

BULLETIN

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STORY OF NEW YORK'S "FIRST SUBWAY" & BMT CITY HALL STATION Page 3

NEW SUBWAYS & EXTENSIONS EXTENSIONS PROPOSED IN 1940 Page 6

SOME "E" TRAINS WERE EXTENDED TO LIEFFERTS BLVD. starting on June 6. These trains carry yellow and green markers and leave Lefferts Blvd. at 7:21, 7:31 and 7:43 am and leave 179 St.-Jamaica at 4:31, 4:39 and 4:51 pm.

TWO NEW M-U SERVICES ON THE PENNSY effective with the Spring schedule mean that it is now possible to ride an M-U train (car) on every part of the Pennsylvania RR where there is electrified passenger service except for the trackage between Parkesburg, Penna. and Lancaster, Penna. There is now M-U service between Philadelphia and Baltimore whereas previously there was no M-U service between Baltimore and Newark, Delaware. The other new service is between Harrisburg and Lancaster, Penna. This is one car, one trip each way, Monday through Friday only and was added because of the dropping of a through train.

SOME OF THE NEWEST IRT STANDARD LOW-V'S ARE WORK CARS. These are the 5503-5627 motor cars built by ACF in 1925 and seem to indicate that NYCTA plans to eliminate all older IRT cars from passenger service before too many years. The new work cars are divided into two types. One type has a tripper on both sides (4-per-car) and are to be used for moving IRT cars through IND tunnels to 207 St. Yard. The other type has only one trip (each end) and that is under the motorman's cab as are all other IRT trippers. These will be used as IRT work motors. The following have trippers on both sides (some have a special coupler as indicated, on one end only):

| | | | |
|------|------|----------|----------|
| 5533 | 5543 | 5568 H2C | 5583 H2C |
| 5534 | 5544 | 5577 H2C | 5584 H2C |
| 5535 | 5556 | 5578 H2C | 5587 H2C |
| 5537 | 5561 | 5579 H2C | |

The following have only one tripper on each end:

| | | | | |
|---------|----------|----------|------|------|
| 5505 VD | 5519 MCB | 5541 H2C | 5555 | 5581 |
| 5509 VD | 5520 MCB | 5542 H2C | 5564 | 5593 |
| | 5526 MCB | 5562 H2C | 5570 | 5602 |
| | 5527 MCB | | 5580 | |

The NYCTA plans to convert 102 of these LV cars (numbered 5503 thru 5605 (5536 was retired 10/24/57) to the following:

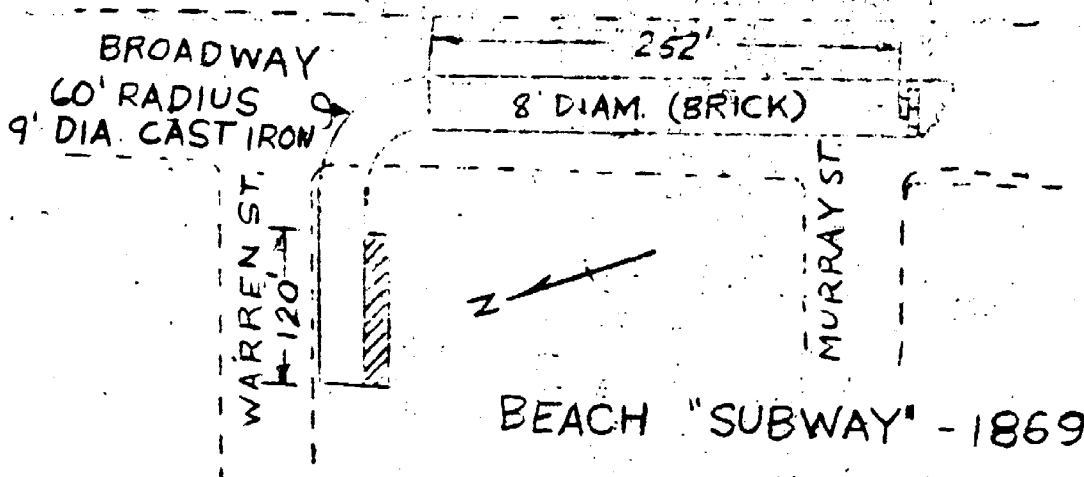
| | <u>1-trip</u> | <u>2-trip</u> | <u>Total</u> |
|-------|---------------|---------------|--------------|
| MCB | 18 | - | 18 |
| H2C | 22 | 8 | 30 |
| VD | 12 | | 12 |
| J | 34 | 8 | 42 |
| Total | <u>86</u> | <u>16</u> | <u>102</u> |

(Data by
Hugh Dunne)

MCB is a standard railroad Knuckle Coupler
H2C is an electric plate
VD is a Van Dorn Link & Pin Coupler

J is standard IRT Coupler.
W is added after the car number to indicate work service car.

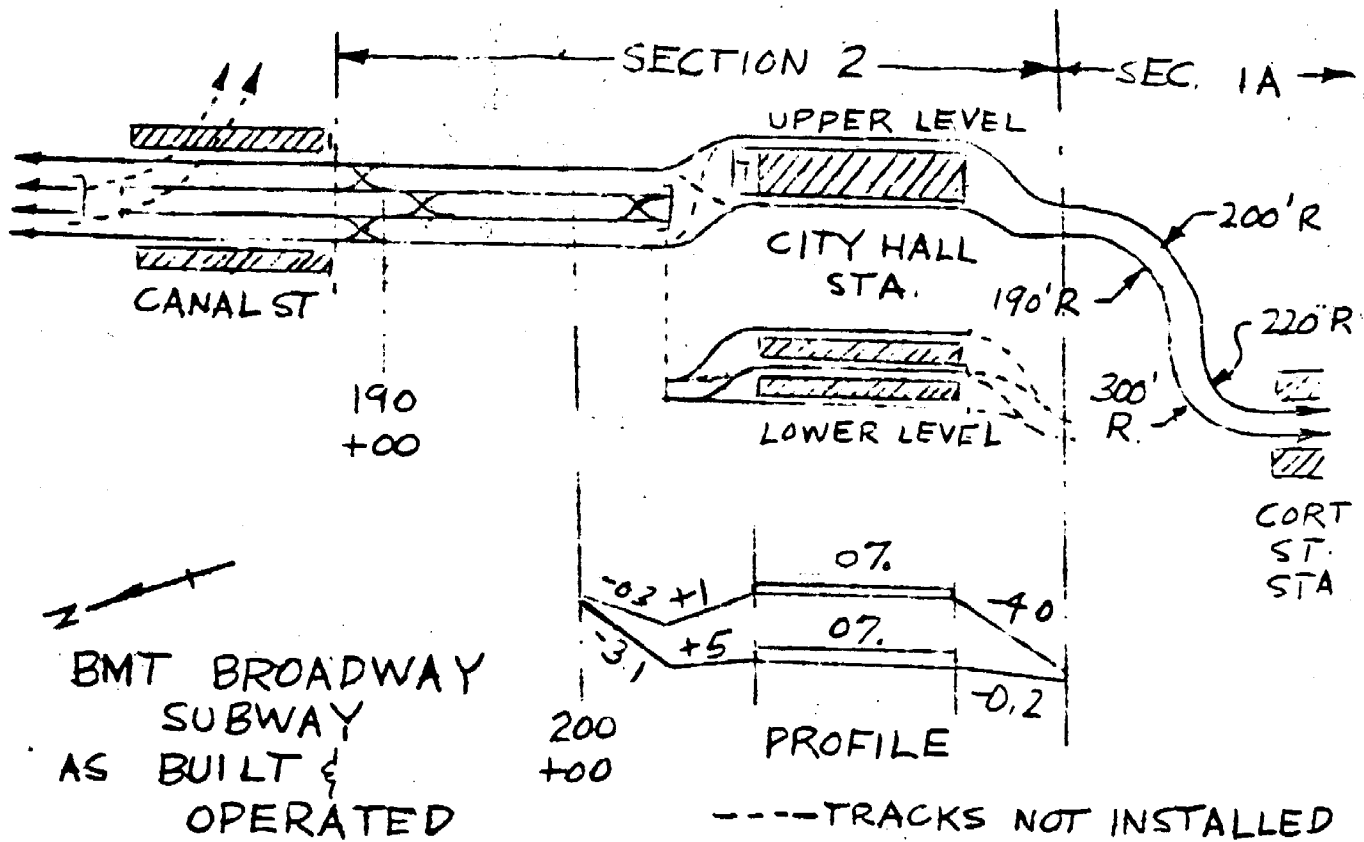
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Sketches above and below by the author, drawn on mimeo stencil by Henry T. Raudenbush.

Pneumatic railways had been proposed as early as 1810 by one George Medhurst. Other early pneumatic backers were a Mr. Vallance and T. W. Rammell who later became engineer of the Pneumatic Despatch Co. (referred to in the story). This line, by the way, was only partially filled in after abandonment. What was not, is used today for some of London's telephone cables.

The section numbers and letters refer to contract numbers. It might be pointed out that these numbers and letters have nothing to do with the route and track letters and numbers. In fact, the IRT Track & Structure Dept. track numbers do not agree with the IRT Signal Dept. track numbers. This accounts for the difference between the numbers on the mile posts and on the signal plates.



CITY HALL STATION OF THE BMT -&- NEW YORK'S "FIRST SUBWAY"

.....BY DAVID ROGOFF

Alfred Ely Beach (1826-1896), co-founder and editor of the Scientific American, chartered the Beach Pneumatic Transit Co. in 1868 with proposed capitalization of \$10,000,000, to operate in New York City and Brooklyn and under the East and North Rivers. Its purpose was to convey letters, parcels and merchandise in underground pneumatic tubes; much as is done today in department stores, post-offices, etc. The tubes were to be 54 inches in diameter and were to be built in pairs. To simplify matters, a large tube, 108 inches in diameter (slightly over 8 feet inside) was to be built, into which both small tubes would fit.

Beach, however, was also an advocate of rapid transit and an inventor. He believed in underground rapid transit but not with steam engines (as then in London). He reasoned that if pneumatic power could move heavy parcels, it could move people, so before the construction was ever begun, the tunnels were redesigned for passenger use. Only the planned outer tube was retained and the two inner tubes were abandoned.

Construction was begun on an experimental section (all that was ever to be built) in 1869. Digging was entirely by shield tunneling so that no "cut and cover" work was required. For the tunnel, Beach designed and built the first shield used in the United States (and the first hydraulic driven shield used anywhere). The experimental section was completed in only 58 days of actual working time. On Feb. 26, 1870, the tunnel was opened to the public, who were permitted to walk through it for a charge of 25¢ (for charity). Several months later, an experimental car was installed, and passengers were carried (still for 25¢) for the remaining year or so that the tunnel operated.

The tunnel, as built, was 312 feet long, of which 252 feet were straight 8 feet diameter brick lined tunnel and 60 feet were curved 9 feet diameter cast iron lined tunnel. The tunnel was 21½ feet below the street surface. The only station was located under the Warren St. sidewalk at the southwest corner of Broadway and Warren St. The tunnel began at a portal at the east end of the station, swung south under Broadway and went as far as a point opposite the south side of Murray Street. The blowers, boilers and steam engine were located under the then adjoining Devlins Building at 260 Broadway (as was the station access). The blowers were P. H. & F. M. Roots compressors with a capacity of 100,000 cubic feet per minute, driven by a 100 horsepower steam engine.

The single car was made of wood with a metal underframe. It was cylindrical, about 8 feet outside diameter, with doors at each end of the car. The car was 18 feet long and had longitudinal seats for 18 or 22 (reports differ). Seats were well upholstered. Lighting was by zircon lamps. The car operated on two conventional running rails and a center guide rail. As operation was by compressed air, clearances were very small. The car was blown to one end of the tunnel and then sucked back. The wheels of the car operated a sort of telegraph at each end of the line which tripped an air valve, reversing the direction of air flow. There was an air grating at Murray St. (in City Hall Park). The tunnel was painted white and illuminated by zircon lights.

Beach was able to change the company's charter in 1873 to permit carrying of passengers as well as property and tried to get an operating franchise. He proposed a route, beginning at Bowling Green (or at South Ferry), thence under Broadway to the intersection of 8th Ave. & 59th St. at Central Park. A branch was to begin at Madison Square and continue under Madison Ave., to and under the Harlem River. Bowling Green to 14th St. was to be 2 track and was to be built within 3 years,

the rest was to be 4 track and to be built 5 years later. The city (actually "Boss" Tweed), however, favored elevated railways and did not grant a franchise to Beach. The tunnel was closed about 1871 and was forgotten by the general public. Unsuccessful attempts were later made to revive the project. The Beach company eventually became part of the Arcade Railway Co. (which also had elaborate elevated railway plans), and finally in 1897 became part of the New York Parcel Post Dispatch Co.

Long after abandonment, the bricked up end of the tunnel was accidentally rediscovered in 1898. The old Rogers-Peet Building, then at the southwest corner of Broadway and Warren St. was destroyed by fire and excavators after the fire hit on the bricked up end of the tunnel. Finally in 1912 when the Broadway-Lexington Ave. subway (later the BRT or BMT Broadway Subway) was being built, the entire tunnel was removed as occupying part of the site required for City Hall station. The subway builders found the shield still at Murray St., at the end of the tunnel, and sent it to Cornell University. The remains of the car, the wood rotted away from the metal, were also found; but what the final disposition of the car was, is not known.

Beach did not originate the idea of a pneumatic subway. A similar subway was operating in London from 1863 to 1879 carrying parcels and occasional passengers. This line, the Pneumatic Despatch Co., was incorporated in 1859 and began operating in 1863, the same year as London's Metropolitan Railway (the world's first subway in today's meaning of the word). Beseet by constant mechanical operating difficulties, the company liquidated in 1879 and ceased existence in 1882. The London pneumatic subway was quite similar to Beach's. Its diameter was about the same but it was much longer and had several stations. Beach was unquestionably influenced by the British operation.

The Broadway-Lexington Ave. Subway plan included the route of the present BMT Broadway Subway south of Union Square and the present IRT Lexington Ave. Subway north of Grand Central. However, the section between was dropped in later plans.

Sec. 2 of Construction Route 5 of the Broadway-Lexington Ave. Subway ran under Broadway from a point 65 feet south of Park Place to a point 90 feet north of Walker St. At its north end, it joined Sec. 2A (see article in April BULLETIN), and at its south it joined Sec. 1A. Like all of the Broadway-Lexington Ave. Subway, it was planned long before the IRT-BRT Dual Contracts were signed in 1913. It was to be a 4 track subway with a single station, "City Hall" between Chambers St. and Park Place. This was to be an elaborate 2 level station with an overhead mezzanine. Each track level was to have 2 island platforms and 4 tracks. The lower level was to be for "through" (express) trains, to and from Brooklyn and Bronx, the upper level was to be for local trains, to and from the Bronx, which were to dead end at the station.

In 1911, the station was redesigned to its present simplified layout. The mezzanine was eliminated and the number of tracks reduced. The upper (local) level was redesigned for 2 tracks and a single large concourse platform. The lower (express) level was redesigned to have 3 tracks and 2 smaller island platforms. All street entrances connected to the large island platform of the upper level directly from the east side of Broadway only. The station was also offset at the east side of Broadway, partly under the east sidewalk, but the 4 track subway portion north of the station remained centered under Broadway.

The station was built as planned, but changes had to be made after it was decided to connect the Canal St. Subway to the 2 center (express) tracks of Sec. 2A of the Broadway-Lexington Ave. Subway (see the last article). This change isolated the 2 center tracks of Sec. 2, which would have been used for "through" (express) service. Consequently, it

was necessary to use the upper level tracks at City Hall Station for "through" (local) service and the lower level was used only for storage and train layups. The 2 center tracks of Sec. 2 were connected to the local tracks by crossovers between Chambers and Canal Sts. The lower level itself was closed to passengers.

The lower level 3 tracks were to converge into 2 tracks south of the station near Park Place and were to continue under private property (then the Astor House) at the northwest corner of Broadway and Vesey Street and then go under part of St. Paul's Chapel Burying Ground to the corner of Church & Fulton Sts. & the rest of Sec. 1A. Instead, the upper 2 tracks were connected via the same route into Sec. 1A. Provisions were made however, and still remain, to connect the lower tracks to Sec. 1A, if so desired. This could be done merely by removing the floor of the ramp on which the upper level tracks descend to reach Sec. 1A and substituting new tracks leading into the lower level. This is possible as the structure was excavated and built deep enough to reach the lower level. The ramp to the upper level is a false floor, the true floor being at the lower track level.

At present the lower level BMT tracks dead end at the south end of City Hall station. The lower level structure, however, extends for quite a way south of the station, beneath the ramp leading to the upper level. The space constructed to switch the 3 lower level tracks into 2 tracks south of the station can still be traced, although it is obstructed at present by circuit breaker chambers and a descending ceiling (the bottom of the ramp above).

Later when the IRT subway under Park Place was built, it was constructed deep enough so not to destroy the space provided for the connection to the lower level tracks south of City Hall station. A pedestrian passageway from the Woolworth Building (at the southwest corner of Broadway and Park Place) into the south end of the upper level platform was built later, passing above the IRT subway but going between and above the tracks of the BMT subway.

Sec. 2 was built by the Degnon Contracting Co. and was completed in January 1916. Service through City Hall station was begun on Jan. 5, 1918, when the section of the BMT subway from Prince St. station to Whitehall St. station was opened, as a part of a local service between Times Square station and Rector St. stations. (The trains reversed at the then uncompleted Whitehall St. station.) Through operation to DeKalb Ave. station in Brooklyn (via the Montague St. tunnels under the East River) was not begun until August 1, 1920.

At present, a large interlocking signal tower is being built at the north end of the upper level platform of City Hall Station. It eventually will control the movements of trains on all BMT trackage in Manhattan although it will be used first only for the BMT Broadway Subway (including Canal St.).

BMT DESTINATION SIGN *Note: Cars with large signs have: via BRIDGE thru NASSAU LOOP
 (above ASTORIA) Via TUNNEL thru KASSAU LOOP
 via BRIDGE to B'KLYN
 via TUNNEL to B'KLYN (below 6 Av-Manh't'n)

BMT 2000 SUBWAY CARS
 DESTINATION SIGN ROLL

- NINTH AV
- CITY HALL
- 62nd ST. B'KLYN
- BAY PARKWAY
- CONEY ISLAND
- TIMES SQUARE
- KINGS HIGHWAY
- 57th ST. MANH'T'N
- BRIGHTON BEACH
- KASSAU ST.
- FRANKLIN-NASSAU
- FRANKLIN AVE.
- PROSPECT PARK
- 95th ST. FT. H'TON.
- QUEENS PLAZA
- WHITEHALL ST.
- BROAD ST.
- METROPOLITAN AV.
- 111th ST.
- CRESCENT ST.
- JAMAICA
- CANAL ST.
- CHAMBERS ST.
- BOWERY
- CANARSIE
- ATLANTIC AV.
- EASTERN PKWAY
- 8th AV. MANH'T'N
- MYRTLE AVE.
- 6th AV. MANH'T'N
- ASTORIA
- 36th ST. 4th AV.
- DITMAS AVE.
- FOREST HILLS-QUEENS

SUBWAY PROPOSALS OF TWENTY YEARS AGO

These are taken from an official report of the Board of Transportation to the City Planning Commission dated July 16, 1940. These proposals were often changed but this report is considered significant because it was written shortly following the unification of the BMT and IRT lines into the New York City Transit System. The projects are listed in order of priority with the first six deemed urgent. The report states that the Board realizes the City cannot finance all the projects and that various conditions can cause changes in the program. The costs are exclusive of "administrative, legal and engineering costs." (The numbers were added by your editor for reference purposes.)

Of the 6 "urgent" projects, two have been forgotten and one has been replaced by a substitute. Number 1 was completed Oct. 30, 1954 after much procrastination. No. 2 was dropped and the shuttle discontinued. No. 3 was completed Dec. 10, 1950. No. 4 opened December 1955. No. 5 was apparently forgotten. No. 6 was partially replaced by a connection to the Fulton St. "L" in April 1956. (See more comments on page 8.)

CULVER LINE:(1)Connection to Prospect Park-Coney Island Line and rehabilitation of structure and equipment \$ 11,266,000.

BROADWAY-LENOX AVENUE LINE EXTENSION:(2) Construction and equipment of a 2 track subway and elevated connection to the 162nd Street spur of the Jerome Avenue Line, IRT Division 2,840,000

HILLSIDE AVENUE EXTENSION (1st step) to provide a proper terminal; (3) Construction and equipment of a 4 track subway along Hillside Avenue from 178th Street to 184th Street, Queens 3,455,000.

QUEENS BOULEVARD LINE-60th STREET TUNNEL CONNECTION: Construction (4) and equipment of a 2 track subway connecting the Queens Boulevard Line of the Independent Division with the 60th Street Tunnel of the BMT Division 11,550,000.

WEST END LINE-SMITH STREET CONNECTION (5): Construction and equipment of a 2 track subway and ramp connection between the West End Line of the BMT Division and the Smith Street-Prospect Park Line of the Independent Division along Fort Hamilton Parkway, Bklyn. 5,320,000

FULTON STREET EXTENSION (6): Construction and equipment of a 4 track subway via Pitkin Avenue and Linden Boulevard; from Grant Avenue, Brooklyn to 106th Street, Queens 18,550,000.

ROCKAWAY LINE (7): Construction and equipment, acquisition and reconstruction of a 2 and 4 track subway, embankment and elevated system from Queens Boulevard to and along the Rockaway Peninsula, Queens 34,380,000.

CONNECTION FROM ROCKAWAY LINE TO FULTON STREET EXTENSION (8): Construction and equipment of a two track subway and open cut; intersection of the Rockaway and Fulton Street Lines 1,933,000

DYRE AVENUE-PELHAM BAY LINE CONNECTION (9): Construction and equipment of a 2 track connection between the Dyre Ave.-East 174th Street Line at East 174th Street, and the Pelham Bay Line of the IRT Division at Hunts Point, The Bronx 1,850,000

SECOND AVENUE LINE (10): Construction and equipment of a yard and a 2 and 4 track subway from Coenties Slip, Manhattan to Harding Avenue, The Bronx 194,000,000.

- WORTH STREET LINE (11): Construction and equipment of a 2 and 4 track subway from Church Street to the Bowery, Manhattan. . \$ 10,000,000.
- HOUSTON STREET AND UTICA AVENUE LINE (12): Construction and equipment of a 2, 4 and 6 track subway, river tunnel and yard. Route extends along various streets from Essex Street, Manhattan to Avenue U, Brooklyn 147,240,000.
- SIXTH AVENUE LINE (2 additional tracks)(13): Construction or acquisition and equipment of 2 additional tracks along the route of the Sixth Avenue Line, from West 9th Street to West 31st St. . . 17,970,000.
- FLUSHING LINE EXTENSION TO BAYSIDE (14): Construction and equipment of a 2 and 4 track subway, embankment and open cut, via Roosevelt Avenue from Main Street, Flushing to Bell Blvd., Bayside, Queens 10,498,000.
- HILLSIDE AVENUE EXTENSION (2nd Step)(15): Construction and equipment of a 4 track subway along Hillside Avenue from 184th Street to 212th Street, Queens. 16,335,000.
- WORTH STREET LINE EXTENSION (16): Construction and equipment of a 2 track subway and river tunnel; the Bowery, Manhattan to Driggs Avenue, Brooklyn 23,480,000.
- HILLSIDE AVENUE EXTENSION (3rd Step)(17): Construction and equipment of a 2 track subway along Hillside Avenue from 212th Street to Little Neck Road, Queens 13,520,000.
- VAN WYCK BOULEVARD LINE (18): Construction and equipment of a 2 track subway via Van Wyck Boulevard, from Hillside Avenue to Rockaway Boulevard, Queens. 13,340,000.
- FLUSHING LINE EXTENSION TO COLLEGE POINT(19): Construction and equipment of a 2 track elevated railroad, via 149th Street and 11th Avenue, from Roosevelt Avenue to 122nd Street, College Pt., Queens. 12,260,000.
- NOSTRAND AVENUE EXTENSION (20): Construction and equipment of a 2 track subway and elevated line from Flatbush Avenue to Voorhies Avenue, Brooklyn. 19,740,000.
- FULTON STREET LINE EXTENSION TO 229th STREET (21): Construction and equipment of a 2 and 4 track subway, via Linden Boulevard from 106th Street to 229th Street, Queens. 42,710,000.
- BROOKLYN-STATEN ISLAND TUNNEL (22): Construction and equipment of a 2 track subway and river tunnel from 4th Avenue and 68th Street, Bklyn. to New Brighton and Tompkinsville, Staten Island. . . . 38,270,000.
- SIXTH AVENUE LINE EXTENSION (23): Construction and equipment of a 2 track subway from 53rd Street to 145th Street, through Central Park and along Morningside Avenue, Manhattan. 30,360,000.
- SEVENTH AVENUE LINE EXTENSION(24): Construction and equipment of a storage yard and a 2 and 4 track subway and river tunnel via 72nd Street, Manhattan and Horace Harding Boulevard, Queens from 59th St. Manhattan to Manhattan to Marathon Parkway, Queens. . . 144,890,000.
- SECOND AVENUE LINE EXTENSION (25): Construction and equipment of a 2 track river tunnel and subway from Coenties Slip, Manhattan to Court Street, Brooklyn. 19,150,000.
- FRANKLIN AVENUE LINE (26): Construction and equipment of a 2 track subway from Eastern Parkway to Lafayette Avenue, Brooklyn, to connect the Brighton Beach Line, BMT Division with the Crosstown Line of the Independent Division. 7,680,000.

FORT HAMILTON PARKWAY-10TH AVENUE LINE (27): Construction and equipment of a 2 track subway from 37th Street to 86th Street, Brooklyn \$ 14,760,000.

Explanations for some projects seem desirable. Numbers 1 and 5 were for relief of the overtaxed BMT Fourth Ave. subway and DeKalb Ave. junction. The rebuilding of the latter together with the Chrystie St. BMT-IND link tend to make #5 unneeded. No. 2 was to allow Jerome Ave. passengers to reach the West Side without change and relieve the IND Concourse line. No. 4 gives Queens riders an additional line to Manhattan. It must be remembered that in July 1940 the Sixth Ave. subway was under construction, so that only the "E" line served the IND Queens line. With the inauguration of the "F" line five months away, the B of T realized even then that the doubled service would not be adequate. No. 7 was completed June 1956 south of Liberty Ave. and #8 was changed to connect the Rockaway line to the "L" making #6 less necessary. The other part of #7 is indefinitely postponed.

No. 10 was quite different from the 1948 plan in that, in Bronx it was to run north (probably along Morris Ave.) and then turned east (probably) along E. 161 and 163 Sts. and Bruckner Blvd., then E. 177 St., E. Tremont Ave. to Harding Ave. In Manhattan it was to run south down Chrystie St. then St. James Pl. and Pearl St. and Coenties Slip. No. 25 would continue under the East River between the IRT Bwy.-7 Ave. and BMT Montague Street tunnels, and turn south in Brooklyn to join the abandoned IND Schermerhorn St. spur at the Court St.-Boro Hall sta. This information is based on a map of proposed lines and since the streets are not listed thereon, the streets we named are approximated by comparison with street maps in order to give the reader an idea of the proposed routes of the lines listed.

No. 11 connected with IND tracks A1 and A2 under Church St. north of Chambers St. station and ran east along Worth St., then #16 continued east along East Broadway, Grand St. and under the river and Broadway, Brooklyn, then turned slightly north to join #12 at Driggs Ave. and S. 4 St. No. 12 connected with IND tracks B3 and B4 at the Second Ave. station and ran east along Houston St., Manhattan; Grand St., Brooklyn, turned slightly south to join #16 at Driggs Ave., then east along S. 4 St., p.r.w. north of Broadway, then Beaver St. to Stuyvesant Ave. An earlier plan had one branch continue east along Bushwick Ave. to Myrtle Ave. but this seems to have been dropped before 1940. At Stuyvesant Ave., the Houston-Utica line would turn south along Stuyvesant Ave. to Fulton St., then along Utica Ave. to Flatbush Ave. to Ave. U.

No. 14 would run along Roosevelt Ave. and Northern Blvd.

No. 19 would branch off #14 and run elevated on streets as listed.

No. 24 refers to the BMT Broadway subway and was quite different from the 1939 plan which would have left the BMT at Bridge Plaza and 21 St., L.I.C., Queens, turned north under 21 St., then east along Ditmars Blvd., under or near Astoria Blvd. to about 104 St., then south to Corona Ave. then under Horace Harding Blvd. to Marathon Pky. The 1940 plan would run north from the 57 St. station, probably through Central Park and turn east under 72 St., and under the East River to Queens and turn north under 21 St. and follow above route.

No. 27 would connect with #5, then run south along Ft. Hamilton Parkway and 10 Ave., Brooklyn. The 1939 plan would have the Staten Isl. line, #22, connect with #27 at 69 St. and Ft. Hamilton Pky., rather than with the BMT at 4 Ave. & 68 St. In Staten Island, the line would join the SIRT near the junction of the Tottenville line and former South Beach line and would divide into three branches, one to St. George, one to South Beach and the other to Tottenville. -- A. J. Lonto