

ITEM 15  
MANAGER'S REPORT NO. 1  
COUNCIL MEETING 1982 01 04

RE: A.L.R.T. DEVELOPMENT IN BURNABY

ACTING MUNICIPAL MANAGER'S RECOMMENDATION

1. *THAT the recommendations of the Director Planning & Building Inspection be adopted.*

\* \* \* \* \*

TO: MUNICIPAL MANAGER 1981 DECEMBER 29  
FROM: DIRECTOR PLANNING & BUILDING INSPECTION PLANNING DEPARTMENT  
SUBJECT: A.L.R.T. DEVELOPMENT IN BURNABY

RECOMMENDATIONS:

1. THAT the A.L.R.T. Light Rapid Transit system in Central Park be elevated after passing under Kingsway and continue in an elevated mode across Patterson and through Burnaby.
2. THAT, consistent with Recommendation No. 1, the A.L.R.T. system be elevated at Rumble and to the south.
3. THAT A.L.R.T. stations be provided at Smith and Patterson as previously endorsed by Council.
4. THAT, if stations at Smith and Patterson are to be phased, the first station provided be at Patterson.
5. THAT municipal lands on the East side of the B.C. Hydro rail right-of-way be made available at a cost to be determined by negotiation, to enable the A. L. R. T. yard site to be located in the gravel pit area bounded by the B. C. Hydro rail right-of-way and the 20th Street and 10th Avenue rights-of-ways with due recognition to the possible alignments of the

Marine Way/10th connector proposed in the municipality's 'Comprehensive Transportation Plan'.

6. THAT Council's position on the above recommendations be made known to the "Rapid Transit 86 Committee", chaired by the Hon. Jack Davis, and charged with the development of the A.L.R.T. system.

SUMMARY:

At its meeting of 1981 07 13 Council received and tabled the attached report outlining developments to that date on the subject of A.L.R.T. alignments and station locations in Burnaby. Earlier this year the U.T.A. had defined a base line specification for A.L.R.T. alignment and station locations for contractual purposes with the prime contractor for the system, Metro Canada. Staff felt that this specification did not address all municipal concerns about rapid transit as embodied in previous Council consideration of the G.V.R.D., L.R.T. project. Since that time, no substantial progress has been made towards reconciling the differences between municipal needs and the base line contract specification and indeed it is our understanding that the U.T.A. staff is currently considering variations from the base line specification which could be a cause for additional concern. Accordingly, it is important for Council to state its position to the U.T.A. on these matters.

ITEM	15
MANAGER'S REPORT NO.	1
COUNCIL MEETING	1982 01 04

REPORT

1.0 BACKGROUND:

The attached report provides background information on the design definition of A.L.R.T. in Burnaby. Since that report was written staff have further corresponded with the U.T.A. and the G.V.R.D. relative to the G.V.R.D. Rapid Transit project's Report Number 5 entitled "A.L.R.T. Preliminary Service Specification" which was published by the G.V.R.D. as their staff view of how the A.L.R.T. system should be developed. The G.V.R.D. report differs to some extent from the U.T.A. base line specification and is considerably more detailed, but it has no 'official' status. However, it is our understanding that the U.T.A. is considering adopting some of the design features in the G.V.R.D. report. We have also met with U.T.A. staff and the G.V.R.D. transit planners to discuss the A.L.R.T. design specification and as a result of our meeting the U.T.A. has retained a consultant to bring together critical concerns relative to the design of the major station and bus interchange in Metrotown and work on this is currently in progress. However staff discussions with the Urban Transit Authority on other matters have not resulted in a base line system specification that we would recommend to Council as being in accordance with its previous position on rapid transit. These concerns are discussed below.

2.0 CONCERNS REGARDING A.L.R.T.:

Although staff are of the opinion that at this stage in the planning process the A.L.R.T. system design will substantially address the needs of the Municipality there are current differences between the U.T.A. base line contract specification and Council's adopted position on rapid transit. Additionally our understanding is that the Urban Transit Authority staff are considering deviations from their current base line specification which would have undesirable effects on Burnaby. The prime concerns of Municipal staff relate to vertical alignment, station locations in Central Park, the location of the A.L.R.T. yard site and the treatment of the A.L.R.T. right-of-way.

2.1 Central Park Stations:

In its original consideration of A.L.R.T. Council recommended locating stations at both Smith and Patterson on either side of Central Park. Although the G.V.R.D. Rapid Transit Project considered these locations as alternatives the U.T.A. base line specification shows a single station in the middle of the park at grade. Whilst such a location may be considered a compromise to replace the two stations endorsed by

Burnaby Council it is our view that such a compromise does not serve Burnaby as adequately as the two stations at Smith and Patterson or indeed as adequately as a single station located at either Smith or Patterson. The U.T.A. supports a single station in order to minimize their costs. The at grade station that they have proposed would be cheaper than a station in cut at Smith or one that is elevated at Patterson. From an operational point of view they prefer one station because each additional station slows the system down, and during peak hour service each additional station requires an additional train in order to maintain line capacity.

Municipal staff support the two stations as originally endorsed by Council because of the development potential and increased service to the Metrotown regional centre. Should only one station be provided now, then it should be either at Smith or Patterson rather than in the park thus making the station more accessible whilst allowing for the addition of a second station at a subsequent date. In this regard, the station at Patterson rather than Smith is preferable for first phase construction because it will assist the concentration of Metrotown development in the primary core area and serve the high density housing now being developed East of Central Park.

## 2.2

### Vertical Alignment:

The U.T.A. base line specification vertical alignment is shown as part of the attached report. After undercrossing Kingsway the U.T.A. propose that the A.L.R.T. should remain at grade for some distance in Central Park before moving to an elevated alignment overcrossing Patterson. We have met with the U.T.A. staff and they have indicated some flexibility in vertical alignment specification because the guideway construction requirements of the A.L.R.T. are such that an elevated alignment does not cost substantially more than one that is at grade. Staff have considered other alignment possibilities such as proceeding through the park in a cut and undercrossing Patterson but have concluded that the A.L.R.T., after undercrossing Kingsway, should climb to an elevated alignment as rapidly as possible, and remain elevated throughout Burnaby.

The elevated alignment would provide a consistency of image for the system as well as leave open all options for future decisions regarding landuse, pedestrian circulation and traffic movement at ground level.

Specifically the U.T.A. staff have considered dropping A.L.R.T. to grade in the vicinity of Rumble (it is shown substantially elevated on the base line contract specification) which will create potential severance problems, reduce the accessibility of the Edmonds station to South Slope residents and close future options for land use development.

It appears that the U.T.A.'s preference for an at grade alignment is largely influenced by the additional costs of the elevated stations rather than the costs of developing the A.L.R.T. guideway. However, elevated stations if properly designed offer inherent advantages in terms of passenger access as they do not require tunnels or overpasses to cross the tracks.

## 2.3

### A.L.R.T. Yard Site:

Both the G.V.R.D. and the Urban Transit Authority have proposed that the main rapid transit system yard site and maintenance facilities be located in the gravel pit area bounded by the 20th St., B.C. Hydro Railway and 10th Ave. rights-of-way. Staff have recognized that an A.L.R.T. yard is not necessarily a desirable land use but have also recognized that in the absence of other more practical sites elsewhere in the Lower Mainland the gravel pit area represents the most suitable

location for this type of use. Our primary concern relative to the yard site has centered upon the difficulty that we have had with the G.V.R.D. and the U.T.A. in finding a yard site layout that will also accommodate the alignment of the proposed 10th/Marine Way road project.

More recently however we have been advised by U.T.A. staff of difficulties associated with the gravel pit site because of the fill that has been placed on parts of it. Because this problem necessitates higher development costs for the yard site we understand that U.T.A. staff are looking at Municipal lands on the other side (west) of the B.C. Hydro rail right-of-way, south of Dominion Glass. It is our view that the location of an A.L.R.T. yard at this location would be most inappropriate particularly in view of its high quality industrial development potential, the possibility of adjacent residential development and the prejudicing of future land use development in this area.

It is also extremely important to note that the Municipal lands in the vicinity of Dominion Glass have been proposed to major developers as a relocation site for the industrial uses in the Metrotown core area, a basic requirement of achieving our Metrotown objectives. In view of the above it is recommended that the U.T.A. be advised that there is no other municipal land available for the A.L.R.T. yard site in this vicinity other than that already proposed in previous reports.

#### 2.4

##### Other Issues:

There are other issues regarding the A.L.R.T. which require further consideration but are not necessarily a cause for concern at this time. These include the precise locations of the Royal Oak and Metrotown stations and the landscaping treatment of the A.L.R.T. right-of-way. With regard to the latter, one of the selling points in a U.T.A. brochure on A.L.R.T. was that, "unsightly utility poles for wires and other services can be built into the guideway structure". However we understand that utility companies are resisting placing their facilities on an infra-structure that is not wholly controlled by them. It is the staff position that the removal of the overhead powerlines and utility poles from the A.L.R.T. right-of-way should be an integral part of A.L.R.T. development.

#### 3.0

##### CONCLUSION:

Given the need for rapid decisions to meet the A.L.R.T. construction schedule it is necessary for Council to outline its requirements for the design of the A.L.R.T. system in Burraby to the U.T.A. steering committee responsible for the implementation of A.L.R.T.

Staff recommendations are based on the following conclusions:

3.1 The A.L.R.T. base line specification for A.L.R.T. should include stations at Smith and Patterson rather than one station in Central Park.

3.2 If only one station is to be provided now in the vicinity of Central Park then Patterson is the preferred location and the A.L.R.T. system should be built so as to accommodate a future station at Smith.

3.3 Having passed under Kingsway the A.L.R.T. system should be elevated throughout its length in Burraby in order to minimize the adverse impact arising from an at grade system.

- 3.4 Consistent with 3.3 an elevated vertical alignment in the vicinity of Rumble and the Edmonds station should be adhered to and no further consideration given to at-grade operation of A.L.R.T.
- 3.5 As previously agreed, the A.L.R.T. yard site should be located in the gravel pit area east of the B.C.Hydro rail right-of-way (in the area bounded by the rail right-of-way and the 10th Ave. and 20th Street rights-of-way). The A.L.R.T. yard layout should not preclude the development of a Marine Way/10th road link.
- 3.6 The Municipality should not permit the location of the A.L.R.T. yard site in any location other than the previously agreed to site and enable the development of the yard on that site to take place by making available Municipal lands to the U.T.A. at a negotiated price.
- 3.7 Staff should continue to work with the U.T.A. to ensure the resolution of other issues relative to A.L.R.T. station and right-of-way design and development.

PL/mdw

Attachment

C. C. Municipal Engineer.



A. L. Parr,  
DIRECTOR PLANNING &  
BUILDING INSPECTION

ITEM 12  
MANAGER'S REPORT NO. 33  
~~COUNCIL MEETING 1981 07 13~~

RE: A.L.R.T. ALIGNMENTS AND STATION LOCATIONS IN BURNABY

Because the implementation of rapid transit will be of considerable importance to the Municipality, it is considered imperative that Council be kept abreast of ongoing developments. It is for this reason that the Director of Planning has submitted the following report.

182

RECOMMENDATION:

1. THAT the report of the Director of Planning be received for information purposes.

\* \* \* \* \*

ITEM 15  
MANAGER'S REPORT NO. 1  
COUNCIL MEETING 1982 01 04

TO: MUNICIPAL MANAGER 1981 July 02  
FROM: DIRECTOR OF PLANNING  
SUBJECT: A.L.R.T. ALIGNMENTS AND STATION LOCATIONS IN BURNABY

RECOMMENDATION

1. THAT this report be received for the information of Council.

SUMMARY

In its previous consideration of rapid transit in 1980, Council reviewed the preliminary design for a Light Rapid Transit (LRT) system produced by the GVRD. Since that time the Province, through the UTA, has taken the initiative in specifying the implementation of an Advanced Light Rapid Transit (ALRT) system for the lower mainland. Staff review indicates that alignment and station location specifications proposed by the UTA substantially address municipal requirements including concerns previously considered by Council relative to the LRT system. Staff have written to the UTA (and GVRD) relative to issues unresolved by the ALRT alignment and will endeavour to work with the UTA to obviate these concerns.

ITEM 15  
MANAGER'S REPORT NO. 1  
COUNCIL MEETING 1982 01 04

- 2 -

ITEM 12  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING 1981 07 13

R E P O R T

1.0 BACKGROUND: LRT

The final reports of the GVRD rapid transit project were presented to the GVRD board in December 1979. At its meeting of 80 02 25, Burnaby Council considered a staff report on the station locations and alignments in Burnaby and referred it to the Transportation Committee for its consideration. Subsequent to a public meeting at McPherson school, the Transportation Committee reported on this issue to Council. Council at its meeting of 80 04 14 adopted committee recommendations regarding concerns about station locations and the alignment of light rapid transit through Burnaby. The GVRD was requested to work with municipal staff towards the resolution of these outstanding issues. Previously (80 03 24) Council had endorsed in principle the light rapid transit routing through Burnaby and Council had indicated earlier support for light rapid transit proposals in its adoption of Comprehensive Transportation Plan.

2.0 RECENT DEVELOPMENTS: ALRT

Recently the provincial government (through the UTA) has taken the initiative in the development of rapid transit in the lower mainland but has specified that an advanced light rapid transit (ALRT) system will be built rather than the 'conventional' system proposed by the GVRD study. Because the ALRT is fully automated it must be fully segregated from vehicular cross traffic and public access. Hence a substantial proportion of its length must be elevated. This grade separation reduces the potential for accidents and provides a higher overall system speed than could be achieved by the LRT system previously proposed. The ALRT trains will also run more frequently than the LRT.

Thus, if the ALRT performs according to expectation, it will offer a considerably superior service as passenger travel times will be decreased through increased overall system speed and reduced waiting time.

The UTA has contracted for the construction of the ALRT with the system developer and completion of the first priority line from downtown Vancouver to New Westminster is expected by 1986. Presumably, as work proceeds on this line, decisions will be made as to the timing of the implementation of the branch line extensions to Lougheed Mall and Surrey as proposed in the GVRD rapid transit study.

3.0 ALRT ALIGNMENT IN BURNABY

As part of the contract for construction of ALRT, the UTA has specified an alignment plan with station locations. This alignment plan substantially accords with the LRT alignment previously considered and is shown on Fig. 1 attached. This alignment is considered a baseline against which the cost of substantial changes to the design of the system will be judged. The baseline system, which is used to gauge the extra costs, should adequately meet fundamental system requirements which, inter alia, must include the needs of respective Municipalities.

Staff have reviewed the baseline ALRT alignment relative to previous proposals and identified a number of concerns as discussed below. These concerns have been forwarded to UTA staff and to GVRD staff who have been proceeding independently with a preliminary design for ALRT. (No response has been received to date).

The baseline ALRT alignment specification in Burnaby is shown in detail on Figs. 2 to 7 attached. The ALRT line would run along the B.C. Hydro right-of-way as was proposed in the GVRD's LRT study but would be elevated for a substantial proportion of its length. This extensive grade separation addresses concerns regarding severance, safety, congestion etc. held by staff and expressed by the public about the at grade alignment. The elevated alignment will also afford the opportunity of improving the appearance of the B.C. Hydro Rail right-of-way as the existing overhead wiring can be integrated with the ALRT guideway.

4.0 STATION LOCATIONS

The UTA baseline plan specifies four (4) stations in Burnaby as discussed below.

184

4.1 Central Park Station

The UTA has proposed a station location, at grade, south of Kingsway within Central Park (see Fig. 2). In its previous consideration of the LRT study Council endorsed station locations bracketing Central Park at Smith Avenue north of Kingsway and at Patterson. In the preliminary plan for LRT the GVRD considered the station at Smith as an alternative to the one at Patterson because of the proximity of the two station locations. Clearly the location specified by the UTA was chosen as a compromise. Staff have requested that the UTA include both Council endorsed station locations in the baseline specification. Nonetheless it is considered that the number and location of stations in this vicinity should be further evaluated when there is a firm indication as to the final location of adjacent stations in Vancouver and the Metrotown core area. Pending this evaluation the option of having stations at both Smith and Patterson should be maintained.

4.2 Metrotown Station

The UTA has sited a Metrotown core area station in the vicinity of Dow and at the same location where the GVRD proposed an 'interim' station. The interim station was to serve this area pending the redevelopment of Metrotown commercial core, at which time a major transit interchange and station would be integrated into the development. The Municipality has opposed the development of any interim station, not only because of the added cost involved in ultimately relocating it but also because the interim arrangement would not function adequately as a major transit focus and primary station for the regional town centre.

Staff have recently been considering the possibility of locating the core area station along the B.C. Hydro right-of-way in the vicinity of Silver. This location has been considered because it adjoins a large piece of vacant property upon which a major bus interchange\* could readily be developed. On their alignment plans (see Fig. 3) the UTA will adopt a station location that will meet municipal needs. Staff have requested that the relationship of the core area station to the Metrotown development plan be finalized as soon as possible by discussions involving the UTA, GVRD and Burnaby.

4.3 Royal Oak Station

The alignment specification indicates that the LRT station is to be sited (Fig. 4) in accordance with the GVRD's preliminary design for LRT as endorsed by Council. The greater flexibility afforded by the aerial alignment for ALRT suggests that further consideration should be given to the precise siting of the station at Royal Oak. For example a station straddling the Royal Oak right-of-way might offer greater ease of access. It is presumed that such minor adjustment to the micro location of a station would be accommodated within baseline costs.

4.4 Edmonds Station

This station as shown in Fig. 5 is also being sited in general accordance with the endorsed LRT preliminary design concept. It is expected that a bus interchange will be developed adjacent to the station.

\* Note: The development of bus interchange facilities etc. is outside of the scope of contract for the ALRT system per se. The UTA will be responsible for concurrent development of such items.



ITEM 15  
MANAGER'S REPORT NO. 1  
COUNCIL MEETING 1982 01 04

- 4 -

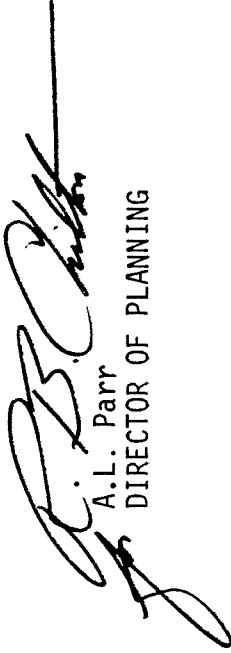
ITEM 12  
MANAGER'S REPORT NO. 33  
COUNCIL MEETING 1981 07 13

5.0 ALRT YARD SITE

Planning staff have some concerns relative to locating a use such as an ALRT yard within the Municipality but it is generally agreed that the proposed site would be the best one. Obviously care will have to be taken and a close liaison maintained with municipal staff in order to minimize any adverse impact of such a facility. The layout of the ALRT yard site shown in Fig. 7 will need to be modified to accommodate the Marine Way-Tenth Avenue road proposal.

6.0 CONCLUSIONS

Although there are unallayed concerns (primarily involving station locations) relative to the development of the ALRT system in Burnaby, it is reasonable to assume that the outstanding issues will be satisfactorily resolved as the detail design of system proceeds. Staff will endeavour to maintain a close liaison with the UTA (and the GVRD) in order to work towards an acceptable design and Council will be apprised of future developments.

  
A.L. Parr  
DIRECTOR OF PLANNING

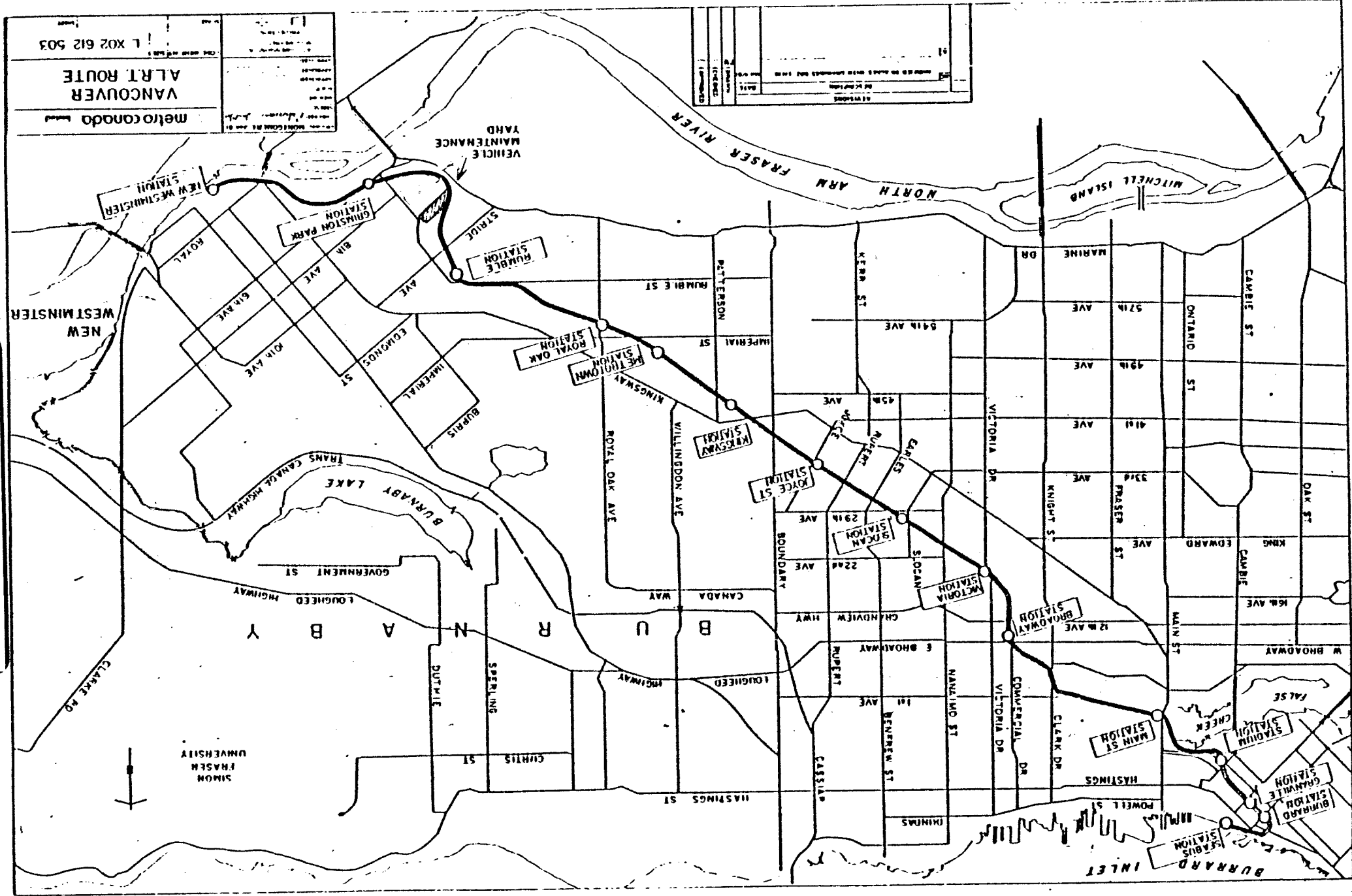
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cc: Municipal Engineer

ITEM 15  
 MANAGER'S REPORT NO. 1  
 COUNCIL MEETING 1982 01 04

ITEM 12 33  
 MANAGER'S REPORT NO. 33  
 COUNCIL MEETING 1981 07 13

186



SOURCE: CONTRACT SPECIFICATION VOLUME II (CONTRACT DRAWINGS). FIG. 1

ITEM

15

ITEM

12

MANAGER'S REPORT NO. 1

MANAGER'S REPORT NO. 33

COUNCIL MEETING 1982 01 04

COUNCIL MEETING 1981 07 13

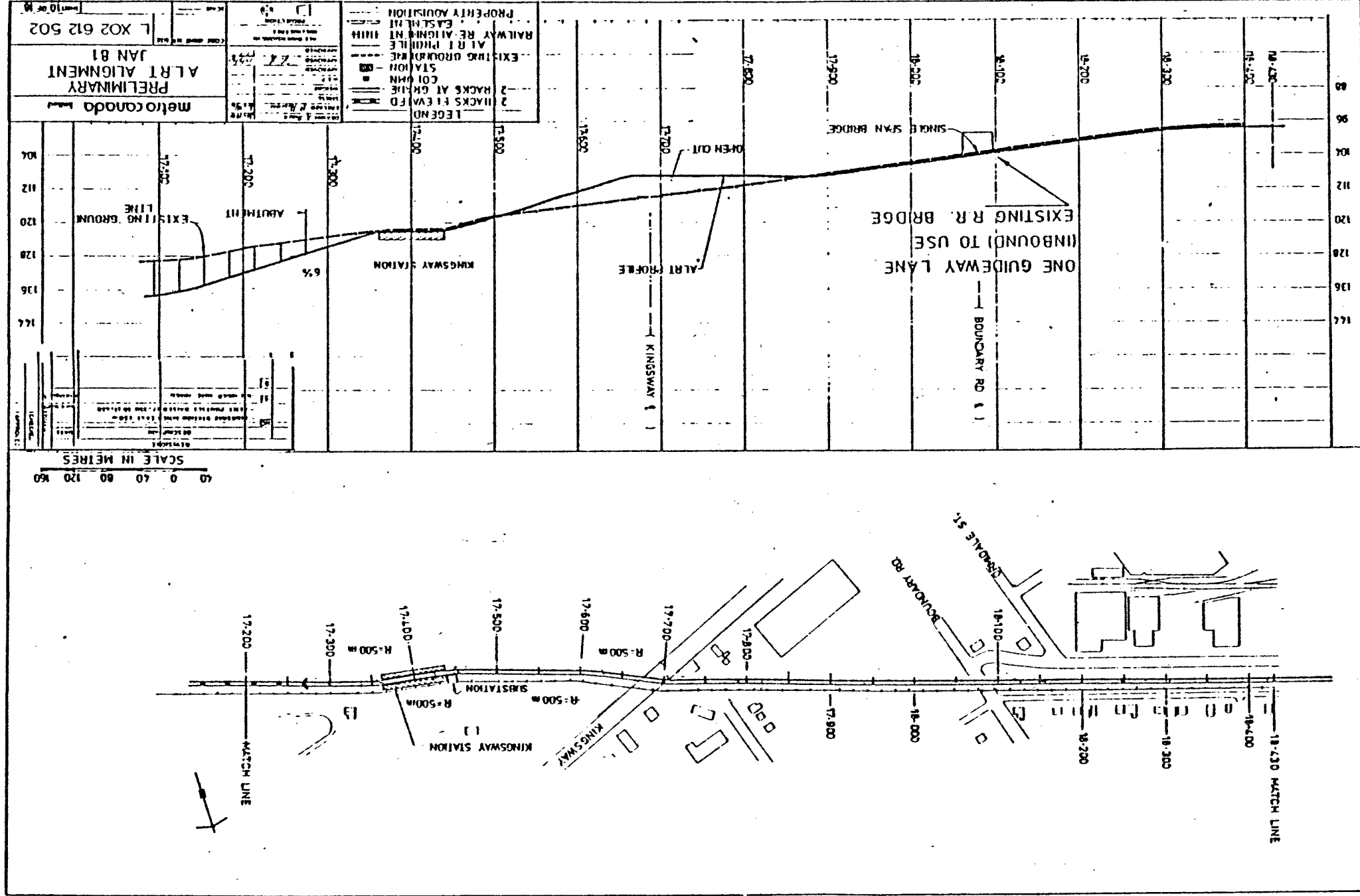


FIG. 2

ITEM 15	MANAGER'S REPORT NO. 1	MANAGER'S REPORT NO. 33
MANAGER'S REPORT NO. 1	COUNCIL MEETING 1982 01 04	COUNCIL MEETING 1981 07 13

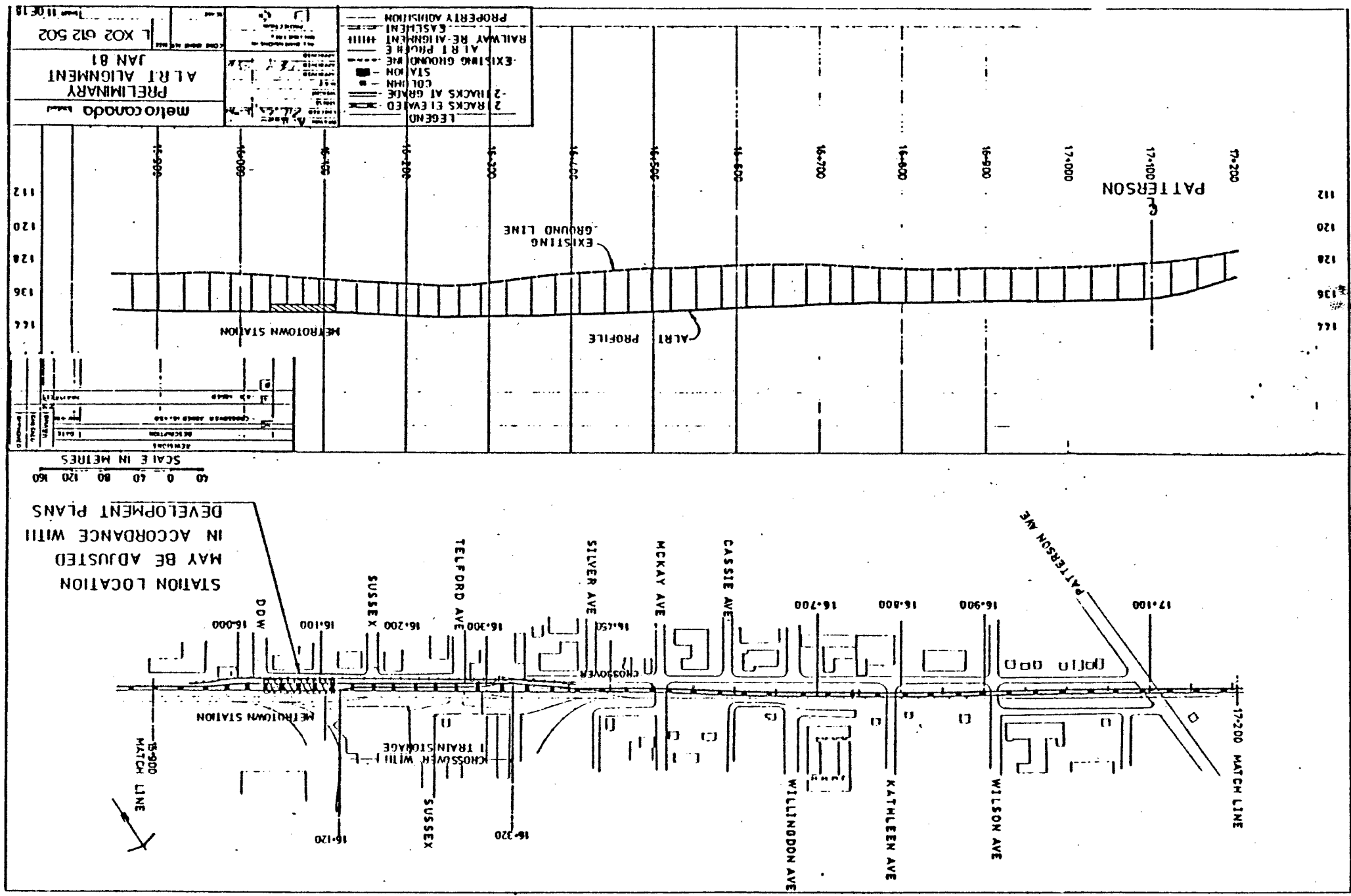


FIG. 3

ITEM 15  
 MANAGER'S REPORT NO. 1  
 COUNCIL MEETING 1982 01 04

ITEM 12  
 MANAGER'S REPORT NO. 33  
 COUNCIL MEETING 1981 07 13

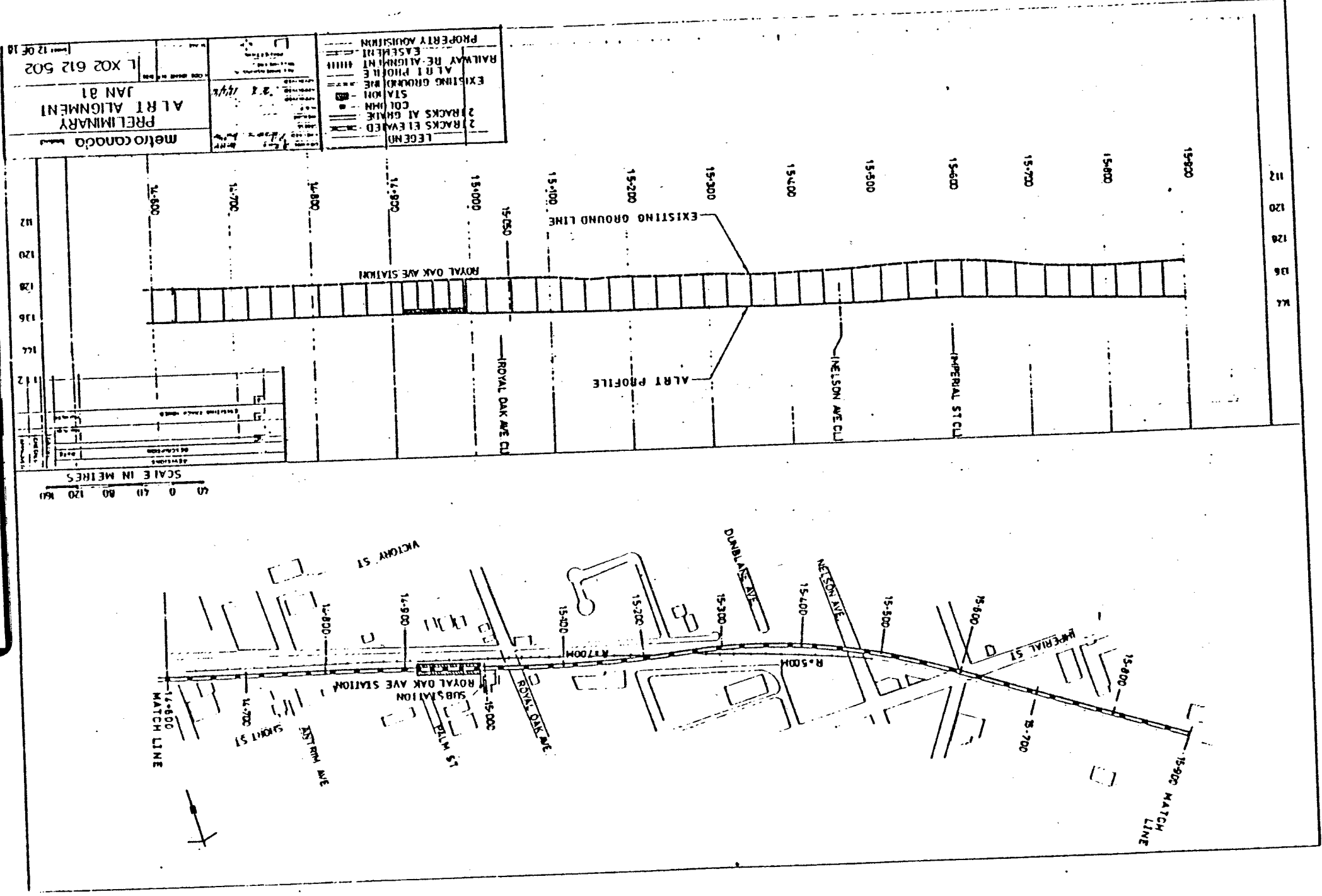


FIG. 4

ITEM 15 12  
 MANAGER'S REPORT NO. 1 33  
 COUNCIL MEETING 1982 01 04 COUNCIL MEETING 1981 07 13

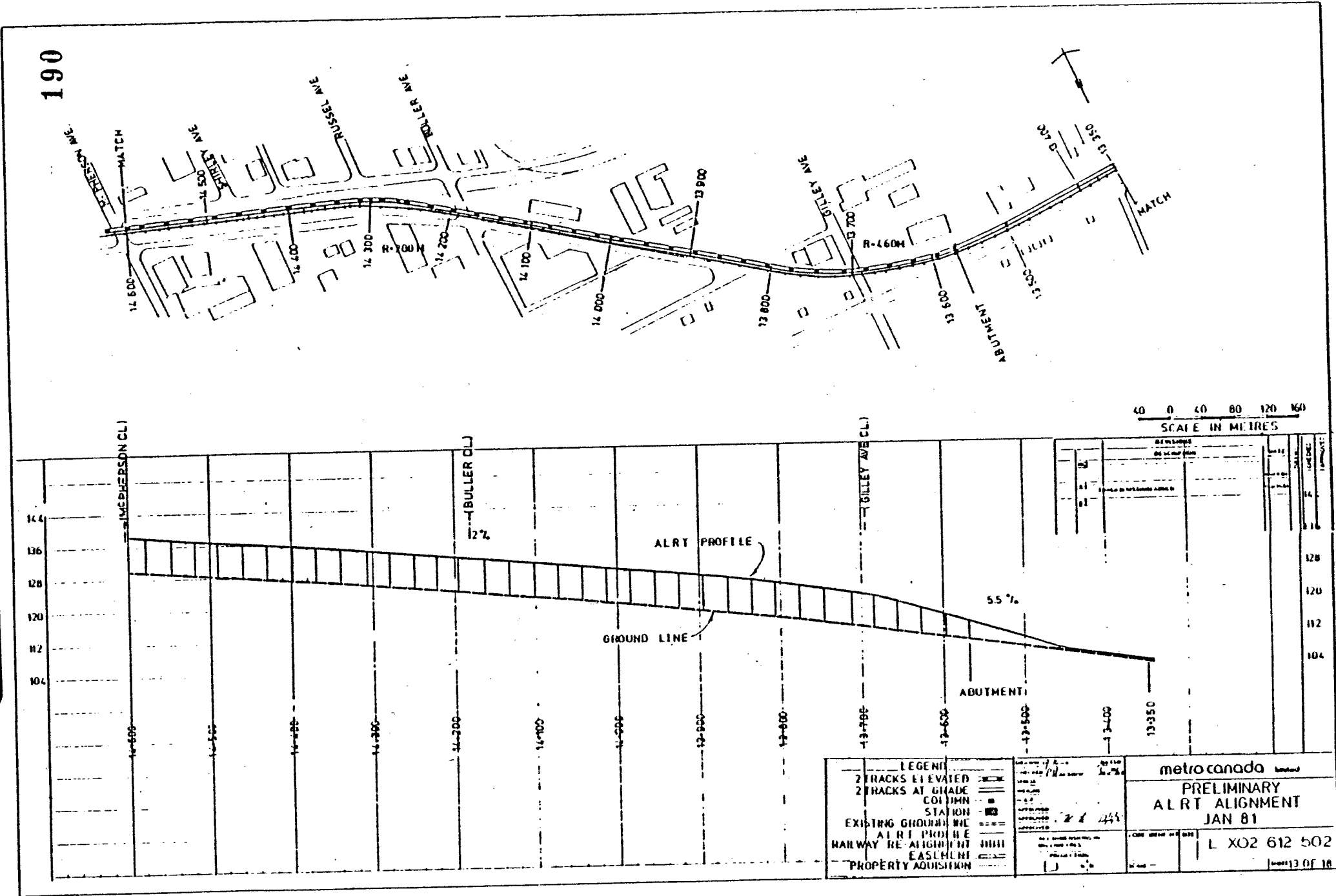


FIG. 5

5

ITEM 12  
 MANAGER'S REPORT NO. 33  
 COUNCIL MEETING 1981 07 13

ITEM 15  
 MANAGER'S REPORT NO. 1  
 COUNCIL MEETING 1982 01 04

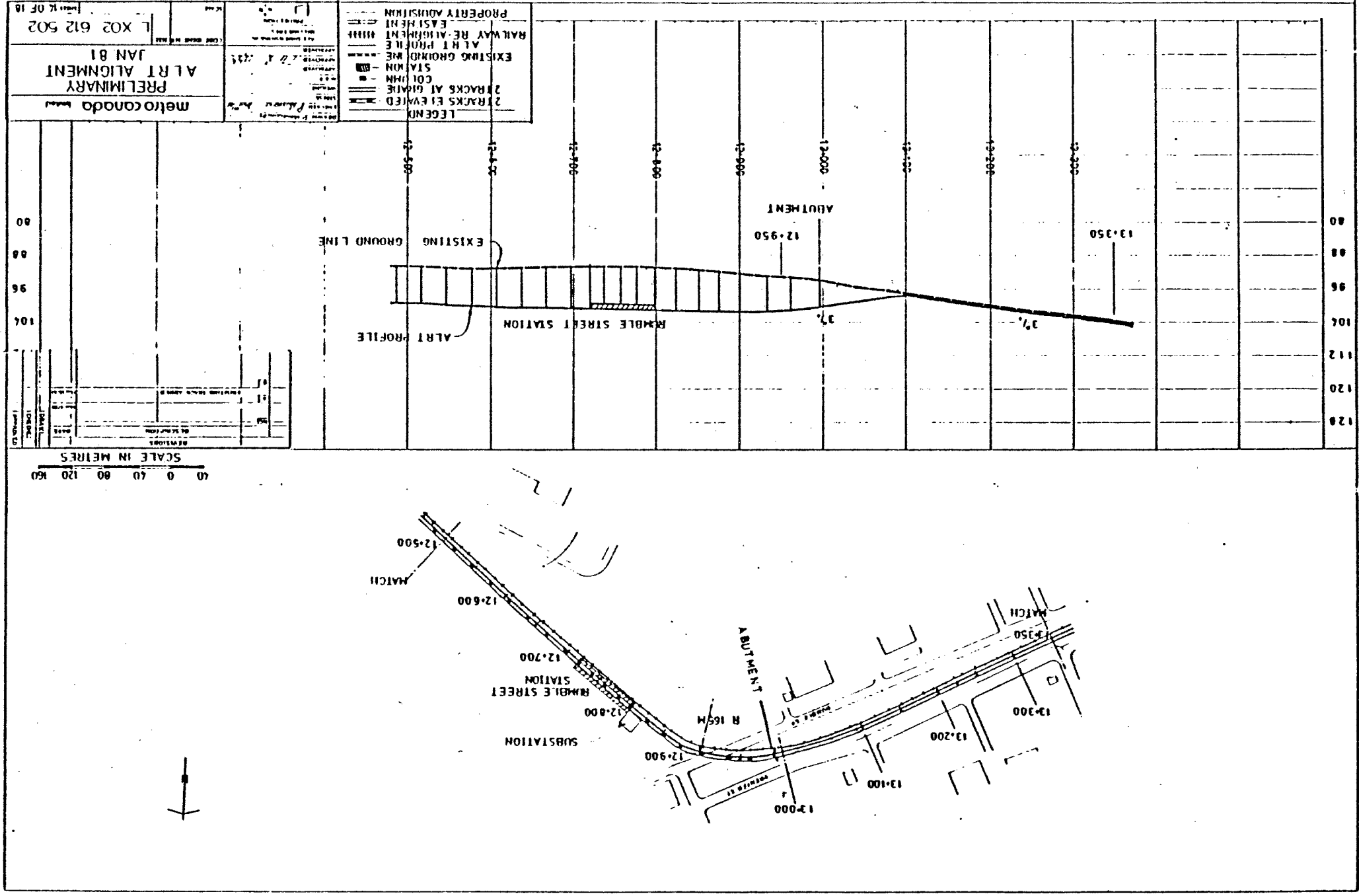


FIG. 6

ITEM 15  
 MANAGER'S REPORT NO. 1982 01 04  
 COUNCIL MEETING

ITEM 12  
 MANAGER'S REPORT NO. 33  
 COUNCIL MEETING 1981 07 13

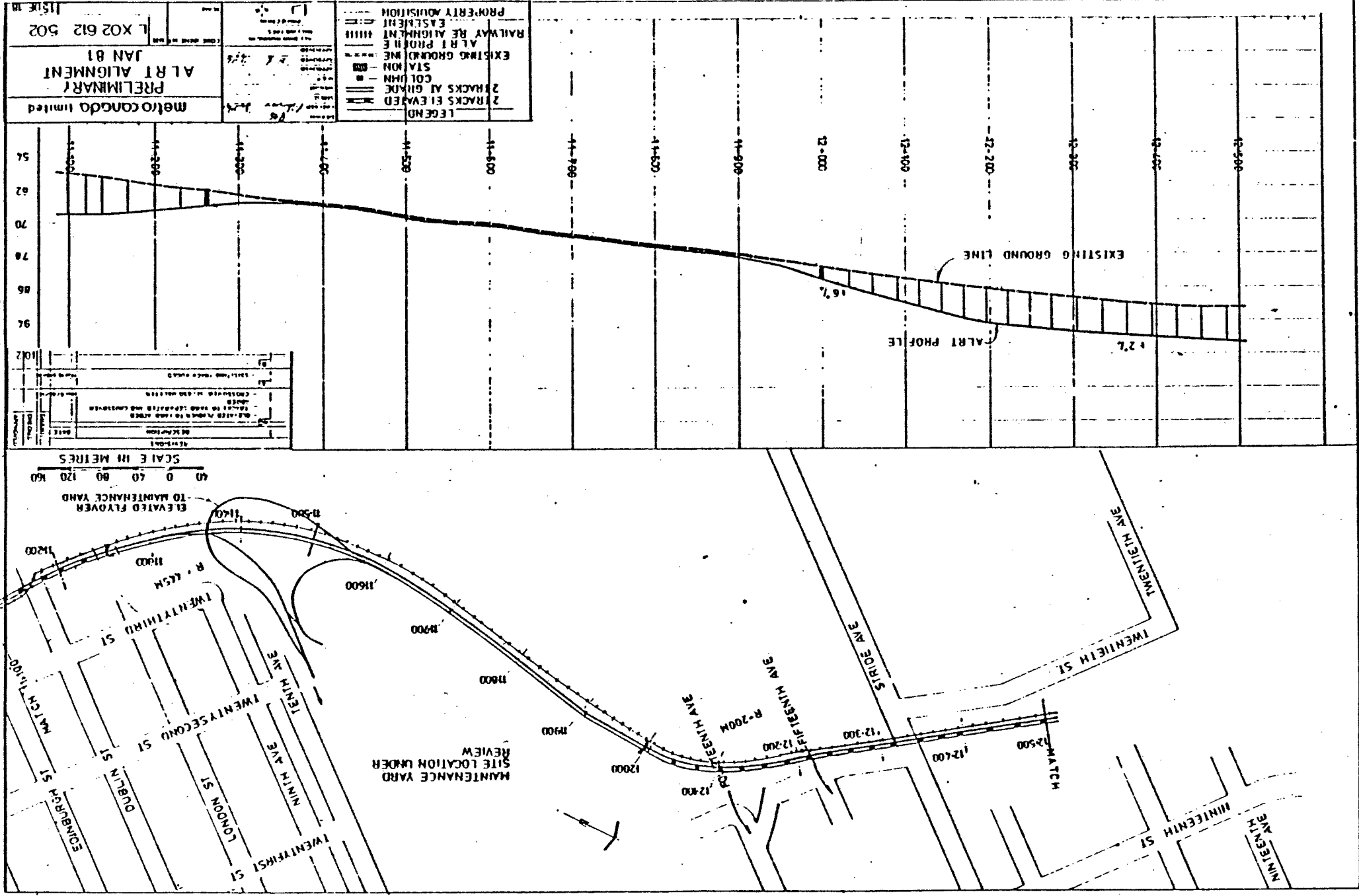


FIG. 7