

Hollywood Area Pocket Track Study

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Metro Rail Transit Consultants
DMJM/PBQD/KE/HWA
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I. BACKGROUND

This study responds to concerns expressed by the City of Los Angeles about minimizing Metro construction impacts along Hollywood Boulevard. SCRTD currently plans three stations along Hollywood Boulevard, at Highland, Vine, and Western, and a pocket track on the west side of Hollywood/Vine Station.

The SCRTD requested this study to identify and compare alternative pocket track locations along Hollywood Boulevard. The Limited Preliminary Engineering and Supplemental Environmental Impact Statement showed the pocket track as per Alternative Location #3 in this study.

II. SCOPE AND OBJECTIVE

This study compares the merits of five alternative pocket track locations along Hollywood Boulevard. These locations are adjacent to the three proposed station sites and are identified as follows:

- Alternative #1: Hollywood/Highland west end
- Alternative #2: Hollywood/Highland east end
- Alternative #3: Hollywood/Vine west end (current location)
- Alternative #4: Hollywood/Vine east end
- Alternative #5: Hollywood/Western west end

Figure 1 shows the five candidate pocket track locations.

The objective of this study is to 1) assess the operational aspects of the system in the short-term and long-term and 2) compare the construction, traffic, utility relocation and business and community impacts of the five alternative pocket track locations.

To accomplish this comparison the study addresses train operation plans and strategies for each alternative and compares each location as to its ability to satisfy the key operating and failure management conditions for the Metro system. The surface impacts of utility relocations and cut-and-cover construction work will be identified and the relative comparisons of these will be used to rate each location relative to its alternatives.

The study relies on a technical assessment of quantifiable conditions and summarizes them in matrix form for both operational and construction impact items.

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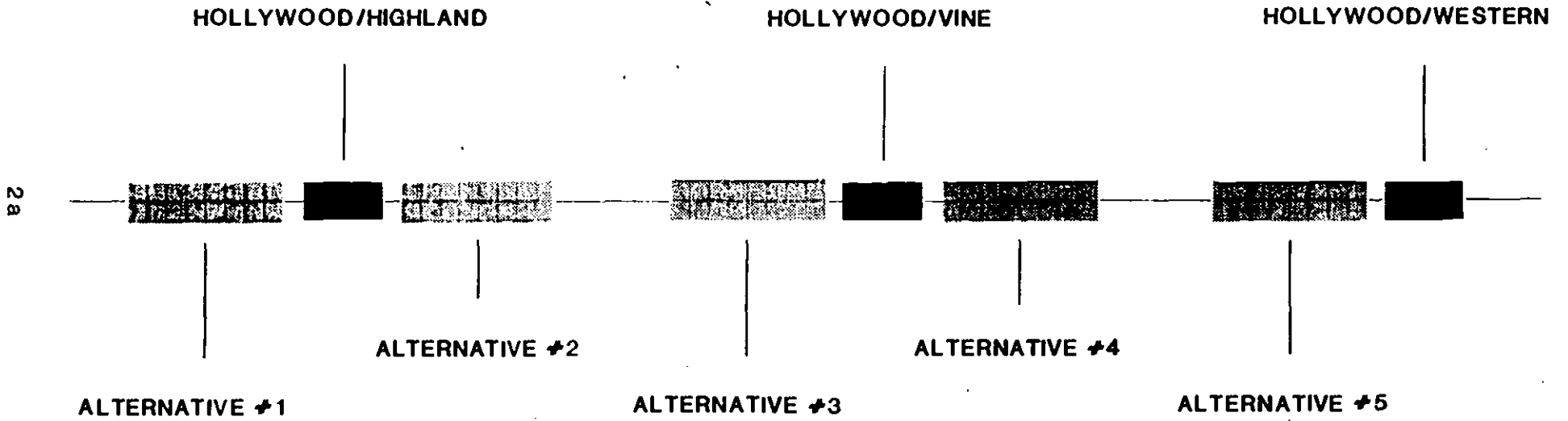


FIGURE 1

HOLLYWOOD AREA ALTERNATIVE POCKET TRACK LOCATIONS

III. INTRODUCTION

A pocket track is commonly used in rail transit systems during both scheduled and unscheduled train operations. It is a third track located between two mainline tracks. It can be used to store a train without affecting revenue service operations on the adjacent mainline tracks. It can also function as a crossover.

Figure 2 shows a pocket track located adjacent to a passenger station. All five alternative pocket track locations are situated adjacent to a station for operational and Fire/Life Safety reasons.

The pocket track is sized to accommodate the maximum train consist, which is 450 feet long. It is designed to be accessible at both ends to both mainline tracks. The proposed pocket track will be built by the "cut-and-cover" construction method, similar to passenger station construction. The right-of-way needed for pocket track structure is approximately 1,050 feet. As a comparison, the length of a passenger station is approximately 550 feet. The pocket track structure is approximately 65 feet wide, except at the tunnel interface end where it is 3 feet wider to accommodate the twin tunnel connections.

The primary functions of a pocket track are to store a failed or work train, to enable trains to move from one mainline track to the other, and to turn trains around to return them in the opposite direction. These functions are further discussed in the operations analysis section.

3a

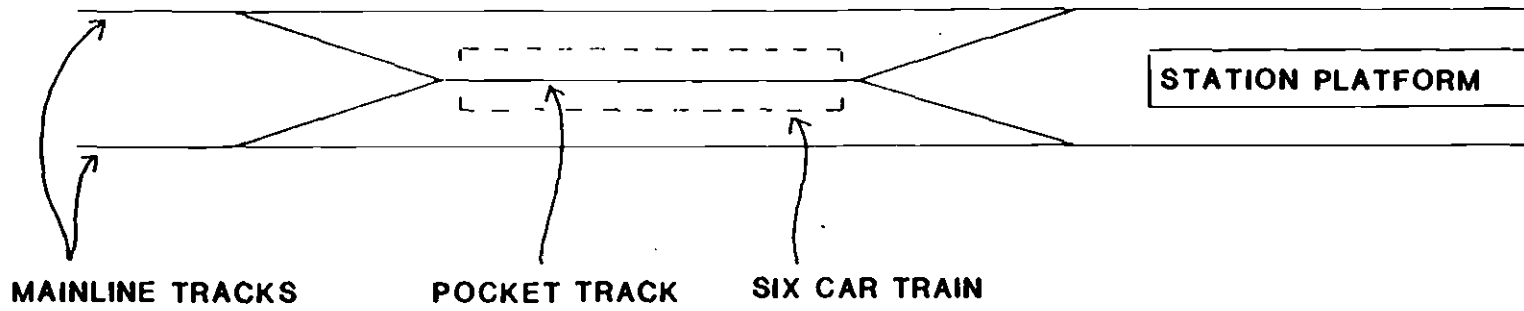


FIGURE 2

POCKET TRACK ADJACENT TO A STATION

IV. OPERATIONS ANALYSIS

This section evaluates the five candidate pocket track locations, which include the current location on the west end of Hollywood/Vine Station. Operational issues are addressed for both the full system to North Hollywood (long-term) and an interim system with a temporary terminal at Hollywood/Vine Station (short-term). Operational criteria were identified so that each alternative could be evaluated and compared in matrix form.

The five candidate locations for the pocket track were evaluated against four operational criteria.

- o Failure Recovery - This refers to the ability to use the pocket track to restore train service back to normal following an incident on the mainline, such as train breakdowns, single track operation, or short turning trains (turning trains around before reaching the end of the line) to recover schedule.
- o Local/Express Train Operation - The use of express trains is not currently part of SCRTD policy, but efforts are under way to determine alternate service patterns which may be included in the policy at some future date. Local/express train operation offers faster end to end times for long haul passengers and provides more seating capacity for riders in Hollywood and other midline points. The pocket track provides a facility to turn an outbound local train between Hollywood and Union Station, while North Hollywood-bound express trains serve all stations farther north of Hollywood in peak hours.
- o Terminal Operations - A pocket track can be used as a crossover at a terminal station to move trains from the arriving track to the departing track.
- o Maintenance Work Staging - When maintenance work is scheduled in Hollywood or other locations on the northern end of the system, storing a work train or work equipment in the pocket track will maximize available work time during the non-revenue nighttime hours. The work equipment can move directly to the work area from the pocket track instead of the yard.

All five alternative pocket track locations are evaluated according to these four criteria.

A. Failure Recovery

Failure recovery is vital to any transit system since repeated or excessive delays will impact passenger confidence in, and use of, the system. The ability of

the system to quickly restore train service back to normal following an incident is a major consideration in locating the Hollywood area pocket track.

Three subcriteria are identified for failure recovery:

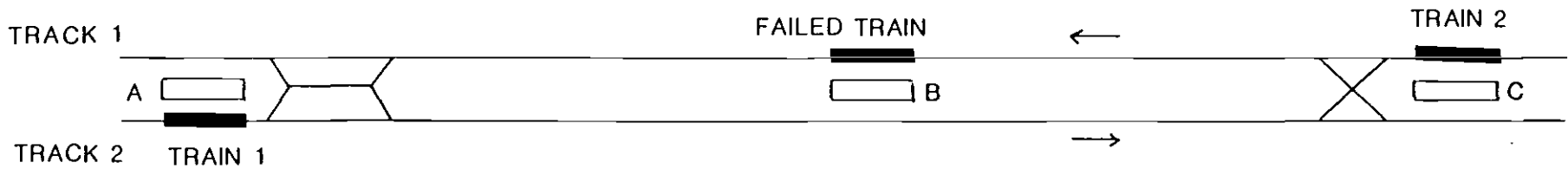
1. Single Tracking Headway - This refers to the shortest headway (minutes between successive trains) that can be operated in both directions on a single track. Single track operation is required when a segment of track becomes impassable, and trains in both directions must operate on the remaining track until the segment is reopened. Figure 3 shows how this operation is performed. Single track operation is important during interim operations to Hollywood/Vine, and even more important when the system is extended beyond Hollywood/Vine to North Hollywood. This is due to longer single tracking distances involved in the full system compared with interim system operations to Hollywood/Vine.

It is important that the required capacity headway be maintained during single track operations. Required capacity headway is the longest headway that can be operated that still provides adequate train service, using fully loaded (to crush capacity) trains, carrying 220 passengers per car in six-car trains. For example, if 110 passengers per minute ride the trains, then a required capacity headway of 12 minutes (1320 passengers/train / 110 passengers/minute) must be operated in order to provide adequate service. A headway longer than 12 minutes (in this example), would result in passengers being left at the station platform since arriving trains are already filled to capacity.

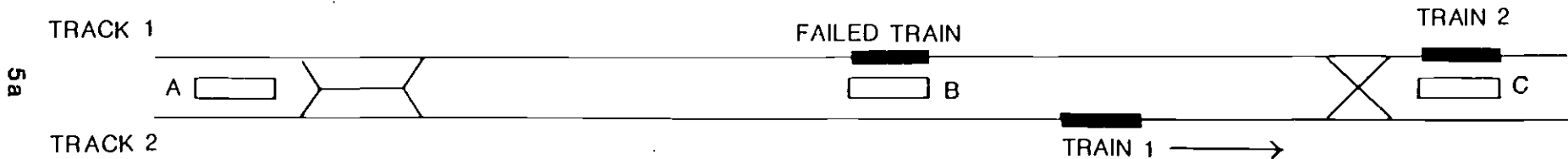
2. Access to Pocket Track For Train Storage - This refers to the proximity of the pocket track when a failed train needs to be removed from the mainline tracks. The closer a failed train is to the pocket track the shorter the travel time required for failed train removal, and the quicker the recovery time for recovery of train service. Pocket track access for train storage is considered primarily a long-term issue. In the short-term, the terminal station tailtracks can be used for train storage.
3. Unscheduled Turnback Operations - This refers to the unscheduled use of the pocket track to turn trains around to help restore train service in an expeditious manner. For example, if trains become closely spaced in one direction on the mainline,

Single tracking headway is time (minutes) between successive trains in the same direction past the same point.

TRACK 1 IS INOPERABLE DUE TO A FAILED TRAIN AT STATION B.



TRAIN 1 PROCEEDS TO STATIONS B AND C IN THE NORMAL DIRECTION OF TRAFFIC.
 TRAIN 2 MUST WAIT FOR TRAIN 1 TO ARRIVE AT STATION C BEFORE PROCEEDING.



ONCE TRAIN 1 HAS ARRIVED AT STATION C, TRAIN 2 PROCEEDS TO STATIONS B AND A AGAINST NORMAL DIRECTION OF TRAFFIC.
 TRAIN 2 MOVES THRU POCKET TRACK TO RETURN TO PROPER TRACK.

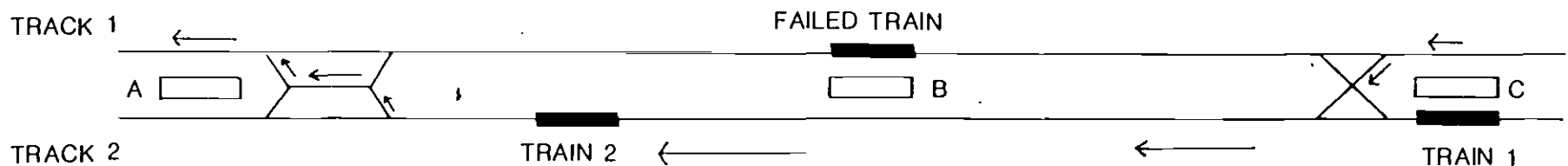


FIGURE 3

SINGLE TRACK OPERATION

some trains may be turned around before reaching the end of the line to help restore service in the other direction. The ability of each alternative pocket track location to accommodate turnback operations is evaluated for the full system to North Hollywood. In the short-term, turnback of all trains occurs at the terminal station in Hollywood.

The primary differences between the alternatives in enabling failure recovery are associated with achievable single tracking headways in both the short- and long-term, and unscheduled turnback operations in the long term.

The five alternatives provide similar benefits for access to a pocket track for train storage, in both short- and long-terms.

Table 1 shows the achievable single tracking headways, and required capacity headways for the long-term.

In the long-term, single tracking headways are best accommodated by Alternative #3 (the current location west of Hollywood/Vine). The maximum single tracking headway is less than 12-1/2 minutes anywhere between Vermont/Sunset and Universal City. Required capacity headways are achievable throughout the entire segment between Vermont/Sunset and Universal City. All other alternatives do not enable required capacity headways to be achieved.

Alternative #4 rates second in this category since it does not enable required capacity headway to be achieved, between Hollywood/Vine and Universal City. Single tracking headway is approximately one-half minute longer than required capacity headway (14:30 vs 13:54) in Alternative #4, which translates into approximately 230 passengers in the peak hour being delayed by one headway.

Alternatives #1, #2, and #5 are worse than Alternatives #3 and #4 since they involve single tracking headways that are two to four minutes longer than required capacity headways, and result in 815 to 1560 passengers being delayed by one headway at the platform in the peak hour.

In the short-term, Alternative #5 is better than the other alternatives, since service headways of 9 to 10 minutes can be maintained during single tracking operations between Vermont/Sunset and Hollywood/Western. Single tracking headway is 8 minutes in this segment. Alternatives #3 and #4 rate behind Alternative #5 in the

ALTERNATIVE	TRACK SEGMENT	SINGLE TRACKING HEADWAY (Min: Sec)		REQUIRED CAPACITY HEADWAYS ^C (Min: Sec)	PASSENGERS DELAYED IN PEAK HOUR
		One Train ^A	Two Train ^B Fleeting (average headway)		
1	Vermont/Sunset to Hollywood/Highland Hollywood/Highland to Universal City	*16:40 8:08	10:20 6:04	12:32 13:54	1560 0
2	Vermont/Sunset to Hollywood/Highland Hollywood/Highland to Universal City	*14:25 10:10	9:10 7:05	12:32 13:54	815 0
3	Vermont/Sunset to Hollywood/Vine Hollywood/Vine to Universal City	12:17 12:18	8:09 8:09	12:32 13:54	0 0
4	Vermont/Sunset to Hollywood/Vine Hollywood/Vine to Universal City	10:00 *14:30	7:00 9:15	12:32 13:54	0 230
5	Vermont/Sunset to Hollywood/Western Hollywood/Western to Universal City	8:01 *16:34	6:01 10:17	12:32 13:41	0 985

- A Headway achieved by sending one train in each direction alternately over the same track segment. This minimizes actual passenger waiting time.
 - B Average headways are achieved by sending two trains at a time in each direction alternately over the same track segment. Although average headways are lower than with one train single tracking headways, the actual passenger waiting time is increased to almost twice the average headways shown.
 - C Minimum headway that is necessary to transport patronage using fully loaded (to crush capacity) trains, each car carrying 220 passengers in six-car trains. If single tracking headway is less than this value, then some passengers are being left at the platform due to already fully loaded trains.
- * Indicates required capacity headways cannot be achieved during single track operations on identified track segment.

T A B L E 1
SINGLE TRACKING HEADWAYS VS REQUIRED CAPACITY HEADWAYS

short term, as service headways of 9 to 10 minutes cannot be maintained with single tracking headways of approximately 12-1/2 minutes. Shorter single tracking headways are achievable than in Alternatives #1 and #2. Alternatives #1 and #2 involve the longest (worst) single tracking headways of approximately 15 minutes, and service headways cannot be achieved.

Unscheduled turnback operations will be required in the long-term when the trains become closely spaced in one direction, and trains are needed to turn around to restore service in the other direction. For example, a likely scenario for turnback operations will be the need to turn selected outbound trains in Hollywood to return to the CBD during the evening rush hour. Some trains will need to continue to North Hollywood to serve the remaining stations north of Hollywood.

Alternative #1 best accommodates unscheduled turnbacks since those trains turning back at the Hollywood/Highland pocket track serve all Hollywood stations. With Alternatives #2 and #3, trains would be turned back prior to Hollywood/Highland, thus serving one less station in Hollywood. The number of trains turned back will vary with the severity of the delay. Assuming no more than half the trains are turned back since inadequate service to the remainder of the route would result, then 2060 passengers would need to transfer to a continuing train at Hollywood/Vine in the evening peak hour in Alternatives #2 and #3. This compares with 1985 passengers requiring transfer at Hollywood/Highland in Alternative #1, representing a marginal three and a half percent increase in transfers.

Alternatives #4 and #5 would involve trains turning back prior to Hollywood/Vine, thus serving only Hollywood/Western Station in Hollywood. A total of 2240 transfers to a continuing train would be required at Hollywood/Western, which is a thirteen per cent increase in transfers compared with Alternative #1.

Based on failure recovery alone, Alternative #3 provides the most important benefit, that being the ability to operate required capacity headways during single track operations in the long-term anywhere between Vermont/Sunset and Universal City. Also, single tracking headways are minimized in this alternative. In the short-term, Alternative #3 does not rate as well as Alternative #5 since service headways cannot be achieved during single tracking in the former. However, the trade-off between short-term and long-term benefits favors the latter, because the short-term will consist of at most two years, while long-term impacts will last the life of

the system. Long-term unscheduled turnback operations are operationally acceptable with Alternative #3.

B. Local/Express Operation

Local/express operation is not planned during the short-term. However, once the full system to North Hollywood is in place, this operation may be employed to reduce travel time for long haul passengers and to reduce equipment needs. Analysis focuses on the long-term impacts on local/express operation.

The method of operating local/express service will be dependant on passenger use of the system and pocket track location. Express trains on the North branch will bypass stations between either Hollywood/Highland, Hollywood/Vine, or Hollywood/Western and Wilshire/Vermont, while serving all other stations between Union Station and North Hollywood. Local trains will operate between Union Station and the station east of the pocket track, serving all stations including those bypassed by the express trains. The pocket track location, next to one of the three Hollywood stations, will determine where outbound local trains are turned around to return to the CBD and thus the length of express operation.

Alternative #3 is best suited for local/express operation. It enables higher patronage on express trains than Alternative #1 by serving one more station (Hollywood/Vine), and enables longer express runs than Alternatives #4 and #5. It requires fewer numbers of transfers from express to local than Alternative #1.

Alternative #1 is rated second as express runs are longer than in any other alternative, saving express riders an additional minute (approximate) of travel time. However, express patronage is lower than in any other alternative. The number of transfers from express to local are higher than in any other alternative.

Alternative #5 ranks third as the express patronage is highest since all three Hollywood area stations are served by express trains. Transfers from express to local are fewer than in any other alternative. A drawback is that the express run is the shortest (similar to Alternative #4), saving express riders one minute less of travel time than Alternative #3.

Alternative #2 ranks fourth since deadheading of local trains from the pocket track to Hollywood/Vine is required. The length of express service is the same as in Alternative #3. Express patronage is lower than in Alternative #1. The advantages are that fewer transfers from express to local are required compared with

Alternative #1. Also, higher express patronage occurs than in Alternative #1.

Alternative #4 involves the shortest express run similar to Alternative #5. Express riders save one minute less of travel time compared with Alternative #3 since only three stations are bypassed. Deadheading of local trains from the pocket track to Hollywood/Western is required, resulting in inefficient train operations. An advantage is that the number of transfers from express to local are fewest, similar to Alternative #5.

Based on local express operation alone, Alternative #3 is preferred due to a combination of significant express patronage, fewer transfers required, length of express run, and no deadheading involved.

C. Terminal Operations

Terminal operations at Hollywood/Vine is a short-term consideration, and therefore no long-term impacts are addressed.

The primary criterion for terminal operations at Hollywood/Vine is whether regularly scheduled headways can be maintained while turning trains. All five alternatives permit scheduled service headways of 9 to 10 minutes on the branches to be maintained.

Alternative #4 involves the shortest turnaround time, since trains can use the pocket track on the arriving end of the station as a crossover. Alternative #3 requires slightly longer turnaround times since trains must travel further to the pocket track behind the station to turn around. Alternative #4 imposes a 30-second travel time increase to passengers, compared with Alternative #3, since trains must decrease speed through the pocket track on approach to the platform.

Alternatives #1 and #2 would not be useful since these pocket tracks would not be available during interim terminal operations to Hollywood/Vine. Scheduled service headways can still be maintained by using the crossover south of Vermont/Sunset, and essentially operating trains on both tracks alternately between this station and Hollywood/Vine. The travel time from Vermont/Sunset to Hollywood/Vine and back is 11-1/2 minutes, which includes a 3-minute layover. The use of both tracks would enable service headways to be achieved. However, if the terminal layover time needed to be increased significantly to accommodate scheduling, then service headways may not be achievable. Alternative #5 would enable trains to cross tracks using the

pocket track at Hollywood/Western, and operate trains on both tracks alternately between here and Hollywood/Vine.

All alternatives are operationally acceptable for short-term terminal operations. Alternatives #3 and #4 provide the most benefit. Alternative #3 enables service headways to be operated and minimizes passenger travel time. Alternative #4 involves the shortest train turnaround time but requires a 30-second increase in passenger travel time.

D. Maintenance Work Staging

Maintenance work staging is a long-term consideration. In the short term, more work time is available due to shorter service hours compared with the long term. Thus, the need for maintenance work staging is not as important during the short term.

All five alternatives provide significant long-term benefit for maintenance work staging. Work trains can be stored in the pocket track during off-peak hours in preparation for maintenance work on the northern half of the route. This saves travel time and increases the amount of time available for actual sitework. The planned eventual use of a 20-hour revenue service period results in only four hours of system down time in the long-term. Much of this time would be spent by a work train in transit from the downtown yard if the Hollywood area pocket track was not provided.

All alternatives are operationally acceptable, with Alternative #5 being marginally less effective for maintenance work near the northern terminus at North Hollywood.

E. Overall Operations Assessment

The selection of the pocket track location is based on the extent that it meets the operational criteria already identified. In cases where short- and long-term impacts are different for an alternative, greater importance has been placed on the long term, since the lifespan of the system will be measured in decades.

Failure recovery is significantly enhanced with Alternative #3 more than any other alternative. Long-term single tracking headways are minimized between Vermont/Sunset and Universal City, and required capacity headways can be achieved during single track operations. All other alternatives will result in single tracking headways that are 2 to 4 minutes longer, and more importantly will not enable required capacity headways to be achieved.

Alternative #4 is not as effective as Alternative #3 as 230 passengers in the peak hour would be delayed by one headway, due to insufficient single tracking headways. Alternatives #1, #2, and #5 are unacceptable since 815 to 1560 passengers in the peak hour would be delayed by one headway due to insufficient train headways, during single track operation.

Long-term unscheduled turnback operations will be better accommodated by Alternative #3 than #4, since one additional Hollywood area station is served. The remaining alternatives are not considered due to their adverse impact on single tracking headways.

Long-term local/express operation is accommodated best by Alternative #3. Express runs are adequately long, number of transfers are few, and express patronage is significant. No deadheading of trains is required.

The remaining criterion which distinguishes the five alternatives is short-term terminal operations at Hollywood/Vine. Alternative #3 is suited for this purpose since service headways can be operated without imposing delay to passenger travel time. Alternative #4 also is effective for terminal operations, but results in a 30-second increase in passenger travel time. All alternatives enable regular service headways to be achieved.

Alternative #3 is operationally better located to accommodate train operations. Alternative #4, as shown, would involve significant drawbacks since it performs poorly in failure recovery. SCRTD Transportation has stated a preference for Alternative #3 as shown in a memo included in the Attachment to this study.

The next section addresses the construction requirements for the alternative pocket track locations, and includes utility impacts, construction staging sites, and traffic detours.

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V. CONSTRUCTION IMPACTS

Construction of the pocket track will have specific impacts in each of the alternative pocket track locations. The following considerations have been addressed to evaluate the five alternatives:

- o Construction excavation and alignment impact
- o Availability of convenient construction staging sites
- o Utility relocation
- o Traffic detour operations.

Subsequent to these four considerations being addressed, the construction sequence common to all alternatives is described in detail.

A. Construction Excavation and Alignment Impact

Alternatives #1 and #2 will require an additional 10 feet of cut-and-cover construction depth compared with the other three alternatives. Typical construction depth along Hollywood Boulevard is 50 to 60 feet, so the added 10 feet is a 17- to 20-percent increase.

Alternative #1 will require an extension of the alignment westward from Hollywood/Highland to accommodate a pocket track. Approximately 600 feet of additional twin tunnels are required due to this realignment. This results in a capital cost increase of \$2.85 million dollars (in 1985 dollars). The alignment currently turns north towards Universal City west of the station, which precludes the provision of a pocket track there. The pocket track cannot be located on a curve since the turnouts need to be on tangent trackage. All other alternatives do not require any alignment change.

Alternatives #2, #3, #4, and #5 are rated equally based on a nominal construction excavation depth of from 50 to 60 feet and alignment impact perspective. Alternative #2, which is nominally 10 feet deeper, still has the same order-of-magnitude costs as Alternatives #3, #4, and #5.

B. Construction Staging Areas

Construction staging sites are available for all pocket track alternatives, though some alternatives have more convenient sites than others. It is important to have the staging sites as close to the construction areas as possible, so that equipment and material can easily be transported.

There are a few convenient sites along or adjacent to Hollywood Boulevard which could be purchased by the District or leased by the Contractor. The actual location of the vacant land, parking lots, or under-utilized land is more readily available towards the Western Avenue end of Hollywood Boulevard as opposed to the Highland Avenue end. In fact, the development potentials and planned new private construction are generally in the Vine Street to Highland Avenue direction.

Figures 4 through 8 show the availability of construction staging areas for all five alternatives.

It is important to have immediately adjacent space for the earth tunneling operations. It appears that tunnel heading shaft(s) will be required at Highland Avenue and at Western Avenue only. This alone opens up the potential for the cut-and-cover work for Alternatives #3 & #4 at Vine to have more space.

Figures 6 and 7 show that Alternative #4 has over 40,000 square feet of potential staging area adjacent to the construction area, whereas Alternative #3 has no site fronting Hollywood in the pocket track construction area. The only suitable area is about 500 feet south of Hollywood Boulevard off Ivar Avenue.

Based on construction staging sites availability, Alternative #4 is the best alternative due to proximity of the staging areas to the construction site.

C. Utility Relocations

The major utilities such as gas, water, electricity, telephone, storm drains, and sewers are present in all locations. However, some pocket track locations require more relocation and/or support of utilities than others.

Although there appears to be no significant additional utility relocation or in-place support of utilities for Alternatives #1 and #2, other factors such as capital cost of Alternative #1 and the surface impacts of Alternative #2 far outweigh the utility impacts. Alternative #2 will impact utilities on Las Palmas Avenue and will add to the disruption of that north-south artery.

Alternative #3 will require the opening up of utilities on Vine Street and will impact traffic flow. This alternative will require temporary support of a 75-inch diameter storm drain and an 8-inch sanitary sewer, which crosses through the cut-and-cover excavation. Also,



CONSTRUCTION STAGING
(60,000 SQ FT APPROX)

CONSTRUCTION STAGING
(40,000 SQ FT APPROX)
PARTIALLY REQ'D FOR ENTRANCE

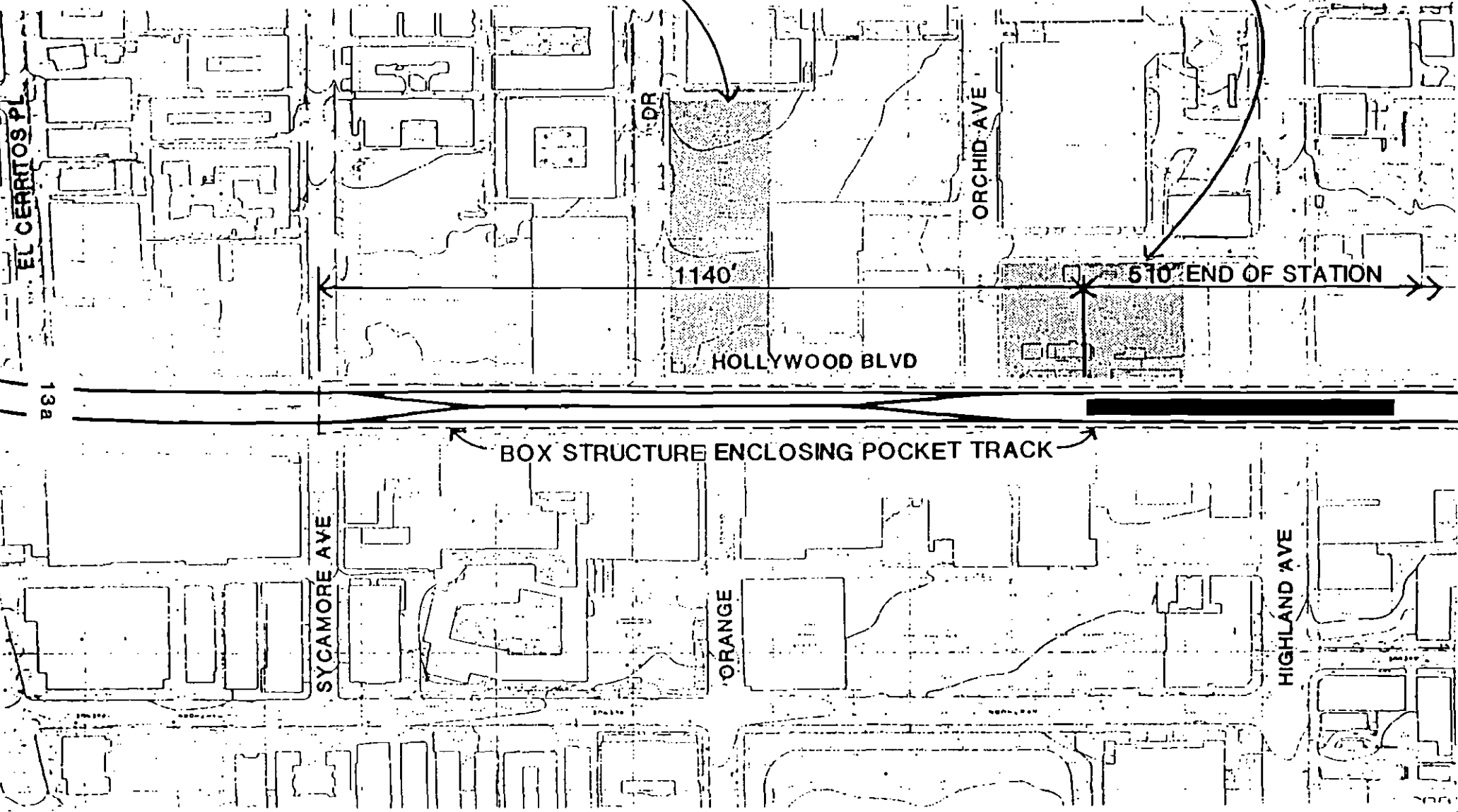


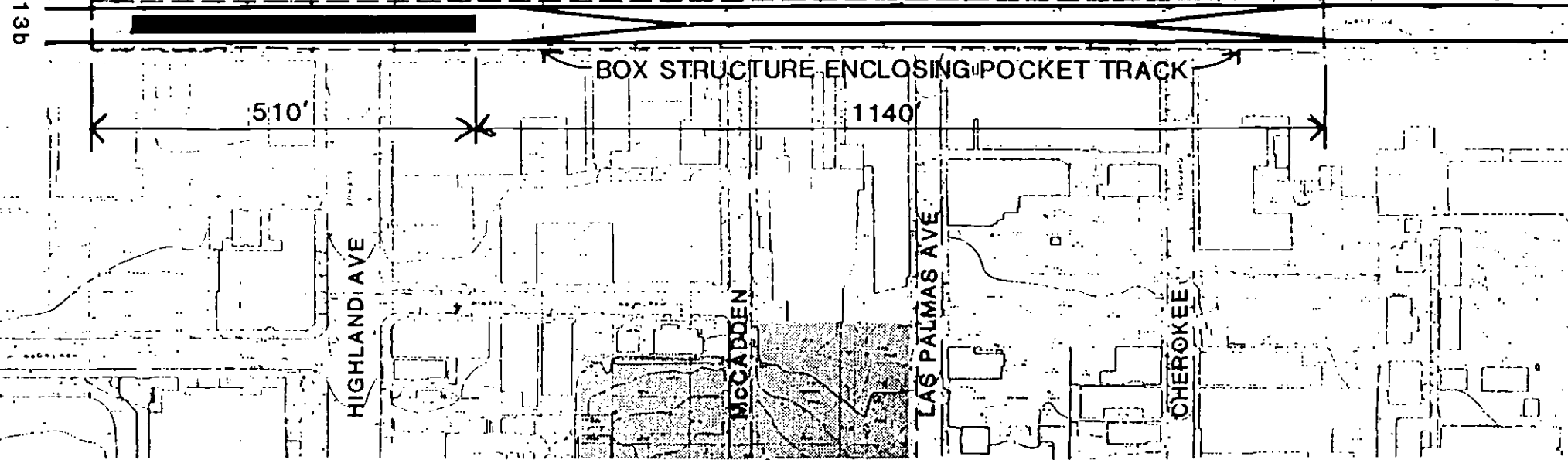
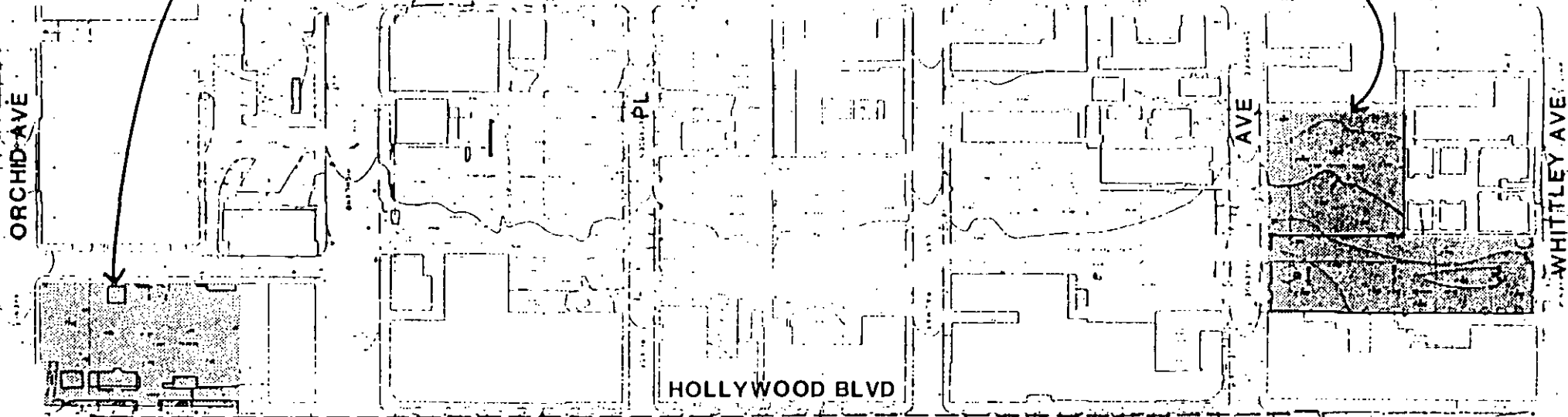
FIGURE 4

LOCATION NO.1
OUTBOUND POCKET TRACK
HOLLYWOOD/HIGHLAND STATION



CONSTRUCTION STAGING
(40,000 SQ FT APPROX)
PARTIALLY REQ'D FOR ENTRANCE

CONSTRUCTION STAGING
(67,000 SQ FT APPROX)



CONSTRUCTION STAGING
(86,000 SQ FT APPROX)

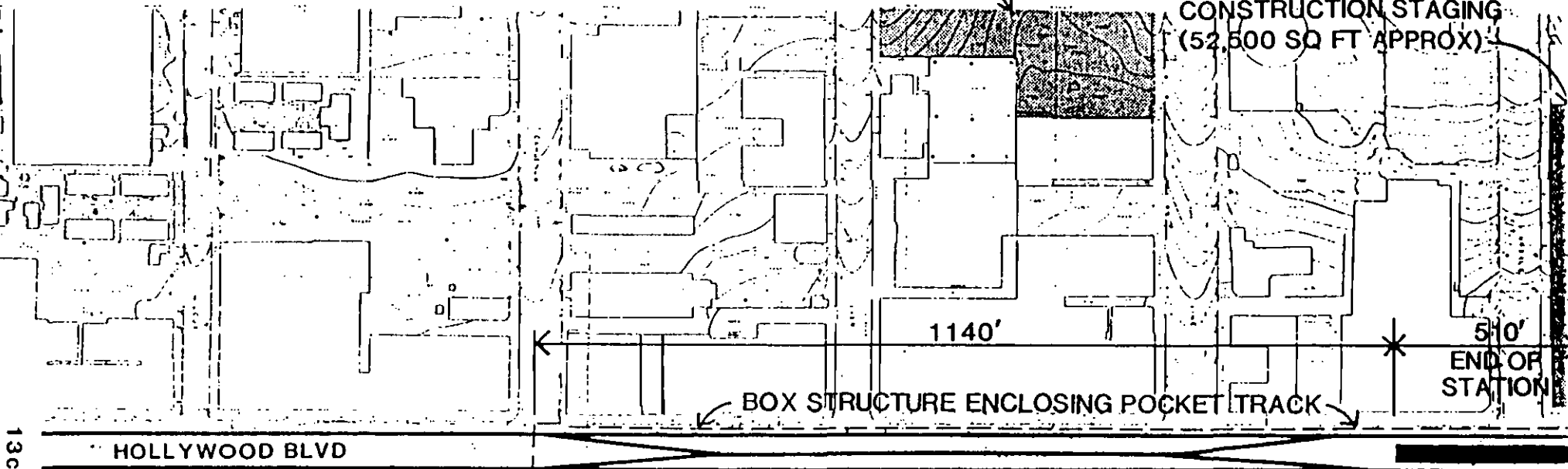
LOCATION NO.2
INBOUND POCKET TRACK
HOLLYWOOD/HIGHLAND STATION

FIGURE 5



CONSTRUCTION STAGING
(78,000 SQ FT APPROX)

PERMANENT TAKE FOR
ENTRANCE & BUS TERMINAL
CONSTRUCTION STAGING
(52,500 SQ FT APPROX)



PERMANENT TAKE ENTRANCE
& KISS-AND-RIDE
CONSTRUCTION STAGING
(100,000-SQ-FT-APPROX)

CONSTRUCTION STAGING
(70,000 SQ FT APPROX)

LOCATION NO.3
OUTBOUND POCKET TRACK
HOLLYWOOD/VINE STATION

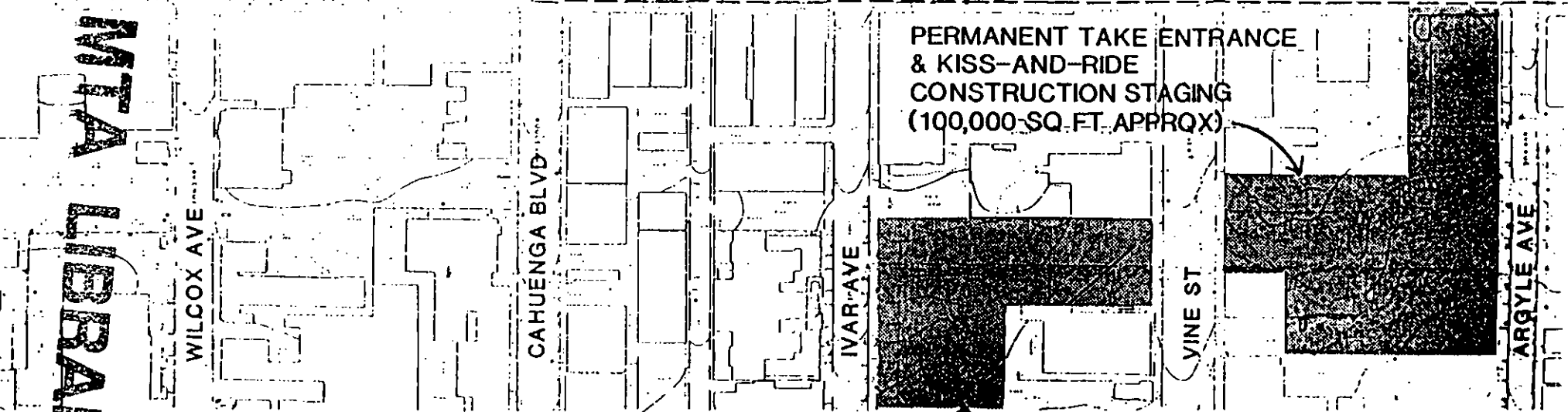


FIGURE 6



PERMANENT TAKE FOR
ENTRANCE & BUS TERMINAL
CONSTRUCTION STAGING
(52,500 SQ FT APPROX)

CONSTRUCTION STAGING
(16,000 SQ FT APPROX)

CONSTRUCTION STAGING
(14,000 SQ FT APPROX)

CONSTRUCTION STAGING
(12,500 SQ FT APPROX)

BOX STRUCTURE ENCLOSING POCKET TRACK

HOLLYWOOD BLVD

510'
END OF STATION

1140'

ARGYLE AVE

EL CENTRO AVE

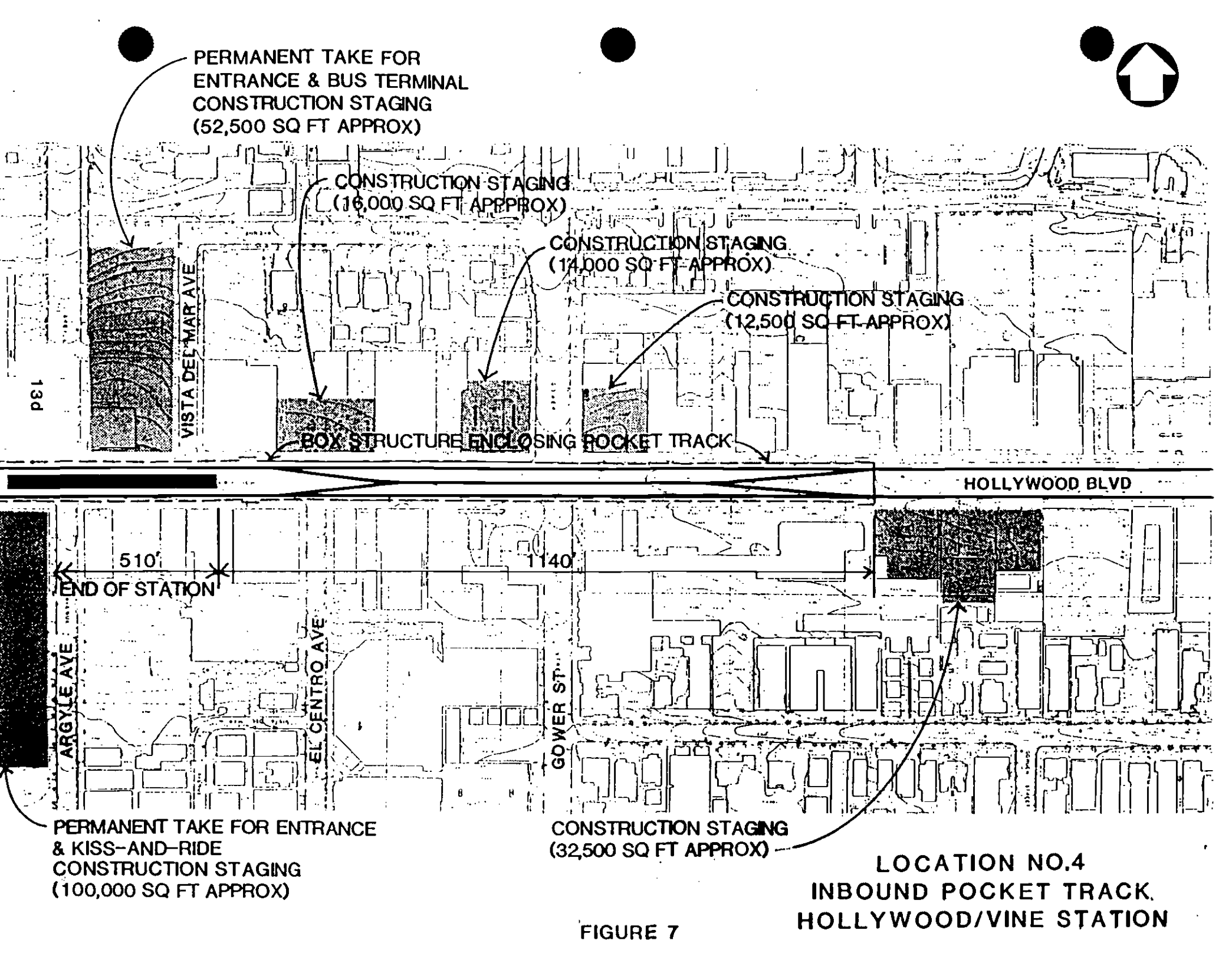
GOWER ST

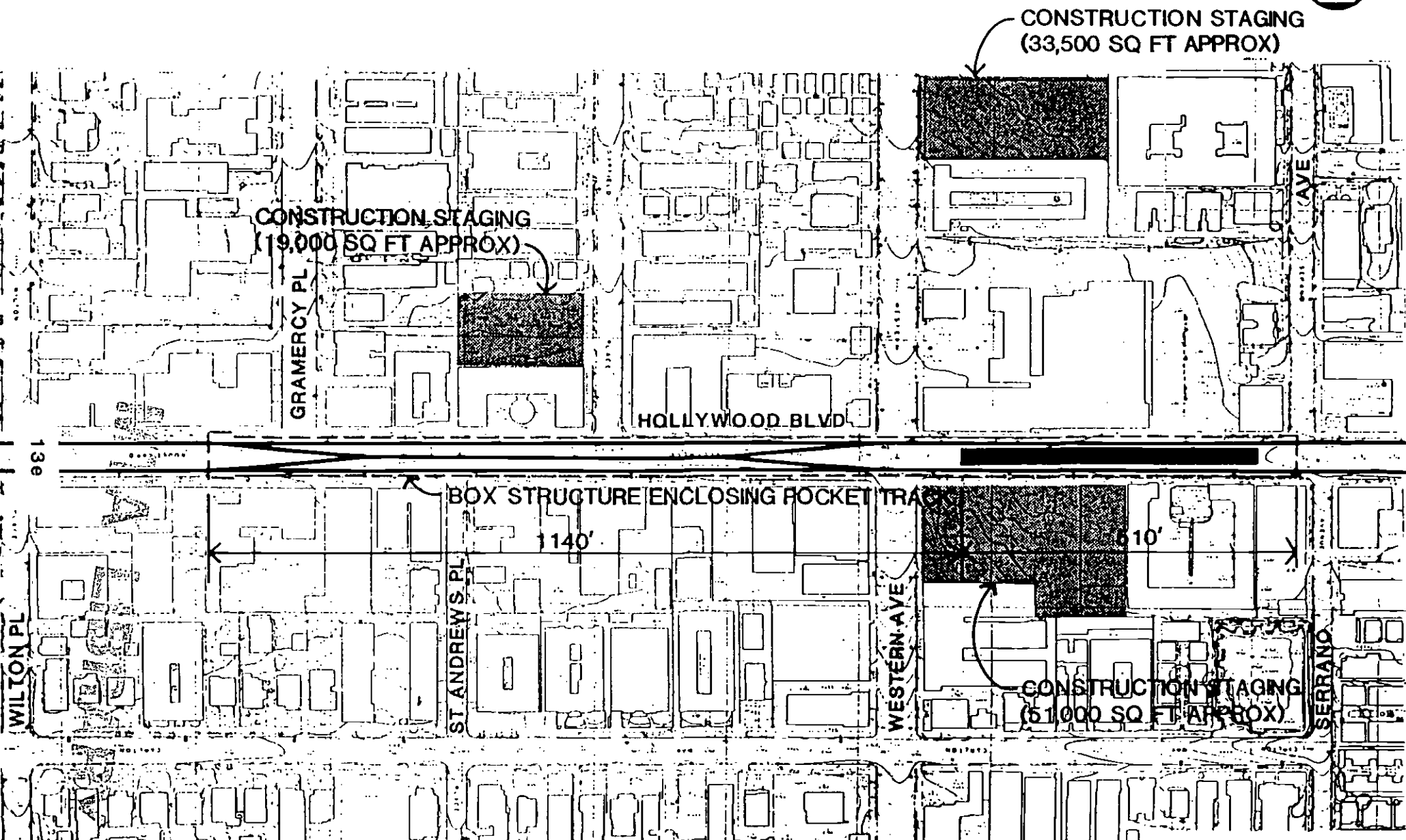
PERMANENT TAKE FOR ENTRANCE
& KISS-AND-RIDE
CONSTRUCTION STAGING
(100,000 SQ FT APPROX)

CONSTRUCTION STAGING
(32,500 SQ FT APPROX)

LOCATION NO.4
INBOUND POCKET TRACK,
HOLLYWOOD/VINE STATION

FIGURE 7





LOCATION NO.5
OUTBOUND POCKET TRACK
HOLLYWOOD/WESTERN STATION

FIGURE 8

approximately 1200 feet of telephone duct and storm drainage will be impacted by construction.

Alternative #4 impacts a 48-inch storm drain and an 8-inch sewer which will require temporary support during construction. In addition, approximately 600 feet of telephone ducts and 500 feet of small diameter storm drains will require temporary relocation or support in place. Clearly, Alternative #4 has less impact than Alternative #3.

Alternative #5 requires that an 8-inch sewer and a 51-inch storm drain that cross through the cut and cover box be supported during construction. Also, approximately 960 feet of storm drain lines will require temporary relocation and reconstruction.

D. Traffic Detour Operations

Traffic detours for vehicles and pedestrians around construction sites will be required for all five pocket track alternatives. Hollywood Boulevard will be affected in all alternatives. Los Angeles City Department of Transportation requires at least three vehicular lanes open during the rush hours. This can be accommodated with one lane in each direction and one reversible flow lane.

Alternatives #1 and #2 do not alter or add to the impact to Highland Avenue traffic since the station straddles the intersection in any case. Both alternatives will add to congestion on Hollywood Boulevard. Alternative #3 causes cut-and-cover construction across the Vine Street intersection as well as Cahuenga Boulevard. Cahuenga is planned as a southbound couplet with Wilcox Avenue and thus will carry greater volumes of traffic when the couplet is implemented.

Alternative #4 impacts only Gower Street, which is not a major north-south arterial. The fact that Hollywood Boulevard narrows east of Gower will have an impact only on the width of the sidewalk area, which may be reduced to 5 feet on each side of the boulevard.

Alternative #5 will require construction and detours at the Western Avenue intersection. However, the volumes on Western Avenue and Hollywood Boulevard are significantly less and the peak volumes are less on the Western Avenue end of Hollywood Boulevard.

It appears that from an overall traffic impact analysis, the farther east the surface disruptions of construction are, the less impact to Hollywood Boulevard and to the respective cross street arterials.

E. Construction Impacts Assessment

Alternatives #2, #3, #4, and #5 rate equally under construction excavation and alignment impact criterion. These four alternatives do not require any additional construction requirement that would significantly raise capital costs.

Alternative #4 has the most convenient construction staging access along Hollywood Boulevard. Alternative #3 would involve staging areas approximately 500 feet from the construction area.

Utility relocations are minimized in Alternatives #1 and #2, but the associated capital cost and surface impacts would make these locations undesirable. Alternative #4 has less of an utility impact than Alternative #3. A 75-inch storm drain requires support in Alternative #3 while a 48-inch storm drain requires support in Alternative #4. Other utilities are impacted equally in both of these alternatives.

Traffic detour operations will be more extensive and thus have a worse impact on traffic flow in Alternative #3 than in Alternative #4, since Vine and Cahuenga will be affected in the former, whereas only Gower will be affected in the latter. Alternatives #1 and #2 will have no additional impact on traffic due to the pocket track location alone. However, the station construction will interfere with traffic on the heavily traveled Highland Boulevard.

F. Cut-and-Cover Construction Activity

While the alternatives have shown to have differing impacts on construction, there are some construction activities which are common to all alternatives. A step by step description is provided for cut-and-cover construction that will affect Hollywood Boulevard.

Step 1 - Relocation of Utilities

The first construction work in the street will be the relocation or replacement of utilities that will directly affect the first major construction work. Utilities that interfere with the installation of the soldier piles will be relocated clear of the neat line of the proposed rapid transit structure.

Step 2 - Temporary Walkways

In order to clear the soldier pile line, all surface obstructions and structures will be

removed. The proximity of the installation of the soldier pile line will require the removal and storage of the "Walk of Fame" sidewalk stone slabs as well as the demolition of curb and gutter. A temporary walkway will replace the permanent sidewalk during the construction period lasting 2 to 2-1/2 years. Timbers or equivalent will act as temporary curbs or wheelguards to separate the vehicular and pedestrian traffic. Figure 9 shows a typical cross-section of a pocket track structure and describes Steps 2 and 3.

Step 3 - Installation of Excavation Support System

With utilities cleared and curb and gutter removed, crane-mounted augers will drill vertical holes on 6- to 8-foot centers and steel soldier piles will be placed in each hole and backfilled with low strength concrete. Work will progress down the street curb line at a rate of 80 to 100 feet per week. Once the soldier piles are in place the area will be cleaned up and temporarily patched or plated.

Step 4 - Installation of Timber Deck

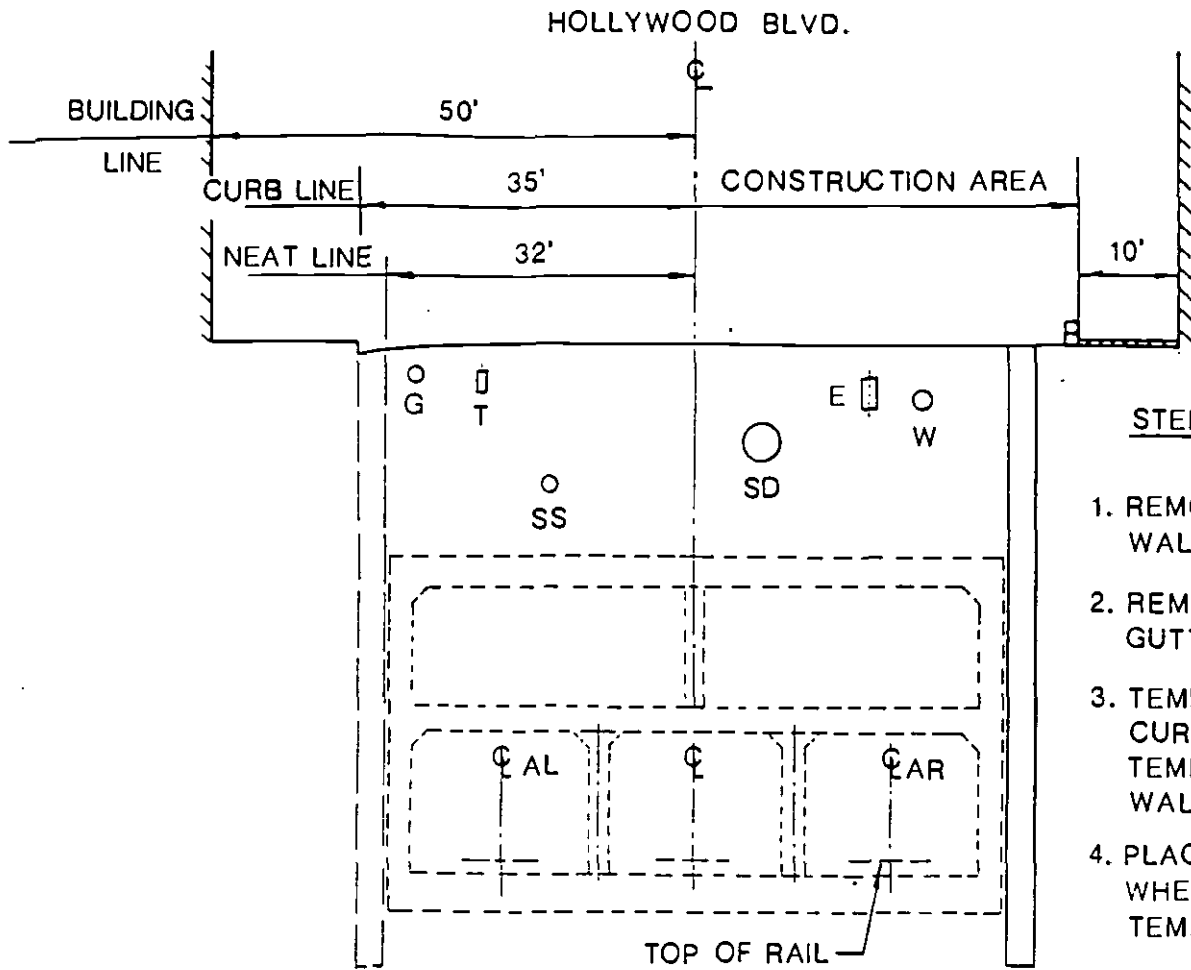
After soldier piles are in placed down both curb lines construction crews will begin to open up the pile line along the curb to ready the soldier piles to accept the street beams and timber decking that will form the traffic running surface for the next two years. Excavators will remove about 8 feet of depth of the street and beams and timber deck mats will be placed in stages down the street. Traffic will flow on approximately half the decked street while the remainder provides a construction area for the contractor.

Step 5 - Excavation and Structures Construction

Over the next two years most of the construction work will take place beneath the temporary timber deck. Excavation will continue down and steel walers and struts will form the framework of the support system which retains the ground on either side of the street. When the excavation has reached the prescribed depth (approximately 50 to 60 feet), concrete work will begin to form the rapid transit box structure.

Step 6 - Restoration

When the concrete work is completed, backfill material will be placed on top of the structure and



STEP 2 & 3

1. REMOVE AND STORE WALKWAY STONE
2. REMOVE CURB AND GUTTER
3. TEMPORARILY BACKFILL CURB LINE AND SET TEMPORARY TIMBER WALKWAY
4. PLACE TIMBER (2-12X12 WHEELGUARD TO FORM TEMPORARY CURB LINE
5. BEGIN PLACEMENT OF SOLDIER PILES

E - ELECTRICAL	SD - STORM DRAIN
G - GAS	T - TELEPHONE
SS - SANITARY SEWER	W - WATER

TYPICAL CROSS-SECTION
POCKET TRACK STRUCTURE

FIGURE 9

the remainder of the excavated area will be filled, the deck assembly removed in stages, and the sewer, water, and electric ducts rebuilt in the street. All temporary excavation support will be removed from the surface, and new curb and gutter, catch basins, and sewer tie-ins will be completed. Finally, sidewalks will be replaced, the street paved and striped, and the area fully restored.

The next section addresses the environmental issues of pocket construction such as impacts to commercial activity.

VI. ENVIRONMENTAL ISSUES

The primary concerns in this category are the short-term impacts to pedestrian and commercial activity due to construction activity. Vehicular and pedestrian circulation will be adversely impacted, which in turn affects the local businesses. Store front visibility may also be impaired at certain times. However, the marketing expertise of the small business will probably have special signs and eye catching banners displayed during construction.

On-street parking will typically be eliminated in the cut-and-cover areas. Deliveries to local businesses will be affected, and sidewalk widths will be narrowed. Generally, the District and the contractor will spend more money and effort to keep walkways and serviceways clean and safe in the more congested areas of Hollywood Boulevard. The heaviest congestion is the area west of Vine Street to Orange Street, just beyond Highland.

A. Construction Impact to Pedestrians

One aspect of the cut-and-cover construction work for the stations and pocket track is that the width of the structures will impact the sidewalk areas. In fact, the "Walk-of-Fame" stonework and star imbedments will need to be lifted, palletized, and stored during the construction period. Sidewalks will be replaced with timber walkways of a narrower width and a temporary wheelguard and fencing will isolate the pedestrians from the construction.

Since the heaviest pedestrian traffic is west of Vine Street, the impact is considerably less with the pocket track located east of the Vine Street Station. In fact, Alternative #4 would require approximately 1000 feet less of Walk-of-Fame stone walkway to be removed, stored, and replaced as compared with Alternative #3.

B. Construction Impacts to Businesses

The Hollywood historical district extends from Argyle Avenue on the east to La Brea Avenue on the west, along Hollywood Boulevard. Alternatives #1, #2, and #3 are located in this area.

Alternative #1 will involve pedestrian and vehicular traffic disruption to the Mann's Chinese Theater, a popular tourist attraction that has significant pedestrian traffic. In addition to the Mann's Chinese Theatre, there are mixed walk-in businesses and fast-food outlets that depend almost entirely on the pedestrian traffic for their business.

The Hollywood Roosevelt Hotel and the Pacific Paramount Theatre are on the south side of Hollywood Boulevard in this area. The Bank of Hollywood is on the ground floor of a 13 story building also on the south side of the boulevard across from the Mann's Theatre. A total of 27 businesses will be affected, 11 on the north side of Hollywood Boulevard, and 16 on the south side.

Alternative #2 has 81 businesses adjacent to the construction area, 44 on the north and 37 on the south side of Hollywood Boulevard. These businesses include: McDonalds, Hollywood Wax Museum, Music Instrument Store, B. Dalton bookstore, a sporting goods store, many retail type stores that sell souvenirs and various other offices not related to tourist traffic. There is a 7-story building on the north side and a 9-story office building on the south side in this same area.

The mixture within the Alternative #2 area is much the same as in Alternative #3 area west of Vine Street, except that in the #3 area there are more multi-storied buildings which, though considered as one business, represent a greater density of pedestrian traffic in and out of the building. This traffic, however, is not necessarily the "walk-in" traffic that the individual small retail and fast-food businesses depend on for most of their business. Also at the northwest corner of Vine and Hollywood Boulevard is the Brown Derby restaurant, which has been recently restored. The Hollywood Plaza senior citizen retirement home is located immediately south of this intersection.

Alternative #3 has 79 businesses adjacent to the construction site, 45 on the north side and 34 on the south side of Hollywood Boulevard. All would be impacted by construction.

Alternative #4 has 29 businesses adjacent to the construction site, 12 on the north side and 17 on the south side of Hollywood Boulevard. Two drive-in type businesses are located on both sides of Hollywood Boulevard and are included in these totals. A block-long automobile dealership is on the south side of Hollywood Boulevard.

In the Alternative #4 area the businesses are nearly 100% related to the automobile. A couple of auto-body shops, a service station, parts store, and the whole block east of Gower Street, on the south side of Hollywood Boulevard, is a new car dealership. The Henry Fonda Theatre is also on the south side, but west of Gower Street. It is important to note that the Hollywood Walk of Fame does not extend east of Gower Street. Only half of the Walk of Fame sidewalk is disrupted for construction of the pocket track.

Alternative #5 has 47 businesses along the construction site, 29 on the north and 18 on the south side of Hollywood Boulevard. Several residential buildings face Hollywood Boulevard here.

In the Alternative #5 area, west of Western Avenue, the businesses are mostly those that are on the ground floor of a 2- to 4-story apartment building. There are also a few single story retail buildings. These businesses are related more to the neighborhood than to expected tourist traffic.

In the physical count of businesses along Hollywood Boulevard, all actual and potential businesses were included. Though the retail outlet was not currently in use, it represented a potential use. Similarly, businesses now existing may not be existing at the time of construction.

The Hollywood Walk of Fame, which has the bronze and terrazzo panels in the sidewalk, is impacted by construction in all alternatives except Alternative #5. Also, the pocket track construction is entirely within the street right-of-way, so property/business relocation is not required in any alternative.

The City of Los Angeles has indicated a preference for Alternative #5 since it is furthest away from the Hollywood historical district. Alternative #4 is their second preference since it is also outside the historical district, but closer to it. Both of these alternatives involve the least amount of adverse impact to commercial activity along Hollywood Boulevard. The letter from the City of Los Angeles stating their preference is included in the Attachment to this study. Alternatives #1, #2, and #3 would be significantly worse than Alternatives #4 and #5.

The next section addresses all major concerns relating to pocket track selection, and forms the basis for a location recommendation.

VII. TECHNICAL EVALUATION

This section evaluates all alternative pocket track locations based upon the operational, construction, and environmental considerations already identified.

Train control, communications, and Fire/Life Safety concerns do not have any significant influence on pocket track location. Tables 2 and 3 summarize the significant differences between all five alternatives from an operational, construction and environmental (business) standpoint.

A. Evaluation of Alternative #1

Capital costs are approximately equal for all five alternatives, except Alternative #1 which is \$2.85 million dollars (in 1985 dollars) more expensive due to an additional 600 feet of twin tunnel extension of the alignment to accommodate the pocket track.

Construction will cause significant pedestrian circulation restrictions to Mann's Chinese Theater, and impact a total of 27 businesses. More importantly, it will result in poor operational failure recovery ability in the long-term when train service is disrupted due to a train failure or right-of-way incident between Vermont/Sunset and Hollywood/Highland. Single tracking headway times are not adequate to meet required system capacity. The ability to quickly restore train service following an incident on the mainline, as previously discussed, is vital to any rail transit system. Unscheduled turnback operations are best accommodated in this alternative, since all three Hollywood stations are served prior to trains being turned back. In the p.m. peak hour, 1990 transfers to a continuing train are required, assuming half the trains are turned back. These are the fewest transfers of all alternatives. Short-term terminal operations enable service headways to be achieved.

B. Evaluation of Alternative #2

Locating the pocket track east of the Hollywood/Highland Station negatively impacts failure recovery ability of the system in the long term. Single tracking headway times from downtown are increased and restrict the operational capacity of the system by moving the pocket track away from its optimal position at Vine Street.

Unscheduled turnback operations would require 75 additional transfers during the p.m. peak hour compared with Alternative #1.

#1 - HOLLYWOOD/HIGHLAND
WEST END

#2 - HOLLYWOOD/HIGHLAND
EAST END

#3 - HOLLYWOOD/VINE
WEST END

#4 - HOLLYWOOD/VINE
EAST END

#5 - HOLLYWOOD/WESTERN
WEST END

FAILURE RECOVERY

1) SINGLE TRACKING HEADWAY
(Providing bi-directional service on one track)

SHORT TERM:
Fair. Pocket Track will not be used until route is extended beyond Hollywood/Vine Station. Single tracking headways in this alternative and Alternative #2 are longer than in any other alternative. Service headways are not achievable.

LONG TERM:
Poor. Single tracking headway between Vermont/Sunset and Hollywood/Highland is unacceptably long. Required capacity headways cannot be achieved.

SHORT TERM:
Fair. Pocket Track will not be used until route is extended beyond Hollywood/Vine. Single tracking headways in this alternative and Alternative #1 are longer than in any other alternative. Service headways are not achievable.

LONG TERM:
Poor. Single tracking headway between Vermont/Sunset and Hollywood/Highland is long, yet better than headway achieved in Alternative #1. Required capacity headways cannot be achieved.

SHORT TERM:
Good. Use of pocket track and extended tail tracks enables quicker turnaround times at Hollywood/Vine. Service headways cannot be achieved.

LONG TERM:
Excellent. Single tracking headway between Hollywood/Vine and Universal City and Vermont/Sunset is optimized. Required capacity headways are achievable.

SHORT TERM:
Good. Pocket track allows use of both platform tracks at Hollywood/Vine to turn trains back. This results in quicker turnaround times, but service headways cannot be achieved.

LONG TERM:
Fair. Single tracking headway between Hollywood/Vine and Universal City is worse than those achievable in Alternative #3, yet better than maximum headways in Alternatives #1, #2, and #5. Required capacity headways cannot be achieved.

SHORT TERM:
Excellent. Short single tracking headways are achievable between Vermont/Sunset and Hollywood/Western. Service headways can be achieved. Reverse running of trains (against normal direction of traffic) is required between Hollywood/Western and Hollywood/Vine.

LONG TERM:
Poor. Single tracking headway between Hollywood/Western and Universal City is unacceptably long. Required capacity headways cannot be achieved.

2) TURNBACK OPERATION

LONG TERM:
Excellent. Outbound trains from the CBD can be turned around using the pocket track. This will enable trains to return to the CBD earlier when service delays in the outbound direction require increased service. All Hollywood area stations are served with this operation.

LONG TERM:
Good. Outbound trains can be turned around to return to the CBD. Two of the three Hollywood area stations will be served.

LONG TERM:
Good. Outbound trains can be turned around to return to the CBD. Two of the three Hollywood area stations will be served.

LONG TERM:
Fair. Turnback of trains here will not serve two Hollywood area stations.

LONG TERM:
Fair. Turnback of trains here will not serve two Hollywood area stations.

LOCAL/EXPRESS OPERATION

LONG TERM:
Good. Express runs are longest saving express riders more travel time. However, number of express riders is lowest and transfers from express to local are highest.

LONG TERM:
Fair. Deadheading of local trains from the pocket track to Hollywood/Vine is required. Express patronage is lower than Alternative #1. Fewer transfers and greater express patronage occurs than in Alternative #1.

LONG TERM:
Excellent. Local/express operation has significant express patronage, adequately long express run, few required transfers from express to local, and no deadheading of trains required.

LONG TERM:
Poor. Deadheading of local trains from the pocket track to Hollywood/Western is required. Express runs are shortest, similar to Alternative #5, saving express riders less travel time. Number of transfers are fewest similar to Alternative #5.

LONG TERM:
Fair. Express runs are shortest and travel time saved by express riders are smallest. Express patronage is highest, and transfers are fewest.

TERMINAL OPERATIONS

SHORT TERM:
Fair. Trains will need to use the Vermont/Sunset crossover to change tracks. Service headways can be achieved.

SHORT TERM:
Fair. Trains will need to use the Vermont/Sunset crossover to change tracks. Service headways can be achieved.

SHORT TERM:
Good. Train turnaround can be done on pocket track. This requires slightly longer turnaround times than Alternative #4. Service headways can be achieved.

SHORT TERM:
Good. Train turnaround time is shortest of all alternatives. Service headways can be achieved. Imposes a 30 second travel time increase compared with Alternative #3.

SHORT TERM:
Fair. Requires bi-directional movement on both tracks Hollywood/Western and Hollywood/Vine. Service headways can be achieved.

TABLE 2
OPERATIONS EVALUATION MATRIX

MTA
LIBRARY

	#1 - HOLLYWOOD/HIGHLAND WEST END	#2 - HOLLYWOOD/HIGHLAND EAST END	#3 - HOLLYWOOD/VINE WEST END	#4 - HOLLYWOOD/VINE EAST END	#5 - HOLLYWOOD/WESTERN WEST END
1) CONSTRUCTION REQUIREMENTS					
o Depth of Structure	10' more than nominal. Extends twin tunnels 600'.	10' more than nominal	Nominal	Nominal	Nominal
o Capital Cost	Base + \$2.85 million (1985 dollars)	Base	Base	Base	Base
o Staging Areas	Good	Poor	Poor	Good	Poor-Good
o Extent of Utility Support & Relocation	Average	Average	More Than Average (Sewer & 75" Storm Drain)	More Than Average (Sewer & 48" Storm Drain)	More Than Average (Sewer & 51" Storm Drain)
o Traffic Disruption	Hollywood Blvd Only	Hollywood Blvd Only	Hollywood Blvd Cahuenga Blvd Vine St	Hollywood Blvd Gower St	Hollywood Blvd Western Ave.
2) ENVIRONMENTAL ISSUES					
o Short Term Impacts					
- Areas Affected	Hollywood Historic Dist. Mann's Chinese Theater Walk of Fame	Hollywood Historic Dist. Walk of Fame	Hollywood Historic Dist. Walk of Fame	Walk of Fame	Many residential buildings along Hollywood Blvd.
- Businesses Affected	27 Businesses	81 Businesses	79 Businesses (incl. Brown Derby)	29 Businesses	47 Businesses
o City Preference (Subject to capability of system operating effectively)	Undesirable	Undesirable	Undesirable	Acceptable	Preferred

TABLE 3

CONSTRUCTION AND ENVIRONMENTAL EVALUATION MATRIX

Construction impacts to businesses and pedestrian activity are significantly more than Alternatives #1, #4, and #5, as 81 small businesses along the 1050-foot construction area would be disrupted. In addition, the Walk of Fame sidewalk tourist attraction would be impacted over the entire construction length as it would in Alternative #3 but to a lesser extent in Alternatives #1 and #4.

The area between Vine Street and Highland Avenue attracts many tourists and is generally congested. Construction of a pocket track in this area will have a negative impact on pedestrians as well as motorists compared to Alternatives #1, #4, and #5. Both Alternatives #2 and #3 have the greatest construction and environmental impacts.

C. Evaluation of Alternative #3

Alternative #3 is operationally preferred since it enables failure recovery to be achieved faster than any other alternative. Single tracking headways are adequate to meet required capacity headways. Turnback operations are similar to those described in Alternative #2. Local/express operations are accommodated in the long-term better than in any other alternative.

Problems such as the lack of convenient construction staging areas adjacent to the cut-and-cover work exist in both Alternatives #2 and #3. The siting of the pocket track west of Hollywood/Vine Station causes cut-and-cover construction and utility relocations to impact the Hollywood and Vine intersection. Some major utility relocations or support-in-place methods are required.

Again, the small tourist-oriented shops that line both sides of Hollywood Boulevard west of Vine Street will be impacted by the cut-and-cover construction.

There are 79 businesses within the construction area on Hollywood Boulevard of which more than half are tourist oriented. The construction negative impacts would be similar to Alternatives #1 and #2 with respect to congestion, more than in Alternative #1 on small businesses, and the worst of all alternatives with respect to utility relocations.

D. Evaluation of Alternative #4

Locating the pocket track east of the Hollywood/Vine Station has some operational impacts in the long term.

Failure recovery in the long-term is not as effectively accommodated as in Alternative #3. Required capacity headway during single track operations between Hollywood/Vine and Universal City cannot be achieved. Approximately 230 passengers in the peak hour would be delayed by one headway. Unscheduled train turnback operations are not as well accommodated as in Alternative #3 since two Hollywood area stations would not be served by returning trains, requiring an additional 180 passengers on-board to transfer to a continuing outbound train, compared with Alternative #3.

Local/express train operation is not as effectively accommodated as in Alternative #3 since express runs are the shortest (similar to Alternative #5), and train deadheading from the pocket track to Hollywood/Western is required. Short-term terminal operations enable service headways to be achieved.

Construction impacts to the Walk of Fame are reduced by almost 1000 feet. Sites for construction staging adjacent to the work are readily available as compared to Alternatives #2, #3, and #5. The narrowing of Hollywood Boulevard at Gower Street by 10 feet can be accommodated by reducing the width of the temporary sidewalk and therefore not affecting the number of traffic lanes.

Utility interferences are less than in Alternative #3 and only 29 small businesses are impacted as compared to approximately 80 in Alternatives #2 and #3.

E. Evaluation of Alternative #5

Alternative #5 is operationally inadequate for failure recovery in the long-term. Single tracking headways are excessively long between Hollywood/Western and Universal City. Required capacity headways are not achievable here. Unscheduled turnback operations are poorly accommodated as Hollywood/Highland and Hollywood/Vine are not served. As in Alternative #4, 180 additional transfers are required in the p.m. peak hour, compared with Alternative #3. Short-term terminal operations enable service headways to be achieved. An 8-inch sewer and a 51-inch storm drain will require support during construction, and 960 feet of storm drain lines will require temporary relocation and reconstruction. As in Alternative #4, three traffic lane operation will be achievable, but construction will use approximately five feet more of sidewalk on each side of the street. A total of 47 businesses will be adversely impacted from construction.

VIII. CONCLUSION/RECOMMENDATION

This study has examined the operational, construction and environmental impacts of alternative locations for the pocket track planned for Hollywood Boulevard. Analysis has resulted in the following findings:

OPERATIONAL IMPACTS:

The currently planned location at the west end of the Hollywood/Vine station would be most advantageous operationally, showing clear benefits in supporting failure recovery and providing opportunities for improved service at lower cost. The current location was shown to be the only alternative that would enable the Metro to maintain adequate service levels to Hollywood and North Hollywood during a service disruption in the Hollywood area. It will also permit RTD to implement a service plan that includes express service to Hollywood and North Hollywood.

CONSTRUCTION IMPACTS:

Relocation of the pocket track to a location east of the Hollywood/Vine station would benefit construction management by providing better access to strategically located staging areas, and by reducing the cost of utility relocation.

ENVIRONMENTAL IMPACTS:

Relocation of the pocket track to a location east of the Hollywood/Vine station would reduce the amount of cut-and-cover construction in the Historic District of Hollywood. This would in turn reduce the potentially adverse impacts of restricted access on the small tourist-oriented shops in the area (although at the expense of businesses east of Vine Street). Relocation would also reduce the impacts on north-south arterial traffic flow during construction.

While construction of the pocket track at the currently-planned location will impact businesses along a portion of the Historic District and will slow traffic on Vine Street, it is important to note that these are short-term impacts that will occur for a period of approximately two years. On the other hand, the operational impacts of relocating the pocket track will affect the quality of service that can be provided the residents of Hollywood and the San Fernando Valley for the life of the rail line.

The strategic location of the pocket track and of the system's crossovers is critical to the quality of service.

This "special trackwork" enables a rail system to respond to service disruption by permitting trains to run around an unusable section of track. While preventive measures (design-related and procedural) can minimize the possibility of disruption, experience shows that disruptions are nevertheless unavoidable. Other transit systems with reputations for dependability, such as BART, Washington, D.C., and Baltimore, experience service disruptions which require single tracking operation approximately once per week on average. These disruptions are generally due to equipment problems or other external factors (e.g., suicides).

Relocating the pocket track to the east side of the Hollywood/Vine station will, of course, still enable trains to run around a line problem. However, service levels and Valley patrons will experience greater delay as the Metro will lack the capacity to carry these passengers to their destinations. One of RTD's key criteria for service dependability will be violated.

Locating the pocket track at the west end of the Hollywood/Vine station will also be ideal for the operation of an express service to Hollywood and the Valley. The potential benefits of this service are improved travel times to these areas from downtown and the Wilshire District, and a reduction in the cost of operation. Travel times to 7th/Flower downtown from Hollywood/Vine would be reduced to 10 minutes from 13 minutes, a reduction of 23 percent. The more efficient express service also reduces annual operating costs, due to a reduction in the number of car miles.

A pocket track west of Hollywood/Vine would support the express service by enabling RTD to institute a corresponding local service that operates between downtown and the Hollywood/Vine station. Relocating the pocket track would significantly diminish the potential of the express service. Travel time savings on the express trains would be reduced as the express portion of the service would be shortened. Furthermore, the local service would need to terminate at Hollywood/Western, essentially missing downtown Hollywood, a strategic termination point.

In summary, locating the pocket track at the west end of the Hollywood/Vine station will support RTD's objective to design and operate a system that attracts riders with dependable and convenient service. Mitigation of the short-term construction impacts does not warrant the compromises to long-term operational capabilities that would occur with relocation. It is therefore recommended that the pocket track remain on the west end of the Hollywood/Vine station.

ATTACHMENTS

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSPORTATION DEPARTMENT
INTERDEPARTMENTAL MEMORANDUM

DATE: March 31, 1989
TO: J. E. Crawley, Director of Engineering.
FROM: Paul O'Brien *P. O'Brien*
Rail Operations Superintendent, Transportation
SUBJECT: Special Study - Hollywood Area Pocket Track Study

I have received and reviewed the Hollywood Area Pocket Track Study. As the Department that will be operating the rail system, we naturally find Alternative #3 to be far superior to the others. Alternative #2 would be our second choice and Alternative #4 the third choice.

Understanding that construction of the pocket track will be disruptive to business and tourism, the alternative to moving the pocket track is to explore alternate means of construction which would reduce the disruption. The construction impacts are short term but the operating consequences and costs continue in perpetuity.

If, due to the concerns of the city, it is decided to use Alternative #4 the importance of the Universal City interlocking increases greatly. Should single track operation be required, and the Universal City interlocking not be available, the resulting effect on service would be catastrophic.

cc: L. M. Bailey
B. Hanson
W. Springer ✓

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SCRTD - TSD
SYSTEMS DESIGN & ANALYSIS

APR 4 1989

ITEM # 1535
FILE # _____

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SCRTD-TSD
APR 03 1989
COMMUNICATIONS CONTROL

N. Tahir

Councilman Michael W

City of Los Angeles
13th District

*O. Ahi
C. Pen*

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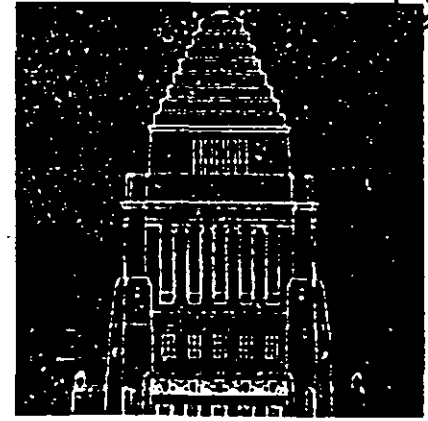
April 20, 1989

APR 24 1989

*F. Hollywood
Hollywood
Pocket
Track Study*

GENERAL MANAGER

Mr. Alan F. Pegg
General Manager
Southern California Rapid
Transit District
425 South Main Street, 6th Floor
Los Angeles, CA 90013



Attention: Mr. Nadeem Tahir

Dear Mr. Pegg:

Thank you for affording my office and other City departments the opportunity to work with your staff in determining the most desirable location for Metro Rail Pocket track facilities in Hollywood.

For reasons more fully detailed in the two enclosures, I concur with the Department of Transportation and the Community Redevelopment Agency that the Metro Rail pocket track for the Hollywood segment should be located on the east end of the RTD-TSD Hollywood and Vine station.

RECEIVED
ASSI. GENERAL MAN

Sincerely,

MAY 03 1989

Michael K. Woo

ITEM # _____
FILE # F/T

MICHAEL K. WOO
Councilman

MKW:PMjc

Enclosures

cc: Mr. Dan Beal
Office of the Chief Legislative Analyst

Mr. Robert Tague
Mr. Cooke Sunoo
Mr. Richard Bruckner
Mr. Steve Andrews
Community Redevelopment Agency

Mr. Ed Rowe
Mr. John Fisher
Department of Transportation

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MAY 03 1989

CORRESPONDENCE
CONTROL

Chair
Governmental Operations Committee

Vice Chair
Planning and Environment Committee

Member
Transportation and Traffic Committee

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(213) 485-3353

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Los Angeles, CA 90027
(213) 485-6471
12229 Ventura Boulevard
Studio City, CA 91604
(818) 989-8059

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

Date: March 29, 1989

To: **PAT**
Councilman Michael Woo
13th Council DistrictFrom: *[Signature]*
S. E. Bove, General Manager
Department of Transportation

Subject: METRO RAIL ON HOLLYWOOD BOULEVARD

We have been in discussion with Pat Michell of your staff and representatives of the CRA and SCRTD regarding the best location for the proposed Metro Rail pocket tracks and Vine Street station along Hollywood Boulevard.

Based on these discussions and review of alternatives, we recommend that you request SCRTD to locate the Vine Street station immediately easterly of Vine Street, rather than within or westerly thereof. In addition, we recommend that they be requested to locate the pocket tracks, which they indicate is necessary for rail operations, adjacent to and easterly of the station. These locations will achieve the following:

- o allow passenger access from the northeast and southeast corners of the Hollywood Boulevard/Vine Street intersection;
- o avoid the historic retail area between Highland Avenue and Vine Street;
- o retain unimpeded northbound and southbound circulation along Cahuenga Boulevard and along Vine Street, which will be critical to accommodating diverted traffic from Highland Avenue when station construction commences at that location.

We understand that the Community Redevelopment Agency is sending you a similar recommendation, based on redevelopment considerations.

JEF:sa
jef2/hometro

cc: Steve Andrews, CRA
Dan Beal, CLA

Councilman Michael Woo
13th District
City of Los Angeles
City Hall, Room 239
200 North Spring Street
Los Angeles, CA 90012

Dear Councilman Woo:

The current plans for the second phase of Metro Rail through Hollywood requires that a 1,000 foot "pocket track" be located along Hollywood Boulevard. Agency staff has been working with SCRTD and City staff to evaluate alternative locations for this facility, and it is our recommendation that the subway's pocket track be located under Hollywood Boulevard east of Vine Street. This location is favored for the following reasons:

1. Construction of the pocket track involves the "cut and cover" construction method requiring approximately two years of street decking. It is our view that of the alternatives examined, construction of a pocket track east of Vine would be least disruptive to commercial activity in Hollywood. Commercial activity along this section of Hollywood Boulevard has less pedestrian oriented retail than the alternative area west of Vine.
2. The cut and cover construction for the pocket track will also likely cause significant traffic impacts, particularly on north-south arterial streets in the vicinity of the construction area. The effectiveness of the Wilcox-Cahuenga one-way couplet, a key element in the proposed Transportation Plan, could be diminished during the two year construction of a west of Vine pocket track. There are similar concerns related to traffic impacts for the pocket track alternatives near Highland Avenue. Of the alternatives reviewed, construction of a pocket track east of Vine would be less disruptive to north-south traffic flow.

We have communicated our preference for an east of Vine pocket track to SCRTD, and it is our understanding that they are now evaluating its effect on Metro Rail train operations.

James M. Davis

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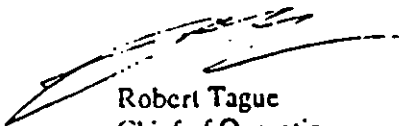
James M. Davis

Councilman Michael Woo
13th District
City of Los Angeles

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Additionally, we have reviewed our recommendation and rationale on a east of Vine pocket track location with the Department of Transportation. We understand they will be sending similar recommendations on this issue.

Sincerely,



Robert Tague
Chief of Operations

cc: P. Michell, CD13
J. Fisher, LADOT
D. Beal, CLA
N. Tahir, SCRTD
C. Sunoo, CRA
R. Bruckner, CRA