95.
January 5/1881.

71 BROADWAY, NEW YORK CITY, JANY. 3RD 1881.

ERASTUS WIMAN ESQ.
PRESIDENT STATEN ISLAND RAPID TRANSIT CO.
314 BROADWAY, N. Y. CITY.

DEAR SIR:-

IN ACCORDANCE WITH YOUR INSTRUCTIONS, I HAVE MADE AN INSTRUMENTAL EXAMINATION OF THE TOPOGRAPHY OF THE GROUND BETWEEN THE PROPOSED FERRY LANDING AND ARIETTA STREET, WITH A VIEW TO THE PROPER LOCATION OF A RAPID TRANSIT RAILWAY LINE, THROUGH THE GOVERNMENT LIGHT HOUSE PROPERTY, AND ALSO THAT OF THE AMERICAN BOOK COMPANY, AND I AM ABLE TO REPORT THAT A GOOD LINE ON A LOW GRADE CAN BE HAD, AT A REASONABLE COST, WITHOUT INTERFERING WITH THE FULL ENJOYMENT OF THE SAID PROPERTIES BY THEIR RESPECTIVE OWNERS. THE KEY TO THE WHOLE POSITION, AS I THOUGHT PROBABLE WHEN FIRST VIEWING THE GROUND, IS THE CONSTRUCTION OF A TUNNEL UNDER THE GOVERNMENT PROPERTY AND SOUTH STREET, A DISTANCE OF 650 LINEAL FEET, AND ANY OTHER SOLUTION OF THE PROBLEM IS PRACTICALLY IMPOSSIBLE, HEDGED IN AS IT IS, WITH THE PROPERTY REQUIREMENTS OF THE CASE. THE PROFILE OF THE PROPOSED LINE, IN THE MAP ACCOMPANYING THIS REPORT, SHOWS THE RELATION OF THE GRADE TO THE SURFACE OF THE GROUND.

THE LINE COMMENCES ON THE PROLONGATION OF HYATT STREET, AT A GRADE OF SIX FEET (MORE OR LESS) ABOVE HIGH WATER, THENCE CURVING TO THE LEFT ON A 14 DEGREE (400 3-10 FEET RAD.) CURVE FOR ABOUT 800 FEET, TO A TANGENT (POINTING TOWARDS STUYVESANT AVE. AND SO LOCATED AS TO PASS WEST OF THE OIL TANKS AND EAST OF THE "GENERALS" QUARTERS ON THE GOVERNMENT PROPERTY) ABOUT 1108 FEET LONG, THENCE CURVING TO THE LEFT FROM SAID TANGENT WITH AN 8 DEGREE CURVE (716 1-4 FEET RAD.) FOR ABOUT 278 FEET TO A TANGENT PARALLEL TO AND ON EASTERLY SIDE OF STUYVESANT AVENUE, THENCE ALONG SAID TANGENT ABOUT 450 FEET TO ARIETTA ST. WHICH IS INTERSECTED AT GRADE. IT IS NOTICED THAT THE LINE DESCRIBED IS VERY DIRECT, WITHOUT A SINGLE REVERSE CURVE, AND THE GRADE IN NO PORTION WILL EXCEED 80 FEET PER MILE, A MUCH BETTER RESULT THAN I EXPECTED WHEN I WENT OVER THE GROUND WITH YOU SOME TWO WEEKS SINCE.

MY ESTIMATE OF THE COST OF CONSTRUCTION OF THE ABOVE LINE, FROM THE LANDING TO ARIETTA ST. IS $88,138, COVERING ALL GRADUATION, TUNNEL WORK, AND MASONRY FOR A DOUBLE TRACK RAILWAY. THIS ESTIMATE I DEEM A JUDICIOUS ONE, AND ONE ON WHICH YOU MAY RELY. THE FINAL LOCATION AND WORKING PLANS CANNOT VARY IT MUCH EITHER WAY. IN JUDGING OF THIS ESTIMATE HOWEVER IT MUST NOT BE FORGOTTEN THAT EVERY YARD OF MATERIAL MOVED IS NEEDED FOR EMBANKMENT PURPOSES ELSEWHERE AND IT SHOULD BE CREDITED ACCORDINGLY. THE CONSTRUCTION OF THE TUNNEL I WOULD PROPOSE TO CARRY ON IN SHORT SHEET PILED OPEN CUT SECTIONS, DISTURBING AS LITTLE AS POSSIBLE THE LAWN IN FRONT OF THE OFFICERS QUARTERS, FILLING IN AS EACH SECTION WAS COMPLETED, AND WHEN THE WHOLE WAS FINISHED THE TURF TO BE RESTORED AS BEFORE. RECAPITULATING THE MERITS OF THE LINE RECOMMENDED I FIND :-

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FIRST. IT IS THE ONLY LINE POSSIBLE WITHIN THE LIMITATIONS GIVEN, WHICH ARE

A. NON INTERFERENCE IN ANY WAY WHATEVER WITH GOVERNMENT PROPERTY OR BUILDINGS.

B. NON INTERFERENCE WITH EXTENSION OF AMERICAN DOCK PROPERTY.

C. A PRACTICABLE GRADE BETWEEN THE FERRY LANDING, AND WHERE THE LINE MUST ENTER (IF ENTER AT ALL) THE GOVERNMENT PROPERTY, AND REGARDING A LEVEL GRADE ON STEAMBOAT PIER AS AN ABSOLUTE ESSENTIAL.

SECOND.

THE DIRECTNESS OF ALIGNMENT, IT BEING ALMOST STRAIGHT, HAVING BUT TWO CURVES IN THE WHOLE DISTANCE, ONE IN LEAVING THE PIER AND ONE IN SWINGING INTO STUYVESANT AVENUE.

THIRD.

THE EASY, UNIFORM GRADE OF NOT OVER 50 FEET TO THE MILE, THROUGHOUT THE WHOLE LENGTH OF THE LINE.

FOURTH

CROSSING ARIETTA ST. AT GRADE, SIMPLYFYING VERY MATERIALLY, THE CONSTRUCTION OF THE LINE SOUTHERLY.

FOR PURPOSES OF COMPARISON, I HAVE DRAWN UPON THE MAP ACCOMPANYING THE MC CLAY & DAVIS REPORT (WHICH YOU HANDED ME) THE LINE I PROPOSE.

VERY TRULY YOURS,

(SIGNED)

ALF. P. BOLLER.

CONSULTING ENGINEER.

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