

Boston Transit Commission.

Sixteenth Annual Report.



June 30, 1910

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FROM

THE BOSTON TRANSIT COMMISSION,

15 Beacon Street.

GEORGE G. CROCKER, *Chairman,*

GEORGE F. SWAIN,

HORACE G. ALLEN,

JOSIAH QUINCY,

JAMES B. NOYES,

Commissioners.

EDMUND S. DAVIS,
Acting Chief Engineer.

B. LEIGHTON BEAL,
Secretary.



SIXTEENTH ANNUAL REPORT

OF THE

BOSTON TRANSIT COMMISSION,

FOR THE YEAR ENDING

JUNE 30, 1910.



BOSTON

CHAPPLE PUBLISHING COMPANY, LTD., PRINTERS

1910

BOSTON TRANSIT COMMISSION.

15 BEACON STREET, BOSTON, June 30, 1910.

TO THE CITY COUNCIL OF THE CITY OF BOSTON:

In compliance with Statutes of 1894, chapter 548, section 24, the report of the Boston Transit Commission for the year ending June 30, 1910, is respectfully submitted.

CAMBRIDGE CONNECTION.

As stated in the Fifteenth Annual Report a bill in equity brought by Edmund D. Codman, Augustus Hemenway, Alfred Bowditch, Lyman Gibbs, William C. Codman, Jr., John D. Bryant, Albert C. Aldrich, Patrick J. Bergin, Henry Goodwin and George H. Rimbach, in the Supreme Judicial Court, praying for an injunction to restrain the Commission from constructing the Cambridge Connection (the Boston end of the Cambridge Main street subway) with Park street as a terminal, was then pending. Every effort was made by the Commission to obtain an early determination of the matter, but it was not until September 11, 1909, that the opinion of the Supreme Judicial Court was delivered dismissing the bill with costs and sustaining all the positions of the Commission. The pendency of this bill resulted in delaying prosecution of work upon the Cambridge Connection for more than five months. (See Appendix A).

September 14 the following communication was received:

87 MILK STREET,

BOSTON, September 14, 1909.

HON. GEORGE G. CROCKER, *Chairman, Boston Transit Commission, 15 Beacon Street, Boston.*

DEAR SIR:—As the Supreme Court has now decided adversely to the petitioners in the case of *Codman, et al. v. Crocker, et al.*, the petitioners have under consideration an appeal to the Supreme Court of the United States.

The Supreme Court in its opinion has said that the question whether or not a railroad station is within the scope of the purpose for which the

Common was originally dedicated is "the most important and difficult question in the case."

While the counsel for the petitioners were disappointed at the decision of the Supreme Court, they were not entirely unprepared for it, as no opportunity was given for oral argument, and very little time for the preparation of briefs, or for investigation on the part of the court.

There seems to be respectable authority in other jurisdictions to the effect that the use of Commons, or portions of them for street or steam railroads does not tend to promote the purpose for which they were originally established.

In *Muhlker v. Harlem Railroad Co.* 197 U. S. 544, a case presenting the question whether an elevated railroad could be built in a street established by dedication without providing compensation to the abutting owners, the Supreme Court of the United States took jurisdiction of the case, and held that such a use, under such a statute, did impair the obligation of the contract and reversed the decision of the State Court.

It seems clear from the opinion of our Supreme Court that if it should be held that a subway station was not consistent with the purposes which Governor Winthrop and the donors of the Common had in mind when they made their dedication, no action either of the legislature or of other subordinate authorities could in any way ratify or authorize the use of the Common for the proposed tunnel.

In the former subway case of *Prince v. Crocker*, the opinion appeared to dwell very considerably upon the vote of the city as obviating any objection that might be raised; but the court now says that the vote of the city, or of the voters, is immaterial.

In view of the importance and difficulty of the several questions presented, it is possible that your Commission may think it wise to delay action in the matter of the contract with McGovern for a week or ten days, until we can give you definite information as to whether or not the case will go to the Supreme Court at Washington.

Very truly yours,

(Signed)

WM. D. TURNER.

On September 17 the final decree was entered in the Supreme Judicial Court, and thereafter the Corporation Counsel assured a committee of the Commission that "proper entry having been made in the Supreme Judicial Court of the dismissal of the injunction, the Commission need delay no further in proceeding with the work."

On the same day, at a special meeting of the Commission called for the purpose, the following vote was passed:

"VOTED, That a draft of a contract with Patrick McGovern for the construction of Section 1, Cambridge Connection, with the time of completion fixed as May 1, 1911, be executed and delivered."

Under this vote the contract was delivered to Patrick McGovern, the lowest bidder, to whom it had been awarded prior to the beginning of the litigation. Work under this contract was begun almost immediately, and the details of its progress will be found in the report of the Acting Chief Engineer.

Real Estate Taken.

Six takings by eminent domain have been made by the Commission for the prosecution of the work. Four of these have been of easements, under buildings, and extend from the beginning of the section at Sta. 1+06.73 in the yard in the rear of the Aaron Krause property to Mt. Vernon street. The top of the taking at Sta. 1+06.73 is 15.7 feet above the surface and the bottom at the same station is 8.88 feet below the surface. At Mt. Vernon street the top of the taking is 64.23 feet below the surface, and the bottom is 94.4 feet below the surface.

Two takings of entire estates in Grove place were made, and the buildings thereon razed.

Park Street Station.

The following correspondence has been had with the Boston Elevated Railway Co. with reference to the Park street station:

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, November 9, 1909.

WILLIAM A. BANCROFT, *President, Boston Elevated Railway Company.*

DEAR SIR:—I am instructed by the Commission to call the attention of your Company to the fact that sketch plans for the treatment of the additional underground station at Park street for the Cambridge Connection are awaiting an expression of opinion by its representatives.

Copies of the plans referred to were sent to Mr. Sergeant on Nov. 3, 1908, (B. T. C. No. 9,207) and January 11, 1909, (B. T. C. No. 9,301).

Yours respectfully,
(Signed) B. LEIGHTON BEAL.
Secretary.

No. 9,301 enc.

BOSTON ELEVATED RAILWAY CO.
PRESIDENT'S OFFICE.
101 MILK ST.

BOSTON, MASS., November 10, 1909.

B. LEIGHTON BEAL, ESQ., *Secretary, Boston Transit Commission, 15 Beacon St., Boston, Mass.*

DEAR SIR:—Your letter of November 9th, current, to the President, has been submitted by him to the Executive Committee, and referred to Messrs Sergeant and Kimball, who will be very glad to take up the subject matter with your Chief Engineer.

Respectfully,
(Signed) D. L. PRENDERGAST,
Secretary.

BOSTON TRANSIT COMMISSION.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, December 30, 1909.

WILLIAM A. BANCROFT, *President, Boston Elevated Railway Company.*

DEAR SIR:—I am instructed by the Commission to call your attention to my letter to you of November 9th, 1909, and to ask if your company is ready to give its opinion as to the plans for the Park street station, Cambridge Connection. Certain portions of the work of the Commission are awaiting your determination.

Yours respectfully,

(Signed)

B. LEIGHTON BEAL.

Secretary.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, March 29, 1910.

WILLIAM A. BANCROFT, *President, Boston Elevated Railway Company.*

DEAR SIR:—I am instructed by the Commission to again call your attention to the necessity of action by your company in relation to the plans for the Park street terminal of the Cambridge Connection.

This Commission has submitted to you plans which seem to it to be the best thus far devised, and, in a general way, they seem to meet the approval of your officials. The Commission does not wish to adopt these plans finally until it has received a formal expression of your views in regard to them, but, on the other hand, as the Commission has repeatedly stated, the delays which have already occurred in acting upon the plans may result in the Commission being unable to finish the station by the time the rest of the line is ready for use.

Yours respectfully,

(Signed)

B. LEIGHTON BEAL.

Secretary.

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, April 7, 1910.

Boston Elevated Railway Company, WILLIAM A. BANCROFT, President.

DEAR SIR:—Before determining upon the plan of the Park street terminal of the Cambridge Main-street subway, we desire your general approval of the arrangement shown on the accompanying plans 9474 a, b and c. The model of this terminal can be seen at this office or could be carried to your offices if desired.

As we have repeatedly stated to you in the past, we deem that this matter should receive immediate attention owing to the length of time which will necessarily be consumed in the preparation of final plans and specifications and the completion of the work.

This Commission is of opinion that the level shown on the plan sent herewith should be adopted, as a higher level would stand in the way of any extension of the tracks easterly under the Tremont street subway, and would involve changes in the contract already let for the construction of the tunnel under Beacon Hill.

Yours truly,

(Signed)

GEORGE G. CROCKER

Chairman.

On the date of the last communication a conference was held with the officials of the Company, and May 13 the decision of the Company was received as follows:

BOSTON ELEVATED RAILWAY CO.
SECRETARY'S OFFICE,
101 MILK ST.

BOSTON, MASS., May 13th, 1910.

Boston Transit Commission, GEORGE G. CROCKER, Chairman, 15 Beacon St., Boston, Mass.

DEAR SIR:—Referring to your communication of April 7th, ult., desiring our general approval of the arrangement shown on plans of the Park Street Terminal of the Cambridge Main St. subway numbered 9474-a, b and c, we have to say that the matter has been taken up between your engineer, Mr. Davis, and our Vice-President and Chief Engineer of Elevated & Subway Construction, who have considered also your plans 9497, 9468 and 9468-a.

After considering the report of our officials, we consent to the lower level platform, and favor the 3-platform scheme, but with entrances and exits on Tremont Street only, except those connecting with the present subway, and with further modifications which Mr. Sergeant and Mr. Kimball will be glad to point out to Mr. Davis.

Respectfully,
(Signed) WM. A. BANCROFT
President.

The engineering department has proceeded with plans on this basis.

RIVERBANK SUBWAY.

By the terms of the act authorizing the construction of the Riverbank Subway (Chapter 573 of the Acts of 1907) work on that structure was to begin

“at such time after the expiration of one year from the completion of the tunnel authorized by said chapter five hundred and thirty-four as the commission and the company may agree upon, or in case of difference as the board shall determine that the public interests require; but the same may be begun at any time which the commission and the company may agree upon.”

At the expiration of that period if the assent of the Company was still withheld the question was to be determined officially by the Board of Railroad Commissioners.

The Washington street tunnel was opened for public use November 30, 1908. On December 8, 1908, the officials of the Boston Elevated Railway Company were asked to meet the Commission in conference to see whether the Company and the Commission could agree upon a time for beginning the construction of the Riverbank subway. This conference was held January 4, 1909. The Company asked for delay in beginning the work pending the action of the Legislature on certain matters then before it.

As stated, the work could not be begun without the

Company's assent until the expiration of one year from the completion of the Washington street tunnel, and then, if the Company still withheld its consent, only upon determination of the Board of Railroad Commissioners.

February 3, 1910, a hearing was given to the Riverbank Protective Association on its petition for the immediate construction of the Riverbank subway, and many petitions in aid thereof were received by the Commission.

At a conference with representatives of the Company held on March 10, 1910, it was announced that the Company would not further oppose the beginning of the work of constructing the Riverbank subway, and the following vote was passed by the Commission on the same date:

"VOTED, That the Commission begin the construction of the Riverbank Subway authorized by chapter 573 of the acts of 1907."

Westerly Terminal.

The route and the termini of the Riverbank subway were defined in the act as follows:

"from a point or points in or under the existing Park street subway station, or any enlargement thereof, under Boston Common, and any other intervening public or private ways or lands, substantially parallel with and adjoining or as a part of the tunnel authorized by chapter five hundred and twenty of the acts of the year nineteen hundred and six, to a point or points more than one hundred feet distant from the Common; thence in and under any intervening public or private ways or lands to a point or points in the Charles River embankment and park provided for by chapter four hundred and sixty-five of the acts of the year nineteen hundred and three, as amended by chapter four hundred and two of the acts of the year nineteen hundred and six; thence westerly in and under said embankment and park to a point or points in said embankment or park west of Harvard bridge; thence in, under, over and across public ways and lands to a point or points in Beacon street at or near the Back Bay Fens, or to such point or points in Commonwealth avenue or Beacon street east of the junction of Commonwealth avenue, Beacon street, Brookline avenue and Deerfield street as the commission may determine after due notice to all the parties interested and a public hearing thereon * * * * *"

Such notice having been given and such hearing having been held, on February 13, 1908, the Commission voted that the westerly terminal be located "in the embankment between Massachusetts avenue and Charlesgate East." Property owners abutting on the proposed terminal incline agitated the question of a relocation of the terminal during the year, but the Commission was of opinion that having located the terminal, and due notice of such location having been given to the Boston Elevated Railway Company, and that

Company not having appealed within three days to the Board of Railroad Commissioners, as was its right, the powers of the Commission in the matter were exhausted, and this opinion was sustained by the Corporation Counsel in the following communication:

CITY OF BOSTON
LAW DEPARTMENT
73 TREMONT STREET

BOSTON, February 24, 1910.

Boston Transit Commission, 15 Beacon Street, Boston, Mass.

DEAR SIR:—In reply to the questions concerning the westerly terminal of the Riverbank subway asked me orally by your Chairman, I would say that in my opinion as the public hearing called for by the statute has been given, the location decided upon, and notice of it sent to the Elevated and no appeal having been taken either by the Elevated or by the Charles River Basin Commission from this decision, the location cannot be changed unless the Elevated agreed to such change. If the Elevated agrees to such change I think it would be in the power of your Board by vote to rescind or repeal the former vote, that then notice would have to be given and a hearing held, and action taken under the statute as though there had been no prior action concerning the location of this terminal.

Yours truly,

(Signed)

THOMAS M. BABSON
Corporation Counsel.

Upon petition of certain property owners to the Legislature an act was passed (Chapter 579, Acts of 1910—See Appendix B), authorizing the reopening of the question, with the assent of the Company. This act was approved May 31, 1910, and at the date of this report no action thereon has been taken by the Company.

Grade of Riverbank Subway.

The Commission early established the grade of the Riverbank subway below the existing sewers in the district, but subsequently the then Acting Superintendent of Sewers having rendered an opinion that the sewage could be properly taken care of by siphons, the grade was raised about ten feet, the roof to be constructed in such a manner that overflows for the sewers could be made one foot lower. Afterward certain property owners in the vicinity became alarmed lest the district would be flooded in the event of the improper care of the siphons, and at a hearing given to them on March 17 they presented a report of experts strongly condemning the plan which had been adopted. They urged that the ideal scheme would be that originally adopted by the Commission

placing the structure below the sewers, but they expressed their willingness to accept as a compromise for the height of the overflows, grade 7 instead of grade 10, as previously suggested. The Chief Engineer of the Sewer Division was present at the hearing, and, reversing the advice of his department as previously given, protested strongly against the adoption of grade 10. He approved of the grade originally voted for by the Commission, but owing to the additional expense of building at that grade he expressed his willingness to approve of grade 6 or even 7. The committee of property owners brought the matter to the attention of His Excellency the Governor, and the following reply to a communication from him may best explain the situation:

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, June 23rd, 1910.

To His Excellency the Governor, EBEN S. DRAPER.

DEAR SIR:—Your letter enclosing copies of correspondence with Mr. Gordon Abbott relating to possible interference with the sewer connections in the Charles river embankment, through the construction of the Riverbank Subway has been received.

The situation is as follows: The Commission originally intended to place the subway at such a grade that it would be entirely below the sewers connecting with the marginal conduit and a vote was passed to this effect in February, 1908. In view of the fact that it would be less expensive if the subway could be placed at a higher grade, the Commission made further studies with the object of ascertaining the highest grade which could be fixed without causing trouble, and inquired of the City Engineer, who was then the Acting Superintendent of Sewers, with reference to this matter. He replied that if siphons and overflows were provided there was no substantial reason why the subway should not be constructed with its top approximately at grade 10, and in March, 1908, the Commission voted to fix the top of the subway approximately at grade 11, the grade of the overflows to be about a foot below this, or at the grade referred to in the letter from the Acting Superintendent of Sewers.

The beginning of work on the Riverbank Subway having been delayed because the Boston Elevated Railway Company was unwilling to agree that this should be started earlier than the date fixed in the law, the matter of the sewers was again brought to the attention of the Commission in March of this year by Mr. J. B. Warner, representing certain Back Bay residents. His expert stated that, in his opinion, the bottom of the overflow should not be in any event above grade 7, while the present engineer of the City Sewer division stated that it should not be above grade 6. All agreed that the ideal plan so far as sewerflow was concerned was the one originally contemplated by the Commission, in which the subway was placed entirely below the level of the sewers.

The Commission made a further study of the matter and came to the conclusion that grade 10 would be too high for the bottom of the overflows, and, after a conference with officials of the Boston Elevated Railway Company addressed a letter to that company, April 7, of which a copy is enclosed. The plan accompanying this letter showed a grade of from 1 to 4.75 for the bottoms of the various overflows. On May 26 the company replied by letter, of which a copy is enclosed.

This Commission still hopes, however, that some compromise may be

reached which will enable it to place the subway at such a grade that the bottom of the overflows will be at about grade 6 or 7.

The Commission has also been in conference with a committee of the Chamber of Commerce on the same matter, and this committee has given the Commission to understand that it would endeavor to have the Board of Directors of the Chamber of Commerce take action looking to this same end.

Yours very truly,
(Signed) GEORGE G. CROCKER
Chairman.

The letters referred to in the foregoing communication follow:

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, April 7, 1910.

Boston Elevated Railway Company, WILLIAM A. BANCROFT, President.

DEAR SIR:—Referring to its conference with you on this date, this Commission now requests an answer from your Company to the following questions relating to the Riverbank subway.

1st. This Commission being now of opinion that it is wise to place this subway at a lower level in the embankment than that previously fixed upon, such proposed new level being that shown on plan No. 9489, sent to you herewith, will your Company give its assent to the re-opening of this question as to level, and, if so, will it approve of construction at such lower level? Our Acting Chief Engineer estimates that this change of level would involve an extra cost for construction of about \$200,000.

* * * * *

Yours truly,
(Signed) GEORGE G. CROCKER
Chairman.

BOSTON ELEVATED RAILWAY CO.
PRESIDENT'S OFFICE.
101 MILK ST.

BOSTON, MASS., May 26, 1910.

Boston Transit Commission, GEORGE G. CROCKER, Chairman.

DEAR SIR:—Referring to your communication of April 7th, current, and to the first question contained therein, relating to placing the Riverbank Subway at a lower level in the embankment than that previously fixed upon, such proposed new level being that shown on plan 9489, after consideration I am instructed to say that this Company is not willing to give its assent to the reopening of this question as to the lower level.

Respectfully,
(Signed) WM. A. BANCROFT
President.

The Commission is still in consultation with the Company, and hopes to obtain its assent to the reopening of the question, with the understanding that the grade shall not be fixed lower than grade 6.

WASHINGTON STREET TUNNEL.

Settlements for real estate or rights or interests therein taken by the Commission have been made as follows:

November	23,	1909,	Lowell estate, 726-730 Washington street, easement.
December	22,	1909,	Salisbury estate, Washington and Summer streets, entire estate.
January	27,	1910,	Wildes estate, 66-94 Washington street, easement.
February	8,	1910,	F. S. Grand de Hauteville estate, 770-772 Washington street, easement (after trial in court).
March	1,	1910,	Thorndike estate, 97-103 Union street, easement.
March	7,	1910,	Gardiner estate, 1-6 Haymarket square, easement.
March	19,	1910,	Anna B. Matthews et al., 744-756 Washington street, easement.
April	12,	1910,	Ropes estate, 4-8 Washington street, easement.
May	5,	1910,	Cushman estate, 118 Hanover street, easement.
May	5,	1910,	Gale estate, 120-122 Hanover street, easement.
May	5,	1910,	Ames estate, 126-128 Hanover street, easement.
May	14,	1910,	Capen estate, 60-64 Washington street, easement.

Sherburne Building.

January 22, 1910, the Sherburne building, so-called, situated at the corner of Washington and Bennet streets, was sold to Ezra F. Pratt and Samuel A. Fuller for \$220,000.

Salisbury Estate.

In September, 1909, an option was given to the trustees of a syndicate for the purchase of the Salisbury estate, corner Washington and Summer streets, for \$550,000, that sum, however, including the granting of certain privileges for show windows looking on the station platforms, and for entrances and exits at Summer station. This option held until December 1, 1909, at which date the trustees failed to take advantage of it. In May last the pending litigation concerning this estate was decided by the Supreme Judicial Court in favor of this Commission. (See Appendix C).

Thereupon, a settlement was effected with the lessee of the building for arrears of rental, and a new lease executed with him from June 1, 1910, to December 31, 1913. A copy of this lease will be found in Appendix D.

Subsequently, the trustees above referred to entered again into negotiations for the purchase of the estate, and June 29 an agreement of sale and purchase was made with them by which they are to take the estate, subject to the lease above referred to, for \$510,000, and including the plat-

form privileges above spoken of, for \$560,000. The completion of this bargain is set for August 1, next.

Winter Street Property.

William Filene's Sons Co., the lessee corporation of the premises corner of Washington and Winter streets, has taken advantage of the clause in its lease allowing the extension of the term of the same, and has notified the Commission of its election to take the premises for a further term of ten years, expiring February 28, 1921. The rental is \$36,000 per annum.

SUBWAY.

In April a request was received from His Honor the Mayor for the views of the Commission in regard to restoring the Atlantic avenue and Pleasant street loops to the subway, as follows:

CITY OF BOSTON,
OFFICE OF THE MAYOR.

April 13, 1910.

Transit Commission, 15 Beacon St., Boston, Mass.

GENTLEMEN:—I am directed by His Honor, Mayor Fitzgerald, to solicit your views upon the question of restoring the Atlantic Avenue and Pleasant Street loop of the Boston Elevated Railway, making Pleasant Street a terminal station of such a loop. If you have already expressed yourself upon this subject the Mayor would be pleased to have a reference to the document containing your statement so that he might give a somewhat thorough consideration to the matter.

Thanking you in anticipation of a courteous response, I remain,

Yours very truly,
(Signed) WILLIAM A. LEAHY
Secretary.

The reply was:

BOSTON TRANSIT COMMISSION,
15 BEACON STREET,

BOSTON, May 12, 1910.

His Honor JOHN F. FITZGERALD, Mayor, City of Boston.

DEAR SIR:—The letter of April 13th from your Secretary, Mr. Leahy in which he stated that you desired the views of the Transit Commission "upon the question of restoring the Atlantic avenue and Pleasant street loop of the Boston Elevated Railway, making Pleasant street a terminal station of such a loop," was duly received and has been given consideration by this Commission.

The restoration of the Tremont street subway to the use for which it was originally intended and designed and for which only it is properly suitable, that is to say, for surface cars alone, made it necessary to fill the Pleasant street entrance to the grade of the original incline so that surface cars could pass out of the subway and up to Tremont street and Shawmut avenue. The bridge carrying Pleasant street over the tracks formerly

used by the through subway trains still remains, but the excavation under and near it has been partially re-filled for the purpose above set forth.

It would be physically possible to run shuttle trains from the North station, passing the South station and reversing at or near Pleasant street for the return journey. The station for these trains might be on the south side of Pleasant street and on a level with the street. Passengers from the subway could leave the cars when they reach the surface on either Tremont street or Shawmut avenue and take these shuttle trains.

Such an arrangement, however, would in the opinion of this Commission be extremely undesirable. The most serious and indeed fatal objection to it would be that at the junction of Washington and Castle streets it would involve a grade crossing with the through tracks from the Washington street tunnel, and this, to the extent to which shuttle trains were run, would diminish the capacity of the Washington street line and correspondingly increase the over-crowding of the cars on that line.

At the present time, as you no doubt understand, through elevated trains are run from Sullivan square via Atlantic avenue to Dudley street, and similar through trains from Sullivan square via Washington street tunnel to Dudley street and Forest Hills. Shuttle trains are also run from the North station via Atlantic avenue to Beach street.

The through trains via Atlantic avenue are run during the rush hours at intervals of about eight minutes, while the through trains via the Washington street tunnel are run during the rush hours at intervals of about two and one-half minutes. At the junction of Castle street the southbound trains via Atlantic avenue cross the northbound tracks via Washington street. This is now the only grade crossing. If shuttle trains were run to Pleasant street all these trains would cross both the northbound and the southbound Washington street tracks, and northbound shuttle trains would cross in addition the tracks on which the southbound through trains via Atlantic avenue run.

The expense of the re-establishment of trains or single cars running between Pleasant street and the South station would only be justified by considerable traffic, and if the traffic were considerable it will be readily seen that the interference with the more important Washington street traffic, due to the grade crossing referred to, would be serious. If the traffic between Pleasant street and the South station were so small as not seriously to interfere with the tunnel traffic, it would not justify the re-establishment of the service, particularly in view of the fact that provision is now made for reaching the South station from the corner of Boylston and Tremont streets by means of surface cars, which involves no longer time and less changing than would be involved if the shuttle service to Pleasant street were established. In order to use this shuttle service a passenger having entered the subway by the Public Garden incline and having landed on the northbound platform at the Boylston street station would have to go down stairs through the sub-passage and up stairs again to the platform for southbound cars; from these cars he would have to change on the surface at Pleasant street to the shuttle car, and upon reaching the South station go down stairs again from the elevated platform. To reach the South station from the same point at present the passenger goes up stairs to the street surface and takes the surface car which lands him directly at the South station on the street level.

The Washington street tunnel is the great through traffic route between the north and south sections of the city. Its net cost will be in the neighborhood of \$8,000,000 when the accounts are finally closed. In the opinion of this Commission a double track grade crossing of this line by a shuttle line at Castle street would be most objectionable for the reason that it would no longer be possible to use the tracks in the tunnel to their full capacity.

Mr. Leahy's letter further asks to be referred to any other documents containing the opinions of the Commission on this subject.

The Commission has not elsewhere definitely discussed the particular question here referred to, but in the report of the Joint Board to the Legis-

lature upon House Bill No. 1247 (1909), which provided for re-establishing the train service in the Tremont street subway, some further considerations which may be of interest to you were adduced. (See Senate No. 28, 1910).

The Commission will be pleased to give you any information which is in its possession or to discuss the matter further with you if you should so desire.

By the order of the

BOSTON TRANSIT COMMISSION,

(Signed)

B. LEIGHTON BEAL.

Secretary.

Rental under the Toll System.

The withdrawal of the elevated trains from the subway so reduced the number of cars running therein that there have been no payments toward rental under the toll system, so-called. The total amount heretofore paid under that system is \$44,703.67.

LEGISLATION.

Acting under the authority of certain resolves passed by the Legislature of 1909 the Commission, sitting jointly with the Board of Railroad Commissioners, made reports to the Legislature of 1910 on the advisability of authorizing the Boston & Eastern Electric Railroad Company to construct a tunnel and subways in the city of Boston, (See Appendix E), on certain matters relative to the West End Street Railway Company and the Boston Elevated Railway Company (See Appendix F), and on the advisability of constructing additional subways, tunnels and elevated structures in the city of Boston, and relative to the extension of the Boston Elevated Railway from Sullivan square into Medford. (See Appendix G).

The Commission also sat, with the Board of Railroad Commissioners, the Board of Harbor and Land Commissioners, and the Metropolitan Park Commission, as a joint board for investigation and report relative to public improvements for the metropolitan district.

The following were passed by the Legislature of 1910:

Acts, chapter 579. Providing for the relocation of the westerly terminal of the Riverbank subway (already referred to under "Riverbank Subway").

Resolves, chapter 58. Providing for an investigation relative to the construction and use of subways in the city of Boston. (Sitting jointly with the Board of Railroad Commissioners). (See Appendix H).

Resolves, chapter 94 (as amended by chapter 139). Providing for an investigation relative to the construction of a subway from Park street to the South Station in the city of Boston. (Sitting jointly with the Board of Railroad Commissioners). (See Appendix I).

Resolves, chapter 97 (as amended by chapter 139). Providing for a report on certain proposed improvements in transportation in the city of Boston. (Sitting jointly with the Board of Railroad Commissioners). (See Appendix J).

Resolves, chapter 139. Relative to the improvement of transportation facilities in and around the city of Boston. (Sitting jointly with the Board of Railroad Commissioners). (See Appendix K).

BOSTON-1915 EXPOSITION.

Substantially the same exhibit was made by the Commission at the Boston-1915 Exposition, at the request of the managers of that affair, as was made at the Lewis & Clark and Buffalo Expositions.

EAST BOSTON TUNNEL.

Toll Receipts.

The following is a statement of the receipts from tolls and the cost of collection of the same for the year ending June 30, 1910:

July 1, 1909, to July 31, 1909:			
Receipts	\$10,522.66		
Cost	1,503.97		
			\$9,018.69
Aug. 1, 1909, to Oct. 31, 1909:			
Receipts	\$33,178.73		
Cost	4,609.97		
			28,568.76
Nov. 1, 1909, to Jan. 31, 1910:			
Receipts	\$35,438.15		
Cost	4,901.24		
			30,536.91
Feb. 1, 1910, to Apr. 30, 1910:			
Receipts	\$34,002.36		
Cost	4,817.29		
			29,185.07
May 1, 1910, to June 30, 1910:			
Receipts	\$23,643.28		
Cost	3,201.42		
			20,441.86
Total			<u>\$117,751.29</u>

SINKING FUNDS.

The following is the condition of the debt and of the sinking funds for the various divisions of the work of the Commission at the date of this report, as stated by the City Treasurer:

SUBWAY (INCLUDING ALTERATIONS).

(Debt, \$4,416,000, *outside debt limit.*)

Amount of fund, July 1, 1909		\$1,140,347.96
Interest on bank deposits, July 1, 1909, to date	\$2,632.85	
Interest on investments, July 1, 1909, to date	39,417.50	
Revenue, etc., July 1, 1909, to date	51,942.54	
Appreciation of investments, July 1, 1909, to date	7,058.40	
		<u>101,051.29</u>
		\$1,241,399.25
Premium on investments purchased, July 1, 1909, to date	\$4,673.60	
Interest on investments purchased, July 1, 1909, to date	2,916.25	
		<u>7,589.85</u>
		<u>\$1,233,809.40</u>

CHARLESTOWN BRIDGE, No. 1.

(Debt, \$750,000, *inside debt limit.*)

Amount of fund, July 1, 1909		\$161,097.58
Interest on bank deposits, July 1, 1909, to date	\$628.68	
Interest on investments, July 1, 1909, to date	5,155.00	
Requirement for debt	7,893.00	
		<u>13,676.68</u>
		<u>\$174,774.26</u>

CHARLESTOWN BRIDGE, No. 2.

(Debt, \$805,000, *outside debt limit.*)

Amount of fund, July 1, 1909		\$194,424.24
Interest on bank deposits, July 1, 1909, to date	\$853.72	
Interest on investments, July 1, 1909, to date	5,611.00	
Requirement for debt	6,176.00	
		<u>12,640.72</u>
		<u>\$207,064.96</u>

BOSTON TRANSIT COMMISSION.

EAST BOSTON TUNNEL.

(Debt, \$3,193,000, outside debt limit.)

Amount of fund, July 1, 1909		\$241,559.96
Interest on bank deposits, July 1, 1909, to date	\$1,770.95	
Interest on investments, July 1, 1909, to date	6,335.00	
Appreciation of investments, July 1, 1909, to date	2,901.00	
Revenue, etc., July 1, 1909, to date	55,046.63	
		<u>66,053.58</u>
		\$307,613.54
Premium on investments purchased, July 1, 1909, to date	\$1,965.00	
Interest on investments purchased, July 1, 1909, to date	253.86	
		<u>2,218.86</u>
		<u>\$305,394.68</u>

BOSTON TUNNEL AND SUBWAY.

*(Washington Street Tunnel.)**(Debt, \$8,496,700, outside debt limit.)*

Amount of fund, July 1, 1909		\$299,423.60
Interest on bank deposits, July 1, 1909, to date	\$1,148.91	
Interest on investments, July 1, 1909, to date	10,428.88	
Appreciation of investments, July 1, 1909, to date	3,207.50	
Revenue, etc., July 1, 1909, to date	69,572.20	
		<u>84,357.49</u>
		\$383,781.09
Premium on investments purchased, July 1, 1909, to date	\$5,788.00	
Interest on investments purchased, July 1, 1909, to date	3,282.90	
		<u>9,070.90</u>
		<u>\$374,710.19</u>

RAPID TRANSIT—CAMBRIDGE CONNECTION.

(Debt, \$350,000, outside debt limit.)

Amount of fund, July 1, 1909		\$10,648.99
Interest on bank deposits, July 1, 1909, to date		260.56
		<u>\$10,909.55</u>

RIVERBANK SUBWAY.

(Debt, \$5,000, outside debt limit.)

No fund.

AMOUNTS PAID FOR RENTAL OF THE SUBWAY.

The following sums have been paid during the year by the Boston Elevated Railway Company for the use of the subway:

Sept. 30, 1909:		
Net cost of subway	. . . . .	\$4,100,878.25
One quarter's rental	. . . . .	\$49,979.45
Alterations: net cost	. . . . .	242,673.93
One quarter's rental	. . . . .	2,957.59
Dec. 31, 1909:		
Net cost of subway	. . . . .	4,100,915.79
One quarter's rental	. . . . .	49,979.91
Alterations: net cost	. . . . .	242,673.93
One quarter's rental	. . . . .	2,957.59
March 31, 1910:		
Net cost of subway	. . . . .	4,100,915.79
One quarter's rental	. . . . .	49,979.91
Alterations: net cost	. . . . .	242,673.93
One quarter's rental	. . . . .	2,957.59
June 30, 1910:		
Net cost of subway	. . . . .	4,100,915.79
One quarter's rental	. . . . .	49,979.91
Alterations: net cost	. . . . .	242,673.93
One quarter's rental	. . . . .	2,957.59
		\$211,749.54
		\$211,749.54

AMOUNTS PAID FOR RENTAL OF THE WASHINGTON STREET TUNNEL.

Owing to a difference of opinion between the Boston Elevated Railway Company and the Commission as to the dates from which interest should be reckoned in computing the net cost of the Washington street tunnel, the Company has not paid the full amount of the rental charged to it by the Commission. The bills rendered therefor, and the amounts paid on the same are as follows:

	<i>Bills rendered</i>	<i>Paid</i>
Dec. 31, 1908:		
Net cost of tunnel	\$6,783,323.96	
Rental for one month and one day	\$26,273.77	
March 31, 1909:		
Net cost of tunnel	6,944,727.49	
Rental for one quarter	78,128.19	
June 30, 1909:		
Net cost of tunnel	7,081,170.62	
Rental for one quarter	79,663.17	\$175,000.00
Sept. 30, 1909:		
Net cost of tunnel	7,104,327.62	
Rental for one quarter	79,923.69	79,923.69
<i>Carried forward</i>	\$263,988.82	\$254,923.69

	<i>Bills rendered</i>	<i>Paid</i>
<i>Brought forward</i>	\$263,988.82	\$254,923.69
Dec. 31, 1909:		
Net cost of tunnel	7,145,514.78	
Rental for one quarter	80,387.04	75,000.00
March 31, 1910:		
Net cost of tunnel	7,416,734.05	
Rental for one quarter	83,438.26	75,000.00
June 30, 1910:		
Net cost of tunnel	7,645,785.59	
Rental for one quarter	86,015.09	*
	<u>\$513,829.21</u>	<u>\$404,923.69</u>

* Payment for this quarter had not been made at the date of this report.

STATEMENT OF EXPENSES.

The following is a classified statement of the expenses of the Commission for the year ending June 30, 1910:

SUBWAY.		
General Expenses:		
Office stationery	\$37.54	\$37.54
SECTION EIGHT.		
Water pipes	\$13.98	13.98
EAST BOSTON TUNNEL.		
General Expenses:		
Office—Stationery and printing	\$25.02	
Supplies	4.37	
	29.39	
ENGINEERING DEPARTMENT		
Rooms—Fuel and light	\$0.50	
Stationery and printing	50.80	
Supplies	28.50	
Messengers	2.50	
Skilled service	410.40	
	492.70	
MISCELLANEOUS.		
Field supplies	\$1,800.60	
Labor	4,238.01	
Teaming	86.67	
	6,125.28	
SECTION A.		
Construction	\$2.25	2.25
SECTION B.		
Construction	\$369.82	
Field supplies	153.12	
Labor	3,211.11	
Office supplies	15.50	
Skilled service	441.51	
Teaming	18.60	
	4,209.66	
<i>Carried forward</i>		<u>\$10,910.80</u>

<i>Brought forward</i>		\$10,910.80
SECTION C.		
Skilled service	\$5.00	5.00
SECTION F.		
Coleman Bros. (Contract No. 192)	\$5,450.00	
Construction . . . . .	.65	
Field supplies	2,000.00	
Labor	9.00	
Teaming	7.00	
	<hr/>	7,466.65

BOSTON TUNNEL AND SUBWAY.

General Expenses:		
Office—Furniture	\$15.80	
Lighting	10.90	
Printing	46.75	
Rental	750.00	
Repairs	10.22	
Stationery-supplies	82.23	
Telephone-telegraph	33.75	
Stenographers	805.28	
Messenger	252.00	
Clerks	280.00	
Salaries of Commissioners and Secretary	6,930.55	
	<hr/>	\$9,217.48
Transferred to Cambridge Connection	2,304.36	
	<hr/>	\$6,913.12
Amount transferred from Cambridge Connection, general expenses		5,689.99
General office expenses chargeable directly to Boston Tunnel and Subway:		
Printing	\$538.03	
Stationery-supplies	86.60	
Telephone-telegraph	2.70	
	<hr/>	627.33
		<hr/>
		13,230.44

ENGINEERING DEPARTMENT.

Rooms—Lighting	\$70.75	
Printing	1,619.50	
Rental	750.00	
Stationery-supplies	417.74	
Telephone-telegraph	63.40	
	<hr/>	2,921.39

MISCELLANEOUS.

Advertising	\$6.40	
Field supplies	23.24	
Instruments	4.10	
Labor	1,334.79	
Legal and expert advice	905.00	
	<hr/>	\$2,273.53
<i>Carried forward</i>		<hr/>
		\$34,534.28

<i>Brought forward</i>	\$2,273.53	\$34,534.28
Messengers	463.75	
Paving	6.05	
Pleasant street changes	177.33	
Skilled service	5,325.55	
Stenographers	1,217.50	
Teaming	32.03	
Testing	11.45	
Tools	12.53	
	<u>\$9,519.72</u>	
Credit: Stock	7,503.96	
	<u>\$2,015.76</u>	
Salary of Chief Engineer	937.50	
Proportion of salary of Chief Engineer, transferred from Cambridge Connection	625.00	
	<u>3,578.26</u>	
		<u>\$38,112.54</u>

SECTION ONE.

Legal and expert advice	\$1,480.00	
Skilled service	28.00	
Stenographers	10.50	
	<u>\$1,518.50</u>	
Credit: Property damages—Takings	89,734.24	
		<u>88,215.74</u>
Net decrease		\$50,103.20

SECTION TWO.

Boylston street station:		
Miscellaneous	\$44.96	
Labor	11.50	
LaGrange street station:		
Miscellaneous	28.84	
Paving	108.27	
Tools	.95	
Water pipes	10.83	
	<u>\$205.35</u>	
Credit: Construction	7.98	
		<u>197.37</u>

SECTION THREE.

Jones & Meehan (Contract No. 226)	\$1,000.00	
Construction	6.15	
Field supplies	25.30	
Labor	12.07	
Paving	9.20	
Skilled service	5.87	
	<u>\$1,058.59</u>	
<i>Decrease carried forward</i>		<u>\$49,905.83</u>

<i>Decrease brought forward</i>		\$1,058.59	\$49,905.83
Credit:			
Essex street station:			
Miscellaneous	\$326.49		
Hayward place station:			
Miscellaneous	118.01		
		<u>444.50</u>	614.09

SECTION FOUR.

Alterations		\$21.43	
Construction		43.98	
Damages		14.50	
Labor		42.50	
Lighting		3.14	
Property damages—Takings		587,655.16	
Skilled service		28.85	
Summer street station:			
Patrick McGovern (Contract No. 322)		464.34	
Winter street station:			
Patrick McGovern (Contract No. 316)		311.94	
		<u>\$588,585.84</u>	
Credit:			
Summer street station:			
Miscellaneous	\$350.17		
Temple place station:			
Miscellaneous	198.29		
Water pipes	6.34		
Winter street station:			
Miscellaneous	410.89	965.69	
		<u>965.69</u>	587,620.15

SECTION FIVE.

Coleman Bros. (Contract No. 240)		\$2,250.00	
Damages		1,129.36	
Field supplies		1.73	
Franklin street station:			
Patrick McGovern (Contract No. 289)		187.00	
Labor		115.21	
Lighting		3.15	
Paving		57.47	
Legal and expert advice		75.00	
Stationery-supplies		.56	
Water street station:			
Miscellaneous		7.45	
		<u>\$3,826.93</u>	
Credit:			
Construction	\$47.31		
Franklin street station:			
Miscellaneous	111.56		
Old South station:			
Miscellaneous	84.63	243.50	
		<u>243.50</u>	3,583.43
<i>Increase carried forward</i>			\$541,911.84

Increase brought forward \$541,911.84

SECTION SIX.

Patrick McGovern (Contract No. 308)	\$7,103.50	
Reno Inclined Elevator Company (Contract No. 384)	3,653.23	
Wm. H. Smith (Contract No. 338)	294.67	
Construction	879.00	
Field supplies	1.00	
Labor	481.59	
Lighting	3.15	
Paving	10.17	
Skilled service	15.47	
Teaming	5.26	
Telephone-telegraph	2.05	
Tools	4.74	
Water pipes	635.61	
		<u>13,089.44</u>

SECTION SEVEN.

Construction	\$4.50	
Labor	13.11	
Paving	361.65	
		<u>379.26</u>

SECTION EIGHT.

Patrick McGovern (Contract No. 257)	\$4,235.43	
Adams square station:		
Patrick McGovern (Contract No. 284)	758.52	
Miscellaneous	12.19	
Construction	10.71	
Paving	1,539.20	
Portland street sewer:		
Miscellaneous	20.80	
Legal and expert advice	45.00	
Property damages—Takings	115,032.87	
Water pipes	19.36	
		<u>121,674.08</u>

SECTION NINE.

Wm. H. Smith Co. (Contract No. 366)	\$178.77	
Construction	171.39	
Field supplies	3.71	
Labor	94.70	
Legal and expert advice	785.00	
Property damages—Takings	82,946.02	
Tools	6.95	
Water pipes	30.63	
		<u>\$84,217.17</u>
Credit:		
Union street station:		
Miscellaneous	341.40	
		<u>83,875.77</u>
<i>Carried forward</i>		<u>\$760,930.39</u>

Brought forward \$760,930.39

SECTION TEN.

Construction \$12.53
 Labor 1.30
 Skilled service 9.60
 Property damages—Takings 3,500.00

3,523.43

Credit:
 Water pipes 6.77

3,516.66

SECTION ELEVEN.

Hugh Nawn Contracting Company (Contract No. 365) \$1,005.17
 Construction 5,775.53
 Field supplies 17.90
 Labor 59.03
 Lighting 3.15
 Paving 1,298.39
 Skilled service 23.88
 Water pipes 248.63
 Relief Station—Alterations and Additions:
 Kendall, Taylor & Co., Architects16
 Miscellaneous 859.48

9,291.32

SECTION TWELVE.

Travers street sub-passageway:
 Miscellaneous \$4.25 4.25

RIVERBANK SUBWAY.

Office Expenses:
 Proportion of general expenses, transferred from Cambridge Connection \$4,079.70
 Printing 25.03
 Stationery-supplies 1.45

4,106.18

Engineering Expenses:
 Proportion of salary of Chief Engineer, transferred from Cambridge Connection \$625.00
 Instruments 38.70
 Legal and expert advice 200.00
 Messengers 137.50
 Printing 10.50
 Skilled service 4,172.50
 Stationery-supplies 39.99
 Stenographers 497.55

5,721.74

CAMBRIDGE CONNECTION.

Office Expenses:
 Furniture \$9.15
 Lighting 49.85

Carried forward \$59.00 \$783,570.54

<i>Brought forward</i>	\$59.00	\$783,570.54
Printing	245.07	
Rental	2,250.00	
Stationery-supplies	270.65	
Telephone-telegraph	104.00	
Stenographers	2,218.26	
Messenger	702.00	
Clerks	757.70	
Salaries of Commissioners and Secretary	21,375.00	
	<u>\$27,981.68</u>	
Transferred to Riverbank Subway	\$4,079.70	
Transferred to Boston Tunnel and Subway	5,689.99	
	<u>\$9,769.69</u>	
Transferred from Boston Tunnel and Subway	2,304.36	7,465.33
		<u>20,516.35</u>

ENGINEERING DEPARTMENT.

Advertising	\$1.95	
Alterations	6.48	
Borings:		
Materials	2.12	
Chief Engineer	2,812.50	
Field supplies	7.91	
Fuel	36.79	
Furniture	27.75	
Instruments	15.35	
Insurance	40.00	
Labor	1,442.70	
Lighting	230.40	
Messengers	933.13	
Printing	315.32	
Rental	2,280.00	
Skilled service	8,621.81	
Stationery-supplies	472.11	
Stenographers	1,875.50	
Teaming	7.82	
Telephone-telegraph	307.30	
Testing	18.48	
Tools	82.27	
Water pipes	30.29	
	<u>\$19,567.98</u>	
Credit—Stock	1,780.32	17,787.66

SECTION ONE.

(From a point about 130 feet northwesterly from the corner of Grove and Phillips streets to a point on Boston Common about 220 feet southeasterly from Beacon street.)

John E. Palmer (Contract No. 368)	\$9.49	
Phoenix Iron Co. (Contract No. 380)	52.52	
Patrick McGovern (Contract No. 382)	97,102.37	
L. F. Shoemaker & Co. (Contract No. 385)	1,750.63	
	<u>\$98,915.01</u>	<u>\$821,874.55</u>
<i>Carried forward</i>		

<i>Brought forward</i>	\$98,915.01	\$821,874.55
Advertising	1.95	
Alterations	753.56	
Construction	22,284.47	
Damages	30.00	
Field supplies	204.69	
Fuel	94.35	
Furniture	11.45	
Inspection	129.72	
Instruments	10.70	
Labor	2,023.75	
Legal and expert advice	1,000.00	
Lighting	334.18	
Paving	98.63	
Printing	26.40	
Property damages—Takings	7,536.25	
Protection of tenants	14.50	
Rental	313.25	
Skilled service	3,941.75	
Stationery-supplies	124.26	
Teaming	1.00	
Telephone-telegraph	9.32	
Testing	17.79	
Tools	18.17	
Water pipes	422.29	
		<u>138,317.44</u>

SECTION TWO.

(From the end of Section One under Boston Common and the Park street station of the Tremont street subway to Tremont street opposite Winter street.)

Skilled service	\$67.96	
Stationery-supplies	2.35	
		<u>70.31</u>

INTEREST.

Boston Tunnel and Subway	\$2,336.16	
Riverbank Subway	300.00	
Cambridge Connection	12,075.00	
		<u>14,711.16</u>
Grand Total		<u>\$974,973.46</u>

SUMMARY.

	From Beginning of work to June 30, 1909	June 30, 1909 to June 30, 1910	Total.
Subway—Subway			
Commission	\$14,131.16		\$14,131.16
Part of General			
Expenses	117,473.24	\$37.54	117,510.78
Engineering and			
Miscellaneous	407,475.48		407,475.48
Section One	239,407.12		239,407.12
Two	363,605.50		363,605.50
Three	300,639.36		300,639.36
<i>Carried forward</i>	<u>\$1,442,731.86</u>	<u>\$37.54</u>	<u>\$1,442,769.40</u>

BOSTON TRANSIT COMMISSION.

	From Beginning of work to June 30, 1909	June 30, 1909 to June 30, 1910	Total.
<i>Brought forward</i>	\$1,442,731.86	\$37.54	\$1,442,769.40
Section Three and one half	9,355.70		9,355.70
Four	469,620.33		469,620.33
Five	388,955.49		388,955.49
Six	327,541.86		327,541.86
Seven	231,504.27		231,504.27
Eight	95,888.08	13.98	95,902.06
Eight and one half	76,639.47		76,639.47
Nine	299,452.07		299,452.07
Ten	254,497.88		254,497.88
Eleven	270,310.57		270,310.57
Interest	258,575.60		258,575.60
	<hr/>	<hr/>	<hr/>
	\$4,125,073.18	\$51.52	\$4,125,124.70
Transfer to Altera- tions, see 11th report	4.95		4.95
Total	<hr/>	<hr/>	<hr/>
	\$4,125,068.23	\$51.52	\$4,125,119.75
Alterations — Part of General Ex- penses	\$28,945.53		\$28,945.53
Section Three	2,568.26		2,568.26
Four	163.42		163.42
Five	30,233.01		30,233.01
Seven	178,516.16		178,516.16
Nine	3.00		3.00
Ten	534.04		534.04
Interest	1,905.56		1,905.56
Transfer from Sub- way, see 11th re- port	4.95		4.95
Total	<hr/>	<hr/>	<hr/>
	\$242,873.93		\$242,873.93
Charlestown Bridge: Total	<hr/>	<hr/>	<hr/>
	\$1,570,197.98		\$1,570,197.98
East Boston Tun- nel—Part of Gen- eral Expenses	\$161,031.69	\$29.39	\$161,061.08
Engineering Ex- penses	184,329.70	6,617.98	190,947.68
Section A	98,866.84	2.25	98,869.09
B	1,370,780.93	4,209.66	1,374,990.59
C	494,347.21	5.00	494,352.21
D	244,822.98		244,822.98
E	188,201.14		188,201.14
F	234,900.28	7,466.65	242,366.93
Interest	248,156.88		248,156.88
Total	<hr/>	<hr/>	<hr/>
	\$3,225,437.65	\$18,330.93	\$3,243,768.58

	From Beginning of work to June 30, 1909	June 30, 1909 to June 30, 1910	Total.
Boston Tunnel and Subway—Part of General Ex- penses . . .	\$211,857.55	\$13,230.44	\$225,087.99
Engineering Ex- penses . . .	411,693.90	6,499.65	418,193.55
Section One . . .	824,889.78	*88,215.74	736,674.04
Two . . .	637,500.18	197.37	637,697.55
Three . . .	460,245.83	614.09	460,859.92
Four . . .	1,717,010.68	587,620.15	2,304,630.83
Five . . .	1,030,688.30	3,583.43	1,034,271.73
Six . . .	321,948.64	13,089.44	335,038.08
Seven . . .	139,087.14	379.26	139,466.40
Eight . . .	494,579.43	121,674.08	616,253.51
Nine . . .	543,870.60	83,875.77	627,746.37
Ten . . .	139,363.69	3,516.66	142,880.35
Eleven . . .	336,134.59	9,291.32	345,425.91
Twelve . . .	45,413.27	4.25	45,417.52
Interest . . .	648,179.81	2,336.16	650,515.97
Total . . .	<u>\$7,962,463.39</u>	<u>\$757,696.33</u>	<u>\$8,720,159.72</u>
Investigation of Con- gestion of Traf- fic, etc.			
Office Expenses . . .	\$94.46		\$94.46
Engineering Ex- penses . . .	2,921.46		2,921.46
Total . . .	<u>\$3,015.92</u>		<u>\$3,015.92</u>
Riverbank Subway			
Office Expenses . . .	\$180.57	\$4,106.18	\$4,286.75
Engineering Ex- penses . . .	1,848.99	5,721.74	7,570.73
Interest . . .	161.51	300.00	461.51
Total . . .	<u>\$2,191.07</u>	<u>\$10,127.92</u>	<u>\$12,318.99</u>
Cambridge Con- nection—Office Ex- penses . . .	\$4,044.95	\$20,516.35	\$24,561.30
Engineering Ex- penses . . .	16,832.64	17,787.66	34,620.30
Section One . . .	15,515.72	138,317.44	153,833.16
Two . . .		70.31	70.31
Interest . . .		12,075.00	12,075.00
Total . . .	<u>\$36,393.31</u>	<u>\$188,766.76</u>	<u>\$225,160.07</u>
Grand Total . . .	<u>\$17,167,641.48</u>	<u>\$974,973.46</u>	<u>\$18,142,614.94</u>

*Decrease.

TERM OF THE COMMISSION.

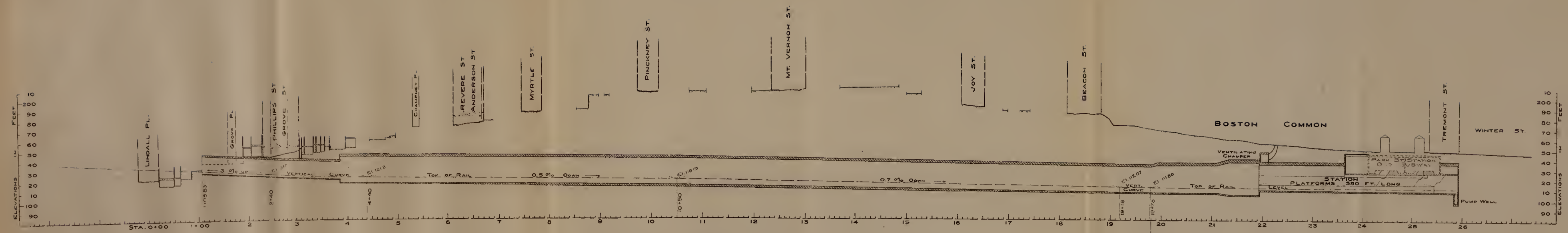
Chapter 455 of the Acts of 1909 extended the term of the Commission and of its members for two years from July first of that year, and on that date the Commission was organized by the re-election of George G. Crocker, as Chairman, B. Leighton Beal, as Secretary, and Edmund S. Davis, as Acting Chief Engineer.

July 20, James B. Noyes qualified as a member of the Commission, having been appointed by His Honor the Mayor, the late George A. Hibbard, to fill the vacancy caused by the death of Thomas J. Gargan.

The term of office of the Commission will expire July 1, 1911. At that date there will remain from three to six months' work upon the Cambridge Connection, and the River-bank subway will hardly be much more than just begun.

The report of the Chief Engineer is appended.

GEORGE G. CROCKER,	} <i>Boston Transit Commission.</i>
GEORGE F. SWAIN,	
HORACE G. ALLEN,	
JOSIAH QUINCY,	
JAMES B. NOYES,	



PROFILE OF BEACON HILL TUNNEL



GEORGE G. CROCKER CHAIRMAN
 GEORGE F. SWAIN
 HORACE G. ALLEN
 JOSIAH QUINCY
 JAMES B. NOYES
 COMMISSIONERS

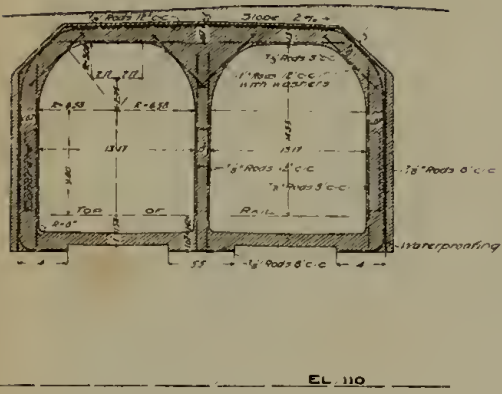
EDMUND S. DAVIS Acting Chief Engineer

NOTE
 Elevations are referred to a datum which is
 100 feet below mean low water of the sea

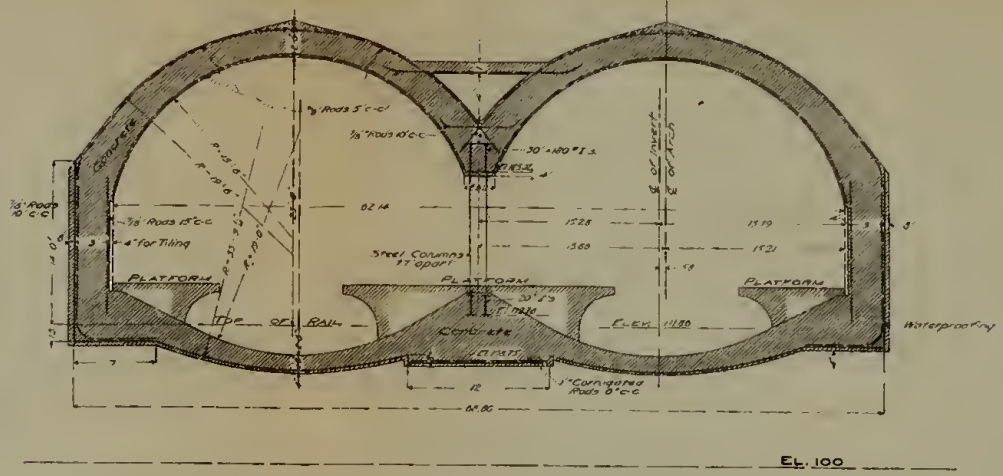


BOSTON COMMON

GROVE AND PHILLIPS ST'S.

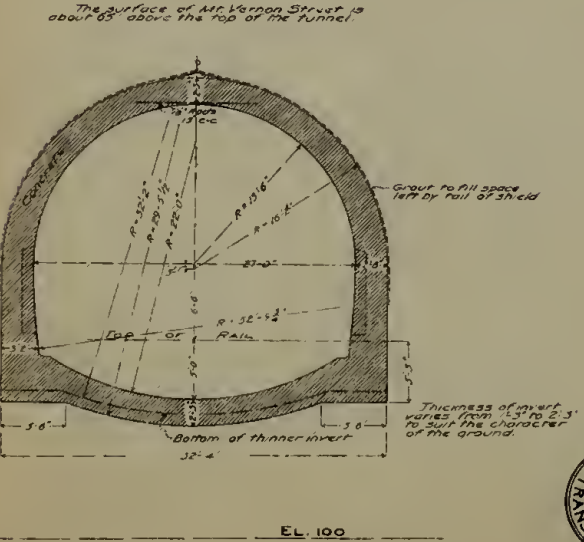


CROSS SECTION AT STA. 2+44
LOOKING EAST

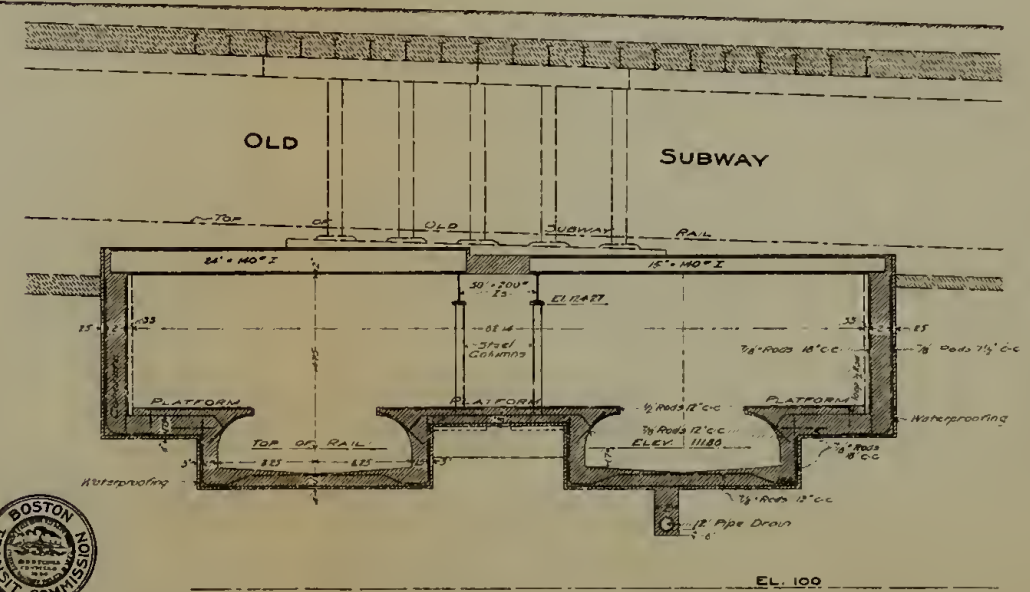


CROSS SECTION AT STA. 23+50
LOOKING EAST

BOSTON COMMON



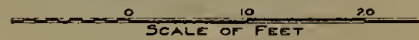
CROSS SECTION AT STA. 12+50
UNDER MT. VERNON ST.
LOOKING EAST



CROSS SECTION AT STA. 24+79
LOOKING EAST

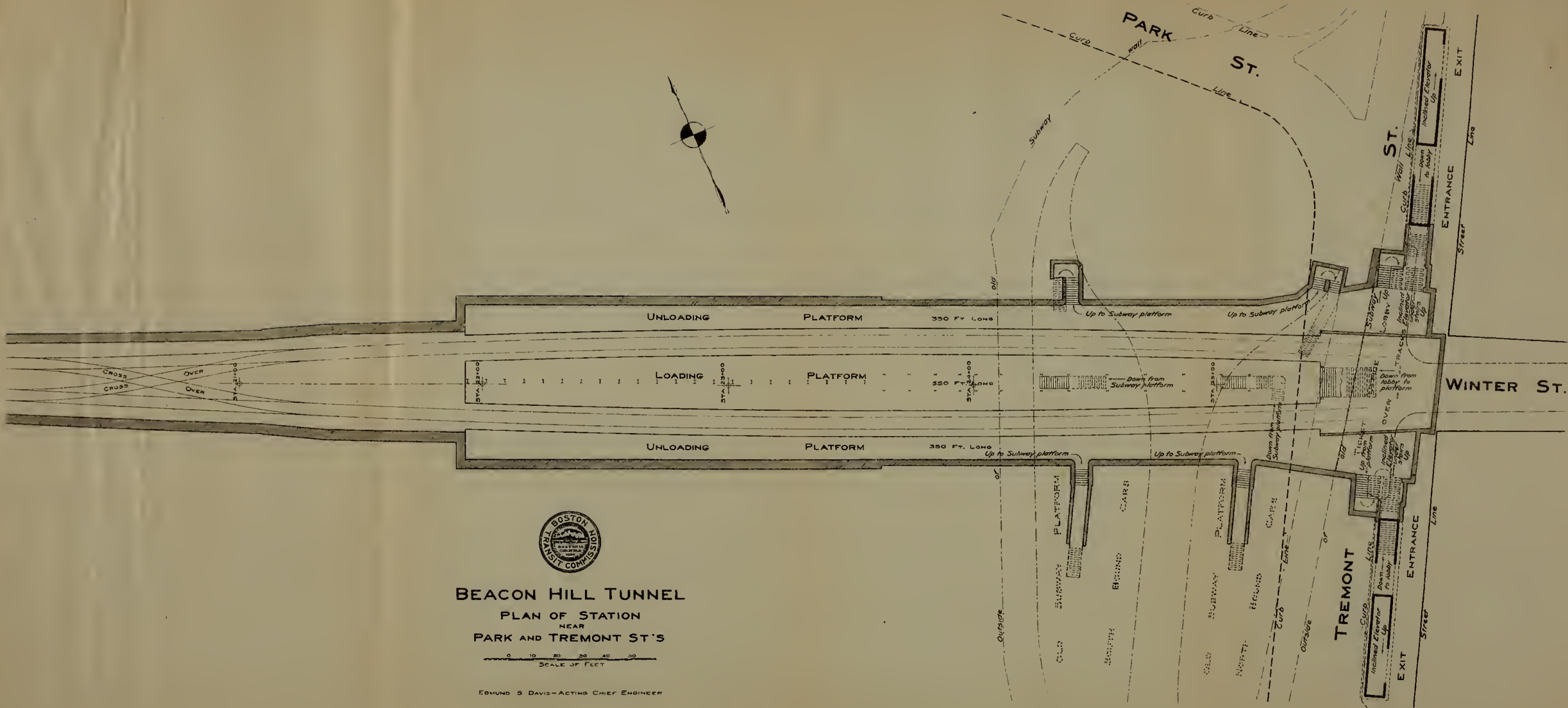


BEACON HILL TUNNEL
CROSS SECTIONS

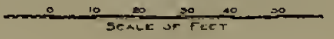


NOTE
Elevations are referred to a datum
which is 100 feet below mean low water
of the sea

EDMUND S. DAVIS Acting Chief Engineer



BEACON HILL TUNNEL
 PLAN OF STATION
 NEAR
 PARK AND TREMONT ST'S



EDMUND S. DAVIS - ACTING CHIEF ENGINEER



REPORT OF THE ACTING CHIEF ENGINEER

BOSTON, JUNE 30, 1910.

GEORGE G. CROCKER, GEORGE F. SWAIN, HORACE G. ALLEN,
JOSIAH QUINCY, JAMES B. NOYES, *Boston Transit Commis-
sioners.*

GENTLEMEN:—I herewith submit a report for the year ending on this date, referring principally to construction and proposed work on the Cambridge Connection and to studies and preliminary work on the Riverbank Subway. It also mentions some minor matters in connection with the East Boston Tunnel.

TUNNEL UNDER BEACON HILL FOR CAMBRIDGE CONNECTION.

Beginning about 130 feet northwest of the intersection of Phillips and Grove streets and in the rear portion of lots numbered 13 and 15 Grove street, the line extends in a southeasterly direction under private lands and crosses diagonally under Phillips, Grove, Anderson, Revere, Myrtle, Pinckney, Mt. Vernon, Joy and Beacon streets, also under Boston Common and Park street station, to a point in Tremont street at the westerly end of Winter street—see Plates 1, 2, 3 and 4. About 1,873 linear feet of the above, extending from the westerly end of the tunnel to a point about 100 feet within the Common, is embraced in the contract with Patrick McGovern dated September 17, 1909, the bids for which were opened March 30, 1909. A canvass of the bids is given in the Fifteenth Annual Report, Appendices CC and DD. The construction having been delayed by legal proceedings, as stated in the last annual report, the time at first named for the completion of the work was changed, before the contract was signed, to July 1, 1911.

PROGRESS OF CONSTRUCTION ON SECTION 1.

Dates of beginning.—Excavation, Sept. 29, 1909; concrete, Oct. 11, 1909.
Total amount of work done to and including June 30, 1910, from beginning

of work.—Excavation, 19443 cu. yds.; concrete, 6354 cu. yds. Work still in progress.

Number of men ordinarily employed by the contractor.—On the first 300 feet, which was done by open cut, there were about 70 men on each shift day and night. After the shield was put in operation the force was increased to about 135 men on the day shift and 125 on the night shift.

EXCAVATION DATA.

Character of earth found in excavation.—Ground in general is a very hard mixture of sandy clay with numerous small stones and occasional boulders. Some irregular veins and pockets of fine sand carrying small quantities of water were encountered at about the level of the side-wall drifts. This sand for a short distance hindered work somewhat by caving in, in advance of the drift timbering, but the difficulties were not serious enough to necessitate the use of compressed air.

About 65 or 70 feet below the surface in the vicinity of Myrtle street some worn fragments of clam shells were found embedded in hard blue clay. Disposition of surplus.—1718 cu. yds. to Charles River Dam; 15573 cu. yds. to Scully's dump, East Cambridge; 2152 cu. yds. to Stuart St. between Berkeley and Clarendon Streets.

CONSTRUCTIONAL STEELWORK.

Contractor for furnishing steelwork (year ending June 30, 1910) and date of contract.—Lewis F. Shoemaker & Co., Nov. 22, 1909.

Amount of contract.—\$1664.18.

See appendix O for canvass of bids.

Date of completion named in contract.—January 24, 1910.

Date of certificate of completion.—April 29, 1910.

About 300 feet of the westerly end of the tunnel, near the intersection of Phillips and Grove streets, where the structure is near or partly above the surface of the ground, was built in open cut. This portion of the work was started in September, 1909, and was practically completed in March, 1910. It involved supporting, cutting through and underpinning, numerous buildings over the line of the tunnel—see Plate 5.

The greater portion of the length of Section One is being constructed by means of a roof shield (Plates 6 and 7), some data in regard to which are as follows:

Builder of shield, Daniel Russell Boiler Works, South Boston.

Weight of shield, without the hydraulic jacks and feed pumps, about 65 tons.

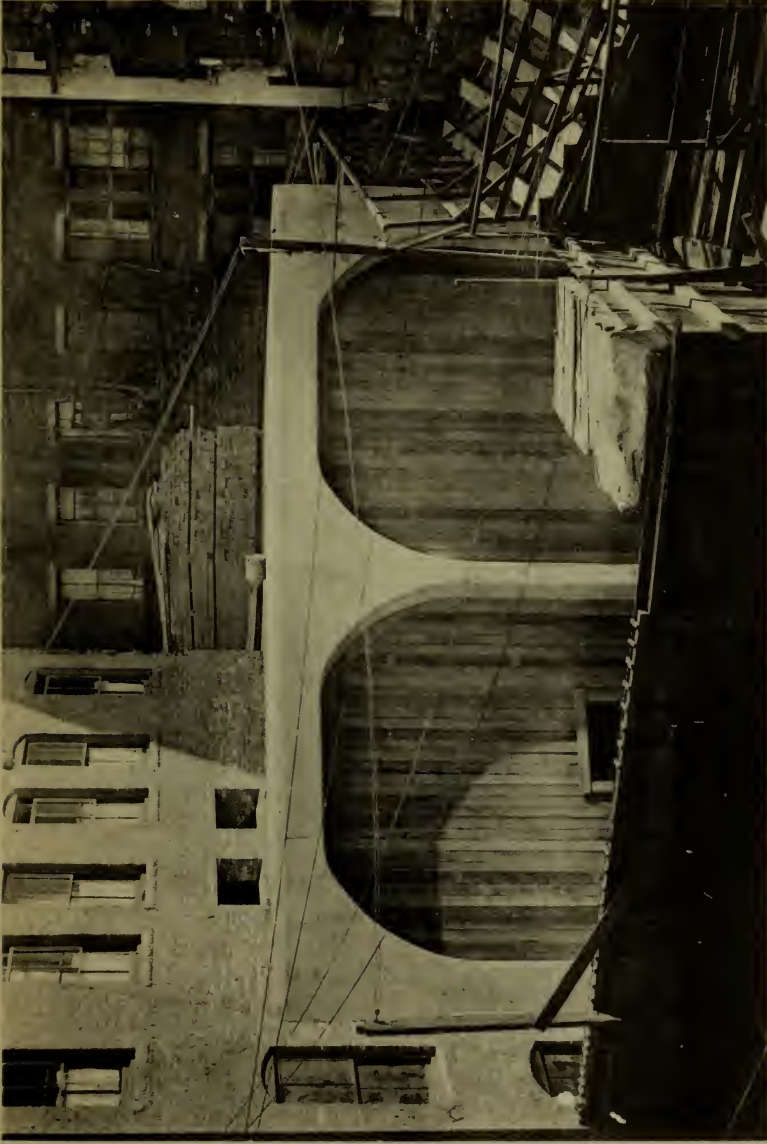
Width of shield, 32 feet 6.5 inches.

Length of shield, 12 feet 6 inches.

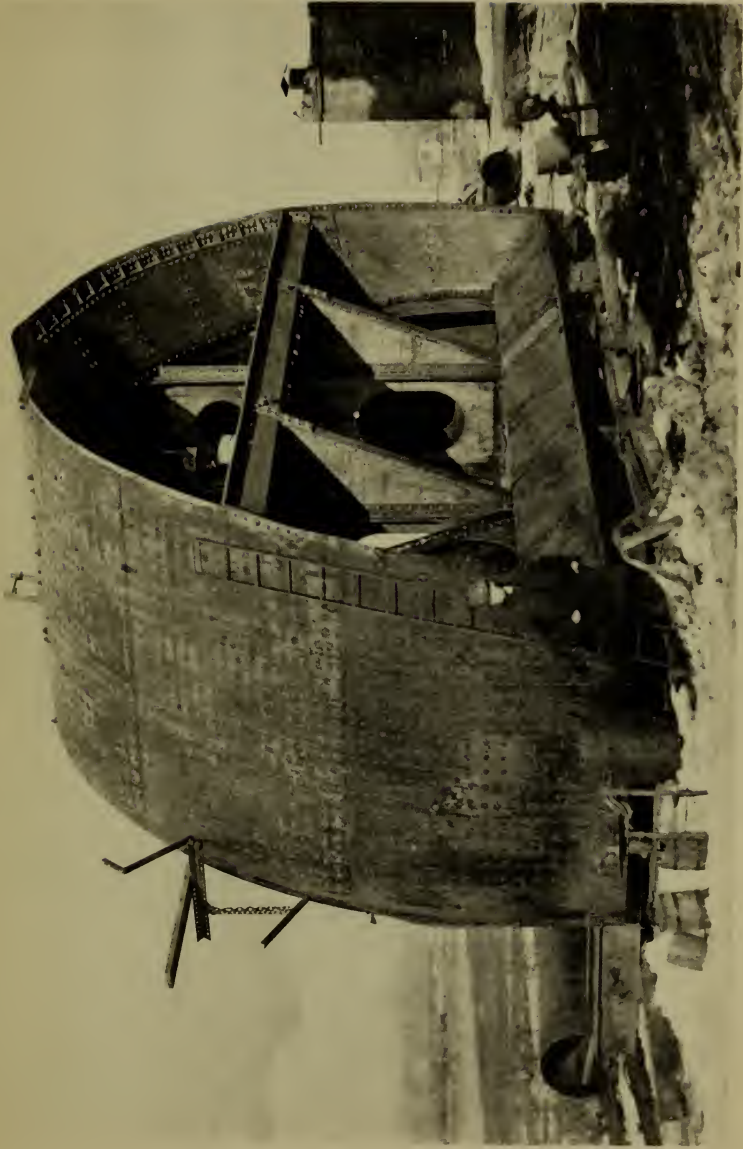
Maker of hydraulic jacks (for pushing shield), Watson Stillman Co.

Number and capacity of hydraulic jacks: fourteen 8-inch, each with a capacity of 80 tons; maximum working pressure, 4000 lbs. per square inch.

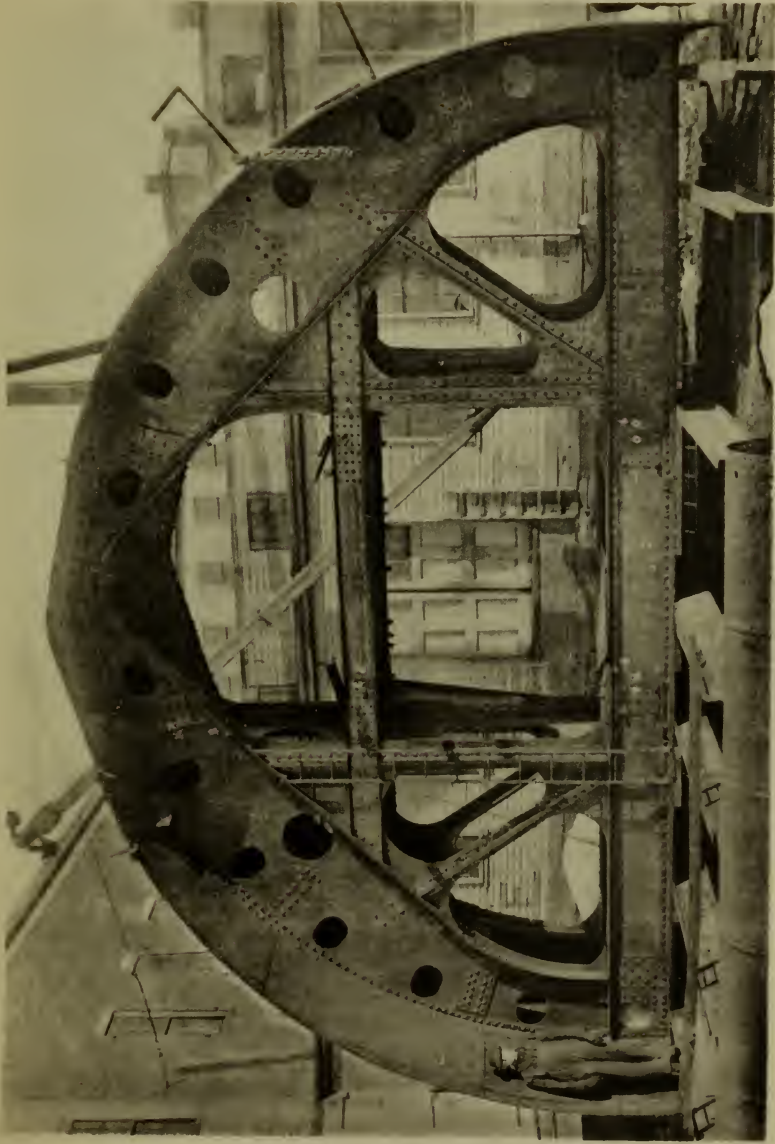
The lower portions of the side walls are built in drifts which are kept about 200 feet in advance of the shield. The invert is put in about 100 feet behind the shield and arch.



ENTRANCE TO TUNNEL UNDER BEACON HILL, AT REAR OF 13 AND 15 GROVE STREET.
APRIL 1, 1910.



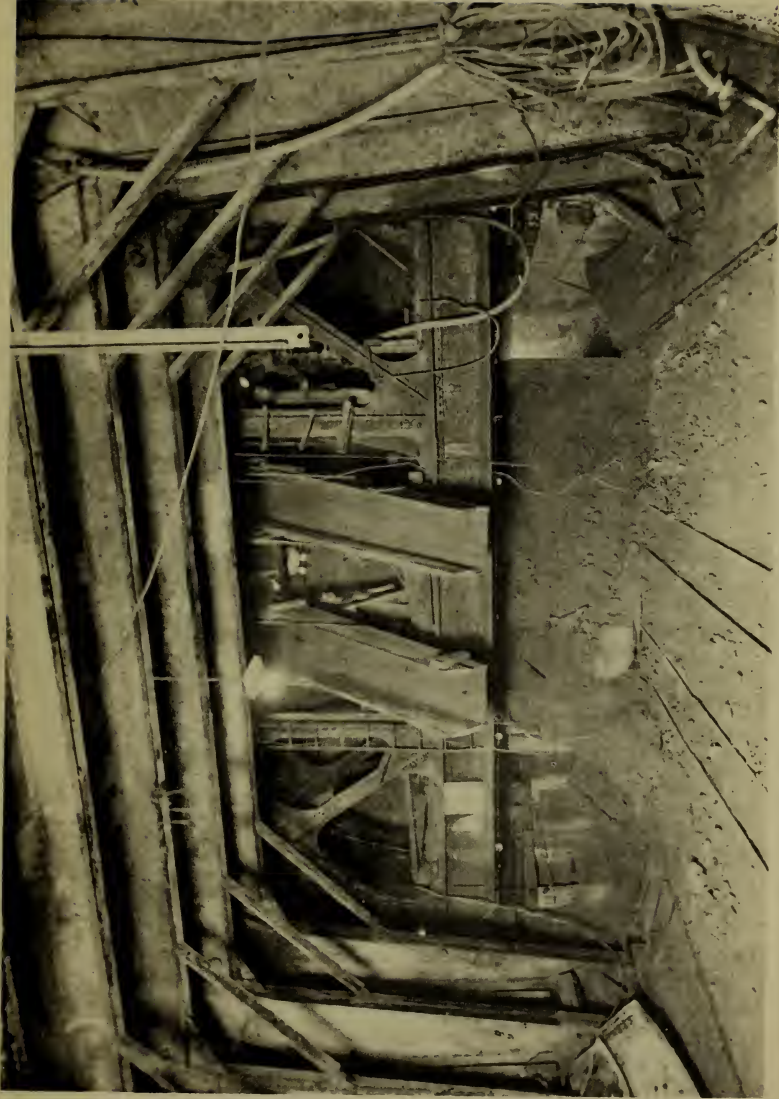
FRONT AND SIDE VIEW OF UNCOMPLETED SHIELD FOR USE IN CONSTRUCTING TUNNEL
UNDER BEACON HILL. JAN. 8, 1910.



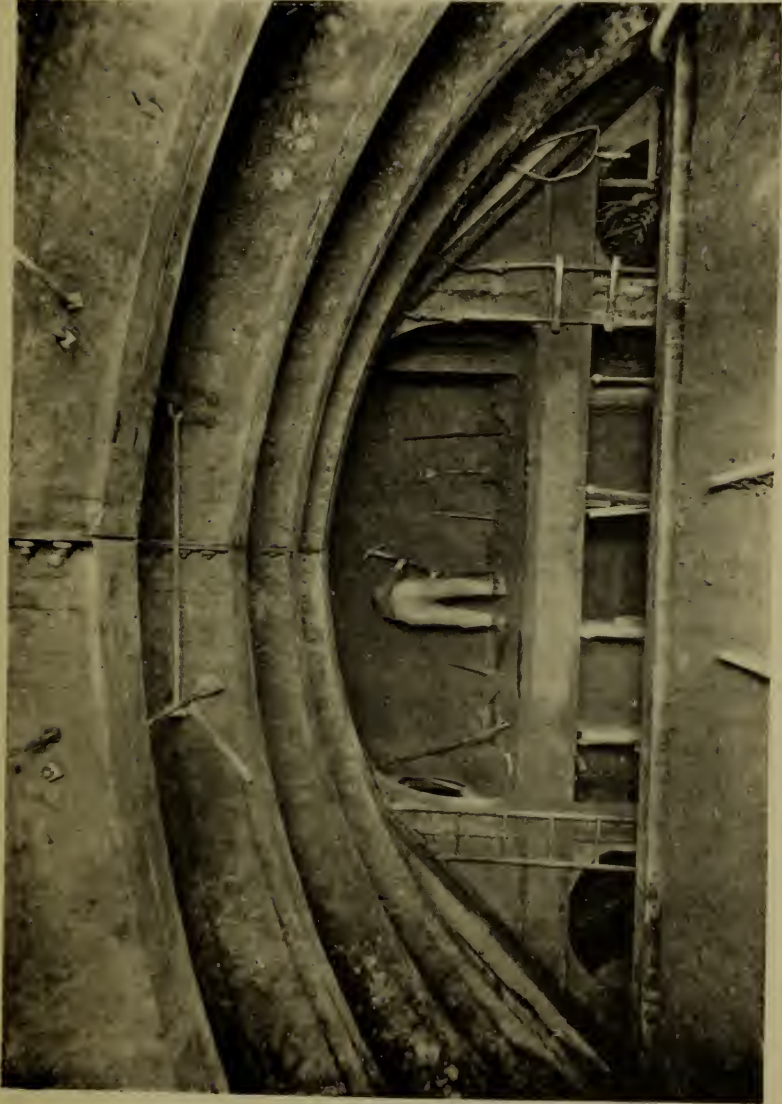
REAR OF UNCOMPLETED SHIELD FOR USE IN CONSTRUCTING TUNNEL UNDER
BEACON HILL. JAN. 20, 1910.



NORTHERLY DRIFT, TUNNEL UNDER BEACON HILL. JUNE 4, 1910



LOWER PART OF SHIELD IN TUNNEL, MAIN HEADING AND SIDE-WALL DRIFTS, TEMPORARY
STEEL CENTERING WITH CROSS-BEAMS. STATION 8 + 41. JUNE 27, 1910.



UPPER PART OF SHIELD IN TUNNEL, MAIN HEADING; TEMPORARY STEEL CENTERING
UNDER CONCRETE ARCH. JUNE 29, 1910.

The shield was put in operation on April 7, 1910. The normal progress, leaving out various minor delays, has been from 45 to 50 feet a week.

The general method adopted for doing this work (Plates 8, 9 and 10) is similar to that used in the construction of Sections B and C of the East Boston Tunnel, described by Chief Engineer Howard A. Carson in the Seventh and Eighth Annual Reports of the Commission, excepting that this work is not being done in compressed air.

All surplus earth is being removed from the tunnel and all structural materials are being taken in through a shaft at the intersection of Phillips and Grove streets.

A number of old wells which formerly furnished water to residents of Beacon Hill have been encountered. Some of the wells are said to have been dug more than a hundred years ago, and they have not been used for a considerable period, for most of them had been covered or built over and their locations forgotten. Some of the deeper ones go down 80 feet below the surface and in several cases the sand veins at the bottom were practically dry.

At Phillips and Grove streets, where the roof of the tunnel is near the surface, it became necessary to make some changes in the sewers. A statement as to these changes is given in Appendix M. Some minor changes in the location of water and gas pipes and electric conduits had also to be made at Phillips and Grove streets.

SECTION 2 INCLUDING A STATION FOR THE CAMBRIDGE CONNECTION.

The station (Plate 4) will have three platforms, extending from Tremont street westerly about 350 feet. Cross-sections at Station 23+50 and Station 24+79 are shown on Plate 3. The easterly ends of the platforms will be under the present Park-street station. The central platform will be used only for passengers taking the cars. The two side platforms will be used only for passengers leaving the cars. There will be six stairways connecting the present Park-street station with the tunnel station below. Two of these stairways, one from each of the present platforms of the Park-street subway station, will lead down to the central platform of the Tunnel station. There will be stairways leading up from each of the side platforms to each of the present subway platforms. It is proposed to have stairs

from Tremont street leading to the platforms of the Tunnel station and also to have inclined elevators for exit from the two side platforms. The general plan and details of this station are in accordance with agreements arrived at after consultation with representatives of the Boston Elevated Railway Company. There will be about 213 feet of tunnel for two tracks, with cross-overs, west of the station, extending to Section 1 of the Tunnel under Beacon Hill. West of the present Park-street station provision will be made for connecting with a proposed station for the Riverbank Subway.

The tracks at the Tremont street end will be about 37 feet below the surface. The depth of earth over the roof at a point about 50 feet west of the Park-street Station will be about 15 feet and at the westerly end of this Section it will be about 35 feet.

Most of the work will be done by tunneling. There will be about 36,000 cubic yards of earth excavation, about 10,000 cubic yards of concrete to be put in place, about 300 tons of steel rods in the concrete for reinforcing and about 400 tons of heavy steel, consisting of posts, beams and girders.

RIVERBANK SUBWAY

No construction work has been begun. A considerable number of preliminary studies of location and the necessary surveys for accurately laying out the subway and for re-locating the sewers have been made.

The proposed route of the Riverbank Subway is shown on Plate 1. The subway will be from about 8,500 feet to 10,000 feet long, depending on the location of its westerly terminal. Starting from a loop station under Boston Common at the Park Street Station, the proposed route is under the Common and private property to a point under Chestnut street, thence under that street to the Charles River Embankment and thence under the grass plot of the embankment by the side of Back street to an incline reaching the surface at Charlesgate East. If, however, the incline should be placed so as to reach the surface at the intersection of Commonwealth avenue and Beacon street the subway would continue beneath the surface west of Massachusetts avenue, would cross under the Stony Brook conduit near the gate-house, and under the stream in the Back Bay Fens to Beacon street, and thence westerly under Beacon street to its intersection with Common-

wealth avenue, where an open incline, extending from about 35 feet west of Raleigh street to about 100 feet east of Deerfield street, would bring the tracks to the surface.

Three stations are under consideration, respectively at Charles street, Dartmouth street and Massachusetts avenue, and various studies for their location and arrangement have been made.

A study of grades shows that the proposed subway will cross many large sewers, involving extensive changes in the sewer system.

These changes naturally fall into two groups: (1) Sewer changes in the vicinity of Charles street which appear unavoidable, and; (2) Changes in the Back Bay sewers at their junction with the Boston Marginal Conduit which may or may not be necessary, according to the grade of the proposed subway.

The changes in the first group include a permanent siphon in the intercepting sewer at Charles street, a temporary siphon at Brimmer street and new sewers to divert the main flow from Chestnut street, in Charles street, River street and Mt. Vernon street in addition to the regular Chestnut street sewers. Studies for these changes have been made in co-operation with the Boston Sewer Division. The situation is complicated by the fact that in this territory, draining into the Charles River Basin, the City is required by law to separate the house sewage from surface water, which will necessitate a double system of pipes along both side-walls of the proposed Charles street Station for practically its whole length.

The second group of sewer changes directly affects the grade of the Riverbank Subway through the Charles River Embankment. At Otter, Berkeley, Dartmouth, Fairfield and Hereford streets there are overflow sewers which cross the line of the subway and during times of storm discharge into the Boston Marginal Conduit. The dry weather flow of sewage is intercepted at Beacon street by dams which divert it through regulating chambers into the intercepting sewer which conveys the sewage to the Calf-Pasture Pumping Station. During a storm, floats in the regulating chambers shut off the passage of water to the intercepting sewer, causing water to overflow the dams and to discharge into the Boston Marginal Conduit. In case of severe storms and a high tide the Marginal

Conduit is unable to carry off the flow and the water overflows at about grade 8.4 into the Charles River Basin.

During a large portion of the time there is practically no water in these overflow sewers, and in case the flow should be carried below the Riverbank Subway in siphons the stagnant water in the said siphons during dry weather might be offensive and the solids would settle to the bottom, making frequent cleaning necessary.

Various studies have been made to care for these sewer outlets where they would cross the Riverbank Subway. By an early subway plan, called the high level plan, practically entire dependence was placed upon siphons for the discharge of the sewers into the Marginal Conduit, the overflows being shown at elevation 10 above City Base. This plan is objectionable because in case of a stoppage in a siphon the water would rise in the sewers to above grade 10 in times of storm and consequently flood the cellars in the area drained.

By another plan, called the low level plan, the Riverbank Subway would be depressed at its lowest point 10.5 feet lower than proposed by the high level and would allow the existing sewers to be extended across the subway roof without siphons. This plan has the objection that it is more expensive, on account of the additional cost of the subway at the greater depth.

Further studies are being made which it is hoped will overcome the principal objections to each of the schemes before mentioned. In these studies the sewer overflows are carried over the proposed subway at grade 7, or about the height to which the water in the Marginal Conduit rises at high tide, and iron pipe siphons under the subway are designed to take care of the water from small storms and to drain the sewers during dry weather. These siphons are so designed that they may be flushed by a stream of water from the Charles River Basin.

EAST BOSTON TUNNEL.

On page 38 of the Fifteenth Annual Report mention is made of some repairing which was then in progress on portions of the air-duct, on account of rusting of the metal reinforcement. The work has been continued, and of the total length of the air-duct (about 4,325 feet) a length of 308 feet has

been rebuilt and about 3,200 linear feet more has been given additional support. The supporting has been done by using copper loops, made from 3-8 inch rods anchored into the arch on each side of the tunnel, and suspending from these loops some No. 3 B. & S. copper wire drawn tightly across under the duct at intervals of 20 inches.

LEAKAGE.

Continuing the work of previous years in the endeavor to lessen the amount of leakage into the tunnel, grout made of neat cement has been forced into porous places wherever found in the upper arch and sidewalls.

While investigating leakage in the sidewalls some portions of the ribbed terra cotta lining were found to be loose, and about 2,900 linear feet of it, some from each side, was accordingly removed. As the concrete walls thus uncovered were found to be fairly dry it seemed unnecessary to replace the lining.

WATER PIPE.

The discharge pipe leading from the pump well to its outlet into the sewer near the ventilating chamber in East Boston is held suspended from one side of the arch by galvanized iron hangers which were found to be in good condition. The hook bolts to which the hangers are attached are fastened to wall plates, and are held in place by two check nuts. The points of contact between the plates and bolts seemed to be subject to the action of stray electric currents, and the bolts were badly eaten by electrolysis. The cross-sectional area of all had been reduced, the best about 10 per cent and some as much as 90 per cent. Two hundred of them were found to be reduced about 50 per cent. All of the bolts have been cut out and replaced by new ones of the same dimensions but galvanized and painted with Tockolith. All of the iron hangers, about 230, have been removed one at a time, scraped free of salt deposits and dirt, then painted with Tockolith and replaced. After placing the new bolts and adjusting the hangers, the top of the bolts and the nuts were encased in concrete, and the hangers and the lower ends of the bolts were given a second coat of the paint.

The work was begun April 8, 1910, and completed in about six weeks, by five men. The operations could be carried on only between 12.30 A. M., and 5.30 A. M.

ASSISTANTS.

In conclusion I commend the efficient services of the Assistants in the Engineering Department during the past year. The names of those employed for more than one month are given in Appendix L. I would also state that I am grateful for valuable advice given by Consulting Engineer Howard A. Carson.

Respectfully submitted,

EDMUND S. DAVIS,

Acting Chief Engineer.

APPENDIX A.

DECISION OF THE SUPREME COURT ON THE PRAYER FOR AN
INJUNCTION TO RESTRAIN THE COMMISSION FROM
CONSTRUCTING THE CAMBRIDGE CONNECTION TO A
TERMINAL AT PARK STREET.

[203 Mass. 146.]

EDMUND D. CODMAN & OTHERS vs. GEORGE G. CROCKER & OTHERS.

SUFFOLK.

June 22, 1909.—September 10, 1909.

Present: KNOWLTON, C. J., HAMMOND, BRALEY, SHELDON, &
RUGG, JJ.

Equity Jurisdiction, Bill of ten taxable inhabitants. *Boston Common*.
Boston Transit Commission. *Public Officers*. *Constitutional Law*.
Vested Rights, Obligation of contracts, Eminent Domain, Delegation of legislative authority. *Statute*, Constitution.

Whether, upon a bill by ten taxable inhabitants under R. L. c. 25, § 100, this court have jurisdiction of a suit to enjoin the members of the Boston Transit Commission from constructing a tunnel from Cambridge under a part of Boston Common to the subway station near Park Street in pursuance of the authority given by St. 1906, c. 520, the court here did not find it necessary to determine, being of opinion that, if they had jurisdiction, the plaintiffs had shown no ground for relief; but the jurisdiction was doubted, because the proceedings sought to be enjoined were in charge of a board of public officers over whom the city had no control and were conducted under an act of the Legislature which left the city no alternative in the performance of its duties.

Boston Common was dedicated by its owners and was set apart by the town in 1634 "for the common use of the inhabitants of Boston as a training field and cow pasture." It long has been settled that the legal title to the property vested in the town of Boston as a municipality, for the public uses referred to in the language quoted, and the city of Boston now holds the land for these public uses. The inhabitants are to use it in common for such purposes as require that it shall be accessible to all as a common to be enjoyed by the public, the two ways specified in the dedication being only typical as representing the common uses for which there was occasion at that time.

Except in the exercise of the right of eminent domain, Boston Common could not be appropriated to a public use inconsistent with the general character of the use for which it originally was dedicated and set apart, and it is possible that there has been such an acceptance of the dedication of the original donors by the town and city of Boston and by the legislature under different statutes as to amount in this respect to a public trust and deprive the public authorities of the right of eminent domain, which otherwise they would have, to devote the property to a public use of an entirely different kind.

St. 1906, c. 520, in authorizing the construction of a tunnel under a part of Boston Common to the subway station near Park Street in such

a way that the occupation of the Common above the surface hardly will be changed perceptibly, and increasing the facilities for approaching the Common, does not authorize any use of the Common inconsistent with the purposes of its original dedication.

The title of Boston Common is held by the city of Boston in its municipal capacity merely as an agency of the government for the benefit of the public, which is represented by the Legislature. Accordingly St. 1906, c. 520, in authorizing the construction of a tunnel under a part of Boston Common, is none the less valid because it contains no provision for a vote of the city government or of the citizens of Boston.

St. 1906, c. 520, authorizing the construction of a tunnel under a part of Boston Common, contains in § 23 the following provision: "If the tunnel hereinabove described is constructed, it shall, except as otherwise expressly provided herein, be constructed and paid for upon and under the same terms, conditions and provisions, . . . as are prescribed by chapter five hundred and thirty-four of the acts of the year nineteen hundred and two for construction of the tunnel therein provided for." The statute referred to contained a provision that it should be submitted for acceptance to the voters of the city at the next municipal election. *Held*, that the reference to the previous statute did not relate to the question whether the tunnel should be constructed, but only to the question how it should be constructed after it was determined that it should be built, and such determination was provided for in St. 1906, c. 520, with no provision for a submission to the voters.

The Boston Transit Commission are an administrative board of public officers, whose members in deciding questions delegated to them by the Legislature do not act judicially but as representatives of the public in the administration of the law, and such a board may act by a majority of their members, if all have had notice and an opportunity to act. Accordingly the determination by a majority of that commission that a tunnel should be constructed under a part of Boston Common in pursuance of the authority given by St. 1906, c. 520, was lawful and binding.

The provision of St. 1906, c. 520, § 23, conferring on the Boston Transit Commission authority to determine whether a tunnel from Cambridge should be constructed under a part of Boston Common to the subway station near Park Street or whether instead a subway should be constructed by an alternative route, does not involve any unconstitutional delegation of legislative authority, but was a delegation only of such powers as lawfully may be exercised by boards of public officers.

KNOWLTON, C. J. This is a bill brought by ten taxpayers of the city of Boston against the city, the members of the Boston Transit Commission, and one McGovern, a contractor, to obtain an injunction against the construction of a tunnel from Cambridge under a part of Boston Common to the subway station near Park Street. The suit was commenced under the R. L. c. 25, § 100. The Boston Elevated Railway Company, as an interested party, was permitted to intervene as a defendant.

There is at least a grave question whether we have jurisdiction of the case under this statute, since the proceedings sought to be enjoined are in charge of a board of public officers over whom the city has no control, and they are conducted under an act of the Legislature which leaves the city no alternative in the performance of its duties. In *Prince v. Crocker*, 166 Mass. 347, jurisdiction was taken under a statute like this, as the city, by vote, had voluntarily given the act effect. But for the reason stated in the opinion in *Browne v. Turner*, 176 Mass. 9, we do not find it necessary to determine this question. If we have jurisdiction, we are of opinion that the plaintiffs have not shown a case that calls for relief. We therefore consider the substantive matters discussed by the parties.

The act principally relied on is the St. 1906, c. 520, which authorizes

the Boston Transit Commission to construct this tunnel for use in the operation of a railway between Boston and Cambridge. The most important and difficult question in the case is whether the Legislature had constitutional authority to provide for the construction of such a tunnel under a part of Boston Common, in view of the uses to which the Common was dedicated by its owners in 1634. It is averred in the bill that it was then set apart "for the common use of the inhabitants of Boston as a training field and cow pasture." No further particulars of the dedication are stated in the bill, but it has been held repeatedly that the legal title to the property vested in the town of Boston as a municipality, for the public uses referred to in the language above quoted. The city of Boston has succeeded to the town, and it holds the land for these public uses. See *Higginson v. Turner*, 171 Mass. 586; *Steele v. Boston*, 128 Mass. 583, 584, 585; *Lincoln v. Boston*, 148 Mass. 578, 580; *Commonwealth v. Davis*, 162 Mass. 510. As the holder of the title, it is in a kind of trust relation to the people for whose use the property was provided.

The first question is, what are the uses to which the property may be put. Only two are specifically mentioned, one for a training field and the other for a cow pasture. The inhabitants are to use it in common. The nature of each use is such as to require that it be accessible to all as a common to be enjoyed by the public. This dedication was very soon after the arrival of the first colonists in this part of New England. Town organizations were inchoate, and town boundaries were not well defined nor much regarded. In looking forward to the uses of the Common as a training field, the donors must have anticipated, that, in its future use, persons would be present as spectators or as participants in the movements, who were not inhabitants of Boston. The words chosen to designate the use, indicate an intention that the place should be kept for occupation by the public as a common, in ways of which the two specified are only typical. As years have gone by, there is no longer any occasion for common occupation of this land as a cow pasture, and in the sense in which the word "training field" was then used, this is almost equally true of this other kind of use. The proper execution of the public trust requires that the property be still kept open as a common for occupation by all the people, in ways that are kindred to those in which a common would ordinarily be used under such a dedication in the early years of the colony. In general, it seems to have been the purpose and endeavor of the public authorities, for almost three centuries, to preserve the Common for uses, as nearly as possible, under changing conditions, like those indicated by the original dedication. Not only have grass and trees been cultivated, and spaces set apart for games and for the evolutions of soldiers, but walks have been laid out, monuments erected, fountains set up and other provisions made for the comfort and pleasure of the public in their use of the place. Some other uses a little more remote from those originally named, which it was thought would not materially interfere with the execution of the general purpose of the donors, have been permitted. Under the changed conditions in recent years, it was held by this court that the construction of a subway through the Common was not inconsistent with the purposes of the original dedication, and that it could be authorized by the Legislature, acting as the representative of the public interest. *Prince v. Crocker*, 166 Mass. 347. This was virtually a decision that such a use was not a violation of the *quasi* trust under which the legal title is held. It does not disregard the doctrine relied on by the plaintiffs, that, where property is dedicated by donors to a public use for a particular purpose, it cannot, at least without the exercise of the paramount right of eminent domain, be appropriated to a use of a different character, in disregard of the trust under which it is held and in violation of the rights of the donors and their legal representatives. *Cary Library v. Bliss*, 151 Mass. 364, 375, 376. *Howe v. Lowell*, 171 Mass. 575. *Louisville and Nashville Railroad Company v. Cincinnati*, 76 Ohio St. 481, 504, 506. *St. Paul v. Chicago, Milwaukee & St. Paul Railroad*, 63 Minn. 330, 352. *Jacksonville v. Jacksonville Railroad*, 67 Ill. 540, 543, 544. *Riverside v. MacLain*,

210 Ill. 308. In accordance with this doctrine, as stated and illustrated in these and other cases, the Common cannot be cut up into building lots and used for the erection of shops, and it may be doubtful whether it could be taken under an act of the Legislature and a vote of the city government of Boston, or of the citizens of Boston, and used by a railroad corporation for a freight yard. The rule that property taken for a public use may afterwards be taken for an entirely different public use that makes a continuance of the first use impossible applies especially to cases where the original taking is under a statute, and rests upon governmental authority. *Boston v. Brookline*, 156 Mass. 172, and cases there cited. *Old Colony Railroad v. Framingham Water Company* 153 Mass. 561, 563. *Prince v. Crocker*, 166 Mass. 347, 362. As against the donors and the interests which they undertook to serve, it is plain that, except in the exercise of the right of eminent domain, the Common could not be appropriated to a public use entirely inconsistent with the general character of the use originally intended. Whether it could be taken in the exercise of this right it is unnecessary in this case to decide, as the statute does not purport to take property in the Common under the right of eminent domain. It contains no provision for compensation. It is possible that there has been such an acceptance of the dedication of the original donors by the town and city of Boston and by the Legislature under different statutes, and such a creation of a public trust in this particular as to deprive the public authorities of the right, that otherwise they would have, to devote the property to a public use of an entirely different kind. If we assume this as a possibility in favor of the plaintiffs, we are still of opinion that the proposed use is permissible. It is not proposed to interfere much with the surface of the Common. The only change authorized by the commissioners is a slight enlargement of the approaches to the station underground near Park Street. So far as appears, the occupation above the surface, for all proper purposes, will be changed hardly perceptibly, if at all. The increase of facilities for approaching the Common will be a convenience to the public in the use and enjoyment of it. In *Wellington, Petitioner*, 16 Pick. 87, which deals with the original dedication of the Common in Cambridge to use as a training field, it was held that the laying out of a public highway through a common similar to Boston Common was not inconsistent with the condition of the grant from the proprietors to the town. See also *United States v. Illinois Central Railroad*, 2 Bliss, 174, 179. Upon this point we think the decision in *Prince v. Crocker*, *ubi supra*, is also conclusive, notwithstanding the reference in the opinion to the vote of the inhabitants of Boston, accepting the act of the Legislature. If the use for a subway were inconsistent with the use for which the property is held under the original donation, and if the use could not be changed by the public authorities so as to be materially different from that originally contemplated, the action of the legal voters of Boston could not deprive the citizens of Boston or the general public of their rights under the original dedication. The ground on which the decision stands is that the new use is not at variance with the general purpose of the donors, and that accordingly it was within the power of the authorities, representing the public as beneficiaries under the trust, to provide for this additional use of the property.

It having been decided that the construction of the subway was lawful by reason of the statute and the action of the voters of Boston, is it any less so under the present statute, without action of the voters? The relations of the city of Boston to the act are only in its municipal capacity. In different decisions the city has been treated as holding the legal title; but it holds it only as an agency of government representing the interests of the public. It has no rights of a private owner, apart from its holding as a representative of the government. As an agency of the government representing the people, it is subject to the control of the Legislature, which may abolish it and establish another agency in its place, or may deprive it of its power to represent the public, or may transfer a part or all of its governmental authority to another creation. *Boston Electric*

Light Company v. Boston Terminal Company 184 Mass. 566, 570. *Mount Hope Cemetery v. Boston*, 158 Mass. 509, 511, 520. As was said in the opinion in *Steele v. Boston*, 128 Mass. 583, "the city holds the Common for the public benefit, and not for its emolument, or as a source of revenue, and has constructed and kept in repair these paths as a part of the Common for the comfort and recreation of the public, and not as a part of its system of highways or streets." In *Commonwealth v. Davis*, 162 Mass. 510, Mr. Justice Holmes said in the opinion: "There is no evidence before us to show that the power of the Legislature over the Common is less than its power over any other park dedicated to the use of the public, or over public streets the legal title to which is in a city or town. *Lincoln v. Boston*, 148 Mass. 578, 580. As representative of the public, it may and does exercise control over the use which the public may make of such places, and it may, and does, delegate more or less of such control to the city or town immediately concerned." In *Lincoln v. Boston*, 148 Mass. 578, the court said: "The city is alleged to own the Common. But it appears by statutes and decisions, of which we are bound to take notice, that its rights, even at common law, hardly extend beyond a technical title, without the usual incidents of title, and it is equally apparent that the license which it gave was not given by it as an act of ownership, but as an act of municipal government The use of it is dedicated to and belongs to the public . . . and the Legislature has regulated the use very strictly. The city cannot let or sell the Common. St. 1854, c. 448, § 39. It cannot build upon it except within the narrowest limits. Pub. Sts. c. 54, § 16; c. 27, § 50. See St. 1859, c. 210, § 3. It cannot lay out ways over it. Pub. Sts. c. 54, § 13." See also *Clark v. Waltham*, 128 Mass. 567. We are of opinion that the title of the city is held only in its municipal capacity as an agency of the government for the benefit of the public, and that the power of the Legislature to represent this authority is supreme. It follows that the statute is a sufficient authority for the construction of the tunnel, without a vote of the city government or of the citizens of Boston.

The plaintiffs contend that the language of the twenty-third section of the act requires the submission of the question whether the tunnel shall be constructed to the voters of Boston. A part of this section is as follows: "If the tunnel hereinabove described is constructed, it shall, except as otherwise expressly provided herein, be constructed and paid for upon and under the same terms, conditions and provisions, so far as the same are applicable, and with the same rights, powers and privileges in respect of the construction thereof, which rights, powers and privileges are hereby conferred for such purpose upon the commission, the board, the city of Boston and its treasurer, the company, and other public officers or parties in interest respectively, including any persons sustaining damages by the taking of or injury to property by the Commission under authority hereof, as are prescribed by chapter five hundred and thirty-four of the acts of the year nineteen hundred and two for construction of the tunnel therein provided for; including the rights and powers conferred by section thirteen of said act, which section shall also apply to the location of the tunnel and to the construction of the subway referred to in this section if that is constructed." We are of opinion that this language does not relate to the question whether the tunnel shall be constructed, but only to the question how it shall be constructed after it is determined that it shall be built. Other provisions are inconsistent with the interpretation contended for by the plaintiff. Among other things it is provided that, if the Elevated Railway Company is dissatisfied with the decision of the Transit Commission, it may apply to the Board of Railroad Commissioners, who may "consider and finally determine the question." This contention of the plaintiffs is not sustained.

They also say that the determination of the Transit Commission is invalid because only a majority of the board considered and decided the question. The Transit Commission is an administrative board of public officers. In this business its members were not acting judicially but as

representatives of the public in the administration of the law. Such a board may act by a majority of its members, for all had notice and an opportunity to act, and the determination of a majority of a quorum under such circumstances is binding. *Damon v. Granby*, 2 Pick. 345, 355. *Plymouth v. County Commissioners*, 16 Gray, 341. *Mayor & Aldermen of Worcester v. Railroad Commissioners*, 113 Mass. 161. *Boston v. Doyle*, 184 Mass. 373, 385. *St. Joseph Township v. Rogers*, 16 Wall, 644.

Objection is made to the action of the Commission on the ground that the statute involves an unconstitutional delegation of legislative authority. But the legislature determined that a railway for the same general service might be constructed by either of two routes to either of two termini, and left to this Commission the question of administration as to which of the two modes of building this great public work would be the better. This was a delegation only of such powers as often have been left to boards of public officers with the approval of this and other courts. *Brodline v. Revere*, 182 Mass. 598. *Lyon v. County Commissioners*, 148 Mass. 148. *Martin v. Witherspoon*, 135 Mass. 175. *Opinion of the Justices*, 138 Mass. 601. *Welsh v. Swasey*, 193 Mass. 364, 375. *Field v. Clark*, 143 U. S. 649. *Kollock, Petitioner*, 165 U. S. 526. *Agawam v. Hampden County*, 130 Mass. 218. *Flood v. Leahy*, 183 Mass. 232, 236. *Commonwealth v. Union Passenger Railroad*, 163 Penn. St. 22; *People v. Dunn*, 80 Cal. 211.

Bill dismissed.

APPENDIX B.

[CHAPTER 579.]

AN ACT TO PROVIDE FOR THE RELOCATION OF THE WESTERLY TERMINAL OR CONNECTION OF THE RIVERBANK SUBWAY IN THE CITY OF BOSTON.

Be it enacted, etc., as follows:

SECTION 1. The Boston transit commission is hereby authorized and empowered, after such notice and hearing as are required by section one of chapter five hundred and seventy-three of the acts of the year nineteen hundred and seven, and subject to the provisions of section twelve of said chapter, to relocate the westerly terminal point or points of the subway therein provided for, in Beacon street, at or near and east of the junction of Commonwealth avenue, Beacon street, Brookline avenue and Deerfield street. In case such relocation shall so be established, the open cut for the railway incline shall begin westerly of the intersection of the easterly side line of Raleigh street and Beacon street, and such relocation shall be deemed to be the true location of said westerly terminal or connection of said subway to all intents and purposes as if the present location thereof had not been determined heretofore by said commission. Said commission shall grant to the West End Street Railway Company or to the Boston Elevated Railway Company locations for such surface tracks as may be reasonably necessary to connect said subway with the existing surface tracks on Commonwealth avenue, Beacon street and Brookline avenue, and locations for surface tracks on each side of the proposed open cut in Beacon street in order to afford a reasonable connection between surface tracks on Beacon street westerly of the proposed open cut and the surface tracks on Beacon street easterly of the proposed open cut, and in connection with such locations said commission may change and alter existing locations, and shall grant the right to maintain poles and wires and other necessary equipment. If the westerly terminal point or points of the subway are relocated, as herein provided for, no compensation or damages shall be payable by reason of the construction or operation of said subway, approaches, open cut, inclines and other structures, within the limits of Beacon street, and public ways or lands at or near the Back Bay Fens.

SECTION 2. This act shall take effect upon its acceptance by the Boston Elevated Railway Company by vote of its board of directors and return thereof to said commission within two months after its passage. [*Approved May 31, 1910.*]

APPENDIX C.

DECISION OF THE SUPREME COURT IN THE CASE OF THE
CITY OF BOSTON VS. GEORGE N. TALBOT.

[206 Mass. 82.]

CITY OF BOSTON vs. GEORGE N. TALBOT.

SUFFOLK.

March 18, 1910.—May 18, 1910.

Present: KNOWLTON, C. J., HAMMOND, LORING, BRALEY, &
RUGG, JJ.*Constitutional Law, Eminent domain. Boston Transit Commission. Summary Process. Evidence, Extrinsic affecting writings.*

Whether the purpose for which land is authorized to be taken under the right of eminent domain is a public use is a judicial question, and its determination by the Legislature is subject to revision by this court; but, where the use for which the taking is authorized is a public one, the question whether the taking of a particular parcel of real estate is necessary or expedient is a legislative question, upon which the decision of the Legislature as a tribunal of fact is conclusive, and in deciding it the Legislature may determine what kind of an estate it is necessary to take to accomplish the public purpose for which the taking is made, and may authorize the taking of a fee in the public interest, even where the use of the fee will not be needed permanently, and in such a case may authorize a subsequent sale or leasing of any rights in the property that no longer are required for the public use.

The right of the Legislature, to determine what land or rights or easements in land it is necessary or expedient to take for use in the construction or maintenance of a tunnel and its appointments under a street of a city for the promotion of the rapid transit of passengers, they can delegate to a commission representing the public interest in that particular.

Section 7 of St. 1902, c. 534, authorizing the construction of additional tunnels and subways in Boston, providing that the Boston transit commission "may sell or remove the buildings from any and all lands taken by it, and shall sell, if a sale be practicable, or if not shall lease, any lands, or rights or interests in land or other property so taken, or purchased for the purpose of this act, whenever the same shall in the opinion of the commission cease to be needed for such purposes," is constitutional, and that commission, in taking real estate in fee under § 6 of the same chapter and paying for it, and, when the construction of the tunnel is completed, disposing, under the power given in § 7, of such part of the property taken as is no longer needed, are exercising legislative authority properly delegated to them, and their decision in determining in good faith what property it is expedient to take to accomplish the public purpose is not subject to revision.

In an action, where the effect and validity of a taking of real estate by the Boston transit commission under St. 1902, c. 534, for use in the construction and maintenance of a tunnel beneath Washington Street in Boston are in question, evidence offered to show "the sense of the commission" or the belief or the conclusion of the commis-

sioners is incompetent, and so is all evidence which attempts to show the views and opinions of the individual members of the commission, the taking by the commission being done by an instrument in writing filed in the registry of deeds, which by reason of delegated authority stands in the place of a legislative act and is to be interpreted like a statute.

The Boston transit commission, in taking a parcel of land and the building upon it under St. 1902, c. 534, for use in the construction and maintenance of a tunnel beneath Washington Street in Boston, where the original plan of the engineer of the commission contemplated a taking of only the part of the real estate which afterwards was used for the tunnel and a station, consisting of a basement underneath the greater part of the building, lawfully may take the fee of the whole property, if such a taking seems to the commission reasonably necessary for the proper and economical accomplishment of the work.

In an action, where the effect and validity of a taking of real estate by the Boston transit commission under St. 1902, c. 534, for use in the construction and maintenance of a tunnel beneath Washington Street in Boston are in question, evidence tending to show that the commission were mistaken in their judgment as to what real estate it was necessary or proper to take is incompetent.

An action of summary process for the possession of land or tenements under R. L. c. 181 is the proper remedy for the city of Boston to recover from the lessee of the previous owner of real estate which has been taken by the Boston transit commission under St. 1902, c. 534, for use in the construction and maintenance of a tunnel beneath Washington Street in Boston, where the lease of the defendant has been terminated either by the taking under the right of eminent domain or by a notice given by the lessor under a provision of the lease permitting such a termination in case the premises or any part thereof should be taken for a street or other public use. Whether the defendant in such an action properly can raise the questions of the validity of the taking and the constitutionality of the statute under which it was made, here was not considered, because the taking was held to be valid and the statute to be constitutional.

SUMMARY PROCESS, under R. L. c. 181, by the city of Boston to recover possession of the street floor and upper stories of a building at the corner of Washington Street and Summer Street in Boston, alleged to have been acquired by the plaintiff by a valid taking by the Boston transit commission in connection with the construction of the tunnel under Washington Street and of a station for that tunnel under the corner mentioned. Writ in the Municipal Court of the City of Boston dated December 26, 1907.

On appeal to the Superior Court the case was tried before *Aiken*, C.J. The taking filed in the registry of deeds, which was offered in evidence by the plaintiff and was marked Exhibit 1, contained the following:

"The Boston transit commission deems that it is necessary for the purposes set forth in chapter 534 of the Acts of the Legislature of the Commonwealth of Massachusetts for the year 1902, being an act to provide for the construction of additional tunnels and subways in the city of Boston, and every other power and authority it hereto enabling, to take in fee for the city of Boston a parcel of land with the buildings thereon situated in Boston in the Commonwealth of Massachusetts and bounded and described as follows:" Here followed the description of the premises taken which included not only the premises in dispute, but also the underlying part of the same parcel of real estate which now is in use by the city of Boston as a station of the Washington Street tunnel and an entrance thereto and an exit therefrom.

There were offered in evidence by the plaintiff two leases from the executors and trustees of the Salisbury estate, the owners, to the defendant, marked respectively Exhibit 2 and Exhibit 3. The lease marked Exhibit 2 was dated December 15, 1902, and was for a term of five years and six

months from January 1, 1903, to July 1, 1908. The lease marked Exhibit 3 was dated February 12, 1907, and was for a term of five years from the expiration of the term of lease marked Exhibit 2. These were admitted without formal proof of execution by agreement of the parties. The plaintiff also offered in evidence two notices as follows: A notice of a termination of the defendant's lease served upon the defendant by the executors, lessees, dated October 9, 1908, with the return of the deputy sheriff thereon, which notice was marked Exhibit 4, and a notice to quit to the defendant from the city of Boston by Thomas M. Babson, Esquire, corporation counsel, dated December 20, 1907, which, together with the constable's return of service thereon was marked Exhibit 5.

The defendant objected to the introduction of papers marked Exhibits 1, 4 and 5, on the ground that they did not tend to prove any fact that would entitle the plaintiff to maintain its action in its present form of ejectment. The Chief Justice overruled the defendant's objection and admitted the evidence, and the defendant excepted. It being admitted that the defendant was still in possession of the premises, the plaintiff rested.

Thereupon the defendant asked the judge to order a verdict for the defendant on the ground that the plaintiff had shown no title in or right of possession to the premises in question, and that an action of ejectment or summary process would not lie for the recovery of premises under the facts shown by the plaintiff's proof where the validity of the alleged taking and the plaintiff's title to the premises were in controversy.

The Chief Justice refused to rule as requested, and the defendant excepted.

During the discussion, and before this ruling, the counsel for the plaintiff commented on the fact that no answer had been filed. Thereupon the defendant offered an answer for filing which, against the objection and exception of the plaintiff, the Chief Justice allowed to be filed as of the time of the opening of the trial. The defendant set up, among other matters, that the taking was illegal because it was not authorized by the statute and also because the statute was unconstitutional.

The defendant then offered in evidence a model of the building in question showing such parts of the building as had actually been used for tunnel or subway purposes and such parts as had been continuously in the possession of the defendant and as he contended had never been used for tunnel purposes.

The defendant also offered to prove certain facts which the Chief Justice ruled were inadmissible on the ground that the proceedings of the commission were conclusive upon the issues which the defendant sought to raise by the evidence offered. Accordingly the defendant made a formal offer of proof in the following terms:

"In the above entitled case the defendant offers proof of the following facts:

"Some months prior to the alleged taking, which occurred in September, 1907, the Boston transit commission having determined to locate a station of the Washington Street tunnel under the premises in question, caused their engineer to prepare plans for such a station with an entrance thereto and an exit therefrom on Washington Street and Summer Street. These plans contemplated and involved a taking of a portion of the premises only substantially such as is now in use at that station and as shown upon the model offered in evidence—to wit, a small part of the first floor and a larger part of the basement, leaving a part of the basement, nearly all of the first floor (the spaces occupied for entrance and exit as shown on the model being reserved) and the three upper floors, unappropriated for any use in connection with the subway.

"The commission considered and discussed for some time whether they would take only the part of the property above described and now in use for subway purposes, or take the whole estate and thereafter sell that part which was not required and which they did not intend to use for subway or tunnel purposes. It was the sense of the commission that

considering the small proportion of the property which was required for tunnel purposes, it would probably be better to take only the part actually required for such tunnel purposes. The commission investigated the relative cost of taking only that part of the estate needed for the use of the subway station or tunnel purposes, as compared with taking the entire property and subsequently selling the part which they did not intend so to use. They reached the conclusion that the location of the station with its entrance and exit in the property would make that portion of the estate which they did not intend to use for tunnel purposes much more valuable, so that if taken by the city it could be sold at a price which would make the cost of acquiring what they wanted to use much less than the cost would be if they took only what they needed and expected to use for subway purposes; that they would thereby acquire for the city the value of the benefit to the rest of the estate which would accrue from the taking and use of the parts which they proposed actually to use for station purposes.

"Thereupon the commission decided to take the whole estate really believing that only a 'small proportion' was 'required for tunnel purposes' and proposing and intending to use for the purposes described in the act only that 'small proportion' which they did in fact so use. The commission included in their alleged taking that part of the estate which they did not intend to use for tunnel purposes for the sole purpose and with the sole intent of selling such part as soon as a favorable opportunity arose.

"Accordingly, the commission took that part of the estate which is now in suit under the guise of eminent domain but for the purpose of selling the same thereafter, and their taking was in excess of the needs of any purposes described in the act.

"No claim is made or suggested that the commission or any members thereof acted otherwise than in what they believed to be and what actually would have been for the financial advantage of the city, or that they acted in bad faith in any sense of personal gain or advantage; yet they did not in good faith believe or decide that any more of the estate was actually needed for the purposes of the act than was actually so put into use and as is shown in said model in evidence and heretofore described.

"Within less than a week after the alleged taking, the property in suit, that is the part taken not for tunnel or station uses, was placed in the hands of brokers either to negotiate a lease of the same for a term of years or to secure a purchaser thereof. It was contemplated that the proposed lease should go into effect at once, and that the lessee should continue in occupation of the premises in suit continuously throughout the time that the work of subway construction was progressing.

"Before and while the subway was being built various offers were made for the purchase of this property, were considered by the commission, and rejected solely because the price was considered inadequate. The said broker applied to this defendant to become a lessee for a period of five months from October 1, 1907, during the construction of the subway, the premises to be practically the same (with the exception of parts of the basement) as those in suit. The defendant was also invited to become a purchaser of the same premises. The premises in suit from the date of the alleged taking have been for sale to any purchaser who would give a price considered by the commission as adequate, and they were taken solely in contemplation of such sale and for the purpose thereof.

"From the date of the alleged taking the defendant has occupied the said premises exclusively for the conduct of his business as a dealer in men's furnishing goods. No part of them have ever been used for subway or tunnel purposes."

The Chief Justice ruled that the evidence offered was immaterial and inadmissible, not upon grounds of informality in the form of the offer or upon any ground peculiar to the form of action, but broadly on the ground that the action of the transit commission was conclusive upon the defendant, and that the facts which he offered to show would therefore be inadmissible in any form of action for trying the title to the premises. He ruled that

the statute under which the transit commission acted was constitutional; that it authorized the taking of the whole of the estate in fee, and that, the commission having voted that it was necessary to take the entire estate for public use, its action was conclusive and final. The defendant excepted to all of these rulings.

The Chief Justice thereupon ordered the jury to return a verdict for the plaintiff, and at the request of both parties reported the case for determination by this court. If his ruling that this proceeding for ejectment could be maintained for the possession of the premises in question was wrong, judgment was to be entered for the defendant. If, however, this action could be maintained by the plaintiff upon the evidence offered by it, and the whole or any part of the evidence offered by the defendant in his offer of proof was admissible, the case was to be remanded to the Superior Court.

T. M. Babson, for the plaintiff.
S. L. Whipple, for the defendant.

KNOWLTON, C.J. This is an action brought under the R. L. c. 181, to recover possession of real estate at the corner of Washington and Summer Streets in Boston. This property was taken by the Boston transit commission on September 12, 1907, under the St. 1902, c. 534, for the purposes set forth in the act, which is entitled "An Act to provide for the construction of additional tunnels and subways in the city of Boston." The principal question raised by the report is whether the taking was valid.

The form of the taking is in perfect compliance with the terms of the statute. It is contended by the defendant that the act is unconstitutional. In § 6 it authorizes the taking of lands in fee, and of "easements, estates, and rights in land, including the right to go under the surface thereof or through or under buildings or parts of buildings thereon," etc. The taking "may be confined to a portion or section of such parcel fixed by horizontal planes of division below or above or at the surface of the soil, and in such case no taking need be made of upper or lower portions or sections, except of such easements therein, if any, as the commission may deem necessary." In § 7 authority is given to sell or remove the buildings from any and all lands taken, and to sell if a sale be practicable, and if not to lease any lands or rights or interests in land or other property so taken, whenever the same shall, in the opinion of the commission, cease to be needed for such purposes.

The construction of tunnels and stations under ground, with the approaches thereto and all the necessary appointments thereof, called for uses of land in certain places, which involved many complications in reference to the effect upon land adjacent to that which would be occupied permanently by the tunnel and stations and approaches thereto, and upon buildings or horizontal planes of land above the portions permanently occupied. Risks of injury to buildings or foundations of buildings not within the limits of the tunnels or stations to be constructed would be involved in some places. Of course there would be a liability for damages, under § 8 of the statute, wherever property was taken or injured by the commission, under the authority of the act. If the construction of the tunnel, or of a station of the tunnel, would necessarily have a directly injurious effect upon land outside of the limits of the tunnel, so as to subject the city to a substantial claim for damages on that account, it might be reasonable and proper for the commission to take the land in fee and pay for it, and then, when the work was ended, to dispose of that part which was no longer needed.

The Legislature well might provide for a taking of land and a construction of the work with a reasonable regard to economy, and a taking in fee of adjacent land likely to be seriously injured in the progress of the work might be more economical than a taking only of that which would be needed permanently. The uncertainties as to the extent of injuries to the adjacent land from construction might cause serious embarrassment

in the assessment of damages, and sometimes lead to large awards, founded on risks that might prove to be much less than was at first supposed.

The question whether the use for which land is taken under the right of eminent domain is a public use is a judicial question, and the determination of the Legislature upon it may be revised by the court. *Talbot v. Hudson*, 16 Gray, 417. *Moore v. Sanford*, 151 Mass. 285, 288. *Lowell v. Boston*, 111 Mass. 454. Opinion of the justices, 204 Mass. 607, 616. But if the use for which the taking is made is public, the question whether the taking of a particular piece of real estate is necessary or expedient is a legislative question, upon which the decision of the Legislature, as a tribunal of fact, is conclusive. *Talbot v. Hudson*, 16 Gray, 417, 424. *Dingley v. Boston*, 100 Mass. 544, 560. *Lynch v. Forbes*, 161 Mass. 302. *Burnett v. Boston*, 173 Mass. 173, 176. *Moore v. Sanford*, 151 Mass. 285, 288. *Shoemaker v. United States*, 147, U.S. 282, 298. *United States v. Gettysburg Electric Railway* 160 U.S. 668-685. *Challis v. Atchison, Topeka & Santa Fe Railroad*, 16 Kans. 117, 127. This doctrine covers the principles that the Legislature may determine what kind of an estate it is necessary to take to accomplish the public purpose for which the taking is made, and may take a fee, even though the use of the fee may not be permanent. *Sweet v. Buffalo, New York & Philadelphia Railway*, 79 N. Y. 293. *Water Works Co. of Indianapolis v. Burkhart*, 41 Ind. 364. *Dingley v. Boston*, *ubi supra*. *Burnett v. Boston*, *ubi supra*. The Legislature well might determine that a taking in fee might be necessary in certain cases, in reference to a reasonably economical management of the business, in the public interest, even though the use of the fee would not be needed permanently, and might authorize a subsequent sale or leasing of any rights in the property that were no longer devoted to the public use. We see no reason for doubting the constitutionality of the act.

The right of the Legislature to determine what land, or rights, or easements, in land, it was necessary or expedient to take for use in the construction or maintenance of a tunnel and its appointments, it could delegate to a tribunal representing the public interest in that particular. The act of the Boston transit commission, in the form of a taking in writing, duly recorded, in conformity with the statute, is to be treated as if it were a statute. Its exercise of delegated legislative authority and its final judgment in determining what property it was expedient to take to accomplish the strictly public purpose for which the taking was made are not subject to revision. Of course, if the instrument of taking, considered in all its parts, and applied to the property described in it, showed that the property was not taken for the purposes set forth in the statute, and that the portion of the writing averring such a taking was controlled by other parts of it which showed those words to be used erroneously, or to be a mere pretence, the taking would be set aside as not for a public use. But there is nothing on the face of this writing that indicates the possibility of such a construction.

We come now to the defendant's offer of proof. It is to be remembered that this is an offer of evidence to control the construction of a writing which stands in the place of a legislative act. It is not competent to inquire into the individual opinion or motive of any member of the Boston transit commission. Said Mr. Justice Field in giving the opinion of the court in *Soon Hing v. Crowley*, 113 U.S. 703, 710: "The rule is general with reference to the enactment of all legislative bodies that the courts cannot inquire into the motives of the legislators in passing them, except as they may be disclosed on the face of the acts, or inferable from their operation, considered with reference to the condition of the country and existing legislation. . . . The diverse character of such motives, and the impossibility of penetrating into the hearts of men and ascertaining the truth, precludes all such inquiries as impracticable and futile." In *United States v. Trans-Missouri Freight Association*, 166 U.S. 290, 318, it is said that "there is, too, a general acquiescence in the doctrine that debates in Congress are not appropriate sources of information from which

to discover the meaning of the language of a statute passed by that body." See also *Browne v. Turner*, 174 Mass. 150, 159. While facts that appear in connection with the proceedings in the enactment of statutes may sometimes be shown for the purpose of illustrating the subject to which the statute applies, the expression of individual opinions, in debates or otherwise, is never competent. Under this principle, most of what was offered was incompetent. "The sense of the commission," the belief of the commission, and the "conclusion" of the commission in reference to the taking, are to be determined from their final act of taking. The offers, in these particulars, seem to be attempts to show the views and opinions of individual members of the commission, which could not be put in evidence. Other parts of the offer seem to rest upon the erroneous assumption that the commission could not take land, except that which would be needed for permanent use as a part of the tunnel or station, and especially that it could not consider what would be an economical manner of taking land and doing work, in reference to the probable damages from the process of construction, and the risks of injury to portions of the premises that would not be needed permanently.

If the original plan of the engineer contemplated a taking only of the part now in use, which includes a basement underneath the greater part of the building, that did not prevent a taking of the fee, if such a taking afterwards seemed to the commission reasonably necessary for the proper and economical accomplishment of the work. It was right for the commission to consider the cost of acquiring that which would be needed permanently, and it was right to take the building above the part which would be occupied permanently, if, in reference to the probable damages that would be awarded for injury to the building and for interference with the use of it, this seemed reasonably necessary to an economical management of the business in their charge.

So far as the facts offered in evidence tended to show that the commission was mistaken in its judgment as to what it was necessary and proper to take, they were incompetent, for upon that question its judgment was conclusive. None of the facts, if proved, would have controlled the official declaration of the commission that the taking was for the purposes set forth in the statute. They were not inconsistent with it. There was no error of law in the exclusion of the evidence.

We have considered the case without reference to whether this is a proper form of proceeding in which to raise such questions as the defendant has sought to raise, as to which we express no opinion.

The defendant also contends that, if the taking was valid, the plaintiff cannot enforce its rights in this form of action. One of the conditions under which this summary process may be maintained, as stated in the R. L. c. 181, § 1, is when "the lessee of land or tenements or a person holding under him holds possession without right after the determination of a lease by its own limitation or by notice to quit or otherwise." In such a case "the person entitled to the land or tenements may recover possession thereof," under this section. This case comes exactly within the terms of the statute. If there is a termination of the lease in any way, the lessee becomes subject to the process. A taking of the property in fee, under the right of eminent domain, may well be held to be a termination of the lease. *Goodyear Shoe Machinery Co. v. Boston Terminal Co.* 176 Mass. 115. But besides this, there was, on the part of the lessors before this action was brought, a formal termination of the lease by notice, in accordance with an express provision for its termination by the lessors at their election, in case the premises or any part thereof should be taken for a street or other public use. The election of the lessors to terminate the lease, and their notice to the defendant accordingly, brought his tenancy to an end. *Goodyear Shoe Machinery Co. v. Boston Terminal Co., ubi supra.*

The plaintiff is "the person entitled to the land or tenements," within the language of the statute, and as such "may recover possession thereof." This ground of defence is not well taken.

Judgment on the verdict.

APPENDIX D.

LEASE OF THE SALISBURY ESTATE, WASHINGTON AND
SUMMER STREETS, TO GEORGE N. TALBOT.

This indenture, made this first day of June, A.D. 1910, between the City of Boston, acting by the Boston Transit Commission, hereinafter called the lessor (which expression shall include the successors and assigns of said City and Commission unless the context is clearly inconsistent therewith) and George N. Talbot of Brookline, Massachusetts, hereinafter called the lessee, (which expression shall include his heirs, executors, administrators and assigns unless the context is clearly inconsistent therewith).

Witnesseth: In consideration of the covenants herein contained by the lessee to be performed the lessor hereby demises and leases unto the lessee a parcel of land with the building thereon situated in the city of Boston, bounded southerly by Summer street, westerly by Washington street, northerly by land now or formerly of estate of Luther Adams, and easterly by the easterly line of Summer street court, together with the rights appurtenant thereto in, over and under said Summer street court and subject to the rights of other abutters thereon, excepting and reserving, however, so much of said premises as is now used for or in connection with the Washington street tunnel and the entrances thereto and exits therefrom, substantially as shown in the final plans thereof now on file in the office of said Commission, and also reserving to the lessor the right to excavate and use any portion of said premises not already excavated. Said premises are a part of those taken by said Commission by an instrument of taking dated September 12, 1907, and filed in the Registry of Deeds for the County of Suffolk, Book 3234, Page 562.

TO HAVE AND TO HOLD said premises unto the said lessee for the term of three years and seven months beginning with the day of the date hereof, unless sooner terminated as hereinafter provided. By a written notice given by the City of Boston or by the Boston Transit Commission at any time on or after the first day of June, 1911, this lease may be terminated at any time after the expiration of six months from the service of such notice, and in case the lessee vacates the premises at or before the date for termination fixed in the notice, and has otherwise fulfilled his covenants and agreements herein contained, then and then only shall he be relieved from the payment of rent and taxes for said six months. Yielding and paying (except only in case of fire or other casualty as hereinafter mentioned) rent at the rate of Nineteen Thousand Dollars (\$19,000) per annum in equal monthly instalments of One Thousand Five Hundred Eighty-Three and 33/100 Dollars (\$1,583.33), payable on the first day of each month for the month beginning with that day, and at the same rate for any part of a month unexpired at the legal termination of the lease, and at the same rate for any further time beyond the expiration of the lease that the lessee may hold the said premises or any part thereof.

Should gold dollars of the United States of present standard of weight and fineness at any time during the term be at a premium as regards then current funds, the rent so long as a premium exists as aforesaid shall be paid in gold coin of the United States of present standard of weight and fineness.

The lessee further covenants with the lessor to pay during said term

as the same become due all taxes, charges for water, and assessments, except assessments for sewers, sidewalks and betterments, and further to pay interest at the rate of five (5) per cent. per annum on such sums, if any, as may be assessed upon the premises during said term, for sewers, sidewalks and any betterments, other than for benefits caused by the construction of said tunnel and its entrances and exits. It is agreed that taxes, water charges, and interest on betterment assessments on the premises are to be adjusted so that the lessee shall, subject to the abatements hereinafter provided for, pay a proportionate part thereof from the beginning of and according to the actual duration of this lease, except that the lessee is to pay the whole of the taxes for the now current year. During the ownership of said premises by the City, the words taxes, charges for water, assessments, and assessments for betterments, shall be construed to mean amounts equal to and payable at the same time as the taxes, charges for water, assessments, and assessments for betterments which would have been laid upon and payable in respect to said premises in case the same had been in the ownership of an individual.

The lessee further covenants with the lessor as follows: To pay the said rent upon the days hereinbefore appointed (except only in case of fire and other unavoidable casualty as hereinafter mentioned), and for gas, water, electric light or power supplied upon the premises during the continuance of this lease; not to make or suffer any strip of waste of said premises or overload the same, or make any unlawful, improper or offensive use thereof, or use more injurious to persons or property than the present use thereof; not to assign this lease without the consent in writing of the lessor first obtained; not to make any alteration in or upon the premises without the consent in writing of the lessor first obtained; to save the lessor harmless from all loss and damage occasioned by the use or escape of water or gas upon said premises, or by the bursting of the pipes, or by any nuisance made or suffered on the premises; to assume and perform all the duties to third persons and to the public which would be incumbent upon him if he were the owner of said premises and to indemnify and save harmless the lessor against all claims and demands arising out of any injury or accident to person or property in or about the premises; to keep the premises, inside and outside, including the glass, in as good order and repair as the same are in at the beginning of the term, or may be put in by the lessor during the term, reasonable use and wear and damage by fire or other casualty excepted; and at the end of the term to deliver up the premises and all future erections and additions thereon in good and tenantable repair except as aforesaid.

In case during the term the premises or any part thereof are taken for a public use, and the rental value of the premises is reduced in consequence thereof, then the rent herein reserved shall be proportionately reduced and in consideration for this agreement on the part of the lessor the lessee releases and assigns to the lessor any claims which he otherwise might have had for damages on account of such taking.

It is agreed that if the building on the premises is damaged by fire or other unavoidable casualty so that it is rendered unfit for use or occupation, then the rent hereinbefore reserved or a just and proportionate part thereof, according to the nature and extent of the injury sustained, shall be abated until the premises have been duly repaired and restored by the lessor, or in case the said building is substantially destroyed then, at the election of the lessor the estate hereby created may thereupon be determined.

PROVIDED, HOWEVER, and these presents are upon the condition, that if the lessee neglects or fails to perform and observe any of the covenants, agreements, terms or conditions contained in this instrument, whether hereinbefore or hereinafter printed or written, which on his part are to be performed or kept, or if his leasehold interest shall be taken on execution, or if the lessee shall be declared bankrupt or insolvent, according to law, or if any assignment of his property shall be made for the benefit of his creditors, or if a receiver is appointed of his property, and is not

discharged within thirty days, then and in any of said cases, the said lessor lawfully may, immediately or at any time thereafter, while such default continues and notwithstanding any license of any former breach of any of the said covenants, terms or conditions herein, or any waiver of the benefit thereof in a former instance, without further notice or demand enter into and upon said premises, or any part thereof, in the name of the whole, and repossess the same as of its former estate; and upon entry as aforesaid, this lease shall be determined, and said lessee and all claiming under him shall be considered to all intents and purposes as holding possession of said premises without right, so as to entitle the said lessor to any existing or future remedies under the laws of this Commonwealth for recovering summary possession thereof; or, it may expel the said lessee and all claiming under him, and remove their effects forcibly, if necessary, without being taken or deemed guilty of any manner of trespass, and in either case, without prejudice to any remedies which might otherwise be used for arrears of rent or preceding breach of covenant; and said lessee covenants and agrees, as aforesaid, that notwithstanding such determination of said lease and possession regained, said lessor may relet the said premises at its discretion, at the risk of said lessee, and that he will, for the remainder of said term, be and remain liable for, and will pay to said lessor any loss sustained by it on account of said premises being let for such remainder for a sum less than herein stipulated.

IN WITNESS WHEREOF, the City of Boston, the lessor, acting by the Boston Transit Commission, its members not being bound in their personal capacity, and said George N. Talbot, the lessee, execute this instrument in triplicate.

(Signed) THE CITY OF BOSTON

By

Seal of City

GEORGE G. CROCKER,
HORACE G. ALLEN,
JOSIAH QUINCY,
JAMES B. NOYES.

} BOSTON
TRANSIT
COMMISSION.

(Signed) GEORGE N. TALBOT, (LS)

Approved as to Form

THOMAS M. BABSON,
Corp. Counsel

APPENDIX E.

REPORT OF THE JOINT BOARD TO THE LEGISLATURE ON THE
BOSTON AND EASTERN ELECTRIC RAILROAD COMPANY.

THE COMMONWEALTH OF MASSACHUSETTS.

To the Honorable the Senate and the House of Representatives.

By chapter 110 of the Resolves of 1909, approved May 24, the Board of Railroad Commissioners and the Boston Transit Commission, sitting jointly, were requested to investigate and report—

Whether or not in their opinion it is advisable, expedient and in the public interest, to grant the following petition for legislation, namely: the petition of Melville Woodbury and others, with accompanying House Bill No. 1094, and under what conditions and restrictions, if any, and in what form said petition should be granted.

This bill provides for giving authority to the Boston & Eastern Electric Railroad Company to construct and operate a tunnel under Boston harbor from a point in East Boston to a terminal at or near Post Office Square. The above resolve was passed after a report had been made to the Legislature by the same commissions, sitting jointly, under date of May 10, recommending that action upon this petition and bill should at that time be postponed, in order that the subject might be considered in connection with other proposals relating to the construction of subways and tunnels, and affecting the whole question of metropolitan transportation, then pending before the Legislature. Various bills embodying these proposals were referred to this Joint Board by chapter 94 of the Resolves of 1909, and House Bill No. 1094 was subsequently referred, as above stated. In its report of May 10 the Joint Board described the legislative policy then in process of adoption as that of making provision—

for the preliminary study of special transportation projects with reference to the best present and future development of the transportation system as a whole.

The requirements of this policy have been kept in view in preparing the present report.

Acting under the above resolve, the Joint Board has given full opportunity to be heard both to representatives of the Boston & Eastern Electric Railroad Company and to representatives of the city of Boston and of various other interests opposed to conferring upon that company such authority as that provided by House Bill No. 1094.

In determining whether it is "advisable, expedient and in the public interest" to grant the authority requested, the Joint Board has carefully considered the bearing upon this question, not only of the bills specially referred to it, but also of various matters affecting the transportation situation in Boston and in the metropolitan district dealt with in the report of the Metropolitan Improvements Commission. By chapter 113 of the Resolves of 1909 that report was referred by the Legislature for further

consideration to a Quadruple Board, of which the members of the Joint Board are also members.

The powers and duties of the Quadruple Board so created are very extensive. They involve an investigation and recommendation as to the advisability of any public works in the metropolitan district which will tend to the convenience of the people, the development of local business, the beautifying of the district or the improvement of the same as a place of residence, the establishment of a systematic method of internal communication by highways, the control or direction of traffic and transportation and the location of docks and terminals, together with a method of executing and paying for such improvements as it may suggest. The Quadruple Board is also authorized to make maps, plans and estimates of cost. The resolve further provides for a preliminary report to the General Court of 1910 and a final report to the General Court of 1911.

In view of the foregoing powers and duties of the Quadruple Board, it is obvious that no action ought to be taken by the Joint Board at this time that would in any manner prejudice the conclusions of the Quadruple Board, or the rights either of the petitioners or of those who are opposed to the granting of the petition. This conclusion is confirmed by a comparison of the date of the passage of the reference to the Joint Board and that of the resolve establishing the Quadruple Board.

If affirmative action were now taken by the Joint Board, the first question presented for its determination would obviously be the route and terminal of the proposed electric railroad within the city of Boston. Where such a route and terminal should be located depends in large degree upon other proposals and considerations exclusively within the jurisdiction of the Quadruple Board. One signal illustration is the proposed connection by tunnel between the North and South stations. This question is not before the Joint Board by legislative reference, and we should deem it both improper and unwise to undertake to make any decision with respect thereto. Where specific petitions for legislation have been referred to the Joint Board (Resolves of 1909, chapter 94), it has given heed to the effect, if any, of such petitions upon other improvements in the metropolitan district, and its conclusions will not be found to prejudice the powers and duties of the Quadruple Board.

By virtue of the fact that the members of the Joint Board are also members of the Quadruple Board, we must of necessity have knowledge of its proceedings and deliberations; and we deem it not improper to state that the question of a tunnel connection between the North and South stations and other important matters affecting the transportation of Boston and vicinity have been brought to its attention. Other suggested improvements, notably the electrification of the Boston, Revere Beach & Lynn Railroad, and its possible entrance into the city proper by other means than a ferry, which might involve the relocation of its present terminal in Boston proper, must necessarily exercise an important influence with respect to the location of the proposed tunnel, subway and terminal of the Boston & Eastern Electric Railroad Company. The Joint Board is therefore clearly of opinion that judgment ought to be suspended upon the petition of the Boston & Eastern Electric Railroad Company, pending the further deliberations of the Quadruple Board with respect to metropolitan improvements.

We therefore submit to the General Court this report, in the confident belief that our conclusions are in the public interest and in complete accord with legislative policy.

The Joint Board desires to repeat its recognition of the fact that sole authority is vested by law in the Board of Railroad commissioners to decide the question whether public convenience and necessity require the construction of this or any other projected electric railroad under the general electric railroad law. This statutory tribunal has already found, in a decision rendered Nov. 17, 1908 (page 209 of report of the Railroad Commissioners for that year), that "public convenience and necessity have been shown" for the construction of a railroad of this character, and

that "the general plan as now developed by the petitioner will afford the additional facilities demanded in the densely populated territory north of Boston." The Board also found, in a decision rendered Sept. 18, 1907, upon the petition of this company as then pending before it, that "no electric railroad can successfully reach Boston from the north that does not secure an entrance to the city independent of the existing elevated structure in Charlestown;" and in its decision of Nov. 17, 1908, referring to the fact that the amended plan of this company showed "a tunnel under Boston harbor with subway connection with a terminal at Post Office Square," the Board stated its conclusion that no certificate of exigency could then issue, "for the reason that the scheme as a whole contemplates a service by means of a tunnel and subway not authorized by existing law."

WALTER PERLEY HALL,
Chairman,

GEORGE W. BISHOP,
CLINTON WHITE,
Board of Railroad Commissioners.

GEORGE G. CROCKER,
GEORGE F. SWAIN,
Secretary,

HORACE G. ALLEN,
JOSIAH QUINCY,
JAMES B. NOYES,
Boston Transit Commission.

Jan. 8. 1910.

APPENDIX F.

REPORT OF THE JOINT BOARD TO THE LEGISLATURE ON CERTAIN MATTERS RELATIVE TO THE WEST END STREET RAILWAY AND BOSTON ELEVATED RAILWAY COMPANIES.

THE COMMONWEALTH OF MASSACHUSETTS.

To the Honorable the Senate and the House of Representatives.

The General Court of 1909 passed the following resolve (chapter 85), which was approved May 14:—

Resolved, That the board of railroad commissioners and the Boston transit commission, sitting jointly, be requested to investigate and report to the general court on or before the second Saturday of January, nineteen hundred and ten, whether or not in their opinion it is advisable, expedient and in the public interest:—

(First.) To amend chapter five hundred and fifty-one of the acts of the year nineteen hundred and eight by providing for a distribution of any of the assets of the West End Street Railway Company among its stockholders, or by changing the terms and conditions of the first and second preferred stock to be issued by the Boston Elevated Railway Company, and if so, in what manner and to what extent;

(Second.) To authorize the Boston Elevated Railway Company to acquire and hold the stock and securities of other street railway companies, elevated railroads or electric railroads, and if so, under what conditions and limitations;

(Third.) To authorize the Boston Elevated Railway Company to extend its elevated railroad from Sullivan square to the city of Medford, and if so, under what conditions and limitations.

The Board of Railroad Commissioners and the Boston Transit Commission, sitting jointly, having given public hearings, and having afforded full opportunity for the expression of their views to all those who desired to be heard, now make report in this communication on so much of said resolve as is found under (First) and (Second). So much of said resolve as is found under (Third) is reported on by the said boards, sitting jointly, in its report to the General Court under the provisions of chapter 94 of the Resolves of the same year.

The first question referred to the Joint Board under chapter 85 of the Resolves of 1909 is as follows:—

Resolved, That the board of railroad commissioners and the Boston transit commission, sitting jointly, be requested to investigate and report to the general court on or before the second Saturday of January, nineteen hundred and ten, whether or not in their opinion it is advisable, expedient and in the public interest:—

(First.) To amend chapter five hundred and fifty-one of the acts of the year nineteen hundred and eight by providing for a distribution of any of the assets of the West End Street Railway Company among its stockholders, or by changing the terms and conditions of the first and

second preferred stock to be issued by the Boston Elevated Railway Company, and if so, in what manner and to what extent.

The reference involves two questions, the first of which is as to whether St. 1908, c. 551, should be amended by providing for a distribution of any of the assets of the West End Street Railway Company among its stockholders.

In 1897 the Board of Railroad Commissioners, having occasion to pass upon the terms of a proposed lease of the franchise and property of the West End Street Railway Company to the Boston Elevated Railway Company, caused to be made an appraisal of the property and assets of the West End Street Railway Company as of Oct. 1, 1897, the date of the beginning of the present lease, and found that the outstanding capital stock and net debt of the company at that time exceeded the full property value of the West End plant for railway purposes by the sum of \$734,384.91, and that the West End had applied "too little rather than too much of its net divisible income to offset depreciation and to keep its capital intact." (29th Annual Report of Board of Railroad Commissioners, 1898, p. 146.)

It is evident that at that time a distribution of so-called free assets of the company would not have been permissible.

Since the said appraisal, so far as the evidence and the knowledge of this Joint Board goes, nothing has happened to diminish materially the deficiency other than the fact that for the development of the West End properties common stock of the company has since been issued pursuant to the requirements of law at prices above par, so that said issues have brought into the treasury of the company a greater sum than that represented by the par value of the stock so issued. In this way the impairment of capital which existed when the appraisal was made has been diminished and may have been fully wiped out.

The receipt of premiums as above is not, however, a valid reason for allowing at the present time a distribution of so-called free assets, meaning thereby such assets as cash on hand and proceeds of real estate no longer needed for the purposes of the company. Were there no law forbidding corporations from distributing to their stockholders in dividends cash received from the issue of stock in excess of its par value, to do so would be clearly inconsistent with the spirit and intent of the law which governed the issue of the stock in question. Such prohibition, however, is definitely incorporated in the law as section 105 of Part III, of chapter 463 of the Acts of the year 1906, which section reads as follows: "A street railway company shall not declare any stock or scrip dividend or divide the proceeds of the sale of the stock or scrip among its stockholders."

Even if there were positive proof that, by reason of the issue of stock at a price above par and the increase in the value of real estate and other similar causes, the assets of the company now exceeded the amount of its capital stock and debt, nevertheless, a distribution of such excess or any part of it should not be permitted, because such excess is not earnings or income, but is capital. The fact that the law in relation to the issue of capital stock by street railway companies has lately been changed (St. 1908, c. 636) does not alter this conclusion.

The Joint Board therefore is of opinion that it is not advisable, expedient or in the public interest to amend chapter 551 of the Acts of the year 1908 by providing for a distribution of any of the assets of the West End Street Railway Company among its stockholders.

The second part of the reference is as to whether it is advisable, expedient and in the public interest to change the terms and conditions of the first and second preferred stock to be issued by the Boston Elevated Railway Company, and if so, in what manner and to what extent.

The resolve in which this reference is contained was approved May 14, 1909. By an act approved May 13, 1909,—the act and the resolve therefore being practically contemporaneous,—section 15 of chapter 551 of the Acts of the year 1908 was amended so that the time granted by that

act to the Boston Elevated Railway Company and the West End to effect the consolidation therein provided for was extended one year, or to the 31st of December, 1910.

Taking the dates of the act and of the resolve into consideration, and also the terms of the reference, this Joint Board understands that it was not the intention of the Legislature to refer to it the question whether the first and second preferred stock ought to be issued on terms less favorable than those set forth in the act, but simply whether amended terms more favorable to the West End Street Railway stockholders, as urged in their behalf, ought to be granted.

The 8 per cent. rate for the first preferred stock, which stock is to be issued in exchange for preferred stock of the West End Street Railway, is determined by St. 1887, c. 413, § 2, which for certain purposes authorized the West End Street Railway Company to issue from time to time, to an amount not exceeding \$6,400,000, its preferred stock, having preference and priority over the common and all other stock of the corporation forever, and being entitled to semi-annual cumulative dividends, to be paid out of the net profits of the corporation, not exceeding 8 per cent. per annum, but not entitled to participate in any increase or issue of new stock, common or preferred.

So far as the common stock of the West End Street Railway is concerned, the Legislature up to the time of the passage of St. 1908, c. 551, had entered upon no similar obligation.

One amendment of the act of 1908 which is asked for in behalf of stockholders of the West End Street Railway Company is that the second preferred stock of the Boston Elevated Railway Company, to be issued upon consolidation in exchange for the common stock of the West End Street Railway, shall be an 8 per cent. instead of a 7 per cent. stock.

The lease of the franchise and property of the West End Street Railway Company to the Boston Elevated Railway Company, which was under consideration by the Board of Railroad Commissioners in 1897, provided for a term of ninety-nine years and a payment as rental of 8 per cent. both on the preferred and the common stock. In that case the Railroad Commissioners determined that such a lease would be wholly discordant with the public policy deliberately settled and wisely restricted by the Legislature; that the rental charge was unwarranted, and involved an unreasonable and excessive public burden, especially in view of the length of the stipulated term; and that such a lease was not consistent with the public interest nor in accordance with the public policy declared by the General Court.

As a result of this determination, the provisions of the lease were altered, limiting the term to twenty-four years and a fraction, and the payment on account of the common stock to 7 per cent. per annum.

It is now urged that in the consolidation this rate of 7 per cent. should be changed to 8 per cent., not for a specified number of years, but without limit as to time. In this respect, therefore, the proposition is more objectionable than was that submitted in 1897.

In our opinion, if the consolidation is effected under the provisions of the act of 1908, the stockholders of the West End Street Railway Company, by reason of the assurance for the future of preferred cumulative dividends of 7 per cent., will hold after the year 1922, when the present lease expires, a security safer and more permanently valuable than that which they had prior to the execution of the present lease, or than that which, in case consolidation is not effected, they after 1922 will hold, obliged as they then will be to begin anew the operation of their railway in competition with another company seeking business in the same metropolitan district.

It has been suggested that the provisions of the existing lease relating to its termination are such as to place the West End Street Railway Company at that time in a commanding position. It must not be forgotten that the Legislature is the ultimate controller of the situation.

The two companies agree that it is the interest of the public that a

consolidation should take place, and that material economies can be effected thereby. In this view this Joint Board concurs.

The terms of the consolidation should be such as are just to each of the parties. No undue advantage should be granted to either of them. This Joint Board considers that the rate of dividend on the second preferred stock, as named in the act, is not unjust to the West End Street Railway stockholders, but, on the contrary, is amply liberal.

Another amendment asked for in behalf of the holders of the West End preferred and common stock is the insertion in the act of 1908 of a clause guarding more positively against the preference and priority of the first and second preferred stocks of the Boston Elevated Railway Company being lessened or otherwise modified in the future by vote of the holders of the common stock of that company.

It has been proposed that the act should be amended by inserting a clause to the effect that no other stock shall hereafter be issued by the Boston Elevated Railway Company, either preferred or equal to such first preferred or second preferred stock, without the unanimous consent of the holders thereof. This seems to be going too far. A situation might well arise in which the holders of such stocks would feel that it was for their interest to assist and strengthen the corporation by making some concession of their rights, and in such case the necessity of unanimous consent might result in a sacrifice of their properties.

This Joint Board recommends that the act be amended by inserting in section 2, after the words "outstanding at the date of purchase," where these words appear the third time, the words, "No other stock shall hereafter be issued, either preferred or equal to such first preferred or second preferred stock, without the consent of two-thirds of the holders of such stocks respectively."

The remaining question referred to the Joint Board by chapter 85, Resolves of 1909, is as follows:—

Resolved, That the board of railroad commissioners and the Boston transit commission, sitting jointly, be requested to investigate and report to the general court on or before the second Saturday of January, nineteen hundred and ten, whether or not, in their opinion, it is advisable, expedient and in the public interest:—

(Second.) To authorize the Boston Elevated Railway Company to acquire and hold the stock and securities of other street railway companies, elevated railroads or electric railroads, and if so under what conditions and limitations.

Prior to 1887 the territory of Boston and vicinity was served by a number of street railway companies. In that year the General Court passed an act (chapter 413) authorizing the West End Street Railway Company and certain other street railway companies to lease, to purchase and to hold the property, rights and franchises of one another, and to unite and consolidate with one another and with certain other street railway companies, provided that the terms and conditions of such leases, purchases, sales and consolidations should be approved by the Board of Railroad Commissioners. Under that act the Board of Railroad Commissioners gave its approval to the terms of sale of the property of certain of these companies to the West End Street Railway Company.

In 1894 the Boston Elevated Railway Company was incorporated (chapter 548), "to promote rapid transit in the city of Boston and vicinity." Under the provisions of that act and its amendments the Board of Railroad Commissioners, upon the joint application of that company and the West End Street Railway Company, approved the lease of the franchise and property of the latter to the former after such lease had been modified. This lease is now outstanding, and will, by its terms, expire in 1922. The present facilities for transportation in Boston and vicinity include all the surface lines of the West End Street Railway Company leased to the Boston Elevated Railway Company, the elevated structures, tunnels

and subways owned or leased by the Boston Elevated Railway Company and other lines leased by the latter company, comprising in part a portion of the trackage of the Old Colony Street Railway Company and a portion of the Newtonville & Watertown Street Railway Company, operated in part by the Boston Elevated Railway Company. The last-named company now owns or operates substantially all of the electric transportation system of Boston proper. The several cities and towns in which the railways owned or operated by the Boston Elevated Railway Company are located are Boston, Cambridge, Chelsea, Everett, Malden, Medford, Newton, Somerville, Arlington, Belmont, Brookline and Watertown. In addition to the existing lines, subways, tunnels or elevated structures have been authorized in Boston, Cambridge, Everett and Malden. In addition to the lines owned or operated by the Boston Elevated Railway Company, the metropolitan district is served by several other street railway companies, namely, the Boston & Northern Street Railway Company upon the north and east, the Middlesex & Boston Street Railway Company and the Lexington & Boston Street Railway Company upon the north and west, the Boston & Worcester Street Railway Company upon the west, the Blue Hill Street Railway Company upon the south and the Old Colony Street Railway Company upon the south and east. Connections between the lines owned or operated by the Boston Elevated Railway Company and these several street railway companies exist at many points. There is no elevated railway in operation other than the one owned by the Boston Elevated Railway Company, and there is no electric railroad (Acts of 1906, chapter 516) in operation or in process of construction in the Commonwealth.

The first question for the consideration of the Joint Board is whether or not it is advisable, expedient and in the public interest, to authorize by appropriate legislation the Boston Elevated Railway Company to extend its field of service to the travelling public. The opinion of the Joint Board is that this question should be answered in the affirmative. Purely from a public point of view it is desirable, and in the interest of the people of the Commonwealth, that the Boston Elevated Railway Company should be permitted, under proper legislative control, to extend its service into territory in which it does not now own or operate any lines. The granting of such authority will tend to unify the system of transportation centering in Boston, to increase accommodations and decrease rates. This result should be secured through the large financial resources of the Boston Elevated Railway Company and its efficient means and methods of operation.

Perhaps no better illustration can be cited of the advantages of a consolidated transportation system for Boston and vicinity than is afforded by comparison of present conditions with those existing prior to the incorporation, first of the West End Street Railway Company and then of the Boston Elevated Railway Company. Where the combination was made effective fares have been reduced and facilities increased. Where the combination was not made effective, as was the case particularly in the area immediately north of Boston, the travelling public are sustaining a hardship through having to pay fares which are unduly large compared with fares for like service from other points to and from the centre of Boston.

Viewed from the standpoint of the street transportation companies, we are equally clear that advantages will be secured to them by combination. Through fares, more speedy transit and a common management, resulting in savings in operation, will induce travel, and so tend to an increase of income. It by no means follows that these anticipated benefits and advantages both to the public and to the carriers will be secured at once, but all experience in this Commonwealth strongly indicates that the effect of the unification of ownership or operating control of street railways makes for this result. As it appears, therefore, after careful consideration, investigation and study of transportation conditions in eastern Massachusetts, that the natural effects to be anticipated from further

unification of street railways will be in the public interest, it remains for the Joint Board to consider the effective ways and means to secure such a result.

Many consolidations of street railway companies have been authorized and effected, both by special legislation and by the Board of Railroad Commissioners, acting under general authority given them by the Legislature. In addition, many lines of street railway are now operated under leases. With respect to these two methods of combination, the Board of Railroad Commissioners has from time to time declared itself in favor of consolidation rather than lease.

As indicated by the foregoing discussion, it would appear that a consolidation of the Boston Elevated Railway Company with one or more of the street railway companies whose lines connect with it, properly safeguarded, would present substantial public advantages. But the Boston Elevated Railway Company asserts that by virtue of the existing contract between itself and the Commonwealth, embodied in Acts of 1897, chapter 500, it is practically precluded from consolidation under the general law, by reason of the provisions of that contract with respect to fares; and the company further asserts that, even if it can in law be secured in its contract rights with respect to consolidated lines by appropriate legislation, yet a better method is afforded by means of a stockholding bill, so called. It is certainly true that the existing contract between the company and the State, and other contracts between the company and the city by way of lease, together with special acts relative to the company, present objections of grave importance, with respect to the feasibility of consolidation between this company and other companies.

One of the most important of these difficulties, in the opinion of the Joint Board, relates to corporate accounting. It is essential that the public authorities of the Commonwealth should have clear, accurate and precise information relative to the financial condition of its public service corporations, for only through such information can reasonable rates be determined. Another difficulty is presented by the provision of section 17 of chapter 500 of the Acts of 1897, fixing the rental of the East Boston tunnel for twenty-five years from its completion at $\frac{3}{8}$ of 1 per cent. of the gross receipts of all lines owned or leased by the Boston Elevated Railway Company. A further provision with respect to the 1-cent toll is contained in this language: "The whole amount of such tolls and of said rentals is hereby pledged to meet the principal and interest of the bonds issued to pay for the construction of said tunnel or tunnels, and this pledge shall be expressed on the face of such bonds as one of the terms thereof." Other difficulties are also presented by a consolidation under general law. If, therefore, the Boston Elevated Railway Company can be combined with other street railway companies by a method which obviates the above suggested difficulties, the Joint Board is of opinion that such other method of combination, in the case now before it, would be preferable, if no intrinsic or inherent objection is found against it, in principle or practice. The inquiry is therefore directly presented, as phrased in the legislative reference, to wit: Is it advisable, expedient and in the public interest "to authorize the Boston Elevated Railway Company to acquire and hold the stock and securities of other street railway companies, elevated railroads or electric railroads, and if so, under what conditions and limitations."

The first duty of the Joint Board is obviously to examine the alleged advantages and defects of the policy of allowing one transportation company to hold the stock of another. There can be no question that a holding company with unlimited power to purchase and deal in securities generally can, in the absence of proper statutory provision and control, engage in transactions reflecting no credit on the corporation and resulting in great hardship to the people, and that this has been done in many well-known instances in other jurisdictions. If such a proposition were before us, there could be no question of our conclusion. We should deem it, from every point of view, exceedingly unwise for the Legislature of Massachusetts to grant such an unrestricted authority. But the question submitted to

the Joint Board presents an entirely different issue. Briefly stated, it presents this question: Is it practicable and feasible for the General Court of the Commonwealth to enact legislation permitting the Boston Elevated Railway Company to "acquire and hold the stock and securities of other street railway companies," etc., under such limitations and conditions as secure to the Commonwealth and its citizens an efficient control of corporate conduct, to the end that by no vicious or dishonest methods can such authority be abused against the public interest.

In the opinion of the Joint Board, such legislation is practicable and feasible; and we are therefore of opinion that such a holding bill should be enacted, permitting the Boston Elevated Railway Company to acquire and hold the stock of other street railway companies, etc. It may be stated in this connection that while no statutory authority now exists for the acquisition by street railway companies of stock of other street railway companies, yet no prohibition is found in the law with respect to the acquisition of such stock by voluntary associations formed for such purpose. A number of such associations are in existence in this Commonwealth, and it is understood that some or all of the stock of all the street railway companies connecting with the lines of the Boston Elevated Railway Company, with the single exception of the Blue Hill Street Railway Company, is held by such voluntary associations. These several organizations are not subject to the corporation laws of the Commonwealth, nor are their dealings controlled in any way by the Board of Railroad Commissioners.

There appears to be nothing to prevent the stock of the Boston Elevated Railway Company and the stock of the several companies connecting with its lines from being acquired and held and sold by voluntary associations, if the stockholders of the several companies should so agree. When, therefore, the Boston Elevated Railway Company shows a desire to be authorized to hold stock in connecting lines, and is prepared to submit itself as a corporation to the limitations that may be imposed by statute, a proposal is presented to which the General Court, in the opinion of the Joint Board, may well give favorable attention, if it is desirable that the public authorities of Massachusetts should have full control of the situation.

The remaining question presented to the Joint Board is that of suggesting to what extent such holding should be authorized, and under what conditions and limitations. It is to be observed that the Boston Elevated Railway Company desires the right to acquire and hold the stock of street railway companies, elevated railroads and electric railroads. It has already appeared in this report that no elevated lines exist other than those owned and operated by the Boston Elevated Railway Company, and that no electric railroad is in operation or in process of construction. We therefore see no occasion at this time to authorize the Boston Elevated Railway Company to acquire and hold the stock and securities either of elevated railroads or of electric railroads; and we suggest that any enabling act should be limited to the acquisition and holding of stock and securities of street railway companies. The street railway companies whose stock the Boston Elevated Railway Company should be authorized to hold should be further limited, in our opinion, to those whose lines now have a physical connection with those of the Boston Elevated Railway Company, or with the lines now owned, leased or operated by it. This in effect would amount to an authority to acquire and hold the stock and securities of the several companies whose lines radiate from Boston.

It has been urged before the Joint Board that such authority, if granted, should be restricted in territorial extent and confined within the radius of the suburban district. This, in our opinion, is entirely impracticable, in that the existing radiating lines of street railway now connecting with the Boston Elevated Railway are owned by corporations whose lines respectively extend far beyond the suburban district in all directions.

The authority to be granted the Boston Elevated Railway Company should be limited as above suggested, and should also be subject to such

full, adequate and complete restrictions as will safeguard the interests of the Commonwealth and of its citizens.

The resolve does not request the Joint Board to report a draft bill for the consideration of the General Court; but we deem it proper to specify certain essential conditions which should accompany the authorization, as above limited:—

First.—The approval of the public authorities should be had for each and every purchase of stock and securities desired to be held.

Second.—The like approval should be required to permit the sale of any stock and securities so acquired.

Third.—The like approval should be required of each and every contract between the Boston Elevated Railway Company and any company in which it has acquired any stock.

Fourth.—A provision should be inserted requiring that facilities for travel on the railway of each and every one of the companies coming within the terms of the act shall not be diminished, nor the rates of fare increased by reason of the act or anything authorized or done thereunder.

Fifth.—A provision should be embodied securing to stockholders other than the Boston Elevated Railway Company full protection in their property rights.

In this connection we desire to point out that the residents in certain territory north of Boston are entitled to some relief from the burden of having to pay the extra rate of fare now charged by two independent companies for a through ride to and from the business center of Boston; and it is hoped that some relief will be secured as a result of the passage of the legislation above recommended.

Such legislation should of course provide adequate ways and means for the Boston Elevated Railway Company to acquire such stock and securities, and the company should be properly secured in its present contract rights, except as modified above. There should also be provision made for the issue by the Boston Elevated Railway Company of such additional securities as may be made necessary by the acquisition of such stock and securities.

Any legislation embodying the foregoing conclusions of the Joint Board must, of course, be conditioned upon its acceptance by the Boston Elevated Railway Company, as certain of the suggestions can become legally effective only through a modification of the existing contract between the company and the State. If an act embodying in substance and conditions essential to the public interest, including those above indicated, is accepted by the Boston Elevated Railway Company, we are of opinion that its practical results will be found of benefit to the citizens of Massachusetts.

The above report is unanimously submitted.

WALTER PERLEY HALL
Chairman,

GEORGE W. BISHOP,
CLINTON WHITE,
Board of Railroad Commissioners.

GEORGE G. CROCKER,
GEORGE F. SWAIN,
Secretary,

HORACE G. ALLEN,
JOSIAH QUINCY,
JAMES B. NOYES,
Boston Transit Commission.

APPENDIX G.

REPORT OF THE JOINT BOARD TO THE LEGISLATURE, AS
TO ADDITIONAL SUBWAYS, TUNNELS AND ELEVATED
STRUCTURES IN BOSTON, ETC.

THE COMMONWEALTH OF MASSACHUSETTS.

To the Honorable the Senate and the House of Representatives.

The General Court of 1909 passed the following resolve, which was approved May 19, 1909:—

CHAPTER 94.

RESOLVE TO PROVIDE FOR AN INVESTIGATION AS TO THE ADVISABILITY OF CONSTRUCTING ADDITIONAL SUBWAYS, TUNNELS AND ELEVATED STRUCTURES IN THE CITY OF BOSTON.

Resolved, That the board of railroad commissioners and the Boston transit commission, sitting jointly, be requested to investigate and report to the general court on or before the second Saturday of January, 1910, whether or not, in their opinion, it is advisable, expedient and for the public interest, to grant any or all of the following petitions for legislation, namely: petition of Charles A. Ufford, with accompanying bill, No. 1288; petition of Thomas H. Dowd, with accompanying bill, No. 1247; petition of Michael J. Reidy, with accompanying bill, No. 1030; petition of Harry H. Ham, with accompanying bill, No. 1028; petition of Pierce J. Grace, with accompanying bill, No. 1026; petition of Malcolm E. Nichols, with accompanying bill, No. 659; petition of Pierce J. Grace, with accompanying bill, No. 1025; petition of Houghton and Dutton, with accompanying bill, No. 653; petition of William M. Robinson, with accompanying bill, No. 520; petition of Edward P. Barry, with accompanying bill, No. 339; petition of John J. Hayes, with accompanying bill, No. 196; petition of William J. Paul, with accompanying bill, No. 236; and under what conditions and restrictions, if any, and in what form such petitions should be granted; and if any legislation is recommended said joint board is requested to submit with its report a draft of an act or acts embodying the legislation recommended.

The Board of Railroad Commissioners and the Boston Transit Commission, sitting jointly, having given public hearings and having afforded full opportunity for the expression of their views to all those who desired to be heard, now make report thereon, together with a report under the provisions of so much of chapter 85 of the Resolves of the same year as is contained in the following inquiry: Whether or not it is advisable, expedient and in the public interest, to authorize the Boston Elevated Railway Company to extend its elevated railroad from Sullivan Square to the city of Medford, and if so, under what conditions and limitations.

House Bill No. 1288, accompanying the petition of Charles A. Ufford and others for legislation to require the establishment of a station at

Castle Street on the Washington Street tunnel line of the Boston Elevated Railway Company.

This bill requires the Boston Transit Commission to build forthwith a railway and railroad station at Castle Street on the Washington Street tunnel route, and further provides that the train service around the loop through the Tremont Street subway may be restored, the trains making a stop at Castle Street station, at the discretion of the Board of Railroad Commissioners.

The object of this bill is to provide more convenient facilities for transfer between the Washington Street tunnel line of the Boston Elevated Railway Company and the trains on the Boston & Albany and the New York, New Haven & Hartford lines. As the tunnel line crosses these steam railroads at Castle Street, this point is suggested as the location of a new station of the elevated railway. Obviously, in order to accomplish the object sought, a station would have to be constructed at the same point for the steam railroad lines, involving a change of alignment in order to allow the introduction of platforms between the tracks. From a steam railroad point of view the establishment of such a station would be inadvisable. The distance from the South station to the station at Back Bay and at Trinity Place is only about 6,700 feet, and it would be an inconvenience to traffic to introduce an intermediate station only about 3,700 feet from the South station; for, if suburban trains should stop at this station and also at the Back Bay stations, the through traffic and the switching movements would be more or less interfered with. Considering the Washington Street tunnel and elevated line alone, there would seem to be no object in having a station at Castle Street, aside from the possible connection with the steam railroad trains, since there is already a station at Dover Street, which is only 1,000 feet further south. Moreover, access to the South station by passengers over the Washington Street elevated line is already comparatively easy. People going north from points at or south of Dover Street can take the Atlantic Avenue trains, which will carry them directly to the South station; or they can obtain free transfers to surface lines at Essex Street. Passengers from points at or north of Causeway Street can in a similar manner take Atlantic Avenue trains, or can obtain free transfers from the tunnel to surface lines at Milk Street.

Castle Street is no doubt a convenient point for a direct connection between the steam railroad and electric lines, and the situation may at some time in the future be modified by changes in the former; but at the present time the Joint Board does not feel justified in recommending the establishment of a steam railroad station at Castle Street.

The second section of the bill provides that the loop trains in the subway may be restored. This question will be further discussed in connection with House Bills Nos. 1247, 1028 and 653, from which it will appear that it is impracticable to restore this service.

The Joint Board therefore does not recommend any legislation based upon the bill in question.

House Bill No. 1247, accompanying the petition of Thomas H. Dowd and others for legislation to provide for the renewal of a connection between the existing subway and the Atlantic Avenue railway structure, and the re-establishment of train service around the loop so formed.

House Bill No. 1028, accompanying the petition of Harry H. Ham for legislation to provide more adequate facilities in the city of Boston and adjacent cities.

House Bill No. 653, accompanying the petition of Houghton & Dutton Company and others for legislation to provide for restoring the elevated train service in the subway under Tremont Street in the city of Boston.

These three bills provide for restoring the train service in the Tremont Street subway, and may therefore be considered together.

The first bill (1247) provides in substance that the train service in

the Tremont Street subway shall be restored, and that there shall be a transfer station at the junction of Castle and Washington streets, and at Causeway street, at which points passengers may be transferred from the Tremont Street subway line to the Washington Street tunnel line or to surface cars, or *vice versa*. The cost of the work is to be deemed a part of the cost of the Washington Street tunnel.

The second bill (1028) provides for connecting the elevated tracks on Washington Street with the Tremont Street subway tracks at Pleasant Street, and for running loop trains through the Tremont Street subway. The cost of the necessary changes is to be considered a part of the cost of the subway.

The third bill (653) provides similarly for the restoration of the train service in Tremont Street subway, the expense of readapting the subway for such use to be paid by the city of Boston.

When the train service in this subway was discontinued by legislative act, the approach at Pleasant Street was restored to its original condition, and filled in with earth so as to provide for the entrance of surface cars from Tremont Street and Shawmut Avenue. These cars run through the subway to Causeway Street and beyond, and in the opposite direction, using the two outside tracks in the four-track portion; and it is to these tracks that the bills in question propose to restore the train service.

To so restore the service would involve the following difficulties:—

1. The approach at Pleasant Street could not be used both by the surface cars and elevated trains without reconstructing the approach, which would require widening the streets or otherwise taking private property, involving large expense. Even if this could be done in a satisfactory manner, which is doubtful, the running of heavy trains and single surface cars on the same tracks in this subway would be attended with such danger and such limitation of capacity that it is generally considered inadvisable if not impracticable. It is so considered by this Joint Board.

2. The use of elevated trains requires high platforms at the stations, while the use of the usual surface cars does not admit of such platforms, unless some device is used to cover the opening over the car steps, such as a folding piece on each car platform to be lowered over the car steps when a surface car stops at the station. Such an arrangement would take up space on the car platform, and would be exceedingly inconvenient in operation. Moreover, the floor of open surface cars is about a foot lower than that of elevated cars, so that open cars could not use platform designed for elevated cars without danger of accident.

3. These outside tracks must, however, continue to be used by surface cars. It would be a serious inconvenience not to carry the Shawmut Avenue and Tremont Street cars into the subway at the south; and on the north these tracks are the ones which are to be continued over the new elevated structure in front of the North station and over the Charles River dam to Cambridge and Somerville. The cars running on these tracks must be surface cars, because trains of cars of the type used in the tunnel cannot be run upon the surface of the streets in Cambridge and Somerville. Further, these surface cars from Cambridge and Somerville cannot be switched over to the two center tracks of the Scollay Square loop, because it would unduly congest these tracks, which are planned to be fully utilized by the cars running on the surface over Warren and Charlestown bridges.

4. The proposed use of the Tremont Street subway by trains would necessitate switching arrangements at the north entrance of the tunnel, which would interfere with the proposed development of the traffic system and the connection of the surface car tracks with the tracks over the Charles River dam. Trains going south from Charlestown would have a choice of three routes: first, by Atlantic Avenue; second, by the Washington Street tunnel; and third, through the Tremont Street subway. Similarly, trains going north from Dudley Street would have the choice of three routes. At the northern entrance to the subway there are at present six tracks. The two easterly tracks descend the incline into the Washington Street

tunnel; the third track from the east and the sixth track from the east form the two outside tracks of the original four tracks in the Tremont Street subway, and are to be connected with the elevated structure leading to Cambridge over the dam; the fourth and fifth tracks from the east are the tracks which pass around the loop at Scollay Square and remain on the surface at Causeway Street, passing over the Warren bridge or the Charlestown bridge, or passing westward in front of the North station. If the south-bound trains from the elevated structure should be allowed to pass into the Tremont Street subway, as they formerly did, they would have to cross three intermediate tracks. If this crossing were at grade, near the foot of the incline, it would be a serious obstruction to traffic; if it were overhead, at or near Causeway Street, it would require an entire rearrangement of the station, involving many difficulties. Even in the latter case there would be a grade crossing of the south-bound trains entering the subway and the north-bound single cars on the elevated structure going to East Cambridge. Similarly, trains emerging from the Tremont Street subway going north would have to cross the south-bound tracks of the Washington Street tunnel, and this crossing would have to be at grade. Any such arrangement as this would greatly interfere with traffic and would form an intolerable nuisance, diminishing the capacity of Boston's expensive underground transportation system to a very serious extent. Indeed, considering the difficulties referred to, of running trains and surface cars on the same tracks, it is probably not too much to say that the plans for the connection of the elevated structure over Charles River dam could not be carried out if the train service in the Tremont Street subway were restored.

5. There is, however, a still more serious objection than the grade crossing of tracks. If the south-bound trains descending the incline at Causeway Street alternate between two routes, namely, Washington Street tunnel and the Tremont Street subway, neither of these two underground ways can be used to more than one-half of its full capacity. The capacity of one track would be limited by the capacity of the tracks on the elevated approach in Causeway Street; therefore only one-half as many trains would be run through the Washington Street tunnel and half as many through the Tremont Street subway as are run on this elevated approach. As at present operated, trains run continuously from Sullivan Square through the Washington Street tunnel to Dudley Street or Forest Hills and in the reverse direction. Some trains run between Dudley Street and Sullivan Square *via* Atlantic Avenue. The capacity, therefore, of the Washington Street tunnel for traffic is limited by the capacity of the elevated track north of Causeway Street and south of Castle Street; but, as comparatively few through trains run by way of Atlantic Avenue, it is possible at present to utilize almost the full capacity of the tracks in the Washington Street tunnel. If, in addition to running through trains in this tunnel, other trains should also be run through the Tremont Street subway, and if, also, others should be run from Sullivan Square and Dudley Street around the loop as formerly, the traffic capacity of all the through tracks would be seriously diminished. In other words, the city has now six through tracks from the north to the south; two in the Tremont Street subway, two in the Washington Street tunnel, and the elevated tracks on Atlantic Avenue. With the rapid development of traffic from suburban districts, the time will soon come when the full capacity of all the subway and tunnel tracks will be needed. The two through tracks in the Tremont Street subway will be required for cars coming in over the Charles River dam; and the two tracks of the Washington Street tunnel will be fully needed to take care of the through north and south traffic. Owing to peculiar local circumstances, such as narrow and crooked streets and high buildings close to the walls of the tunnel, the Washington Street tunnel was necessarily very costly. To restore the train service in the Tremont Street subway would, as has been suggested, reduce the use of this tunnel to about one-half of its capacity, and would also reduce the capacity of the Tremont Street subway for surface cars coming in from the northwest,

even if it were considered practicable to run such surface cars at all on tracks used by trains.

6. It must be borne in mind that provision has been made since the introduction of these bills for the convenient transfer of passengers at Haymarket Square between all the lines passing that point; that is to say, between the Washington Street tunnel and the Tremont Street subway. The opening of this station has probably removed many of the inconveniences previously existing.

For the reasons given, the Joint Board considers the restoration of the train service in the Tremont Street subway, as proposed in these three bills, to be not in the public interest, and does not recommend any legislation based upon the bills in question.

House Bill No. 1030, accompanying the petition of Michael J. Reidy for legislation to authorize the construction of a South Boston subway in the city of Boston.

House Bill No. 339, accompanying the petition of Edward P. Barry for legislation to provide for better transit facilities to and from the South Boston district of the city of Boston.

The first of these bills (1030) provides for connecting the Tremont Street subway at Park Street and Boylston Street; the Washington Street tunnel and Marine Park at South Boston by a subway passing through Dewey Square and under Fort Point Channel. An alternative route is provided from the junction of Tremont and Pleasant streets to the junction of Broadway and Dorchester Avenue, from which point the subway is to extend to Marine Park, as before. This subway is to be built and paid for by the city of Boston and leased to the Boston Elevated Railway Company at a rental of $4\frac{1}{2}$ per cent. for a period terminating with the expiration of the lease of the Washington Street tunnel.

The second of these bills (339) provides for the construction of a branch of the Washington Street tunnel "from the junction of Broadway and Washington Street or near by" to the junction of Broadway and Dorchester Avenue. Either of these bills, in order to become effective, would require the consent of the Boston Elevated Railway Company.

With reference to the second of these bills, it should be stated that there is no tunnel at the junction of Broadway and Washington Street. The Washington Street tunnel comes to the surface just south of Bennet Street. In order to connect with the Washington Street tunnel, the suggested branch would have to be extended to a point near Kneeland Street. A subway between South Boston and Kneeland Street, however, in order to cross the channel at the proper point and make suitable connections in the city of Boston, would probably be run through Kneeland Street to Atlantic Avenue, and thence along the route indicated in House Bill No. 1030. It would therefore be essentially the same, but rather inferior in convenience to, the subway proposed in the latter bill, terminating, however, at Broadway and Dorchester Avenue, instead of being extended to Marine Park.

With reference to the general question of the construction of a subway to South Boston, the following general principles with reference to subways in cities should be borne in mind. A subway or tunnel in a city is an exceedingly expensive provision for transportation; it is justified only when surface traffic is very congested, or more rapid transit is essential. The original Tremont Street subway was justified by the fact that large numbers of people from Brookline, Newton, Cambridge, Dorchester, Roxbury and other outlying districts, endeavoring to reach the center of Boston, found their lines of approach converging to a point at or near the corner of Boylston and Tremont streets, from which point passage to or through the business district lying further north was extremely slow. The same thing was true with reference to the large numbers of people from Charlestown, Somerville, Chelsea and other outlying communities on the north. Traffic from these districts required to be carried

to and through the center of the city, and the surface cars were not able to carry it. In the same way, in New York City, immense numbers of people are to be carried from the upper districts of the city to the lower parts of the island and beyond. In such cases as these, some means of rapid transit and of avoiding congestion of surface traffic is necessary, and resort must be had to an elevated or subway system.

None of these conditions exist in the case of South Boston. South Boston itself is the only district to be served by any such subway as is proposed by these bills. The district is well built up, and includes no large areas capable of development for residential purposes. Marine Park is a pleasure resort, and no lines of traffic converge there requiring transportation to the center of the city. This pleasure traffic would naturally prefer to be carried on the surface in open cars, and much of it does not have to pass through the city, having its origin in the suburban districts on the south. People from the north of Boston wishing to go to the sea shore would naturally go to Revere beach.

The cost of these subways would of course depend largely upon the number of stations, but an approximate estimate shows that:—

Plan A, from Park Street through Dewey Square under Fort Point Channel to the junction of Broadway and Dorchester Avenue, thence to Marine Park, a distance of 16,400 feet, not including land damages, would cost in the neighborhood of \$8,000,000; while

Plan B, from near the junction of Tremont and Pleasant streets and Shawmut Avenue, under Fort Point Channel to near the junction of Broadway and Dorchester Avenue, thence to Marine Park, a distance of about 13,500 feet, not including land damages, would cost in the neighborhood of \$6,000,000.

The distance from Marine Park to the Park Street station, Tremont Street subway, is about the same as the distance from the Park Street station to Harvard Square.

When it is remembered that the Cambridge subway will provide transportation facilities for a large part of Cambridge and for the outlying districts whose lines of traffic converge at Harvard Square, it will be evident that this line fulfills the conditions requisite to justify the construction of a subway, while the conditions at South Boston do not. Furthermore, an analysis of the traffic statistics obtained by a count of passengers leaving the cars on the South Boston lines, taken by the Elevated Railway Company on four days in August and September last, gives further light with reference to the number of people who would be accommodated by a subway to Marine Park. It appears from this count that there are about 10,000 rides daily in each direction, from and to points east of Dorchester Street; that there are perhaps 12,000 rides daily in each direction from the Dorchester Street transfer station, and perhaps 19,000 in each direction from the Dorchester Avenue transfer station, not including transfers from the last station inbound and outbound *via* Dorchester Avenue. If we allow 9,000 daily for the last-named line, we have a total of about 28,000 passengers per day to and from Boston proper who would be benefited by the proposed subway. There are already 846 cars leaving City Point daily over the various lines running to and through Boston, and the same number in the opposite direction. If these cars carry 28,000 people, the average number of passengers per car would be about 33; while the average number of passengers from South Boston, estimated above at 19,000, would give an average per car of about 22. These figures agree with another count which was made Oct. 5, 1909, of the number of persons passing inward on each of the three avenues, namely, Dover Street, Broadway Extension and Dorchester Avenue, in which the average number of passengers per car varied from 18 to 29.

The saving of time by the proposed subway to Marine Park would not be very great. The schedule of the running time from Summer and Washington streets to City Point is twenty-two minutes *via* Summer

street, and twenty-three minutes *via* Broadway Extension. The proposed subway would effect a saving in this time of about nine minutes; but, as the stations in the subway would be some distance apart, much of this would be counterbalanced by the loss of time in reaching and leaving the stations, since the surface cars stop at practically every street corner. From Summer and Washington streets to the transfer station at Broadway and Dorchester Avenue the time is about ten minutes, of which perhaps four to five minutes would be saved by a subway, all of which would probably be lost, on the average, in reaching and leaving the stations. The total number of cars in the maximum hour leaving City Point is about 80, giving a service of more than one car a minute.

It is evident from the foregoing that traffic to and from South Boston is a local and not a through traffic; that it is comparatively small; that the saving of time in the use of a subway would be largely offset by the lost time due to the greater distance apart of the stations; and that, while some people would be benefited by a subway, others would be incommoded by it.

It is further clear that South Boston has already a frequent car service. There are three main avenues of approach to Boston,—Dover Street, Broadway Extension and Dorchester Avenue. The population of South Boston was a little less in 1905 than it was in 1895, and the residential district is well built up. Probably the greatest future development of South Boston will be in establishing manufacturing industries in its northern portion along the extension of Summer Street. As these industries develop, surface cars may be run over the extension of Summer Street more frequently than at present, and, if necessary, may be continued over one of the streets running north and south, forming a loop with one of the Broadway lines.

The Joint Board therefore believes that the construction of a tunnel to South Boston at the present time is not justified, and does not recommend any legislation based upon the bills in question.

House Bill No. 196, accompanying the petition of John J. Hayes for legislation to provide for the construction of a tunnel in the city of Boston from a point at or near Sullivan Square to the North station.

This bill provides that the Boston Transit Commission shall be directed to construct a double-track tunnel from a point at or near Sullivan Square to a point at or near the North station in the city of Boston, connecting with the elevated railway or with "a subway." The commission is authorized to contract, subject to the approval of the Board of Railroad Commissioners, with any street railway or subway companies for the use of such extension for a term not exceeding twenty years, and the cost of the work shall be defrayed by the city of Boston.

The elevated structure extending from Sullivan Square to the northerly entrance of the Washington Street tunnel, together with the tunnel itself, and the elevated structure extending to Forest Hills, from a through line of transportation designed and nearly arranged for the running of eight-car trains, at short intervals, and providing a system which is approximately of the same capacity at all points. Owing to the fact that some of the trains from the terminal are diverted to pass around the Atlantic Avenue circuit, the number of trains passing through the tunnel is not quite as great as the number of trains passing over the elevated structure at either end, so that the capacity of this through line is limited by the capacity of the tracks on the elevated structure, and the tunnel itself will have a small margin of capacity which is not utilized. This margin will depend upon the relative number of trains from the termini which are run around the Atlantic Avenue circuit.

If eight-car trains are run every two minutes, the capacity of the system will be approximately 24,000 passengers per hour in each direction. This, in addition to the surface cars, which are still run, should be sufficient to accommodate the traffic from Sullivan Square to the center

of the city. The necessity for the subway proposed in the bill could only arise if the capacity of the elevated trains and the surface cars should together be insufficient. The Joint Board has no evidence that such is the case. If it should be the case, however, a subway from Sullivan Square to the North station would not be a proper remedy, unless forming a part of still another underground route through the city. It would not be connected with the present subways, because these are necessary to accommodate the traffic which, either now or in the not distant future, will be carried upon the lines now running through them. The margin of capacity in the Washington Street tunnel above referred to is not large enough to justify connecting it with any other underground system; and whenever it becomes necessary, this margin may be entirely removed, and the tunnel operated to its maximum capacity by operating only shuttle trains over the Atlantic Avenue line, requiring a change of cars at Causeway and Castle streets.

It appears, therefore, that the subway proposed in House Bill No. 196, if extending simply between Sullivan Square and the North station, would not serve any useful purpose, although its cost would be probably from \$3,000,000 to \$4,000,000, depending upon the number and arrangement of stations; and the Joint Board is not yet ready to recommend the construction of another through line from north to south, of which such a subway would form a part.

The Joint Board therefore does not recommend any legislation based upon the bill in question.

House Bill No. 236, accompanying the petition of William J. Paul and others for legislation to provide for the construction of a subway from Tremont and Park streets in the city of Boston to Milton Lower Mills.

This bill requires the Boston Transit Commission to construct a tunnel or subway for two tracks from a point within 500 feet of the junction of Tremont and Park streets, passing under Winter and Summer streets to Dewey Square, thence under Dorchester Avenue to Milton Lower Mills. This subway is to be leased to the Boston Elevated Railway Company, with its consent for a period of twenty-five years from the beginning of the use of the Washington Street tunnel, at an annual rental of $4\frac{1}{2}$ per cent. upon the net cost.

The total length of the subway proposed by this bill would be about $6\frac{1}{2}$ miles, and its estimated cost, including the stations provided for in the bill, would be between \$13,000,000 and \$14,000,000, not including land damages. In other words, this subway would cost considerably more than the total cost of the Washington Street tunnel and the Tremont Street subway.

In its report upon House Bills Nos. 339 and 1030 the Board has already discussed the conditions under which subways in cities are justified. These facts need not be recited again here. The subway proposed would run largely through a district where there is at present no great congestion of traffic, and where there is already what may be called good surface transportation service, some lines connecting with the elevated lines at Dudley Street, and others running to the center of the city entirely upon the surface. The district is also served by the lines of the New York, New Haven & Hartford Railroad, the Shawmut branch of this line extending almost parallel to the proposed subway from the South station to Milton Lower Mills, passing through Ashmont, Fields Corner and Savin Hill, these being the same points at which the proposed bill requires stations in the subway.

The present running time by surface cars from the junction of Broadway and Dorchester Avenue to Milton is twenty-six minutes, and from the corner of Summer and Washington streets to the junction of Dorchester Avenue and Broadway it is ten minutes, making a total running time from the corner of Summer and Washington streets to Milton Lower Mills of thirty-six minutes. The running time between the same points through

the proposed subway, including stops at stations, would, at the same speed now attained in the Washington Street tunnel line, be twenty-three minutes. The running time on the steam railroad between Milton Lower Mills and the South station is about twenty-two minutes. The street car traffic on Dorchester Avenue at present is quite unequally distributed, the greatest traffic being between Park Street (near Fields Corner) and Savin Hill Avenue, where there are 764 trips per day, with 71 in the maximum hour. Between Savin Hill Avenue and South Boston there are only 248 round trips per day, a large number of the cars coming in from beyond Savin Hill being diverted to serve the traffic on Stoughton and Dudley streets, which is tributary to the station of the elevated system on Dudley Street.

Considering as a whole the district which is contemplated to be served by the proposed subway, it will be at once seen that the proposed location is not a favorable one for an expensive underground line. A large part of the district is naturally tributary to the elevated system at Dudley Street and Forest Hills. Dorchester Avenue for a considerable distance has but a small area between it and the bay on the east, while nearer Boston it has but a small area between it and the South Bay and Fort Point Channel on the west. Between Andrew Square and Fields Corner such a line would therefore have a small contributing population on the east, and for its entire distance it would only be about 1,000 feet away from the New York, New Haven & Hartford railroad, which has suburban stations at short intervals; while on the west, as already stated, a large part of the territory is naturally served by the Dudley Street elevated station.

It is obvious to the Joint Board, without further investigation, that there is at present no necessity for the subway proposed by the bill; that Dorchester Avenue does not now appear to be a suitable location for an expensive underground transportation line; that the district can be well served by steam and surface car lines; that a large part of Dorchester is naturally tributary to the Washington Street elevated line; and that if, in the future, additional rapid transit facilities should be required for this district, they should be provided by connecting at some suitable point with the latter system.

The Joint Board, therefore, does not recommend any legislation based upon the bill in question.

House Bill No. 1025, accompanying the petition of Pierce J. Grace and others for legislation to provide for connecting the stations of railroad corporations and street railway companies in the metropolitan district.

This bill reads as follows:—

The railroad commissioners shall, on the first Wednesday of January, nineteen hundred and ten, report to the legislature a scheme for uniting the several terminals and stations of the steam railroads and elevated railroad in the city of Boston.

The intent of the bill is not quite clear. The several terminals and stations of steam railroads in Boston are already united by surface and elevated lines, the Atlantic Avenue elevated loop forming a direct connection between the North and South stations. Many surface car lines in Boston run directly to the North station, while all of the underground and elevated lines pass that point. Similarly, many surface lines run directly to the South station. Moreover, there is already connection between the subway lines and the South station by the surface lines running on Summer Street directly to the corner of Washington Street (where they connect with the Washington Street tunnel), and from that point along Washington and Boylston streets to the corner of Boylston and Tremont streets (where they connect with the Tremont Street subway).

Any improvement in these connections would naturally be a part of some general scheme for the future development of the traffic in the metropolitan district. It should not be undertaken as a separate question,

nor could any such scheme, even if practicable or desirable, be formulated at the date mentioned in the bill.

The Joint Board therefore does not recommend any legislation based upon the bill in question.

House Resolve No. 520, accompanying the petition of William M. Robinson for legislation relative to the construction of a tunnel between the cities of Boston and Chelsea.

This resolve reads as follows:—

Resolved, That the Boston transit commission shall inquire into the subject of the necessity and the cost of the construction of a tunnel or a subway between the city of Boston and the city of Chelsea, and shall report to the general court on or before May first, nineteen hundred and nine, the results of their investigations, the expense of said investigation not to exceed _____ dollars, to be from the appropriation for _____

In compliance with this reference, the Joint Board has at its hearings taken a large amount of testimony regarding the transportation facilities between Boston and Chelsea and the districts on the north. There is no question that the facilities for transportation by surface cars in these districts are inferior to the facilities enjoyed by districts at an equal distance from the center of the city on the south and west, both as regards fares and speed.

Surface cars from Boston to Chelsea may go by two routes: the first is by way of the East Boston tunnel and Meridian Street in East Boston, crossing Chelsea Creek by the Meridian Street drawbridge; the other is by the Charlestown and Warren bridges, over Charles River, through Charlestown and across Mystic River. The former route crosses one draw span, while the latter route crosses three draw spans. The latter route passes through narrow streets in Charlestown, which, as well as Causeway Street and Warren bridge, are likely to be obstructed by team traffic. By the East Boston tunnel route there is less delay, the route being comparatively unobstructed between Scollay Square and the Meridian Street bridge, which is the only place where any considerable delay is likely to occur.

With reference to fares, a passenger taking one of the Boston Elevated Railway Company's cars by way of the East Boston tunnel can for 6 cents go to any point in Chelsea served by that company, whose cars run to Gerrish Avenue at the corner of Broadway. The 6 cents includes a tunnel toll of one cent. Passengers going beyond the district served by the Boston Elevated Railway Company can get an 8-cent transfer check to the Boston & Northern cars, which, with the 1-cent tunnel toll, makes a total of 9 cents. The 8-cent transfer checks are not issued at the stations of the Tremont Street subway, the Washington Street tunnel, the East Boston tunnel or the elevated stations, and can only be obtained when a passenger pays a cash fare on a surface car. A person taking the cars, therefore, in the subway at Park Street or Scollay Square, or in the tunnel at the Old State House, would have to pay two 5-cent fares added to the tunnel toll, or 11 cents in all to reach a point in the district beyond the limits of the elevated railway system. Returning, however, 8-cent transfer checks are issued by the Boston & Northern Street Railway Company, which are accepted on all the cars of the Boston Elevated Railway Company. To go to points in Chelsea by the tunnel route beyond the Boston Elevated Railway Company's lines the fare will be 11 cents or 9 cents, while returning it is 9 cents.

By the route through Charlestown, travelling in the Boston & Northern cars, the cost to and from Scollay Square subway station is, of course, 5 cents, while to or from points south of Scollay Square the fare is 8 or 10 cents; but, as already stated, the delay by this route is likely to be greater.

Union Park, which is the central point in Chelsea, is about 3 miles distant in a straight line from the city hall in Boston, while in a southerly direction the Forest Hills station is about 5 miles, and Milton Lower Mills is about 6 miles distant from the same point.

In view of the above facts, there would seem to be no question, therefore, that the facilities to and from Chelsea are inferior to the facilities in other directions.

A portion of the difficulty in this case, however, is due to inherent or natural obstacles, namely, the presence of the rivers which intervene between Chelsea and Boston. It is not to be expected that transportation facilities in all directions will be made equal, in spite of such natural obstacles; and, if facilities are inferior on account of such obstacles, it does not follow that unduly expensive measures should be undertaken to counteract them. The bill suggests a tunnel under the harbor between Boston and Chelsea. Such a tunnel would naturally follow essentially the route of the present Chelsea ferry. It would require long and expensive approaches at each end. Its length, measured only between shore lines, would be about 7,500 feet, all of which would be under water, and the cost of this portion alone would probably be about \$2,750,000. The cost of the approaches with stations would probably more than double this sum, so that the total cost of the tunnel proposed would be likely to approach \$6,000,000, and might very likely exceed this figure. The Joint Board believes that the expense of such a tunnel is entirely too great to justify its further consideration.

There is no question, however, that some improvement should be sought to be effective in the transportation facilities between Boston and Chelsea, and the Joint Board believes that some such improvement is possible, although the natural obstacles may never be entirely counteracted. The East Boston tunnel is capable of carrying a very much larger traffic than now passes through it. If its Scollay Square terminal were constructed with a loop beneath the present station, the number of cars run through the tunnel might be four times the number now run; and if some form of traffic arrangement between the Boston Elevated and the Boston & Northern street railway companies could be effected, by which a larger number of cars could be run by the tunnel route, and by which transfers could be given at the stations of the elevated railway company, a great improvement could be made. The 1-cent toll through the tunnel must remain in operation for the present, inasmuch as these tolls are in part a guaranty for the tunnel bonds. There would seem to be no means of bringing about the improvement suggested, unless the two railway companies concerned could be induced to enter into some voluntary agreement.

While the Joint Board concludes, therefore, that the construction of a tunnel between Boston and Chelsea is unjustified, it suggests that the Boston Elevated Railway Company and the Boston & Northern Street Railway Company should endeavor to make some joint arrangement by which the facilities through the tunnel may be increased and the prevailing rates of fare reduced.

In view of the above conclusion, there seems to be no object in requiring further investigation as to the necessity and cost of a tunnel by the Boston Transit Commission, as provided in the resolve under consideration.

House Bill No. 659, accompanying the petition of Malcolm E. Nichols for legislation to provide for rapid transit in the city of Boston by a cross-town tunnel.

This bill gives the Boston Transit Commission authority to construct a so-called cross-town tunnel between the existing Park Street subway station and the South station. Before beginning its construction, the commission is to execute a lease of this tunnel to the Boston Elevated Railway Company for a term of twenty-five years from the beginning of its use,

at an annual rental of $4\frac{1}{2}$ per cent. of the net cost. The tunnel is to be built and paid for in the same manner in which the Tremont Street subway and the Washington Street tunnel have been constructed.

The length of this tunnel would be in the neighborhood of 3,000 feet, and its estimated cost, not including land damages, about \$2,750,000. Its total cost would probably be in the neighborhood of \$3,000,000.

The present situation with regard to access to the South station is shown by the following facts:—

People desiring to reach the South station from points on the line of the Washington Street tunnel at or north of Causeway Street or at or south of Dover Street are able to do so by taking the trains over the Atlantic Avenue loop. Passengers desiring to reach the South station from points between Dover and Causeway streets can do so by means of one of the surface lines. The Elevated Railway Company furnishes the following list of surface lines passing this station, namely:—

LINES.	CAR SERVICE ONE WAY.		
	CARS PER HOUR.		Trips per Day.
	Normal.	Maximum.	
From Washington Street south of Broadway:— Dudley Street to South station <i>via</i> Washington Street, . . .	6	6	110
Tremont Street service <i>via</i> Boylston Street:— Roxbury Crossing to East Boston ferry and Rowe's wharf <i>via</i> Tremont, Boylston, Atlantic Avenue, . . .	6	12	117
Columbus Avenue service:— Lenox Street to Rowe's wharf <i>via</i> Columbus Avenue, Tremont and Boylston streets, . . .	6	6	96
Special Park Square service:— Park Square to Rowe's wharf <i>via</i> Eliot, Tremont, Boyl- ston and Washington streets, . . .	8	8	126
Charles Street, East Cambridge and Somerville:— Clarendon Hill, Somerville, to South station <i>via</i> Union Square, Craigie bridge, Charles, Park Square, Eliot, Boylston and Washington streets, . . .	4	8	86
Bowdoin Square and Cambridgeport, entering Washing- ton Street at Cornhill:— North Cambridge to South station <i>via</i> Inman Square, Cambridge bridge, Bowdoin Square and Washington Street, . . .	6	6	77
Mattapan and Franklin Field <i>via</i> Columbia Road:— Franklin Field to Post Office Square <i>via</i> Columbia Road, Mattapan to North Station <i>via</i> Blue Hill Avenue, Colum- bia Road and Dorchester Avenue, . . .	6	6	99
Franklin Field to Post Office Square <i>via</i> Columbia Road and Dorchester Avenue, . . .	—	6	28
South Boston <i>via</i> Dorchester Avenue:— City Point, ¹ South Boston, to Summer and Washington <i>via</i> Broadway Extension, returning Summer Street, City Point to Harvard Square <i>via</i> Bay View, North Station and East Cambridge, . . .	—	12	30
City Point to Franklin Street <i>via</i> Bay View, . . .	8	12	133
City Point to Adams Square <i>via</i> Washington and Milk streets, . . .	—	6	21
City Point to North station <i>via</i> Dorchester Avenue, . . .	—	5	13
City Point to Post Office Square <i>via</i> Dorchester Avenue, Dorchester Street, South Boston, to East Boston ferry, <i>via</i> Atlantic Avenue, Dorchester Street, Broadway, Dorchester Avenue and Atlantic Avenue, . . .	6	9	76
Dorchester and Milton <i>via</i> Dorchester avenue:— Park Street, Dorchester, to Franklin Street <i>via</i> Dorches- ter Avenue and Federal Street, returning Summer Street, . . .	6	12	112
Milton to Franklin Street <i>via</i> Dorchester Avenue and Federal Street, returning Summer Street, . . .	6	23	140
Milton to North station <i>via</i> Dorchester Avenue, . . .	—	—	22
Park Street to North station <i>via</i> Dorchester Avenue, . . .	6	9	77
Park Street to North station <i>via</i> Dorchester Avenue, . . .	—	5	19
Park Street to North station <i>via</i> Meeting House Hill, Columbia Road and Dorchester Avenue, . . .	—	10	27
To Charlestown <i>via</i> Beach and Washington streets:— Sullivan Square to D Street, South Boston, <i>via</i> Wash- ington, Essex, Harrison Avenue, Beach and Atlantic Avenue, . . .	6	6	92
Total cars passing through Dewey Square one way,	80	179	1,535

¹ One way does not return *via* Dewey Square.

ELEVATED SERVICE.	TRAIN SERVICE ONE WAY.		
	TRAINS PER HOUR.		Trains per Day.
	Normal.	Maximum.	
To North station,	8	10	161
To Charlestown,	6	7½	111
To Roxbury,	6	7½	111

Passengers coming into Boston from the west and entering the Tremont Street subway can reach the South station without additional fare by changing to the surface cars at the corner of Tremont and Boylston streets, or they may continue to Scollay Square, paying the 1-cent toll and passing over the East Boston tunnel line to Atlantic Avenue, change there again and take the Atlantic Avenue trains, or they may go to Causeway Street and take the shuttle trains on the Atlantic Avenue line. Similar free transfer to surface cars at the corner of Tremont and Boylston streets is available for passengers going south from Park Street in the Tremont Street subway.

Information obtained from the Boston Elevated Railway Company with reference to these opportunities for getting from the Park Street station of the Tremont Street subway to the South station is given in the following table:—

	Minutes consumed.	FREQUENCY OF CAR SERVICE.	
		Normal.	Maximum
		Min. Sec.	Min. Sec.
1. Park Street subway station to South station <i>via</i>			
North station,	13	—	—
Subway cars to Haymarket station,	—	1 00	45
Elevated train to North station,	—	4 00	2 30
Elevated shuttle train to South station,	—	7 00	6 00
2. Park Street subway station to South station <i>via</i>			
Touraine corner, Boylston:—			
Washington and Summer streets,	11	—	—
Subway cars to Boylston street station,	—	20	11
Walk to Touraine and take surface cars, ²	—	2 30	2 03
3. Park Street subway station to South station <i>via</i>			
Winter and Summer streets,	5½	—	—
Walk through Winter Street and take cars at Summer and Washington streets,	—	1 34	58
4. Park Street Subway station to South station <i>via</i>			
East Boston tunnel,	9½	—	—
Subway cars to Scollay Square station,	—	1 00	45
Take tunnel cars from Court Street station,	—	2 00	1 00
Change at Atlantic Chambers for elevated,	—	4 00	4 00

¹ The minutes consumed on the route does not include the possible waiting for cars, but does include the walking on routes 2 and 3.

² This is based on the assumption that the proposed transfer privilege about to be instituted will enable passengers to take the so-called "subway-South station" cars.

From this it appears that by going all the way around the Atlantic Avenue loop *via* North station, which can be done without extra fare, the running time, exclusive of waits, is thirteen minutes; that by going to the Boylston Street station and taking the surface cars, the running time is eleven minutes; by walking through Winter Street and taking the surface cars on Summer Street, the time is five and one-half minutes; and by the East Boston tunnel route, the time is ten minutes.

The average time consumed in going from the corner of Winter and Tremont streets to the South station has been found by actual tests to be as follows, viz. : by way of the subway, Haymarket Square, Friend Street, North station and Atlantic Avenue Elevated, 20.1 minutes; by way of the subway and surface cars *via* Boylston, Washington and Summer streets, 15.5 minutes; by way of the subway, Scollay Square, East Boston tunnel and Atlantic Avenue Elevated, 14.8 minutes.

The foregoing statements show the surface system of transportation to and from the South station as at present provided by the Boston Elevated Railway Company. It is, however, clear that there is a legitimate demand for a quicker and easier means of transportation between this point and several of the centers of metropolitan Boston. This can best be satisfied, in our opinion, by a subway or tunnel connecting the present Tremont Street subway and the Washington Street tunnel with the South station. In view of the proposed terminus of the Cambridge rapid transit line at Park Street, it is our opinion that an extension of this line to the South station is a logical development. If constructed, this extension would obviously run under Winter Street, securing a station connection with the Washington Street tunnel and thence under Summer Street to the station.

While we are of opinion that under present conditions the Boston Elevated Railway Company ought not to be called upon to assume additional large obligations arising from the construction and operation of new elevated structures, subways and tunnels radiating to the suburbs of Boston, it by no means follows that its rapid transit system ought not to be extended by some sub-surface structure in the heart of the city itself. Such a connection is the one proposed in substance in House Bill No. 659, which, if constructed, would co-ordinate the existing lines of the company and create a direct, rapid and easy means of connection between the largest passenger terminal in the city of Boston and the territory now served by the Washington Street tunnel and the Tremont Street subway. While the provisions of existing law secure to the Boston Elevated Railway Company certain rights with respect to additional burdens, we are of opinion that studies should be made by the Boston Transit Commission, having for their object the construction of this tunnel. Those studies should embrace the selection of a route, the development of the Park Street station, a connection with the Washington Street tunnel and a terminal station at or near Atlantic Avenue. Further study also should be made, in connection with this investigation, of the expenses of construction, and, so far as possible, the land damages to be paid. This investigation should be seasonably prosecuted, and a report made to the General Court not later than Jan. 1, 1911. If it shall appear that no unforeseen obstacles of construction are disclosed, and that the total estimate of expense is not too great, permissive legislation should be enacted for the construction of this subway. For this purpose the Joint Board recommends to the General Court the passage of the following resolve:—

RESOLVE RELATIVE TO A SUBWAY FROM PARK STREET TO THE SOUTH STATION IN THE CITY OF BOSTON.

Resolved, That the Boston transit commission be and hereby is authorized and instructed, after an appropriation sufficient to cover the expense of the same as estimated by it has been made by the city of Boston, to make studies, plans and estimates of cost for the construction of a sub-

way from the present subway station at Park street to the South station, with proper terminals and connections; and to report to the general court on or before the first Wednesday of January, nineteen hundred and eleven, the draft of a bill for the construction of such subway.

House Bill No. 1026, accompanying the petition of Pierce J. Grace and others for legislation to provide for the discontinuance of the elevated structure on Washington Street and the extension of the Washington Street tunnel to Dudley Street in the city of Boston.

In addition to House Bill No. 1026, an alternative bill proposing to accomplish the same result was, we understand, presented to the legislative committee, and has been submitted to the Joint Board.

The constitutionality of both these bills having been raised at the hearings, the Joint Board requested and has received an opinion of the Attorney-General of the Commonwealth. This opinion in substance holds the bills unconstitutional in their essential features.

We have therefore given no further consideration to the proposition proposed in the petition and accompanying bills, but return herewith a copy of the opinion of the Attorney-General.

DEPARTMENT OF THE ATTORNEY-GENERAL,
BOSTON, Dec. 6, 1909.

Hon. W. P. HALL, *Chairman*, Hon. GEORGE F. SWAIN, *Secretary*,
Joint Board.

GENTLEMEN:—The Joint Board acting under the provisions of chapter 94 of the Resolves of 1909, and consisting of the Board of Railroad Commissioners and the Boston Transit Commission, asks my opinion with respect to the constitutionality of House Bills No. 1026 and No. 1026A.

House Bill No. 1026 is as follows:—

SECTION 1. The present Washington street tunnel used by the elevated railroad in the city of Boston shall be extended by the Boston transit commission, or such other board or authority as shall be charged with such construction, to a point beyond Dudley street, under the same provisions as to construction, payment and use as provided by law for the construction, payment and use of the said present tunnel.

SECTION 2. The elevated structure now in said Washington and connecting streets used in connection with the present tunnel, shall on the construction of the extension of the tunnel hereinbefore provided for, be removed, the expenses thereof to be considered a part of the cost of construction of said extension.

The proposed bill, numbered 1026A, in sections 1 and 2 is identical with House Bill No. 1026. Section 3 is as follows:—

Upon the carrying out of the provisions aforesaid, the superior court for the county of Suffolk upon petition of the city, company, or any party in interest, shall appoint three commissioners who shall determine the damages, if any, sustained by the company over and above the benefit, if any, the company receives by the carrying out of said provisions, and the damages so determined, shall be paid by the city and considered a part of the cost of said extension; the commissioners shall within three years after the carrying out of said provision, determine the benefits, if any, received by the several parcels of real estate abutting on the part of the streets from which said structure shall have been removed, and assess upon each such parcel, a betterment consisting of a proportional part of the cost of carrying out said provisions, but the total amount of the betterments assessed shall not exceed one half of such cost, and no betterment shall exceed one half of the benefit received by the parcel.

Section 4 provides:—

The owner of each parcel so assessed, shall pay to the city each year a part of the betterment consisting of one twenty-fifth of the amount assessed on the parcel, and the rental to be paid by the company shall be reduced by the total amount of said parts to be paid during the year; any owner may pay to the city the whole or the balance of his betterment, and in such case, the city shall pay his part aforesaid.

Section 5 provides:—

If any party in interest is dissatisfied with the determination of the commissioners, the damage or betterment may be determined by a jury or a justice of said court on petition therefor filed in said court within one year after the determination; and all laws relating to the determination and payment of damages and betterments for laying out highways in said city shall so far as applicable govern in such matters under this act.

To accomplish the purpose of these bills, if enacted, by requiring the Boston Elevated Railway Company to abandon its present elevated structure in Washington Street, and to operate its trains in and through a new subway to be constructed thereunder as provided in such bills, it is obvious that the Legislature must invoke one of three powers:—

1. The reserved power to amend the charter of all corporations organized since 1831;
 2. The police power; or
 3. The power of eminent domain;
- and that such purpose must justify the exercise of the power so invoked.

1. *The Reserved Power to amend the Charter of the Boston Elevated Railway Company.*

The reserved power in the Legislature to amend or repeal the charter of any corporation is derived from statutes of which the present form is to be found in R. L., c. 109, § 3, which is as follows:—

Every act of incorporation passed since the eleventh day of March in the year eighteen hundred and thirty-one shall be subject to amendment, alteration or repeal by the general court. . . .

The power so reserved, however, is not without limitation, and cannot be constitutionally invoked to work a forfeiture or confiscation of property legally acquired and owned by the corporation, or to abrogate a contract established by the terms of its charter and duly performed by it. *Commonwealth v. Essex Co.*, 13 Gray, 239; *Woodward v. Central Vermont Railway Co.*, 180 Mass. 599. See also *Parker v. Metropolitan R.R. Co.*, 109 Mass. 506; *Attorney-General v. Old Colony R.R. Co.*, 160 Mass. 62.

The Boston Elevated Railway Company was chartered under St. 1894, c. 548, as amended by St. 1897, c. 500, and was authorized by section 6 of the former statute, as amended by section 2 of chapter 500 of the Acts of 1897, to—

construct lines of elevated railway according to such plans or systems as the board of railroad commissioners may approve, to be operated by electricity or other motive power except steam, upon the following locations, and may equip, maintain and operate engines, motors and cars thereon, to wit:—

Then follow certain specific locations. Section 10 of chapter 500 is as follows:—

Said corporation may establish, and take a toll or fare, which shall not exceed the sum of five cents for a single continuous passage in the

same general direction upon the roads owned, leased or operated by it; and this sum shall not be reduced by the legislature during the period of twenty-five years, from and after the passage of this act: . . . During said period of twenty-five years no taxes or excises not at present in fact imposed upon street railways shall be imposed in respect of the lines owned, leased or operated by said corporation, other than such as may have been in fact imposed upon the lines hereafter leased or operated by it at the date of such operating contract or of such lease or agreement hereafter made therefor nor any other burden, duty or obligation which is not at the same time imposed by general law on all street railway companies: . . .

This section has been held to constitute a contract between the Commonwealth and the corporation, by which for a period of twenty-five years the corporation was to pay a fixed tax or compensation for the privileges granted by the act, "and for the use and occupation of the public streets, squares and places, by the lines of elevated and surface railroad, owned, leased and operated by it," and for such period was not to be made subject to any burden, duty or other obligation which was not at the same time imposed by general law upon all other street railway companies. See II Op. Atty.-Gen., 426, 427; II Op. Atty.-Gen., 261.

Section 19 of chapter 500 is as follows:—

The locations of or right to maintain any elevated lines or structures of the Boston Elevated Railway Company shall not be subject to revocation except in the manner and on the terms prescribed in sections seven and eight of chapter one hundred and twelve of the Public Statutes: *provided, however*, that any location upon which said corporation has not constructed its railroad within ten years from the passage of this act shall be subject to revocation by the legislature; but no location upon which said corporation has begun the construction of its railroad within said period shall be subject to revocation if the same be completed within three years thereafter.

St. 1902, c. 534, is entitled "An Act to provide for the construction of additional tunnels and subways in the city of Boston," and provided for the construction by the Boston Transit Commission of—

a system of tunnels and subways so designed as to be adapted for the accommodation of two tracks especially for use by elevated cars or trains and two tracks especially for use by surface cars. (Section 1.)

Section 10 provides that:—

The commission shall within ninety days after the passage of this act execute with the company (the Boston Elevated Railway Company), in the name of the city, the company consenting thereto, a contract in writing for the sole and exclusive use of the tunnel and subway and appurtenances for the period of twenty-five years from the beginning of the use of the tunnel, at an annual rental equal to four and one-half per cent of the net cost of the tunnel and subway respectively, for the running of trains and cars therein, and for such other uses and upon such provisions and conditions, not affecting the term or rental, as the commission and the company may agree upon, or in case of difference, as the board may determine. The provisions of this act, so far as they declare, define or establish the terms and conditions for the construction, tenure, maintenance and operation of said tunnel, subway and appurtenances, shall be embodied in and made part of said contract. . . .

Section 11 is in part as follows:—

If the company shall execute the contract hereinbefore provided for, the company may, before the completion of the tunnel, construct lines of elevated railway according to such plans as the board may approve, to

be operated by electricity or by such other motive power except steam, as may be approved by the board in respect of the locations heretofore granted to the company, upon the following locations, which are hereby granted therefor, and may equip, maintain and operate engines, motors, trains and cars thereon, to wit:—(a) beginning at the southerly end or ends of the tunnel, thence upon and over any streets and public or private lands to the company's elevated structure now erected on or near Washington, Mott or Castle streets; . . .

These acts, in my opinion, clearly constitute a contract between the Commonwealth and the Boston Elevated Railway Company with respect to the locations granted, which is to endure so long as such company shall have the use of the tunnel under the contract with the city of Boston, provided for therein, and which cannot be altered or abrogated by amendment without the consent of the company without violating section 10 of Article I. of the Constitution of the United States, which prohibits the passage by a State of any law impairing the obligation of contracts. See *New Jersey v. Yard*, 95 U. S. 104.

It follows, therefore, that the purpose of the proposed bills cannot constitutionally be accomplished by means of an amendment to the charter of the Boston Elevated Railway Company without the assent of that company to its terms and provisions.

2. The Police Power.

The police power, as exercised by the Legislature, is defined in *Commonwealth v. Bearse*, 132 Mass. 542, 546, as extending "to all matters which concern its internal regulation." Under this power the Legislature may regulate the operation of railroads, may alter their location, or may provide that at their own expense they shall eliminate a crossing at grade, with highways or other public means of communication, when public necessity or convenience so require. See *Roxbury v. Boston & Providence R.R.*, 6 Cush. 424; *Commonwealth v. Eastern R.R.*, 103 Mass. 254; *In re Mayor, etc. of Northampton*, 158 Mass. 299. And this, it would seem, may be done without regard to the reserved power of amendment. *Norwood v. New York, etc. R.R.*, 161 Mass. 359, 265, and cases cited.

This power is not lost because its exercise may impair obligations of contracts either between third parties or between the sovereign and the corporation affected. See *Bulchers' Union Co. v. Crescent City Co.*, 111 U. S. 746, and cases cited.

I am of opinion, therefore, that under the police power the Boston Elevated Railway Company might be required at its own expense to remove its elevated tracks from Washington Street, notwithstanding the existence of a contract between such corporation and the Commonwealth, and of a further contract between such corporation and the city of Boston, represented by the Transit Commission. Such a regulation, however, must be grounded upon a legitimate public advantage to be derived therefrom, and the courts will interfere if rights of property are invaded under the guise of police regulation. See *Commonwealth v. Bearse, supra*.

In the present instance the question would seem to be whether or not any sufficient public benefit would accrue from the removal of the elevated structure upon the Washington Street location. It is to be observed that since the enactment of St. 1894, c. 548, it has been the policy of the Legislature to permit the construction of elevated structures in the streets of the city of Boston where the need of public transportation calls for further facilities, and that such structures are no longer to be regarded as nuisances within such streets. The Legislature frequently authorizes and legalizes the maintenance of structures in the streets which would otherwise be nuisances. See *Commonwealth v. Boston*, 97 Mass. 555; *Lincoln v. Commonwealth*, 164 Mass. 374.

The very structure which the proposed bills seek to remove was specifically authorized by the Legislature, and it must be assumed that

in conferring authority upon the company it was familiar with the conditions obtaining upon the location granted, and had weighed and determined the several means of serving the public necessity and convenience at that point. In view of this consideration by the Legislature, it would be necessary, in my opinion, that evidence should be offered tending to show a substantial change in the conditions attending the public use of the streets in which locations were granted, since the passage of the act, by which the public safety, health or convenience were seriously interfered with by the continued maintenance of an elevated structure. No such changed condition has been shown as, in my opinion, would warrant a conclusion that the Legislature's point of view could reasonably have changed since the passage of the acts aforesaid. It would seem to follow, therefore, that after the Boston Elevated Railway Company had acted upon due authority from the Legislature, and had expended money for land damages and for the erection of an elevated structure, upon the faith of an enactment by which such structure was legalized, should the Commonwealth reconsider its act and declare such a structure a nuisance and require its removal without compensation, such action would be unjustifiable under the police power, and would amount to a confiscation of property, provided it did not appear that there was any material change in the public use of the streets in which such structure was erected to justify it.

Another objection to the proposed bills is that they assume to impose upon the company a contract with the city of Boston which apparently the company is to have no opportunity to decline, since they provide that the proposed tunnel shall be constructed and used "under the same provisions as to construction, payment and use as provided by law for the construction, payment and use of said present tunnel." While these bills are not particularly clear, it may be fairly gathered from section 1 that no choice is to be left to the company, provided by law for the construction, payment and use of the said present tunnel." While these bills are not particularly clear, it may be fairly gathered from section 1 that no choice is to be left to the company, and that such company is required to occupy a tunnel, when constructed, upon the same terms and conditions as those established by law for the occupation of the present tunnel in Washington Street, which would include an existing contract between the company and the Boston Transit Commission on behalf of the city. This, it seems to me, could not be done under the police power, since to require the company to descend into the tunnel and to pay rent therefor upon terms and conditions established by another contract entered into for the use of another part of the tunnel, would amount to a taking of the property of the company without due process of law.

3. The Power of Eminent Domain.

It would seem that there can be no doubt that the structure in Washington Street might be taken by eminent domain and due compensation given therefor, and House Bill No. 1026A, in sections 3 and 5, appears to contemplate a taking by eminent domain, with a final appeal to a jury. The bill is loosely drawn, and it is difficult to determine the exact effect of its provisions, and I shall assume that it has provided for a taking, with a proper recourse to the courts for the determination of damages. The bill does not in terms provide for any compensation for the contract subsisting between the Commonwealth and the Company in respect to the Washington Street location, but it provides for the payment of damages, if any, to the company, and this provision would doubtless include damages occasioned by the interruption to such contract. The same provision would probably also include any damages which might accrue from the diminished consideration for the contract which the company now has with the Transit Commission.

The proposed bills, however, both contemplate the construction of a tunnel and its occupation by the Boston Elevated Railway Company, payment for such occupation and use to coincide with the terms and con-

ditions upon which the existing tunnel in Washington Street was constructed and is now occupied under the contract with the Transit Commission above referred to, which contract is not before me. It seems to me that such requirements do not properly fall within the field of the power of eminent domain. Under that power property may be taken upon sufficient payment, but I am not aware of any case in which under such power an attempt has been made to make the volition of a corporation—its freedom to do or not to do any particular act or acts—the subject of a taking; and I am therefore clearly of the opinion that so much of these proposed acts as assumes to require the company to occupy and use a new tunnel upon terms and conditions now fixed by law or by contract with relation to an existing tunnel, can be justified only under the police power, which has been elsewhere referred to.

Very truly yours,

DANA MALONE, *Attorney-General.*

Chapter 85, Resolves of 1909, requests the Joint Board to "investigate and report to the general court on or before the second Saturday of January, nineteen hundred and ten, whether or not in their opinion it is advisable, expedient and in the public interest, . . . (Third.) To authorize the Boston Elevated Railway Company to extend its elevated railway from Sullivan square to the city of Medford, and if so, under what conditions and limitations."

In accordance with this resolve, the Joint Board has taken testimony with reference to this matter. This testimony was mainly in the form of remonstrances from the citizens and officials of the city of Somerville, who strongly protested against the construction of an elevated railway through their city. The mayor and counsel of the city of Medford appeared in favor of the proposition, while counsel for the Boston Elevated Railway Company did not express an opinion.

The natural route for the extension referred to would be along Mystic Avenue, which extends in nearly a straight line from Sullivan Square to Medford Square in the city of Medford. The city of Medford had in 1905 a population of 19,686, or about one-half the population of Malden, to which city the Legislature has recently authorized the extension of the elevated line from Sullivan Square. Tributary to Malden and the new terminus is Melrose, with a population of 14,295, Wakefield, with a population of 10,268, and other towns; while north of Medford lies Winchester, having a population of only 8,242, and with a considerable extent of sparsely populated territory lying between.

Medford has already communication with Boston by means of two steam lines; one the main line of the southern division of the Boston & Maine, which runs through West Medford, and one by the Medford branch of the western division of the Boston & Maine, which extends about to the center of the city. The city is also connected by two surface lines with Sullivan Square; one running through a thickly populated portion of Somerville *via* Main Street and Broadway, and the other being the line which extends from Middlesex Fells through Wellington across the Mystic River at Broadway Park to Mystic Avenue and thence to Sullivan Square. A third surface line runs through West Medford and Medford Hillside to Union Square in Somerville.

The Joint Board has previously discussed the conditions under which elevated and subway lines, should be substituted for surface lines, and it does not appear that the necessities of traffic in this case would render the construction of an elevated line necessary. The surface line from Sullivan Square to Broadway Park could easily be extended along Mystic Avenue to Medford Square, or a branch could be run in Riverside Street or some other street to the same point. It would seem that these lines should be sufficient to adequately meet the needs of the city of Medford and the district beyond.

The Joint Board does not consider that a city or town is justified in

objecting to the construction of a rapid transit line through it which shall enable more distant population to reach the center of the city, provided the requirements of the traffic justify such construction; in such case it will simply be a question whether the line should be built on an elevated structure or in a subway. There is no doubt, however, that the construction of an elevated line is a serious injury to adjoining property, and that such lines should not be constructed unless their necessity is fully demonstrated.

In consideration of the facts which have been recited, the Joint Board does not recommend any legislation based upon the bill in question.

The above report is unanimously submitted.

WALTER PERLEY HALL,
Chairman,

GEORGE W. BISHOP,
CLINTON WHITE,
Board of Railroad Commissioners.

GEORGE G. CROCKER,
GEORGE F. SWAIN,
Secretary,

HORACE G. ALLEN,
JOSIAH QUINCY,
JAMES B. NOYES,
Boston Transit Commission.

JAN. 8. 1910.

APPENDIX H.

[CHAPTER 58.]

RESOLVE TO PROVIDE FOR AN INVESTIGATION RELATIVE TO THE CONSTRUCTION AND USE OF SUBWAYS IN THE CITY OF BOSTON.

Resolved, That the board of railroad commissioners and the Boston transit commission, acting as a joint board, shall consider and investigate the subject-matter of the petitions of Edmund D. Codman and others, with accompanying bills, House, Number 45 and Number 46, relative to the construction and use of subways in the city of Boston, and shall report in print thereon to the general court not later than January first, nineteen hundred and eleven. The members of the said joint commission shall receive no extra compensation for their services, but the commission may expend a sum not exceeding five hundred dollars in carrying out the provisions of this resolve. [*Approved April 8, 1910.*]

APPENDIX I.

[CHAPTER 94.]

RESOLVE TO PROVIDE FOR AN INVESTIGATION RELATIVE TO THE CONSTRUCTION OF A SUBWAY FROM PARK STREET TO THE SOUTH STATION IN THE CITY OF BOSTON.

Resolved, That the Boston transit commission is hereby authorized and instructed, after an appropriation sufficient to cover the expense of the same, as estimated by it, has been made by the city of Boston, to make studies, plans and estimates of cost for the construction of a subway from the present subway station at Park Street to the South station, with proper terminals and connections, and to report in print to the general court, on or before the first Wednesday of January in the year nineteen hundred and eleven, the draft of a bill for the construction of such subway. [Approved May 11, 1910.]

APPENDIX J.

[CHAPTER 97.]

RESOLVE TO PROVIDE FOR A REPORT BY THE BOSTON TRANSIT COMMISSION
ON CERTAIN PROPOSED IMPROVEMENTS IN TRANSPORTATION IN THE
CITY OF BOSTON.

Resolved, That the Boston transit commission is hereby authorized and directed to investigate and report in print to the next general court on or before the second Saturday in January, nineteen hundred and eleven, whether or not in its opinion it is advisable and for the public interest to grant any or all of the following petitions for legislation, namely:—The petition of Charles L. Carr for legislation to provide rapid transit to and through the Dorchester district of the said city, which petition is accompanied by House bill number eight hundred and eleven; the petition of William S. McNary and others for legislation to provide improved transit between that part of the city of Boston known as the city proper and Dorchester and South Boston, the said petition being accompanied by House bill number eight hundred and twelve; and also the petition of William S. McNary and others to provide for rapid transit between the city proper and the South Boston district, the said petition being accompanied by House bill number eight hundred and thirteen. The said commission shall report under what conditions and restrictions, if any, and in what form the said legislation should be granted. The said commission is also directed, after an appropriation sufficient to cover the expense of the same as estimated by it has been made by the city of Boston, to give public hearings, and to investigate and report in print, on or before the date above mentioned, a route for a subway or tunnel to the Dorchester district of the city of Boston, including such connections with the South Boston district as public interest may require, the said subway or tunnel to start at or near the South station, at a point convenient for a junction with the proposed tunnel from Park street, and to run to such point in or near the Dorchester district as will most conveniently provide rapid transit between Boston proper and Dorchester and South Boston. The commission shall embody in its report an estimate of the cost of constructing such subway or tunnel. [Approved May 13, 1910.]

APPENDIX K.

[CHAPTER 139.]

RESOLVE RELATIVE TO THE IMPROVEMENT OF TRANSPORTATION FACILITIES
IN AND AROUND THE CITY OF BOSTON.

Resolved, That the board of railroad commissioners and the Boston transit commission, sitting jointly, be requested to investigate and report in print to the general court, on or before the second Saturday of January, nineteen hundred and eleven, whether or not in their opinion it is advisable, expedient, and in the public interest:

First. To provide for the acquisition by the Boston Elevated Railway Company of stocks and bonds of other street railway companies, or for the acquisition of the property and rights of other street railway companies in any other way.

Second. To provide in advance of the expiration thereof for extensions of the existing contracts for the use of the Tremont street subway, the Washington street tunnel, and the East Boston tunnel, and if so, on what terms and conditions, and for what period of time.

Third. To provide for further modifications of chapter five hundred and fifty-one of the acts of the year nineteen hundred and eight, or to provide by any other method, and if so, by what method, for continuing the advantages of a single control of the systems of the Boston Elevated Railway Company and the West End Street Railway Company.

The said joint board is requested to give public hearings in regard to said matters, and to report the result of its investigation to the general court on or before the second Saturday of January, nineteen hundred and eleven, with such recommendations as the joint board may deem advisable in view of previous investigations and the investigation to be made in the pursuance of this resolve. And the joint board is also requested to submit with its report drafts of a bill or bills embodying any recommendations which it may make.

And further resolved that the board of railroad commissioners be joined with the Boston transit commission in the investigations and reports to be made under chapters ninety-four and ninety-seven of the resolves of the year nineteen hundred and ten. [*Approved June 14, 1910.*]

APPENDIX L.

The names of all the assistants in the Engineering Department who have been employed for more than one month during the last year, together with an indication of the work on which they have been engaged, are given below.

Assistant Engineers.

CHARLES H. BARTLETT,	Detail work for steel structures.
C. LEONARD BROWN,	Inspection of construction, Section 1 of Tunnel under Beacon Hill.
WILBUR W. DAVIS,	Contract plans, lines, grades and estimates for Section 1, Tunnel under Beacon Hill.
G. DANA EMERSON,	Designs for structures and in charge of construction of Section 1, Tunnel under Beacon Hill.
LEONARD B. HOWE, } WILLIAM W. LEWIS, } ROY M. LOTHROP, }	Studies, preliminary estimates, designs for structures and contract plans.
LAURENCE B. MANLEY,	Studies and surveys for Riverbank Subway.
GEORGE H. STEARNS,	Designs for steelwork and concrete structures.

Draughtsmen.

GEORGE P. GOODMAN,	Plans for tunnel work and structures.
EDMUND A. RICE,	Plans for steel work.
FREDERIC W. STILES,	Draughting and miscellaneous office work.

Transitmen.

JAMES B. FLAWS,	Work for Washington street Tunnel and inspection, Section 1, Tunnel under Beacon Hill.
HENRY N. HAYWARD,	Line and grade work, also inspection, Section 1, Tunnel under Beacon Hill.
THOMAS R. HAZELUM,	Inspection, Section 1, Tunnel under Beacon Hill.
LEROY P. HENDERSON,	Survey work for Riverbank Subway, etc.
ARTHUR V. LYNCH,	Lines and grades, Section 1, Tunnel under Beacon Hill.
ROBERT K. TAYLOR,	Inspection, Section 1, Tunnel under Beacon Hill.
PHILIP B. WALKER,	Inspection, Section 1, Tunnel under Beacon Hill, also work in East Boston Tunnel.

Rodmen.

HAROLD K. BRIDGMAN,	Line and grade work, Section 1, Tunnel under Beacon Hill.
WARREN H. HUNTSMAN, } THOMAS H. KEENAN, } CHARLES E. PARKER, }	Inspection of concrete mixing for Section 1, Tunnel under Beacon Hill.
SIDNEY S. VON LOESECKE,	Line and grade work, Section 1, Tunnel under Beacon Hill.

Chemists and Inspectors of Material.

HAROLD C. DELONG, }	Testing cement, pitch and other material, also superintending making of concrete sheeting, etc.
*FRANK H. SCHOENFUSS, }	
ALFRED W. PARKER,	Inspection of steel work.

Clerical Force.

ARTHUR B. CARTER,	Secretary and Executive Clerk to the Acting Chief Engineer.
ROSE A. MCMAHON,	Stenographer.
JOHN E. RYAN,	Stenographer.
JOSEPH P. SHEERIN,	Messenger at field office, 63 Phillips St.
CHARLES E. FAY,	Messenger in draughting room; blue-printing; care of plans.

* Left the employ of the Commission in April, 1910.

APPENDIX M.

SEWERS RELOCATED DURING THE YEAR ENDING WITH JUNE 30, 1910, IN CONNECTION WITH TRANSIT COMMISSION'S WORK OF CONSTRUCTING THE TUNNEL UNDER BEACON HILL.

Sewers Built. (All of vitrified pipe.)

- 72 feet of 20-in. sewer over tunnel roof in Phillips and Grove Streets.
 - *36 feet of 12-in. sewer over tunnel roof in Phillips and Grove Streets.
 - 60 feet of 12-in. sewer in Phillips Street west of Grove Street.
 - *18 feet of 12-in. sewer at southwest corner of Phillips and Grove Streets.
 - 25 feet of 10-in. sewer—House connection to south side of Phillips Street, west of Grove Street.
 - 14 feet of 6-in. sewer—House connection to 61 Phillips Street.
 - 15 feet of 6-in. sewer—House connection to 63 Phillips Street.
 - 19 feet of 6-in. sewer—House connection to 65 Phillips Street.
- *Not connected at present—put in for future use.

Sewers Rebuilt.

- 15 feet of 6-in. sewer—House connection to 24 Grove Street.
- 16 feet of 6-in. sewer—House connection to 28 Grove Street.
- 6 feet of 8-in. sewer—House connection to 30 Grove Street.
- 8 feet of 10-in. sewer from catch basin to manhole in Grove Street south of Phillips Street.
- 8 feet of 10-in. sewer from catch basin to sewer in Grove Street south of Phillips Street.

Manholes.

Five new manholes built at the intersection of Phillips and Grove Streets; one of these for future use and not connected at present.

Two new catch basins built in Grove Street south of Phillips Street.

In addition to the above, 102 feet of 12-inch sewer has been built under private property alongside the tunnel and connecting with the new manhole west of the tunnel in Phillips Street. This sewer carries only surface water, from the roof of the tunnel incline.

Sewers, catch basins and manhole abandoned.

- 65 feet of 12-in. x 16-in. wooden sewer in Grove Street at Phillips Street.
- 26 feet of 10-in. house connections from south side of Phillips Street.
- Two catch basins in Grove Street south of Phillips Street.
- One manhole in Phillips and Grove Streets.

APPENDIX O.

CAMBRIDGE CONNECTION.—CANVASS OF BIDS FOR FURNISHING AND DELIVERING ADDITIONAL STEEL AND IRON WORK FOR SECTION I TUNNEL UNDER BEACON HILL.—BIDS OPENED NOVEMBER 4, 1909.

BIDDERS AND ADDRESSES	34,000 lbs. steel tie-rods, including nuts. (cents per lb.)	2,340 lbs. steel turn-buckles (cents per lb.)	4,700 lbs. clevis nuts, pins, etc. (cents per lb.)	6,200 lbs. cast iron washers (cents per lb.)	Totals	Date of Delivery
H. P. Converse & Co., 88 Broad Street, Boston	2.6 for 43,407 lbs.* \$1,128.58	8.0 \$187.20	8.0 \$376.00	2.0 \$124.00	\$1,815.78	Jan. 10, 1910
Lewis F. Shoemaker & Co. Harrison Bldg., Philadelphia	2.89 \$982.60	7.7 \$180.18	7.7 \$361.90	2.25 \$139.50	1,664.18	Jan. 10, 1910

*The increased weight in Converse & Co.'s bid is due to the substitution of 2 3/4-inch rods for the 2 1/4-inch rods designated by the Commission.

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