CHAPTER 2
THE INCEPTION OF THE BRISTOL & EXETER RAILWAY COMPANY

The GWR Act received the Royal Assent on 31 August 1835, and on 21 September Brunel appointed George Frere and John Hammond as his Resident Engineers at the Bristol and London ends of the GWR respectively. For the sake of 'expedition', these two and their staffs were:

... exclusively employed on the ground in setting out the line and obtaining the information necessary for designing the various works and preparing the drawings, which are forwarded to me in London.

Soon afterwards Brunel engaged Gravatt to:

... superintend under me the making of the designs and drawings which would otherwise have occupied the respective engineers in whose division the works occurred.

No recorded start date of Gravatt's engagement has been found; however, he was paid £87 10s. for seven weeks work on the GWR up to 31 December 1835 and, as will be shown later in this chapter, he was engaged on the B&ER parliamentary survey for the whole of November 1835, so this payment equates to a GWR start date in early October 1835.¹

Just before the second GWR Bill went before the Commons in February 1835, a GWR deputation had travelled down to the West Country to canvass support. They were well received at all venues, with resolutions to petition in favour of the undertaking, and the Taunton Courier carried an enthusiastic editorial expressing the expectation that a branch would soon be made 'from Bath to this town.'² The hoped-for branch from Bath was not to be; instead, a 'Provisional Committee … for the establishment of a railway from Bristol to Exeter' was constituted in October 1835. The Committee members, who were independent of the GWR but who had been motivated by the passage of the GWR Bill, swiftly set about obtaining parliamentary powers.

In this chapter evidence is presented relating to the period between the Committee's first approach to Brunel in October 1835 and the appointment of Gravatt as

¹ Brunel to the GWR Directors, 30 Sep, 31 Dec 1835, 7 Jan 1836: TNA/PRO RAIL 250/82; Obit, p.570.
² TNA/PRO RAIL 1014/4/3, circular letter from W. Lee inviting interested parties to a meeting in Exeter Guildhall on 18 February 1835, dated 13 Feb 1835; ibid, printed notice from the Bailiffs of Taunton inviting interested parties to a meeting in Taunton Guildhall on 24 February 1835, undated; Taunton Courier 25 Feb, 4 Mar 1835.
Resident Engineer on the B&ER in July 1836. The first section considers the initial activities of Brunel and the Committee in the lead-up to the parliamentary survey. The second section covers the survey itself, and the line that was eventually adopted is discussed in the third section. A final section examines the developments that took place between the deposition of the parliamentary survey in November 1835 and Gravatt's appointment in July 1836.

2.1 Prelude to the B&ER Parliamentary Survey

Seventeen of the twenty-two B&ER Provisional Committee members resided in the Bristol area, two in Bath, two in Bridgwater and one in Taunton.¹ Samuel Waring, one of the Bristol members, wrote to Brunel on 17 October 1835, requesting him to meet the Committee at Bristol. Waring told Brunel that both the Committee and the GWR Directors looked to him for 'engineering direction' in the enterprise, and that they wanted the parliamentary notices to be prepared as soon as possible.² Evidently Brunel complied because on 21 October, within four days of their initial approach to him, the Committee issued its first prospectus naming him as their Engineer. According to the prospectus:

It is believed that the Line of this Rail Road presents no peculiar obstacles, and that a great part of it will be carried through a very flat country. Under the advice of Mr. Brunel the Line from Bristol is proposed to be formed through the level country, towards the [Bristol] Channel, and within a few miles of Clevedon and Weston. It will be brought at Bridgwater as close as possible to the Port, and from thence proceed to Taunton and towards Collumpton [sic], and within reach of Tiverton, and then to Exeter.³

The estimated cost was given as £1,500,000, 'but it is confidently expected that £1,200,000 will complete the work.' That Brunel should be said to have given advice on the route at the northern end of the proposed line implied that he had discussed at least part of the route with the Committee. However, as to the line further south, no doubt the Bridgwater and Taunton members of the Committee would have opinions on the best

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¹ Prospectus of the Bristol and Exeter Railway (Bristol, 21 Oct 1835).
² Samuel Waring to Brunel, 17 Oct 1835: BUL DM 1758/1. Waring was later to be Deputy Chairman of the B&ER Co.
³ Prospectus of the Bristol and Exeter Railway (Bristol, 21 Oct 1835). MacDermot has incorrectly given the date of the prospectus as 1 Oct 1835: MacDermot E.T., History of the Great Western Railway Vol.2: 1863-1921 (1931), revised edition by Clinker C.R. (1964), p.125; the present writer has relied on the date printed on the copy of the prospectus in: SRO DD/DP 69/6, Beadon business papers regarding the B&ER.
approaches to those towns and, understandably, beyond Taunton the route was vague at that stage.

The Committee appointed Thomas Osler as their Secretary, Osborne & Ward as joint Solicitors with Savery & Clarke in Bristol, and Swaine, Stevens & Co. as their Solicitors in London.\(^1\) The Bristol solicitors immediately set about contacting influential inhabitants of the towns along the likely route corridor with a view to canvassing support, forming local committees and appointing local agents.\(^2\) On 28 October the decision was taken to apply for parliamentary powers in the ensuing session, leaving Brunel just one month in which to reconnoitre and select the route, and to complete the plans and accompanying documents.\(^3\) A three-man deputation of the Committee had already set off on 27 October to canvass support at the western end of the line. On their way to Exeter they made short stops at Bridgwater, Taunton, Wellington and Cullompton to gauge the views of the inhabitants. Returning from a highly satisfactory public meeting in Exeter on 29 October, they again stopped at Wellington, Taunton and Bridgwater to meet prominent inhabitants by appointment. In Wellington the Fox brothers and the brick maker and merchant William Horsey, all 'very zealous' and with excellent knowledge of the local landed interests, agreed to act as agents in that area. Notably, Edward Ayshford Sanford MP assured them of his 'cordial support' and asked that Brunel would call on him at Nynehead Court near Wellington when he was in the area during the survey. The line was likely to pass through Nynehead parish and, as Sanford owned nearly the whole parish and was the MP for that part of Somerset, his support for the scheme was crucial to its success.\(^4\) Like John Heathcoat, MP for Tiverton, he told the deputation it would be improper to take shares, as he would have to serve on the Commons Committee considering the B&ER Bill. On 31 October the deputation was well received by about 40 of the most influential inhabitants of Taunton, 'which is opulent and populous,' and many shares were subscribed for; the attorney Robert Beadon and his brother Edwards Beadon were already acting as the Committee's

\(^1\) TNA/PRO RAIL 75/1, Committee Minutes, 28,31 Oct 1835.
\(^3\) TNA/PRO RAIL 75/1, Committee Minutes, 28 Oct 1835. On the basis of MacDermot's incorrect date of 1 October 1835 for the prospectus, Hepple has wrongly inferred that Brunel had 'exactly two months to survey the line and prepare plans for deposition': Hepple J.R., 'The Influence of Landowners' Attitudes on Railway Alignment in Nineteenth Century England' (unpublished University of Hull PhD thesis, 1974), p.137.
\(^4\) Edward Ayshford Sanford (1794-1871) later represented Minehead in Parliament and was also a Deputy Lieutenant of the County: Whitaker R., Notes on the History of Nynehead Court (Nynehead, 1979), p.20.
local agents in the Taunton area. By contrast, the inhabitants of Bridgwater apparently knew very little of the undertaking. John Browne, a Bridgwater member of the Committee, gave the deputation a plan of an abortive canal scheme from Bristol to Bridgwater, no doubt in the hope that it would assist in the survey.

The deputation arrived back at Bristol on 1 November and presented an up-beat report the following day, when the Committee also received Brunel's written response, dated 31 October, to their resolution to apply to Parliament. Brunel wrote that his first impression of carrying out such a hurried survey was that 'the thing is impossible.' However, although he would be unable to undertake the actual survey himself due to the pressure of his other commitments, he said he now had no hesitation in acting on the resolution:

… because I have assistants in whom I can place perfect reliance and who by communicating to me the results of their surveys would render my directions in effect as well as I could myself … indeed in such a hurried survey as you propose the only mode of effecting it is by sending an immense number of surveyors and examining the results of their surveys upon paper … I conscientiously believe the person I shall send as acting Engineer is perfectly competent and with my assistance will effect your object, at all events as well as I should myself.

He did not name his 'acting engineer' but it was certainly William Gravatt who managed the day-to-day surveying operations right from the outset. Brunel reported that he was already seeking surveyors experienced in parliamentary surveys, 'as new hands will be perfectly useless.' In short, 'I believe you will find no other Engineer more disengaged who has the necessary assistance at command.' He had already arranged for his assistants to travel down by mail coach from London to Bristol the following night, 1 November.

The main difficulty now, he warned the Committee, would be to quickly find and mobilise sufficient clerks experienced in making books of reference:

It will be absurd to attempt it unless the Solicitors can by Wednesday next [4 November] send ten or even twenty clerks who are accustomed to this peculiar work, upon the line, and who must wait upon the Surveyors ready to commence their work as each bit of plan is complete ... If you

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1 In February 1836 Robert and Edwards Beadon described themselves as 'Agents here [ie. Taunton] of the Projectors of the [B&ER] Scheme': SRO DD/DP 69/6, draft petition to the Commons in support of the B&ER Bill, 27 Feb 1836.
2 Copy of deputation's report of 2 November 1835: TNA/PRO RAIL 75/1, Committee Minutes, 2 Nov 1835.
3 Brunel to the 'Principal Committee' of the B&ER, 31 Oct 1835: BUL PLB 1, p.502 (this letter has been entered into the letter book out of chronological sequence and appears to have been copied from another source). The contents of the letter were also copied into: TNA/PRO RAIL 75/1, Committee Minutes, 2 Nov 1835.
can manage this, if money is not an object, and if you clearly relieve me from any responsibility of a failure of the experiment, for it is one, [the survey] shall be made … upon the understanding therefore that it is merely expected that all should be done that can be done by any body in such a case, that the assistance of experienced persons to the extent I have mentioned can be obtained by your Solicitors to be in constant communication with my Surveyors, that expence is not an object compared with that to be obtained, [and] that the responsibility of failure in the experiment does not in any way rest upon my shoulders.

In the event, Robert Osborne of Osborne & Ward managed the clerks throughout the survey, leaving Gravatt free to manage the surveyors. Thus Brunel would have had 14 days notice at most to mobilise his team of assistants, but it is likely that he would have held off running up substantial charges to the Committee's account before their formal resolution to apply to Parliament, so that in reality the mobilisation period would have been much shorter. There is no evidence that the solicitors were unable to comply with his seemingly impossible demand to have at least ten experienced clerks ready to support the surveyors within two days, suggesting that he had already forewarned them of this prerequisite.

2.2 The Parliamentary Survey

Brunel would have had access to a great variety of maps, plans and other data to help him and Gravatt prepare for the survey. Evidence of the preparations he made before and during his survey for the GWR in 1833 is relevant here.¹ He ordered copies of the 1in.-to-the-mile Ordnance Survey sheets that covered the region through which the line of the GWR would have to be formed.² He also applied directly to the Ordnance Survey for permission to take tracings of the 2ins.-to-the-mile maps held at the Tower.³ He also made use of large scale plans, such as deposited plans and, possibly, parish

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¹ Adrian Vaughan and David Clifford have recently published accounts of aspects of Brunel's own experience of surveying the route of the GWR in 1833: Vaughan A., Brunel (2006), pp.23-35 passim; Clifford D., op.cit., pp.27-31 passim.

² For example, in September 1833 he ordered the map covering the Chippenham area to be mounted, 'edges and all, to roll up, not cut … if you have time to line it so much the better': Brunel to John Hammond, 26 Sep 1833: BUL DM 1758/219.

³ Vaughan has quoted an unreferenced entry in Brunel's 'journal' for 13 March 1833:

maps; in his evidence to the Lords Committee on the second GWR Bill in June 1835 he described the desk study he carried out in early 1833:

On our first Examination of the Country I obtained all the information I could which could be collected upon the point. The levels of the canals on both lines are well known and are ascertained. Projects had been put forward by other persons previous to that: there had been a printed Prospectus of a railway from London to Bristol, and a Survey made for a Turnpike road, one of those took the north and the other the south of the Marlborough Downs. Those I got access to, and the levels of … the Kennet and Avon Canals [sic] … [and] the Wilts and Berks Canal.¹

He admitted later to having reservations about the value of some of these resources when he was asked to give an estimate for the parliamentary survey for the Plymouth & Exeter Railway in March 1836:

I am ignorant of the nature of the Parish Maps and other documents which at present exist and which when good are very useful in the preliminary surveys but if incorrect are frequently sources of error and consequent expense.²

Despite these qualms he continued to instruct his surveyors to use parish and other large-scale maps in preparing for other projects, for example on the embryonic South Wales Railway in May 1836:

Press on the survey at Chepstow, Newport and Purton at the places indicated in order that I may mark a line there and have sections taken ... you should immediately compile a map by connecting the surveys of different Parishes and enclosing plans [ie. deposited plans for enclosures] which you shewed me so as to ascertain exactly what parts require filling up.³

The maps Brunel ordered for the B&ER survey would certainly have included the four 1in.-to-the-mile Ordnance Survey sheets that covered the region in Somerset through which the line would have to pass.⁴ He may also have had tracings made of the

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¹ TPA HL/PO/JO/10/8/1116, evidence taken before the Lords Committee on the GWR Bill, I.K. Brunel, 23 Jun 1835, p.43. Punctuation has been inserted by the present writer.
² Brunel to Thomas Gill, 28 Mar 1836: BUL PLB 1.
³ Same to T. Morris, 30 May 1836: ibid.
At that time, before the passage of the Tithe Commutation Act of 1836 and the subsequent mass production of tithe maps, there was no comprehensive source of ready-made large-scale maps of the whole region through which the B&ER was intended to pass. Tithe maps for the parishes in this region of Somerset were surveyed between 1837 and 1847, but some of these maps were clearly based on earlier surveys that may have been made available for the B&ER survey; in fact, early in November 1835 Sir John Smyth's agent lent the B&ER's solicitors a map of Long Ashton parish, on which 'the proposed line of the Exeter Railway shall be laid down ... in pencil.' The Beadons contacted at least three local surveyors and valuers in early November 1835 in the hope that they could provide suitable large-scale maps of estates and parishes in Somerset and Devon. Thomas Hawkes of Williton said he had received details of the areas under consideration from a Mr. Cox of Carhampton:

… who has this day [12 November 1835] been with Mr. Gravatt & others in the Railway business ... & if my Maps are of any service they shall be produced at the shortest notice.

Thomas Wright of Tiverton had surveys of Halberton and Cullompton parishes. Charles Chilcott of Crowcombe offered maps of Huntspill, Pawlett, Puriton and North Petherton, 'making no stipulation for the remuneration to be allowed for their use', and he also had maps for parts of Trull, Bradford-on-Tone, Fitzhead, Wiveliscombe and Sampford Arundell, if required.

Another resource was the collection of deposited plans for enclosure, land drainage, turnpike road and canal projects in and around the area of the B&ER survey; Greenwood J., Map of the County of Somerset, from Actual Survey made in the Years 1820 & 1821 (1822), reproduced in facsimile by Somerset Record Society, 76 (Taunton, 1981); Harley J.B. and Dunning R.W., Somerset Maps (Taunton, 1981), passim.

2 J. Osborne to C.H. Abbot, 6 Nov 1835: BRO 12167/31, Solicitors' Letter Book. Other examples include the tithe maps for Banwell (1838), which was annotated 'Copied from the Parish Plan made in 1834'; for South Brent (1841), 'From a copy [of the survey] taken in the year 1811;' and for Lymstock (1839), 'A copy from the Map of the Parish of Lymstock ... made in the year 1802.'
3 Thomas Hawkes to Messrs. Beadons, 6,12 Nov 1835: SRO DD/DP 69/6. Hawkes was land agent to the main Somerset branch of the Wyndham family at Orchard Wyndham.
4 Thomas Wright to Messrs. Beadons, 10 Nov 1835: ibid. Wright felt that 'the property in this part of the Kingdom is so much divided that you will get very few entire Maps of a Parish.'
during early November 1835 the Clerk of the Peace for Somerset, Edward Coles, allowed the surveyors to copy such plans held in his office.\footnote{In December 1837 Coles was belatedly paid £20 for his clerks' time and attendance 'in rendering assistance to the Engineers [examining and copying plans] during the progress of the Survey': Osborne & Ward to Edward Coles, 25 Oct, 9 Dec 1837; BRO 12167/31.} These plans would have provided reasonably accurate base plans at a relatively large scale, and the canal plans would also give an early indication of potentially viable routes. As an example, plans had been deposited for three abortive canal schemes that were intended to run from Uphill, near Weston, to Taunton via Bridgwater,\footnote{SRO Q/RUp 3/1, 'Canal - Uphill to Ham Mills,' deposited 30 Sep 1794; SRO Q/RUp 3/2, 'Canal - Uphill to Backwell,' deposited 30 Sep 1794; SRO Q/RUp 4, 'Plan of the Intended Canal from Uphill to Taunton,' deposited 30 Sep 1794.} and three more that would run from the Avon near Bristol to Taunton via a tunnel through the Mendip ridge at Banwell.\footnote{SRO Q/RUp 5, 'A Plan for a Navigable Canal from the River Avon (near Bristol) to Taunton,' deposited 30 Sep 1794; SRO Q/RUp 10, 'A Plan for a Navigable Canal from the River Avon (near Bristol) to Bridgwater & Taunton,' deposited 29 Sep 1795; SRO Q/RUp 32, 'A Plan of the Proposed Bristol and Taunton Canal,' deposited 29 Sep 1810.} Further south, the plans of the Bridgwater and Taunton Canal would aid the planning of the line between those towns; and the Grand Western Canal, which was then under construction between Taunton and the summit of the Blackdowns near Greenham, would give an indication of a possible line over the Blackdowns. An alternative line over the Blackdowns could have been suggested by a plan deposited in 1832 by the Taunton Turnpike Trust for a diversion of the Exeter Road over the summit between Beam Bridge and Red Ball.\footnote{SRO Q/RUp 116, Taunton Turnpike Trust, road alterations at Whiteball Hill, deposited 29 Nov 1832. In the event the diversion was not constructed.} At the Bristol end, the line would have to cross the high ground between the terminus and the North Somerset Levels, where the lowest summit level, near Flax Bourton, was about 150ft. above the Bristol terminus; a feasible route over this summit had already been established by the Bristol Turnpike Trust's Ashton (alias Weston) road, for which a plan had been deposited in 1818.\footnote{SRO Q/RUp 59d, 'Map of the Bristol Turnpike Roads, Division D,' 1818.}

Gravatt was by that time a veteran of railway surveys and there is no evidence that Brunel felt it necessary to instruct him in the niceties of producing a parliamentary plan. Nonetheless, Brunel's later instructions to James Rendel, in connection with the Plymouth & Exeter Railway survey, give an interesting insight to his standard practice for taking and plotting trial lines and levels in advance of, or in the early stages of, such a survey:
When I saw you in Town we agreed upon a general line between Ivy Bridge and Totness [sic] crossing the Avon a little south of the lower Turnpike Road, of which line it was desirable to take a trial level … In taking these trial levels there are a number of conventional rules without which the results are unintelligible except to the person who took the levels. It is necessary to commence at some known level, to establish good bench marks both there and as frequently as possible along the road, having one general rule for selecting such marks, as for instance the tops of milestones, the sills of doors and the top of the lower staple pins of gates. The levels should be carried as much as possible in short straight lines from points that can be determined upon the ordnance maps, always passing if possible the lowest summits and lowest parts of hollows, taking note at the same time of the rise or fall on each side … In these trial levels there is no necessity of chaining, a man will step near enough to give a correct section. I find 4 miles to the inch horizontal and 40ft. vertical a very good scale, and I will send you some paper prepared for plotting sections … this section will establish the character of the levels we must put up with and so far govern future proceedings.¹

Earlier, in his GWR evidence Brunel gave an indication of the principles he adopted for checking the accuracy of the levels; when he was asked whether the levels on which the line of the GWR was based had been taken by him personally, he replied:

No, not the levels taken by myself actually. I walked over the ground and pointed out to the Surveyors where they were to take them.

Q: They were taken under your direction?

Brunel: Yes.

Q: Did you ascertain that they were correct in the usual way by well known points?

Brunel: Yes, and generally speaking a certain number of levels are taken over the same line of country by different Surveyors and the one checks the other. I need hardly say it is impossible for a person directing a choice of lines to take the levels himself.²

Not surprisingly, Brunel delegated non-technical tasks to non-engineers; in fact he generally insisted upon it in the case of the preparation of the books of reference during parliamentary surveys, as he later told the solicitors acting for the promoters of the South Wales Railway in 1836:

With respect to the proceedings necessary to Parliament [sic] it will as I always told the Committee be sharp work … and I have no wish therefore to take upon myself more than I can help. Now the ascertaining the Parishes & of course the Book of reference are peculiarly (at least in all the Parliamentary proceedings in which I have been engaged) the department of the Solicitors. I will in the first place give you an Ordnance

¹ Brunel to James Meadows Rendel, 15 Apr 1836: BUL PLB 1, emphasis as in the original.
² TPA HL/PO/JO/10/8/1116, evidence taken before the Lords Committee on the GWR Bill, I.K. Brunel, 24 Jun 1835, pp.79-80.
Map with the line from which you must learn the parishes – and as fast as the plans are ready you shall have copies and must send to make up the book of reference for which you must learn the names of the owners, lessees and occupiers of which indeed the book consists. I have always avoided having anything to do with either of these operations (excepting in the first year of the Taff Vale Railway).1

In the evening of 3 November Brunel gave the Committee a brief and very general 'view' of the direction that the first 20 miles of the line would probably take.2 The only recorded detail of this view at that time is a mention of his explaining to them the advantages of crossing the river Axe near Bleadon; neither the advantages, nor his proposed route to that crossing point, nor his reasons for selecting it, were recorded but as it is probable that he had not then personally examined in detail the country between Bristol and Bleadon his initial comments would have been based on a study of maps and on the local knowledge of the Directors and other individuals. He visited the district between Bristol and the Axe the following day, and that evening he 'suggested' to the Committee that a line round the far western end of the Mendip ridge, passing within about 1½ miles of Weston super Mare, would avoid the expense of a tunnel. The Committee minutes record that they unanimously determined that the 'suggestion' be adopted, although it was not until 9 November that they formally resolved to adopt this line.3 In his later examination before the Commons Committee Brunel explained that:

… the line is carried considerably westward to avoid the range of the Mendip Hills; they run across Somersetshire down to the sea. There are two points for passing them that are probable, one near Banwell that was examined and surveyed and the levels taken, and it was found it would require a tunnel … The ascent[?] by the simplest mode on examination appeared to go beyond the Mendip Hills, between them and the Severn, round Bleadon and through Uphill.4

The actual start date for the survey is not recorded, but Brunel's statement shows that some levelling had been carried out by 4 November, 'near Banwell' at least. At that time James Sparrow, who had estates in Long Ashton and Flax Bourton, was fobbed off by Savery & Clarke when he attempted to find out how the line would affect his interests.5 By contrast, on 6 November Osborne & Ward were able to tell the agent of Sir John

2 TNA/PRO RAIL 75/1, Committee Minutes, 3 Nov 1835.  
3 Ibid, 4, 9 Nov 1835.  
4 TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.4-5.  
5 TNA/PRO RAIL 75/1, Committee Minutes, 4 Nov 1835; Savery & Clarke to Joseph Fisher, 6 Nov 1835: SRO DD/WY 169, emphasis as in the original.
Smyth, who was a neighbouring landowner of Sparrow's, that the line would go 'in the best possible direction for Sir John Smith's Coal Works & avoid all possible annoyance to his pleasure Grounds.'

On 9 November the Committee formally resolved that the Bristol terminus of the line should be at Temple Meads, and also that they would adopt the route which ran via Uphill and crossed the Axe where it was navigable. Brunel later stated that one thing in particular governed their choice of this crossing point:

An opinion formed which turned out to be correct that, provided we constructed proper sluices there for the drainage, we should benefit materially the existing drainage of the County … forming as we should a larger basin for receiving the back water than is at present afforded.

However, it was not merely an altruistic decision to adopt this crossing place: by 9 November Captain Christopher Claxton, the Harbour Master at Bristol, had already reported favourably on the commercial prospects of building wharfs at this site, and the Committee's Parliamentary Agents had advised that they did not expect any difficulty would be raised in Parliament on that account.

Further south, the alignment from Somerset into Devon over the Blackdown Hills was governed to a large degree by which of two route corridors running towards Exeter was selected: one via Tiverton and the Exe valley, the other down the Culm valley via Cullompton. Trial levels had been taken across 'all the possible summit levels or passes' on the Blackdowns by 10 November, when Brunel rode over them to determine the best crossing points. He reported to the Committee on 11 November that he felt at this early stage that both routes down to Exeter were practicable from an engineering point of view, although it would be difficult to construct a branch line joining either route to the other district if thought to be necessary. In his view the decision on which route should be selected was essentially a commercial question,

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1 J. Osborne to C.H. Abbot, 6 Nov 1835: BRO 12167/31. Sir John was also Lord of the Manors of Bedminster, Long Ashton and Flax Bourton. The Smyth family of Ashton Court had been involved in mining activities since the mid-eighteenth century; the B&ER parliamentary line runs close to South Liberty Colliery which the Smyths managed in partnership with the Bennett family as the Bedminster Coal Company: http://www.gertlushonline.co.uk/the-kingswood-miners---c.html, accessed 23 Jun 2008.

2 TNA/PRO RAIL 75/1, Committee Minutes, 9 Nov 1835.

3 TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.10-11.

4 TNA/PRO RAIL 75/1, Committee Minutes, 9 Nov 1835. At this meeting the Committee authorised a payment of £10 to 'Capt. Claxton … for his time and expenses in a recent survey and report relating to the River Ax [sic]'.

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MAP 2.1  THE PARLIAMENTARY LINE FROM BRISTOL TO THE RIVER AXE

Source: 'Walker's Somersetshire' 1835.

MAP 2.2  THE PARLIAMENTARY LINE OVER THE BLACKDOWNS

Source: 'Walker's Somersetshire' 1835
therefore he would not proceed with the detailed survey until the Committee formally resolved which route he should take. He also told them that the survey was in a ‘very favorable state of forwardness’ between Bristol and Taunton, and that R. Dymond, an Exeter surveyor, was already at work on the final four miles of the line down to Exeter.1

On 13 November the Committee resolved to adopt the route via Tiverton, ‘regarding the question purely in a Commercial point of view.’ However, three days later they received a letter from the Foxes which evidently threw a different light on the commercial issues, as Brunel was instructed to contact the Foxes and to re-survey both lines if he thought it necessary. As a result, the Committee rescinded their original resolution and unanimously adopted the Cullompton line on 18 November. By then the survey was said to be practically complete from Bristol to Harpford Bridge, which crosses the Tone about 1½ miles west of Wellington.2 Gravatt, who was then based at the White Hart in Wellington, promised to have ready the plans for the completed length, with the parliamentary line marked on, in time for a meeting at the Clarence Hotel in Bridgwater on 21 November when the book of reference was to be checked and corrected.3 The emphasis then shifted to the Devon length of the line.4 The Devon stretch of the survey has not been researched during this present study but suffice it that, in the event, the 75 miles of main line plus a short branch to Bridgwater and a five mile long branch to Tiverton were ‘accurately surveyed and laid down, under all the difficulties and impediments of Winter,’ in time for the plans, sections and book of reference to be deposited on 30 November 1835 with the Clerks of the Peace for the Counties of Somerset and Devon, the Cities of Bristol and Exeter and the towns of Tiverton and Bradninch; a remarkable achievement.5

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1 Copy of Brunel’s report 11 Nov 1835: TNA/PRO RAIL 75/1, Committee Minutes, 13 Nov 1835; Osborne & Ward to Edmund Osborne, 18 Nov 1835: BRO 12167/31. This was almost certainly Robert Dymond, whose surveying firm based in Exeter, known as Dymond & Sons, later acted for the B&ER in disposing of the Grand Western Canal after its closure: SRO D/R/ta 32/1/1, Taunton Highway Board Minutes, 26 Sep 1868 - 12 Apr 1869 passim; SRO D/R/wel 32/1/1, Milverton Highway Board Minutes, 3 Jun 1867 – 12 Oct 1868 passim; SRO D/R/wel 32/1/2, Milverton Highway Board Minutes, 23 Nov 1868 – 8 Feb 1869 passim.

2 TNA/PRO RAIL 75/1, Committee Minutes, 13,16,18 Nov 1835; Osborne & Ward to Edmund Osborne, 18 Nov 1835: BRO 12167/31.

3 Robert Osborne to Francis Ward, 19 Nov 1835: BRO 12167/31; same to William Hemming, 19 Nov 1835: ibid; same to William Gravatt, 19 Nov 1835: ibid.

4 Osborne & Ward to Frederick White, 24 Nov 1835: ibid.

5 TNA/PRO RAIL 75/1, Committee Minutes, 1,2 Dec 1835, 1 Jul 1836; TNA/PRO RAIL 75/49, Minutes of General Meeting, 2 Jul 1836; SRO Q/RUp 126, ‘Plan and section of the Bristol & Exeter Railway,’ deposited 30 Nov 1835.
The Committee formally recorded their thanks to Brunel, the solicitors 'and the other Gentlemen engaged in surveying the Line' on 2 December, following a description of the line by Brunel. Gravatt was singled out for 'the very great & efficient assistance he has rendered.'\(^1\) Robert Osborne, who had spent the month 'living on the road between this place [Bristol] and Exeter' in order to manage the clerks, summed up the experiences of many of those involved in the survey:

> Our work is accomplished and really in not an unsatisfactory manner. The Directors are both pleased and astonished at what has been done and when I see the pile of books, papers and plans before me I begin to be astonished myself ... How we got thro' it I can hardly tell ... It was a long pull, a strong pull and a pull altogether, and without it we should have failed. I calculate that for this last ten or twelve days I have worked from 20 to 22 hours a day, and altho' sometimes on lying down on my bed for an hour or two my head has reeled like a drunken man's I am by no means knocked up.\(^2\)

Writing in his private diary on Boxing Day 1835, Brunel noted that the B&ER survey was 'done in grand style – it's a good line too ... Gravatt served me well in this B&E Survey.'\(^3\) In similar vein the B&ER Directors later asserted that the line was 'the most favourable that could have been selected under any circumstances.'\(^4\)

Nineteen surveyors, together with more than 30 clerks and other professionals and assistants, were employed on different parts of the line to make the survey and the book of reference; Gravatt employed a Captain Bingley and a Mr. Cobbe to keep the surveyors' accounts.\(^5\) It is possible that this was William Cobbe, who was a cousin of Gravatt's brother-in-law and who would later become Gravatt's pupil; William Cobbe's later involvement in the B&ER is examined in Chapter 3. Apparently Bingley carried out his engagement 'exceedingly well' and was subsequently employed by the solicitors to superintend the traffic census.\(^6\) Brunel was paid £300 for his own 'professional services' during the survey, and Gravatt received £194 5s. as his 'Assistant Engineer.'

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1. TNA/PRO RAIL 75/1, Committee Minutes, 2 Dec 1835.
3. BUL PriD 4, Brunel's Private Diary, 26 Dec 1835.
4. TNA/PRO RAIL 75/49, B&ER minutes of General Meeting, 23 Feb 1837.
Payments to the surveyors, most of whom were from 'other parts of the Country,' totalled £2,660 4s. 3d.\(^1\) Several of them are named in the surviving records including William Townsend, Brunel's erstwhile collaborator on the GWR survey, who was involved at the Bristol end of the B&ER survey; R. Dymond at the Exeter end; and G.T. Ashwin who was paid for 23 days surveying at unspecified locations. Ashwin was paid a daily rate of £1.15\(\frac{1}{2}\), excluding expenses, which was said to be 'the sum allowed as the rate to the other Surveyors on the survey.'\(^2\) By way of comparison, during the GWR survey Brunel asked John Hammond to find a surveyor at short notice to run a trial level of about 10 miles, 'without much chaining,' in the neighbourhood of Chippenham, offering to pay him 1½ guineas (£1 11s. 6d.) per day, including expenses.\(^3\)

In his letter of 31 October 1835, agreeing to make the B&ER survey, Brunel asked the Committee to deposit £500 to his credit at the West of England District Bank, as he had already incurred considerable costs in his search for surveyors, ordering maps, and other measures connected with the survey:

… and the daily current expenses of the Survey will commence immediately and owing to the shortness of the period will proceed too rapidly for me conveniently to advance them.\(^4\)

Despite this, it is possible that some of the payments to the surveyors were advanced to them by Brunel from his own pocket; this was a standard, but understandably unwelcome, practice as far as he was concerned at this period. For example, there are several entries in his 1834 office diary noting advances paid to surveyors engaged in GWR and related projects, and there is a strong possibility that he borrowed some of this money from his father.\(^5\) Furthermore, in December 1836 he pressed the promoters of the

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\(^1\) TNA/PRO RAIL 75/95, Journal of Transactions, 31 Dec 1836.
\(^2\) J. Osborne to C.H. Abbot, 6 Nov 1835: BRO 12167/31; copy of Brunel's report dated 11 Nov 1835: TNA/PRO RAIL 75/1, Committee Minutes, 13 Nov 1835; Robert Osborne to Edmund Osborne, 18 Nov 1835: BRO 12167/31; same to William Hemming, 19 Nov 1835: ibid; James Hudson to G.T. Ashwin, 12 Jan 1836: BUL PLB 1.
\(^3\) Brunel to John Hammond, 26 Sep 1833: BUL DM 1758/219.
\(^4\) Same to the 'Principal Committee' of the B&ER, 31 Oct 1835: BUL PLB 1.
\(^5\) BUL DD 1834/2, Brunel's Office Diary, passim. On 29 October 1834 Brunel set off from London, noting in his diary: 'Took for my journey – £100 4s.' He stayed overnight at Wantage, then Chippenham and Bristol, took the steam boat to Cardiff, stayed overnight at Merthyr, travelled overnight back to London, returned to Cardiff and spent five days on the Merthyr & Cardiff line before returning to London on 14 November. During all this time he was paying his own expenses and issuing instructions and payments to surveyors. On 7 November he received £250 from the Merthyr & Cardiff proposers, and on 19 November he recorded: 'Repaid my father – borrowed 3 weeks ago – £100': ibid, 29 Oct – 19 Nov 1834.
the South Wales Railway for the early settlement of his account for completing their parliamentary survey:

... as you will perceive that it consists almost entirely of payments to surveyors – a Class of men who generally cannot wait for their money and consequently I am under the necessity of advancing it.¹

Likewise, in March 1836 he told the promoters of the Plymouth & Exeter Railway:

The principal expense of the [parliamentary survey] will consist of the payments of the surveyors. These generally pass through my hands but in this case I should prefer all such accounts after being examined by me to be paid by the Treasurer or Secretary or any person appointed for that purpose by the Committee.²

Regrettably Brunel's office diary covering the period of the B&ER survey has not been located and there is insufficient evidence elsewhere from which to compile a complete record of the particular days he was present during the actual survey.³ However it is clear that he personally directed operations on the ground from time to time. In addition to his inspections of the area between Bristol and Lympsham on 4 November and the Blackdowns on 10 November, he also visited the Bridgwater area and probably Taunton.⁴ Also he was sent drawings of trial alignments for his comments and directions from time to time when he was unable to visit the site at short notice.⁵ No conclusive evidence has been found that points to Brunel having personally met or corresponded with particular landowners and other interested parties in Somerset during the course of the survey. That is not to say, of course, that he did not meet some of them but, for instance, he certainly did not call on Sanford at Nynehead Court during the

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¹ Brunel to James Kemp, 21 Dec 1836: BUL PLB 1.
² Same to Thomas Gill, 28 Mar 1836: ibid.
³ The 1835 diary is listed in the BUL catalogue as one of the missing volumes: Hannah Lowry, BUL Archivist, pers. comm.
⁴ Brunel later said he spent some time during October or November 1835 in the Bridgwater area where he was 'engaged in a Work connected with the Railway which crossed the River Parrett': SRO D/RA 3/3/4, minutes of evidence taken before the Lords Committee on the Parrett Navigation Bill, I.K. Brunel, 14 Jun 1836, p.78. Likewise he had seen a good deal of the rivers Parrett and Tone 'in consequence of being engaged in a Railway': SRO D/RA 3/3/3, evidence taken before the Commons Committee on the Parrett Navigation Bill, I.K. Brunel, 10 May 1836, p.19.
⁵ For instance, in November 1841 William Froude found some of the trial lines that had been sent to Brunel at Bridgwater and at Bristol in November 1835: William Froude to Brunel, 26 Nov 1841, copy made 27 Nov 1841: BUL DM 1306.VIII.22.
survey, as requested.\textsuperscript{1} On the other hand, when he was later asked whether, during the survey, he had discussed with interested parties how the line was to approach the major towns, he replied:

Immediately on proceeding to lay down the Line I had either personally or through the members of the Committee or otherwise interviews with all the parties connected.\textsuperscript{2}

Gravatt resumed working on the GWR in early December 1835. Brunel reported the following month to the GWR Directors on his staffing arrangements for setting out the line and designing the structures: Hammond and Frere would continue to be his Resident Engineers at the London and Bristol ends respectively, and he now proposed to make Gravatt's GWR position permanent. Brunel referred to Gravatt's post as the 'Third Resident Engineer' but it is clear that his intended role was, as before, to 'superintend ... the making of the designs and drawings.'\textsuperscript{3} Gravatt's GWR role during this period is examined in Appendix 2 of this study.

\section*{2.3 The Parliamentary Line}

From the terminus and junction at Temple Meads, the line immediately makes a skew crossing of the Avon New Cut and the Bath road of the Bristol Turnpike Trust. It runs nearly level for the next three miles into Ashton Vale, passing in a short tunnel at Bedminster Down under the Bridgwater road of the Bristol Trust. Continuing westwards, an inclined plane just over a mile long is followed by a mile long summit level and a two miles long descending incline, down onto the North Somerset levels at Backwell Common. According to Brunel the gradient of the eastern incline was to be 1 in 76 and worked by a stationary engine located at the start of the summit near Ashton Waters (now Ashton Watering), close to the crossing of the Bristol Trust's Ashton road.

\begin{footnote}{1}Brunel's first interview with Sanford did not take place until mid-December 1835 when he explained his plan for that part of the line: Deputation's report to the Committee, 22 Dec 1835: TNA/PRO RAIL 75/1, Committee Minutes, 22 Dec 1835.

\begin{footnote}{2}TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.2, 15-16.

\begin{footnote}{3}Brunel to the GWR Directors, 7 Jan 1836: BUL PLB 2. He told the GWR Directors: I have allowed Mr. Gravatt up to the present at the same rate as if appointed which is considerably less than I have been in the habit of paying for such assistants, when charged by the day.

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An assistant locomotive engine would be required for trains ascending the western incline of 1 in 103. Brunel's decision to 'concentrate' the gradients either side of Ashton Watering was governed by the same principle he had adopted on the GWR, which Gravatt explained simplistically but effectively in 1845:
It is the same thing as working a pair horse coach for 9/10th of your distance and putting on another pair of horses when you want to go up a hill.  

The next 31 miles from Backwell to Outwood are practically level. From Backwell the line runs almost straight and in a south-westerly direction for about ten miles across the levels to Worle, from whence a long-radius curve carries it round the western limit of the Mendips through a short cutting up to 70ft. deep at Uphill. During his examination before the Commons Committee considering the B&ER in March 1836 Brunel said of this length:

The line is carried considerably westward to avoid the range of the Mendip Hills; they run across Somersetshire down to the sea. There are two points for passing them that are probable, one near Banwell that was examined and surveyed and the levels taken, and it was found it would require a tunnel.

**Q:** That is where the present road goes to?

**Brunel:** Yes, the road.

**Q:** Is that the mode of passage you have adopted?

**Brunel:** The ascent[?] by the simplest mode on examination appeared to go beyond the Mendip Hills, between them and the Severn, round Bleadon and through Uphill.  

A mention of 'the present road' suggests that the route requiring a tunnel would have run from Banwell and close to Winscombe before tunnelling through the col between Winscombe Hill and Shute Shelve Hill, on the line of the Bristol to Exeter road between Winscombe and Cross. A possibly more promising route, but one which had no road worth mentioning near it, would have been to tunnel from Banwell into the valley of the Lox Yeo and follow the river down between Loxton Hill and Crook Peak to Loxton; this passage through the Mendips formed part of the route of the three canals proposed between the Avon and Taunton, mentioned above, for which parliamentary plans were deposited between 1794 and 1810.

From a point about ¾ mile south of Uphill the line runs straight, level and due south for about six miles across the mid-Somerset Levels to Highbridge, crossing en route the river Axe, the Bristol road of the Bridgewater Trust to the north of Highbridge,

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1 TPA HC/CL/PB/2/11/31, evidence taken before the Commons Select Committee on the Direct Northern Railway Bill, William Gravatt, 8 Jul 1845, pp.223-226.
2 TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.4-5.
and the river Brue about 500yds. upstream of Highbridge. The northern end of the alignment would have been governed by the Committee's decision to adopt a line which crossed the Axe at a suitable site for wharfs; presumably the southern end was fixed such that the line passed as close as possible to the hamlet of Highbridge without impinging on the navigable river Brue. The alignment then shifts 10 degrees towards the west for the next six miles, clipping the end of the Polden ridge in a short cutting at Dunball, enabling it to maintain its straight course to Bridgwater without crossing the Parrett. En route it crosses the Bath road of the Bridgwater Trust. The line then takes a series of long-radius curves towards Taunton. It passes half a mile to the east of Bridgwater and crosses the Parrett about a mile upstream of the town. During his examination before the Commons Committee considering the B&ER Bill Brunel agreed that in general the approaches to the major towns had been 'regulated by the express wishes of the persons interested.' However, at Bridgwater 'the main line was governed by other circumstances.' He did not elaborate on the 'circumstances' but topography would certainly be one of them: the line passes the town on the opposite side of the Parrett and land in this area could be more easily purchased.\footnote{1}

From Bridgwater towards Taunton the line follows the general route of the Bridgwater & Taunton Canal, across North Moor and through the Lyng ridge at Outwood, where it crosses the Glastonbury road of the Taunton Trust, to get into the Tone valley. It then rises at 1 in 1200 for the next six miles, running between the canal and the Tone, passing under the Bridgwater road of the Taunton Trust and cutting across a meander of the Tone at Bathpool, before crossing the canal at Obridge. The gradient steepens to 1 in 480 for 4½ miles to Trefusis, passing half a mile to the north of Taunton and closely following the course of the Tone, being never more than half a mile distant from either the river or the Grand Western Canal. A close approach to Taunton, though considered desirable by both the B&ER and the local interests, was precluded by the presence of houses and other property: 'Of course the persons whose property is affected would decidedly object to such an arrangement.'\footnote{2} Richard Ball, the Taunton Committee member, and his Taunton colleagues accepted that the line as laid down was as close to the town as it could possibly be, and it seems that at this stage they did not feel it was

\footnote{1}{TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.1, 15. 'We have carried a Branch through the brick fields and the property is easily got into.'}

\footnote{2}{Ibid, I.K. Brunel, 17 Mar 1836, pp.2, 15-16.}
appropriate to press for a branch towards the town.¹ From Trefusis the line steepens to 1 in 168 for the next 3½ miles to Westford, crossing the GWC and the Tone and passing half a mile to the north of Wellington.

The survey was said to be completed to a point about 1½ miles upstream of Wellington on 18 November. Presumably, at that time it was thought that the line would cross the Blackdowns on the general alignment taken by the GWC, which by and large follows the general course of the Tone valley up to Greenham. Here the Tone valley makes a sharp turn from roughly north-south to southeast-northwest, whereas the GWC continues generally southerly, climbing up out of the Tone valley to cross the summit of the Blackdowns at the lowest col in that area, to get down into the valley of the Lyner and thence via Sampford Peverell and Halberton to Tiverton. However, the line that was finally selected for the B&ER diverges from the general line of the GWC at Nynehead. The alignment between Bradford and Wellington was governed to a large degree by a sharp turn in the existing high embankment which carried the GWC around the southern part of Sanford's ornamental park and it is at this point that the B&ER line turned to get into the valley of the Westford Stream, a tributary of the Tone. The line steepens to 1 in 100 to follow the stream up to Marlands, whence it leaves the valley and runs over the summit through a 1560yds. long tunnel under Whiteball Hill into the Lyner valley and thence, after about five miles, it gets into the Culm Valley at Cullompton; an assistant engine would be needed between Wellington and the summit.

Brunel later gave his own account of the reasoning behind the adoption of the Cullompton line:

If the main line were to pass through Tiverton we must take into consideration the manner of proceeding after leaving Tiverton as well as approaching it, and that would involve our being on low ground at Tiverton so as to be able to get down the valley to Exeter. To get into low ground at Tiverton would involve our coming down the valley of the Stream which leads to Tiverton, and going back [ie. towards Taunton] involves a mode of crossing a summit level which on our taking the sections which were taken at the time were found to be very difficult … A great many lines of sections were taken to enable us to go passing through Tiverton but the principal difficulty arose from the manner in which it cut us off entirely from Cullompton and that District, whereas by taking the Cullompton District in the direction of the main line we could with tolerable facility make a branch to Tiverton … At present we make a much easier and better main line to Exeter … But to have gone through

¹'We are assured that the line was ultimately laid down as approved by Mr. Ball, and in the way least likely to interfere with property': Osborne & Ward to Messrs. Beadons, 7 Mar 1836; SRO DD/DP 69/6; C. Savery to same, 9 Mar 1836: ibid.
Tiverton … we should have had all the high ground between us and Cullompton.¹

2.4 Developments leading to the passage of the B&ER Act

On 11 December 1835 the Board of 'Provisional Directors' ordered Brunel to prepare a suitable plan of the line to supplement a new prospectus.² An undated prospectus which appears to date from this period included a simplified map of the line [Map 2.3] and stated that the total estimated cost of constructing the line would not exceed £1,400,000.³ Two undated pages of estimates in one of Brunel's general calculation books, headed 'Bristol & Exeter railway – rough estimate,' and totalling £1,382,200, probably also relate to this episode.⁴

In mid-December 1835 Brunel and two Directors travelled down to Nynehead to meet Sanford, who told them he had experienced great inconvenience from the unfinished state in which the GWC had been left where it passed through his estate, and he now wanted an assurance that the railway works through his ornamental park would be undertaken and completed immediately after the passing of the Act. Satisfied by Brunel's unrecorded explanation and by the Directors' assurances, he promised his support 'in and out of Parliament'; indeed he later deputised for William Miles MP, chairman of the Commons Committee on the B&ER Bill, during Miles' occasional absences.⁵ The B&ER deputation visited other influential landowners, tradesmen and bankers in Wellington, Taunton and Bridgwater, with generally highly satisfactory results:

… as we found all the parties deeply impressed with the National importance of the Undertaking, and with a conviction that no successful opposition could be offered to our Bill in its passage through Parliament.⁶

¹ TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.25-29 passim.
² TNA/PRO RAIL 75/1, Board Minutes, 9,11 Dec 1835.
³ Bristol and Exeter Railway (Bristol, undated c.1835), preliminary circular describing the line and its prospects, with map.
⁴ BUL DM 162/25, Brunel's 'General Calculation Book,' pp.52-53, undated [circa Dec 1835].
⁵ Osborne & Ward to O. Hunt, 21 Dec 1835: BRO 12167/31; R.B. Ward to William Miles MP, 30 Jan 1836: ibid; TNA/PRO RAIL 75/1, Board Minutes, 22 Dec 1835, 2 Jun, 1 Jul 1836. Miles' absences were due to his attendances at Quarter Sessions '& Mrs. Miles's accouchement': R.B. Ward to Lord Granville Somerset, 30 Jan 1836: BRO 12167/31.
⁶ TNA/PRO RAIL 75/1, Board Minutes, 22 Dec 1835. They had 'most interesting conversations' with, inter alia, Colonel Tynte MP and William Horsey, who was later to supply vast quantities of bricks for the Whiteball Tunnel.
It is very likely that during this tour Brunel was approached by the promoters of the Parrett Navigation, requesting him 'to devote a couple of days to an inspection of the River'\(^1\) (see Chapter 6).

Regrettably, the surviving documentary evidence of what must have been an extensive consultation and negotiation exercise is scant and patchy. The principal surviving sources for this period are Brunel's private letter books and the letter books of Osborne & Ward. In the latter there are later passing references to a 'Turnpike Letter Book,' an 'Agents Letter Book' and a 'Society of Merchants Letter Book'; these additional letter books have not been located, but it seems reasonable to assume that Osborne & Ward maintained these and other separate letter books for specific correspondents or topics where the volume of correspondence justified it.\(^2\)

Hepple has concluded that Brunel decided upon a general policy on the B&ER of 'non-intervention and acquiescence to landed requests,' and has instanced an unreferenced case where, he said, Brunel 'avoided an estate at Bridgwater at the request of a landowner.'\(^3\) No evidence to support that statement has been found. On the contrary, Colonel Tynte, who owned property on the line at Chelvey and other property near the line at Bridgwater, wanted the B&ER to buy some of the latter although it was not required for constructing the line; as it happened, Brunel realised that the Bridgwater property would be useful to the B&ER anyway.\(^4\) Sanford was treated with exceptional liberality in terms of the accommodation works at Nynehead, but of course his political and local influence was exceptional; and anyway it was actually the deputation of Directors, not Brunel, who assured him that the Board would sanction his requests. The only serious instance of dissent encountered by the deputation in December 1835 came

\(^{1}\) SRO D/RA 3/3/5/1, draft brief for the promoters of the Parrett Navigation Bill (further powers), undated [May 1839], p.5.
\(^{2}\) Osborne & Ward to J.B. Badham, 24 Oct 1839: BRO 12167/33; same to unknown recipients, 5 Feb, 18 Mar 1840: ibid.
\(^{4}\) Robert Osborne to Brunel, 7 Jan 1836: BRO 12167/31. In Osborne's words: Col. Tynte does not quite like cutting up Chelvey, but he says in these things we (meaning both parties) must give and take - he thereby means that if he gives in Chelvey we must take from him in Bridgewater. This is an odd explanation of the meaning of the words give & take, but the correct one in this instance. Brunel advised Osborne that Tynte's fields in the area bounded by the Parrett, the main line and the proposed Bridgwater branch would in fact be valuable to the B&ER 'from their contiguity to the Railway, as Brickfields, Wharfs, etc.': Brunel to Robert Osborne, 8 Jan 1836: BUL PLB 1.
from one of Sanford's neighbours, the Reverend William Proctor Thomas, who was
annoyed that the line cut through his pleasure grounds and in particular through a pond
where he intended to install a water wheel to pump water to his house.¹ He
acknowledged it was unlikely that his opposition to the Bill would succeed, and the
deputation reported that he told them he therefore felt he was 'at our mercy.' They
promised they would recommend to the Board that Brunel be instructed to try to
accommodate him.² Dissatisfied with Brunel's initial proposals, Thomas organised
objections and other obstructive tactics, 'for the protection of the Landed Interest.' He
was finally appeased at the end of April 1836 by the promise of substantial
accommodation works and Brunel's agreement to deviate the line as far as possible.³
Again, it was the deputation who promised Thomas they would recommend to the Board
that Brunel be instructed to accommodate him.

There is evidence that at least three dissenting landowners in North Somerset
were also 'accommodated' at that time. The first was John Nattriss, a Bristol
confectioner, near whose pond and ice-house, the largest in the Bristol area, the line
passed at Bedminster. Brunel told Robert Osborne he could easily 'accommodate'
Nattriss – he could leave the ice-house untouched or make him another elsewhere.⁴
The second dissentient was the Reverend James Sparrow who owned much of the land in
Long Ashton and Flax Bourton through which the parliamentary line ran and whose
assent, Osborne warned Brunel, was vital. Sparrow assented on 1 February 1836 when
Brunel agreed to move the railway and the adjacent turnpike road as far from Sparrow's
house in Long Ashton as the parliamentary deviation allowed; in the event, Brunel
would have had to move the line anyway for engineering reasons, as will be seen later.⁵
Thirdly, the provisional Board agreed that the B&ER would pay £5,000 to Charles

² Deputation's report to the Board, 22 Dec 1835: TNA/PRO RAIL 75/1, Board Minutes.
³ BUL PLB 1, 8 Jan – 30 Apr 1836, passim; BRO 12167/31, 25 Jan – 19 Feb 1836, passim; Taunton Courier 10 Feb 1836. Noble incorrectly ascribed this episode to the construction of the GWR: Noble C.B., op.cit., p.136. Buchanan recorded in one place the episode as occurring on the GWR, and in another as on the B&ER: Buchanan R.A., Brunel, pp.68n, 155n.
⁴ Robert Osborne to Brunel, 7 Jan 1836: BRO 12167/31; Brunel to Robert Osborne, 8 Jan 1836: BUL PLB 1. In the event, a purpose-built accommodation bridge was agreed on which had a flight of steps running down in a tunnel behind the abutment, from an entrance chamber in the centre of the carriageway at the crown of the arch to Nattriss' ice pond.
⁵ Robert Osborne to Brunel, 7 Jan, 1 Feb 1836: BRO 12167/31. The description of the site fits Gatcombe Court, near Ashton Watering.
Payne, putative Lord of the Manor of Uphill, if it was found necessary to cut through a paddock that he owned close to the proposed Uphill cutting, in consideration of the withdrawal of his opposition. None of these Somerset examples appears to have been the consequence of a 'policy of non-intervention and acquiescence to landed requests,' although it is certainly apposite in the Devon case Hepple cites, which relates to the influential landowners along the twelve miles from Cullompton to Exeter.

On 11 January Brunel set out his proposals for mitigating Sanford's 'very natural anxiety' about the line through his park. The line would not deviate more than ten yards from the parliamentary line through the park, and the bridge over Nynehead Court drive was to be a stone bridge of the same style as the existing GWC aqueduct 'but superior in every respect ... and it shall if desired include a lodge in the abutments or wing walls.' The bridge would be commenced in the April following the passing of the Act and be completed within three months.¹

During late-January and early-February 1836 Osborne & Ward sought the formal consent of the various parties responsible for the watercourses and turnpike roads that were crossed by the line. A few letters and minutes referring to this exercise have been found but little else has survived in either the B&ER records or those of the other parties; it has already been noted that a passing reference to a 'Turnpike Letter Book' indicates that the B&ER solicitors were apparently then maintaining such a separate book, now lost. The turnpike roads crossed by the line are shown in Map 2.4. There is a single copy letter to a Turnpike Trust in the general letter book maintained by Osborne & Ward at this stage, in which the Taunton Trust's Clerk was asked for the date of the Trustees' next meeting so that one of the solicitors could attend to explain the impact of the B&ER on the Taunton roads. In the event, the Trustees resolved to assent to the proposals, on condition that they incurred no expense.² Regrettably, the contemporary records of the other two Trusts whose roads in Somerset were also intersected by the line appear not to have survived,³ but there are a few passing references in the B&ER

¹ Brunel to E.A. Sanford, 11 Jan 1836: BUL PLB 1.
² Osborne & Ward to W. Kinglake, 27 Jan 1836: BRO 12167/31; SRO D/T/ta 10, Taunton Turnpike Trust Minutes, 2 Feb 1836.
records, certainly to the Bristol Trust and probably to the Bridgwater Trust. In particular, Robert Osborne attended a meeting of the Bristol trustees and their Surveyor, 'Mr. McAdam,' in early February 1836 to discuss the crossing of the Weston Road at Ashton Watering, and the nearby associated alteration that had just been agreed with James Sparrow. Despite Osborne's opposition, the trustees resolved to accept McAdam's recommendation that they should make the alteration themselves immediately, on the ground that, should the agreed alteration not be carried out by the B&ER for any reason, then the construction of the railway would effectually prevent the trustees making it afterwards.

The Osborne & Ward general letter book contains copy letters similar to that to the Taunton Turnpike Trust, addressed to the Clerks of the Grand Western Canal, the Bridgwater & Taunton Canal, the Glastonbury Canal and Bristol Corporation, but no further correspondence with these parties at this stage has been found. There is rather more in the way of accessible documentary evidence in the case of the Commissioners of Sewers for Somersetshire. Brunel was too busy elsewhere to accompany Robert Osborne to Wrington on 27 January 1836 to meet the Commissioners, 'a crotchety body [who] are, besides, conservators of the River Axe.' As far as the B&ER's works were concerned generally, the Commissioners' stated objective was to prevent any injury to

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1 For instance, under examination by the Commons Committee on the B&ER Bill Brunel was asked how it was intended to cross 'the Turnpike Road and the Moors the other side of Bridgwater,' unfortunately without stating to which side of Bridgwater this referred. He replied: We have arranged with the Trustees of the Turnpike road to raise their road … with an easy inclination to be carried over the railway, we arranged with respect to all those Roads with the Trustees, one of whose body came up to Town about it: TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, pp.13-14.

2 Robert Osborne to Francis Ward, 4 Feb 1836: BRO 12167/31. It could have been either John Loudon McAdam or his son, also John Loudon, who met Osborne: they shared the General-Surveyorship of the Bristol Turnpike Trust from 1824 until McAdam senior's death in November 1836, when his son took over as sole General Surveyor: Reader W.J., Macadam: The McAdam Family and the Turnpike Roads 1798-1861 (1980), pp.51, 64, 76.

3 Osborne & Ward to Frederick Leigh (GWC), 29 Jan 1836: BRO 12167/31; same to Isaac Cooke & Sons (B&TC), 29 Jan 1836: ibid; same to R.P. & S. Pratt (GC), 6 Feb 1836: ibid; same to Brice & Burges (Bristol Corporation), 3 Feb 1836: ibid.

4 Robert Osborne to Brunel, 25 Jan 1836: BRO 12167/31; Brunel to Osborne, 26 Jan 1836: BUL PLB 1; SRO D/RA 1/2/3, Sewers Sessions Orders for the Northern Division, 27 Jan 1836; SRO D/RA 1/7/2, Sewers Sessions Orders for the North Western Division, 28 Jan. 1836.
MAP 2.4  TURNPIKE ROADS CROSSED BY THE B&ER IN SOMERSET

Base map: Bristol and Exeter Railway (Bristol, undated c.1835), preliminary circular.

<table>
<thead>
<tr>
<th>Site</th>
<th>Road [alias]</th>
<th>Turnpike Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>London Road [Bath Road]</td>
<td>Bristol</td>
</tr>
<tr>
<td>2</td>
<td>Bridgwater Road</td>
<td></td>
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<tr>
<td>3</td>
<td>Ashton Road [Weston Road]</td>
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</tr>
<tr>
<td>4</td>
<td>Wells Road [Mark Road]</td>
<td>Wells, Highbridge &amp; Cheddar</td>
</tr>
<tr>
<td>5</td>
<td>Bristol Road [Bridgwater Road]</td>
<td>Bridgwater</td>
</tr>
<tr>
<td>6</td>
<td>Old Bridgwater Road [Pawlett Road]</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bath Road [Bridgwater &amp; Bath Road]</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Langport Road</td>
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<tr>
<td>9</td>
<td>Burrowbridge Road</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Bridgwater Road</td>
<td>Taunton</td>
</tr>
<tr>
<td>11</td>
<td>Kingston Road</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Staplegrove Road [Minehead Road]</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Exeter Road</td>
<td></td>
</tr>
</tbody>
</table>
the navigation and drainage under their jurisdiction.¹ They were particularly concerned about the proposed bridge which crossed the Axe about 1½ miles downstream of the upper limit of the navigation, and Osborne assured them that Brunel would soon be able to give them sufficient details to enable them to judge its effects.² Brunel missed a reconvened meeting at the King's Arms, Cross, on 10 February,³ but attended a Sewers Court at Axbridge two days later. The previous week the Bristol Mirror carried a notice advertising the meeting, and in the 'News' section of the same issue there was an anonymous, but unsettling, paragraph:

   We recommend the friends of the Bristol and Exeter Railway, who are Commissioners of Sewers ... to attend [the advertised meeting] when an attempt is likely to be made by some persons locally interested to delay, at least, the completion of the measure.⁴

The Sewer Sessions minutes give no indication of any such attempt, and Brunel noted in his diary, '... might just as well have been 100 miles off for any good I did.'⁵ A committee of 18 Commissioners was appointed with authority to negotiate terms and to consent to the Bill on condition that the B&ER agreed to set up a guarantee fund for the repair of damage done to the drainage and to introduce other protective clauses into the Bill.⁶ They appointed as their Engineer John Millard Tucker, whom they had previously engaged from time to time to design their own works and to protect their interests in connection with works being carried out by other parties.⁷ Their powers to raise funds

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¹ SRO D/RA 1/7/2, Sewers Sessions Orders for the North Western Division, 12 Feb 1836.
² Osborne & Ward to Peter Fry, 4 Feb 1836: BRO 12167/31; same to Brunel, 5 Feb 1836: ibid.
³ It is probable that Townsend attended in place of Brunel, with an instruction to 'take care, whilst you conciliate the Commissioners, not to pledge Mr. Brunel definitely to anything': R.B. Ward to Brunel, 7 Feb 1836: BRO 12167/31; same to Brunel, 7 Feb 1836: ibid; same to Robert Osborne, 9 Feb 1836: ibid; Osborne & Ward to William Townsend, 9 Feb 1836: ibid.
⁴ Bristol Mirror 6 Feb 1836, emphasis as in the original; F.R. Ward to Robert Osborne, 6 Feb 1836: BRO 12167/31.
⁵ BUL DD 1836, Brunel's Office Diary, 12 Feb 1836.
⁶ SRO D/RA 1/7/2, Sewers Sessions Orders for the North Western Division, 12 Feb 1836.
⁷ SRO D/RA 1/7/1, Sewers Sessions Orders for the North Western Division, 1790-1825 passim; SRO D/RA 1/2/3, Sewers Sessions Orders for the Northern Division, 1834-1886 passim; SRO D/RA 1/4/1, Sewers Sessions Orders for the Midland Division, 1826-1881 passim; TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, J.M. Tucker, 17 Mar 1836, pp.7-8. In March 1818 Tucker (fl.c.1803-fl.1841) applied unsuccessfully for the post of County Surveyor of Somerset, at which time he stated he had spent 11 years as principal clerk to the land surveyor and drainage
towards any public works were severely limited and they were prohibited from 'applying a farthing' to any works carried out by the B&ER:

They want a clause introduced similar to a clause introduced in the Bristol and Taunton Canal Bill … and similar to a clause which was inserted in the Glastonbury Canal Act … calling on the parties … to make an investment in some of the public funds of certain sums of money on which the commissioners were to have a power to draw, to pay any expence to be incurred in repairing the damage done to the Sewerage by the Works to be constructed.¹

Under the terms of a series of protective measures agreed by Tucker and Brunel the B&ER would construct public wharfs on the seaward side of the Axe bridge, connected by new roads to Bleadon and Lympsham. Tidal sluice gates would be erected under the bridge, giving 30ft. of clear waterway width. In addition, the B&ER would invest £2,500 in 3% consolidated annuities, which would be available for carrying out repairs and alterations of any works constructed by the B&ER which the Commissioners felt were detrimental to rivers or water courses under their jurisdiction; the sum would reduce to £1,000 two years after completion of the railway within Somerset.²

The main line as laid down on the deposited plan crossed the Parrett about a mile upstream of Bridgwater Bridge, close to Huntworth Basin where the B&TC entered the Parrett at that time; a proposed B&ER Bridgwater branch would require a second crossing of the Parrett about 300 yards above the bridge.³ Brunel later stated that he discussed his proposals for the Parrett bridges with the 'Conservators' and that he had met their Engineer with whom he would agree protective clauses, covering the bridges, to be inserted in the Act. He identified neither the 'Conservators' nor their Engineer.⁴ The B&ER Bill as-printed made no direct mention of the bridges required at these major

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¹ TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, J.M. Tucker, 17 Mar 1836, pp.8-9.
² 'A Bill for making a Railway from Bristol to Exeter, with Branches to the Towns of Bridgwater in the County of Somerset, and Tiverton in the County of Devon,' undated [c.1836]. The Commissioners later authorised payments totalling £1,442 2s. 7½d. 'towards the expence of introducing clauses into the Bristol and Exeter Railway Act': SRO D/RA 1/2/3, Sewers Sessions Orders for the Northern Division, 20 Oct 1837; SRO D/RA 1/7/2, Sewers Sessions Orders for the North Western Division, 11 Nov 1836, 13 Jan 1837.
³ SRO Q/RUp 126, 'Plan and section of the Bristol & Exeter Railway,' deposited 30 Nov 1835.
⁴ TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836, p.12.
river crossings, or indeed at any of the other river and canal crossings. The Bill did however contain provisions for constructing branches to Bridgwater and Tiverton.

In early March 1836 some Taunton interests asked for a branch to their town. This request surprised the Bristol Committee, as they had always considered the line passed so close to Taunton that a branch was unnecessary:

> On mentioning to Mr. Brunel what Mr. Ball states to have passed between him and Mr. Gravatt we are assured that the line was ultimately laid down as approved by Mr. Ball, and in the way least likely to interfere with property ... if the town of Taunton hereafter requires a branch to be made actually into it ... there will be no objection on the part of the Co. to make one.\(^2\)

This issue was picked up later in the month during Brunel's examination before the Commons Committee considering the B&ER Bill.\(^3\) He gave his evidence on 17 and 18 March, when he described the proposed route and explained the reasons for selecting that course.\(^4\) He travelled down to the West Country on 19 March so that he could make an early morning visit to Taunton on the 20th 'for the express purpose of satisfying myself again of the practicability of constructing a branch.' He pointed out that it was too late to include the measure in the present Bill, and confirmed to Richard Ball that a branch would be made if there was enough local interest.\(^5\) He also visited Wellington and Bridgwater on the 20th, before returning overnight to Bristol where he spent the following three days redrafting clauses in the B&ER Bill.\(^6\) In the event, the B&ER Act

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1 'A Bill for making a Railway from Bristol to Exeter, with Branches to the Towns of Bridgwater in the County of Somerset, and Tiverton in the County of Devon,' undated [c.1836]. In SRO D/P/hun 20/2/1 there is a copy addressed to the parish clerk of Huntspill, 'for the inspection of all persons concerned therein.'

2 Osborne & Ward to Messrs. Beadon, 7 Mar 1836: SRO SS/DP 69/6; C. Savery to same, 9 Mar 1836: ibid. Richard Ball was a member of the 'Provisional Committee' listed in the Prospectus, and was later one of the original 16 elected Directors of the B&ER.

3 TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17 Mar 1836; TNA/PRO RAIL 75/259, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 18 Mar 1836; BUL DD 1836, Brunel's Office Diary, 17,18 Mar 1836.

4 TNA/PRO RAIL 75/258, evidence taken before the Commons Committee on the B&ER Bill, I.K. Brunel, 17,18 Mar 1836; BUL DD 1836, Brunel's Office Diary, 17,18 Mar 1836.

5 BUL DD 1836, Brunel's Office Diary, 19,20 Mar 1836; Brunel to Richard Ball, 20 Mar 1836: BUL PLB 1.

6 BUL DD 1836, Brunel's Office Diary, 20-23 Mar 1836.
received the Royal Assent on 19 May 1836, authorising the Company to raise £1,500,000 in £100 shares, and to borrow a further £500,000.¹

Frederick Ricketts chaired a meeting of the B&ER Directors on 2 June 1836 when Brunel was appointed as the Company's Engineer, Thomas Osler as Company Secretary, Osborne & Ward as joint Solicitors with Savery & Clarke in Bristol, and Swaine, Stevens & Co. as the London Solicitors.² Ricketts and three other Directors were authorised to agree Brunel's terms of employment with him. On 14 June Ricketts reported to the Board that Brunel, in whom was to be vested 'exclusive responsibility to the Directors of this Company,' should receive a yearly salary of £1,000 and authorised to engage an 'Assistant or Resident Engineer' at a salary of £750.³ The GWR Directors acceded to Brunel's request that he should be allowed to appoint Gravatt as his B&ER assistant 'under the peculiar circumstances of the case,' but with the unusual and potentially contentious proviso that they would reserve to themselves the power to call Gravatt back should Brunel be unable to give the GWR his personal superintendence.⁴ There is no evidence that the GWR Directors ever felt it necessary to invoke the proviso. However, it does suggest that they held Gravatt in high esteem and, in similar vein, the B&ER Directors reported to the first General Meeting of the Company:

To those who are acquainted with the professional qualifications of Mr. Gravatt, and the extent to which the able and rapid Survey in November last may be ascribed to his indefatigable energy and perseverance, it will be a matter of no ordinary satisfaction that he has accepted the Appointment of Resident Engineer.⁵

No record has been found of the official commencement date for Gravatt's appointment; however, he was paid £347 for the period ending 31 December 1836 which, based on his actual salary of £750, equates to a start in mid-July 1836.⁶

Just before he took up his post on the B&ER Gravatt's odd behaviour was once again documented. He was a guest at the dance which followed Brunel's marriage to

¹ 6&7 Will. IV, c.36: An Act for making a Railway from Bristol to Exeter, with Branches to the Towns of Bridgwater in the County of Somerset, and Tiverton in the County of Devon (19 May 1836). Also see MacDermot E.T., op.cit., pp.125-127.
² TNA/PRO RAIL 75/1, Board Minutes, 2 Jun 1836.
³ Ibid, 14 Jun 1836, emphasis as in the original.
⁴ TNA/PRO RAIL 250/97, GWR Bristol Committee Minutes, 21 Jun 1836; BUL DD 1836, Brunel's Office Diary, 21 Jun 1836.
⁵ TNA/PRO RAIL 75/1, Board Minutes, 1 Jul 1836; TNA/PRO RAIL 75/49, Minutes of General Meeting, 2 Jul 1836.
⁶ TNA/PRO RAIL 75/95, B&ER Journal of Transactions, 31 Dec 1836.
Mary Horsley on 5 July. Mary's younger sister, Fanny, described for Mary's benefit the happenings after the couple's departure for a fortnight's honeymoon:

The evening went off perfectly. The players excellent; light, flowers, ice, gentlemen and fresh air in abundance ... numerous were the flirtations al fresco on the occasion – Sophy [Mary's youngest sister] and I were away busy introducing, so we did not dance a great deal ourselves ... Pray tell Isambard that we all liked all his friends extremely except Mr. Gravatt, who I think partakes of the wild beast. Sophy and I, however, paid him every attention, so don't frighten yourself about it, and from what Papa says I think he must have half emptied his snuff-box.¹

¹ Fanny Horsley to Mary Brunel, 8 Jul 1836: BUL DM 1284.