehicles using the road were HGV traffic.
- 1.5 The terms of reference / procedure for the Audit were as per the relevant sections of the NRA DMRB HD 19/04. The team has examined only those issues within the design relating to the road safety implications of the scheme, and has therefore not examined or verified the

compliance of the designs to any other criteria. The Road Safety Audit should not be treated as a design check.

- 1.6 The problems identified and described in this report are considered by the Audit Team to require action in order to improve the safety of the scheme and minimise accident occurrence.
- 1.7 All comments, references and recommendations in this Safety Audit are in respect of the site visit and design drawings provided by Offaly County Council. (Drawing number: 012_004 (i), 012_005).

2.0 Items Raised in the Stage 1/2 Safety Audit

2.1 General

- 2.1.1 The audit was carried out at the proposed site access at the existing Derryclure landfill site. The audit also reviewed the proposed upgrading plans by the local authority for the proposed right turn lane.
- 2.1.2 It is noted that there was a high volume of traffic already in the vicinity of the junction in its existing state. Due to the high speed associated with the N80 in this vicinity and the slow turning speed of vehicles into the site, it would be recommended to upgrade this junction as a matter of necessity. A right turn lane is the most suitable and practical option in this regard.
- 2.1.3 Although full accident records were not obtained in this audit, consultation with the local authority revealed that a number of accidents had taken place including a fatality at this location.
- 2.1.4 Please refer to attached photographs in appendices for description and illustration of the problems and recommendations outlined in this Road Safety Audit.

2.2 Description of Proposed Development

The proposals set forward by Offaly County Council to upgrade the Derryclure Landfill junction with the N80 to include a right turn lane junction. The junction has been designed by Offaly County Council Road Design department. Layout drawings are attached in appendix A.

3.0 Issues Raised from the Stage 1/2 Road Safety Audit

3.1 The following are problems and recommendations to address the safety issues associated with the proposed junction upgrade. The recommendations are proposed to the designer of the development in order to reduce the safety risk associated with the site access and general junction arrangement.

3.2 General Safety Problems in relation to proposed design.

Location: At proposed Landfill Site Access

Problem No. 1

From site observation, the existing road markings are faded and worn away in some locations giving rise to the potential for collisions in low light and wet weather conditions. It may also be difficult for vehicles when turning into the land fill to judge the centre line and positioning on the road.

Recommendation No. 1

It is recommended that all proposed road markings are renewed when the right turn lane is constructed. It is also recommended that double continuous white lines are placed on the approaches to the right turn arrangement.

Location: At the existing site access

Problem No. 2

It is unclear from the drawings provided if the existing hard shoulder will be reduced in width due to the new junction layout. If the hard shoulder is reduced or removed, it may increase the risk to vehicles stopped or broken down in the vicinity of the junction.

Recommendation No. 2

If possible, the designer of the scheme should consider maintaining functioning hard shoulders along the new junction arrangement, to increase the safety of the scheme.

Location: At the existing Site Access

Problem No. 3

From site observations, the speed limit on the road is 100kph and vehicles were observed over this limit. It was also noted that there was a large volume of traffic on the road at approximately 3.00pm when the site visit took place. From the plans provided it is not possible to measure the available sightlines provided by the new junction arrangement or the forward and rear and sight stopping distances. Inadequate sight visibility parameters at the junction may increase the risk of rear shunting accidents, especially as it is anticipated that a large volume of traffic using the landfill will be large trucks that tend to turn in much slower than cars.

Recommendation No. 3

It is recommended that the designer of the scheme ensures that the sight visibility at the junction will be in accordance with the NRA DMRB for a 100kph designed road. Please refer to the NRA DMRB TD41/95 for further details.

Location: At the site access

Problem No. 4

The lining and road markings are in general compliance with the NRA Traffic Signs Manual. Any road markings that deviate from this standard may cause confusion to the road user. It is important that all road markings and signage is in accordance with the relevant standards.

Recommendation No. 4

The designer should ensure that all road markings and signage is in accordance with the NRA Traffic Signs Manual.

Location: At the proposed Junction

Problem No. 5

It is noted that the road alignment in drawing no. 012-005 is for a straight road. From site inspections and review of the other drawing, the proposed layout is on a large radius bend. Increased risk may occur if the junction is designed with the sightlines provided for a straight road, when in fact the junction is on the out side of a bend.

Recommendation No. 5

It is recommended that the designer is aware that the final design of the junction should take account that the junction is on a bend and forward and rear visibility will need to be checked to ensure compliance with the standards.

Location: At the proposed Junction

Problem No. 6

From site observation, there were no drainage facilities apparent along the road. There are also no drainage proposals for the proposed junction. It is important that drainage facilities are provided for on any new junction to prevent ponding and surface water.

Recommendation No. 6

The designer should consider providing drainage gullies or other method of draining and proper run off facilities for surface water to prevent ponding and water lying on the road surface in the final design of the junction.

Location: On the existing road.

Problem No. 7

No public lighting details are provided on the layout drawings. Although the junction will be mainly used during the day, in low light conditions and at winter time it will be assumed that the junction will still be used as the landfill will be open. There is an increased danger of collisions in low light conditions when vehicles are turning on a high speed road.

Recommendation No. 7

It is recommended that public lighting would be installed at the junction to increase visibility in low light conditions.

Location: On the existing road.

Problem No. 8

It is unclear on the proposed layouts to the size of the proposed entrance width. The existing site access is quite narrow for two-way HGV traffic and in order to reduce the potential of accidents, the site access should be sized to allow easy access for passing HGV traffic.

Recommendation No. 8

It is recommended that the site access is sized to cater for the intended type of vehicles. Autotrack or similar should be used to ensure that two-way movement of HGV's can be provided.

Location: At the Site Access

Problem No. 9

It is noted that the gates into the existing site are approximately 8m back from the road edge. If the gate was closed and a HGV turned into the site, it would have to back out and its rear would also block the oncoming traffic creating a hazard.

Recommendation No. 9

It is recommended that any junction improvements would include for the gates to be positioned back to allow a HGV to make a safe manoeuvre at the mouth of the junction if the gates were closed. This could be easily achieved in the final design.

Location: At the site access

Problem No. 10

It was noted on the site visit that the information signs on the approach to the junction were overgrown by the surrounding hedges, thus causing increased risk to motorists who may make a turning manoeuvre too late.

Recommendation No. 10

It is recommended that any new signs and existing signs are upgraded and the surrounding areas scrubbed back to provide full information to the road user.

Location: At the site access

Problem No. 11

It is unclear on the plans as to the sightlines available to the site. Inadequate sight lines at the mouth of the junction may lead motorists to drive out into oncoming traffic.

Recommendation No. 11

It is recommended that the proposed sight lines are shown on the junction and site boundaries are sufficiently set back to ensure that the visibility splays are maintained.

Location: At the site access

Problem No. 12

There is a lack of signage for road users on the internal road in the landfill site on the approach to the N80 junction that may give rise to large vehicles braking too late for the junction and entering the main road.

Recommendation No. 12

It is recommended that additional signage for vehicles approaching the junction from the landfill site be installed.

Location: At the site access

Problem No. 13

It is unclear as to the final road widths proposed for the upgraded junction. If the road widths are under design thresholds, the risk of vehicles clipping other vehicles increases, especially when the vehicles proposed to use the landfill will be large in nature.

Recommendation No. 13

It is recommended that the road widths proposed should be in accordance with the NRA DMRB TD 41/95. Autotrack or similar swept path analysis programs should be used to assess the road widths will accommodate the project type of vehicles. If the width of the lanes cannot be achieved in accordance with the DMRB, the designer could consider reducing the width of the hard shoulders in the vicinity of the junction to accommodate the proposed lane widths.

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General Recommendations for final layout Design:

- The designer shall consider incorporating all relevant signage and road markings in the internal roads layout to increase safety and efficiency. All road markings and signage shall be in-accordance with the "DOE Traffic Signs Manual".
- The internal roads layout from the landfill shall have sufficient surface water drainage provision to reduce the risk of ponding and surface water standing on the road network and at private access's. The final internal road design of the site should consider all aspects of drainage within the site.
- The public lighting layout shall be designed by the ESB or certified electrical contractor to ensure sufficient visibility in the hours of darkness and low light conditions.
- Any new landscaping proposals shall be designed to ensure that visibility from the site and at the revised access is not compromised in any way.
- The site access should be designed to accommodate two-way HGV traffic movements. It should also be large enough for vehicles to manoeuvre and park if the gates to the landfill are shut.
- All sightlines in horizontal alignment should be checked in accordance with the NRA DMRB TD 41/95.
- Ensure all junction identification bollards, directional signs and speed limit signs are provided in the final design. Ensure that any roadside hedgerows are cut back to keep visibility at an optimum.
- In the auditor's opinion, the upgrading of this junction would significantly enhance the safety of the existing junction. Any vehicles turning into this facility should be protected with a right turn lane arrangement as general speeds and traffic volumes in the area are quite high.

4.0 Audit Team Statement

We certify that we have examined the drawings listed in Appendix A and examined the site by means of a site visit. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for improvement, which we recommend should be studied for implementation.

Audit Team Leader: David McCormack: BEng(Hons) Dip Eng AMIEI MIHT

ORS Consulting Engineers

Signed:

Date:

Audit Team Member: John Brennan: BE MIEI

ORS Consulting Engineers

Signed:

Date:

Audit Team Observer: Peter Dunne HCert Eng AMIEI

ORS Consulting Engineers

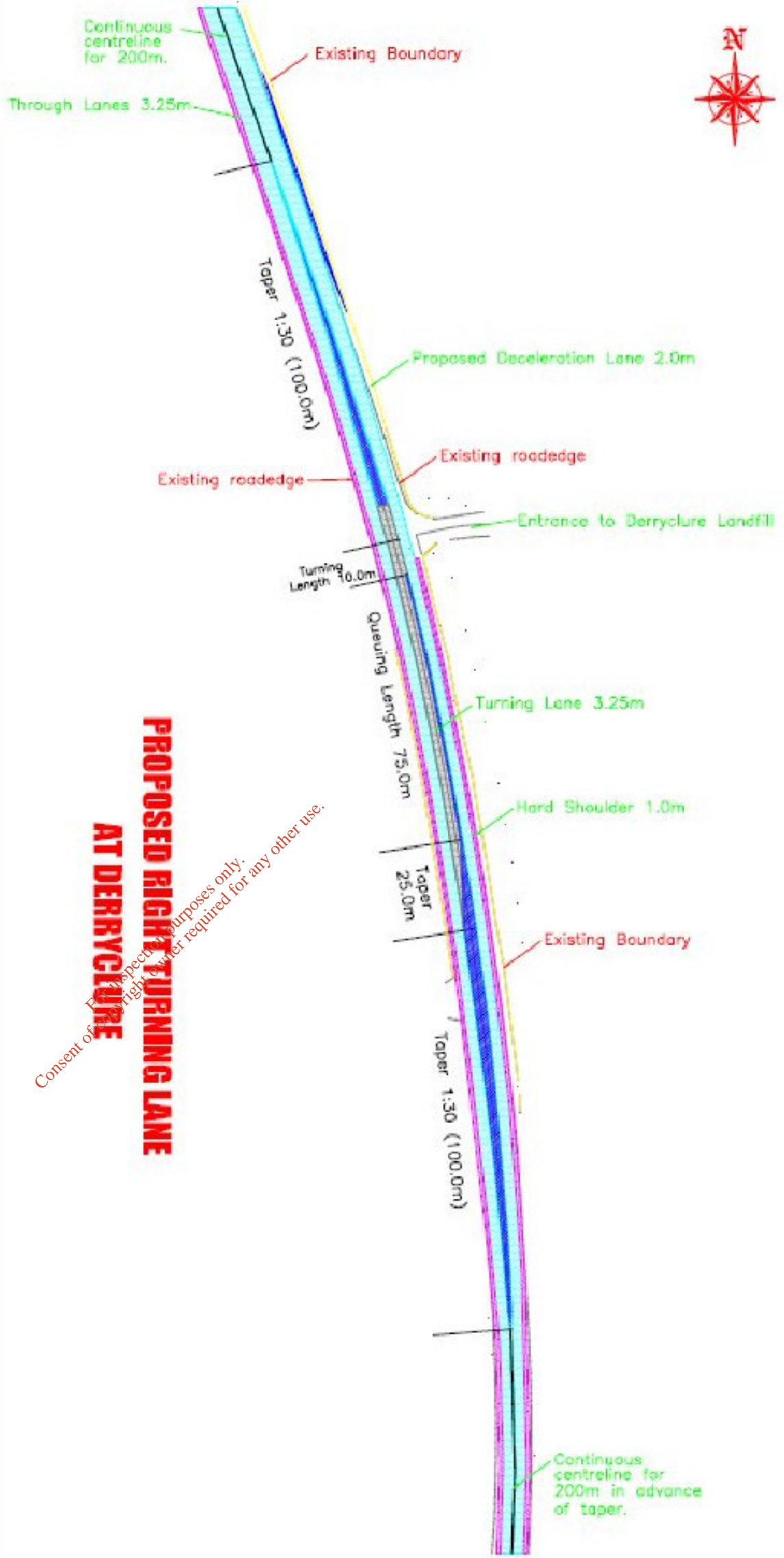
Signed:

Date:

Appendix A

Inspected Plans





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**PROPOSED RIGHT TURNING LANE
AT DERRYCLURE**

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KEY

-  Through Lanes
-  Queuing Length
-  Hatching
-  Hard Shoulder

-  Existing Road Edge
-  Existing Boundary

All signs and road markings to be in accordance with the Traffic Signs Manual.



Do Not Pass signs to be erected 100m prior to the start of the taper on both approaches. On Killeigh side, sign to be at a suitable location before the bend.

NOTES:

DESCRIPTION	DATE	INT.	REV



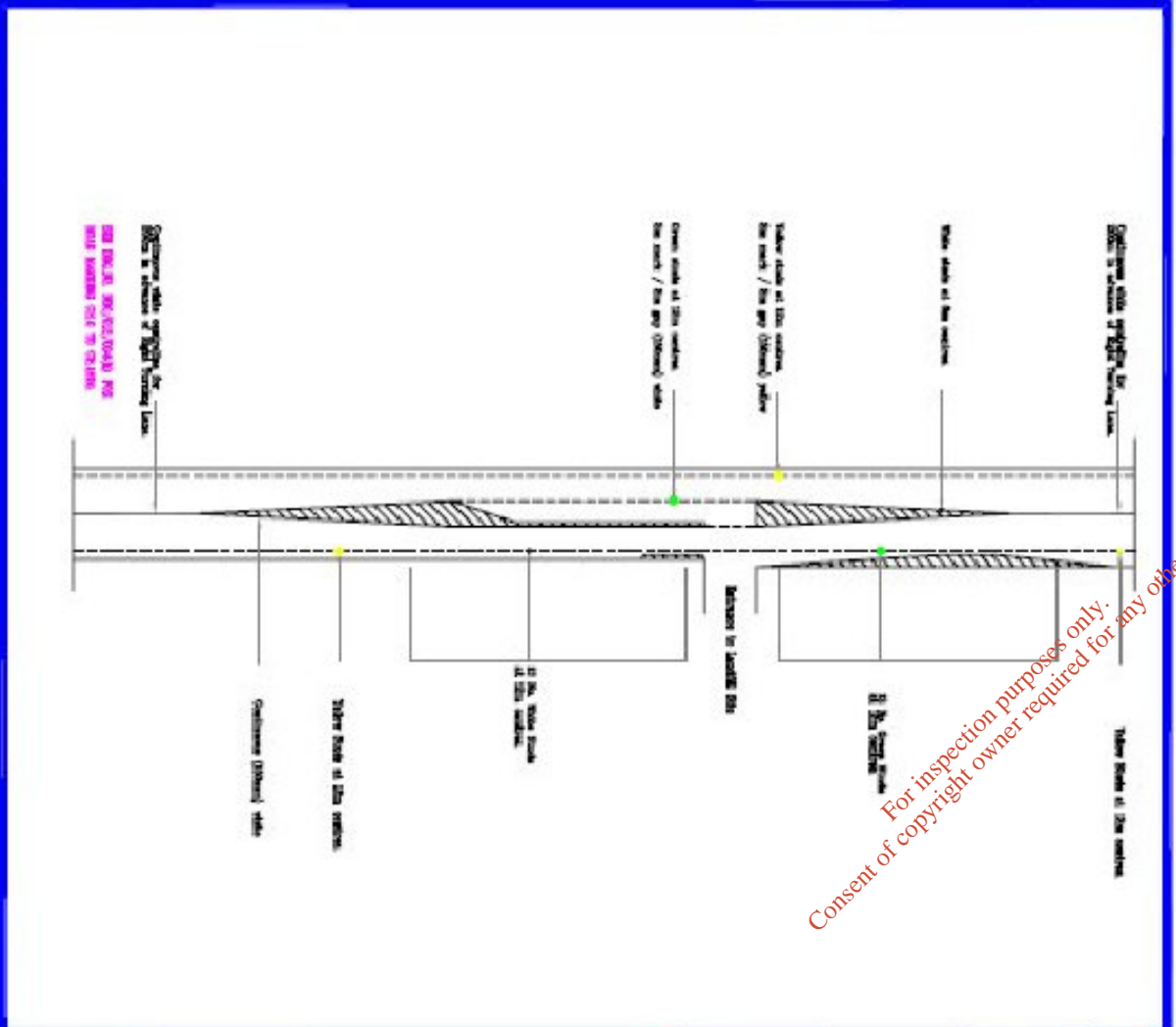
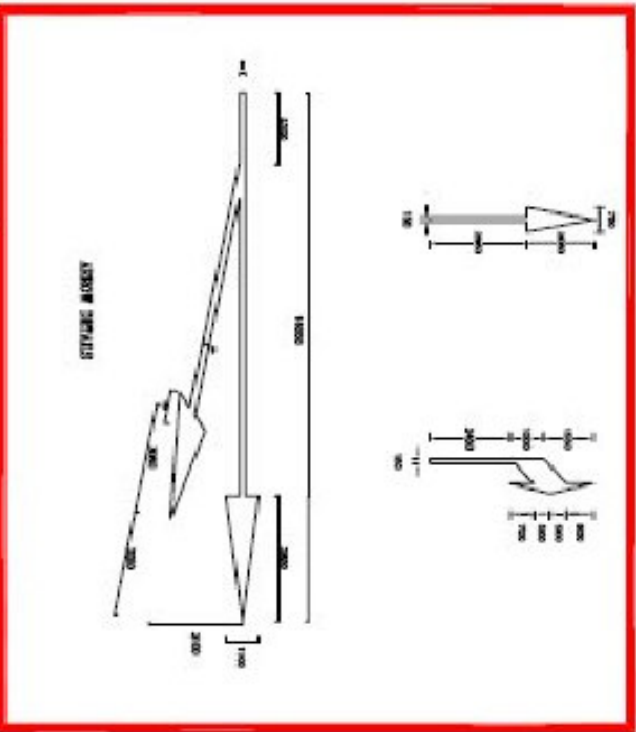
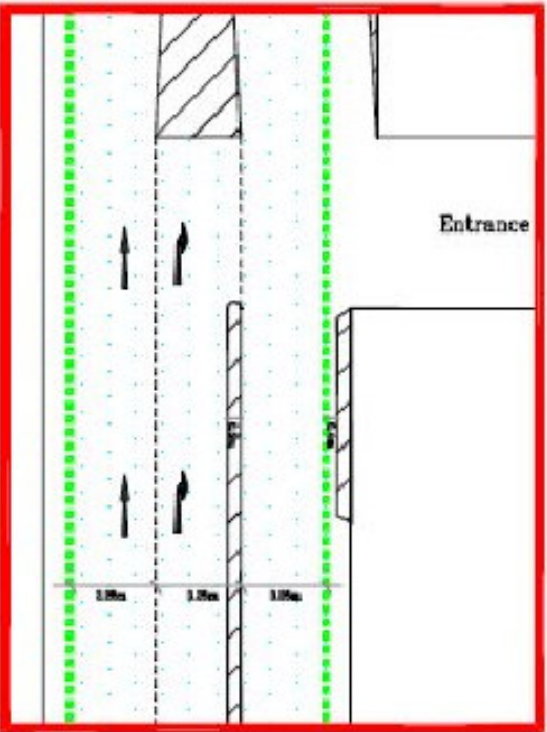
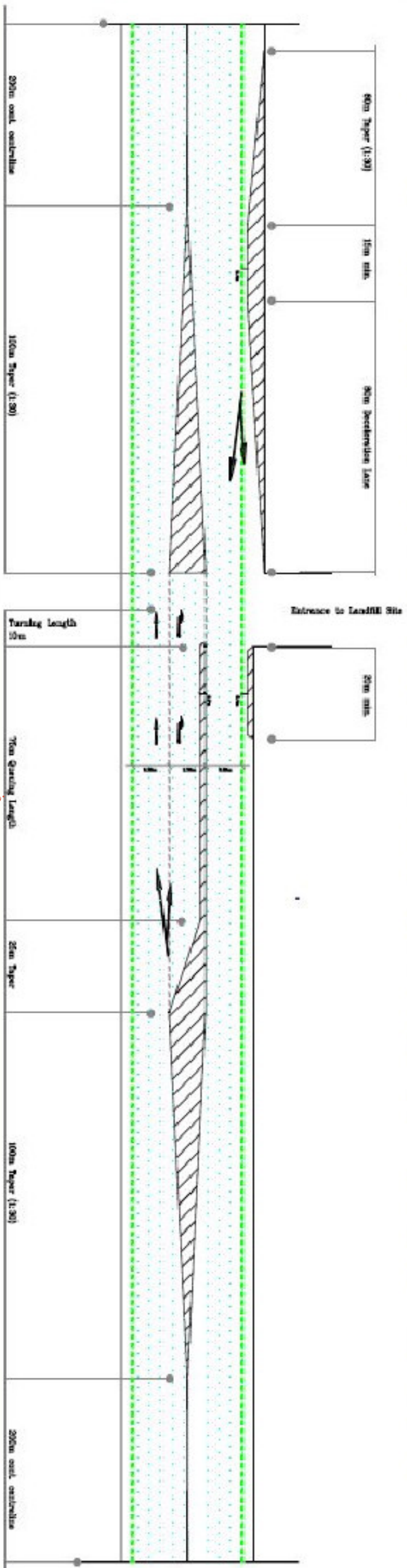
Mr Frank Butler B.E., M.B.A., C.E.M.G., M.I.R.I.
Director - Roads & Emergency Services
Area An Chonain,
Quinville St., Tullamore.

PROJECT WORKS REQUIREMENTS
NED DERRYCLURE
PAYMENT CONTRACT

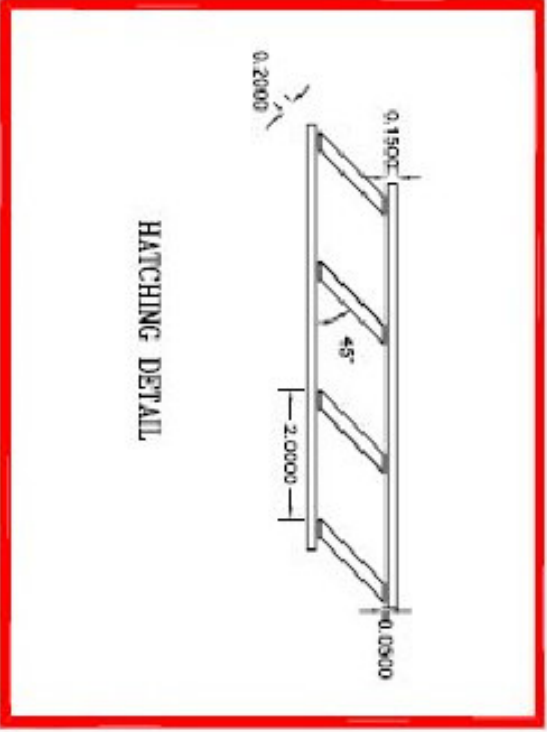
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HOR. 1:50	01/2	004(1)	004(1)
VERT. 1:10			
DATE			
15/08/2008			

ROAD MARKING DETAILS FOR RIGHT TURNING LANE

NOTES:



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ROAD MARKING, STUDS AND DELINEATORS TO BE LAID IN COMPLIANCE WITH THE TRAFFIC SIGNS MANUAL.

ALL ROAD MARKING TO BE MEASURED FROM THE EXISTING CENTRELINE.

CONTINUOUS WHITE CENTRELINE FOR 200M IN ADVANCE OF R.T.L. FROM BOTH DIRECTIONS.

DESCRIPTION	DATE	INT.	REV.

Offaly County Council
The Local Authority

Mr Frank Healin B.E., M.B.A., C.ENG., M.I.E.T.
Director - Roads & Emergency Services
Area for Counties:
Charleville Rd., Tullamore.

PROJECT WORKS REQUIREMENTS
NBD_DESIGN/CLINE
PAVEMENT_CONTRACT

TITLE
DETAILS OF ROAD MARKING

SCALE	DATE	SCALE	DATE
HONG	NBD	012	005
N.T.S.	012	005	005

Appendix B

NRA Letter of Approval

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David McCormack
ORS
Marlinstown Office Park
Mullingar
Co. Westmeath

St. Martin's House / Waterloo Road / Dublin 4
Tel: +353 1 660 2511 / Fax: +353 1 668 0009

Date 25th August 2008

Our Ref. RSA0694/855/1

Your Ref.

**re: N80 DERRYCLURE, RIGHT TURN LANE TO ACCESS LANDFILL SITE DEVELOPMENT
APPROVAL OF ROAD SAFETY AUDIT TEAM, STAGE 1**

Dear David,

Thank you for your email of 18th August requesting approval for the road safety audit team for the above scheme at stage 1.

The following members of the road safety audit team proposed for N80 Derryclure, Right Turn Lane to Access Landfill Site Development fulfil the qualification requirements of National Roads Authority as per RS458 "NRA Road Safety Audit Guidelines".

David McCormack team leader or member,
John Brennan team member.

The above assessment is based on the documentation supplied to NRA.

Approval must be sought again at the next road safety audit stage for any proposed road safety audit team.

A copy of all audit reports, design team response and exception reports should be sent by e-mail to National Roads Authority at roadsafetyaudits@nra.ie.

Yours sincerely,


LUCY CURTIS
Regional Road Safety Engineer

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ORS Consulting Engineers			
RECEIVED			
20 AUG 2008			
JOB NO			
ATTN	DMcG		
SEEN			

Appendix C

Photographs

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Photo 1- View of Existing Site Access towards Portlaoise



Photo 2- View of along existing site access towards Tullamore.



Photo 3- View of approach to junction from Landfill access road.



Photo 4- Poor Quality Entrance sign into landfill

Appendix D

Designer Response Feedback Form

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Road Safety Audit Feedback Form

Job:

Stage of Audit:

Completion Date of Audit:

Note: Please fill out relevant information below, alternatively please forward a letter of response to the Road Safety Audit.

Problem Point In Safety Audit Report	Problem Accepted (Yes/No)	Recommendation Accepted (Yes/No)	Alternative Option (Describe)	Alternative Option Accepted by Auditors (Yes/No)
P1				
P2				
P3				
P4				
P5				
P6				
P7				
P8				
P9				
P10				
P11				
P12				
P13				
P14				

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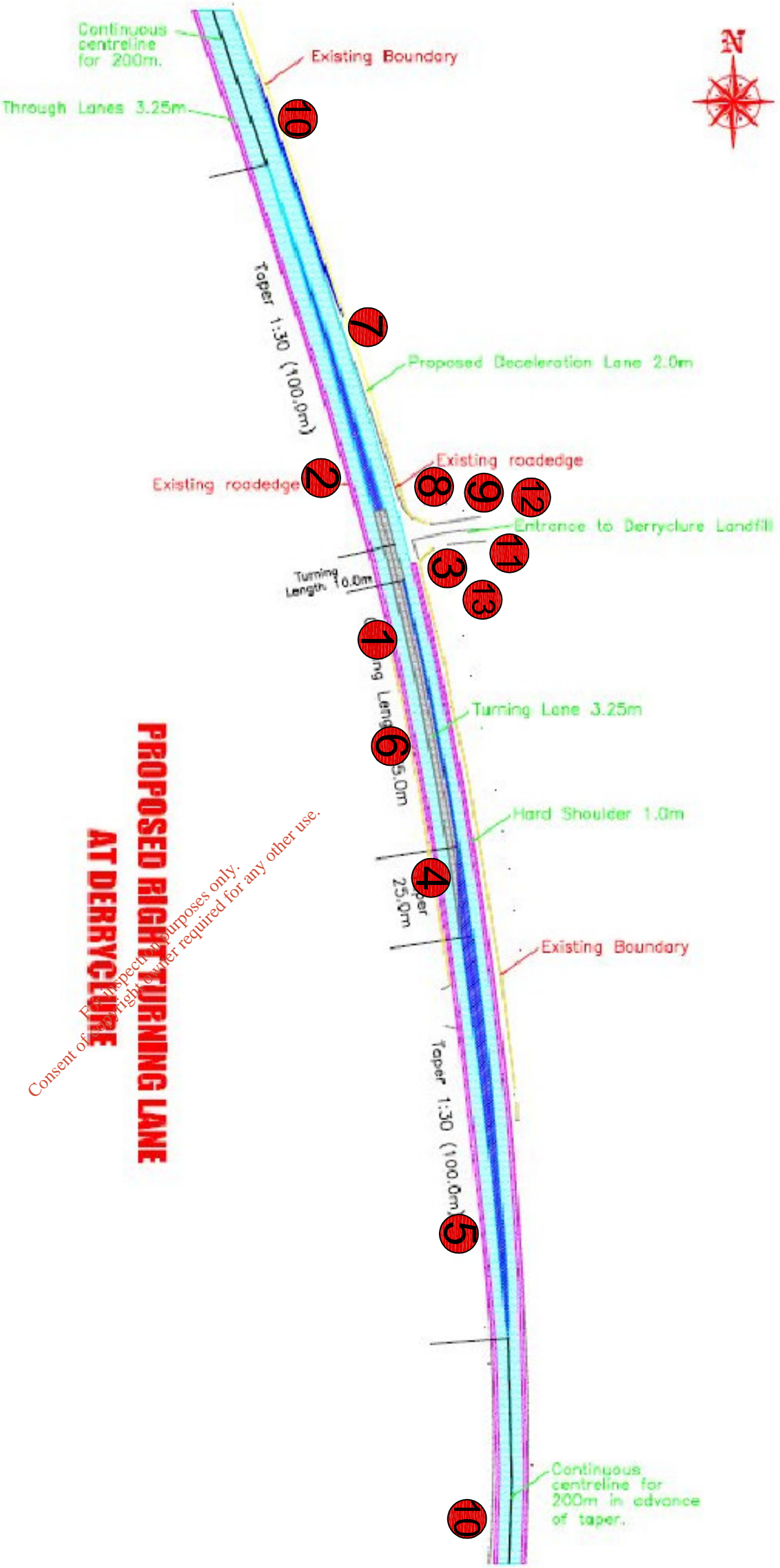
Signed: Design Team Leader

Date:.....

Please complete and return to safety auditor.

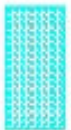



Safety Audit
 Signed Off Audit Team Leader



Date:.....



**PROPOSED RIGHT TURNING LANE
AT DERRYCLURE**

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- KEY**
-  Through Lanes
 -  Queuing Length
 -  Hatching
 -  Hard Shoulder

-  Existing Road Edge
-  Existing Boundary

All signs and road markings to be in accordance with the Traffic Signs Manual.



RSS-1027-03
RUS 014-03

Do Not Pass signs to be erected 100m prior to the start of the taper on both approaches. On Killeigh side, sign to be at a suitable location before the bend.

NOTES:

DESCRIPTION	DATE	INT.	REV.



Mr Frank Bahrin B.E., M.B.A., C.E.M.C., M.I.K.I.
Director - Roads & Emergency Services
Area In Charge,
Carranella Rd., Tullamore.

PROJECT WORKS REQUIREMENTS
NBO, DERRYCLURE
PAVEMENT CONTRACT

TITLE
TRAFFIC SIGNS &
ROAD MARKINGS

SCALE	DATE	PROJECT NO.	ISSUE NO.
HDR.	M80	012	004(1)
NTS			

Appendix 2

Correspondence with NRA on Improvement Works

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National Roads Authority

An tÚdarás um Bóithre Náisiúnta

Mr. Charles McCarthy

Senior Engineer

Offaly County Council

Áras an Chontae

Charleville Road

Tullamore

Co. Offaly

*M. Flynn AO
J. Mitchell A/SSE*

Aine

14/10/08

St. Martin's House / Waterloo Road / Dublin 4

Tel: + 353 1 660 2511 / Fax: + 353 1 668 0009



Date

13th October 2008

Our Ref.

NRA08-67100

RE: N80 Derryclure Pavement Contract 2008

Dear Mr. McCarthy,

With reference to your letter and enclosures of 3rd October 2008, regarding the above, the Authority approves the appointment of Kilsaran Road Surfacing and Contracting, to carry out the Pavement Contract on the N80 at Derryclure in the sum of €402,623.49 including VAT, in accordance with the correspondence submitted and subject to the submission of appropriate Tax Clearance and Insurance Certificates to Offaly County Council.

Yours sincerely

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p.p. Aileen Harte
Doreen Murray
Programme Division

Appendix 3

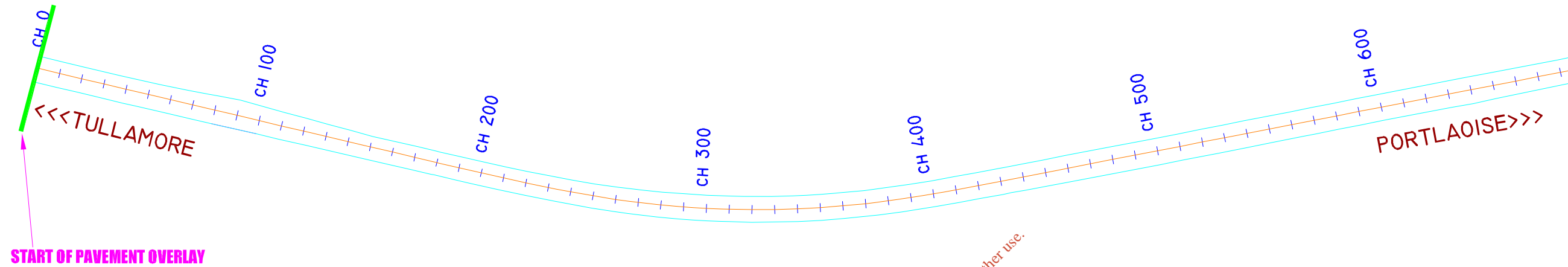
Drawings of Improvement Works

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NOTES:

ROAD RESURFACING WORK N-80 DERRYCLURE



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Horizontal Plan Layout Chainage 0 to 660m

Scale 1:1000



ALCL CHAINAGE	PROPOSED LHS LEVELS ROAD EDGE	PROPOSED CENTRELINE LEVELS	PROPOSED RHS LEVELS ROAD EDGE
0.000	76.682	76.659	76.682
10.000	76.802	76.689	76.832
20.000	76.835	76.722	76.865
30.000	76.849	76.736	76.880
40.000	76.854	76.732	76.873
50.000	76.827	76.709	76.857
60.000	76.684	76.669	76.800
70.000	76.446	76.630	76.663
80.000	76.441	76.596	76.641
90.000	76.387	76.567	76.593
100.000	76.368	76.544	76.585
110.000	76.349	76.526	76.563
120.000	76.338	76.503	76.541
130.000	76.332	76.506	76.545
140.000	76.332	76.504	76.533
150.000	76.337	76.508	76.567
160.000	76.344	76.501	76.572
170.000	76.351	76.509	76.576
180.000	76.357	76.503	76.571
190.000	76.378	76.506	76.578
200.000	76.402	76.506	76.578
210.000	76.440	76.525	76.568
220.000	76.501	76.553	76.592
230.000	76.568	76.589	76.542
240.000	76.607	76.583	76.537
250.000	76.655	76.506	76.524
260.000	76.676	76.497	76.509
270.000	76.676	76.488	76.525
280.000	76.669	76.480	76.481
290.000	76.666	76.477	76.477
300.000	76.669	76.477	76.473
310.000	76.671	76.481	76.471
320.000	76.681	76.489	76.486
330.000	76.691	76.502	76.493
340.000	76.701	76.508	76.505
350.000	76.712	76.538	76.535
360.000	76.737	76.582	76.582
370.000	76.785	76.650	76.608
380.000	76.808	76.650	76.612
390.000	76.781	76.649	76.632
400.000	76.726	76.677	76.637
410.000	76.661	76.704	76.570
420.000	76.606	76.729	76.551
430.000	76.582	76.753	76.582
440.000	76.599	76.775	76.605
450.000	76.608	76.796	76.627
460.000	76.636	76.806	76.617
470.000	76.653	76.834	76.668
480.000	76.668	76.851	76.681
490.000	76.682	76.867	76.700
500.000	76.697	76.883	76.718
510.000	76.711	76.899	76.733
520.000	76.731	76.906	76.749
530.000	76.749	76.932	76.766
540.000	76.766	76.948	76.780
550.000	76.783	76.964	76.796
560.000	76.800	76.980	76.811
570.000	76.806	76.995	76.813
580.000	76.831	77.009	76.832
590.000	76.846	77.023	76.852
600.000	76.860	77.036	76.861
610.000	76.871	77.048	76.878
620.000	76.880	77.060	76.887
630.000	76.889	77.070	76.897
640.000	76.897	77.080	76.906
650.000	76.911	77.090	76.917
660.000	76.921	77.099	76.928

Longitudinal Section Chainage 0 to 660m

Horizontal Scale 1:1000
Vertical Scale 1:100

1 of 2

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DESCRIPTION	DATE	INT.	REV

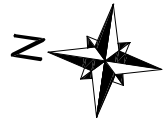
Offaly County Council
Tel. (057) 9340800

F. Heslin, B.E., M.B.A., C.Eng., M.I.E.I.
Director of Services
Aras an Chontae,
Charleville Rd., Tullamore.

PROJECT ROAD RESURFACING WORK
N80 DERRYCLURE

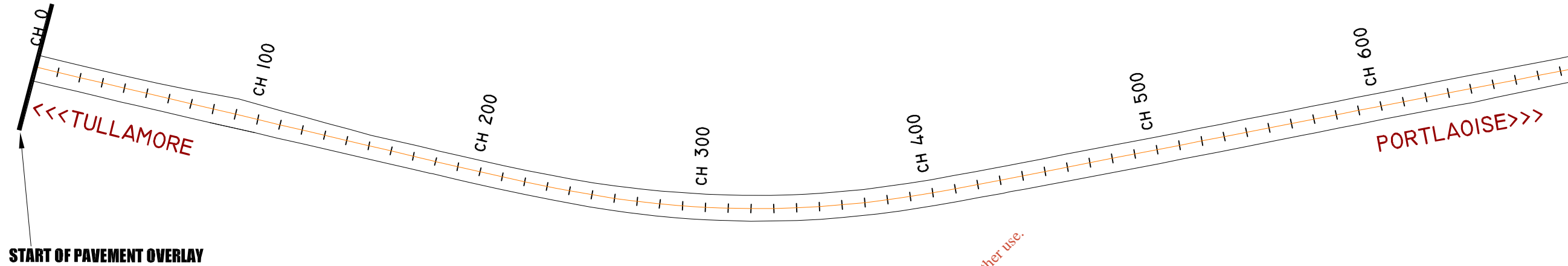
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Chainage 0 to 660m

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1:100	DATE Sept 2008	DRAWN BY P. McD.	CHECKED



ROAD RESURFACING WORK N-80 DERRYCLURE

NOTES:



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Horizontal Plan Layout Chainage 0 to 660m

Scale 1:1000

ALCL CHAINAGE	PROPOSED LHS LEVELS ROAD EDGE	PROPOSED CENTRELINE LEVELS	PROPOSED RHS LEVELS ROAD EDGE
0.000	76.682	76.689	76.682
10.000	76.802	76.689	76.832
20.000	76.838	76.722	76.865
30.000	76.849	76.736	76.880
40.000	76.854	76.732	76.873
50.000	76.827	76.709	76.852
60.000	76.684	76.669	76.830
70.000	76.446	76.630	76.449
80.000	76.441	76.896	76.461
90.000	76.887	76.867	76.863
100.000	76.868	76.854	76.850
110.000	76.849	76.836	76.833
120.000	76.838	76.815	76.814
130.000	76.832	76.806	76.815
140.000	76.832	76.804	76.813
150.000	76.837	76.808	76.817
160.000	76.844	76.811	76.822
170.000	76.851	76.819	76.829
180.000	76.857	76.823	76.833
190.000	76.874	76.826	76.838
200.000	76.882	76.826	76.839
210.000	76.886	76.825	76.838
220.000	76.881	76.823	76.832
230.000	76.868	76.819	76.824
240.000	76.849	76.814	76.814
250.000	76.827	76.807	76.802
260.000	76.805	76.806	76.804
270.000	76.826	76.812	76.810
280.000	76.850	76.818	76.816
290.000	76.866	76.827	76.826
300.000	76.866	76.827	76.826
310.000	76.871	76.831	76.830
320.000	76.868	76.829	76.828
330.000	76.852	76.822	76.823
340.000	76.831	76.818	76.815
350.000	76.812	76.816	76.815
360.000	76.811	76.812	76.812
370.000	76.815	76.810	76.811
380.000	76.808	76.806	76.806
390.000	76.801	76.802	76.802
400.000	76.791	76.800	76.800
410.000	76.786	76.794	76.791
420.000	76.780	76.789	76.785
430.000	76.782	76.783	76.782
440.000	76.789	76.778	76.685
450.000	76.688	76.726	76.627
460.000	76.638	76.816	76.617
470.000	76.653	76.834	76.666
480.000	76.668	76.831	76.681
490.000	76.682	76.867	76.701
500.000	76.697	76.883	76.718
510.000	76.711	76.889	76.733
520.000	76.721	76.906	76.749
530.000	76.719	76.932	76.764
540.000	76.866	76.918	76.780
550.000	76.783	76.964	76.726
560.000	76.800	76.980	76.811
570.000	76.816	76.995	76.823
580.000	76.831	77.009	76.832
590.000	76.846	77.023	76.842
600.000	76.860	77.036	76.864
610.000	76.871	77.048	76.876
620.000	76.880	77.060	76.887
630.000	76.889	77.070	76.897
640.000	76.897	77.080	76.906
650.000	76.911	77.090	76.917
660.000	76.924	77.099	76.928

Longitudinal Section Chainage 0 to 660m

Horizontal Scale 1:1000
Vertical Scale 1:100

1 of 2

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DESCRIPTION	DATE	INT.	REV



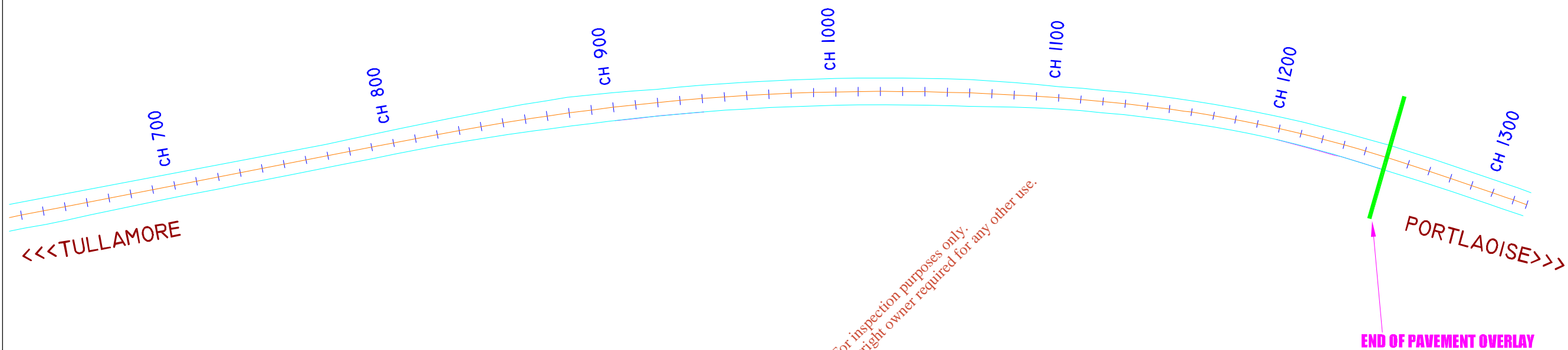
F. Heslin, B.E., M.B.A., C.Eng., M.I.E.I.
Director of Services
Aras an Chontae,
Charleville Rd., Tullamore.

PROJECT ROAD RESURFACING WORK
N80 DERRYCLURE

TITLE
PLAN AND LONGITUDINAL SECTION
Chainage 0 to 660m

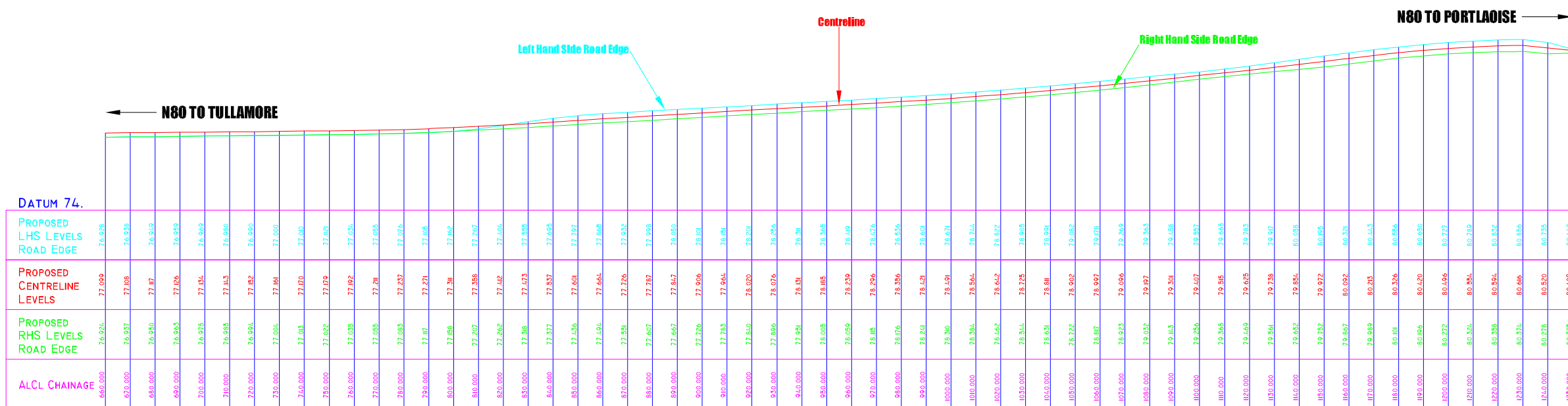
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HOR., 1:1000	N80	012	003
1:100	DATE Sept 2008	DRAWN BY P. McD.	CHECKED

ROAD RESURFACING WORK N-80 DERRYCLURE



Scale 1:1000

Horizontal Plan Layout Chainage 660 to 1250m



Longitudinal Section Chainage 660 to 1250m

Horizontal Scale 1:1000
Vertical Scale 1:100

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Offaly County Council
Tel. (057) 9346800

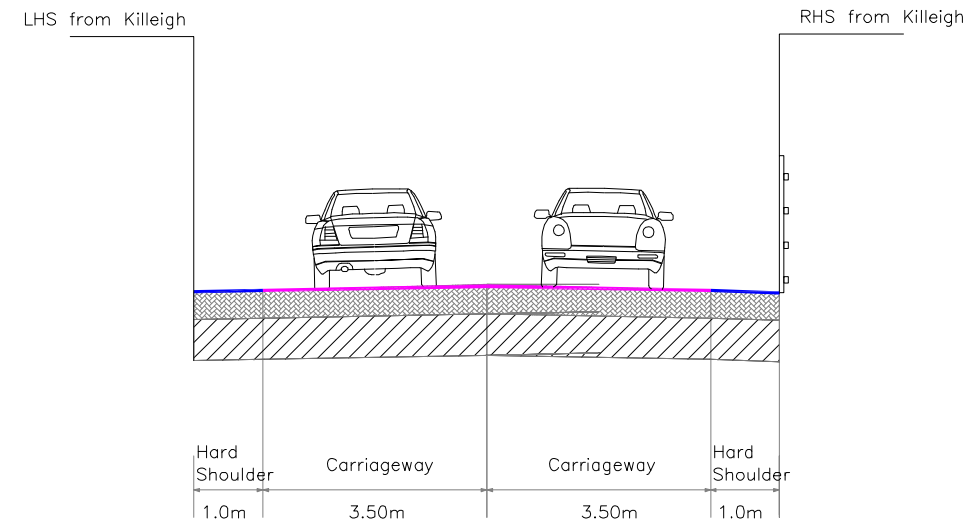
F. Heslin, B.E., M.B.A., C.Eng., M.I.E.I.
Director of Services
Aras an Chontae,
Charleville Rd., Tullamore.

PROJECT ROAD RESURFACING WORK
N80 DERRYCLURE

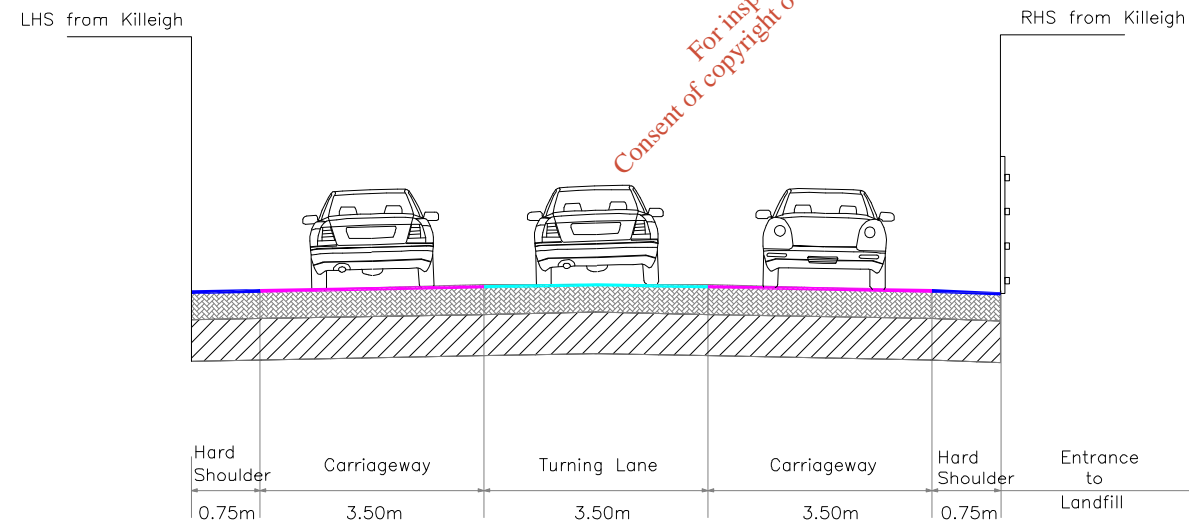
TITLE
PLAN AND LONGITUDINAL SECTION
Chainage 660 to 1250m

SCALE	ROAD NO	PROJECT NO	DRAWING NO
HOR., 1:1000	N80	012	004
1:100	DATE Sept 2008	DRAWN BY P. McD.	CHECKED

NOTES:



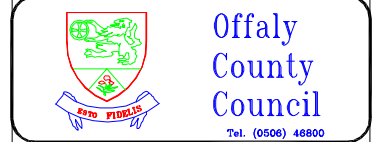
CH. 800



CH. 900

TYPICAL CROSS SECTION

DESCRIPTION	DATE	INT.	REV.
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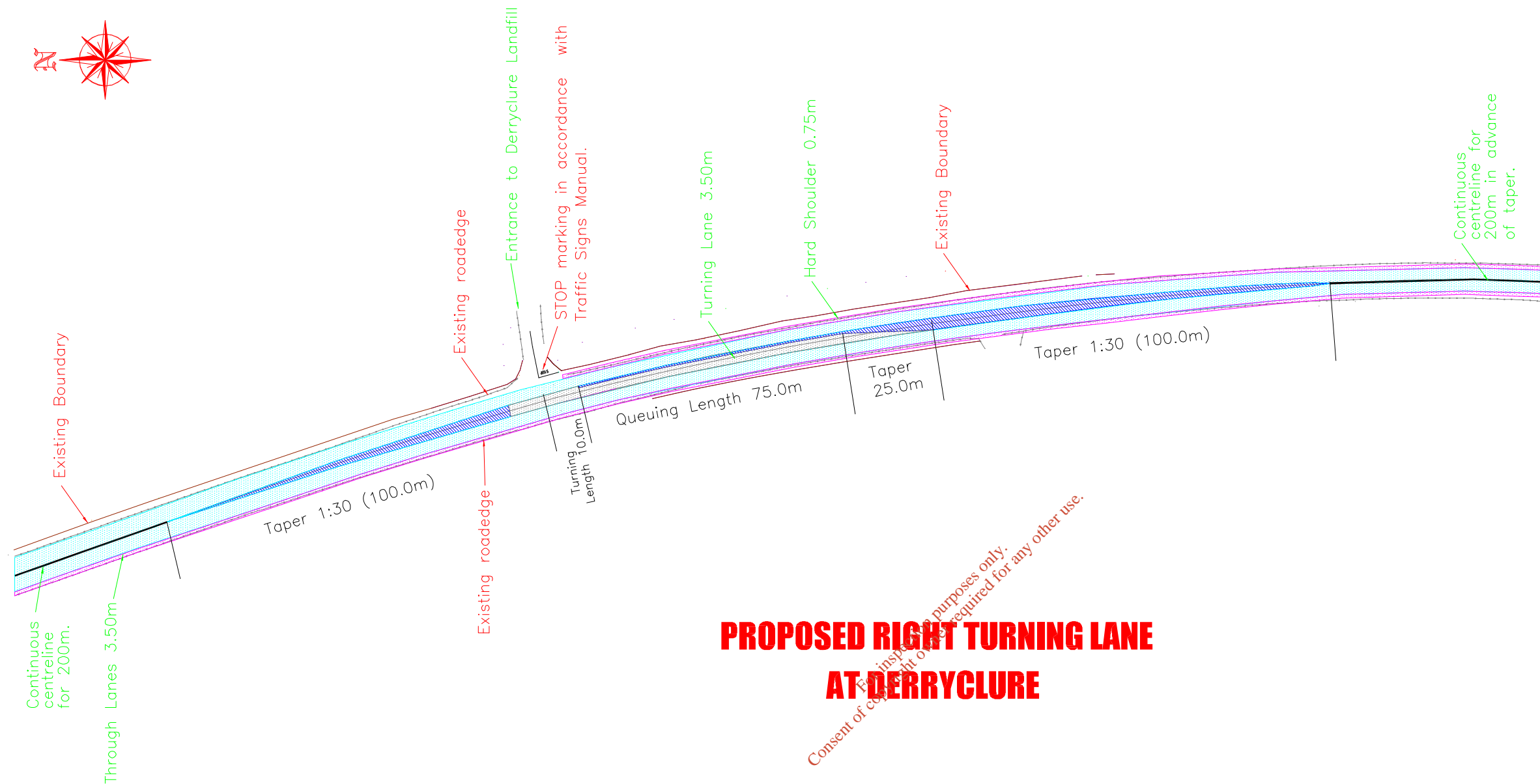
Mr. Frank Heslin B.E., M.B.A., C.ENG., M.I.E.I.
Director - Roads & Emergency Services
Aras An Chontae,
Charleville Rd., Tullamore.

PROJECT WORKS_REQUIREMENTS
N80_DERRYCLURE
PAVEMENT_CONTRACT

TITLE
TYPICAL_CROSS_SECTION


SCALE	ROAD NO	PROJECT NO	DRAWING NO
N.T.S.	N80	012	005
	DATE	DRAWN BY	CHECKED
	AUG.2008	CM	

NOTES:



**PROPOSED RIGHT TURNING LANE
AT DERRYCLURE**

KEY

-  Through Lanes
-  Queuing Length
-  Hatching
-  Hard Shoulder

-  Existing Road Edge
-  Existing Boundary

All road markings to be in accordance with the Traffic Signs Manual.

DESCRIPTION	DATE	INT.	REV.



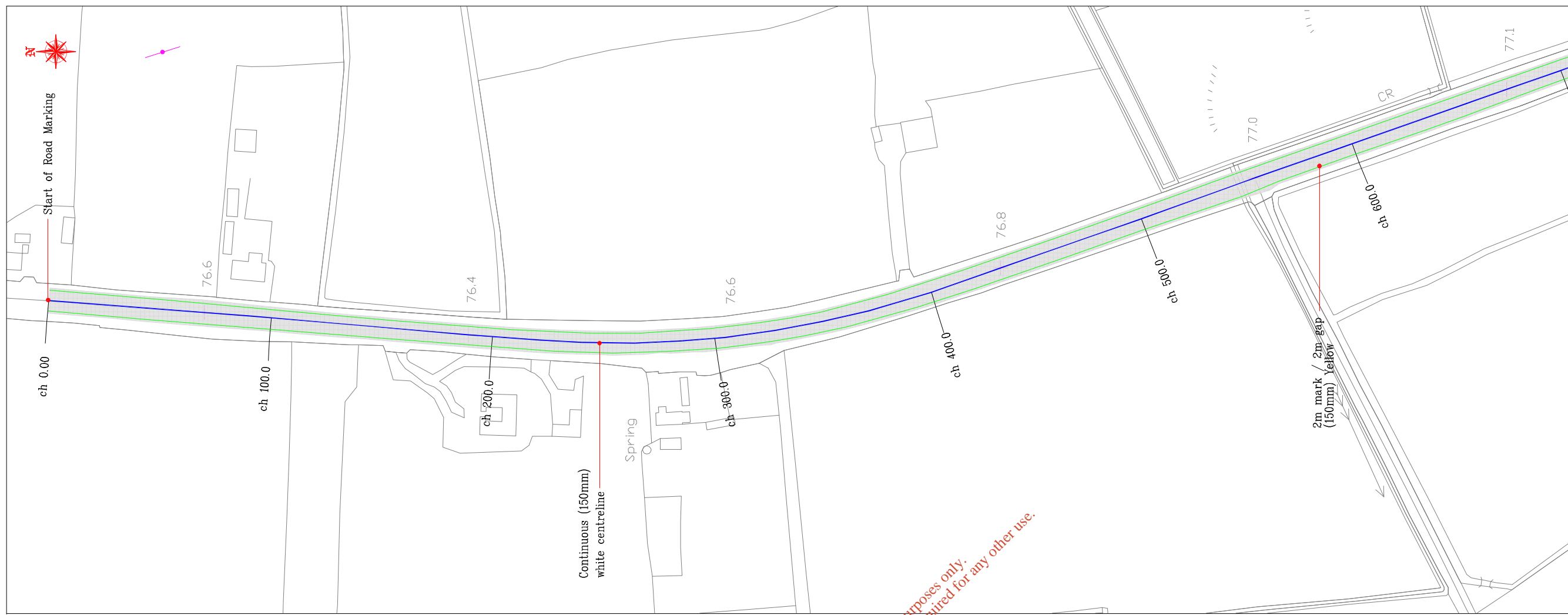
**Offaly
County
Council**
Tel. (0500) 46800

Mr. Frank Heslin B.E., M.B.A., C.ENG., M.I.E.I.
Director - Roads & Emergency Services
Aras An Chontae,
Charleville Rd., Tullamore.

PROJECT WORKS_REQUIREMENTS
N80_DERRYCLURE
PAVEMENT_CONTRACT

TITLE
ROAD MARKINGS (PART 1)

SCALE	ROAD NO	PROJECT NO	DRAWING NO
HOR., NTS	N80	012	006
	DATE	DRAWN BY	CHECKED
	AUG 2008	CM	



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FOR DETAILS OF RIGHT TURNING LANE MARKINGS, REFER TO DRG.NO. N80/012/008

FOR DETAILS OF STUDS REFER TO DRG.NO. N80/012/008

ALL ROAD MARKING TO BE IN COMPLIANCE WITH CHAPTER 7 OF THE TRAFFIC SIGNS MANUAL

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Mr.Frank Heslin B.E., M.B.A., C.ENG., M.I.E.I.
Director - Roads & Emergency Services
Aras An Chontae,
Charleville Rd., Tullamore.

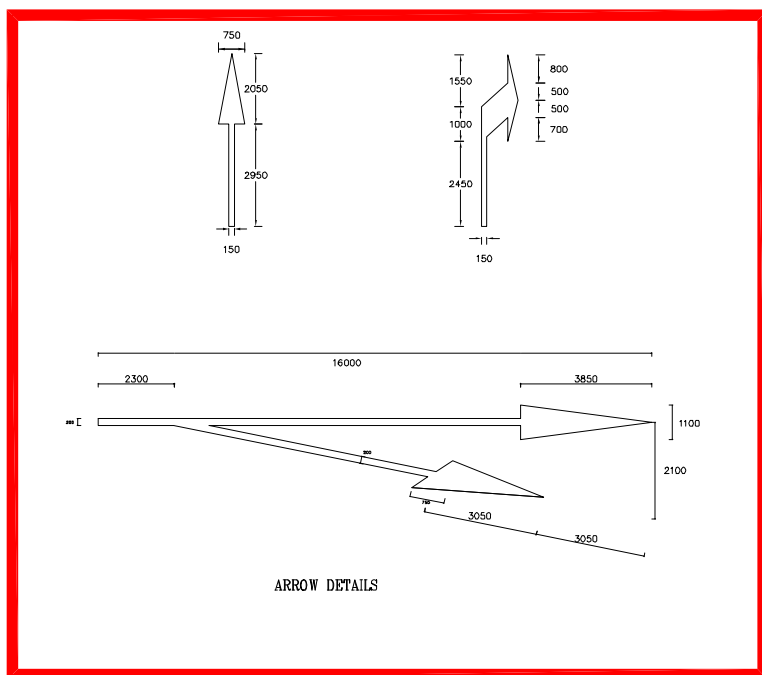
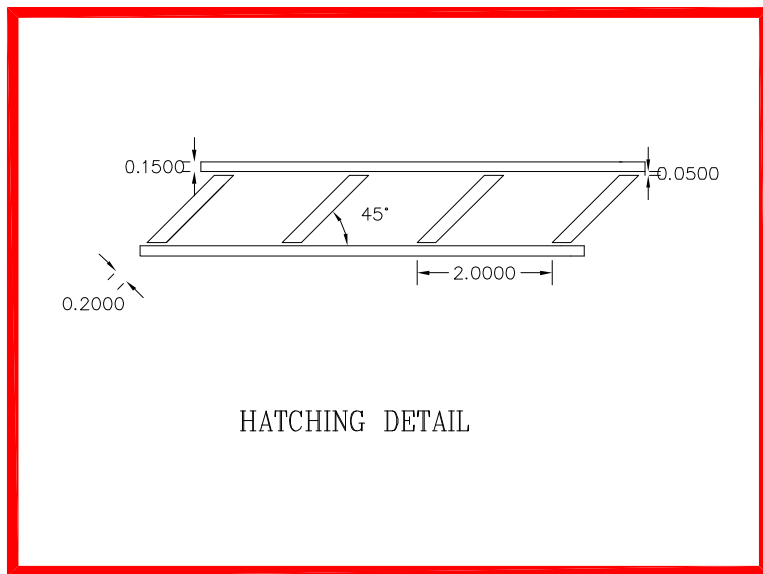
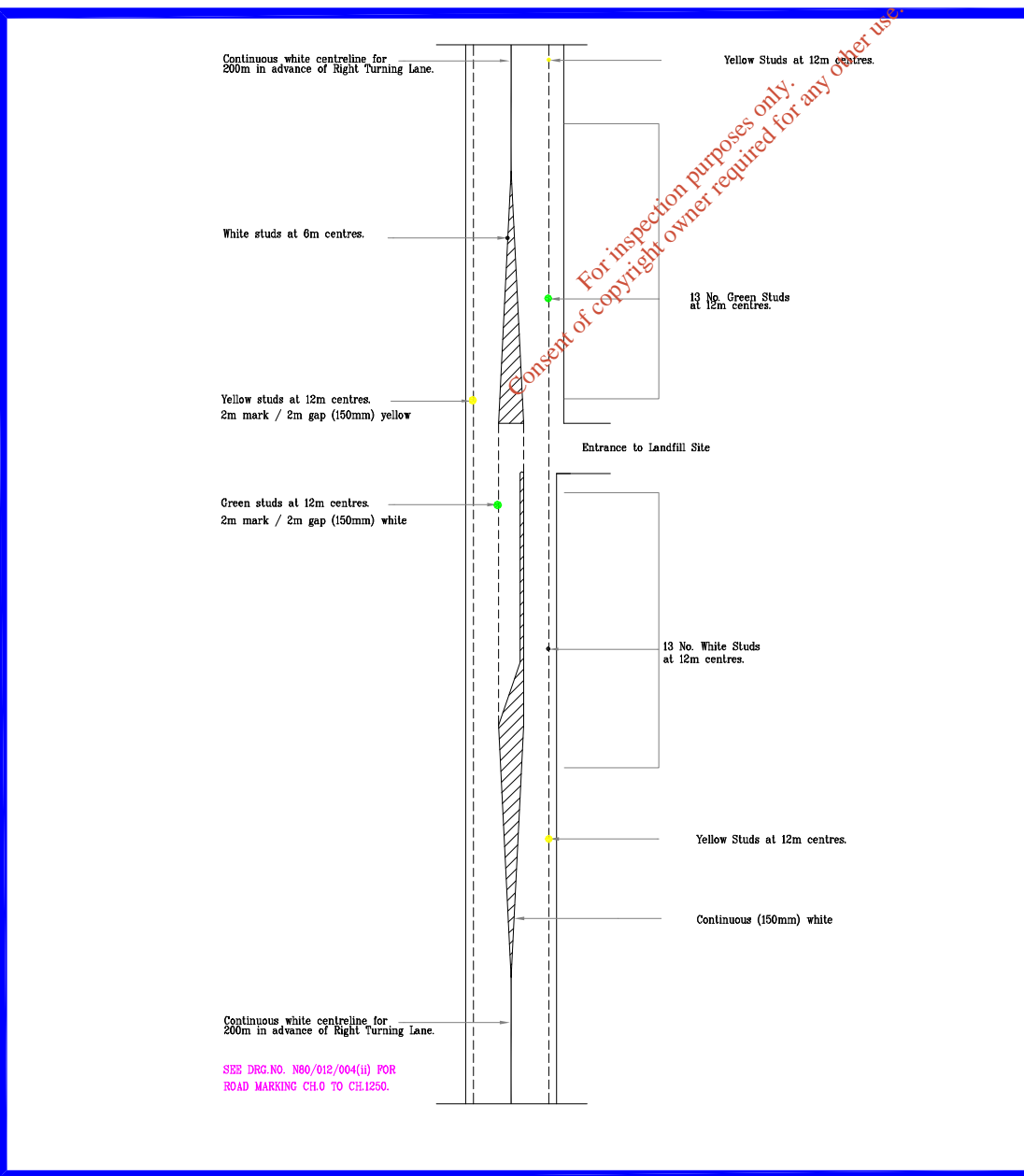
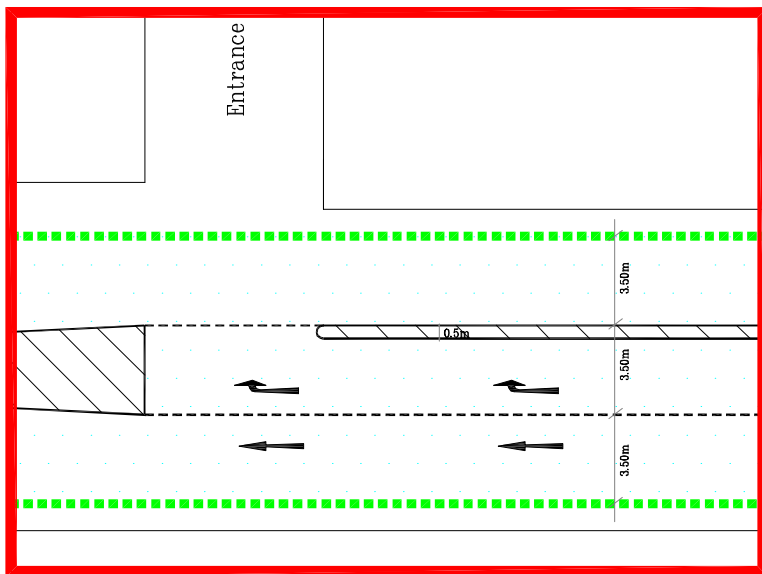
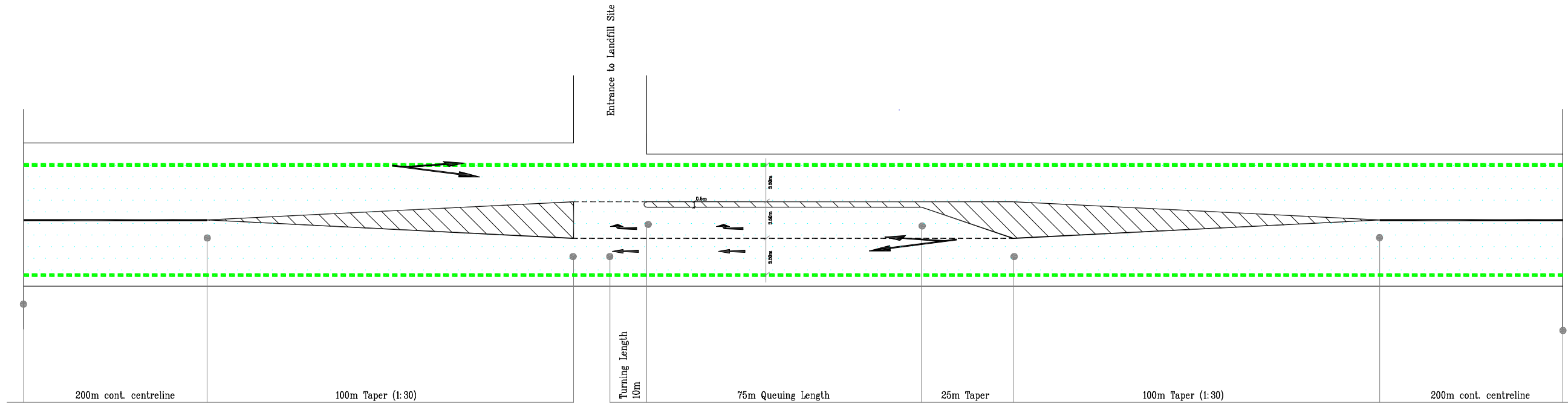
PROJECT WORKS_REQUIREMENTS
N80_DERRYCLURE
PAVEMENT_CONTRACT

TITLE
ROAD_MARKING_(PART_2)

SCALE	ROAD NO	PROJECT NO	DRAWING NO
1:1000	N80	012	007
	DATE	DRAWN BY	CHECKED
	AUG.2008	CM	

ROAD MARKING DETAILS FOR RIGHT TURNING LANE

NOTES:



ROAD MARKING, STUDS AND DELINEATORS TO BE LAID IN COMPLIANCE WITH THE TRAFFIC SIGNS MANUAL.

ALL ROAD MARKING TO BE MEASURED FROM THE EXISTING CENTRELINE.

CONTINUOUS WHITE CENTRELINE FOR 200M IN ADVANCE OF R.T.L. FROM BOTH DIRECTIONS.

DESCRIPTION	DATE	INT.	REV

Mr. Frank Heslin B.E., M.B.A., C.ENG., M.I.E.I.
 Director - Roads & Emergency Services
 Aras An Chontae,
 Charleville Rd., Tullamore.

PROJECT WORKS REQUIREMENTS
 N80_DERRYCLURE
 PAVEMENT_CONTRACT

TITLE
 DETAILS OF RIGHT TURNING LANE

SCALE	ROAD NO	PROJECT NO	DRAWING NO
HOR., N.T.S.	N80	012	008
DATE	DRAWN BY	CHECKED	
AUG 2008	CM		