

The  
**VIRTUAL MUSEUM**  
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**LANCASHIRE & YORKSHIRE RAILWAY**

Operational Documents & Pamphlets.

1874

Specification &c. and Tendering Forms  
For the Construction Of the  
Huddlesden Branch.

(14 Pages)

HODDLESDEN BRANCH  
SPECIFICATION &c.

*Sturges Meers Esq*

## LANCASHIRE AND YORKSHIRE RAILWAY.

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### HODDLESDEN BRANCH.

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**Specification of the Works required in constructing a Branch Railway, commencing by a junction with the Blackburn, Darwen, and Bolton Line of the Lancashire and Yorkshire Railway, in the Township of Eccleshill, near Goose House Bridge, and terminating in the Township of Over Darwen, being in length about 2 miles 6 chains.**

The Plans, longitudinal Section, and detail Drawings of Bridges, Culverts, &c., show the principal Works required in the construction of the Hoddlesden Branch, of which the following is a list:—

- No. 1. PLAN.
- “ 2. SECTION.
- “ 3. BRIDGE FOR ECCLESHILL TURNPIKE ROAD.
- “ 4. OCCUPATION BRIDGE (THREE OF THIS).
- “ 5. CULVERTS.
- “ 6. PERMANENT WAY, &c.

The cost of completing all the works referred to in these drawings and in this specification must be included in the amount of the contractor's tender; for no extra charge will be allowed except in so far as it may become necessary to carry the foundation of any bridges, culverts, viaducts, or retaining walls below the levels shown upon the drawings; in such cases the work performed below that level will be paid for by the Company at the schedule of prices. And in cases where it may be found unnecessary to carry the foundations so deep as shown in the drawings, the quantity of work so saved shall be deducted from the contractor at his schedule of prices. The engineer of the Company only shall have power to make such alterations from the drawings as the work proceeds as he may consider necessary, and for which a proportionate payment or deduction will be made according to the schedule of prices accompanying the contractor's tender.

The Company will provide the land for the railway and slopes, ditches, and fences, also for stations and approaches, and permanent deviation of roads and watercourses, the possession of which the contractor will be put into with as little delay as possible; and all other land required for temporary use, either for diversion of roads, deposit of materials, spoil banks or side cuttings, or any other purpose during the progress of the works, the contractor must provide at his own cost (to obtain which he will be allowed to use the power of the Company's Acts of Parliament), and for which he must treat and agree with the owners, lessees, and

tenants (a copy of all such agreements to be given to the engineer of the Company), and restore the land as required by such agreements; and should any claims for payment be made in respect thereof, or for damage sustained, or from non-compliance with the Acts of Parliament or private agreements in reference to these or other works on the line to which the Company may be, or become liable, and which the contractor refuses, or neglects to pay, after the amount is duly ascertained, the Company may pay the amount of such claim, and debit the same with all legal or other expenses incurred thereby to the contractor, as paid him on account.

This contract will include all excavations, embankments, soiling and sowing or sodding slopes, also all bridges, culverts, drains, retaining and fence walls, level crossings, making approaches to bridges, and severed lands, and all deviations of roads or watercourses, ballasting and laying the rails, &c., points, and crossings for a single line of way; and the contractor must provide all materials, as stone, bricks, timber, cement, concrete, mortar, asphalt, &c., also all workmen, labourers, horses, carts, wagons, barrows, supports, scaffolding, centering, coffer dams, hoards and fences, pumping engines, and other machines, tools, &c., also watchmen, fires or lights, and whatever is necessary for carrying on the works, prevent trespass, and the protection of the public from injury; and he will also be required to keep all roads that may be interfered with clear from all obstructions for vehicles, horses, cattle, sheep, and foot passengers; also particular care must be taken that no earth, debris, or other material fall into the reservoirs, rivers, and watercourses, which must be allowed their natural flow and left free from all obstructions and defilement, and he must in all instances comply with any private agreements, or with the local Acts of Parliament in reference thereto, and also with the Lancashire and Yorkshire Railways (New Works and Additional Powers) Act, 1872.

On application at the engineer's office the contractor will be furnished with a printed form of Tender and Schedule, the former of which must contain the total amount of his tender and other particulars, the latter of which he must fill up with the prices at which his Tender is calculated, and at which all extras in the works or deductions are to be reckoned.

*Materials  
provided  
by the  
Company.*

The railway will be made for a single line of way. The Company will provide the rails, fish-plates, chairs, fastenings, points and crossings, and sleepers, which will be forwarded to the Over Darwen station, where the contractor must take them into his charge, and for which he will be held responsible, and must unload and remove them with all possible despatch (or he will be liable to the expense of demurrage), and deposit the said materials in a dry and secure place to preserve them from loss or damage, from whence he will be required to remove them to the works when they are ready to receive them, but must not use any of such materials (except as hereinafter stated) for temporary roads or for the transport of materials or soil while the works are in progress; and should the contractor make use of any of the above-named materials, the engineer of the Company shall have full power to stop the further use of the same, and charge the contractor with such a sum for compensation as he may consider equivalent to the damage sustained, or, at his option, to charge the whole prime cost of the same, with ten per cent. additional, to the contractor; the amount to be charged as money paid to him on account of his contract.



The whole of the works to be completed on or before the thirty-first day of January, 1875.

When the works are completed, and the engineer of the Company has certified that they are to his satisfaction, the contractor must uphold and keep in good repair for twelve calendar months the whole of the works from the date of such certificate.

The contractor will be required to execute a contract bond, with two approved sureties, for the due performance of the work, to be prepared by the solicitors of the Company, containing such stipulations, clauses, and provisions as the said solicitors shall think necessary; and the contractor and his sureties shall also enter into a joint and separate bond, in the penalty of £50. per week for each week beyond the aforesaid thirty-first of January, 1875, for the due fulfilment of the contracts.

The contractor will be required to send his agent, or clerk of the works, with the Company's surveyor, to take the measurement of the works together, and any disputes as to the measurement, either from time to time or at the completion of the contract, shall be referred to and be decided by Mr. Meek, the Company's engineer. The works are to be measured up each calendar month, and upon such measurements being mutually agreed upon, the certificate for the month will be based.

All assistance required, and stakes, poles, or whatever may be necessary for measuring up or setting out the line, must be provided by the contractor.

The payments will be made each calendar month on the certificate of the Company's engineer; from the amount of each certificate a discount of two-and-a-half per cent. will be deducted, and a sum equal to ten per cent. will be retained by the Company until one month after the principal engineer of the Company has certified, in writing, that the whole of the works have been completed to his satisfaction, when one-half of the retention money shall be paid, and the other half held by the Company until the expiration of the twelve months the contractor is required to maintain the works, when the whole of the retention money will be paid on the engineer of the Company certifying, in writing, that the works are to his satisfaction; but no interest will be allowed thereon.

Any disputes as to payments which may arise shall be referred to Sir John Hawkshaw, the Company's consulting engineer, whose decision shall be final and conclusive.

As the works proceed, the engineer of the Company shall have full power to stop the use of any inferior materials, or the progress of any workmanship he may consider objectionable, and order the same to be removed from the works, and to be replaced by materials according to this Specification, and all such work to be rebuilt at the contractor's expense; and in the event of the contractor not complying with a written order within seven days, the engineer shall engage other contractors or workmen to take down and rebuild such objectionable work, or substitute the material required, and charge the cost of the same to the contractor, such amount to be allowed from his next payment as money paid him on account.

The contractor must provide and maintain the temporary bridges, roads, and approaches, and strong fences and guards, also watchmen and lights where required.

The sods (to the thickness of eight inches) and the soil along the line to be taken off, and laid carefully aside, to be used on the slopes of the railways and roads.

*Excavations.*

The excavations for the lines will be taken out to a formation level two feet below the surface of rails, as shown on the longitudinal sections; the formation level of the line to be ~~fifteen~~<sup>eighteen</sup> feet wide, with slopes on each side, having an inclination of one foot perpendicular to one and a half foot horizontal; the slopes to be soiled six inches thick and sown with grass seeds, or sodded with grass sods eight inches thick; at the bottom of each slope of the railway a ditch must be cut eighteen inches wide, and four inches deeper than the formation level, and the formation to be curved, so that each side shall be four inches lower than the centre of railway.

All springs, watercourses, or drains, that may be interfered with or cut through, must be preserved, and pipes or other communications be fixed, so as not to intercept their present use; and should any soaks, drains, or springs appear on the slopes, the contractor must provide, without extra charge, suitable drains to convey such water to the nearest outlet, and take every precaution to protect the said slope from injury, as he will be held responsible for all slips or damage occasioned thereby; and all drains or springs to be permanently restored to the owners thereof, or parties entitled thereto. In case of any material which, in the opinion of the engineer, is unfit to form the embankments occurring in the excavations, it must be removed from the works, and disposed of as the engineer shall direct, at the contractor's expense.

The contractor will be allowed to use material of a suitable quality that may be found in the excavations for building stone, ballast, or clay for making bricks, but not to excavate below the formation level of the railway without the consent of the engineer of the Company; and should any deficiency occur (by using such material to make up the embankments), the contractor must make up the deficiency at his own cost, from side cutting approved of by the Company's engineer, and afterwards fill up with earth such excavation to the surface where such material has been obtained.

The excavations for the foundations of bridges, walls, &c. must be taken out to the depth required, and when the walls are built and set, must be filled in with dry earth, and compactly rammed along each side of the wall.

*Embankments.*

The embankments of the railways and approaches shall be formed with side slopes of one foot perpendicular to one and a half foot horizontal, and made, when consolidated, to agree with the lines of the formation on the longitudinal section; the width at the formation, or two feet below the surface of the rails, to be eighteen feet; each embankment shall be uniformly carried forward, and filled up to the required level and form (making a due allowance for settling); and provision shall be made for taking away all water that may lodge on the surface or sink into the



earth, so as to endanger the stability of the bank, as the engineer shall direct, at the contractor's expense. Any material brought in larger pieces than one foot, must be broken to that size; and all materials used in the embankments must be approved of by the engineer.

Where a bridge or culvert is built or is building, and an embankment is to be formed, the earth must be wheeled in barrows, and gently tipped on each side of such bridges or culverts, and filled up uniformly, and cautiously rammed.

If the embankment has to be formed on a soft or peaty ground, such precautions must be taken as the engineer shall direct, at the contractor's expense, to ensure a firm basis.

When the excavations and embankments are sufficiently advanced and consolidated, the slopes must be neatly trimmed to the sizes and forms agreeing with the aforesaid inclinations, and the embankments laid over with sods eight inches in thickness, or covered with soil six inches thick, and sown with rye grass and clover seed, at the proper season of the year, in the proportion of twenty pounds of rye grass seeds and ten pounds of white clover seeds to each acre.

*Soiling and Sowing or Sodding Slopes.*

When the works are advanced to not less than five hundred continuous yards, and the engineer of the Company certifies that such portion is ready for the permanent ballasting, the rails, chairs, fish plates, sleepers, and fastenings, will be delivered to the contractor, at the Over Darwen station, to be laid, and he will be permitted to use them; but such rails must not be laid down for use nearer than one hundred yards from the face of any excavation, or the end of any embankment in course of formation.

*Terms on which the Materials provided by the Company may be used.*

When the embankments have to be formed upon sloping ground, the contractor must bench the slopes, to form horizontal beds for the banks to rest upon, at his own cost.

The bridges, retaining walls, &c. to be built with flat bedded rubble stones, the face work to be neatly snecked, to have ashlar stone imposts, springing stones, string-courses, voussoirs, and copings, and the arches to be of parpoint masonry, except where otherwise expressed.

*Bridges, &c.*

The width of the Company's land along the length of the railway to be enclosed on each side with seven-lined bullock wire fencing fastened to sawn larch or oak posts 6 feet apart, 7 feet long, 7 inches by 3 inches, let into the ground 2 feet 6 inches, and well rammed, to have spurs let into the ground where necessary.

*Wire Fencing.*

The level crossings to be paved, as shown on Drawing No. 6, with nine-inch sets, laid on a bed of gravel twelve inches deep,—the edge of the stones, next the inside of the rail, to be bevilled, to allow the uninterrupted passage of the flange of the carriage wheels. All occupation roads to have oak gates for carts, and a curbed swing gate for foot passengers at each end, as shown on drawing. The field gates to be of oak, the same as occupation roads, but without the side gates. All the gates to have strong posts, hinges, latches, and padlocks. The footways to have curbed swing gates of oak; all the woodwork to be kotted and primed, and, with the ironwork, to be painted with three coats of good oil paint.

*Level Crossings.*

*Culverts.* The culvert walls to be built of coursed wall-stone masonry, and the arches of parapoint masonry.

The arching and culverts over the brooks and watercourses must be as shown on the drawing No. 5, according to the size of arching, culvert, or drain required; all to be built on a firm bed, and the earthwork to be carried uniformly up on each side by barrows and cautiously rammed; all culverts above two feet diameter to have ends with wing walls, the tops of which are to follow the inclination of the slopes of the railway, and all culverts must be carried beyond the foot of the embankment, and laid in such a direction and length and with such inclination as may be required for the uninterrupted flow of the water. The contractor to do all excavations, and for the foundations, and deviations at his own cost.

The fences on severed lands to be taken away, and the ground levelled where required.

The timber along the line will be cut down and removed away, and the ground cleared for the contractor.

*Stone.* The stone to be used in the works of this contract shall be of a hard and durable quality, free from clay holes, flaws, or other imperfections, and each stone must be laid on its natural bed, and the quarry and quality of the stone must be approved of by the engineer of the Company before use.

*Ashlar Work.* The ashlar masonry shall be rough-pitched and drafted, and boasted on the beds and joints, which must be dressed to accurate planes; the joints to be even and close, and set in a full bed of mortar. The string-courses and copings, voussoirs, impost and springing stones, must be pitched on the face and drafted, and the copings to have semicircular tops. All ashlar work to be notched, sunk, weathered, and throated as required.

*Coursed Wall.* The coursed wall stone must be laid header and stretcher alternately, pitched on the face, with arris drafts to the quoins; the stones to be not less than eighteen inches long, twelve inches on the bed, and nine inches thick; the joints to be boasted and truly squared, a through stone to be inserted in every superficial yard of face, and each stone set in a full bed of mortar, and backed up with flat-bedded rubble masonry, and grouted.

*Parpoint Masonry.* The parapoint masonry for the arches must be hard flag stone, not less than nine inches long, eight inches broad, and four inches thick, trimmed to the radial joint, to be set in a full bed of mortar, and the joints beaten close, and to be neatly pointed underneath when the centering is removed.

*Rubble Masonry.* The rubble masonry shall be of large hard flat-bedded stones, not less than four inches in thickness, nor less than twelve inches on the bed, and laid horizontal, well squared on the joints, and neatly snecked on the face; all the stones to be laid to bond well together, with a through or bond stone in every superficial yard of face, not less than three feet long, eighteen inches wide, and twelve inches deep, where the wall will allow it, and to be the thickness of the wall when less than three feet thick; the stones to be well bedded in mortar with a mallet, and levelled every twelve or fourteen inches in height, and well grouted, and all to be neatly pointed on the face.



All rubble work, when used for backing, to be built as above described, and also the burr or dry walling, with the exception of the mortar. *Burr Walling.*

The cast-iron girders, road plates, and parapets to be made so that the dimensions shall agree when cold with the figures on the plans. The iron to be of such a mixture of metals the best adapted to the purpose; all the castings to be clean, with sharp arrises, and free from air holes, twists, or other imperfections, And shall be subjected to such test as the engineer of the Company shall direct, at the contractor's expense. *Ironwork.*

The bolts, nuts, and tie rods to be of the best scrap iron, all to be well threaded. *Bolts, &c.*

The iron work to have one coat of good red-lead oil paint before rusting, and two more after fixing of such colours as shall be directed. The iron work not to be painted until the engineer or some one appointed by him shall have inspected the castings, who must be apprized by letter three days previously. *Painting.*

The dry rubble lining behind the abutments and walls to be built up nine inches in thickness, as shown on drawings; the stones to bond well together, with open joints, to extend from the openings made for drains to the formation level and the length of the wall. *Dry Lining, &c.*

The bricks to form the small arches to be moulded to the radius of the arc, and all the bricks to be used in this contract must be hard, sound, of good shape, thoroughly burnt, and uniform in size and colour; to be well steeped in water, unless they have been made twelve months. *Brickwork.*

The concrete must be made of clean gravel and sand mixed with one-fifth of the proportion of Halkin Mountain lime, measured and combined dry, afterwards to be moistened and well mixed together and brought to a proper consistency, and immediately to be taken to the site, and thrown from a height not less than eight feet, as nearly as may be, to the place where it is required to be used; the runs to be shifted so as to require as little levelling as possible; the concrete to be brought up in layers of twelve inches in thickness. *Concrete.*

The mortar to be used throughout this contract must be made from the Halkin Mountain limestone, fresh burnt, and made only as required, of one-third lime and two-thirds sharp clean sand, measured dry, and mixed under rollers in a mill, with a proper proportion of water to make it of the required tenacity. No mortar that has set or been long kept will be allowed to be used. *Mortar.*

Roman cement or lias lime, if required by the engineer, in this contract, shall be of the best quality; all to be mixed fresh, as required for use. *Cement.*

All piles shall be of good sound Memel timber, free from flaws, shakes, and sap, and neatly squared; each pile to be hooped on the top, and shod with wrought iron, and shall be driven with a ram of half a ton weight having a fall of thirty feet, until ten blows of the ram will not move it more than half-an-inch; that portion of the pile in the ground must be charred or creosoted, as the engineer may direct. *Piling.*

Approach roads to have post and rail fencing where required, as shown on Drawing No. 6.

*Timber.* Timber used in this contract for permanent work shall be of Memel or Baltic of the best quality, sound, and free from sap, shakes, and knots, and creosoted where required by the engineer; and all three-inch planking to be grooved and iron-tongued, caulked, and covered with asphalte and gravel.

*Asphalte.* The tops of all arches and abutments of bridges, and inside and between the spandril walls to the level of the rails, must be covered with asphalte; the horizontal portion to be spread over bricks laid flat, or broken stones; the asphalte to be done by Messrs. George Atkin and Co., 40, Seel-street, Liverpool.

*Permanent Way.* When the excavations shall have been made to the form before described and properly drained, and the embankments sufficiently consolidated and made dry, a layer of ballast of broken stones must be deposited, one foot in thickness, and the width of the formation of the railway, and carefully levelled, and beaten with heavy beaters until it is considered sufficiently settled, when the sleepers must be laid in their places, and the rails and chairs firmly fastened thereto, and all made perfectly compact and steady at the proper gauge; then another layer of ballast of gravel, cinders, or broken stones, must be laid upon the first stratum of ballast and carefully trimmed with proper drains, to the satisfaction of the Company's engineer. The ballast, when settled, to be two feet in thickness, and as wide as the railway will allow, keeping clear of the side drains in cuttings and the edges of the embankments.

The rails to be laid to the gauge of four feet eight and a half inches clear. The rails will be in twenty-one feet lengths, fastened to cast-iron chairs with compressed wooden keys, and the joints will be secured by fish plates, with two bolts on each side of the joint; each joint to be left sufficiently easy to allow for the contraction and expansion of the rail. The rails before being laid must be made perfectly straight, and free from twists and windings, and laid in perfectly straight parallel lines, where required, and in the curves must be bent and worked to the arc of the curve. The chairs must be fastened to the sleepers with two wooden trenails and one iron spike to each chair, and must be fixed to the proper rise and inclination required by the curve of the rail. The sleepers will be of timber, creosoted, and laid crossways (except where otherwise directed), as shown on Drawing No. 6, about three feet two inches from centre to centre, but only one foot two inches apart at the joints.

At the completion of the railway works, all the straight portions, curves, and gradients must be made to agree with the lines marked on the Plans and Sections; and all rails, chairs, sleepers, trenails, keys, or spikes that may be damaged during the progress of the work, must be removed and replaced by the contractor with new material, or the contractor will be charged with the cost of the same.

TENDERS to be sent to the Directors, and (endorsed "Tender for the Hoddlesden Branch,") addressed to the SECRETARY OF THE COMPANY, at his Office, HUNT'S BANK, Manchester, by 10 o'clock on the morning of *Tuesday, the 11th day of August, 1874.*

# Hoddlesden Branch Railway.

TO THE DIRECTORS  
OF THE

## LANCASHIRE & YORKSHIRE RAILWAY.

GENTLEMEN, *We Duncan W<sup>c</sup>. Gregor & George Badman*

do hereby propose to make the Railway called the "HODDLESDEN BRANCH RAILWAY," from a Junction with the Blackburn, Darwen, and Bolton Line, in the Township of Eccleshill, near Goose House Bridge, and terminating in the Township of Over Darwen, the length being about 2 miles 6 chains, including the Alterations and Deviations of Roads, Streams, and Approaches to Bridges, with all Excavations, Embankments, Bridges, Retaining and Fence Walls, Culverts, Drains, Post and Rail and Wire Fences, Laying Rails and Sidings, Switches and Crossings, and other works complete, and to keep the same in repair for one year after the completion of the whole has been satisfactorily certified by the Company's Engineer, and to find and provide all the requisite Materials (except the Iron Rails, Chairs, Fish Plates, Sleepers, Switches, Crossings, and Fastenings), and execute the work in the most efficient manner, according to the Plans and Specifications exhibited at the Engineer's Office, Manchester, within the periods and upon the terms and conditions mentioned therein, for the sum of *Seven*

*Thousand five hundred & Sixty nine pounds 1/4*

and *we* have in the Schedule hereto annexed set forth the price of the different descriptions of work at which the aggregate amount of this Tender is computed.

AND in case this Tender shall be accepted, *we* hereby undertake to execute a Contract and Bond, to be prepared by the said Company, according to the terms of the Conditions and Specifications, within a fortnight from this date.

AND *we* propose *W<sup>c</sup>. W<sup>m</sup>. Dransfield* Contractor.  
of *Bankhall Street Liverpool.*  
*W<sup>c</sup>. Arthur Holmes* Contractor. and  
of *Bankhall Street Liverpool.*  
as *our* Sureties for the due performance of such Contract.

AND *we* do hereby undertake that *we* shall, within a week from this date, execute a Bond to be prepared by the said Company, conditioned for that purpose, in a penal sum equal in amount to twenty per cent. on the said sum of *£4569.1.4*

AND lastly, *we* do hereby undertake and agree, in case the said Contract and Bond shall not be executed by *W<sup>m</sup>. Dransfield* and *Arthur Holmes* the said two Sureties, within the time above mentioned, the said Company may not be bound by this Tender and Contract, but the same shall be absolutely void, in case the said Company shall so decide; nor shall they in that case be liable to any claim for or in respect of work then already done by *us* as part of the said Contract.

WITNESS *our* hand this *Eleventh* day of *August* 1874.

(Signed) *W<sup>c</sup>. Gregor & Badman*

*Over Darwen*



The Schedule referred to, containing a List of Prices at which the annexed Tender is computed, including all Tools, Implements, Materials, and Workmanship, and at which all additions or deductions are to be calculated.

		£.	s.	d.
The average price of Excavation, in rock, or other material, in any situation, including moving, barrowing, wagoning, tipping, punning, &c., at any lead.....at	per cubic yard	"	1	1½
Filling-in with earth and ramming .....	per cubic yard	"	"	6
Flat-bedded Rubble Stone Fence Walls, set in mortar .....	per cubic yard	"	15	"
Dry Rubble Stone Fence Walls, the coping only set in mortar .....	per cubic yard	"	12	"
Rubble Masonry set in mortar, including one face neatly snecked, the backing levelled up every 12 or 14 inches and grouted, with a through stone in every superficial yard of face .....	per cubic yard	"	14	"
Rubble Masonry set in mortar, with two faces neatly snecked, in parapets .....	per cubic yard	1	4	"
Rubble Masonry set in mortar, used as backing to bridges, foundations below ground, and back walls .....	per cubic yard	"	14	"
Parpoints, dressed and set in mortar, in regular courses .....	per cubic yard	1	"	"
Parpoints, dressed to the radial joint and set in mortar, in arches.....at	per cubic yard	1	5	"
Block-in-course Masonry .....	per cubic yard	1	"	"
Concrete, in any situation.....at	per cubic yard	"	11	"
Metalling the Surfaces of permanently diverted Roads, or Roads forming the approaches to bridges or level crossings .....	per cubic yard	"	5	"
Ballasting the Permanent Way, as described in the Specification .....	per cubic yard	"	2	"
Brickwork set in mortar, to inside, spandrels, and walls.....at	per cubic yard	1	2	"
Puddling with well-tempered clay, or marl puddle, in any situation ...at	per cubic yard	"	4	6
Dry Rubble Stone Linings, for the backs of walls and eyes to drains in viaducts .....	per cubic yard	"	10	"
Hammer-dressed Footings .....	per cubic foot	"	1	3
Skewbacks, chisel-dressed, boasted on the beds, and set in mortar ...at	per cubic foot	"	3	6
Springing Stones, chamfered and chisel-dressed ditto ...at	per cubic foot	"	3	6
Ditto ditto pitched and drafted ditto ...at	per cubic foot	"	3	"
Stringcourses and Copings, chisel-dressed, weathered and throated and set in mortar .....	per cubic foot	"	4	"
Stringcourses and Copings, pitched and drafted, ditto.....at	per cubic foot	"	3	"
Grid Stones, rebated for grids, 2ft. by 2ft. by 6in. ....at	per cubic foot	"	3	"
Thoroughly-seasoned Red Pine or Memel Timber, wrought and framed in any situation, fixed and completed .....	per cubic foot	"	5	"
Thoroughly-seasoned Red Pine or Memel Timber, in Bearing Piles, sawn and creosoted, hooped and shod with wrought iron, and driven...at	per cubic foot	"	4	6
Trimming, Soiling, and Sowing with Clover and Grass Seeds the slopes of the excavations and embankments, as described in the Specification .....	per square yard	"	"	1½
Paving Roads over Bridges with 6in. hard sets .....	per square yard	"	4	"
Lifting and Relaying Paved Roads, including Footpaths, &c.....at	per square yard	"	3	6
Lifting and Relaying Macadamised Roads, including Footpaths, &c....at	per square yard	"	3	"
3-in. Red Deal Planking, creosoted, fixed, and spiked, or bolted down...at	per square yard	"	11	6

		£.	s.	d.
3-in. Red Deal Planking, creosoted, grooved, iron tongued, and caulked...at	per square yard	"	12	6
Broken Stone and Bricks for Bed of Paving, 12in. deep.....at	per square yard	"	1	6
Gravel for Paving, 6in. deep.....at	per square yard	"	1	6
Ditto ditto 12in. deep .....at	per square yard	"	2	6
Asphalt on Arches and Spandrils (by Messrs G. Atkin and Co., 40, Seel- street, Liverpool) .....at	per square yard	"	4	6
Broken Stone for Asphalt .....at	per square yard	"	"	6
Bricks laid dry for Asphalt .....at	per square yard	"	2	"
2in. self-faced Yorkshire Flags, for cavities in abutments .....at	per square yard	"	4	"
3in. tooled Flagging for footpaths, squared and laid .....at	per square yard	"	4	6
4in. self-faced .....at	per square yard	"	10	"
6in. ditto .....at	per square yard	"	16	"
Cindering, 12in. thick, to footpaths .....at	per square yard	"	1	6
Pointing underside of Arches ..... at	per square yard	"	"	10
Painting, three coats, knotting, and priming..... at	per square yard	"	1	"
Asphalt and Spar for footways, laying and rolling .....at	per square yard	"	4	6
Radial Brick in small Arching, 9in. rim .....at	per square yard	"	6	"
Radial Brick Arching, 14in. rim .....at	per square yard	"	9	"
Building Drains and Culverts in Coursed Wall-stone, including Founda- tions, Fronts, Wing Walls, Puddling, Excavations, and all complete, of dimensions as under:—				
2in. Flags, top and bottom, brick sides—Drain 12in. by 12in. ....at	per lineal yard	"	12	"
3in. Flags, top and bottom, coursed stone ditto—Culvert 1ft. 6in. square, at	per lineal yard	1	"	"
4in. Flags, top and bottom ditto ditto—Culvert 2ft. by 1ft. 6in., at	per lineal yard	1	15	"
Coursed Wall-stone walls and parpoint { Culvert 2ft. opening.....at	per lineal yard	1	15	"
	arches ..... { Culvert 3ft. opening.....at	per lineal yard	3	10
Coursed Wall-stone walls and parpoint { Culvert 4ft. opening.....at	per lineal yard	4	10	"
	arches ..... { Culvert 5ft. opening.....at	per lineal yard	5	15
Coursed Wall-stone walls and parpoint { Culvert 6ft. opening.....at	per lineal yard	8	5	"
	arches ..... { Culvert 10ft. opening.....at	per lineal yard	20	"
Post and Rails for approaches to Bridges, and three coats painting ...at	per lineal yard	"	6	"
Post and Rails, deviated Roads, and two coats gas tarring.....at	per lineal yard	"	2	6
Post and Wire Rail Fencing along Railway, seven lines bullock wire, with sound sawn larch or oak timber—Posts 6ft. apart, 7ft. long, 7in. by 3in., fixed and well rammed .....at	per lineal yard	"	2	6
Laying a Single Line of Permanent way, with all necessary drains ...at	per lineal yard	"	1	6
Laying the Permanent Points and Crossings, including Drains, cutting the rails into proper lengths, fixing the crossings, points, lever boxes, &c., and making the whole complete.....at	per lineal yard	"	6	"
Cutting Side Drains, 18in. wide, 4in. deep, along slopes of Railway...at	per lineal yard	"	"	3
Tooled Curb Stones, 10in. by 10in., and laying .....at	per lineal yard	"	8	"
Lifting and Relaying Curb Stones .....at	per lineal yard	"	1	6
3in. Circular Tile Drains, socket-joints, bends, and junctions, including excavations, &c..... at	per lineal yard	"	1	6
6in. Circular Tile Drains ditto ditto .....at	per lineal yard	"	2	6
9in. Circular Tile Drains, socket-joints, bends, and junctions, including excavations, &c.....at	per lineal yard	"	3	6

		£.	s.	d.
12in. Circular Tile Drains, socket-joints, bends, and junctions, including excavations, &c..... at	per lineal yard	"	5	"
18in. Circular Tile Drains ditto ditto..... at	per lineal yard	"	9	"
24in. Circular Tile Drains ditto ditto..... at	per lineal yard	"	13	"
Cast-iron in Girders, Parapets, and Road Plates ..... at	per ton	12	"	"
Wrought-iron Tie Rods, Bolts, Nuts, &c..... at	per lb.	"	"	4
Cast-iron Grids ..... at	each	"	3	6
Maintaining and keeping in good order a Single Line of Permanent Way, for the period of one year after the completion of the whole of the Works ..... at	per mile	110	"	"
Field or Occupation Gates, including posts, hinges, spring latches, &c., and fixing, and three coats of painting..... at	per gate	4	"	"
Gates as before, and Curved Swing Gates ditto ditto..... at	per set	8	"	"
DAY WORK :—				
Masons ..... at	per day per man	"	8	"
Ditto Labourers ..... at	per day per man	"	4	6
Bricksetters ..... at	per day per man	"	8	"
Ditto Labourers..... at	per day per man	"	4	6
Carpenters ..... at	per day per man	"	4	6
Joiners ..... at	per day per man	"	4	6
Smiths ..... at	per day per man	"	4	6
Excavators..... at	per day per man	"	4	6
Labourers ..... at	per day per man	"	4	6
Plumbers and Glaziers ..... at	per day per man	"	8	"
Platelayers ..... at	per day per man	"	5	"
Paviors and Flaggers..... at	per day per man	"	4	6
Cart and Horse ..... at	per day	"	12	"

NOTE.—It is to be understood that only the *net measurement* in the above Work will be allowed, notwithstanding any custom to the contrary; the labour and workmanship of fixing complete to be included in the price.