



John A. Dyer  
General Manager

July 22, 1986

TO: Board of Directors  
FROM: John A. Dyer  
SUBJECT: PROPOSED METRO RAIL CBD STATION  
CONSTRUCTION BUS ROUTE MAINTENANCE PLAN

#### RECOMMENDATION

It is recommended that the Board of Directors approve the attached proposed Metro Rail CBD Station Construction Bus Route Maintenance Plan. (See Attachment I and Attachment IA.) This plan will impact 38 lines within the LACBD.

#### ALTERNATIVES CONSIDERED

Several alternative routing options were analyzed. This analysis involved the movement of specific line combinations to alternative north/south surface streets between Olive and Main streets. However, the results of this analysis indicated that the studied options did not meet the criteria for plan development as indicated in Attachment II.

#### IMPACT ON BUDGET AND DISTRICT OBJECTIVES

Implementation of the proposed CBD detour plan will result in approximately forty to fifty thousand dollars in additional annual operating mileage costs. These costs would be incurred during each year of the three to four year construction period. The cost during FY 87 will be proportioned to the number of months the plan will be in operation during this year. Implementation of this plan will help meet the District's objective of initiation of Metro Rail construction during this fiscal year.

#### BACKGROUND

Metro Rail construction in the LACBD will begin shortly after successful negotiation of a full funding contract between the District and the Urban Mass Transit Administration (UMTA). The first major contract will be for

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utility relocation at the Fifth and Hill Street Station and will trigger the implementation of this plan. At that time, the Los Angeles Department of Transportation (LADOT) plans to convert Hill Street into one-way southbound operation between Temple and Twelfth streets in order to maintain traffic during construction.

The proposed Metro Station Construction Bus Route Maintenance Plan was developed with LADOT staff to conform with the City's planned conversion of Hill Street into a one-way operation. The plan was also designed to account for other construction projects in the downtown area that are anticipated to occur during the same period as Metro Rail construction. Some of these projects include the reconstruction of Spring Street and Broadway, the construction of Library Square, the Central Library expansion/renovation, and the Long Beach LRT subway construction. This current plan mainly affects north/south lines affected by the Hill Street, and Seventh/Flower station construction. Further plans are being developed to reroute east/west lines affected by the Seventh/Flower station construction and north/south lines affected by conversion of Flower and Figueroa Streets to a one-way pair. Attachment III shows the peak hour bus volume impact on various north/south streets as a result of plan implementation.

The main factors considered in the plan development included the existing street and curb capacities in relation to projected passenger activity, bus volumes, turning restrictions dictated by construction activity, ease of accommodating planned full street closures, and minimizing disruption of existing patrons' travel patterns. Due to the lack of a companion northbound move with southbound Hill Street, and with the temporary unavailability of the Spring Street Contra-Flow Lane due to reconstruction activities, northbound buses on the Broadway/Main Street Corridor may experience some operational difficulties. City staff has committed to providing adequate curb space on Broadway. This will allow the District to accommodate the passenger interface activities through balancing loading zone volumes for passengers and buses.

During certain phases of construction, the intersection of Hill and First streets and Hill and Fifth streets will be closed at night and on weekends. The lines operating through these intersections would be operated as shown in Attachment IV and Attachment IVA.

This plan has been presented to and has the concurrence of the New Services Review Board. Subsequent to the NSRB approval, the Board of Directors approved the cancellation of Lines 421 and 422.

### IMPACT ON PATRONAGE

The proposed Metro Rail CBD Construction Detour Plan would impact approximately 112,000 daily boarding and alighting patrons, 85,000 on Saturday, and 52,000 on Sundays. However, for the vast majority of these patrons, their boarding and alighting activities are only shifted from one to two blocks.

### IMPACT ON COSTS

The total operation cost increase due to additional mileage on affected lines would be about forty to fifty thousand dollars for an entire year. Since the beginning of station construction will occur well into FY 87, the impact on this year's budget should be minimal.

### THREE-TO-FIVE-YEAR IMPACT

The proposed Metro Rail CBD Station Construction Bus Route Maintenance Plan will maintain the viability of the downtown bus network as efficiently as possible during the approximate four-year construction period as well as the other CBD construction projects mentioned previously. In FY 88 and beyond, additional equipment may be required to maintain existing schedules under a "worst case scenario" of downtown congestion. Under these circumstances, an additional 12 to 15 all-day buses could be required to maintain current schedules and layover requirements. These additional buses would add \$3.5 to \$4.5 million in operation costs. Congestion levels will be monitored closely with the LADOT staff. Every effort will be made to reduce the need for additional equipment through schedule adjustments and traffic mitigation measures.

### IMPACT ON EQUIPMENT

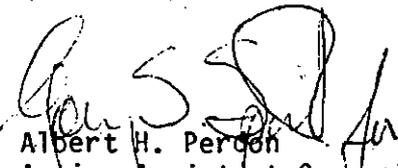
Initially, existing schedules and equipment would remain in place. Running time and congestion levels will then be closely monitored in order to determine schedule adjustments required and possible equipment impacts. Since there will not be a companion northbound move to compensate for southbound only operation on Hill Street, severe congestion could occur on Broadway and Main streets in the area between approximately First and Eighth streets.

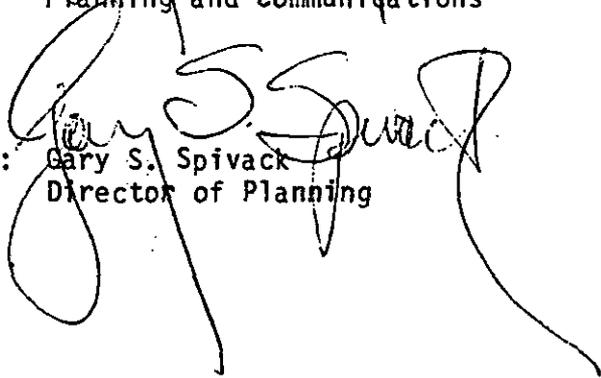
IMPLEMENTATION

With the concurrence of the Board of Directors, this plan will be implemented as soon as work commences on utility relocation work at the Fifth and Hill Street stations, and in conjunction with conversion of Hill Street to one-way southbound operation between Temple and Twelfth streets.

Respectfully,

John A. Dyer

  
By: Albert H. Perdon  
Acting Assistant General Manager  
Planning and Communications

  
By: Gary S. Spivack  
Director of Planning

Attachments



## EXISTING ROUTE -- HOLLYWOOD LOCAL LINES

### LEGEND

- 1 HOLLYWOOD BOULEVARD
- 2,3 SUNSET BOULEVARD
- 4,304 SANTA MONICA BOULEVARD
- 10,11 MELROSE AVENUE
- 14,37 BEVERLY BLVD.-WEST ADAMS BLVD.
- 16 WEST THIRD STREET



# PROPOSED ROUTE — HOLLYWOOD LOCAL LINES

## LEGEND

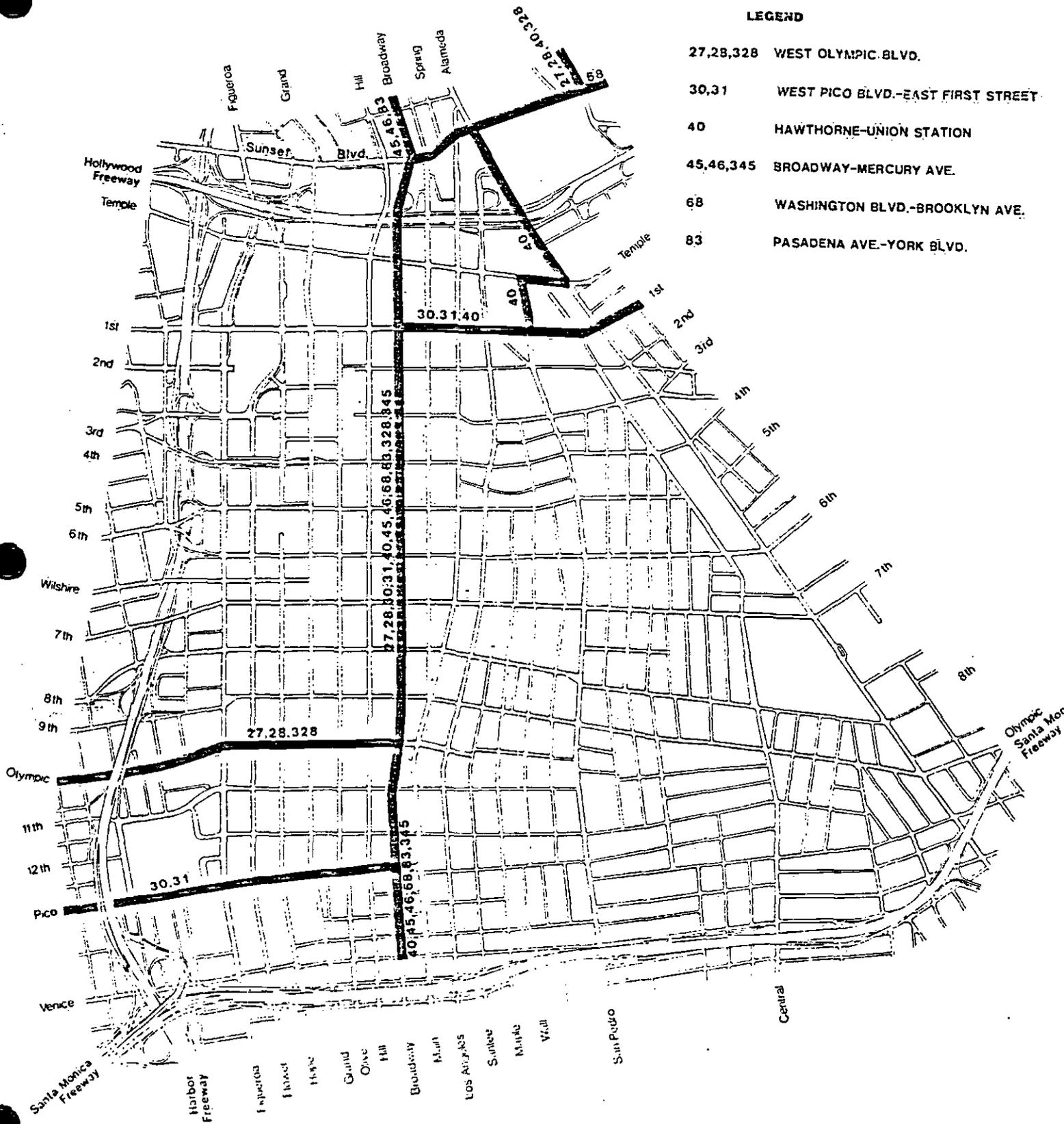
- 1 HOLLYWOOD BOULEVARD
- 2,3 SUNSET BOULEVARD
- 4,304 SANTA MONICA BOULEVARD
- 10,11 MELROSE AVENUE
- 14,37 BEVERLY BLVD.-WEST ADAMS BLVD.
- 16 WEST THIRD STREET



# EXISTING ROUTE — BROADWAY LOCAL LINES

## LEGEND

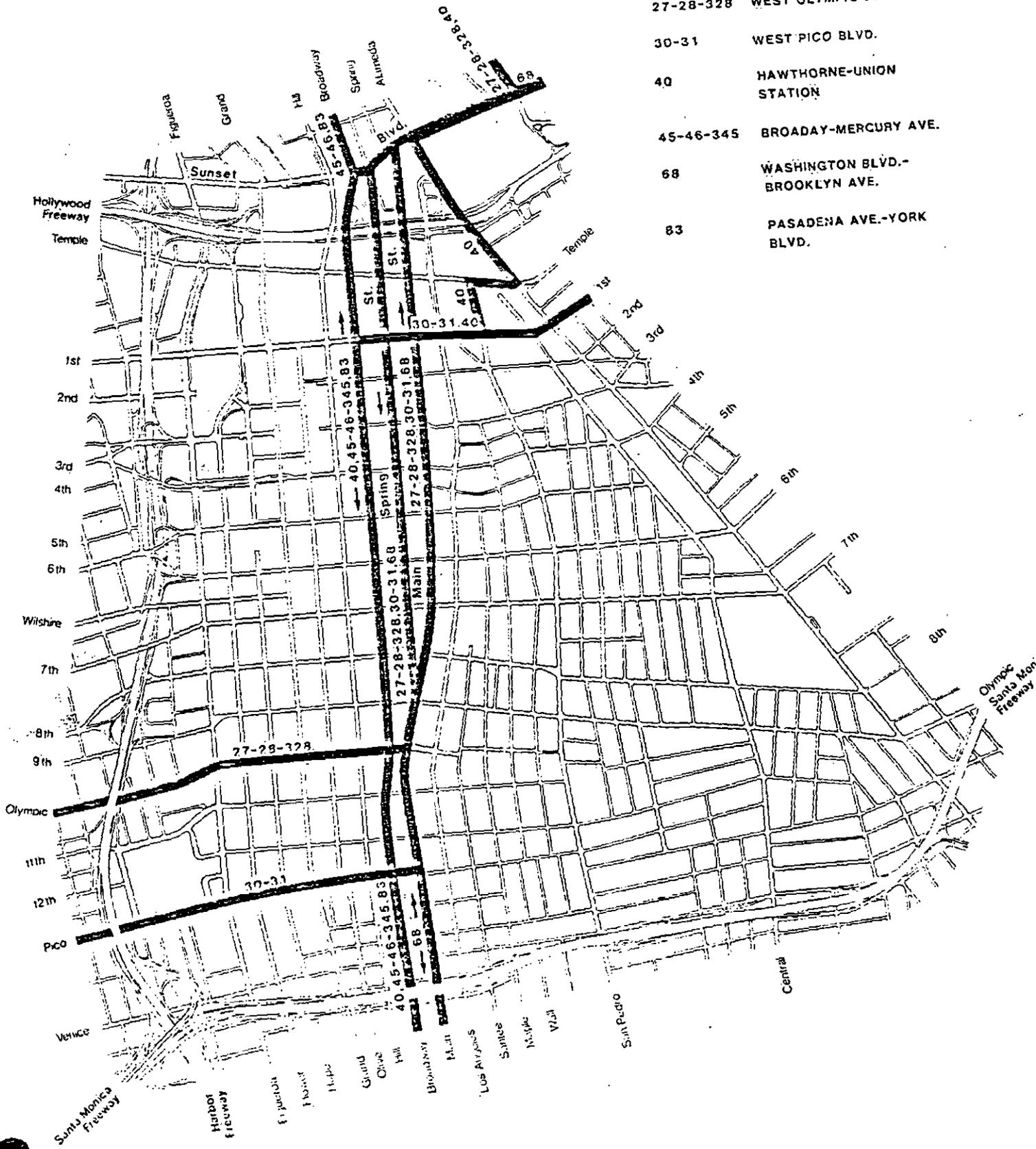
- 27,28,328 WEST OLYMPIC BLVD.
- 30,31 WEST PICO BLVD.-EAST FIRST STREET
- 40 HAWTHORNE-UNION STATION
- 45,46,345 BROADWAY-MERCURY AVE.
- 68 WASHINGTON BLVD.-BROOKLYN AVE.
- 83 PASADENA AVE.-YORK BLVD.



# PROPOSED ROUTE -- BROADWAY LOCAL LINES

## LEGEND

- 27-28-328 WEST OLYMPIC BLVD.
- 30-31 WEST PICO BLVD.
- 40 HAWTHORNE-UNION STATION
- 45-46-345 BROADWAY-MERCURY AVE.
- 68 WASHINGTON BLVD.-BROOKLYN AVE.
- 83 PASADENA AVE.-YORK BLVD.



EXISTING ROUTE -- SAN FERNANDO VALLEY HOLLYWOOD FREEWAY LINES



LEGEND

- 420,421,422 LOS ANGELES-VAN NUYS-NORTHRIDGE EXPRESS
- 423 LOS ANGELES-WOODLAND HILLS-WESTLAKE EXPRESS
- 424,425 LOS ANGELES-VENTURA BLVD. EXPRESS
- 427 LOS ANGELES-TARZANA-WOODLAND HILLS-CANOGA PARK EXPRESS
- 429 LOS ANGELES-SUNSET BLVD.-EXPRESS

## PROPOSED ROUTE — SAN FERNANDO VALLEY HOLLYWOOD FREEWAY LINES

### LEGEND

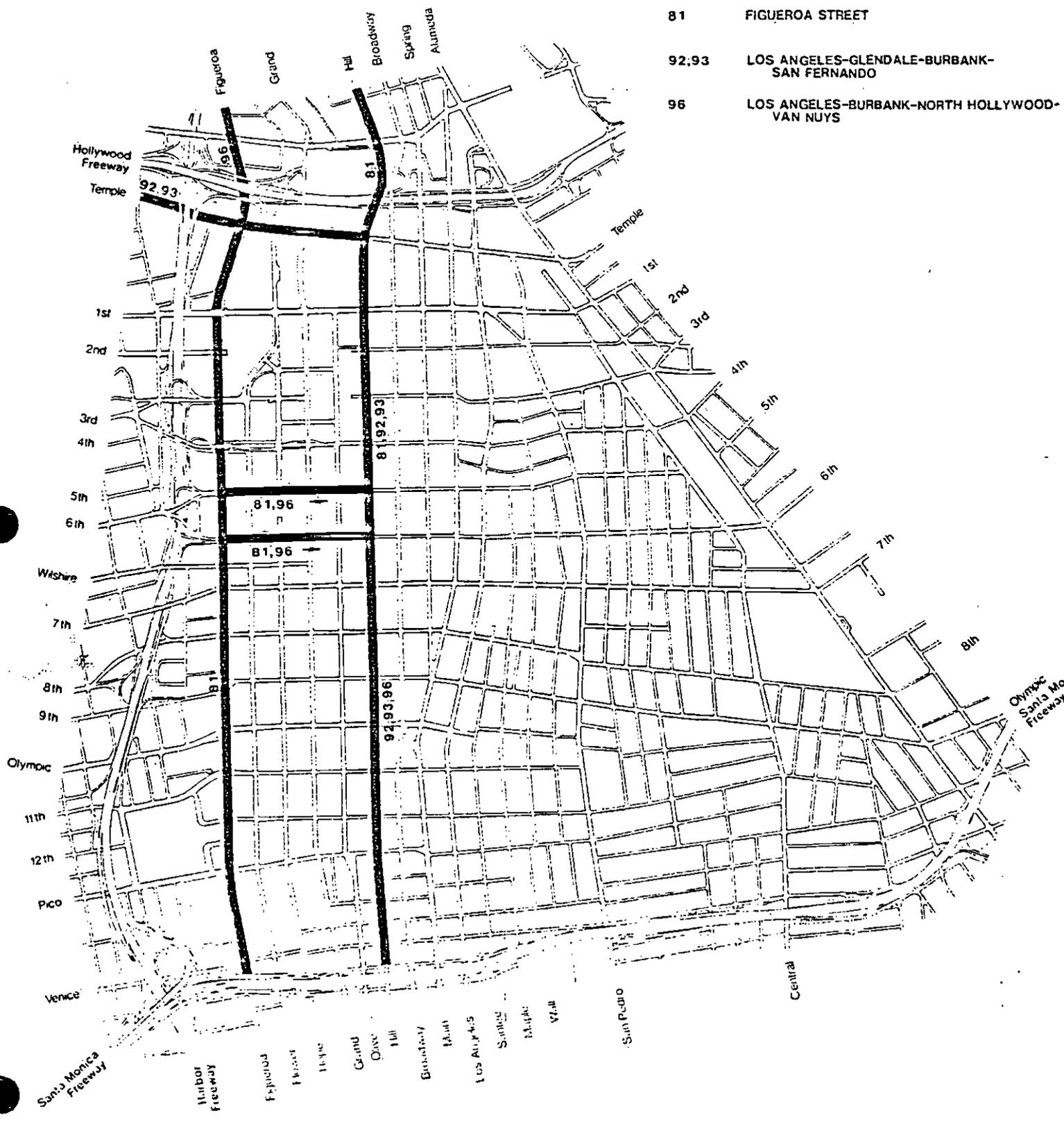
- 420 LOS ANGELES-VAN NUYS-NORTHRIDGE EXPRESS
- 423 LOS ANGELES-WOODLAND HILLS-WESTLAKE EXPRESS
- 424,425 LOS ANGELES-VENTURA BLVD. EXPRESS
- 427 LOS ANGELES-TARZANA-WOODLAND HILLS-CANOGA PARK EXPRESS
- 429 LOS ANGELES-SUNSET BLVD.-EXPRESS



EXISTING ROUTE -- BURBANK, GLENDALE, HIGHLAND PARK LOCAL LINES

LEGEND

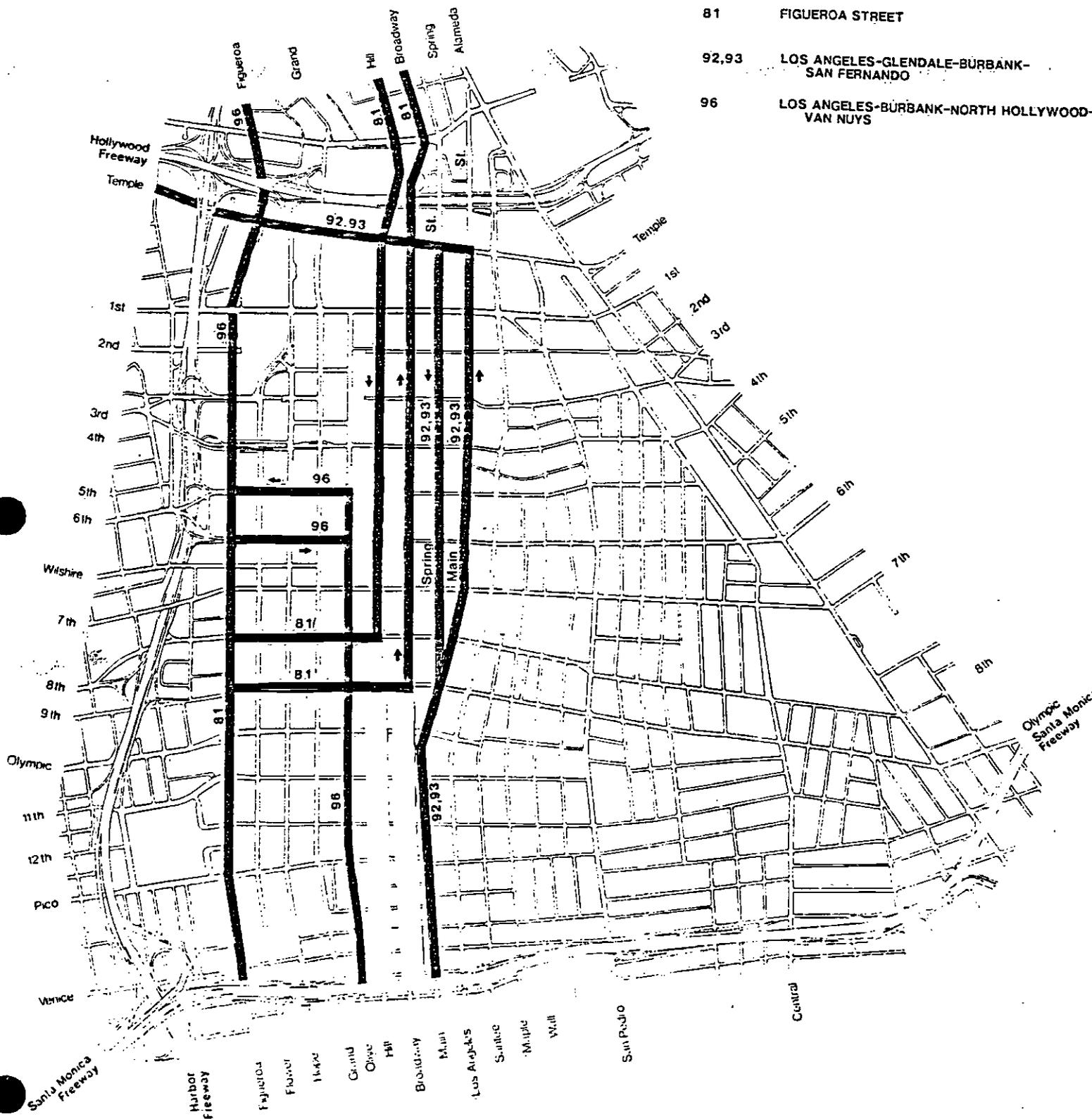
- 81 FIGUEROA STREET
- 92:93 LOS ANGELES-GLENDALE-BURBANK-SAN FERNANDO
- 96 LOS ANGELES-BURBANK-NORTH HOLLYWOOD-VAN NUYS



PROPOSED ROUTE — BURBANK, GLENDALE, HIGHLAND PARK LOCAL LINES

LEGEND

- 81 FIGUEROA STREET
- 92,93 LOS ANGELES-GLENDALE-BURBANK-SAN FERNANDO
- 96 LOS ANGELES-BURBANK-NORTH HOLLYWOOD-VAN NUYS



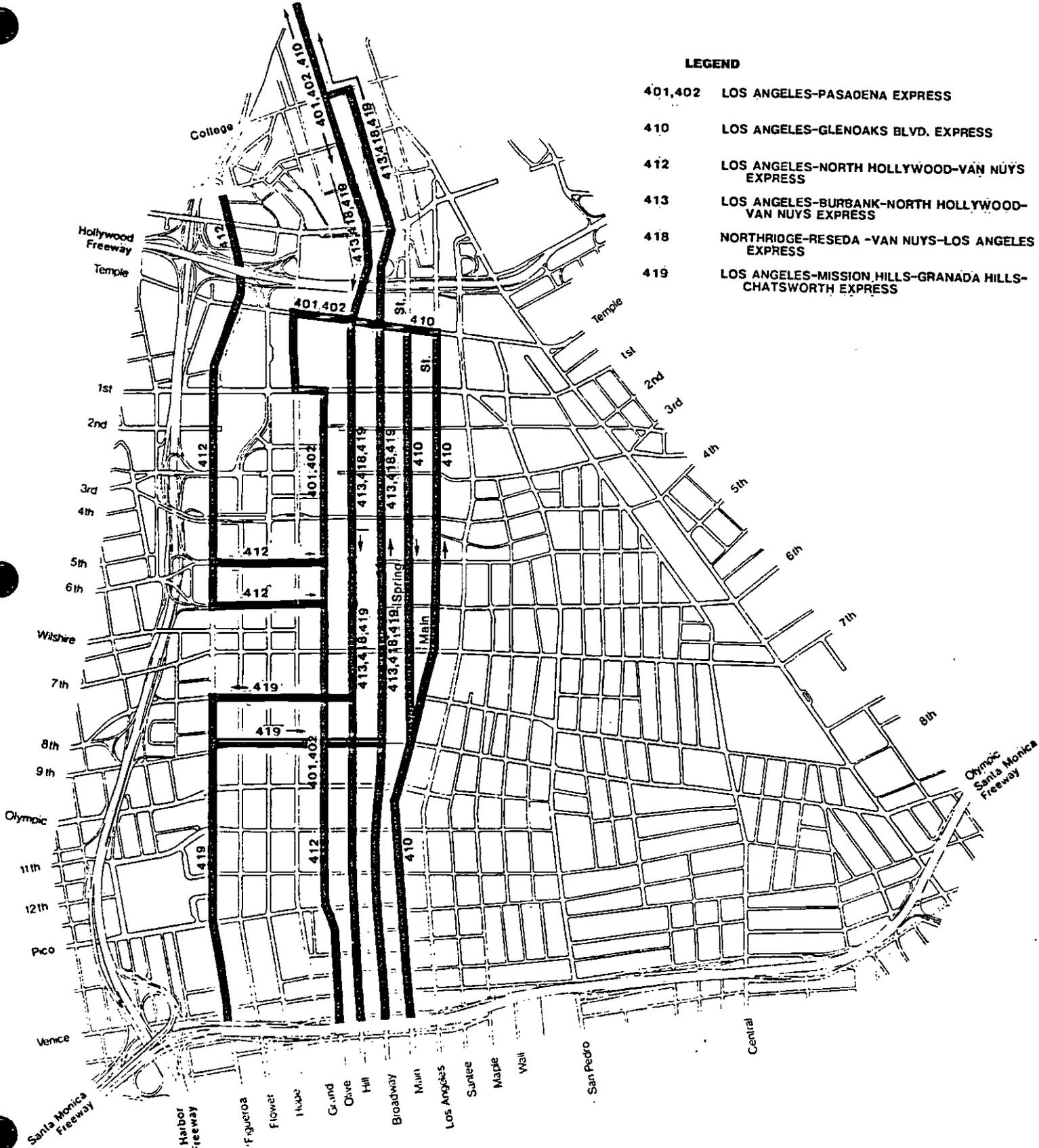
## EXISTING — GOLDEN STATE, PASADENA FREEWAY LINES

### LEGEND

- 401,402 LOS ANGELES-PASADENA EXPRESS
- 410 LOS ANGELES-GLENOAKS BLVD. EXPRESS
- 412 LOS ANGELES-NORTH HOLLYWOOD-VAN NUYS EXPRESS
- 413 LOS ANGELES-BURBANK-NORTH HOLLYWOOD-VAN NUYS EXPRESS
- 418 NORTHRIDGE-RESEDA -VAN NUYS-LOS ANGELES EXPRESS
- 419 LOS ANGELES-MISSION HILLS-GRANADA HILLS-CHATSWORTH EXPRESS



PROPOSED — GOLDEN STATE, PASADENA FREEWAY LINES



LEGEND

- 401,402 LOS ANGELES-PASADENA EXPRESS
- 410 LOS ANGELES-GLENOAKS BLVD. EXPRESS
- 412 LOS ANGELES-NORTH HOLLYWOOD-VAN NUYS EXPRESS
- 413 LOS ANGELES-BURBANK-NORTH HOLLYWOOD-VAN NUYS EXPRESS
- 418 NORTHRIDGE-RESEDA -VAN NUYS-LOS ANGELES EXPRESS
- 419 LOS ANGELES-MISSION HILLS-GRANADA HILLS-CHATSWORTH EXPRESS

PROPOSED ROUTE OF LINE FOR METRO RAIL STATION CONSTRUCTION  
(WITH HILL STREET ONE-WAY SOUTHBOUND FROM TEMPLE TO 12TH)

Hill Street Lines

- 1, 2-3,  
4-304      Northbound - From Terminal 28 via L-18th Street,  
L-Broadway, L-Sunset Boulevard to Grand Avenue and regular  
route.
- Southbound - Via regular route to Sunset Boulevard and  
Grand Avenue, then continue via Sunset Boulevard to R-Hill  
Street transition lane, R-Hill Street to Temple Street and  
regular route.
- 10-11      Northbound - Via regular route to Eighth Street and  
Broadway then R-Broadway, L-Temple Street to Hill Street and  
regular route.
- Southbound - Operate regular route.
- 14-37      Northbound - Via regular route to the confluence of Hill  
and Olive streets, then L-Olive Street, L-First Street and  
regular route.
- Southbound - Via regular route to First and Olive streets,  
then R-Olive Street to the confluence of Olive and Hill  
streets and regular route.
- 16          Northbound - Via regular route to Sixth and Hill streets,  
then continue via Sixth Street to L-Main Street, R-Fourth  
Street and regular route.
- Southbound - Via regular route to Third and Spring streets,  
then L-Spring Street, R-Fifth Street to Hill Street and  
regular route.
- 81          Northbound - Via regular route to Figueroa and Ninth  
streets, then R-Ninth Street, L-Broadway, L-College Street,  
R-Hill Street and regular route.
- Southbound - Via regular route to Hill and Fifth streets,  
then continue via Hill Street to R-Eighth Street, L-Figueroa  
Street and regular route.
- 92-93      Northbound - From Terminal 28 via L-18th Street, L-Main  
Street, L-Temple Street to Hill Street and regular route.
- Southbound - Via regular route to Temple and Hill streets,  
then continue via Temple Street to R-Spring Street, R-17th  
Street to Terminal 28.

- 96-412      Northbound - Via regular route to 17th and Hill streets, then continue via 17th Street to R-Olive Street, L-Fifth Street and regular route.
- Southbound - Via regular route to Sixth and Olive streets, then R-Olive Street, L-18th Street to Terminal 28.
- 401-402      Northbound - Via regular route to Olive and First streets, then L-First Street, R-Grand Avenue, R-Temple Street, L-Hill Street and regular route.
- Southbound - Via regular route to Hill and Temple streets, then R-Temple Street, L-Grand Avenue, L-First Street, R-Olive Street and regular route.
- 410            Northbound - From Terminal 28 via L-18th Street, L-Main Street, L-Temple Street, R-Hill Street and regular route.
- Southbound - Via regular route to Hill and Temple streets, then L-Temple Street, R-Spring Street, R-17th Street to Terminal 28.
- 413-418      Northbound - From Terminal 28 via L-18th Street, L-Broadway, L-College Street, R-Hill Street and regular route.
- Southbound - Operate regular route.
- 419            Northbound Via regular route to Figueroa and Ninth Street, then R-Ninth Street, L-Broadway, L-College Street, R-Hill Street and regular route.
- Southbound - Via regular route to Hill and Fifth streets, then continue via Hill Street to R-Eighth Street, L-Figueroa Street and regular route.
- 420, 424      Northbound - From Terminal 28 via L-18th Street, L-Broadway, L-Temple Street to Hill Street and regular route.
- 425, 429      Southbound - Operate regular route.

423, 427

Northbound - Via regular route to Figueroa and Sixth streets, then continue via Figueroa Street to R-Figueroa Street ramp between Second and First streets, R-First Street, L-Grand Avenue to Temple Street and regular route.

Southbound - Via regular route to the Temple Street off-ramp and Temple Street, then continue via Hope-Flower streets to R-Third Street (immediately after traffic island), L-Figueroa Street to Fifth Street and regular route.

PROPOSED ROUTE OF LINE FOR METRO RAIL STATION CONSTRUCTION  
(WITH HILL STREET ONE-WAY SOUTHBOUND FROM TEMPLE TO 12TH)

Broadway Lines

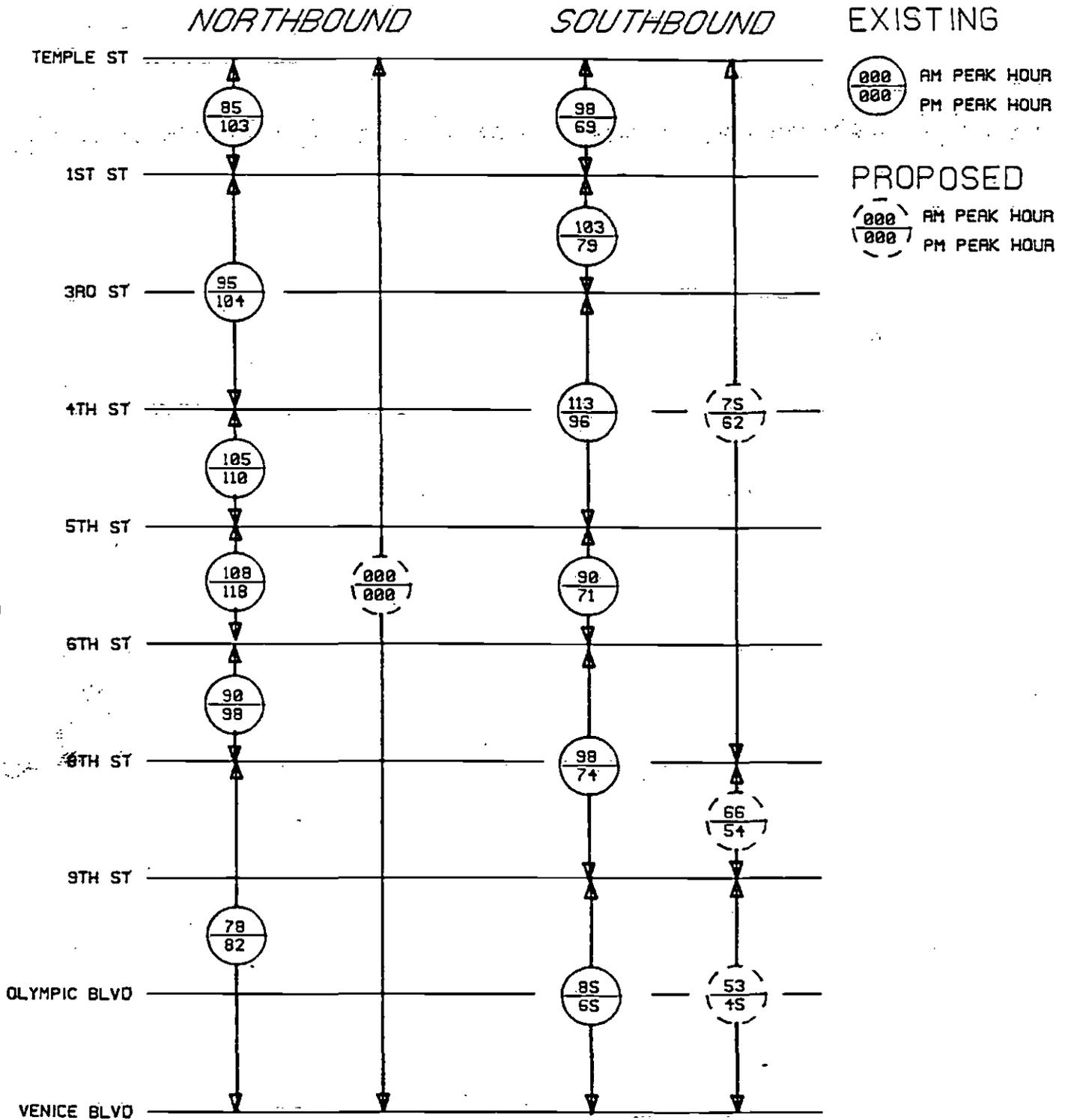
- 27-28-328     Northbound - Via regular route to Olympic Boulevard and Broadway, then continue via Olympic Boulevard to L-Main Street, R-Sunset Boulevard and regular route.
- Southbound - Via regular route to Sunset Boulevard and Spring Street, then L-Spring/Main streets, R-Olympic Boulevard to Broadway and regular route.
  
- 30-31            Northbound - Via regular route to Pico Boulevard and Broadway, then continue via Pico Boulevard to L-Main Street, R-First Street and regular route.
- Southbound - Via regular route to First and Spring streets, then L-Spring/Main streets, R-Pico Boulevard to Broadway and regular route.
  
- 40, 45-46-     Operate regular route in both directions.  
345, 83
  
- 68                Northbound - Via regular route to Washington Boulevard and Broadway, then continue via Washington Boulevard to L-Main Street, R-Sunset Boulevard and regular route.
- Southbound - Via regular route to Sunset Boulevard and Spring Street, then L-Spring/Main streets, R-Washington Boulevard to Broadway and regular route.

CRITERIA

1. Minimize impact to existing patrons.
2. Ensure curb capacity and availability for 3 berth stop zones that will accommodate no more than:
  - (a) 750 boarding passengers/hr or 900 alighting passengers/hr
  - (b) 60-65 buses/hr
3. Minimize turning movements and ensure that required turning movements are made at intersections with at least Level of Service D during peak periods.
4. Consideration for future construction projects in the downtown area.
5. Reduce bus volumes at existing stops on Broadway from 85/hr to 65/hr due to projected increased traffic congestion.
6. Reroute lines as close as possible to anticipated destination areas for majority of patrons.
7. Compatibility for future use of Spring Street contra-flow.
8. Maintain easy pedestrian access to/from bus stops.
9. Operationally compatible to possible future one-way couplet arrangement on Broadway/Hill.
10. Reverse moves on all lines operating on streets with one-way operation will be on adjacent street, if possible, to minimize confusion and inconvenience to patrons.
11. Compatibility with need for full street closures at station sites during nights and weekends.
12. Avoid turning movements within station construction areas.
13. Reduce existing bus volumes through station construction areas.
14. Lines with common trunks and close geographical destinations will have the trunk portion remain on the same street(s).
15. Avoid multiple line changes during various construction phases at station sites or during additional construction activities scheduled to commence within CBD.

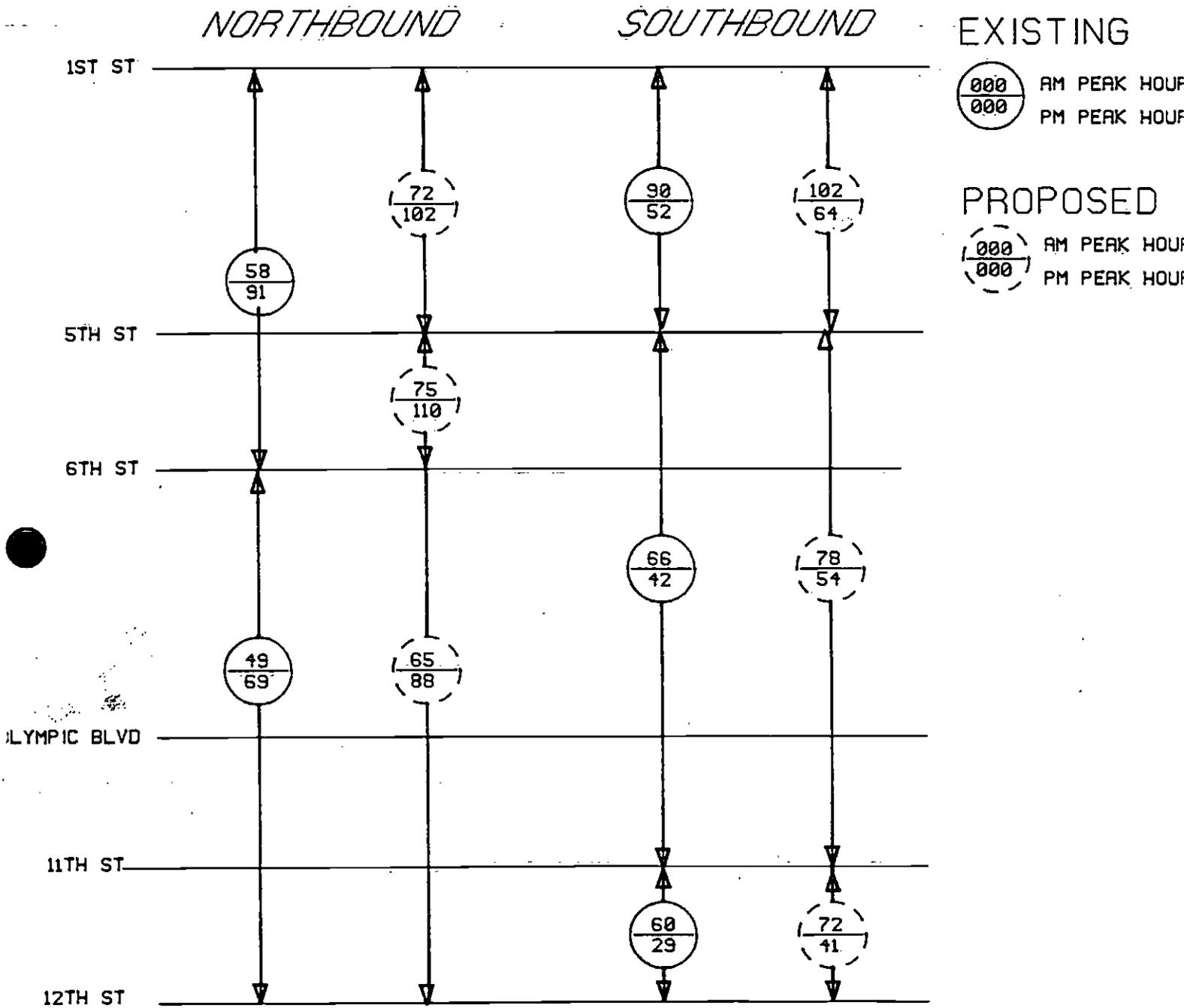
# ATTACHMENT III

## METRO RAIL CONSTRUCTION BUS ROUTE PLAN PEAK HOUR BUS VOLUME IMPACTS HILL ST



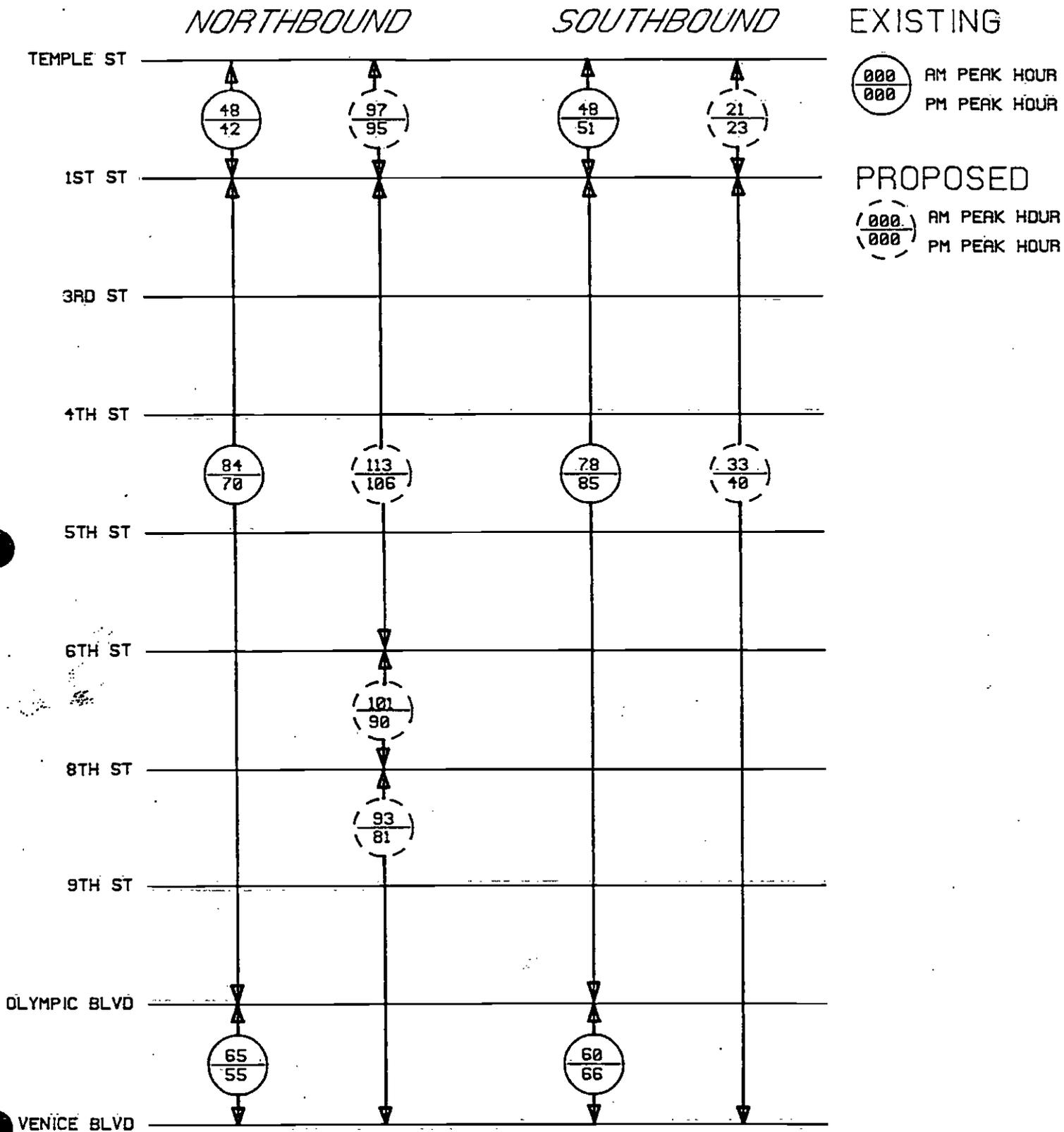
# ATTACHMENT III - 1

## METRO RAIL CONSTRUCTION BUS ROUTE PLAN PEAK HOUR BUS VOLUME IMPACTS OLIVE ST



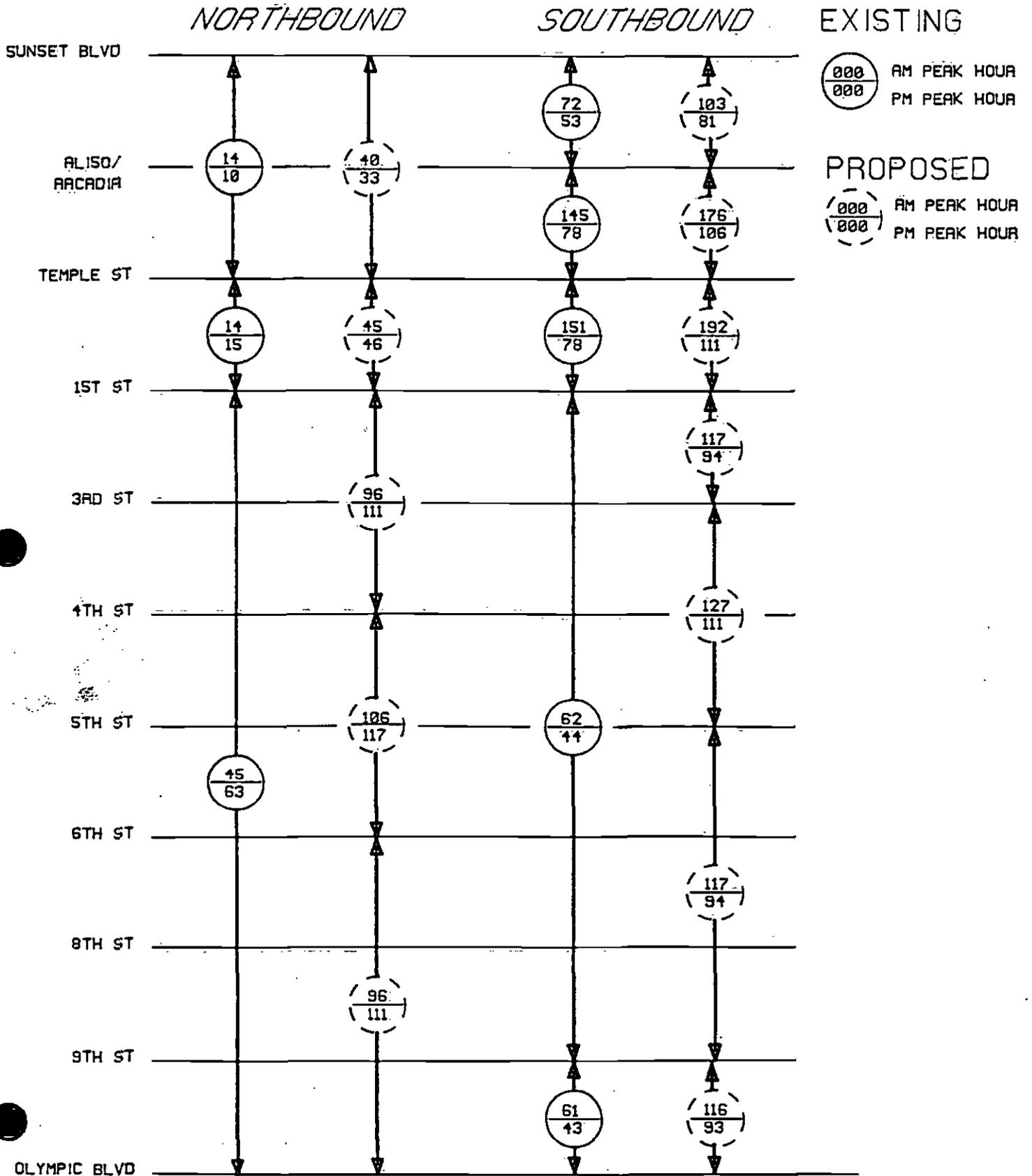
# ATTACHMENT III - 2

## METRO RAIL CONSTRUCTION BUS ROUTE PLAN PEAK HOUR BUS VOLUME IMPACTS BROADWAY



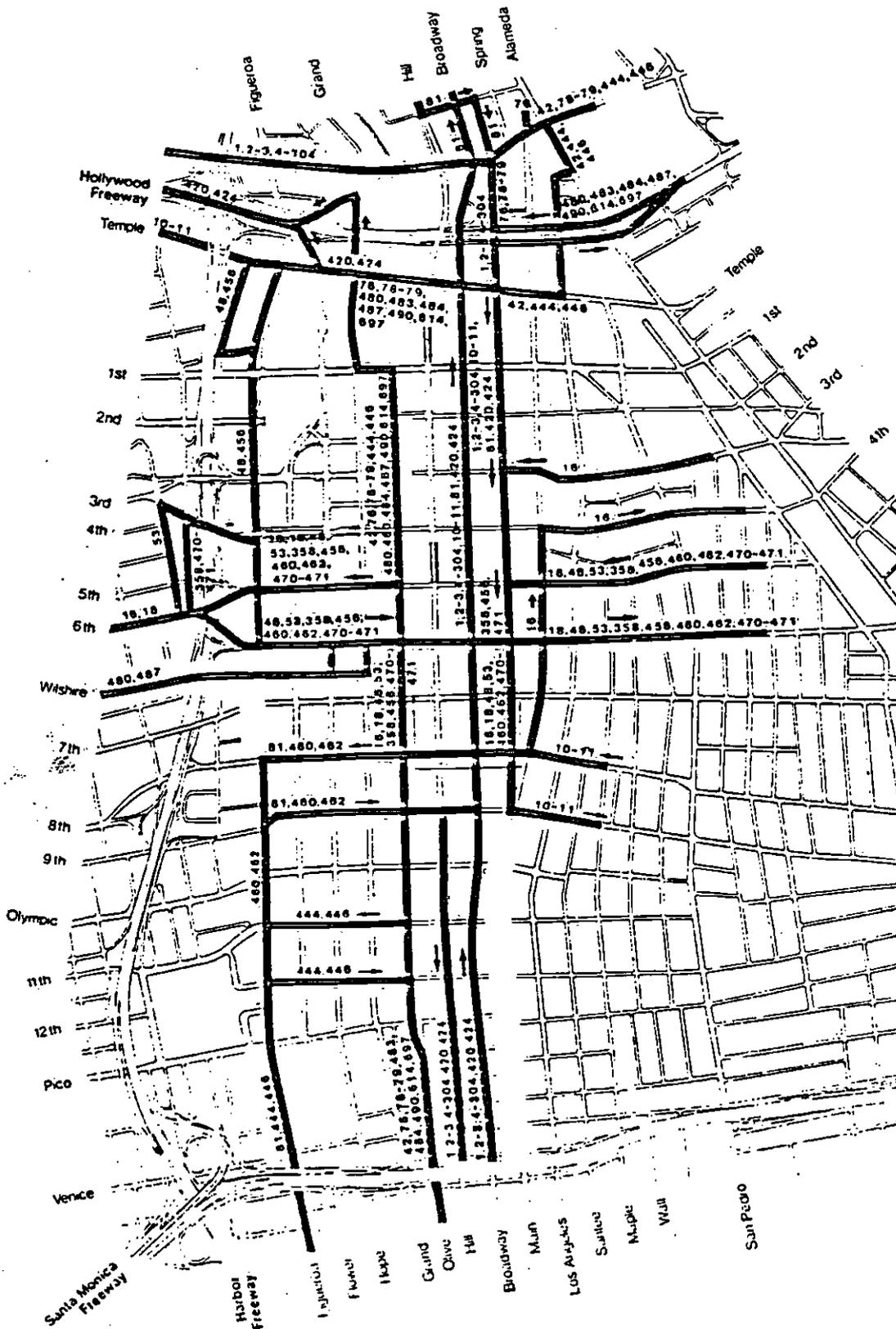
# ATTACHMENT III - 3

## METRO RAIL CONSTRUCTION BUS ROUTE PLAN PEAK HOUR BUS VOLUME IMPACTS SPRING ST/MAIN ST



## PROPOSED NIGHT AND WEEKEND DETOURS

### LEGEND



- 1 HOLLYWOOD BLVD.
- 2-3 SUNSET BLVD.
- 4-304 SANTA MONICA BLVD.
- 10 MELROSE AVE.
- 11 TEMPLE ST.
- 16 WEST THIRD ST.
- 16 WEST SIXTH ST.-WHITTIER E
- 42 LOS ANGELES-WESTCHESTER  
REDONDO BEACH
- 48 MAPLE AVE-SOUTH MAIN ST.
- 53 CENTRAL AVE.
- 78 LOS ANGELES-EL MONTE-VIA  
MAIN ST. -VALLEY BLVD.
- 78 LOS ANGELES-ALHAMBRA-S  
ARCADIA VIA LAS TUNAS DR.
- 79 LOS ANGELES-ARCADIA VIA  
HUNTINGTON DR.
- 81 FIGUEROA ST.
- 358 LOS ANGELES-LYNWOOD LIM
- 420 LOS ANGELES- VAN NUYS-  
NORTHRIDGE EXPRESS
- 424 LOS ANGELES-VENTURA BLV  
EXPRESS
- 444 LOS ANGELES-WEST TORREN  
-ROLLING HILLS-MARINELAND  
EXPRESS
- 446 LOS ANGELES-CARSON-  
WILMINGTON-SAN PEDRO EXP
- 456 LOS ANGELES-LONG BEACH  
FREEWAY EXPRESS
- 460 LOS ANGELES-NORWALK-  
DISNEYLAND EXPRESS
- 462 LOS ANGELES-NORWALK-VIA  
SANTA FE SPRINGS EXPRESS
- 470 LOS ANGELES-WHITTIER-LA )  
EXPRESS
- 471 LOS ANGELES-WHITTIER-PUE  
HILLS MALL
- 480 LOS ANGELES-EL MONTE-WE  
COVINA-POMONA EXPRESS
- 483 LOS ANGELES-ALTADENA- VI  
FAIR OAKS AVE
- 484 LOS ANGELES-EL MONTE-PO  
ONTARIO AIRPORT EXPRESS
- 487 LOS ANGELES-SAN GABRIEL-  
SIERRA MADRE EXPRESS
- 490 LOS ANGELES-EL MONTE-CC  
DIAMOND BAR-BREA MALL E)
- 814 LOS ANGELES-SANTA ANITA  
RACETRACK EXPRESS
- 697 LOS ANGELES POMONA  
FAIRGROUNDS EXPRESS .

## PROPOSED ROUTE OF LINE FOR METRO RAIL STATION CONSTRUCTION

Night and Weekend Detours  
Hill Street Lines

- 1, 2-3, 4-304      Northbound - From Terminal 28 via L-18th Street, L-Broadway, L-Sunset Boulevard to Grand Avenue and regular route.
- Southbound - Via regular route to Sunset Boulevard and Grand Avenue, then continue via Sunset Boulevard to R-Spring Street, R-Eighth Street, L-Hill Street to Terminal 28.
- 10-11      Northbound - Via regular route to Eighth Street and Broadway, then R-Broadway, L-Temple Street to Hill Street and regular route.
- Southbound - Via regular route to Temple and Hill streets, then continue along Temple Street to R-Spring Street, L-Ninth Street and regular route.
- 16      Northbound - Via regular route to Sixth and Hill streets, then continue via Sixth Street to L-Main Street, R-Fourth and regular route.
- Southbound - Via regular route to Third and Spring streets, then L-Spring Street, R-Eighth Street, R-Olive Street, L-Fifth Street and regular route.

## PROPOSED ROUTE OF LINE FOR METRO RAIL STATION CONSTRUCTION

Night and Weekend Detours  
Hill Street Lines

- 81            Northbound - Via regular route to Figueroa and Ninth streets, then R-Ninth Street, L-Broadway, L-College Street, R-Hill Street and regular route.
- Southbound - Via regular route to Hill and Ord streets, then L-Ord Street, R-New High/Spring streets, R-Eighth Street, L-Figueroa Street and regular route.
- 420, 424     Northbound - From Terminal 28 via L-18th Street, L-Broadway, L-Temple Street to Hill Street and regular route.
- Southbound - Via regular route to Temple and Hill streets, then continue via Temple Street to R-Spring Street, R-Eighth Street, L-Hill Street to Terminal 28.

## PROPOSED ROUTE OF LINE FOR METRO RAIL STATION CONSTRUCTION

Night and Weekend Detours  
First Street Lines

42, 444, 446 Northbound - Via regular route to Olive and First streets, then L-First Street, R-Grand Avenue, R-Temple Street, L-Los Angeles Street and regular route.

Southbound - Via regular route to Los Angeles and Temple streets, then R-Temple Street, L-Grand Avenue, L-First Street, R-Olive Street and regular route.

76, 78-79,  
480, 483-  
485, 484,  
487, 490,  
614, 697 Eastbound - Via regular route to Olive and First streets, then L-First Street, R-Grand Avenue, R-Temple Street, L-Spring Street and regular route.

Westbound - Via regular route to Spring and Temple streets, then R-Temple Street, L-Grand Avenue, L-First Street, R-Olive Street and regular route.

## PROPOSED ROUTE OF LINE FOR METRO RAIL STATION CONSTRUCTION

Night and Weekend Detours  
Fifth Street Lines18, 48, 53  
358, 456,  
470-471Eastbound - Operate regular route.Westbound - Via regular route to Fifth and Spring streets,  
then L-Spring Street, R-Eighth Street, R-Olive Street,  
L-Fifth Street and regular route.

460, 462

Eastbound - Operate regular route.Westbound - Via regular route to Fifth and Spring streets,  
then L-Spring Street, R-Eighth Street, L-Figueroa Street and  
regular route.