

To the President and Directors
of the Camden and Amboy Rail-
road and Transportation Company:
Gentlemen:-

Having been appointed by you
in June last to make the nec-
essary examinations and surveys,
and to locate a line of Rail-
road between Camden and South
Amboy; and having organized
two corps to carry into effect
the objects contemplated by
your Company, I now respect-
fully offer you a brief report
in relation to our operations:
In order to obtain a thorough
knowledge of the country it
was deemed expedient to
conduct lines of levels over
different routes between Camden
and Amboy which appeared to
offer favorable ground for the
construction of a Railroad.
With this view lines were sim-
ultaneously traced from the
points of termination at
Camden and Amboy towards
Crosswick's creek.

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The first Route that was explored from Camden followed nearly the direction of the Mount Holly road to its intersection with the Eastern branch of Pensauken creek; the line then was conducted to the west of Moorestown, and crossed Rancokus creek below the mouth of Tallman's creek. Whence it was traced to the East of Slabtown, and the Black horse, crossing the Assisunk creek above the mouth of Parker's branch, and pursuing a Northerly direction it finally reached Crosswicks creek at a favorable position above Groveville for crossing that stream with a Bridge. The explored line from South Amboy to the position at Crosswicks creek followed generally the turnpike to a point about three miles beyond Spotswood; it then diverged Eastwardly and ascended through a favorable Ravine leading to the summit

of the Plain which divides the waters of the Manalapan branch of South River, from Cranberry brook a tributary of Millstone River; it then pursued a straight direction to Hightstown. Thence it followed the Turnpike as far as Centerville; and again diverging from that road, it was then conducted after uniting with the line from Camden at Crosswicks Creek, to the Mile Hollow or Ravine on the lands of Court de Surveillers thence to the wharf at Bordentown. From the knowledge thus obtained of the country between South Amboy and Bordentown, it was deemed inexpedient to prosecute any further survey for routes from Centerville towards Amboy, but rather advisable for the party under the direction of Lt. Cook to return to the latter place and take accurate cross levels of the ridges and spurs between the waters of the Raritan river

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and Cheesequakes creek, so as to ascertain the best method of overcoming the abrupt ascent on that portion of the Route. After a thorough examination of the country in every possible direction, and after surveying various trial lines at different inclinations, it was found that to obtain a graduated line even at Thirty or Thirty-five feet to the mile, it would be at the expense of a circuitous route and great increase of distance. It was therefore finally decided by the Directors as most advantageous to consider the first 150 chains of the line from the wharf at South Amboy as an inclined plane having a rise of 1 foot in 100 feet. - There being no other points on the Route to Centerville which presented any serious obstacle to the location of a Railroad, the party was accordingly directed to trace that much of the line

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until the further survey
between Croswick's creek and
Cairden were completed.

[The second Route surveyed
from Cairden leaves the trace
of the first line at a point
West of Moorestown, and takes
the direction of the Mount
Holly road, which it crossed
a short distance beyond the
South Branch of Rancokus creek.
The line then kept East of the
road, and after crossing the
North Branch of Rancokus
creek, and leaving Mount Holly
immediately to the left, the
survey was pursued to Jobstown.
Thence to Georgetown; thence
East of Recklesstown; thence to
a point a short distance west
of Sheltown; thence to Croswick
which it crossed below Nahn's
Mill. - The line of the survey
was also extended some distance
beyond Croswick; in order to
ascertain the features of the
Country in the neighborhood
of Doctor's creek.

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The third route surveyed from
 Camden to Crosswicks creek
 passed through Burlington.
 Thence to the shore of the Del-
 aware River, which it approach-
 ed near the mouth of Craft's
 creek. Thence along the shore
 of the River through White Hill
 to the wharf at Bordertown.
 Thence over the marsh to the
 terrace below the Bellvidere -
 (on the property of Count De-
 Surveillers.) Thence along the
 face of the side hill bordering
 on the marsh of Crosswicks
 creek to the Mile Ravine,
 where the line branches:
 one branch was conducted
 along the side slope of the
 Mile Ravine, and after pass-
 ing the Trenton Road, it
 was traced nearly in a direct
 line to Crosswicks creek,
 where it united with our
 former position above Grove-
 ville:- The other branch after
 crossing the Mile Ravine was
 conducted to the side hill

North of Mr Pearson's house,
Thence along the side hill to
a position near Middleton's
house. Thence over the Meadows
and Crofswick's creek to the
Bluff at the old landing.
From the latter point the
survey was continued to the
neighborhood of Nightstown;
the face of the country over
which the line was passed
differed but little in its
character from that before
surveyed between Nightstown
and the position above Grove-
ville; both affording equal
facilities for the formation
of the main line of Road.

[As it was desirable that no
route should be left unexplo-
red from Bordertown Eastward
which offered any probability
of superior advantages, another
line was traced, passing
through the Ravine South of
the residence of the Court of
Surveillers; and after crossing
the Trenton^{and} Amboy road,

it was conducted to the position above Groverville. Having completed such preliminary surveys between Camden and South Amboy as appeared necessary to enable the Directors to form a judgment of the comparative advantages of the several routes which had been proposed for the main line of Railroad, there was no hesitation on their part in selecting in preference to any other the Western Route, passing through Burlington to Bordertown; and thence towards Hightstown crossing Crosswicks creek at the old landing below the turnpike. - This latter Route offered the shortest and easiest communication between the extreme points of the line, and at the least cost for construction. It also saved the necessity of a Branch line which must have been unavoidable, had a more Eastern route been adopted.

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Description of the located
line from South Amboy to Cannders.

The line begins at the first Bridge on the wharf at South Amboy, and after curving from the wharf is located nearly in a direct line to the front of the house at present occupied by Mr S. Gordon; it then follows the gentle sloping ground west of that house for upwards of three fourths of a mile; then curves around a projecting point of a sand ridge, and keeps upon the east side of a ravine leading to the first high ridge near the old Amboy road which it passes over:- Thence gaining the opposite ravine the line is located for some distance nearly parallel with the Bordertown turnpike. Thence turning with an easy curve to the left, it again keeps a direction parallel with the turnpike,

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and passes South of Buccleugh's house. Thence to the dividing ridge between the waters of the Raritan^{and} South Rivers; thence North of Bloodgoods house, and after curving through a Ravine which opens to the turnpike is located to the South of Brown's Tavern. Thence running nearly parallel and a short distance South of the turnpike, it crosses in its course Tennants creek, Deep Run, South River, and enters Herbertsville in the rear of the Tavern. Thence skirting the slope bank of South River untill it passed Vanwinkle's residence it again keeps parallel with the turnpike for some distance, and then crosses it at Melanaphy's house. Thence it takes a direction towards Spotswood which it leaves to the East; passing which, it is then located to the North of Snowhill's snuff mill, and near his Mill-dam. Thence keeping North of the

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Turnpike passing Bowen's residence, and afterwards South of his Snuff Mill, then curving to the left it recrosses the turnpike at Bennetts saw mill, and after having been located near to his residence, takes a South-west direction to the South slope of a Ravine through which the line is traced to the Summit of the ridge dividing the waters of South River and Cranberry Brook. This latter summit was attained with a high graduation and deep cutting. Thence the line is located in a straight direction through the lands of Gordon^{es} Davison to the crossing place at Cranberry Brook; after which, it continues in the same straight line through lands of — Holland and — Dye. Thence passing over the Millstone creek, and bending to the right through Applegates land, it crosses the Turnpike, and Rocky brook about a quarter of a mile

North-west of Hightstown.
 Thence in a straight direction
 through lands of Mefsr's book,
 Britton and others, it reaches
 the turnpike at a point not
 far beyond Wild Cat Swamp.
 Thence running on the North
 Side of the turnpike and parallel
 with it, it crosses Bear
 Run at Appleton; and keeping
 still the same course it is
 conducted to Centerville.

From Centerville the located
 line keeps a straight direction,
 and after crossing the Assan-
 pink creek North of Hutchinson's
 Mill and East of Ford's house,
 it approaches the turnpike
 which it follows; and after
 crossing Mirey Run attains
 Hungry Hill summit between
 the Crofs-keys Tavern, and
 Tindale's house. From this
 summit the line keeps a
 straight direction, and passes
 West of Mrs. Pearsons house;
 thence after crossing ~~the~~ creek
 it is located to the bluff at the

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old landing on Croswick's creek. Thence crossing the creek and meadow it is conducted along the side hill as far as Mr Pearson's residence. Thence passing the lane leading from the Trenton to the Amboy Road, the line is located to a Ravine which it follows beyond the Trenton road. Thence curving to the left and passing to the Eastern Slope of a high ridge which separates it from Croswick's creek on the property of Count De Surveillers it then keeps along the face of this ridge, and, after crossing a deep run, reaches the shore of Croswick's creek. Thence along the face of the steep bluff of the creek to the Mile Ravine; thence across Mile Ravine to the margin of the opposite side; thence along the face of the hill to the terrace below the Bellvidere; thence over the marsh to the steep side

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hill on land of Court De
 Surveillers which it follows to
 the wharf at Bordertown.

I must here take occasion to
 remark that the line located
 from Croswick's creek (at the
 old landing) to Bordertown,
 was done by Lt. Cook in
 accordance with the views
 of a majority of the Directors.
 It was deemed advisable by
 the Company that various
 lines of road should be ex-
 plored through the lands of
 Court de Surveillers with a view
 not only to ascertain their
 cost of construction but also
 that they might have it in
 their power to offer any of
 them to the Court for his
 selection. The two lines which
 were traced through his lands
 to the position above Grove-
 ville; the one passing through
 the Ravine near Bordertown,
 and the other through the
 Mile Ravine, were both aban-
 doned: the first being too

expensive; and the second rejected by the Court in consequence of the manner in which it passed through his property. It being considered by the Directors that the position at Grosivick's creek at the old landing below the turnpike offered a more favorable route for locating the Rail-road to Amboy than any other, on account of the distance being shorter; two other lines were located through the lands of Court de Surveillers the one already described in the statement of the preliminary surveys as branching from the Mile Ravine in a direction to Mr Pearson's house and thence to Grosivick's creek, and the other located in conformity with the views of the Court, excepting that portion of it which is traced on the western slope hill of the table land nearest the Trenton Road.

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The profile of a part of the first of these lines exhibited a graduation of 3.5 feet in the mile ascending East for one and a quarter miles; but in making an estimate of its cost that grade was increased for the same distance to 40 feet per mile. - There can be no hesitation in deciding that of all the lines located from Bordertown to the old landing at Grosuicks creek, the latter possessed superior advantages, not only for its shortness of distance, but also for the straightness of its direction.

Its cost of construction at a graduation of 3.5 feet (beginning at the terrace below the Bellvedere) or 30 feet (from the wharf at Bordertown) is also less than the other lines. The Court however refused his consent to this line being established by the Company through his lands.

✓ The next line located was

more to the Westward than the one already mentioned, and its excess of distance eight chains. It was located level from the wharf at Bordentown at four feet above high water (mean tide) for half a mile; it then ascended for about a mile further at a grade of 40 feet per mile, in order to diminish the expense of excavating through the table land which it passed at a mean depth of seven feet, thence descending at thirty feet in the mile to Froswick's, it united with the line located from South Amboy about midway in the meadow bordering on the creek.

On comparing either of these lines with that described in the location of the Main Route as approved by the directors, the superiority of the first is unquestionable; and placing the other two at an equal cost for construction by

diminishing the grade of the one to 35 feet; the difference in distance being 7 chains 50 links, places them nearly equal as regards the time that would be taken for the travel of a locomotive engine for one mile on their respective inclinations of 30 and 35 feet, provided the curves are alike in each location.* This is not however the case; a reference to the map (accompanying this Report) will at once exhibit the difference in the respective curvatures of

* Assuming the velocity of a Locomotive Engine on an inclination of 30 feet per mile at ten miles per hour; the comparative velocity in travelling with the same weight on an inclination of 35 feet per mile, will be as the difference between the space $\frac{1666}{10000}$ and $\frac{1536}{10000}$ of a mile per minute passed over. While therefore the Engine has passed over one mile on an inclination of 35 feet it would have travelled 1 mile 6 chains ⁴/₁₀ and 72 links on an inclination of 30 feet; and in the case of 40 feet graduation the difference would be 13 chains 45 links.

the two lines. - As carriages are kept on the rails by flanges on the wheels, it is obvious that where there is on any portion of the line an excess of curvature, the friction from rubbing on the sides of the rails and consequent retardation, must be very great. On the whole distance from Amboy to Croswick's creek with the exception of a single instance the location is remarkable for the great length of the straight lines, which must well adapt the route for rapid communication. - From the above considerations I have been induced to dissent from the manner of location of that part of the line between Croswick's creek and Bordentown. - I would however recommend to the Company when staking it out for the Road formation, to straighten the line in those places which were curved for the purpose of obtaining earth

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for embankments; as the Charter granted by the Legislature empowers the Directors to take materials for that purpose "on or near the said route". -

From Bordentown the location of the Main line is continued after crossing Black's creek near its mouth, along the shore of the Delaware River to Craft's creek which is passed near its junction with that River.* The line then leaves the River shore and follows the side hill of the creek; thence through lands of — English and — Kales, passing between the house and barn of the former, and curving to the left crosses Kales' Run and

* The level of the shore line of the Route is about four feet above high water, mean tide. It would be advisable here in forming the Road to place it between such portions of the side hill as are precipitous, and the River, so as not to disturb the high and steep bluff.

approaches the Burlington
 Road. Thence keeping the
 direction of that road towards
 Garwood's house; thence continuing
 between Garwood's house and
 barn on a side hill; and be-
 nding to the right it passes
 a projecting point of hill;
 then curving to the left and
 passing through Smith's Nur-
 sery, it follows the Burlington
 Road near its edge for three
 fourths of a mile. Thence across
 the Asisscunk creek on the
 lower side of the present cause-
 way; thence through Broad
 Street in Burlington on its
 Western side, and fourteen
 feet from the centre; thence
 crossing London Run, and
 continuing to the West of
 J. Lott's dwelling house.
 Thence West of the Burlington
 and Camden road passing
 near Cooperstown Church, and
 crossing the former about a
 mile distant from Cooperstown.
 Thence to the Ramocus creek

which it crosses about thirty chains above the Toll Bridge. The length of the Bridge over the creek being Four hundred feet, and the height above high tide twelve feet. From Rankocuss creek the located line is traced to a position above the junction of the two branches of Laurel Run; thence crossing the Moorstown and Toll bridge road, it intersects Pompeston creek at the head of Haines' Mill dam; thence to the Swede's branch run, which it crosses near Worrington's house. Thence West of Lippincott's Saw Mill to the dividing ridge betwixt the waters of Pensauken creek and Swedes Run on property of J. Lippencott.

Thence through the barn yard of J. Lippencott to the Eastern branch of Pensauken creek, crossing it near the tide dam; thence across a neck of land to the West branch which is crossed below Poplar landing;

thence through the Twenty Mile Valley, on lands of Burrow Lawrence and Clements; and through a depression in the ridge dividing the waters of Pensaukin creek and Baldwin's Run on land of Merret Horner, the line is conducted to the Cove landing road. Thence in a parallel course with the Camden road, and turning a point of a ridge through Carters land, it is traced to the Burlington road and Baldwin's Run, both of which it crosses near Copperthwaites Store. - Thence it follows the top of the side hill on Baldwin's Run and pierces the dividing ridge between that run and Coopers creek; thence through lands of — Cooper to Coopers creek; thence over the creek below the present bridge on the Moorestown Road, thence crossing the Moorestown Road, passes through land of — Carman to the

Kaighn's point Road.

Thence following the centre of Bridge Street in Camden to the Marsh bordering on the Delaware River.

The peculiar nature of the face of the country through which the line of the road is located rendered it necessary in many cases to use high numbers for its graduation. In some instances this might have been avoided by incurring the expense of deeper excavations and higher embankments, but as it was an object with the company to diminish the cost of the Road formation, and bring it within a less expenditure, it was considered by them expedient to adopt such graduations as they deemed best suited to the localities that presented themselves on the Route. The Table herewith submitted exhibits the graduation of the line as located from South Amboy to Camden.

(The tables which are omitted ^{are} in the file of the Section of Transportation and Engineering US N. M. & M.)

Graduation Table.

25

Stations from Anchorage	Chains of 66 feet	Ascending Grade Per mile	Descending	Stations	Chains 66 feet	Ascending Grade Per mile	Descending Grade Per mile
54 1/2	150.	52.8.		257.	14.	0.0	0.0
	2	0.0	0.0	264	14.	16.0	
79	58.		35.0	274	20.	0.0	0.0
	80	35.0		277	6.	16.0	
88	176.		40.0	283	12.	0.0	0.0
94	12.	0.0	0.0	285	4.	16.0	
104	20		35.0	294	18.	0.0	0.0
106	4.	0.0	0.0	306	24.	0.0	0.0
116	20.	12.0		321	30.	35.0	
124	16.		12.0	322	2.	0.0	0.0
127	6.	12.0		331	18.		35.0
131	8.		12.0	339	16.	0.0	0.0
132	2.		7.0	348	18.	8.0	
142	20.	0.0	0.0	349	2.	0.0	0.0
151	18.	9.8		355	12.		8.0
160	18.	0.0	0.0	375	40.	35.0	
186 1/2	54.	35.0		389	28.	0.0	0.0
196	20		35.0	473	168.	40.0	
200	8.	0.0	0.0	474	2.	0.0	0.0
204	8.	20.0		501	54.		35.0
207	6.	0.0	0.0	502	2.	0.0	0.0
232	32.	20.0		573	22.	28.0	
237	30		24.0	574	2.	0.0	0.0
241	6.	0.0	0.0	533	38.		35.0
245	8.	8.0		540	14.		20.0
246	2.	0.0	0.0	545	10.	0.0	0.0
250	8	12.0		549	8.		20.0

Graduation Table.

26

Stations	Chains of 66 feet	Ascending Grade Per mile	Descending	Stations	Chains of 66 feet	Ascending Grade Per mile	Descending Grade Per mile
552	6.	0.0	0.0	742	36.		24.0
554	4.		20.0	743	2.	0.0	0.0
558	8.	0.0	0.0	757	28.	28.0	
561	6.		20.0	758	2.	0.0	0.0
562	2.	0.0	0.0	762	8.		28.0
585	46.	35.0		764	4.		8.0
587	4.	12.0		765	2.	0.0	0.0
588	2.	0.0	0.0	772	14.	8.0	
590	4.		12.0	773	2.	0.0	0.0
591	2.	0.0	0.0	776	6.		8.0
595	8.		20.0	777	2.	0.0	0.0
596	2.	0.0	0.0	781	8.	8.0	
622	52.		35.0	782	2.	0.0	0.0
623	2.	0.0	0.0	798	32.		30.0
630	14.	12.0		799	2.	0.0	0.0
632	4.	0.0	0.0	812	26.	30.0	
641	18.		35.0	813	2.	0.0	0.0
651	20.	0.0	0.0	830	34.		30.
667	32.	35.0		833	6.	0.0	0.0
668	2.	0.0	0.0	835	4.	8.0	
685	34.		35.0	836	2.	0.0	0.0
686	2.	0.0	0.0	855	38.		35.0
687	2.	1.0		858	6.	0.0	0.0
719	64.	35.0		893	70.	35.0	
720	2.	0.0	0.0	899	12.	0.0	0.0
723	6.		35.0	921	44.		35.0
724	2.		33.0	925	8.	0.0	0.0

Graduation Table

(27)

Stations from Amboy	Chains of 66 feet	Ascending Grade Per mile	Descending	Stations	Chains of 66 feet	Ascending Grade Per mile	Descending Grade Per mile
953	56.	35.0		465	64.	30.0	
954	2.	0.0	0.0	462	12.		30.0
986	64.		35.0	452	39.37	30.0	
994	16.	0.0	0.0	444	32.	0.0	0.0
1034	80		35.0	431	52.		30.0
1040	12	0.0	0.0	423	32.	20.0	
1047	14.		35.0	413	40.		8.0
1049	4.	0.0	0.0	405	32.		30.0
1054	10.	35.0		395	40.		6.0
1061	14	0.0	0.0	386	36.		30.0
1064	6	35.0		372	56.	0.0	0.0
1067	6	45.0		368	16.	10.0	
1083	32	0.0	0.0	360	32.30	0.0	0.0
1085	4.		22.5	359	4.	25.0	0.0
1126	80.		35.0	357	8.		30.0
1128	4.	0.0	0.0	355	8.		24.0
1152	48.50	30.0		346	28.20	0.0	0.0
1155	6.	0.0	0.0	336	40.	24.0	
1194	78.		30.0	329	28.	12.0	
1200	12.	0.0	0.0	321	32.	30.0	
1206	12.		30.0	319	8.		20.0
1209	6.	0.0	0.0	317	8.	0.0	0.0
1210	2.		20.0	309	32.	30.0	
1211	2.		23.7	303	24	0.0	0.0
{ 1369 481							
	316.	0.0	0.0	291	48		10.0

No. 1067 to be altered from 45 to 35. 286. 20. 30.0.

By adding 24 chains to Station 1211 it 283 12 20.0
gives the wharf at Bordentown.

Graduation Table

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Stations	Chains 66 feet	Ascending Grade Per mile	Descending Grade Per mile
279	16.	10.0	
271	32.		30.0
260	44.		20.0
237	92.	30.0	
236	4.		10.0
223	52.		30.0
207	64.	24.0	
197	40.		14.5
192	20.		24.0
188	16.	20.0	
182	24.		20.0
166	64.	30.0	
165	4.	10.0	
139	104.		30.0
135	16.	30.0	
132	12		30.0
114	72	10.0	
108	24	0.0	0.0
86	88	30.0	
	48		30.0
	16		2.0
	60		30.0
	32	30.0	
	80		30.0
	20	13.0	
	35.16	30.0	
	8.30	5.0	
	44.		30.0
0.	4.	0.0	0.0

Whole distance from
South Amboy to Camden,
61 Miles, 67 chains, 83 links.

From Amboy to U.L.

Wharf at Bordentown:-
34 Miles, 16 chains, 50 links.

From U.L. Wharf at
Bordentown to Camden,
or end of the Line:-
27 Miles, 51 chains, 33 links.

Delaware at Camden.

The Map which accompanies this Report is delineated by a scale of four inches to a mile. It would have been desirable to have exhibited on the Drawing all the lines which have been explored during the course of the survey, but the shortness of the time which has been allotted to accomplish the work would not admit the extension of it for that purpose*. The Map therefore only illustrated the survey of the located line as described in my Report.

In addition to which I have in conformity with the charter of your Company prepared two Books containing the courses and distances of the

Note * The Board of Directors being anxious to commence the construction of the Road at an early period could not by the terms of their charter accomplish this until a return was made in the proper office of the whole location of the line.

In order to fulfill my engagement with the Company, it was necessary that the documents should be completed for that purpose on the 11th of the present month; the location was only finished on the 2nd of the month.

In the estimate of the cost of construction the embankment in the Deep cut at South Ambry is put down at 12 cents ^{per cubic yard}, excavation at 15 cents. In the other portions of the road the cost of embankment varies from 7 to 14 cents per cubic yard.

<u>Bridges</u> ^{over} from South River 200 feet platform	\$ 2,466.00
at Bennetts, 100 ft,	750.00
^{over} Millstone ^{creek} 60 "	1,350.00
" Rockbrook 60 "	1,350.00
" Assapink ^{creek} 60 "	1,350.00
" Greenwich Creek	4,730.00
" Rancocres " 400 ft.	5,783.00
" Pensaucon "	
" Nest Branch 110 "	2,060.00
" " " 110 "	1,960.00
" Cooper's Creek 800 "	5,914.00

located line which are herewith presented. As the completion of the location of the line was only brought to a close a few days ago, we have also had but a short period of time to prepare the other documents, illustrative of the operations we have been engaged in. - It only remains for the completion of the duty assigned me to present the following approximate estimate of the Road formation.

Estimate
of
cost of the
Camden and Amboy Railway,
commencing
at
South Amboy.

(The

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Copy to
be furnished
for here

Section No. 1.

From the wharf to Station 59. Distance 160 chains. Excavation from Amboy to commence^{ment} of Deep Cut

10 551 C.Y. @ 7 cents \$ 738.57

Embankment for same distance

25 867 C.Y. @ 12 cents 3104.04

Excavation at Deep Cut

133,224 C.Y. @ 15 cents 19983.60

7 cross Drains - whole length - 294 ft. @ 75^{cts} 220.50

\$ 24046.71

Section No. 2.

From Deep cut to end of cut at Dividing ridge. 160 chains. Excavation from station 59 to beginning of 20 ft cut.

6,835 C.Y. @ 7 cents \$ 478.45

Embankment on same distance

15,534 C.Y. @ 10 cents 1553.40

Excavation at 20 ft cut, 23,463, C.Y. @ 10cts 2346.30

Embankment from 20 ft. cut to Dividing ridge,

20,609 C.Y. @ 7 cents 1442.63

Excavation at Deep cut, 81,390 C.Y. @ 14 cents 11394.60

7 cross Drains whole length

406 feet @ 75 cents \$ 304.50

17519.88

Section No. 3.

From end of cut to Station 77 near Browns Tavern - 120 chains. Embankment from Deep		
cut to 22 ft cut - 9,921 c.y. @ 7 cents,		\$ 694.47
Excavation @ 22 ft cut, 18374 c.y. @ 10 cents		1837.40
Embankment on remainder of Section		
36950 c.y. @ 16 cents		5912.00
Excavation on same 3949 c.y. @ 6 cents		236.94
6 cross drains - length 324 feet	\$	243.00
		<u>8923.81</u>

Section No. 4.

From Station 77 to 167 near Herberts Mills		
180 chains, Excavation 11298 c.y. @ 7 cts		\$ 790.86
Embankment 20034 " " 11 "		2203.74
7 cross Drains - 266 feet @ 75 cents		199.50
One culvert 8 feet span		224.00
Bridge at Deep run 36 feet platform		588.00
" " South river 200 " " "	\$	<u>2466.00</u>
		6462.10

Section No. 5.

From Herbertville to Spotswood 180 chains		
Excavation 6437 c.y. @ 7 cents	\$	450.59
Embankment 16351 " " 9 "		1471.59
3 cross Drains 108 feet " 75 "		81.00
One culvert 6 feet span	\$	<u>290.00</u>
		2293.18

Section No. 6.

From Spotswood to Bowers's Snuff Mill	160 chains	
Excavation	10201 c.y. @ 9 cents	\$ 918.09
Embankment	8002 " " 8 "	640.16
3 crop drains	90 feet	67.50
One culvert	6 feet span	\$ 240.00
		<u>1865.75</u>

Section No. 7.

From Bowers's Snuff Mill to Station 415 near West Tavern.	150 chains.	
Excavation to Station 380.	20451 c.y. @ 10 cents	\$ 2045.10
Embankment on section	- 46151 c.y. @ 15 cts.	6922.65
Excavation at 24 ft cut	23088 " " 11 "	2539.68
5 brook Drains	180 feet @ 75 cents	135.00
Bridge at Bennetts,	100 feet span	\$ 750.00
		<u>12392.43</u>

Section No. 8.

From West's Tavern to Station 480 near Devil's	1/2 acre 130 chains -	
Excavation to Ridge		
	9632 c.y. @ 8 cents	\$ 770.56
Embankment do	14197 c.y. @ 8 cents	1135.76
Excavation thro. ridge	43531 " " 13 "	5659.03
8 crop drains -	320 feet	\$ 240.00
		<u>7805.35</u>

Section No. 9.

From Station 480 to Sta. 572 near Cranbury Brook,		
184 chains, Excavation	3870 c.y. @ 7 cents	\$ 270.90
Embankment on D-	23829 " " 10 "	2382.90
5 brof Drains	180 feet	135.00
Culvert at Cranbury Brook		<u>\$ 550.00</u>
		<u>3338.80</u>

Section No. 10.

From Station 572 to Sta. 652 on South Bank of
Millstone River 160 chains.

Excavation	18582 c.y. @ 8 cents	\$ 1486.56
Embankment	18758 " " 10 "	1875.80
6 brof drains	288 feet " 75 "	171.00
Bridge over Millstone - 60 ft span		<u>\$ 1350.00</u>
		<u>4883.36</u>

Section No. 11.

From Sta. 652 to 722 in Mr. Brittons woods - 140 chains

Excavation	13245 c.y. @ 8 cents	\$ 1059.60
	13690 " " 9 "	1232.10
Embankment	26201 " " 13 "	3406.13
3 brof Drains	96 feet	72.00
Bridge over Rocky Brook 60 feet span -		<u>\$ 1350.00</u>
		<u>7119.83</u>

Section No. 12.

From Station 722 to Sta. 804 at Bears Run.

164 chains - Excavation	5242 c.y. @ 8 cents	\$ 419.36
Embankment	16626 c.y. @ 8 cents	1330.08
Seven crop Drains	266 feet @ 75 "	199.50
One culvert	8 feet span at Bears Run.	175.00
"	4 " "	\$ 124.00
		<u>2247.94</u>

Section No. 13.

From 804 to Sta. 874 S. side of Assapink creek

140 chains - Excavation	13,376 @ 8 cents	\$ 1062.08
Embankment	37,104 c.y. @ 12 "	4452.48
2 brof drains	76 feet	57.00
One culvert	6 feet span	}
"	16 " "	
		385.00
Bridge over Assapink creek	60 feet span	<u>1350.00</u>
		<u>7306.56</u>

Section No. 14.

From Sta. 874 to Sta. 954 - termination of cut at Hungry

Hill. 160 chains - Excavation	5425 c.y. @ 7 cents	\$ 379.75
Do at Hungry Hill	12640 " " 10 "	1264.00
Embankment	20470 " " 13 "	2661.10
One culvert	10 feet span at Murey Run	894.00
One Road bridge at Hungry Hill		350.00
4 crop Drains	128 feet long.	\$ 96.00
		<u>5644.85</u>

Section No. 15.

From Sta. 954 to Sta. 1049 at Back Creek.

190 chains Excavation	16632 c.y. @ 10 cents	\$ 1663.20
Embankment	25557 " " 11 "	2811.27
3 crop drains	102 feet	76.50
Culvert at Back creek	15 ft span	894.00
do do	8 " "	<u>\$ 286.00</u>
		<u>5730.97</u>

Section No. 16.

From Sta. 1049 to Sta. 1136 on S. Bank of Crofivick

174 chains Excavation	64404 c.y. @ 9 cents	\$ 5796.36
Embankment	13454 " " 10 "	1345.40
do at Crofivick	75054 " " 12 "	9006.48
5 crop Drains	230 75	192.50
Bridge at Crofivick creek		<u>\$ 4730.00</u>
		<u>21070.74</u>

Section No. 17

From Sta. 1136 to Sta. 1226 by Union Line whf. Bordentown

180 chains Excavation	113650 c.y. @ 8 cents	\$ 9092.00
Embankment	59122 " " 10 "	5912.20
10 crop Drains	540 feet	405.00
3 culverts	- -	1145.00
Road bridge at Piersons		<u>\$ 300.00</u>
		<u>16854.20</u>

Section No. 18.

From Sta. 1226 of Cook's line to 481 of Thomsons line at Crafts Creek. 290 chains.

Embankment	77920 c.y. @ 10 cents	\$ 7792.00
Malling on Section	10560 perches @ \$1.40	14784.00
Bridge at Craft Creek and wharfing at side of embankment.		1100.00
3 Culverts		\$ 540.00
		<u>24216.00</u>

Section No. 19.

From mouth of Crafts Creek to P435	180 chains	
Embankment at Crafts Creek	36594 c.y. @ 13 cts.	\$ 4757.22
Excavation	14983 " " 8 "	1198.64
Embankment on remainder of Sec.	10838 " " 8 "	867.04
Six crop drains	216 feet	162.00
One culvert at Crafts Creek	12 ft span.	560.00
		<u>7544.90</u>

Section No. 20

From Kales Run to P400 near School House	140 chains	
Embankment	15110 c.y. @ 8 cents	\$ 1208.80
Excavation	21142 " " 8 "	1691.36
3 Crop Drains	120 feet	90.00
One culvert		\$ 186.00
		<u>3176.16</u>

Section No. 21

From School House to P. 355 near end of Broad St. Burlington	180 chains	
Excavation	9486 c.y. @ 8 cents	758.88
Embankment	6692 " " 8 "	535.36
Five cross drains	160 feet	120.00
Bridge and wharfage at Assiscunk		\$ 350.00
		<u>1764.24</u>

Section No. 22.

From Burlington to P. 314 on A. Martens land	164 chains	
Excavation	8658 c.y. @ 7 cents	\$ 606.06
Embankment	21075 " " 10 "	2107.50
3 cross drains	138 feet	103.50
One culvert	6 feet span at London run	\$ 164.00
		<u>2981.06</u>

Section No. 23

From P. 314 to P. 279 near Burlington Road	140 chains	
Excavation	13948 c.y. @ 8 cents	\$ 1115.84
Embankment	5855 c.y. " 8 "	464.40
2 brof Drains	72	\$ 54.00
		<u>1634.24</u>

Section No. 24.

From P. 279 to 244 in Moonstown^{an} Toll
Bridge Road 140 chains.

Excavation	21930 c.y. @ 8¢	\$ 1754.40
Embankment at Rancocas	29111 " " 14¢	4075.54
Do on remainder of Section 20904	" " 10¢	2090.40
One cross Drain 40 ft.		30.00
Bridge at Rancocas 400 feet		5783.00
Culvert at Laurel run		\$ 315.00
		<u>14048.34</u>

Section No. 25.

From Moonstown Road to P. 209 Summit of
Dividing Ridge - 140 chains.

Excavation	18983 c.y. @ 8 cents	1518.64
Embankment	17865 " " 10 " "	1786.50
3 cross Drains	126 feet	94.50
One culvert at Pompeston		\$ 292.00
		<u>3691.64</u>

Section No. 26.

From P. 209 to P. 164. Beginning of cut
Pensauken Summit. - 180 chains.

Excavation	26612 c.y. @ 8 cents	2128.96
Embankment	11379 " " 8 "	910.32
Four crop Drains	152 " 75	114.00
Culvert at Surdes Brook		\$ 284.00
		<u>3437.28</u>

Section No. 27.

From P. 164 to P. 119 near Haddonfield
road. - 108 chains.

Excavation at Summit	23609 c.y. @ 9¢	2134.54
Embankment at Moon T. Road.	18100 " " 9¢	1629.00
Excavation - remainder of Section	24911 " " 7¢	1743.77
Embankment, E. & W. B. of Pemeaucon	20103 " " 10¢	2010.30
Four crop Drains	192 ft.	144.00
Bridge at E. B. of Pemeaucon	110 ft span	2060.00
do N. B. do	110 ft span	1960.00
One road Bridge		\$ 350.00
		<u>12031.61</u>

Section No. 28.

From P. 119 to P. 89 on Darding Ridge.	120 chains
Excavation 7210 c.y. @ 7 cents	\$ 504.07
Embankment 16931 " " 9 "	1523.79
Four crop Drains 160 feet	120.00
One farm Bridge at Laurence's	\$ 400.00
	<u>2547.86</u>

Section No. 29.

From P. 89 to P. 49 edge of cut at Baldwin's Summit	-160 chains
Excavation 19964 c.y. @ 8 cents	\$ 1597.12
Embankment 13814 " " 8 "	1105.12
Four crop Drains 144 feet	108.00
One culvert at Baldwin's run.	\$ 165.00
	<u>2975.24</u>

Section No. 30.

From P. 49 to P. 0 - Foot of Bridge at Camden.	196 chains.
Excavation 23614 c.y. @ 8 cents	\$ 1889.12
Embankment 30038 " " 11 "	3304.18
Six crop Drains 252 ft.	189.00
Bridge at Copers creek 800 feet	\$ 5914.00
	<u>11296.30</u>

To amount for grubbing on the whole line - \$4,250. -

Section N ^o .		Summary.					
	1 = 160 chains	#	2	4	0	4	6
"	2 = 160 "	1	7	5	1	9	7 1
"	3 = 120 "		8	9	2	3	8 8
"	4 = 180 "		6	4	6	2	8 1
"	5 = 180 "		2	2	9	3	1 0
"	6 = 160 "		1	8	6	5	1 8
"	7 = 150 "	1	2	3	9	2	7 5
"	8 = 130 "		7	8	0	5	9 3
"	9 = 184 "		3	3	3	8	3 5
"	10 = 160 "		4	8	8	3	8 0
"	11 = 140 "		7	1	1	9	3 6
"	12 = 164 "		2	2	4	7	8 3
"	13 = 140 "		7	3	0	6	9 4
"	14 = 160 "		5	6	4	4	5 6
"	15 = 190 "		5	7	3	0	8 5
"	16 = 174 "	2	1	0	7	0	9 7
"	17 = 180 "	1	6	8	5	4	7 4
"	18 = 240 "	2	4	2	1	6	2 0
"	19 = 180 "		7	5	4	4	0 0
"	20 = 140 "		3	1	7	6	9 0
"	21 = 180 "		1	7	6	4	1 6
"	22 = 164 "		2	9	8	1	2 4
"	23 = 140 "		1	6	3	4	0 6
"	24 = 140 "	1	4	0	4	8	2 4
"	25 = 140 "		3	6	9	1	3 4
"	26 = 180 "		3	4	3	7	6 4
"	27 = 108 "	1	2	0	3	1	2 8
"	28 = 120 "		2	5	4	7	6 1
"	29 = 160 "		2	9	7	5	8 6
"	30 = 196 "	1	1	2	9	6	2 4
Grubbing on the whole line			4	2	5	0	3 0
Total cost			2	5	1	1	0 1
Add for Superintendence and unforeseen expenses - 10 %.			2	5	1	1	8 3
			2	7	6	2	1 8
			2	7	6	2	0 1

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In closing my Report on the location of the Camden^{and} Amboy Rail-road, and my connection with the Company, I would wish to do justice to the respective parties who conducted the surveys under the direction of Lt. Cook and Mr J. E. Thomson.

The alacrity and zeal with which they cooperated in bringing to a close the different duties assigned them has enabled me to fulfill my engagement with the Board of Directors.

All which is respectfully submitted.

John Wilson,
Civil Engineer.

Philada, October 11- 1830.

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