

## 2. Group 1: Cashel, Cahir and Thurles Co. Tipperary.

### 2.1. Cashel, Co. Tipperary

#### 2.1.1. Summary Details:

Cashel is situated on the N8 Cork to Dublin National primary Route and N74 Secondary Route and is approx. 16km from the existing Cork Dublin natural gas pipeline. The population of Cashel is currently 2,413 as per the results of the 2006 Census. This is projected to increase to 6,216 by 2018 (see Appendix B). It is forecast that up to 1,140 residential units will be connected in Cashel over the next ten years (Cashel Town Development Plan, 2003).

There are a number of pharmaceutical companies based in Cashel, these include Alza Ireland and Ranbaxy ltd. The IDA Ireland has a business and technology park based in Cashel. There are 4 Contract/Large I&C loads, 9 Medium I&C loads and 153 Small I&C loads located in close proximity to Cashel.

Cashel is 14.5km from the existing Distribution network servicing Ballyclerahan, Co. Tipperary.

#### 2.1.2. Summary Load Analysis:

*Cashel, Co. Tipperary*

Source: Networks cost estimates report June 2007.

##### Industrial/Commercial Load Summary Forecast:

<b>Total EAC 2015</b>	41,300 MWh	1,409,562 Therms
<b>Peak Day 2015</b>	197,720 kWh	6,748 Therms

##### New Housing Summary Forecast:

<b>New Housing Load (Therm)</b>	592,800 (year 10)
<b>New Housing Load (MWh)</b>	17,374 (year 10)

#### 2.1.3. Solutions:

The most cost effective solution to supply Cashel is via a 180mm dia. PE 100 SDR 17 feeder main from Ballyclerahan, Co. Tipperary. The existing Ballyveelish AGI also requires an upgrade and the incremental costs to cater for the increased load due to the addition of Cashel Town have been included in the analysis.

## 2.1.4. Cost Estimates:

### Estimated Capital expenditure Costs for feeder and Distribution Mains:

*Cashel, Co. Tipperary*

Source: Networks cost estimates report June 2007.

Item	Costs €
<i>Transmission AGI Upgrade</i>	€50,000
<i>Feeder / Distribution Main Construction</i>	€ 4,600,407
<b>Total Estimated Costs</b>	<b>€ 4,650,407</b>

#### These estimated costs include for the following:

District regulator installations, special engineering difficulties (crossings), archaeological survey, local authority charges, adverse ground conditions, pre-tender investigations, insurance, design, administration, material procurement and construction contracts.

#### The estimates do not include for:

New housing estate mains, service or meter costs.

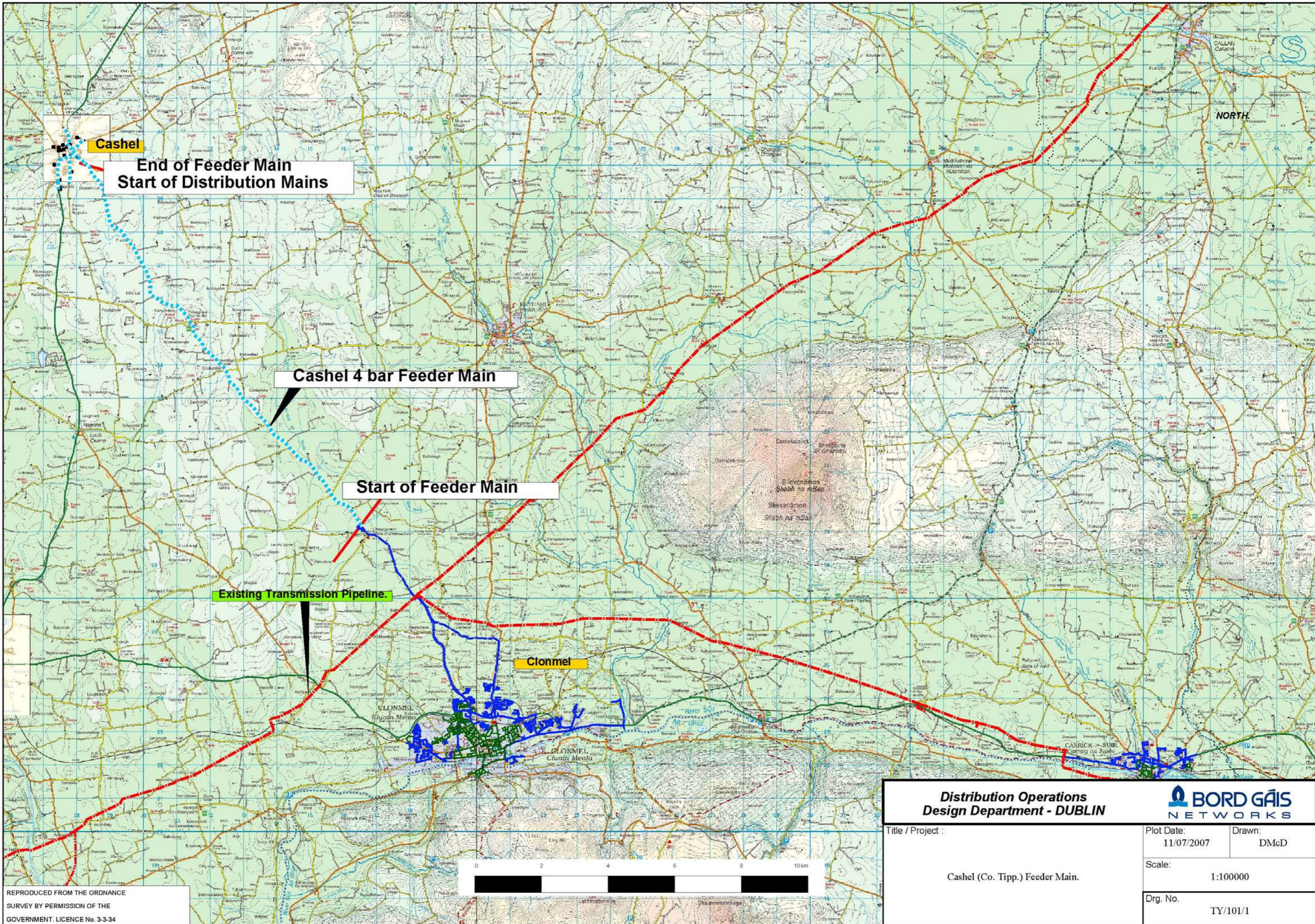
Industrial / Commercial mains, service or meter costs.

## 2.1.5. Business Modelling:

€m	NPV @ 5.2%
<b>DISTRIBUTION</b>	
Distribution Revenue	5.92
Capex	-5.50
Contributions	0.25
Opex	-0.21
<b>Distribution Total</b>	<b>0.47</b>
<b>TRANSMISSION</b>	
Onshore Revenue	1.67
Entry Revenue	1.16
Capex - AGI	-0.05
Opex	-0.01
<b>Transmission Total</b>	<b>2.76</b>
<b>NPV TOTAL</b>	<b>3.23</b>

## 2.1.6. Results:

Connection of Cashel to the network results in a positive net present value (NPV) of €3.23m and therefore, appears to be economic on a stand-alone basis.



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<b>Distribution Operations Design Department - DUBLIN</b>			
Title / Project :		Plot Date: 11/07/2007	Drawn: DMcD
Cashel (Co. Tipp.) Feeder Main.		Scale: 1:100000	
		Drg. No. TY/101/1	



ISSUE	REVISION	DATE	DRWN. BY	CHECKED BY	APPR'D BY
3	Option 2 adopted.	13/08/07	rm.	-	-
2	4 bar network extended.	07/07/06	rm.	AT.	-
1	Preliminary Issue.	06/06/06	rm.	-	-

WAYLEAVE REQD:	-	O.S. REF. NO'S:	-
MATRLS. DELIVERY:	-	SURVEYED BY:	-
METER SIZE:	-	SUPPLY PRESS:	-
		OUTLET PRESS:	-

<b>Distribution Operations Design Department - DUBLIN</b>			
<b>PROJECT:</b> Cashel, Co. Tipperary.		DATE: 22/05/2006	SCALE: 1:10000
<b>TITLE:</b> Distribution Layout.		DRAWN: rm.	APPR.: AT.
DRG. NO. 03	PROJ. NO. TY/102	SH.	-

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## 2.2. Cahir Co. Tipperary

### 2.2.1. Summary Details:

Cahir has been labelled the crossroads of the south. It is situated at the junction of two national routes; the N8 Cork to Dublin and the N24 Limerick to Waterford. The population of Cahir is currently 3,381 as per the results of the 2006 Census. This is projected to increase to 5,049 by 2018 (see Appendix B). There is available zoned residential land with a capacity to accommodate a further 500 units (Tipperary Housing Strategy 2001-2007).

There is one Contract Customer in Cahir, AIBP Group who are involved in meat processing. There are 7 Medium I&C customers and 149 Small I&C customers based in Cahir. The Cahir Local Area Plan 2005 allows for 65 hectares of zoned land for new industry which should help to increase the number of I/C customers.

Cahir is situated 6km from the existing Rochestown AGI.

### 2.2.2. Summary Load Analysis:

*Cahir, Co. Tipperary*

Source: Networks cost estimates report June 2007.

#### Industrial / Commercial Load Summary Forecast:

<b>Total EAC 2016</b>	23,251 MWh	793,550 Therms
<b>Peak Day 2016</b>	113,314 kWh	3,867 Therms

#### New Housing Summary Forecast:

<b>New Housing Load (Therm)</b>	260,000 (year 10)
<b>New Housing Load (MWh)</b>	7,620 (year 10)

### 2.2.3. Solutions:

The most economic solution for supplying the town of Cahir is by laying 6.2km of 250mm dia. PE 100 SDR 17 feeder main from Rochestown AGI. 11.5km of mains are required to service the town. Also, a new 7 to 4 bar pressure reduction skid would be required at Rochestown AGI, the costs of which have been included in the analysis.

## 2.2.4. Cost Estimates:

*Cahir, Co. Tipperary*

Source: Networks cost estimates report June 2007.

### Estimated Capital expenditure Costs for feeder and Distribution Mains:

Item	Costs €
Transmission AGI Upgrade	€239,000
Feeder / Distribution Main Construction	€ 2,325,583
<b>Total Estimated Costs</b>	<b>€ 2,564,583</b>

#### These estimated costs include for the following:

District regulator installations, special engineering difficulties (crossings), archaeological survey, local authority charges, adverse ground conditions, pre-tender investigations, insurance, design, administration, material procurement and construction contracts.

#### The estimates do not include for:

New housing estate mains, service or meter costs.

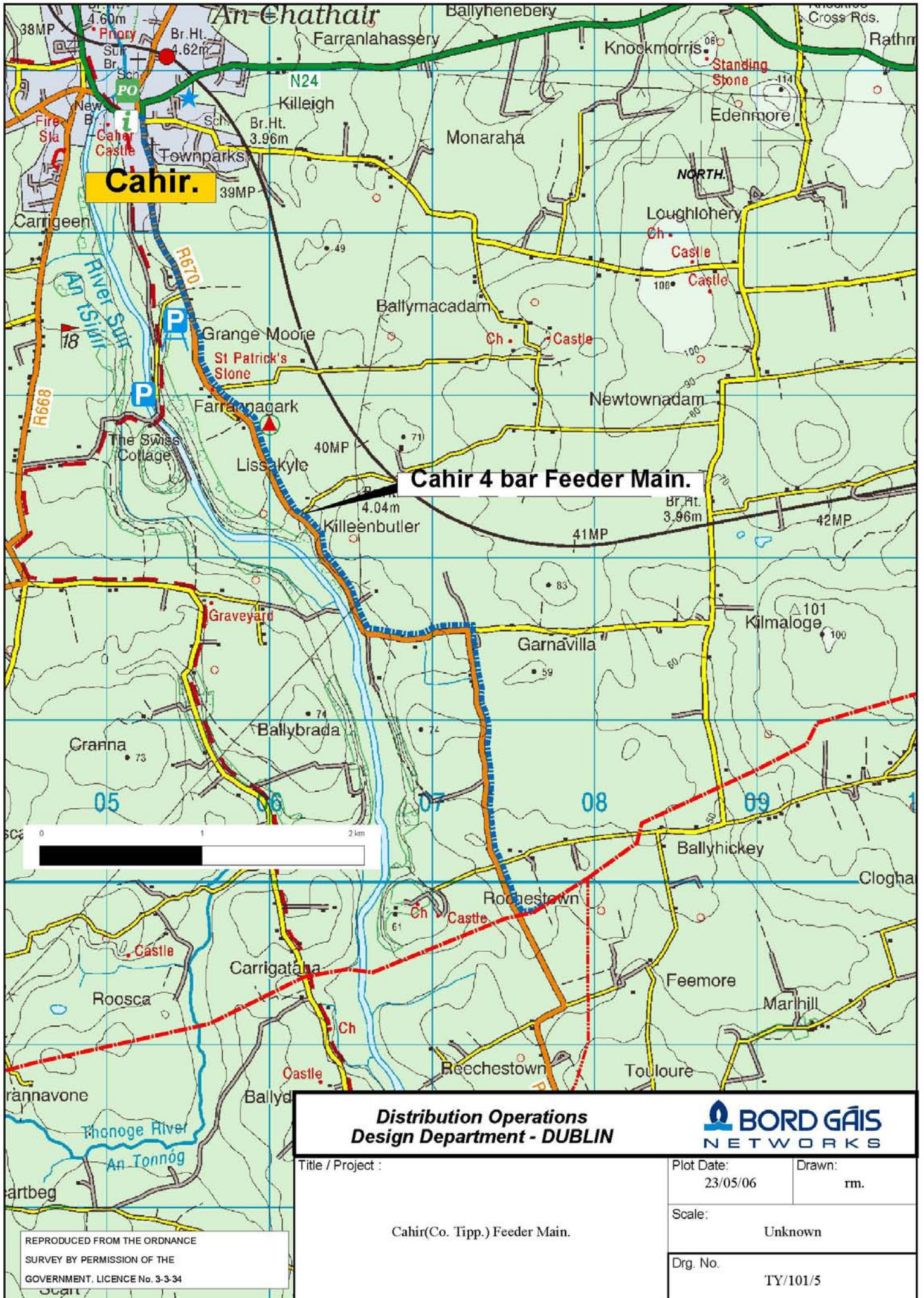
Industrial / Commercial mains, service or meter costs.

## 2.2.5. Business Modelling:

€m	NPV @ 5.2%
<b>DISTRIBUTION</b>	
Distribution Revenue	2.81
Capex	-2.86
Contributions	0.13
Opex	-0.11
<b>Distribution Total</b>	<b>-0.04</b>
<b>TRANSMISSION</b>	
Onshore Revenue	0.84
Entry Revenue	0.58
Capex - AGI	-0.24
Opex	-0.17
<b>Transmission Total</b>	<b>1.01</b>
<b>NPV TOTAL</b>	<b>0.97</b>

## 2.2.6. Results:

Connection of Cahir results in a positive net present value (NPV) of €0.97m and therefore, appears to be viable on a stand-alone basis.





End of Feeder Main  
Start of Distribution mains

Cahir Feeder Main.  
250mm. dia. P/E 4 bar main.

2	Preliminary Issue.	DMcD	-	-
		11/07/06	-	-
1	Preliminary Issue.	rm.	-	-
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WAYLEAVE REQD:	-	O.S. REF. NO'S:	-
MATRLS. DELIVERY:	-	SURVEYED BY:	-
METER SIZE:	-	SUPPLY PRESS:	-
		OUTLET PRESS:	-

<b>Distribution Operations Design Department - DUBLIN</b>		<b>BORD GÁIS NETWORKS</b>	
PROJECT:	<b>Cahir (stand alone)</b>	DATE: 22/05/2006	SCALE: 1:10000
TITLE:	<b>Distribution Layout.</b>	DRWN: rm.	APPR.: AT.
		DRG. NO. 01	PROJ. NO. TY/102
			SH. -

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## 2.3. Thurles & Cashel Co. Tipperary

The most economic solution to supply Cashel is via a supply from Ballyveelish AGI and this stand-alone solution is economically viable as per section 2.1 above. There follows below the details of a separate exercise to assess and analyse the costs and economic appraisal for Cashel (section 2.3.1) and Thurles (section 2.3.2) which form part of a combined solution via a new 150mm 16.5km Transmission pipeline and common AGI at Cashel. This combined solution is being carried out so that cost efficiencies can be achieved and the subsequent costs spread across a larger customer base.

### 2.3.1. Cashel (Grouped Option)

#### 2.3.1.1. Summary Details:

The Distribution supply to Cashel in this grouped option is via a new 150mm 16.5km Transmission pipeline and common AGI at Cashel.

#### 2.3.1.2. Summary Load Analysis:

*Cashel, Co. Tipperary*

Source: Networks cost estimates report June 2007.

##### Industrial/Commercial Load Summary Forecast:

<b>Total EAC 2015</b>	41,300 MWh	1,409,562 Therms
<b>Peak Day 2015</b>	197,720 kWh	6,748 Therms

##### New Housing Summary Forecast:

<b>New Housing Load (Therm)</b>	592,800 (year 10)
<b>New Housing Load (MWh)</b>	17,374 (year 10)

#### 2.3.1.3. Solution:

This option for supplying Cashel is via a new 150mm 16.5km Transmission pipeline and common AGI at Cashel. This AGI will then supply a distribution network in Cashel.

## 2.3.1.4. Cost Estimates

*Cashel, Co. Tipperary*

Source: Networks cost estimates report June 2007.

### Estimated Capital expenditure Costs for feeder and Distribution Mains:

Item	Costs €
Transmission Pipeline & AGI at Cashel	€ 5,630,000
Feeder / Distribution Main Construction (Cashel)	€2,140,697
<b>Total Estimated Costs</b>	<b>€7,770,697</b>

#### These estimated costs include for the following:

District regulator installations, special engineering difficulties (crossings), archaeological survey, local authority charges, adverse ground conditions, pre-tender investigations, insurance, design, administration, material procurement and construction contracts.

#### The estimates do not include for:

New housing estate mains, service or meter costs.  
Industrial / Commercial mains, service or meter costs.

## Business Modelling:

€m	NPV @ 5.2%
<b>DISTRIBUTION</b>	
Distribution Revenue	4.22
Capex	-2.99
Contributions	0.22
Opex	-0.21
<b>Distribution Total</b>	<b>1.25</b>
<b>TRANSMISSION</b>	
Onshore Revenue	1.13
Entry Revenue	0.78
Capex - AGI	-5.35
Opex	-0.38
<b>Transmission Total</b>	<b>-3.82</b>
<b>NPV TOTAL</b>	<b>-2.57</b>

## 2.3.1.5. Results:

Connection of Cashel via the proposed Cashel AGI results in a negative net present value (NPV) of €2.57m and therefore connection of the towns appears to be uneconomic on a group basis.

## 2.3.2. Thurles (Grouped Option)

### 2.3.2.1. Summary Details:

Thurles is the largest town in North County Tipperary located on the mainline rail link to Dublin and on the N75/N62, about five miles west of the N8 National primary (Dublin-Cork) route. The population of Thurles is currently 6,831. This is projected to increase to 10,167 by 2018 (see Appendix B). It is forecast that up to 1000 houses will be connected in Thurles over the next ten years.

There are two potential contract loads and 5 large I/C loads in Thurles. There are also 22 medium I&C customers and 206 small I&C customers operating in the area.

Thurles is approx. 27km from the nearest existing Transmission main. The most economic option for supplying Thurles is by examining a solution to supply the towns of Cashel and Thurles so that cost efficiencies can be achieved and the subsequent costs spread across a larger customer base. This solution involves a new 150mm 16.5km Transmission pipeline and common AGI at Cashel.

### 2.3.2.2. Summary Load Analysis:

*Thurles, Co. Tipperary*

Source: Networks cost estimates report July 2007.

#### Industrial / Commercial Load Summary Forecast:

<b>Total EAC 2016</b>	25,311 MWh	863,638 Therms
<b>Peak Day 2016</b>	140,564 kWh	4,138 Therms

#### New Housing Summary Forecast:

<b>New Housing Load (Therm)</b>	520,000 (Year 10)
<b>New Housing Load (MWh)</b>	15,240 (Year 10)

### 2.3.2.3. Solutions:

The most economic option for supplying Thurles is via a new 150mm 16.5km Transmission pipeline and common AGI at Cashel This AGI will then supply an 18.5km 315/250mm PE100 SDR 17 feeder main to Thurles.

### 2.3.2.4. Cost Estimates:

*Thurles, Co. Tipperary*

Source: Networks cost estimates report May 2007.

#### Estimated Capital expenditure Costs for feeder and Distribution Mains:

Item	Costs €
Transmission Pipeline & AGI at Cashel	€ 5,630,000
Feeder / Distribution Main Construction (Thurles)	€7,581,212
<b>Total Estimated Costs</b>	<b>€ 13,211,212</b>

#### These estimated costs include for the following:

District regulator installations, special engineering difficulties (crossings), archaeological survey, local authority charges, adverse ground conditions, pre-tender investigations, insurance, design, administration, material procurement and construction contracts.

#### The estimates do not include for:

New housing estate mains, service or meter costs.  
Industrial / Commercial mains, service or meter costs.

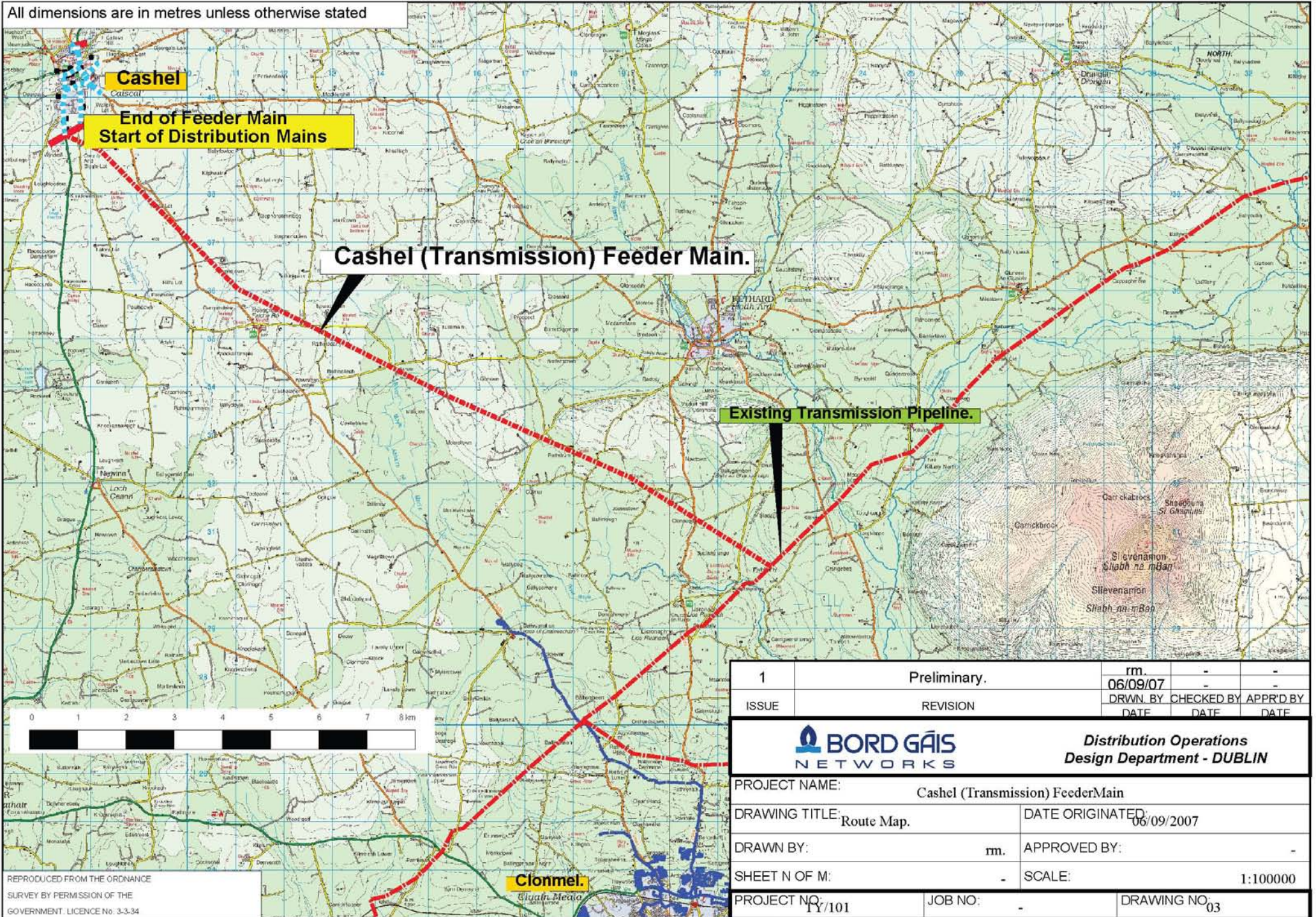
### Business Modelling:

€m	NPV @ 5.2%
<b>DISTRIBUTION</b>	
Distribution Revenue	4.27
Capex	-8.33
Contributions	0.24
Opex	-1.76
<b>Distribution Total</b>	<b>-5.59</b>
<b>TRANSMISSION</b>	
Onshore Revenue	1.15
Entry Revenue	0.80
Capex - AGI	-5.35
Opex	-0.38
<b>Transmission Total</b>	<b>-3.79</b>
<b>NPV TOTAL</b>	<b>-9.38</b>

### 2.3.2.5. Results:

Connection of Thurles via the proposed Cashel AGI results in a negative net present value (NPV) of €9.38m and therefore connection of the towns appears to be uneconomic on a group basis.

All dimensions are in metres unless otherwise stated



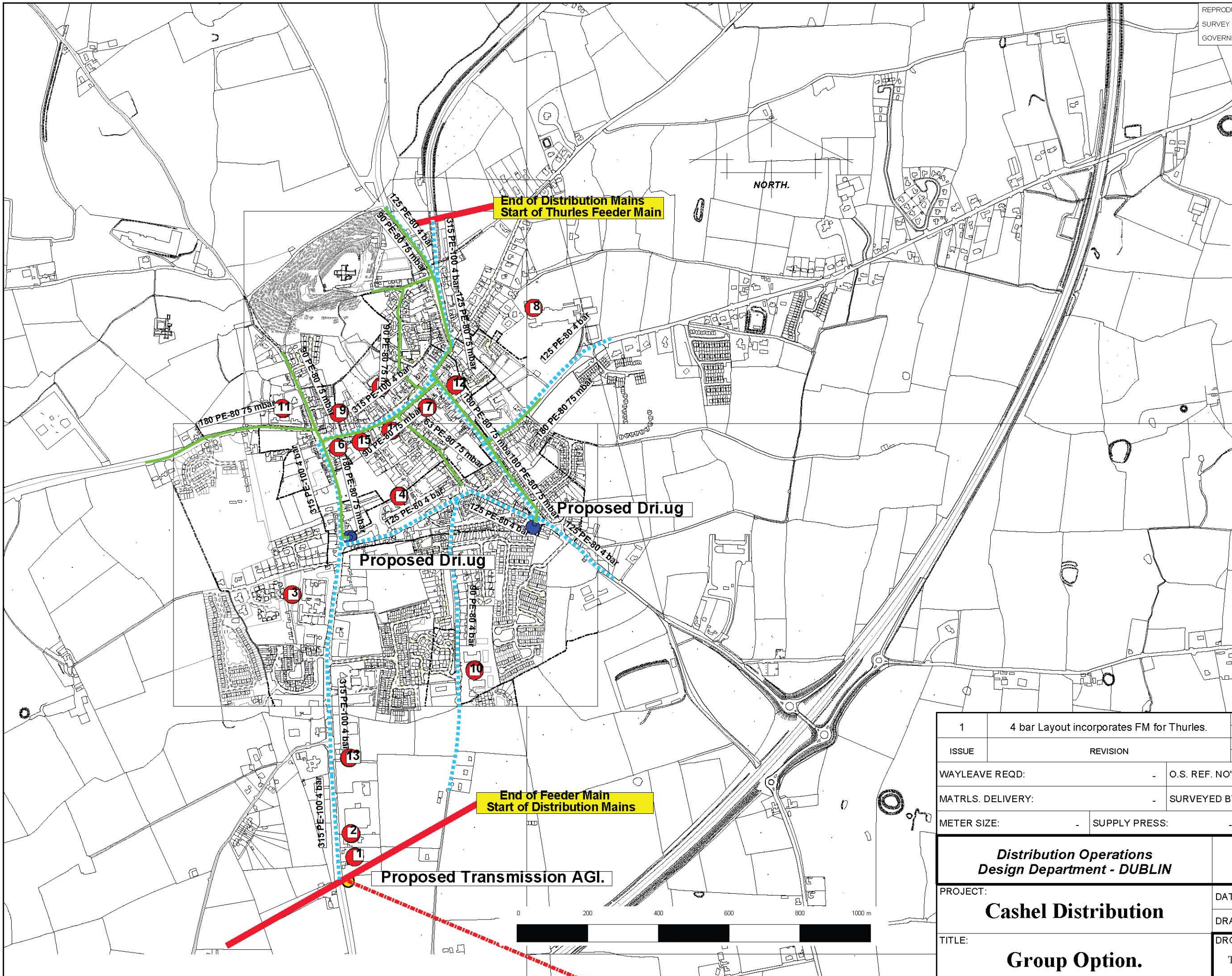
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Distribution Operations  
Design Department - DUBLIN

PROJECT NAME:	Cashel (Transmission) Feeder Main		
DRAWING TITLE:	Route Map.	DATE ORIGINATED:	06/09/2007
DRAWN BY:	rm.	APPROVED BY:	-
SHEET N OF M:	-	SCALE:	1:100000
PROJECT NO:	TY/101	JOB NO:	-
		DRAWING NO:	03

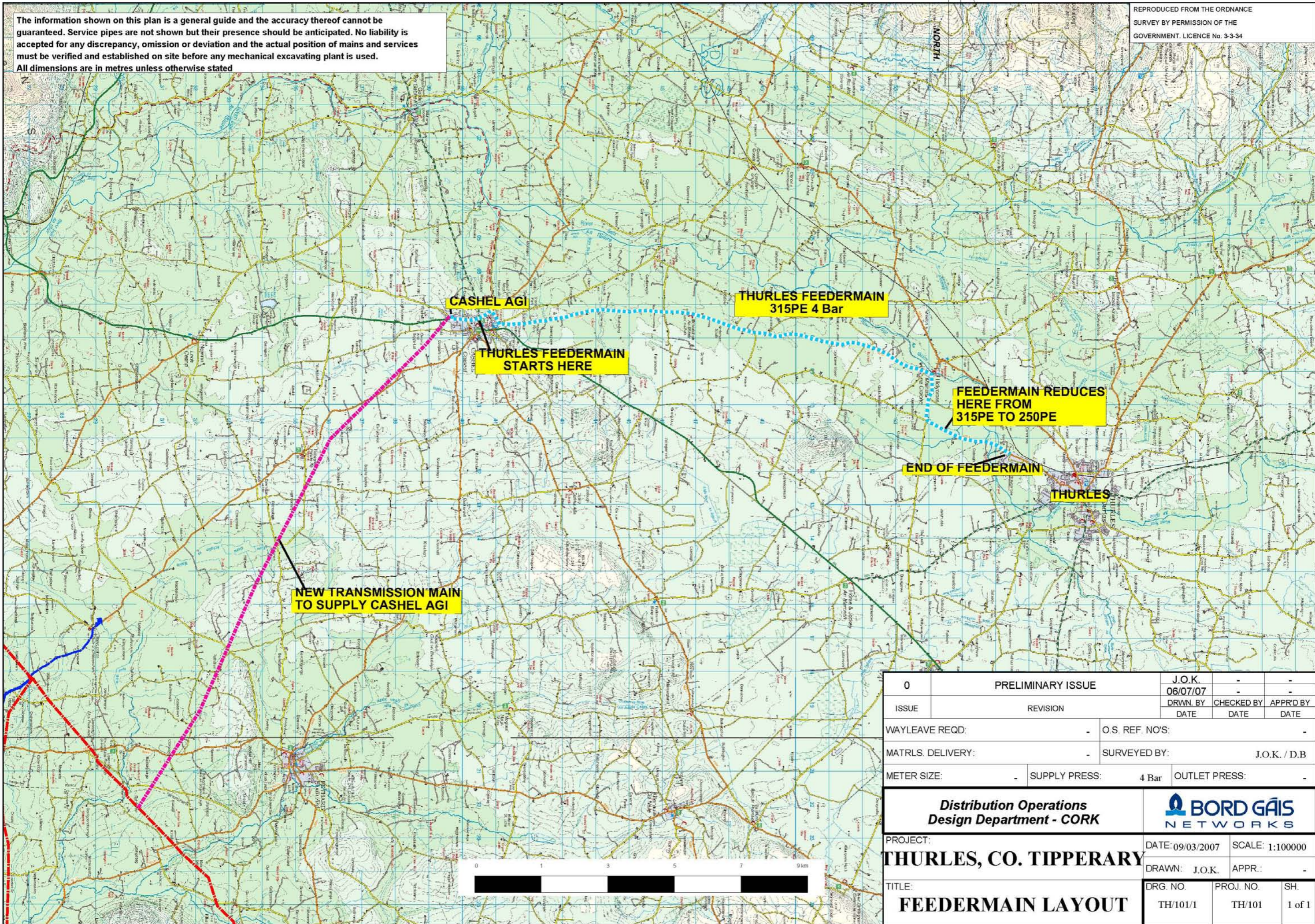
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1	4 bar Layout incorporates FM for Thurles.	rm.	-	-
ISSUE	REVISION	18/09/07	-	-
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WAYLEAVE REQD:	-	O.S. REF. NO'S:	-	-
MATRLS. DELIVERY:	-	SURVEYED BY:	-	-
METER SIZE:	-	SUPPLY PRESS:	-	OUTLET PRESS:
<b>Distribution Operations Design Department - DUBLIN</b>		<b>BORD GÁIS NETWORKS</b>		
PROJECT:		DATE: 06/09/2007	SCALE: 1:10000	
<b>Cashel Distribution</b>		DRAWN: rm.	APPR.: RS.	
TITLE:		DRG. NO.	PROJ. NO.	SH.
<b>Group Option.</b>		TY/102/5	TY/102	-

The information shown on this plan is a general guide and the accuracy thereof cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability is accepted for any discrepancy, omission or deviation and the actual position of mains and services must be verified and established on site before any mechanical excavating plant is used. All dimensions are in metres unless otherwise stated

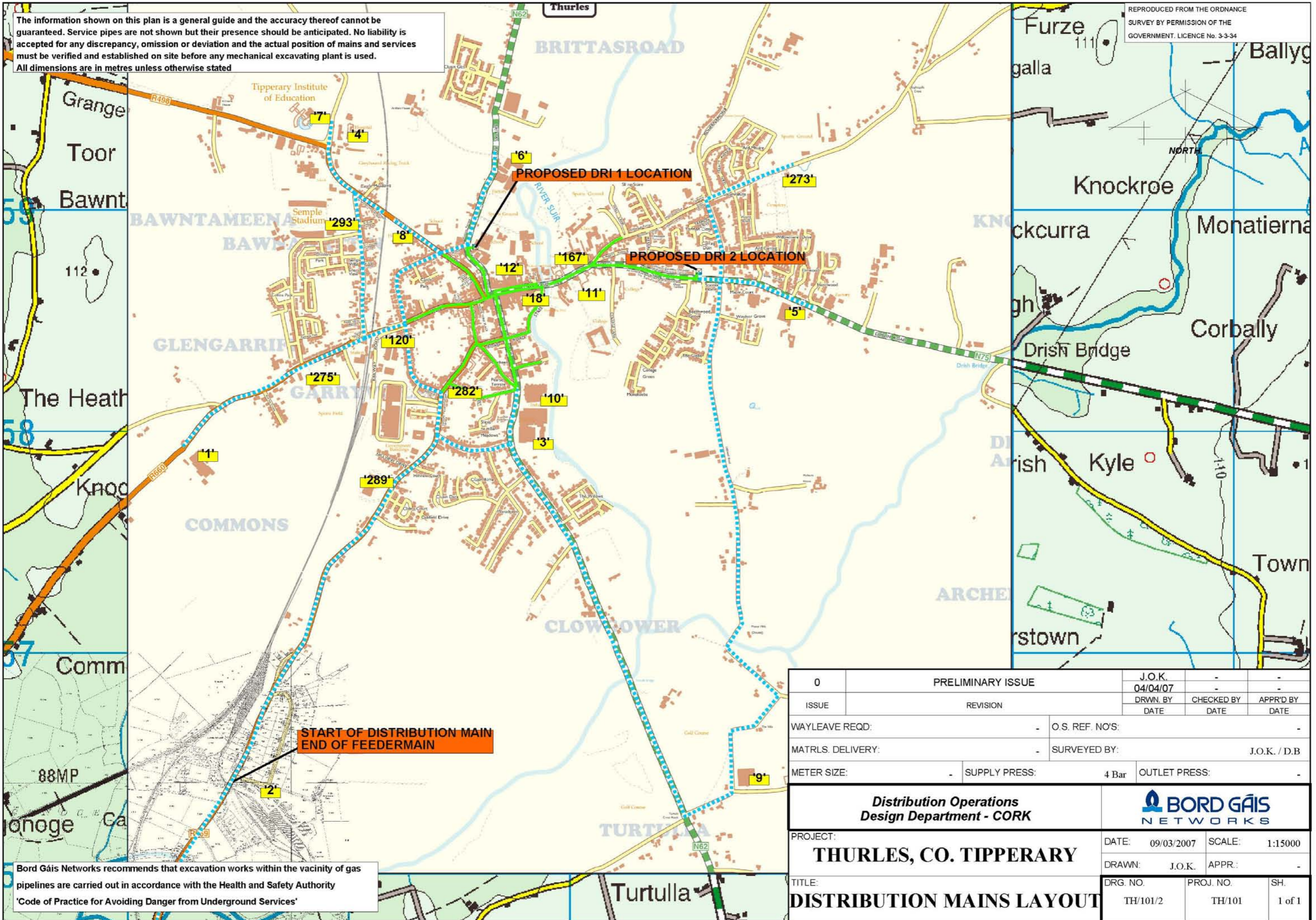
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ISSUE	REVISION	06/07/07	-	-
WAYLEAVE REQD:	-	DATE	CHECKED BY	APPR'D BY
MATRLS. DELIVERY:	-	DATE	DATE	DATE
METER SIZE:	-	SURVEYED BY:	J.O.K. / D.B	
METER SIZE:	-	SUPPLY PRESS:	4 Bar	OUTLET PRESS:
PROJECT:		DATE: 09/03/2007	SCALE: 1:100000	
<b>THURLES, CO. TIPPERARY</b>		DRAWN: J.O.K.	APPR.: -	
TITLE:		DRG. NO.	PROJ. NO.	SH.
<b>FEEDERMAIN LAYOUT</b>		TH/101/1	TH/101	1 of 1

The information shown on this plan is a general guide and the accuracy thereof cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability is accepted for any discrepancy, omission or deviation and the actual position of mains and services must be verified and established on site before any mechanical excavating plant is used. All dimensions are in metres unless otherwise stated

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Bord Gáis Networks recommends that excavation works within the vicinity of gas pipelines are carried out in accordance with the Health and Safety Authority 'Code of Practice for Avoiding Danger from Underground Services'

0	PRELIMINARY ISSUE	J.O.K.	-	-
ISSUE	REVISION	04/04/07	-	-
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WAYLEAVE REQD:	-	O.S. REF. NO'S:	-	
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				-
<b>Distribution Operations Design Department - CORK</b>		<b>BORD GÁIS NETWORKS</b>		
PROJECT:	<b>THURLES, CO. TIPPERARY</b>		DATE:	09/03/2007
			SCALE:	1:15000
			DRAWN:	J.O.K.
			APPR.:	-
TITLE:	<b>DISTRIBUTION MAINS LAYOUT</b>		DRG. NO.	TH/101/2
			PROJ. NO.	TH/101
			SH.	1 of 1