

LA Metro
One Gateway Plaza
M.S. 99-22-5
Los Angeles, CA 90012



TREE INVENTORY

FEBRUARY 29, 2016

East San Fernando Valley Transit Corridor Study Draft EIS/EIR



TABLE OF CONTENTS

Contents

Introduction _____	1
background _____	1
Methodology _____	1
Field investigation _____	3
Executive Summary _____	4
Observations _____	4
Findings _____	5
Company/Contact Information _____	8
APPENDIX _____	9
A. Tree inventory Report _____	9
B. CE Alignment Design Drawings _____	9

TABLE OF CONTENTS

Abbreviations

2008 RCP	2008 Regional Comprehensive Plan
2012 RTP	2012–2035 Regional Transportation Plan/Sustainable Communities Strategy
AA	Alternatives Analysis
BRT	bus rapid transit
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CPA	Community Plan Area
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
FTA	Federal Transit Administration
Growth Vision	2004 Compass Blueprint Growth Vision
HOV	high-occupancy vehicle
I	Interstate [I]
LADOT	Los Angeles Department of Transportation
LRT	light rail transit
LRTP	Long-Range Transportation Plan
Metro	Los Angeles County Metropolitan Transportation Authority
MPO	Metropolitan Planning Organization
MSF	maintenance and storage facility
NEPA	National Environmental Policy Act
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SCAG	Southern California Association of Governments
SR	State Route
TSM	Transportation System Management
U.S.C.	United States Code

TABLE OF CONTENTS

East San Fernando Valley Transit Corridor Project Area



INTRODUCTION

Introduction

BACKGROUND

The Federal Transit Administration (FTA) and Los Angeles County Metropolitan Transportation Authority (Metro) have initiated a Draft Environmental Impact Statement (DEIS)/Environmental Impact Report (DEIR) for the East San Fernando Valley Transit Corridor Project (Project). The DEIS/DEIR is being prepared with the FTA as the Lead Agency under the National Environmental Policy Act (NEPA) and Metro as the Lead Agency under the California Environmental Quality Act (CEQA).

The following six alternatives, including four build alternatives, a TSM Alternative, and the No-Build Alternative, are being evaluated as part of this study:

- No-Build Alternative
- TSM Alternative
- Build Alternative 1 – Curb-Running BRT Alternative
- Build Alternative 2 – Median-Running BRT Alternative
- Build Alternative 3 – Low-Floor LRT/Tram Alternative
- Build Alternative 4 –LRT Alternative

All build alternatives would operate over 9.2 miles, either in a dedicated bus lane or guideway (6.7 miles) and/or in mixed-flow traffic lanes (2.5 miles), from the Sylmar/San Fernando Metrolink station to the north to the Van Nuys Metro Orange Line station to the south, with the exception of Build Alternative 4 which includes a 2.5-mile segment within Metro-owned railroad right-of-way adjacent to San Fernando Road and Truman Street and a 2.5-mile underground segment beneath portions of Panorama City and Van Nuys.

On June 25, 2015, Metro meet with representatives from KOA and ICF to discuss the need to identify any street trees that could be impacted by advanced utility work, construction activities, and sidewalk and roadway modifications for each alternative. It was determined that a general Tree Inventory would be conducted by Metro and disclosed in the DEIS/DEIR to better inform stakeholders, the public, and decision makers of the trees that could be removed by one of the four build alternatives.

METHODOLOGY

Metro conducted a Tree Inventory along the 9.2 mile project alignment within the Cities of Los Angeles and San Fernando. A combination of drive by window surveys, walking, and aerial mapping were used to conduct estimated tree counts. Trees within each City's owned right-of-way open and available for inspection were counted and included in aerial

INTRODUCTION

maps in the attached Tree Inventory Report (see Appendix A). To determine the amount of potentially impacted trees for each alternative, the tree inventory was compared to the areas of sidewalk and roadway modifications identified in the Conceptual Engineering (CE) Alignment Design Drawings prepared by KOA (see Appendix B).

General sizes for the impacted trees were also evaluated and placed in the following categories.

- Small: \leq 5ft tall and/or observed to be newly plated
- Medium: Between 5ft -15ft and/or observed to be around 3-7 years in age
- Large: \geq 15ft and/or observed to be mature (large trunk and/or Canopy) and over 7-years

SMALL



MEDIUM



LARGE



SOURCE: METRO, 2015

For Real Estate Acquisition, Railroad Right-of-Way, or areas not accessible by field observation, no tree inventory was conducted.

Prior to construction of any alternative, however, an arboricultural inventory and evaluation tree report would need to be prepared, by a qualified arborist, for the project and approved by each City. Trees approved for removal (or replacement) shall be done in accordance to the specifications outlined in City of Los Angeles Tree Ordinance 177404

INTRODUCTION

and City of San Fernando Comprehensive Tree Management Program Ordinance (Ordinance No. 1539).

For more information on the types of trees in the study, including heritage trees, please see the East San Fernando Valley Transit Corridor *Ecosystems/Biological Resource Impacts Report*, prepared by [REDACTED] in [REDACTED] in Appendix [REDACTED] of this Draft EIS/EIR.

FIELD INVESTIGATION

A site visit was conducted between 9:30 a.m. and 3:30 p.m. on June 30, 2015, between 9:30 a.m. and 3:30 p.m., and on July 14, 2015 between 11:45 a.m. and 4:30 p.m., by a Metro Urban/Transportation Planner and Summer Intern. Visibility was good for all days of the site visits.

The site visit focused on conducting an inventory of all trees located on sidewalks and medians along Van Nuys Boulevard and San Fernando Road. The effort included hand mapping the location of trees, documenting the general size (small, medium, and large) of trees, and taking photos of different trees along the 9.2 mile alignment.



EXECUTIVE SUMMARY

Executive Summary

OBSERVATIONS

The entire 9.2 mile alignment within the Cities of Los Angeles and San Fernando right-of-way was open and available for inspection, with the exception of two locations where construction activities prevented access. No trees were present at either of the locations.

A wide variety of trees were observed in size, age, and species. In the Civic Center along Van Nuys Boulevard between the Metro Orange Line and Sherman Way, a concentration of mostly large palms 30-60 feet in height lined the sidewalks. At the Malls in Panorama City and at Roscoe/Chase, very large mature trees with large canopies lined the streets. Just north to the I-5 interchange, larger growth trees and a variety of small to median trees were observed. In the Pacoima area to San Fernando Road, trees were small to median sized and scattered further apart than other areas. Along the San Fernando Railroad Tracks between Van Nuys Boulevard and the San Fernando Road/Truman Street split, small newly planted trees aligned the Class I Bicycle Path were observed. In the City of San Fernando's downtown, a centralized concentration of large mature trees were observed. In addition, three large median landscaped planter that housed medium to large trees were also observed. Below is an example of one located just north of Sherman Way.



EXECUTIVE SUMMARY

The locations and impacted trees evaluated as part of this report are included in figures 2-1 through 2-12 in Appendix A. A summary of the impacted trees are discussed in the next section.

FINDINGS

Approximately 1,141 trees were counted. Of the 1,141 trees, 884 (77%) were located in the City of Los Angeles and 257 (23%) in the City of San Fernando.

No-Build

The No-Build Alternative would have no impact to street trees.

TSM Alternative

The TSM Alternative would have no impact to street trees.

Alternative 1 - Curb-Running BRT Alternative

The Curb-Running BRT Alternative would have no impact to street trees.

Alternative 2 – Median-Running BRT

The Median-Running BRT Alternative would potently impact 77 (7%) of the street trees.

Alternative 3 – Low-Floor LRT/Tram

The Low-Floor LRT/Tram Alternative would potently impact 386 (34%) of the street trees.

Alternative 4 –LRT

The LRT Alternative would potently impact 141 (12%) of the street trees.

A breakdown of the tree counts and impacted trees for each alternative are included in Tables 1-1 and 1-2.

EXECUTIVE SUMMARY

Table 1-1: Tree Inventory - Counts

Locations	Total Trees	Impacted Trees			
		Alt 1	Alt 2	Alt 3	Alt 4
City of Los Angeles	884	0	77	167	141
City of San Fernando	257	0	0	219	0
TOTAL	1141	0	77	386	141

It should be noted, that the Low-Floor LRT/Tram Alternative is the only alternative that impacts trees in the City of San Fernando. This could be because the Alternative's amount of stations (28) compared to the other Alternatives (14, 17, and 18), the alignment the runs along San Fernando Road through City of San Fernando, and the extensive roadway reconfiguration that would be required. 84 percent of the trees inventoried in the City are impacted by Alternative 3.

Table 1-2: Tree Inventory – Percentages

Locations	Total Trees	Impacted Trees			
		Alt 1	Alt 2	Alt 3	Alt 4
City of Los Angeles	77%	0%	9%	19%	16%
City of San Fernando	23%	0%	0%	85%	0%
TOTAL	100%	0%	7%	34%	12%

As shown in Table 1-3, Alternatives 2, 3, and 4 would impact a large percentage of medium and large trees. For large trees, the Median-Running BRT Alternative impacts 37 (48%), the Low-Floor LRT/Tram Alternative impacts 180 (47%), and the LRT Alternative impacts 75 (53%) of the street trees inventoried.

Table 1-3: Tree Inventory – Size

Size	Impacted Trees			
	Alt 1	Alt 2	Alt 3	Alt 4
Small	0	4	82	11
Medium	0	36	124	55
Large	0	37	180	75
TOTAL	0	77	386	141

EXECUTIVE SUMMARY

It should be noted that Alternative 4 – LRT could impact trees within the 2.5 mile of the San Fernando Railroad Right-of-Way. In addition, both Alternatives 3 and 4 could have additional impacts to trees from Right-of-Way Acquisition. As mentioned earlier, no tree inventory was conducted for Real Estate Acquisition, in the Railroad Right-of-Way, or areas not accessible by field observation.

The No-Build, TSM and Curb-Running BRT Alternatives would have no impacts to trees.

COMPANY/CONTACT INFORMATION

Company/Contact Information

Ryan Greenway

LA Metro

Transportation Planning Manager, Transit Corridors

Deputy Project Manager, ESFV Transit Corridor Project

213.922.6871

metro.net | facebook.com/losangelesmetro | @metrolosangeles

Metro provides excellence in service and support

APPENDIX

APPENDIX

- A. TREE INVENTORY REPORT
- B. CE ALIGNMENT DESIGN DRAWINGS



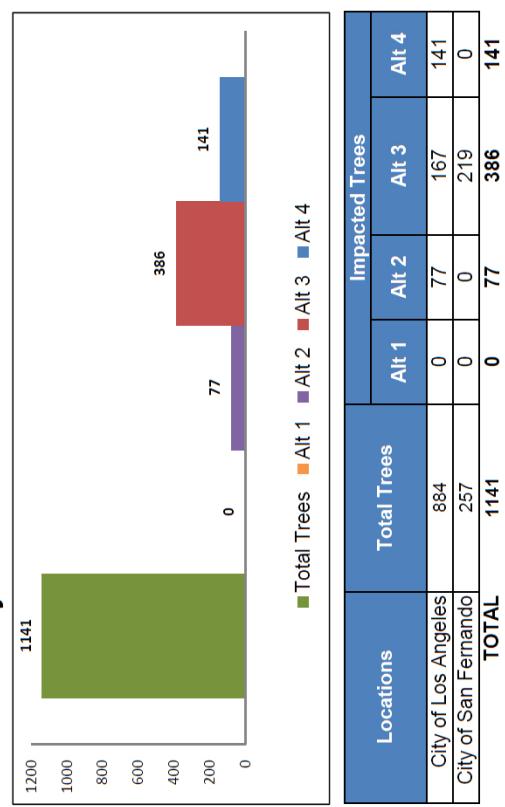
APPENDIX A

ESFV Transit Corridor Project

Tree Inventory



Tree Inventory - Counts



Tree Inventory - Size

Small Medium Large



Source: Metro, 2015

Figure 2-1: Van Nuys Boulevard - MOL to Hartland

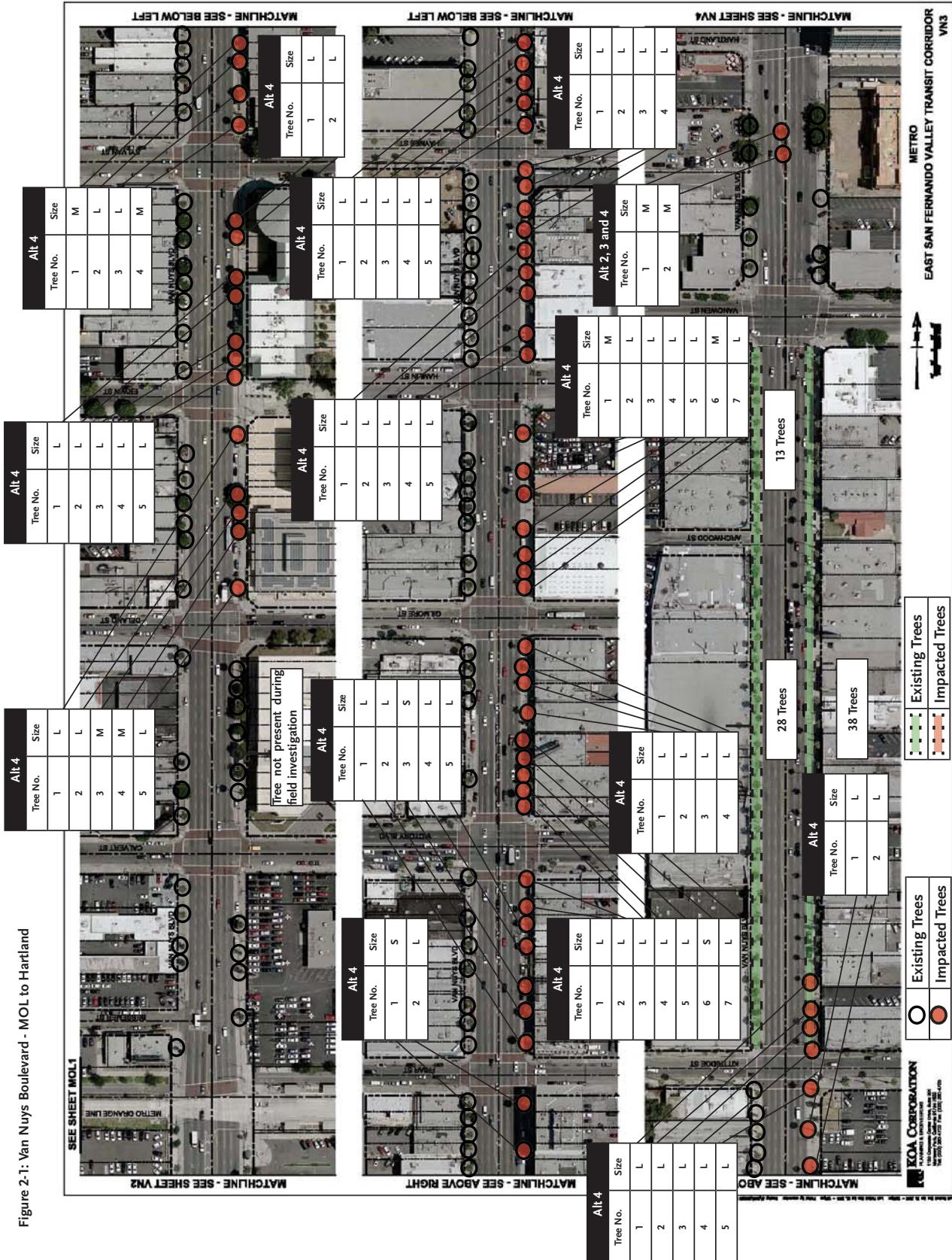


Figure 2-2: Van Nuys Boulevard - Hartland to Saticoy



Figure 2-3: Van Nuys Boulevard - Keswick to Chase

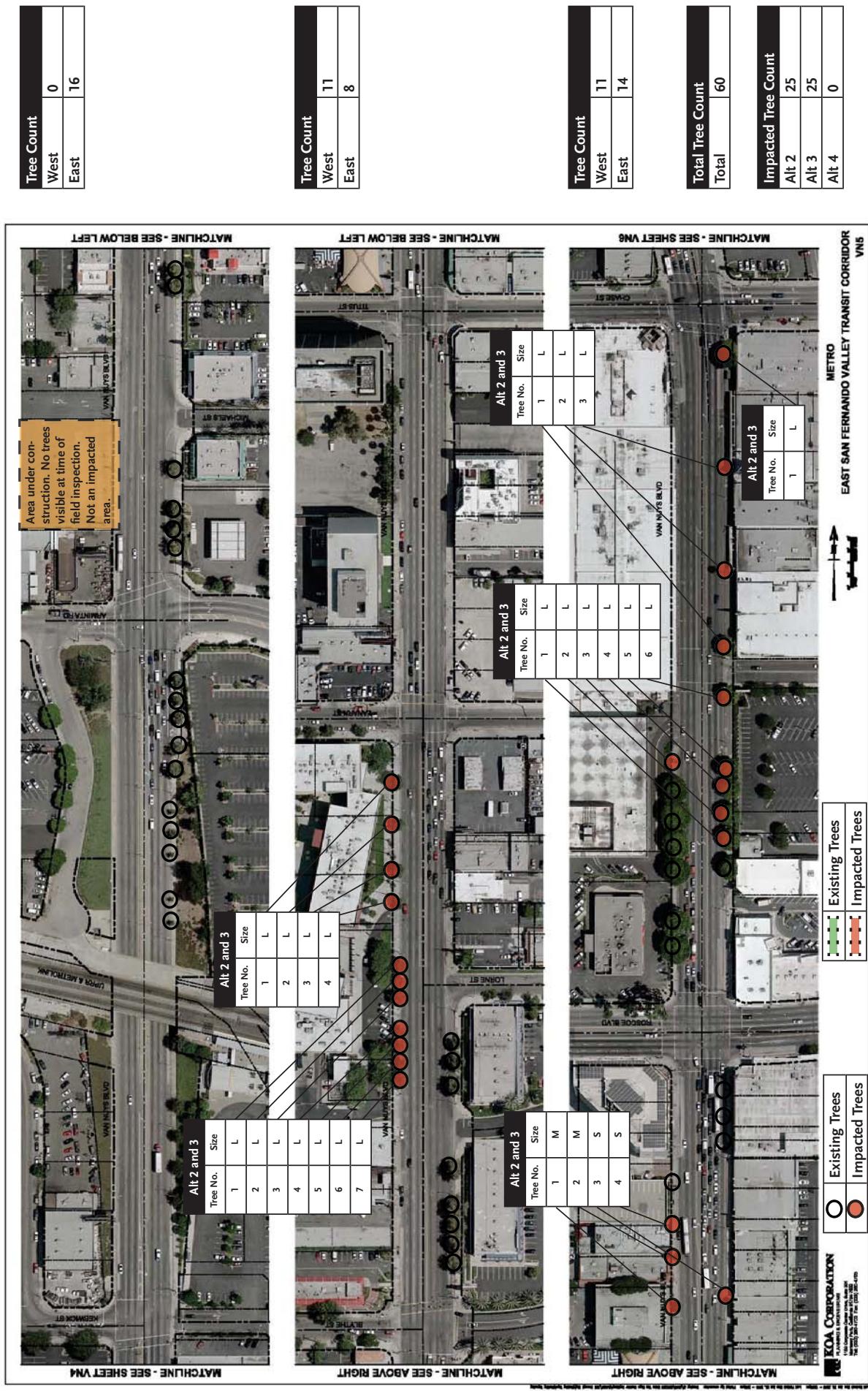


Figure 2-4: Van Nuys Boulevard - Chase to Nordhoff

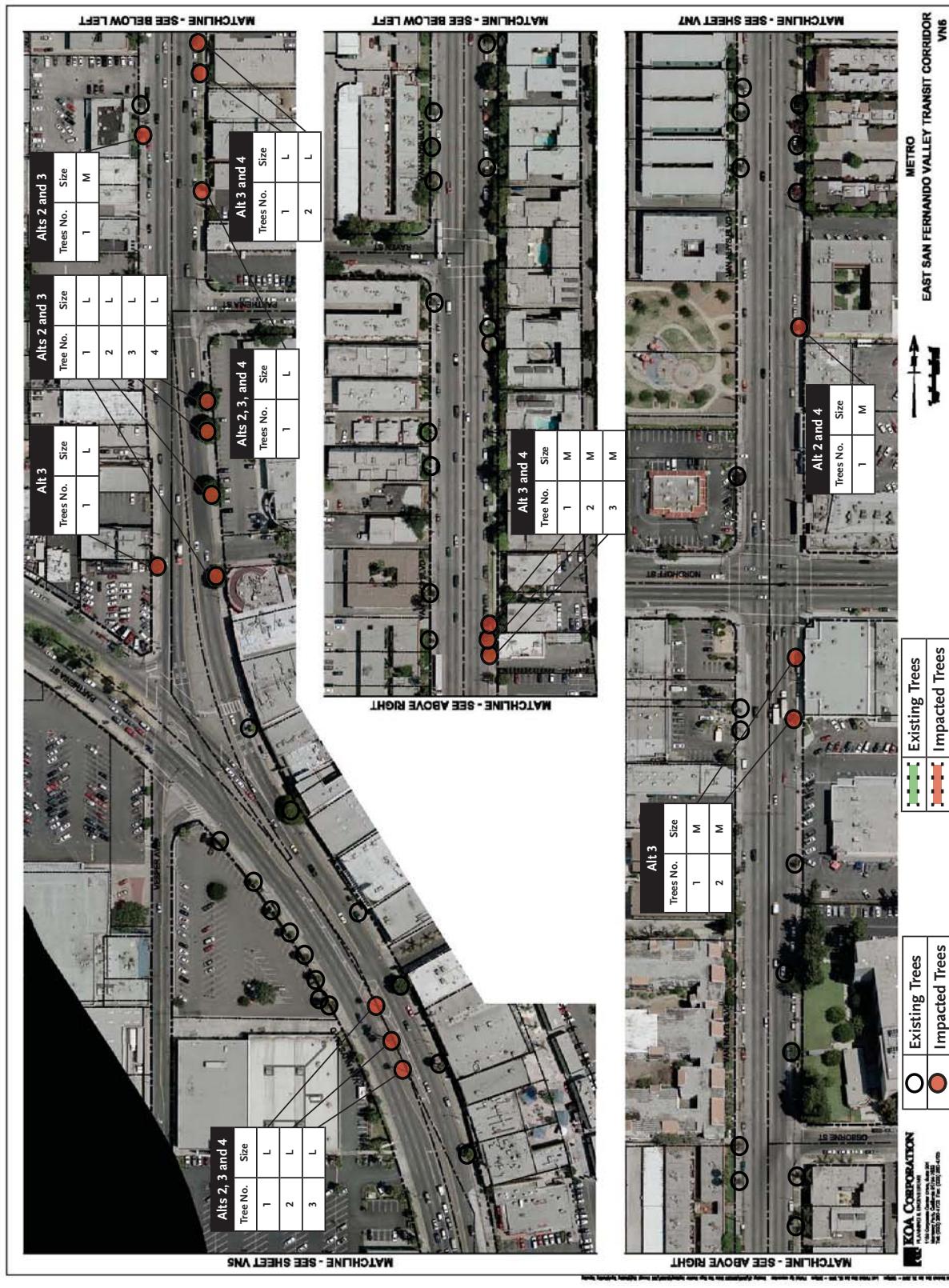


Figure 2-5: Van Nuys Boulevard - Tupper to Canterbury



Figure 2-6: Van Nuys Boulevard - Canterbury to Laurel Canyon

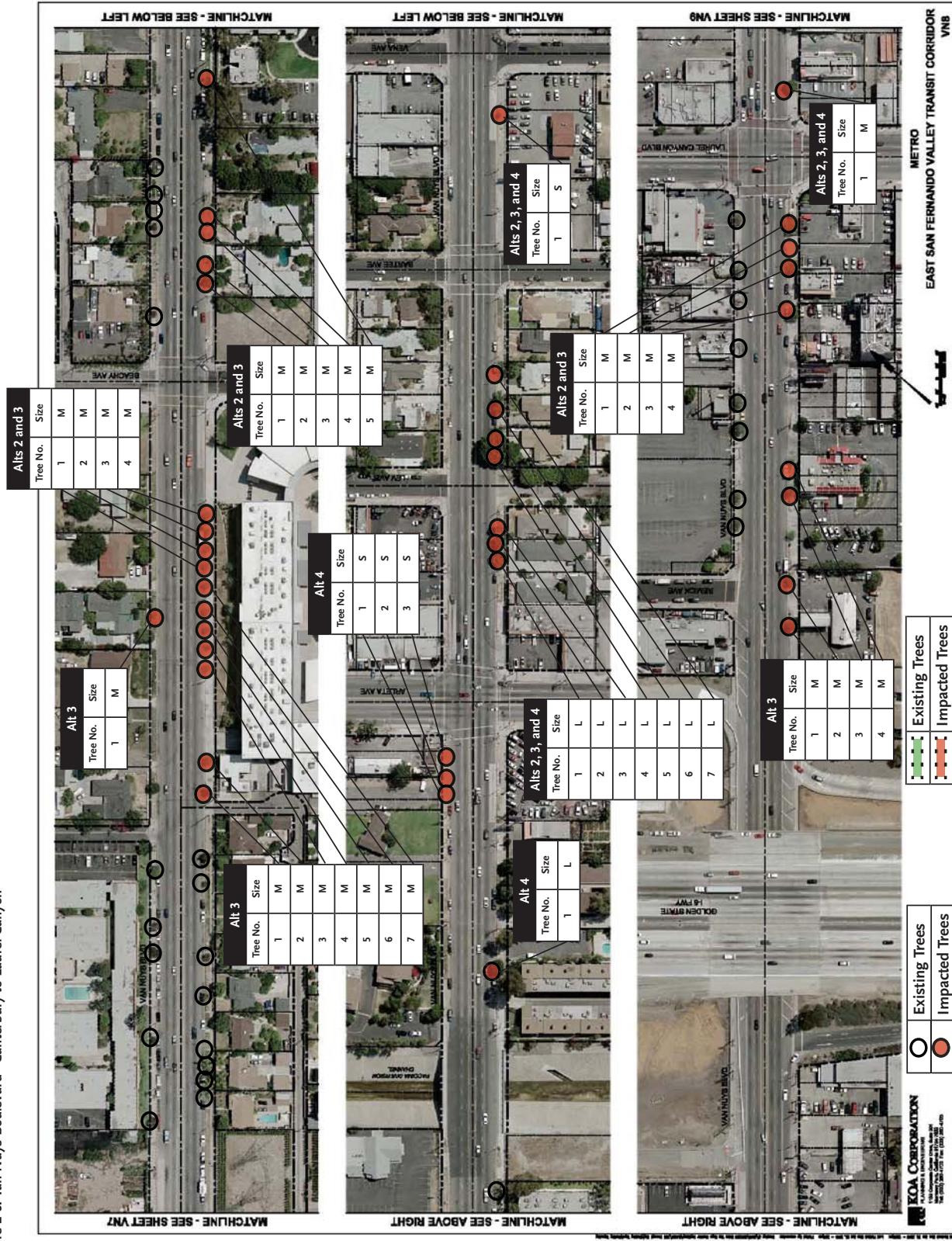


Figure 2-7: Van Nuys Boulevard - Rincon to San Fernando

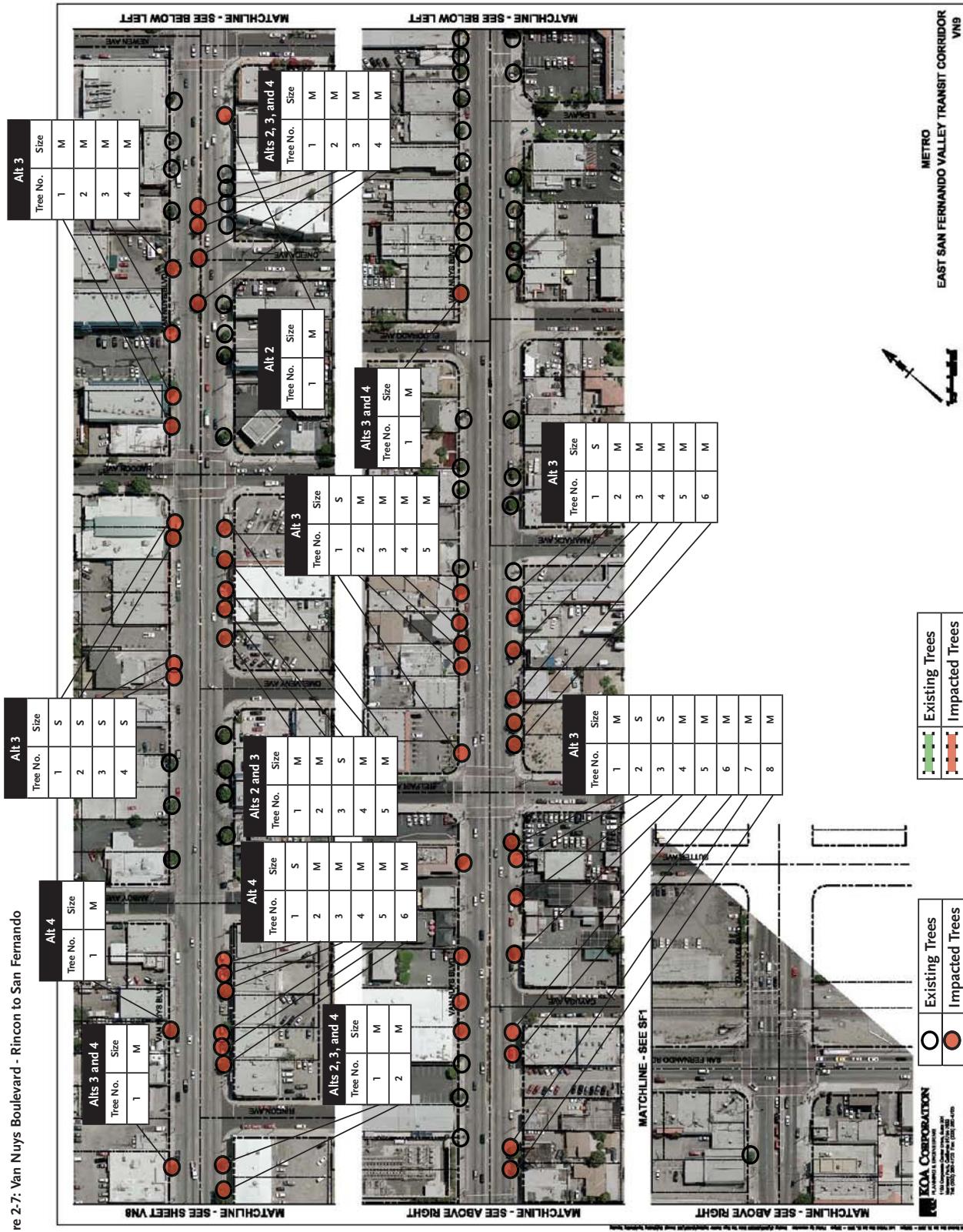


Figure 2-8: San Fernando - Van Nuys to Del Sur

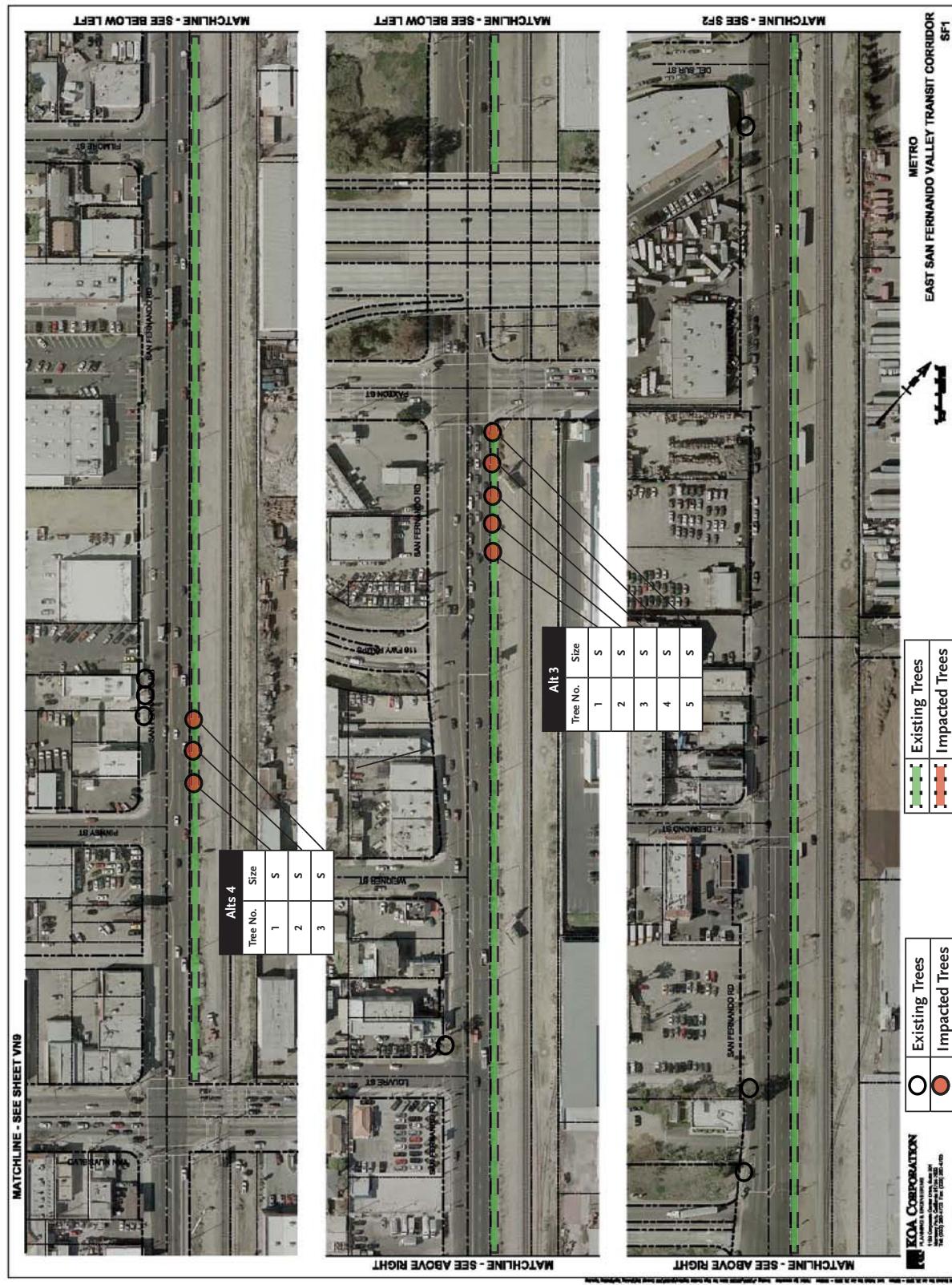


Figure 2-9: San Fernando/Truman - Pacoima Wash to Workman

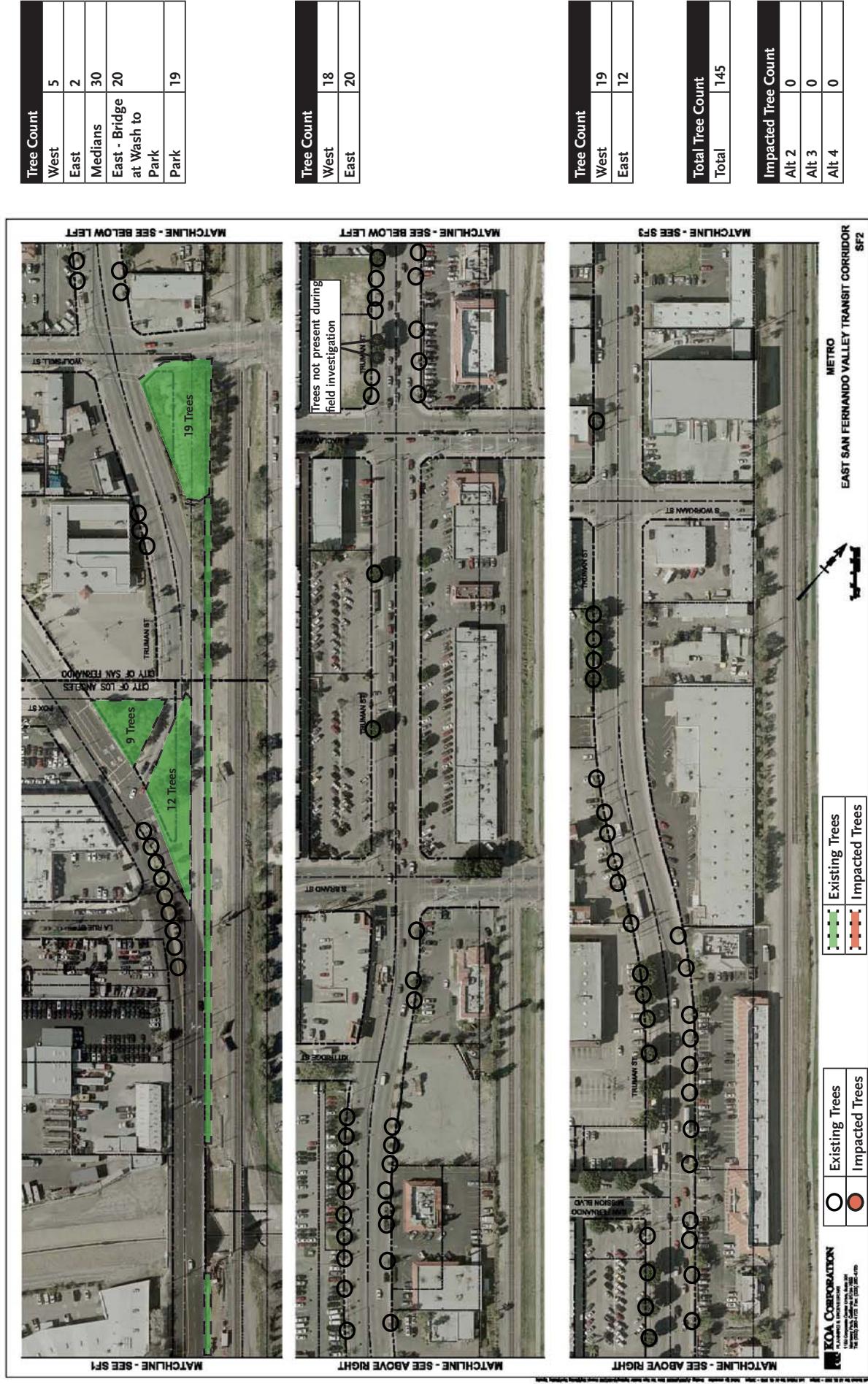


Figure 2-10: Truman/Railroad ROW - Huntington to Bleeker

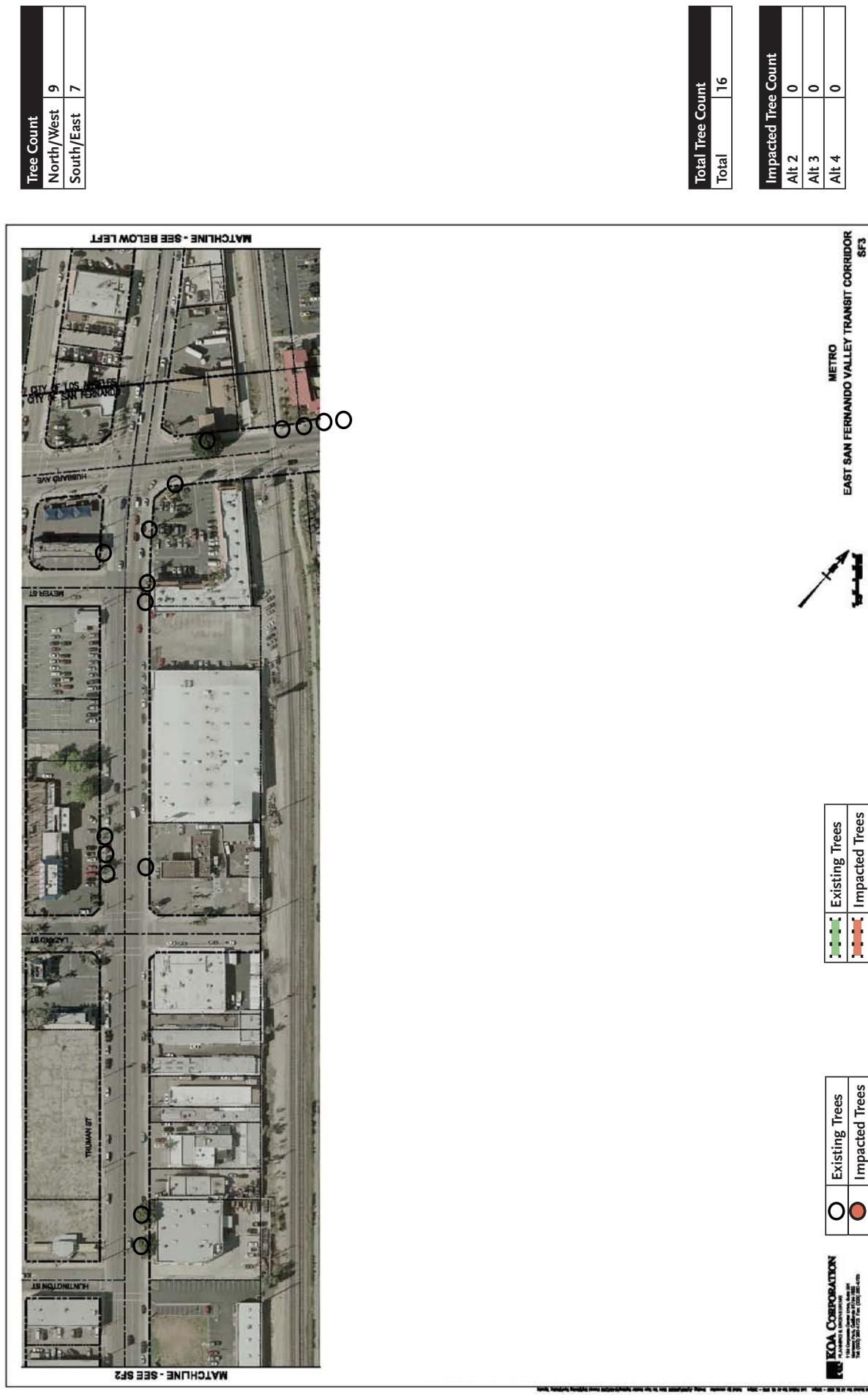


Figure 2-11: San Fernando Road - Fox to Maclay

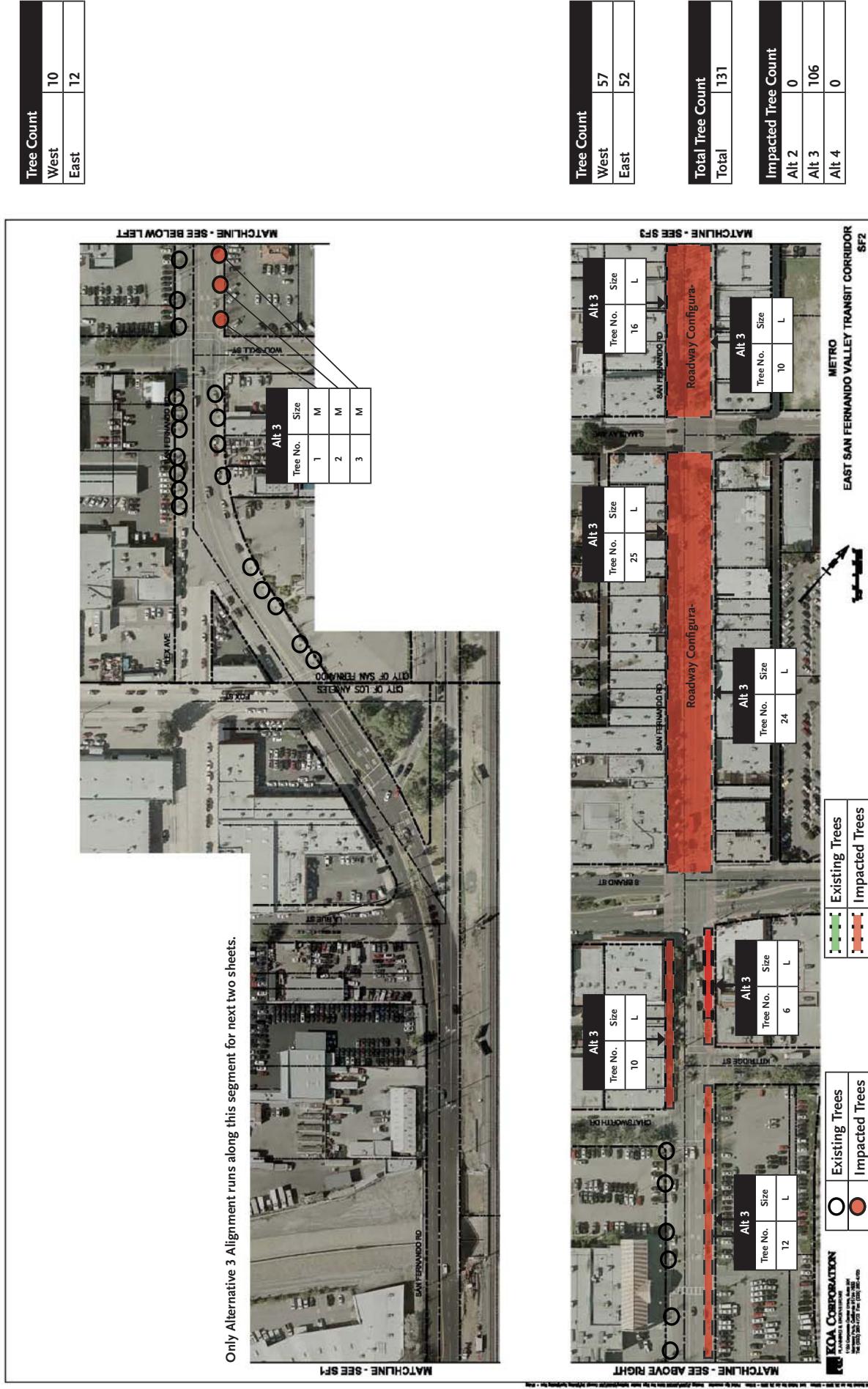
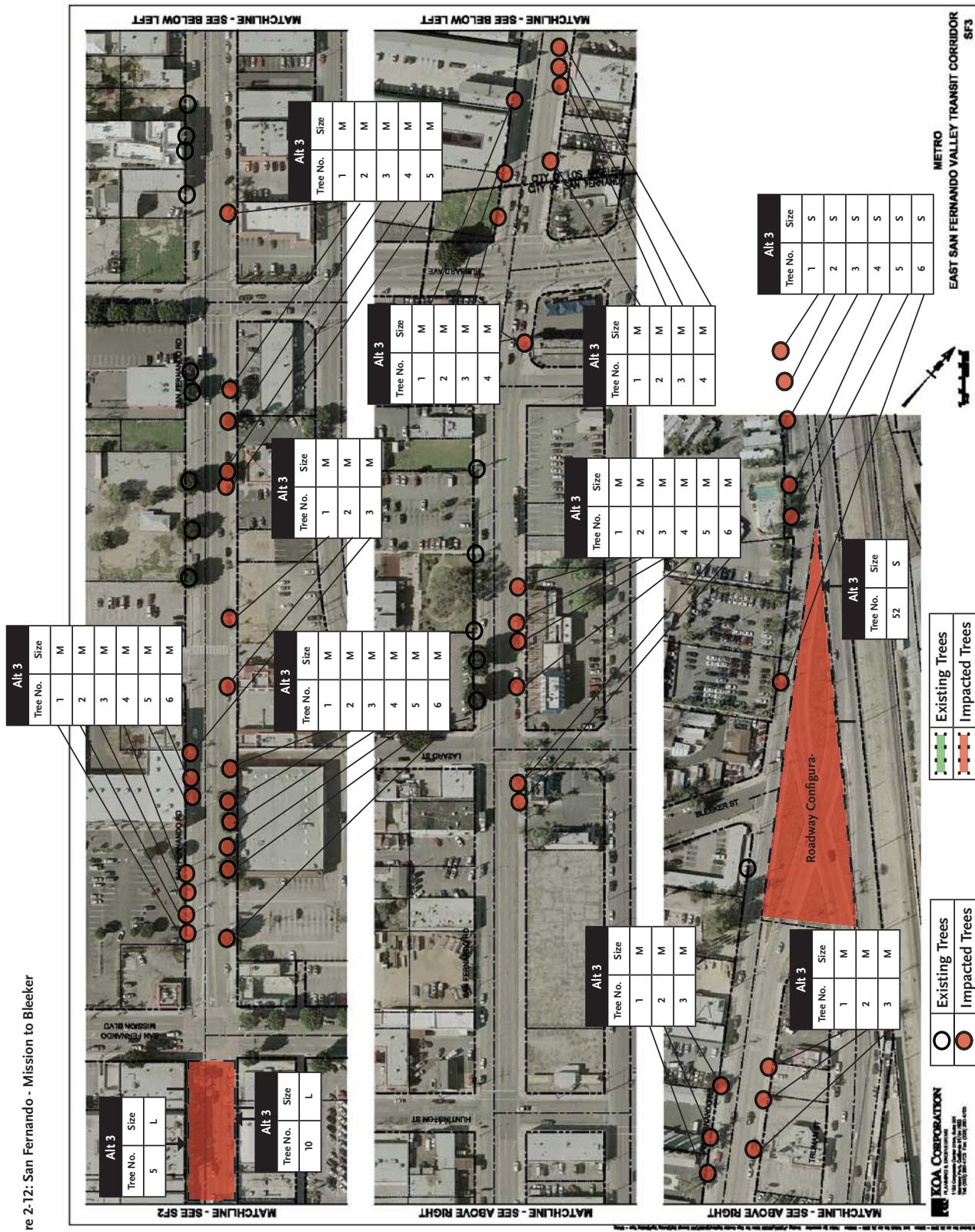


Figure 2-12: San Fernando - Mission to Bleeker



ALTERNATIVE 1 - BRT CURB RUNNING

KOA CORPORATION

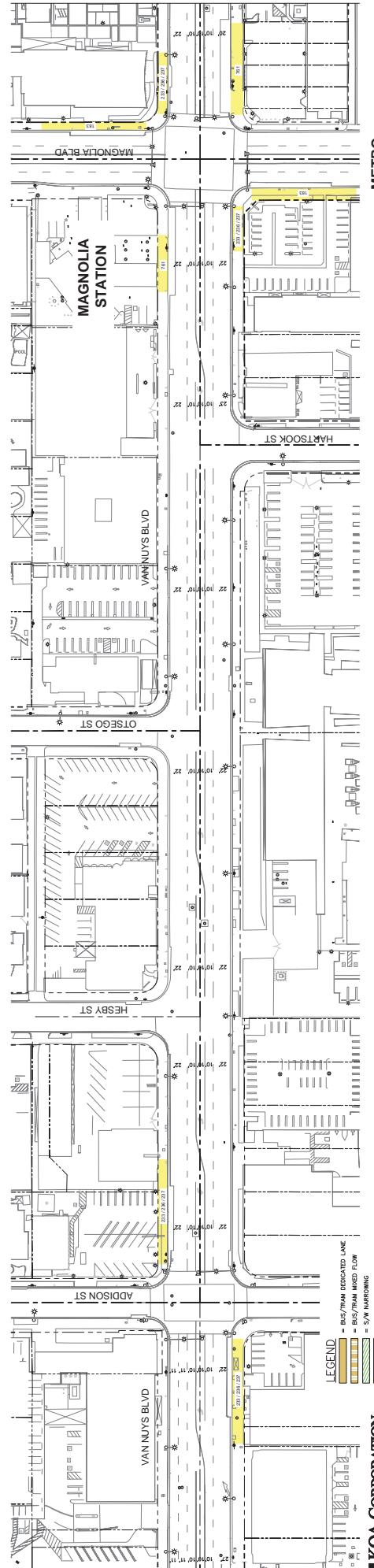
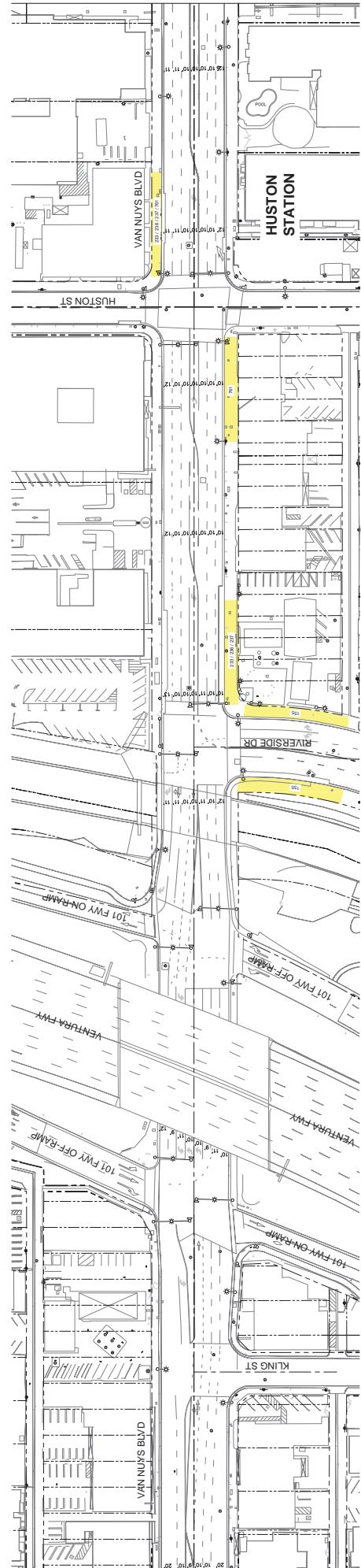
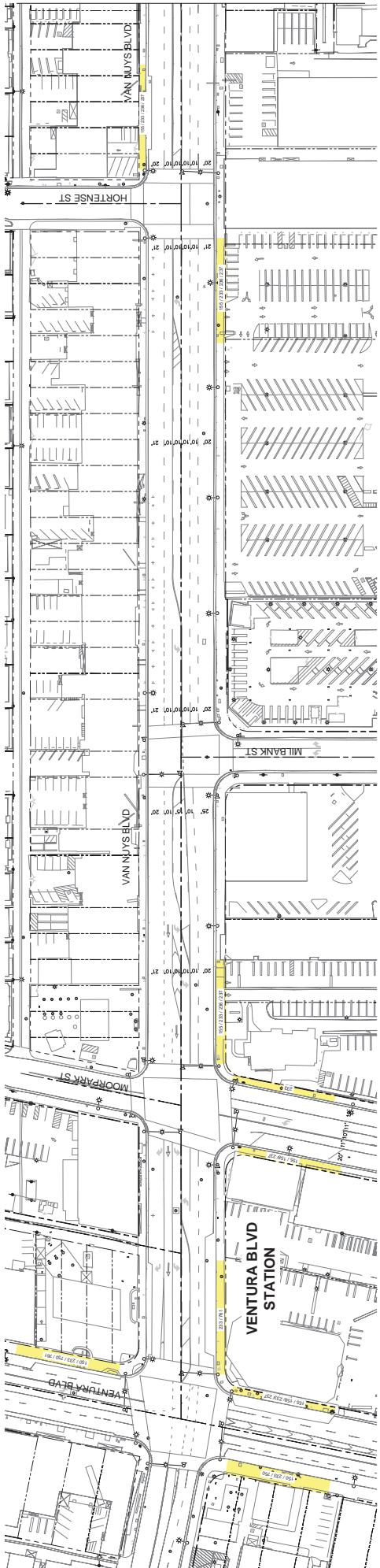
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656

Tel: (714) 266-1110 Fax: (714) 266-1108

LEGEND

- BUS/TRANSIT LANE
- BUS/TRANSIT MODE FLOW
- SAT NAVIGATION
- EXISTING STATION
- PROP. APPROVED STATION
- REDUCED STOP
- REDUCED ON-STREET PARKING



EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR

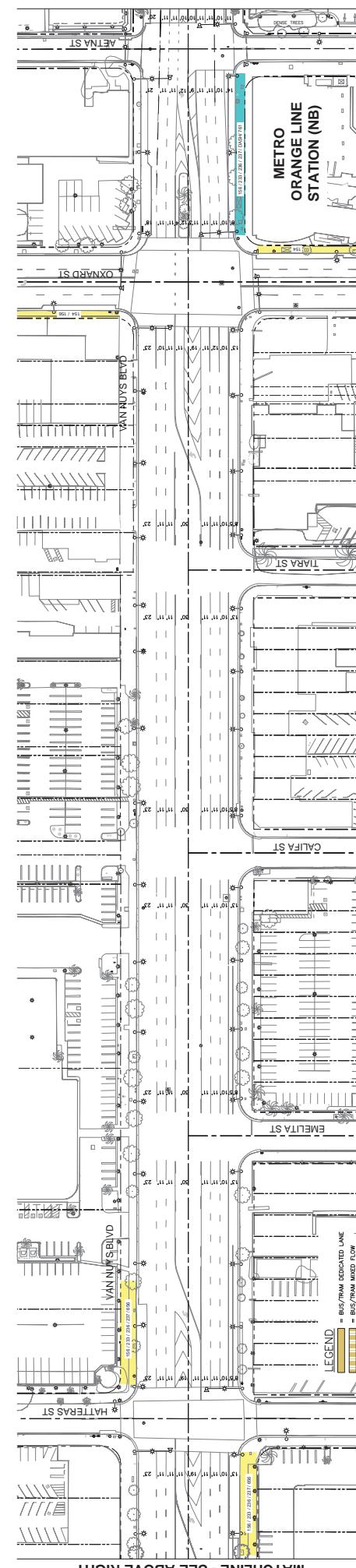
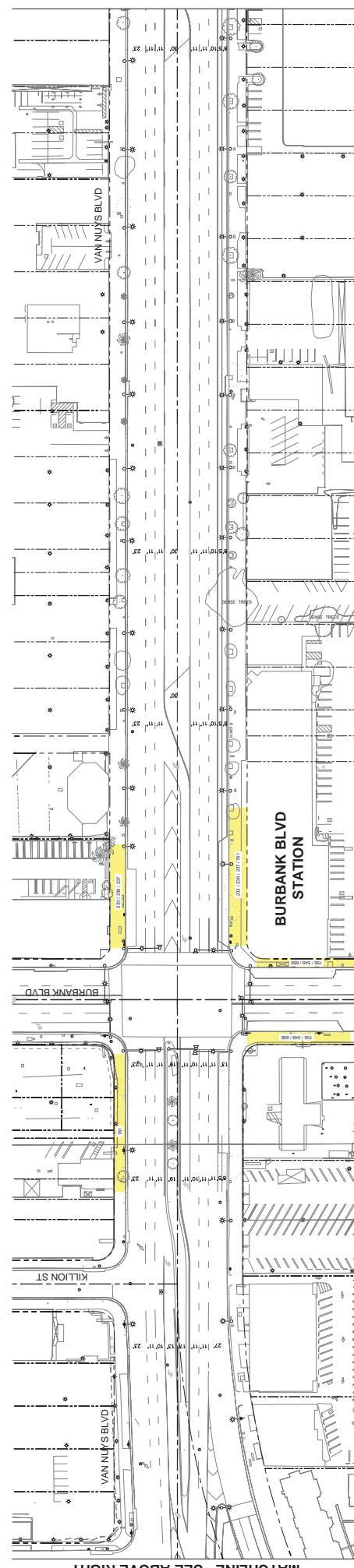
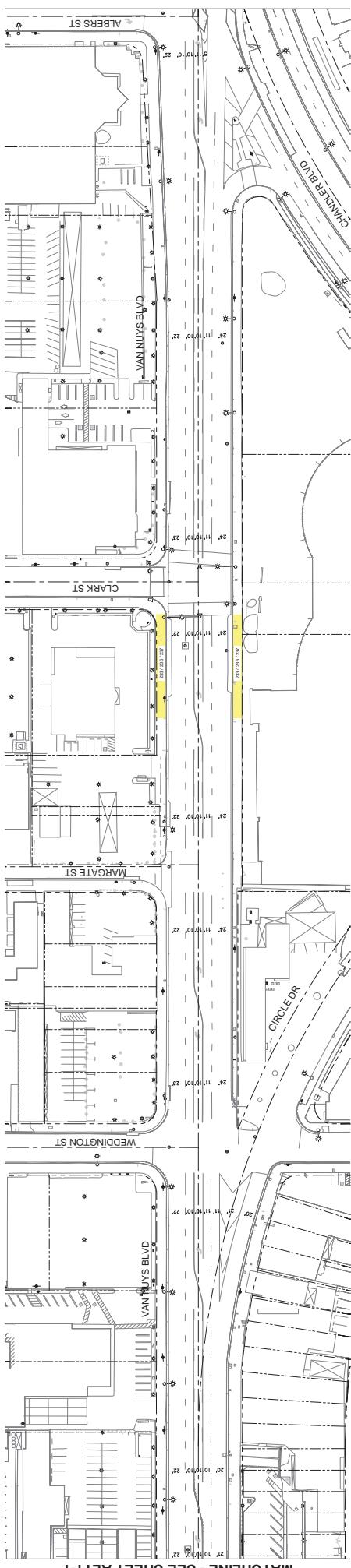
ALT1-1

ALTERNATIVE 1 - BRT CURB RUNNING

KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-3012
(714) 266-1010 Fax: (714) 266-1010

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALTI-2



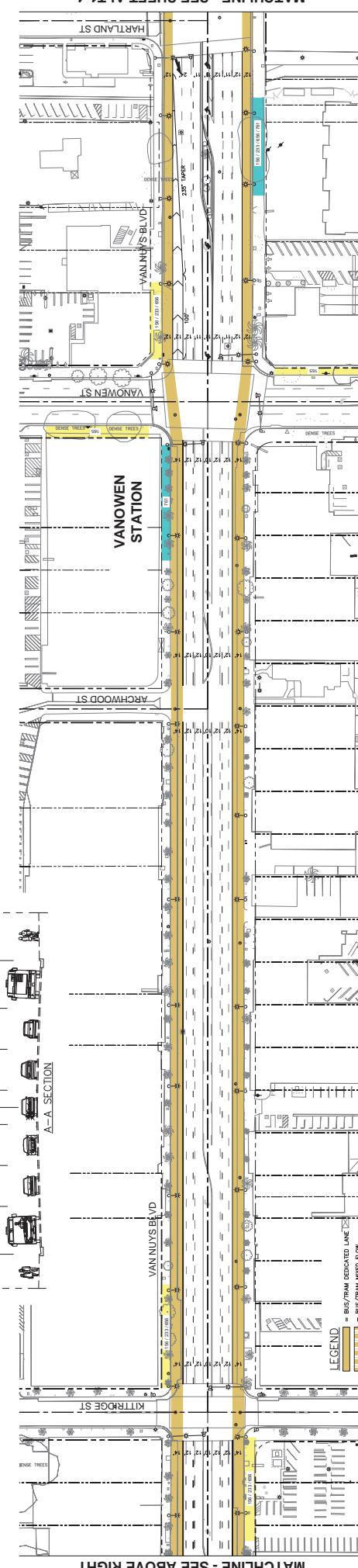
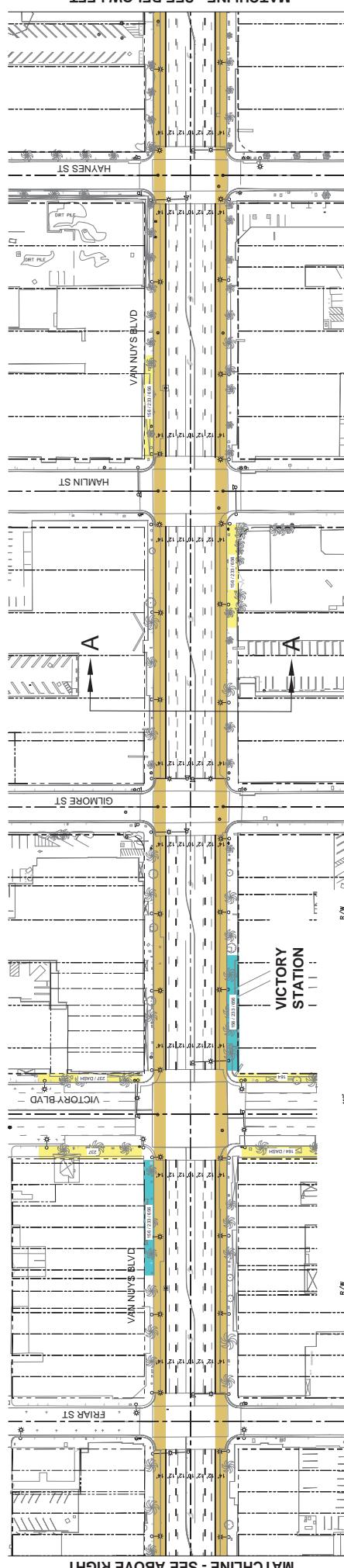
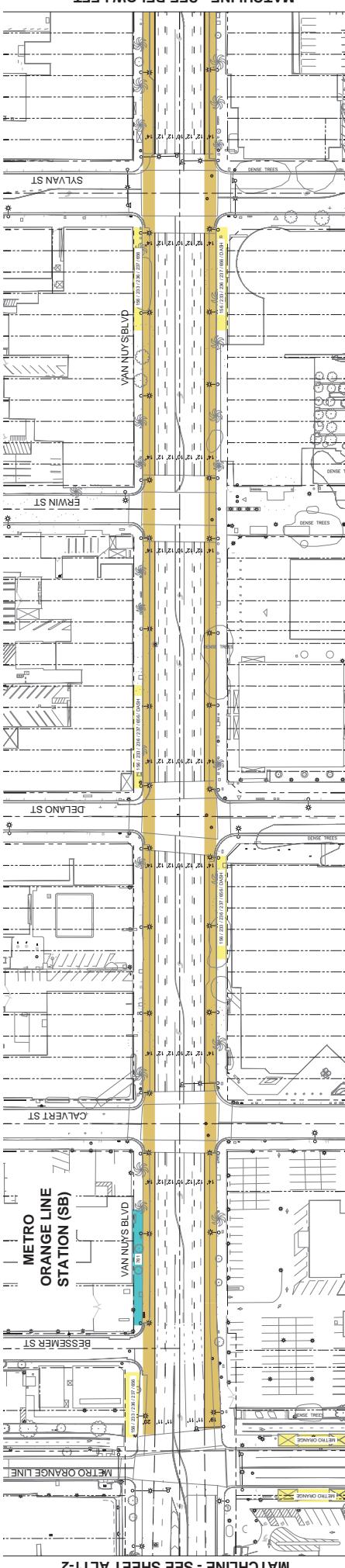
KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-3012
(714) 266-1010 Fax: (714) 266-1010

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALTI-2

ALTERNATIVE 1 - BRT CURB RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALTI-3



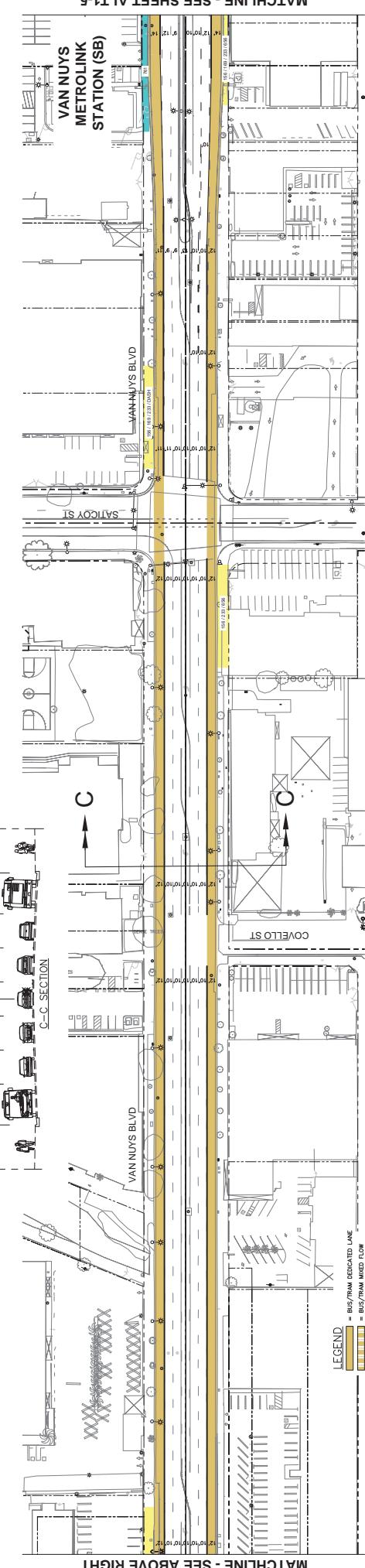
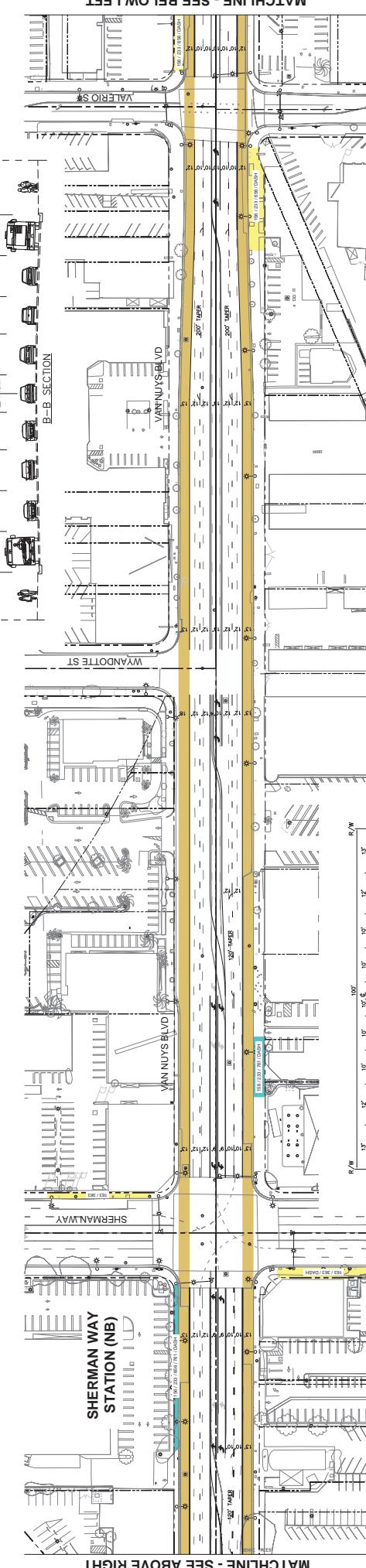
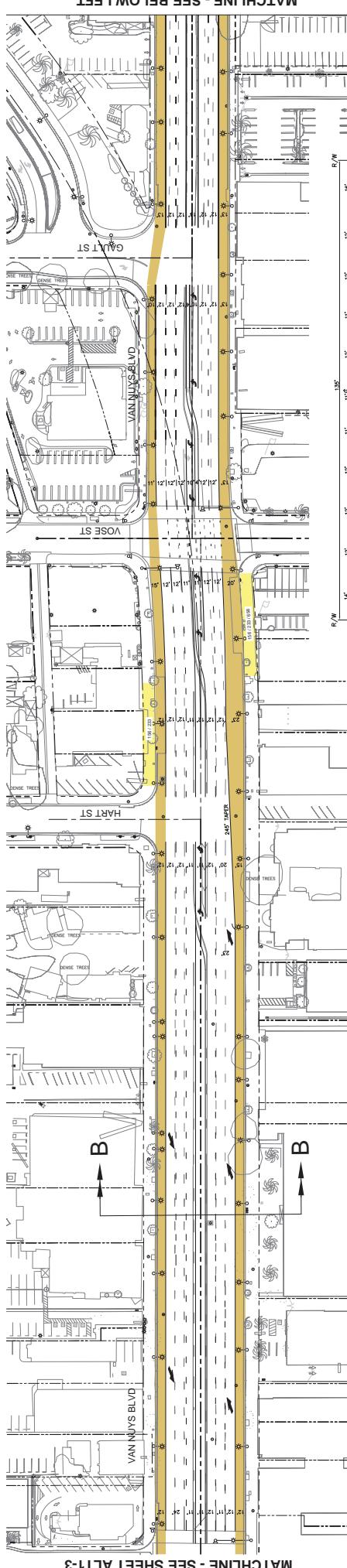
ALTERNATIVE 1 - BRT CURB RUNNING

KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 201
Aliso Viejo, California 92656-7002
(714) 250-5150; Fax: (714) 250-5078

METRO

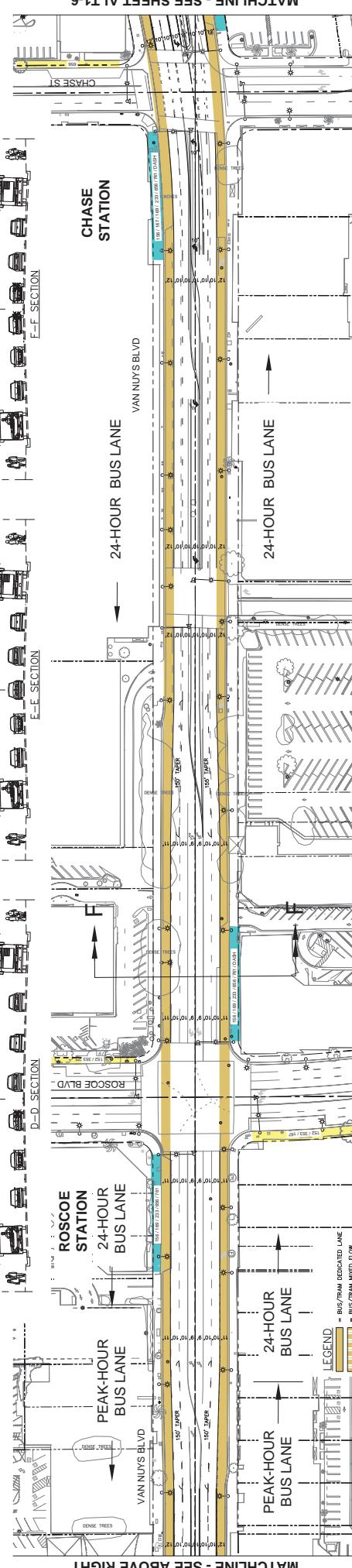
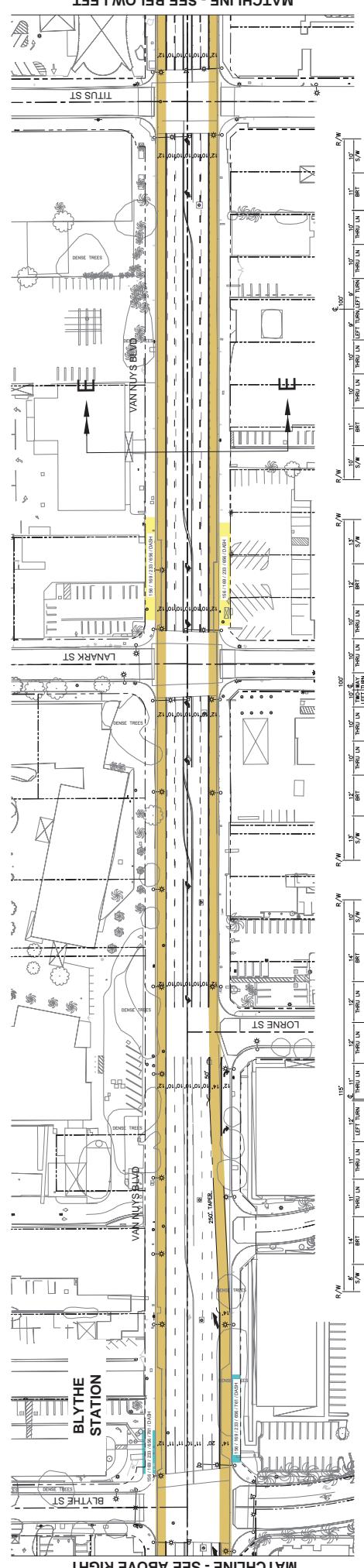
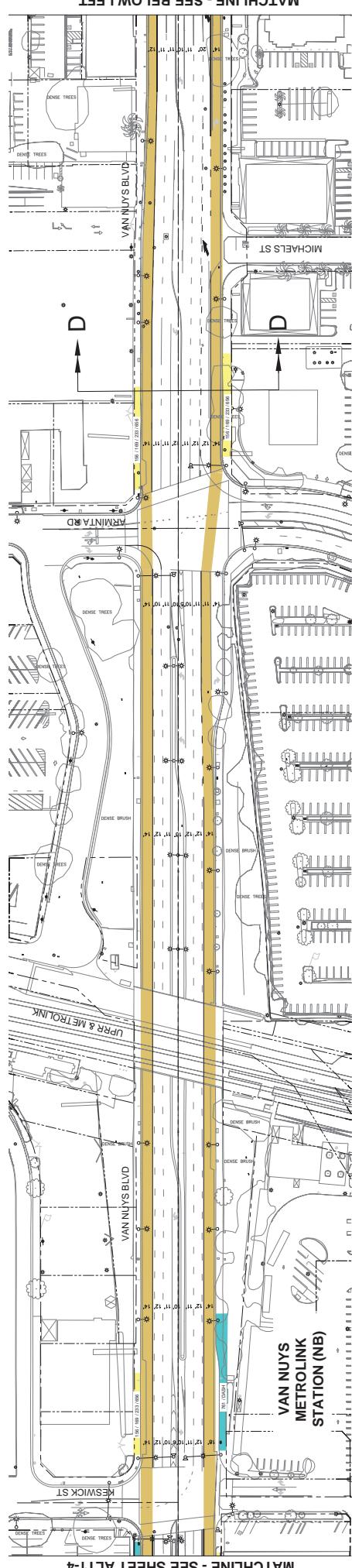
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT1-4



LEGEND

- = BRT/TRANSIT LANE
- = BRT/TRANSIT MID FLOW
- = 5' WALKWAY
- = BIKE PATH
- = PARKING
- = ACTIVE CROSSING
- = PEDESTRIAN CROSSING
- = REARDED ON STREET PARKING

ALTERNATIVE 1 - BRT CURB RUNNING



KOA CORPORATION

PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 201
Aliso Viejo, CA 92656 • Phone: (714) 255-2002
Fax: (714) 255-2010 • E-mail: info@koacorp.com

www.koacorp.com

METRO

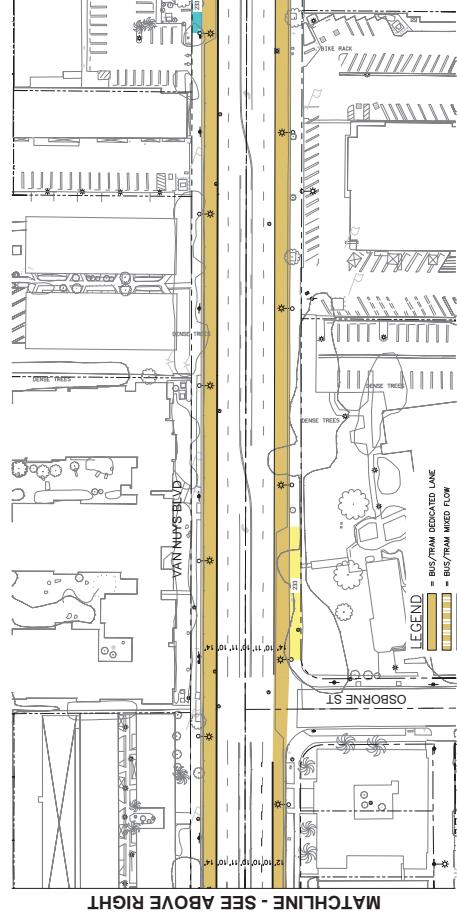
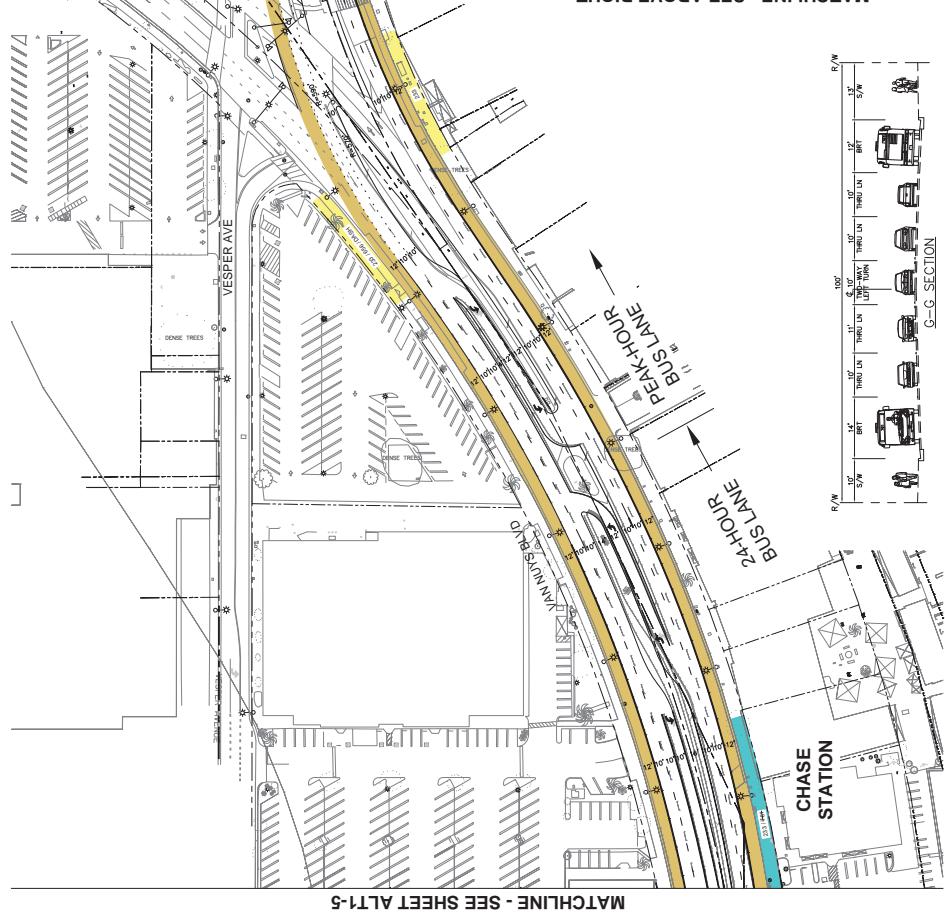
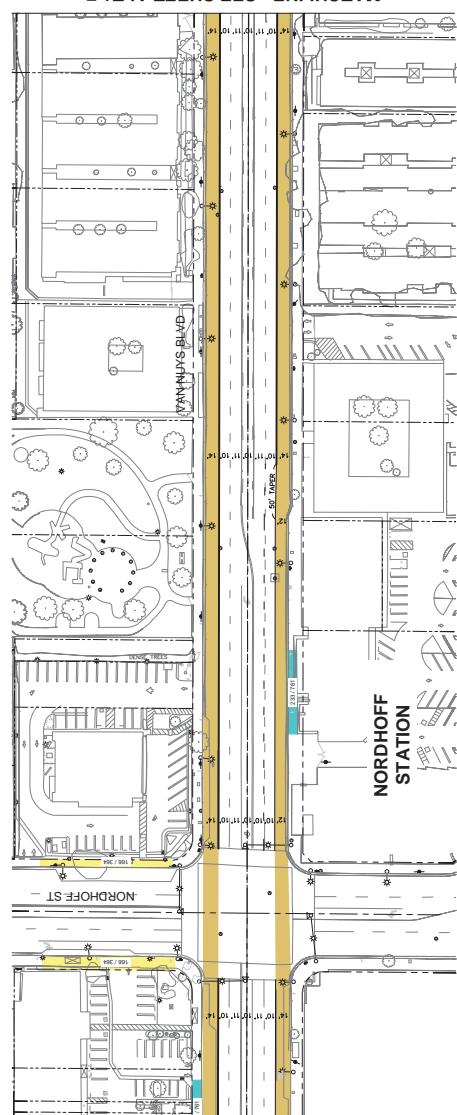
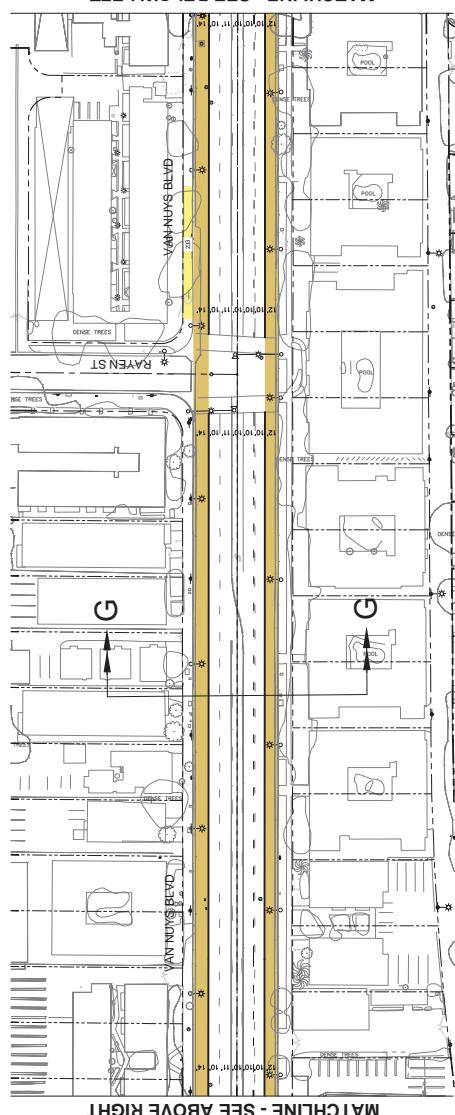
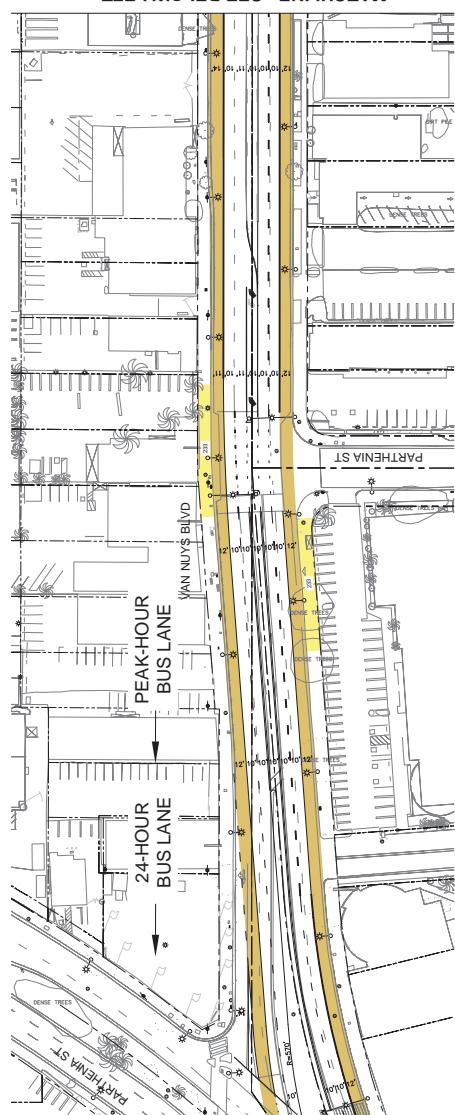
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT1-5

ALTERNATIVE 1 - BRT CURB RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALTI-6

KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
Tel: (800) 267-1010; Fax: (714) 266-9708



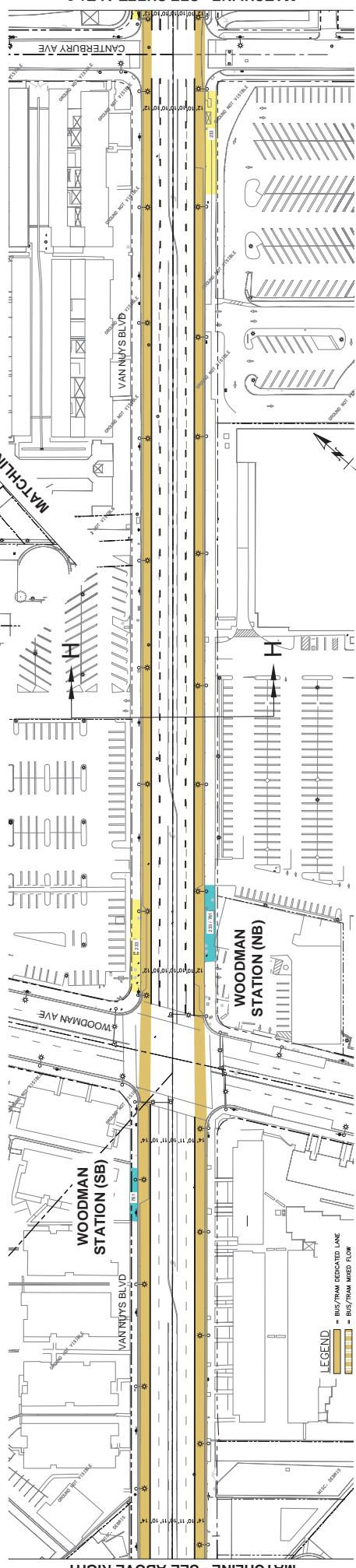
ALTERNATIVE 1 - BRT CURB RUNNING

KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Atwater Village Park, California 91304-2012
Tel: (800) 267-1110 Fax: (800) 267-1108

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALTI-7

MATCHLINE - SEE SHEET ALTI-8

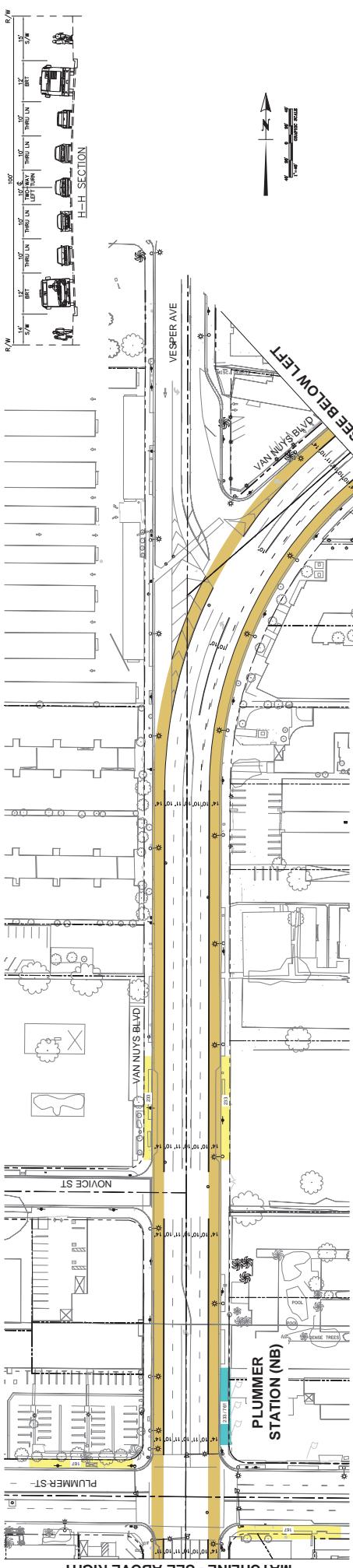


MATCHLINE - SEE SHEET ALTI-8

MATCHLINE - SEE SHEET ALTI-6

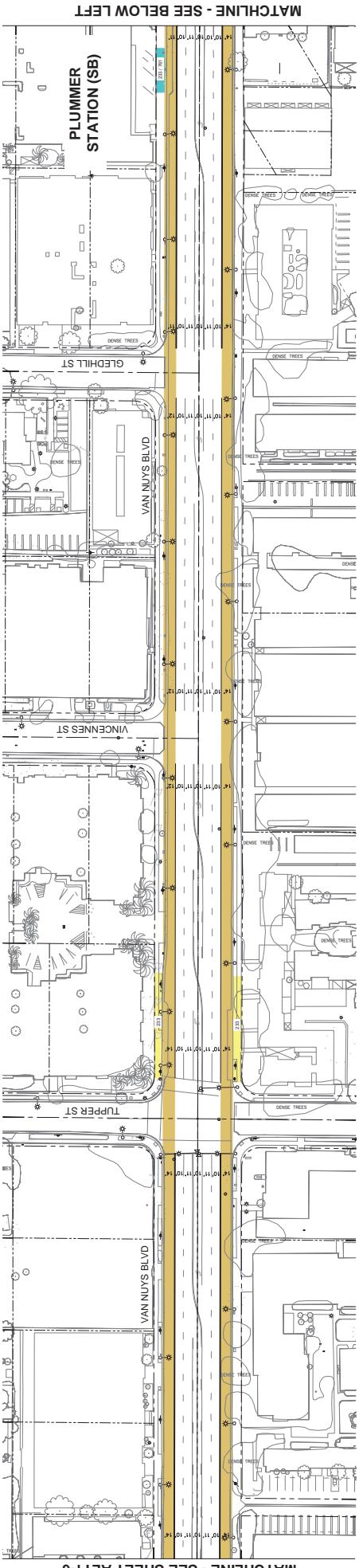
MATCHLINE - SEE SHEET ALTI-6

MATCHLINE - SEE ABOVE RIGHT



MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE SHEET ALTI-6

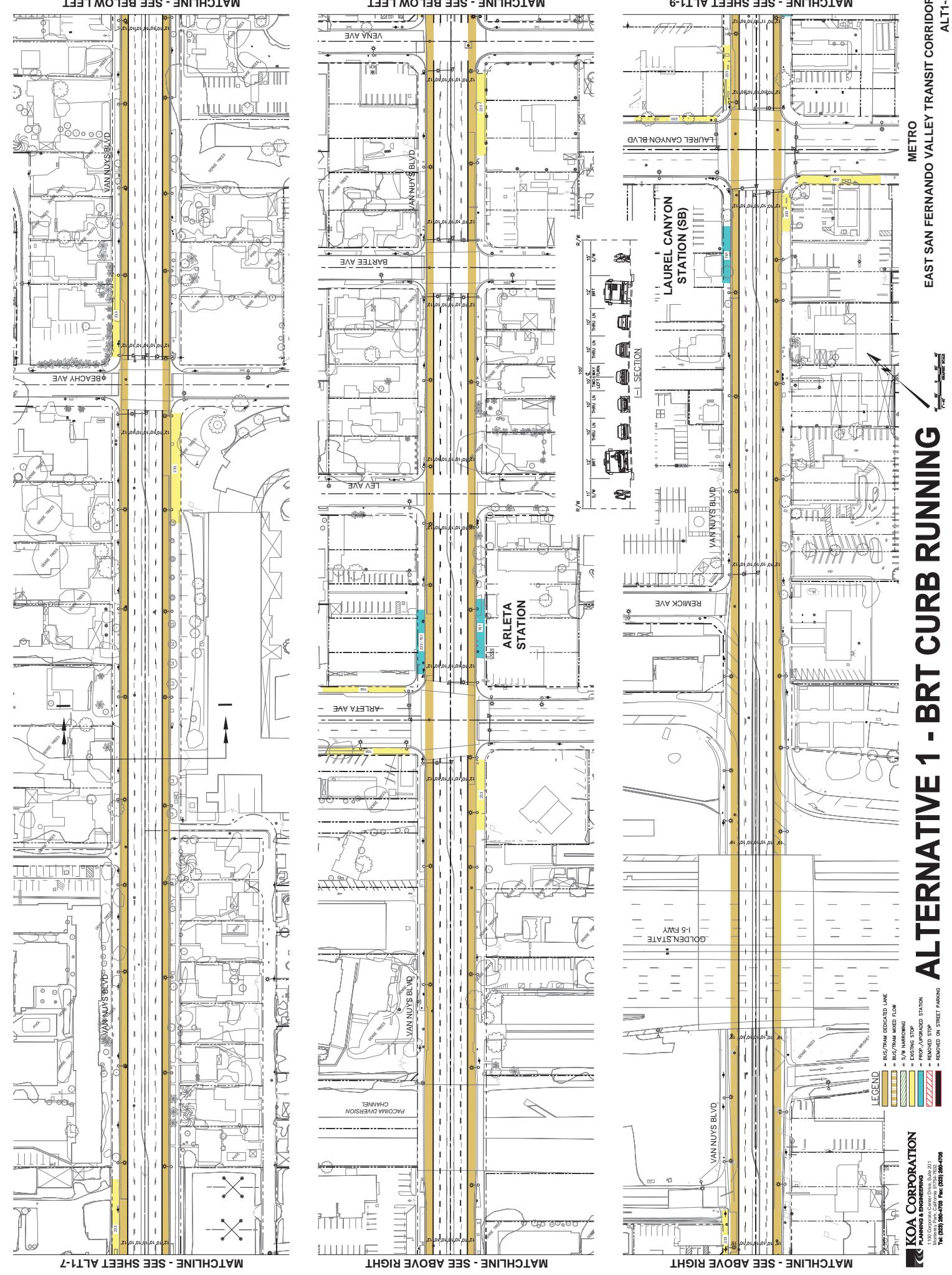


MATCHLINE - SEE SHEET ALTI-6

MATCHLINE - SEE BELOW LEFT

ALTERNATIVE 1 - BRT CURB RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALTI-8



ALTERNATIVE 1 - BRT CURB RUNNING

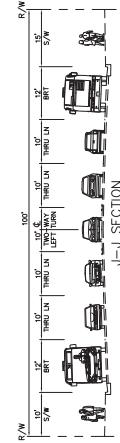
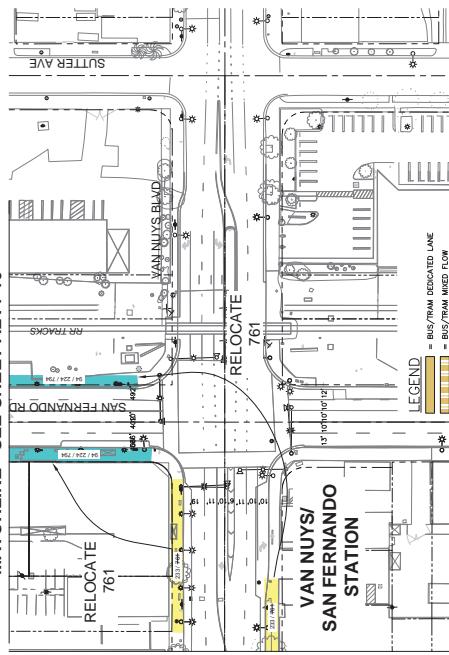
KOA CORPORATION

PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
(714) 250-1010, Fax: (714) 250-1078

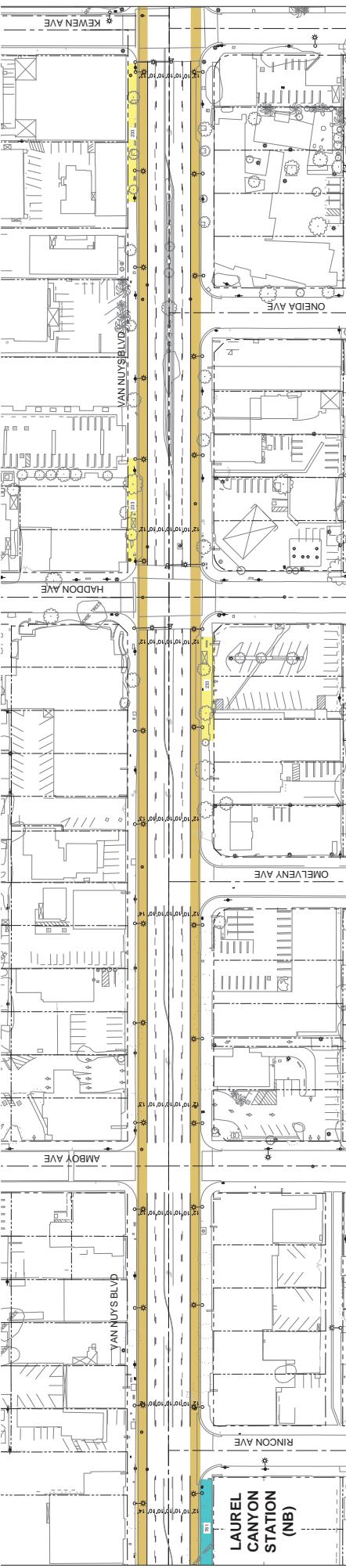
LEGEND
 = BUS/TRAM DEDICATED LANE
 = BUS/TRAM MIXED FLOW
 = S/A NAVIGATION
 = EXISTING STATION
 = PROPOSED STATION
 = RELOCATED ON STREET PARKING

MATCHLINE - SEE SHEET ALTI-10



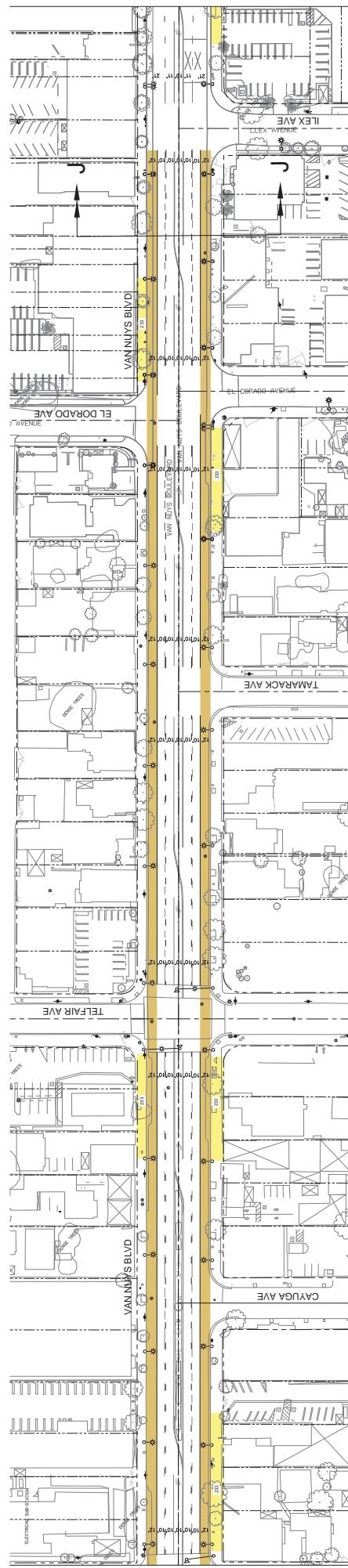
MATCHLINE - SEE SHEET ALTI-8

LAUREL
CANYON
STATION
(NB)



MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE BELOW LEFT



MATCHLINE - SEE ABOVE LEFT

ALTERNATIVE 1 - BRT CURB RUNNING

KOA CORPORATION

PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301

Aliso Viejo, California 92656

Tel: (949) 456-1110 Fax: (949) 456-1105

METRO

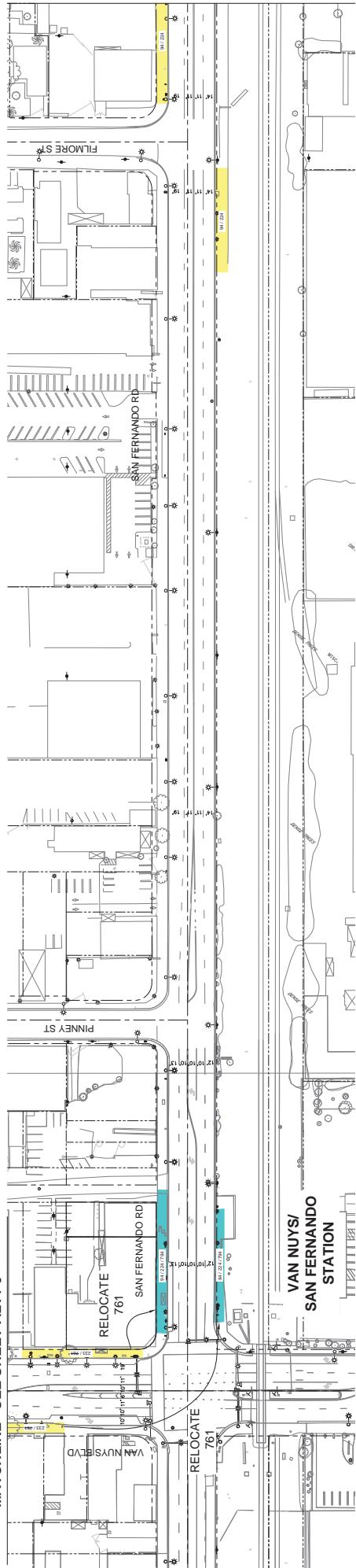
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR

ALT1-10

ALT1-11

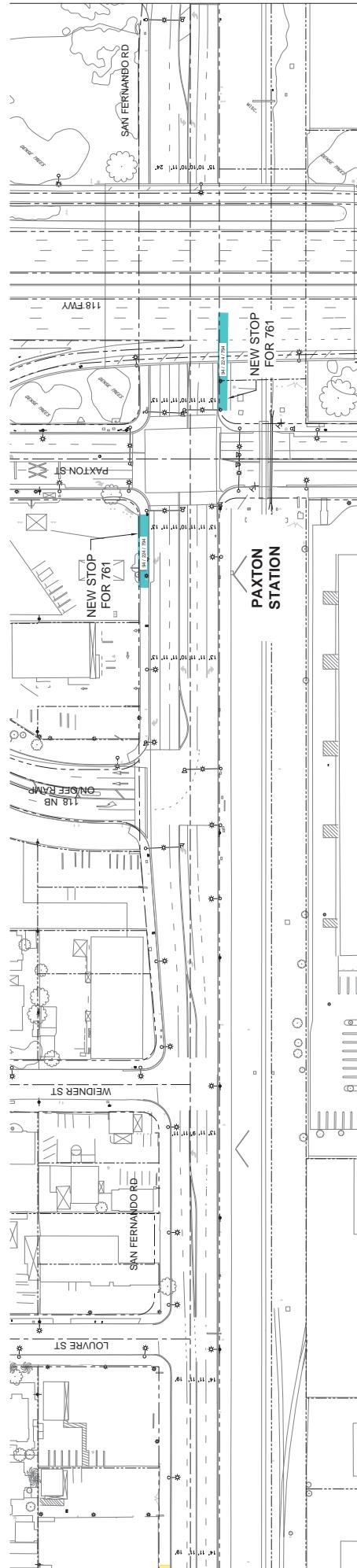
ALT1-9

MATCHLINE - SEE SHEET ALT1-9



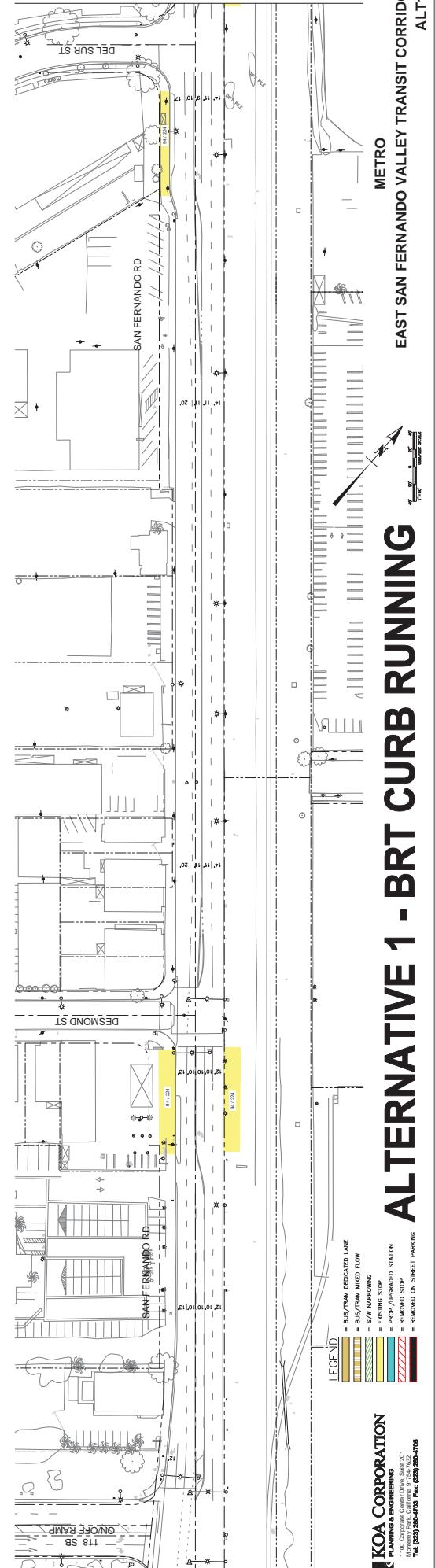
MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE BELOW LEFT



MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE ALT1-11



Legend:

- BUS/RAIL DEPOT LANE
- BUS/RAIL MODE FLOW
- SAN MARCING
- EXISTING STOP
- PROPOSED STOP
- REMOVED STOP
- REMOVED ON STREET PARKING

ALTERNATIVE 1 - BRT CURB RUNNING

KOA CORPORATION

PLANNING & ENGINEERING
110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-3012
Tel: (714) 266-1010 Fax: (714) 266-1078

MATCHLINE - SEE ALT1-12
METRO
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT1-11

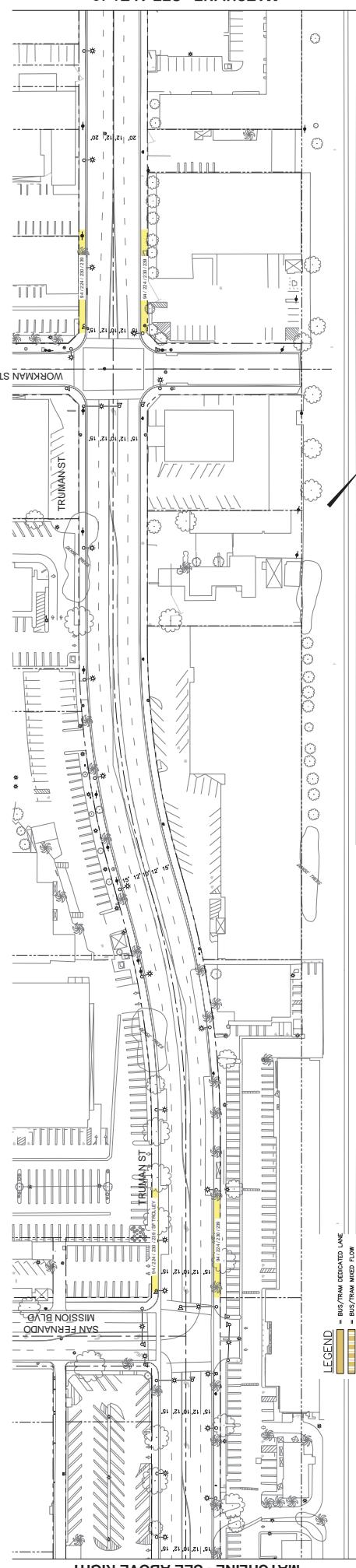
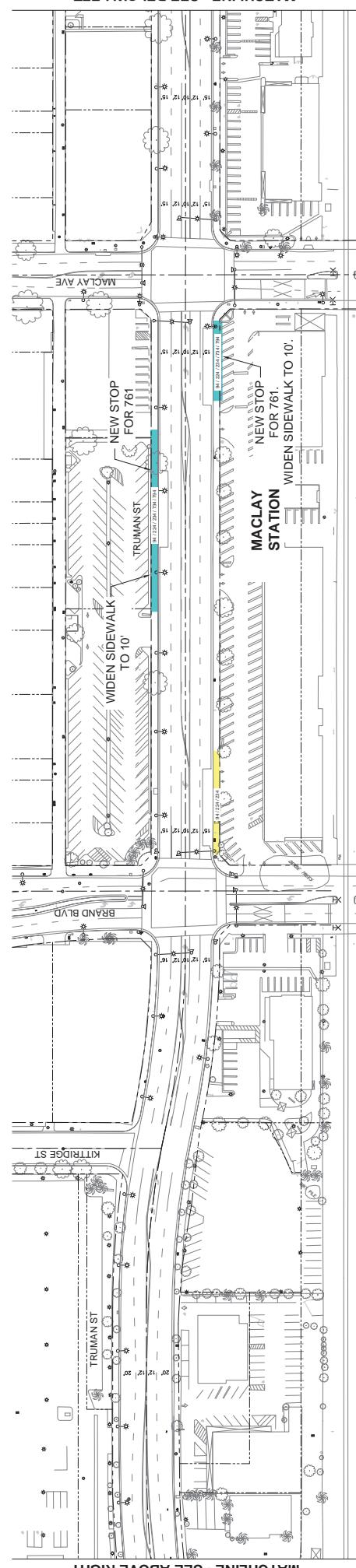
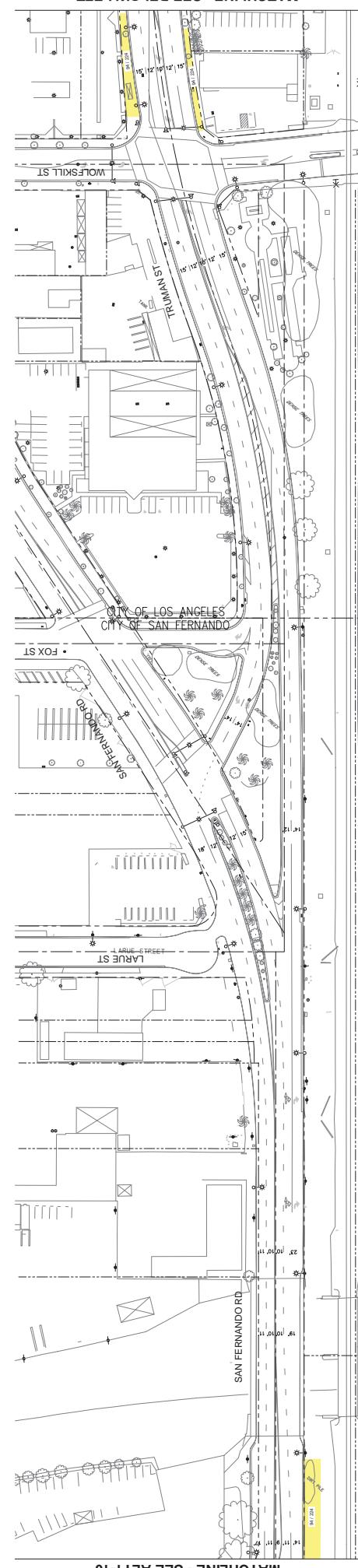
MATCHLINE - SEE BELOW LEFT
ALT1-12

MATCHLINE - SEE BELOW LEFT
ALT1-10

MATCHLINE - SEE ABOVE RIGHT
ALT1-10

MATCHLINE - SEE ABOVE RIGHT
ALT1-11

MATCHLINE - SEE ALT1-12
ALT1-11



KOA CORPORATION

PLANNING & ENGINEERING
110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-3012
Tel: (714) 266-1010 Fax: (714) 266-1078

METRO

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT1-12

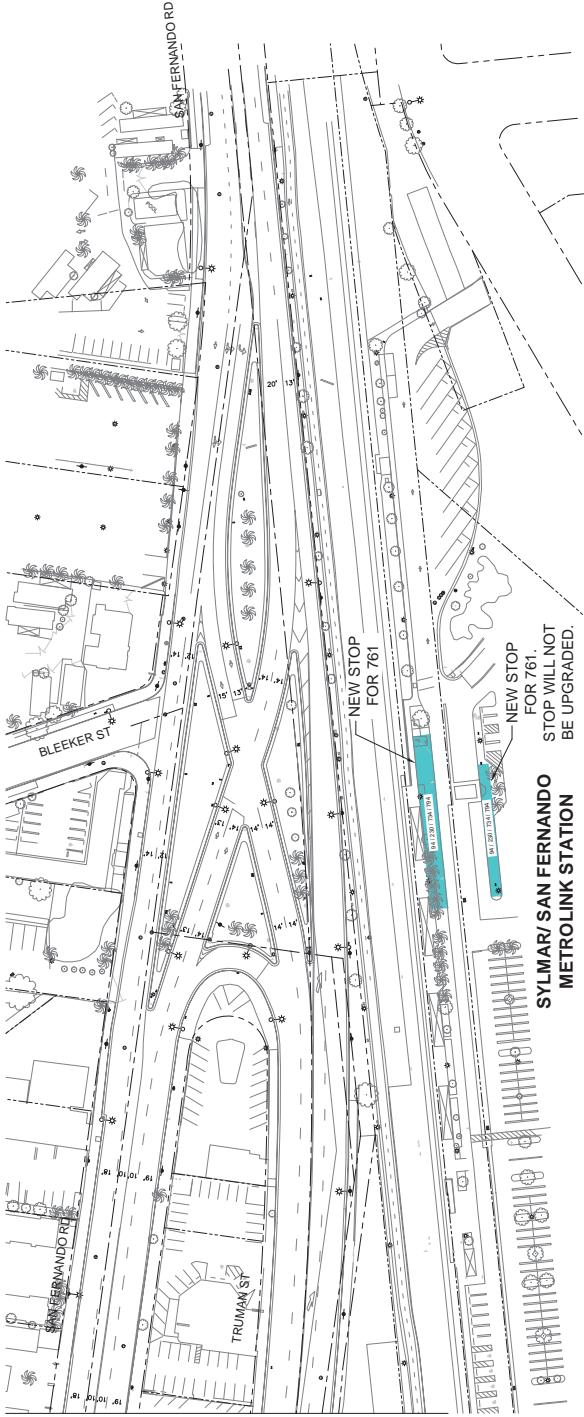
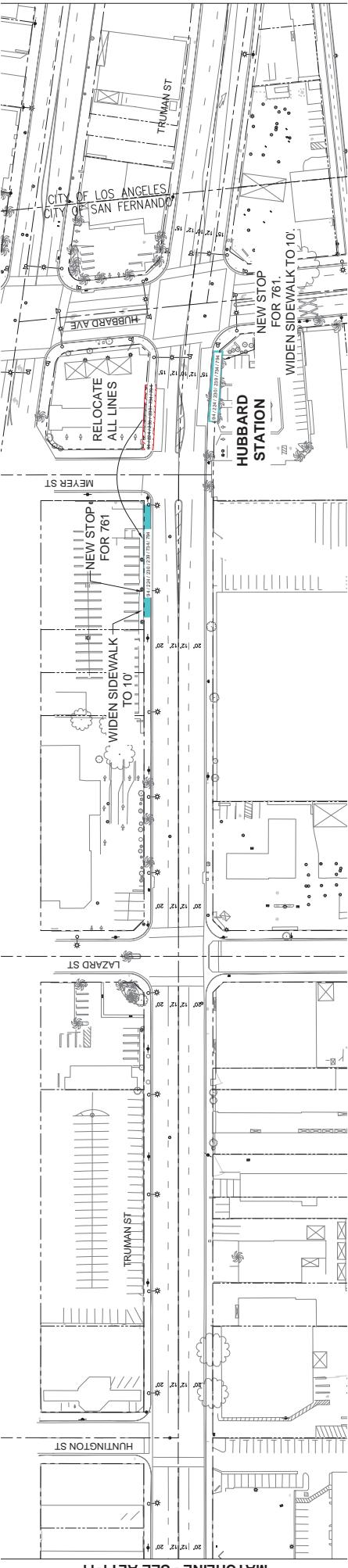
ALTERNATIVE 1 - BRT CURB RUNNING

LEGEND

- = BUS/TRAM DEDICATED LANE
- = BUS/TRAM MIXED FLOW
- = 5% NARROWING
- = EXISTING STOP
- = PROPOSED STOP
- = REMOVED ON-STREET PARKING
- = MATCHLINE - SEE BELOW LEFT
- = MATCHLINE - SEE ABOVE RIGHT
- = MATCHLINE - SEE ALT1-11
- = MATCHLINE - SEE BELOW LEFT
- = MATCHLINE - SEE ABOVE RIGHT
- = MATCHLINE - SEE ALT1-11

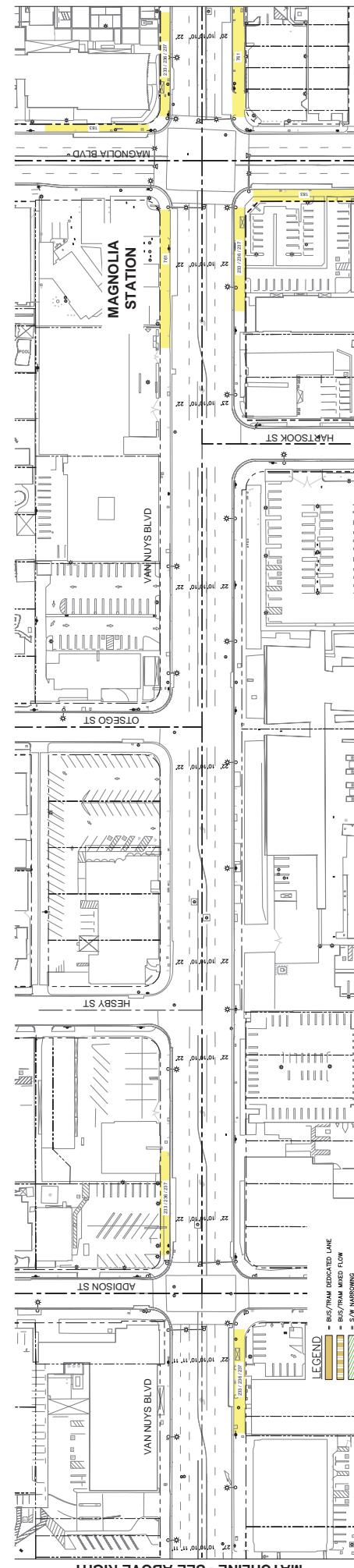
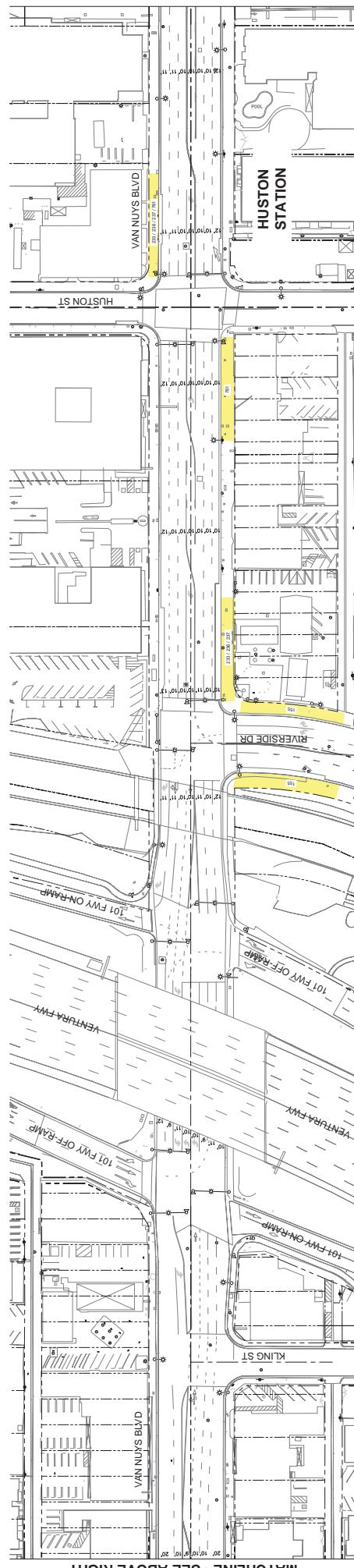
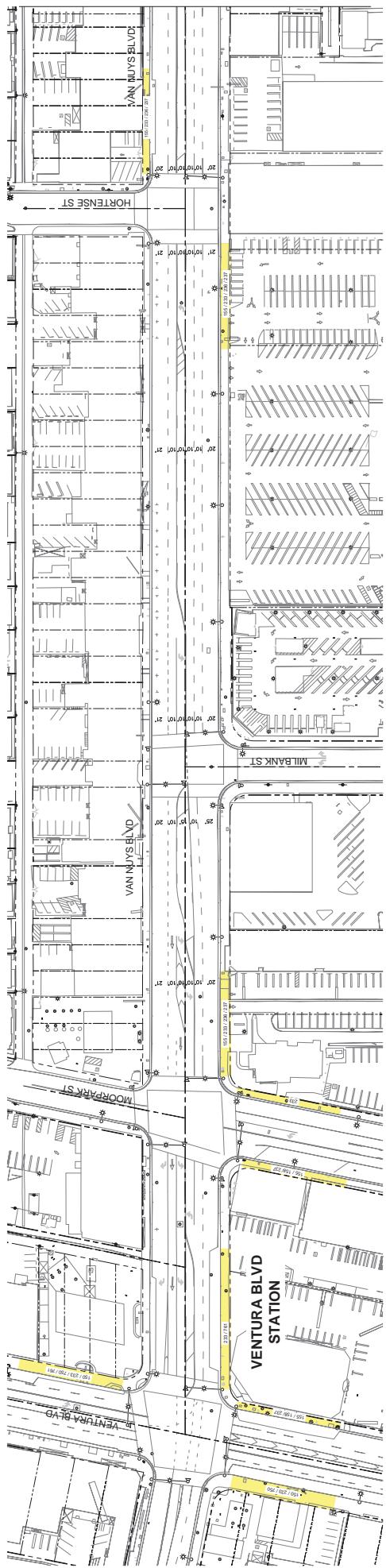
KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Circle Drive, Suite 301
Aliso Viejo, California 92656
(714) 260-3100 Fax: (714) 260-3105



ALTERNATIVE 2 - BRT MEDIAN RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-1

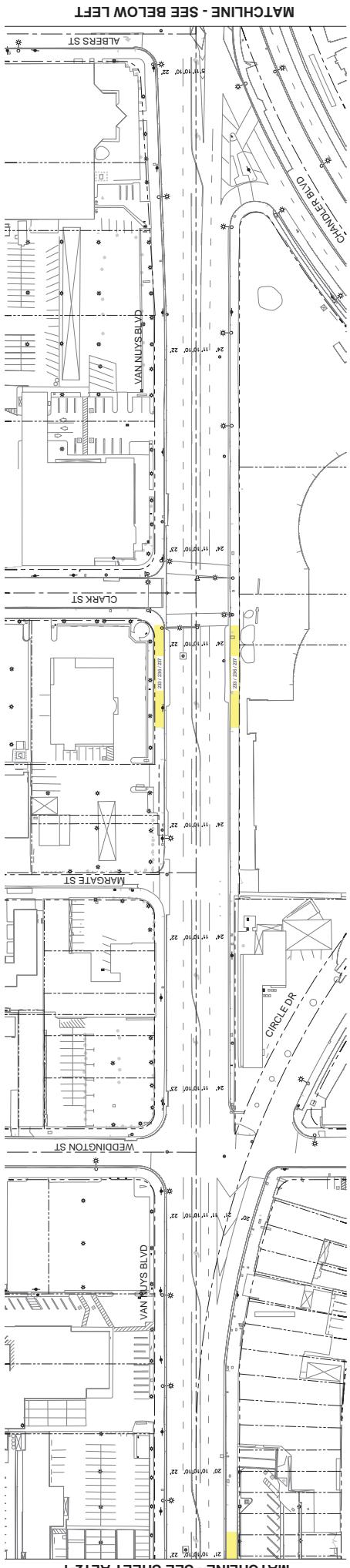
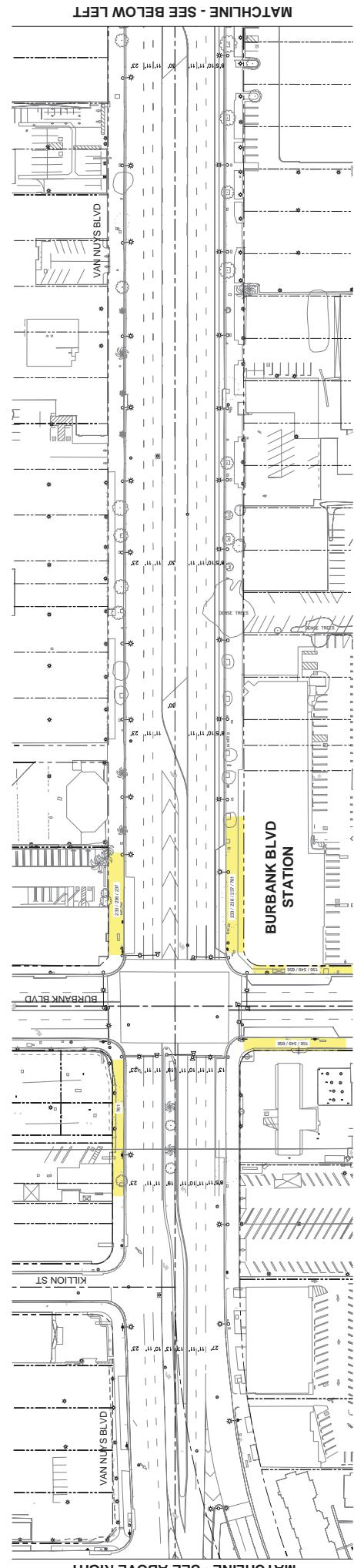
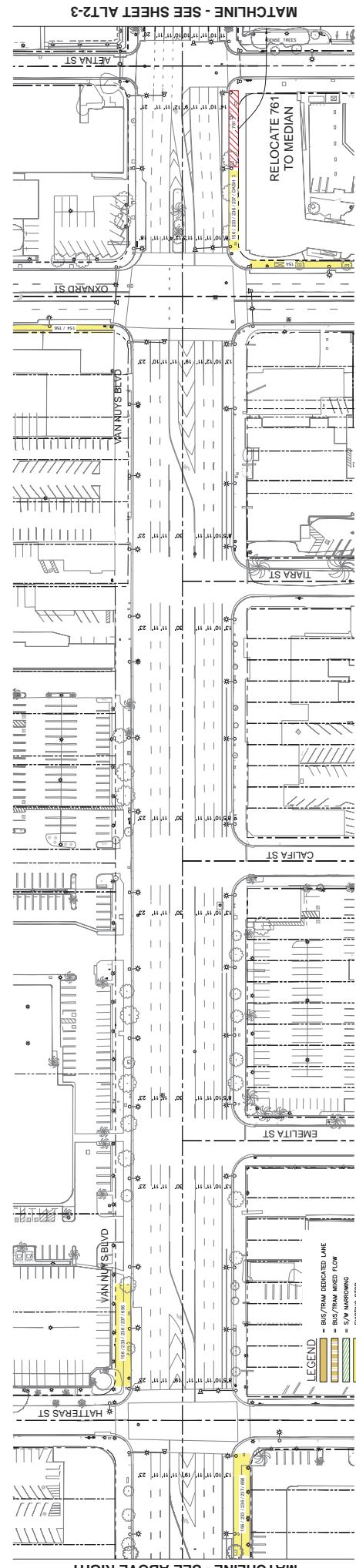


ALTERNATIVE 2 - BRT MEDIAN RUNNING

KOA CORPORATION

PLANNING & ENGINEERING
110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
(714) 266-1110 Fax: (714) 266-1108

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT 2-2

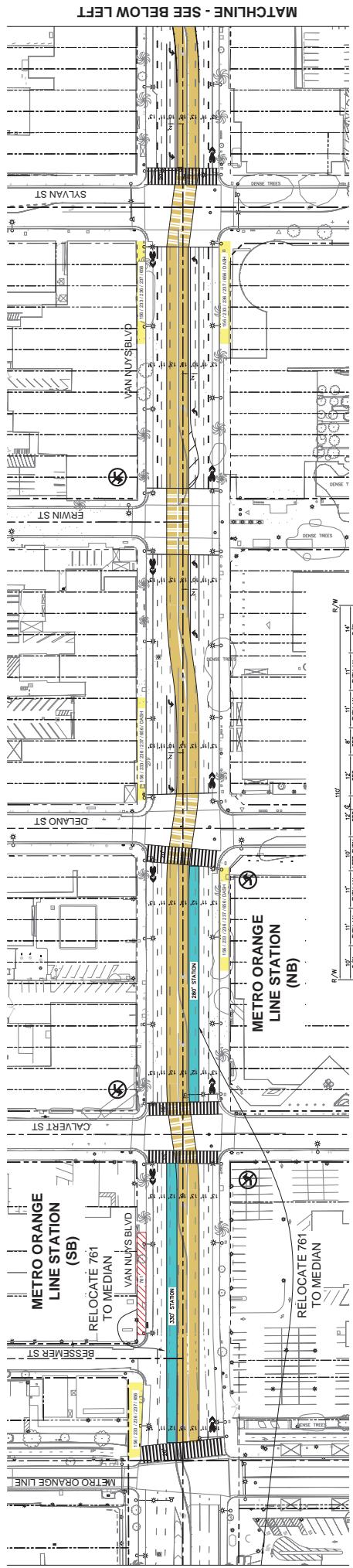
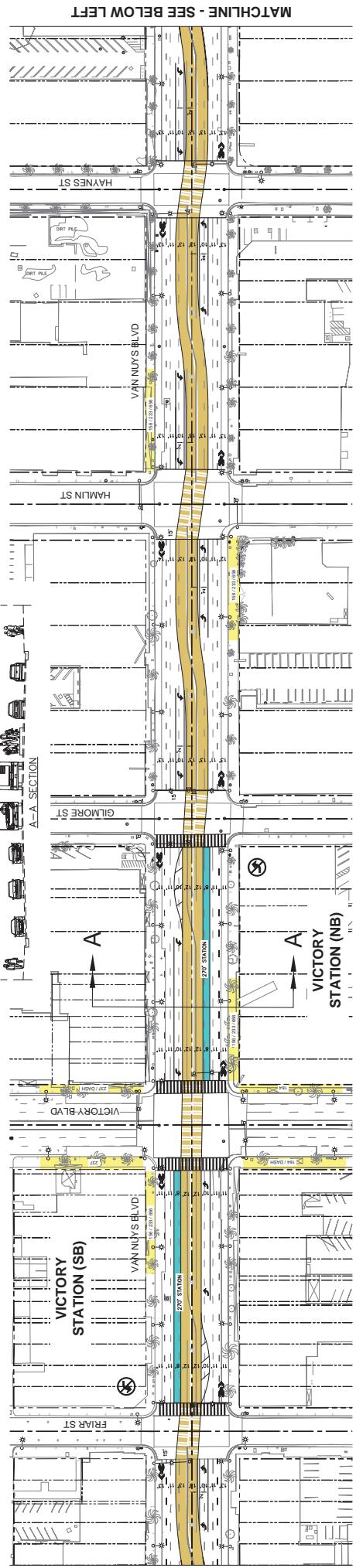
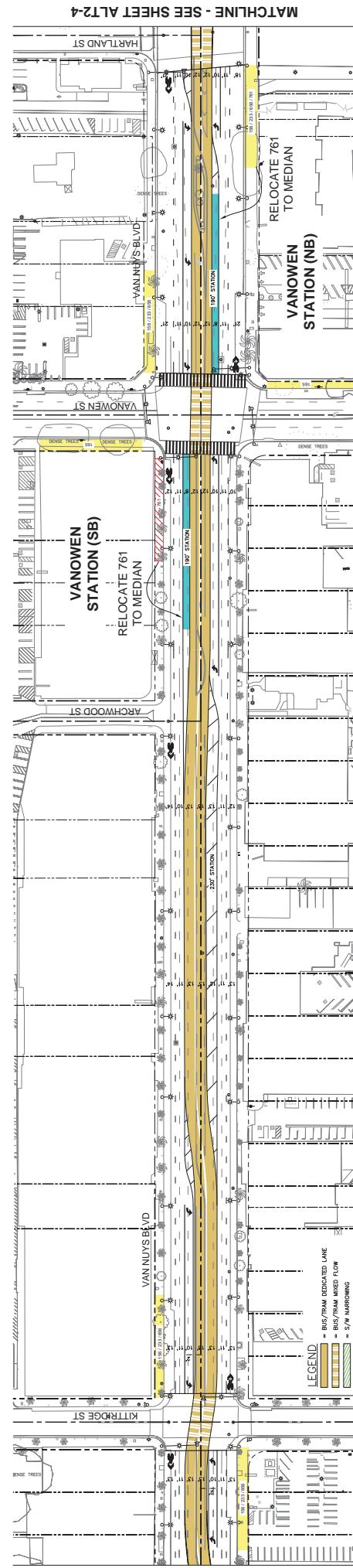
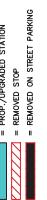


ALTERNATIVE 2 - BRT MEDIAN RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-3

KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-2002
(714) 266-1110, Fax: (714) 266-1108



ALTERNATIVE 2 - BRT MEDIAN RUNNING

KOA CORPORATION

PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-2012
(714) 255-1010, Fax: (714) 255-1078

METRO

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-4

MATCHLINE - SEE SHEET ALT2-5

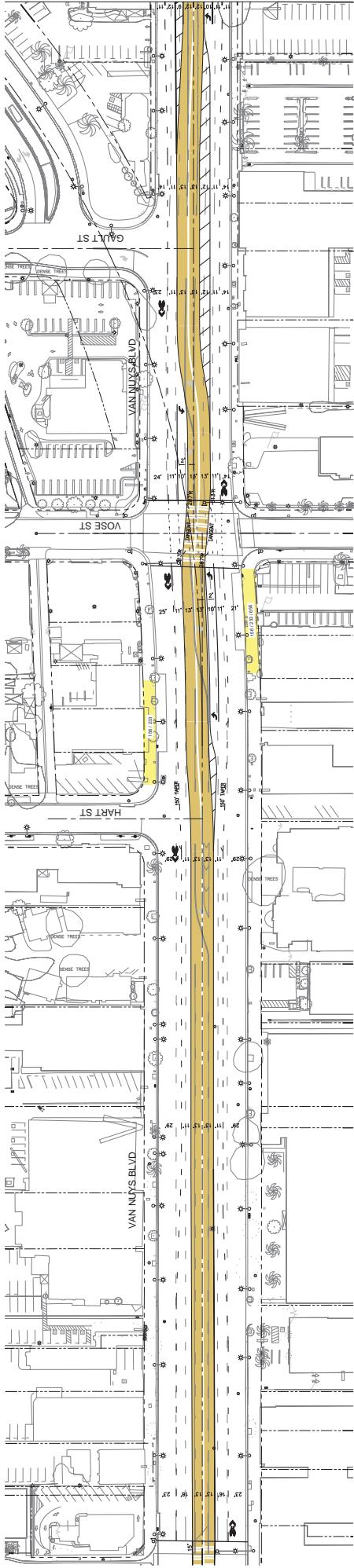
MATCHLINE - SEE SHEET ALT2-5

MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE ABOVE RIGHT

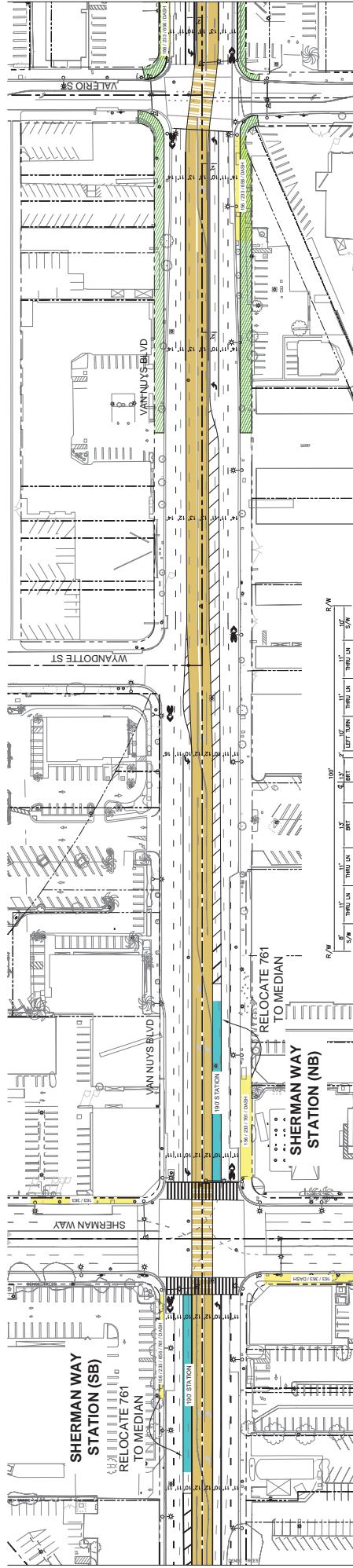
MATCHLINE - SEE BELOW LEFT

MATCHLINE - SEE BELOW LEFT



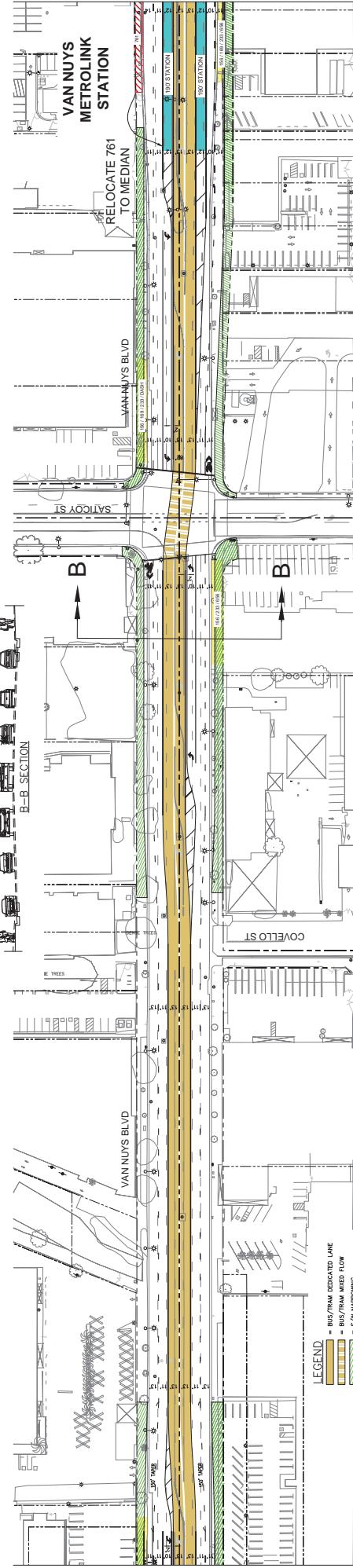
MATCHLINE - SEE BELOW LEFT

MATCHLINE - SEE BELOW LEFT



MATCHLINE - SEE SHEET ALT2-5

MATCHLINE - SEE SHEET ALT2-5



LEGEND

BUS/TRAM DEDICATED LANE

BUS/TRAM OVERHEAD FLOW

S/W NARROWINGS

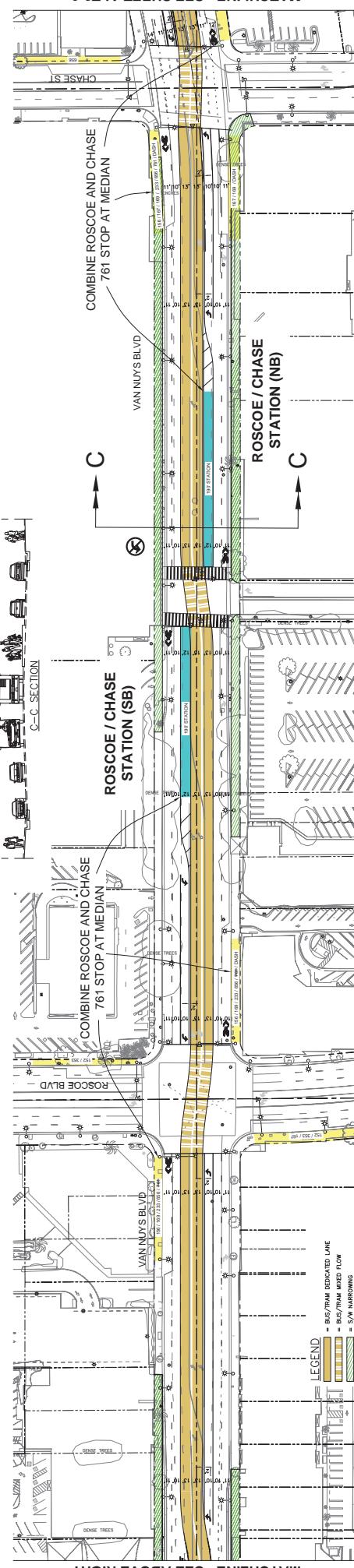
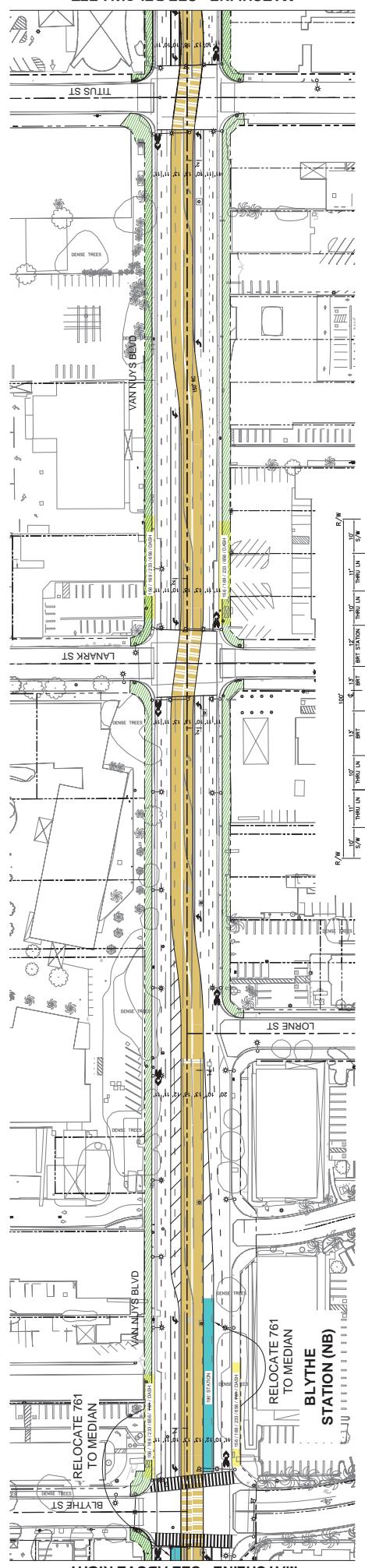
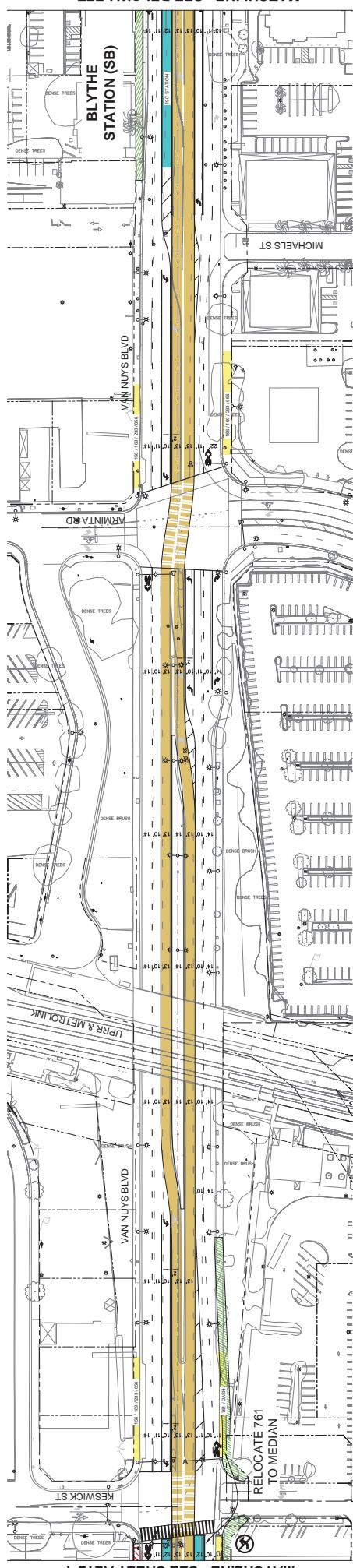
EXISTING STOP

PROPS/UPGRADED STATION

PAWNED STOP

REMOVED ON STREET PARKING

ALTERNATIVE 2 - BRT MEDIAN RUNNING

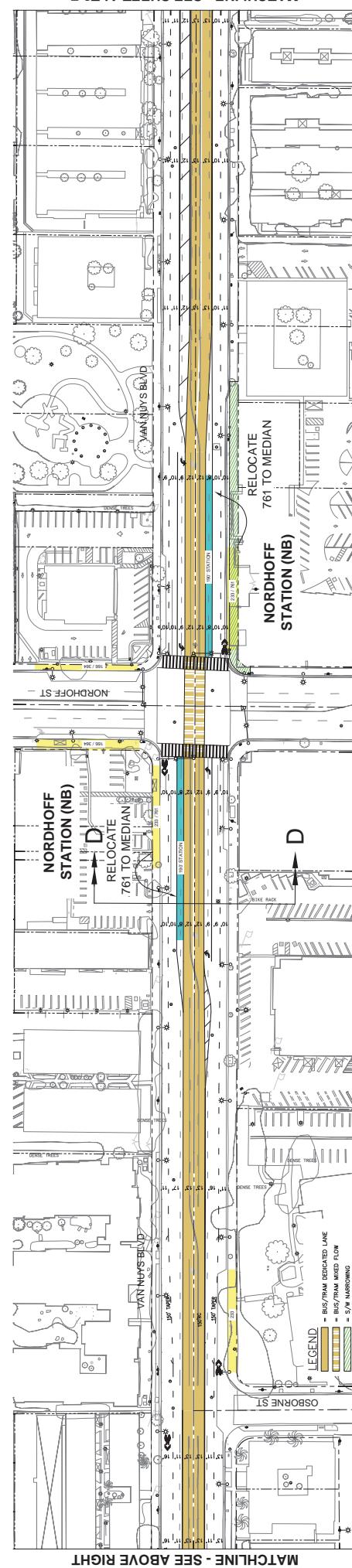
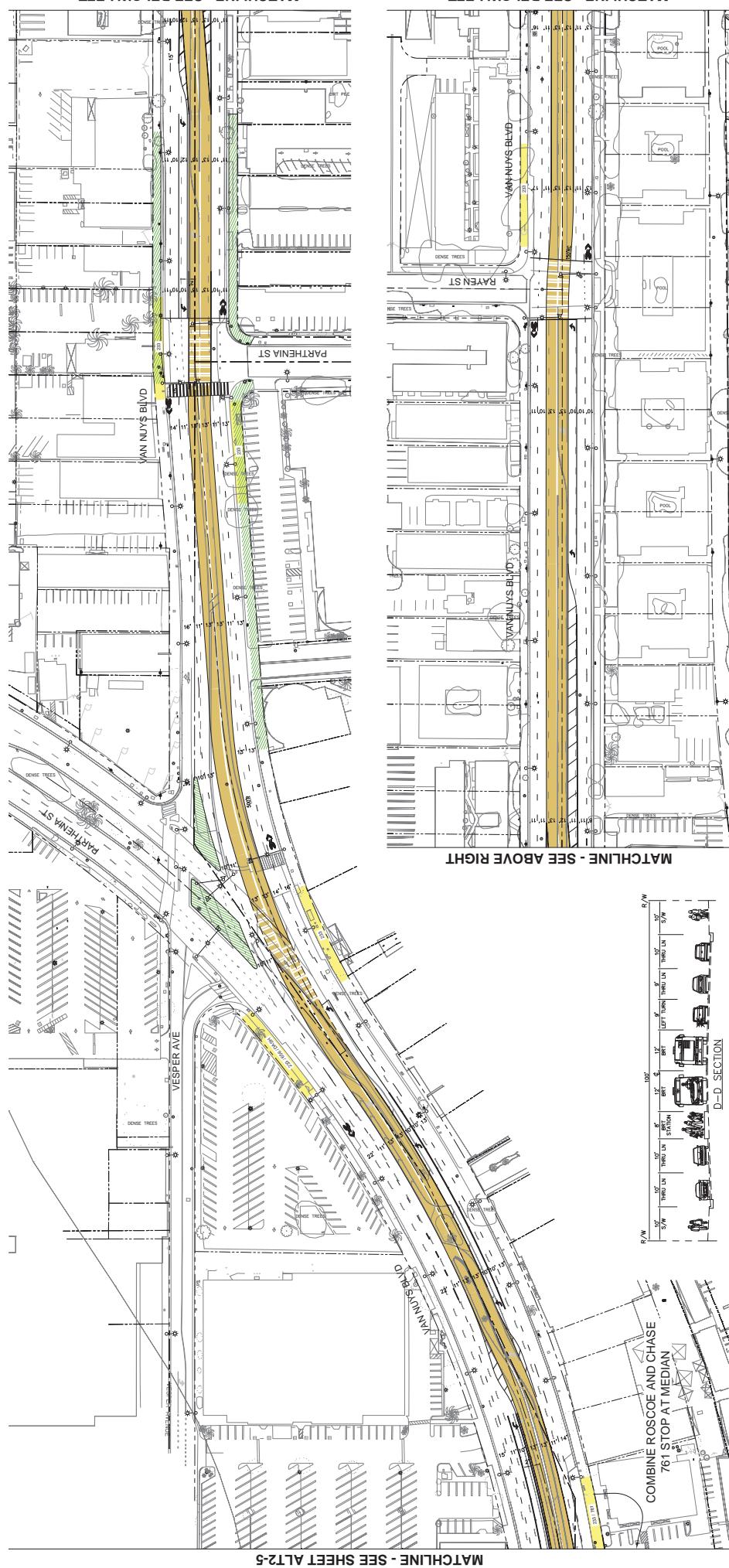


EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-6

ALTERNATIVE 2 - BRT MEDIAN RUNNING

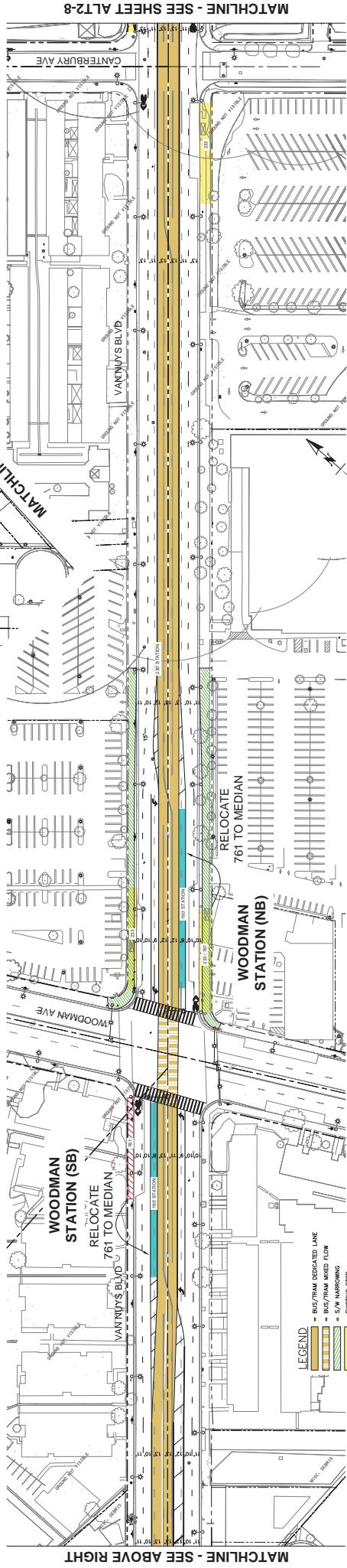
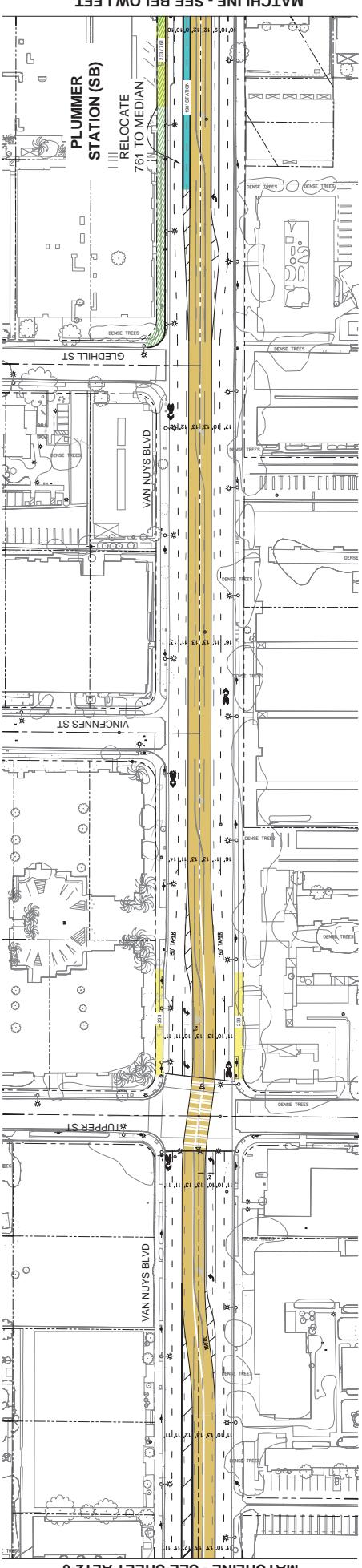
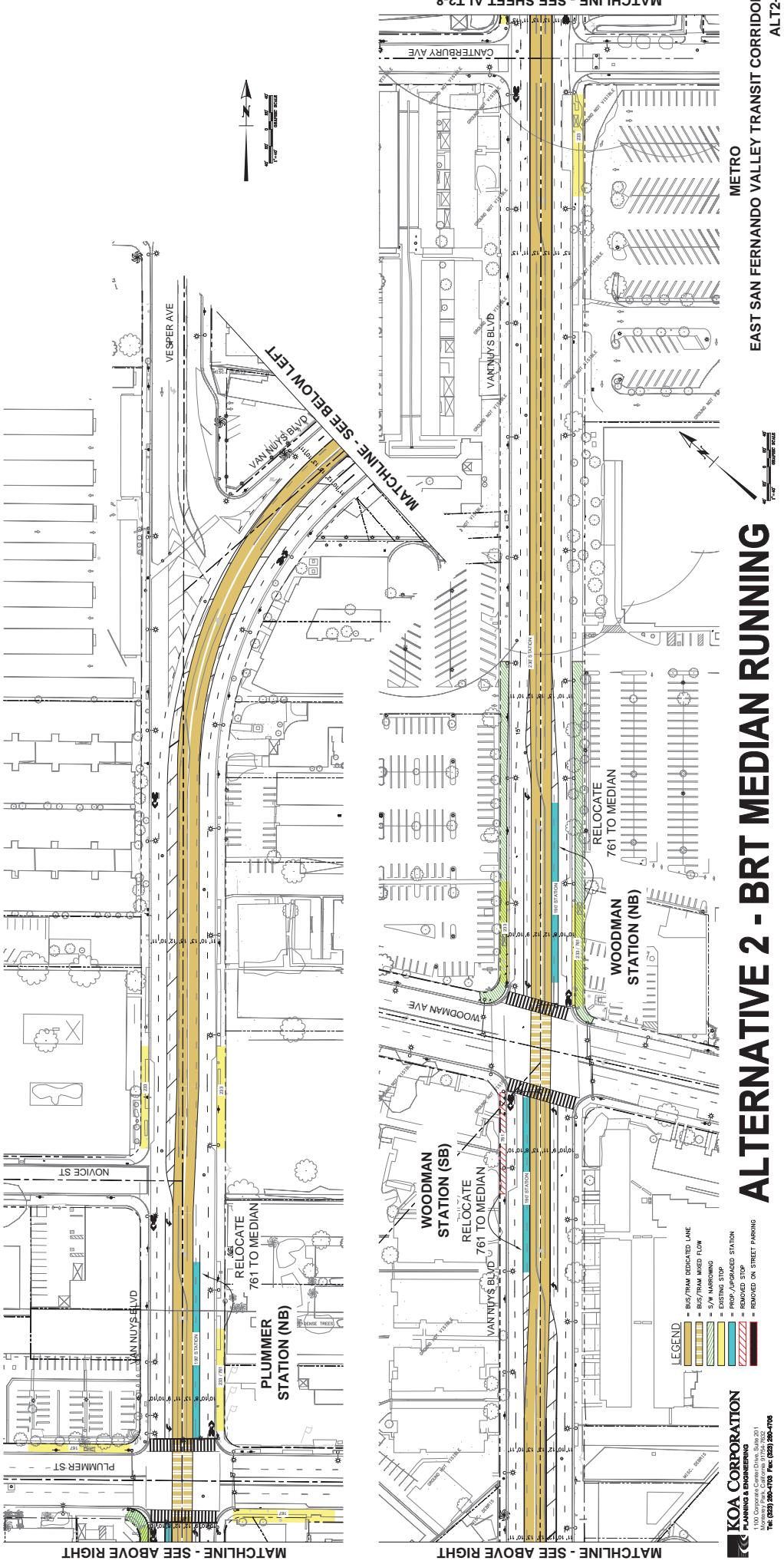
KOA CORPORATION
PLANNING & ENGINEERING

1100 Corporate Center Drive, Suite 201
Aliso Viejo, California 92656-2902
(714) 265-7110 Fax: (714) 265-7078



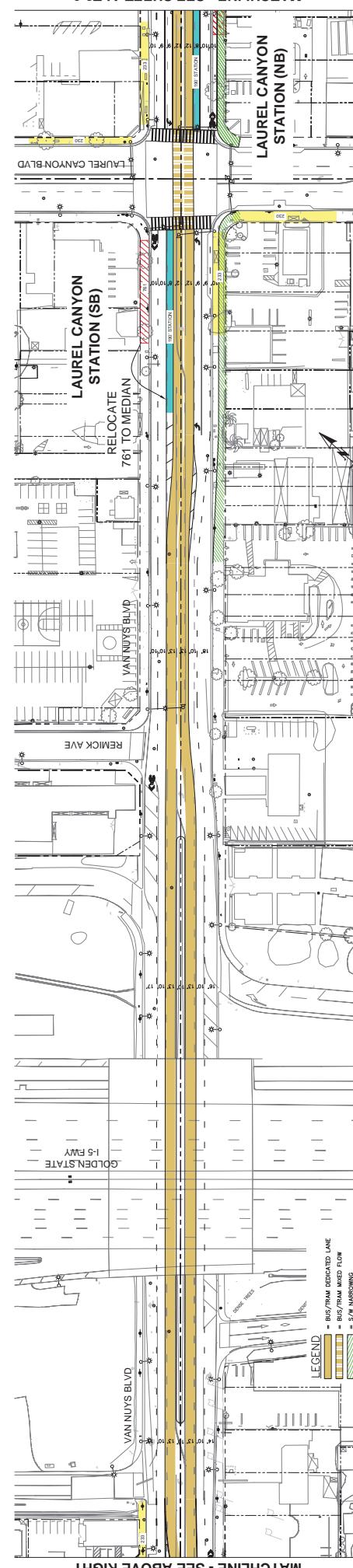
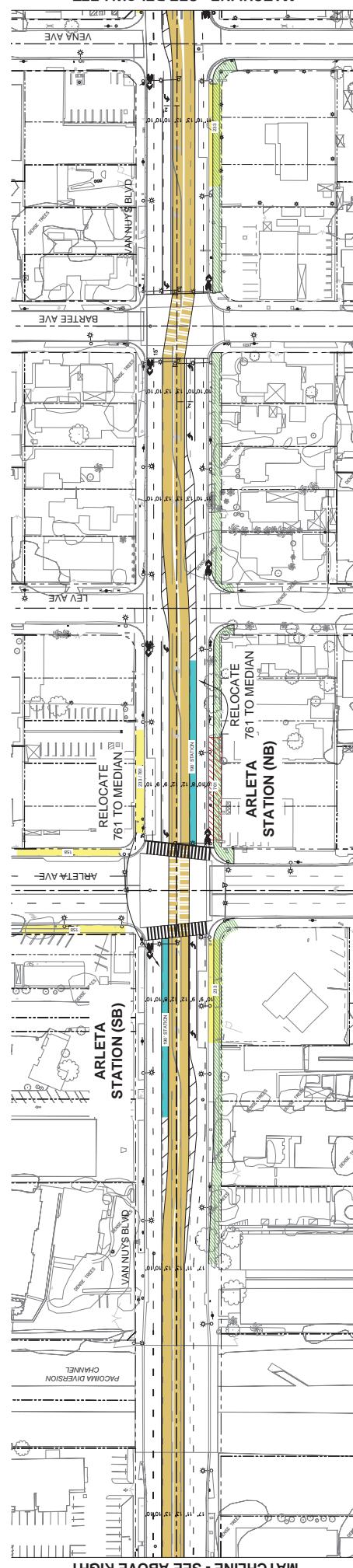
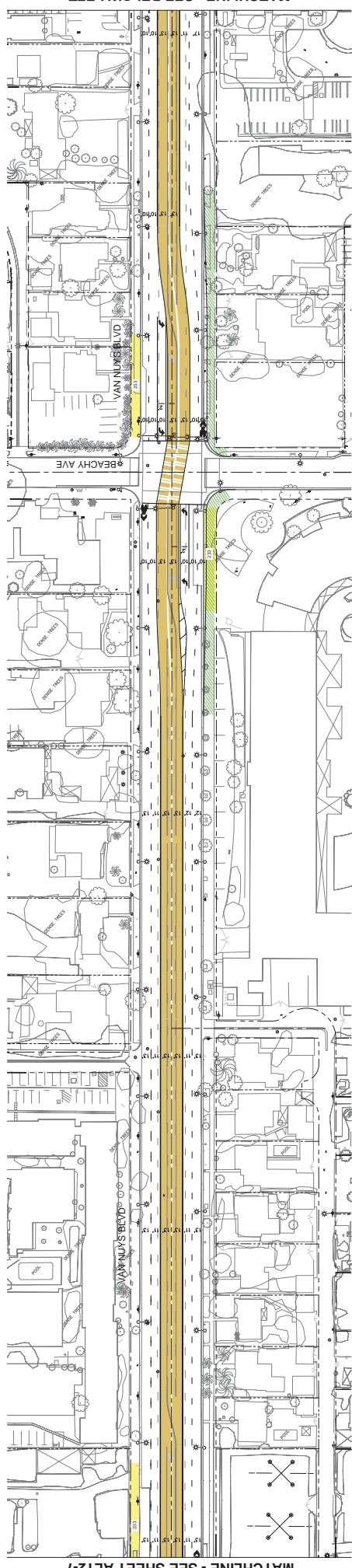
ALTERNATIVE 2 - BRT MEDIAN RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-7



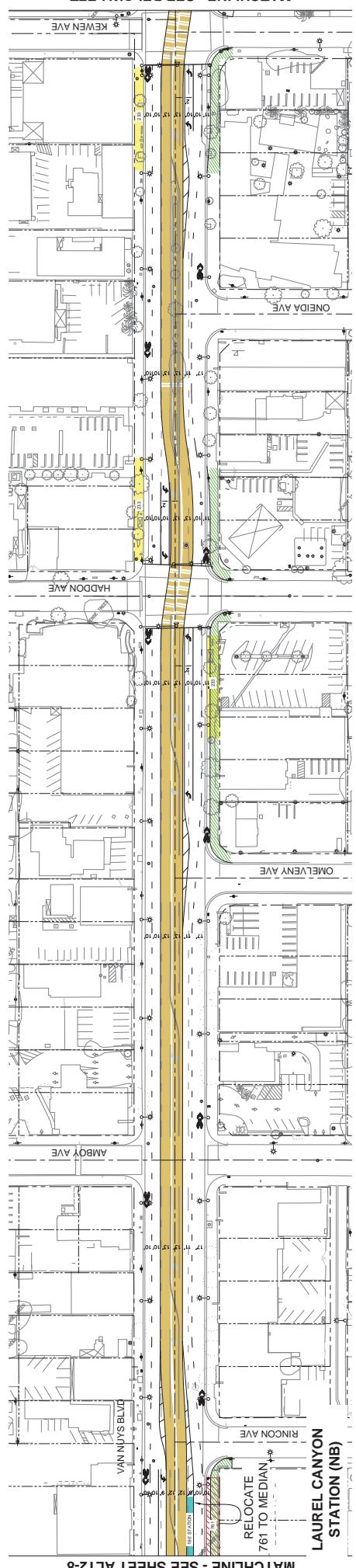
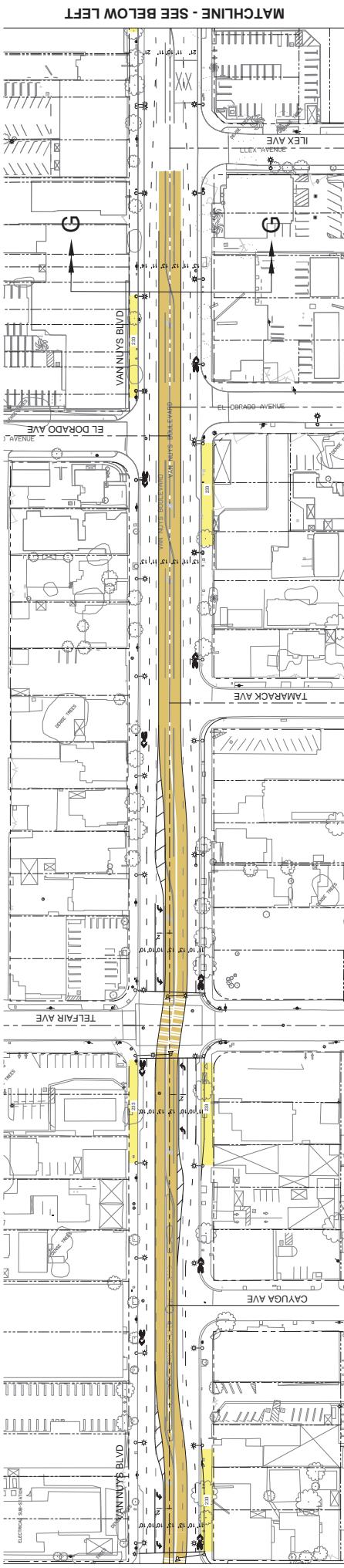
ALTERNATIVE 2 - BRT MEDIAN RUNNING

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-8

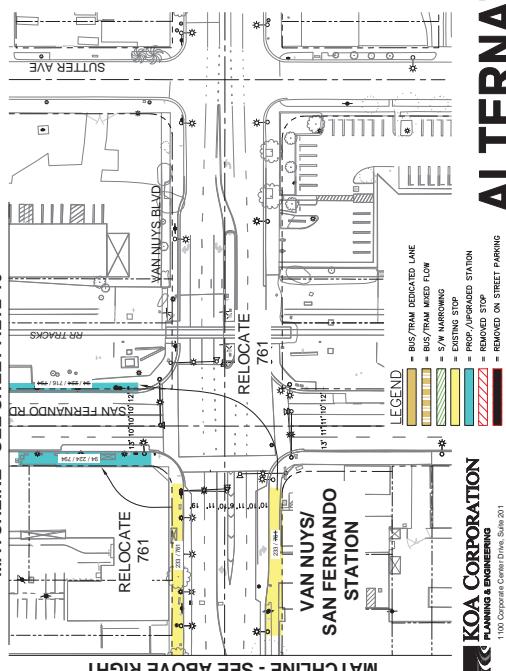


ALTERNATIVE 2 - BRT MEDIAN RUNNING

METRO
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-9



MATCHLINE - SEE SHEET ALT2-10

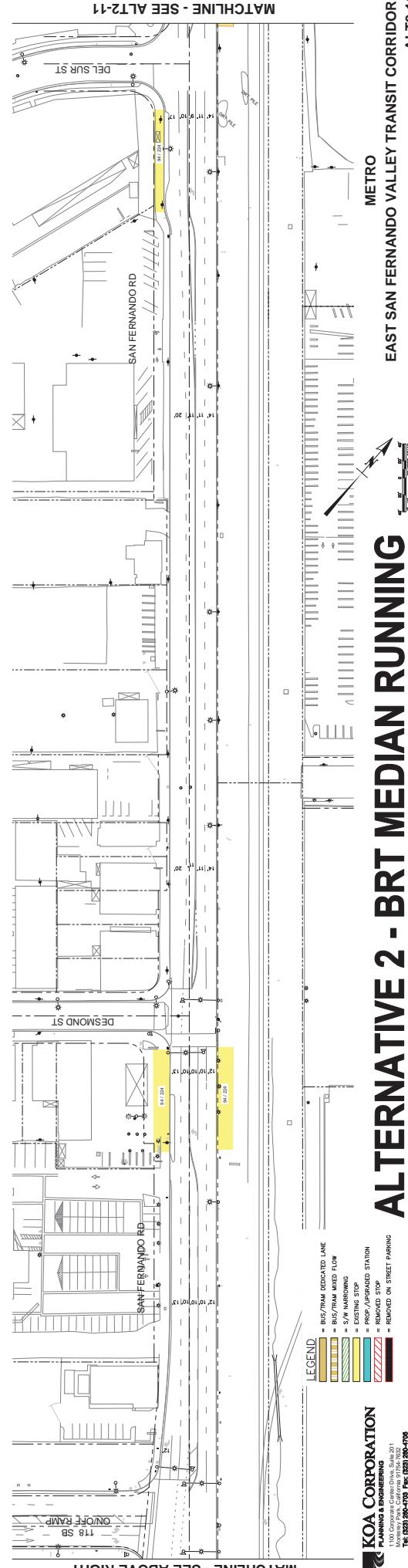
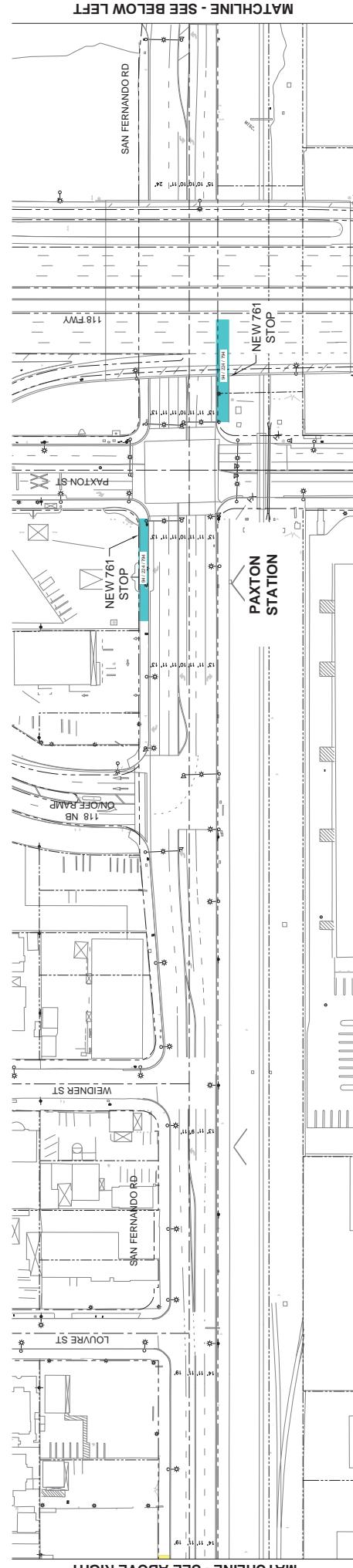
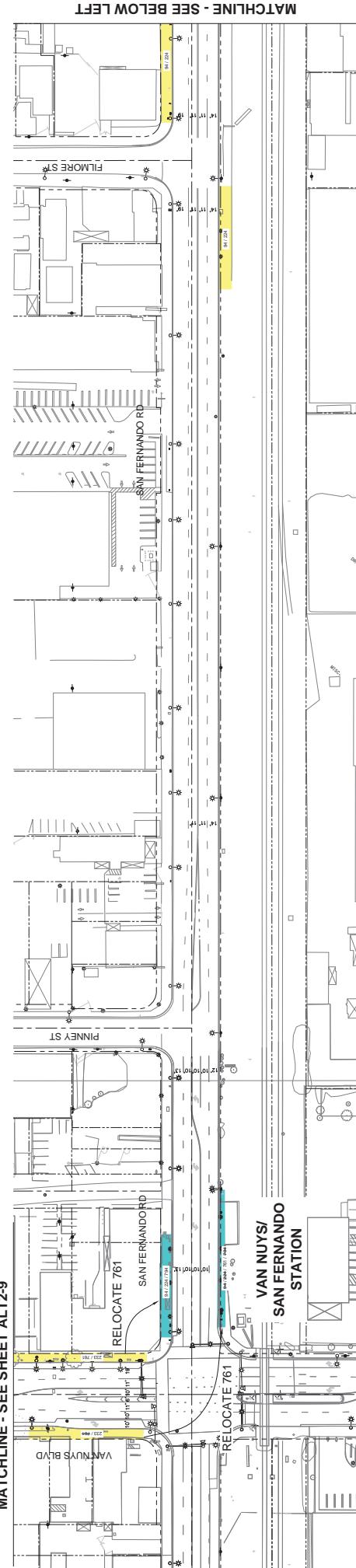


MATCHLINE - SEE ABOVE RIGHT
MATCHLINE - SEE BELOW LEFT
MATCHLINE - SEE ABOVE RIGHT
MATCHLINE - SEE BELOW LEFT
MATCHLINE - SEE BELOW LEFT

ALTERNATIVE 2 - BRT MEDIAN RUNNING

MATCHLINE - SEE ALT2-10
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR

ALT2-10



ALTERNATIVE 2 - BRT MEDIAN RUNNING

METRO
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR

ALT2-11

KOA CORPORATION

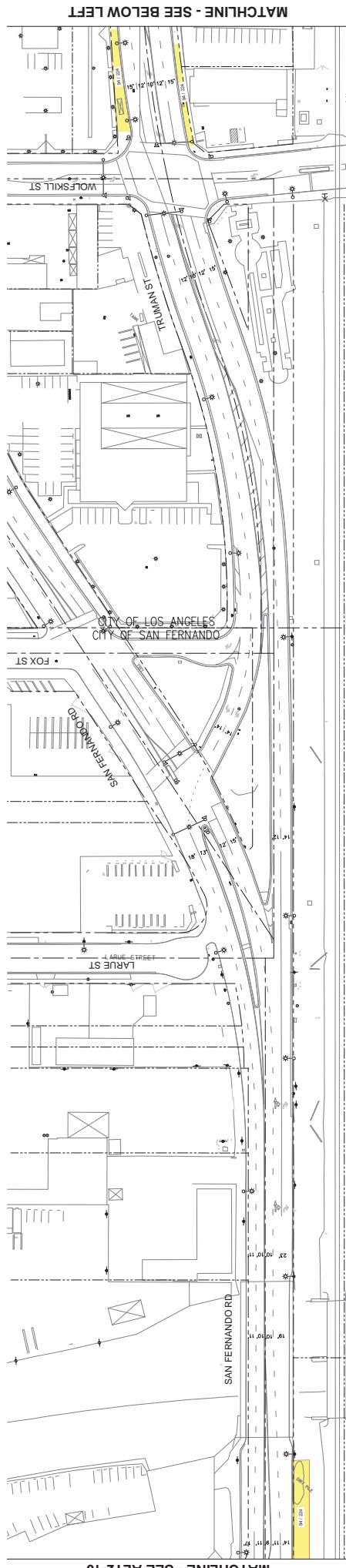
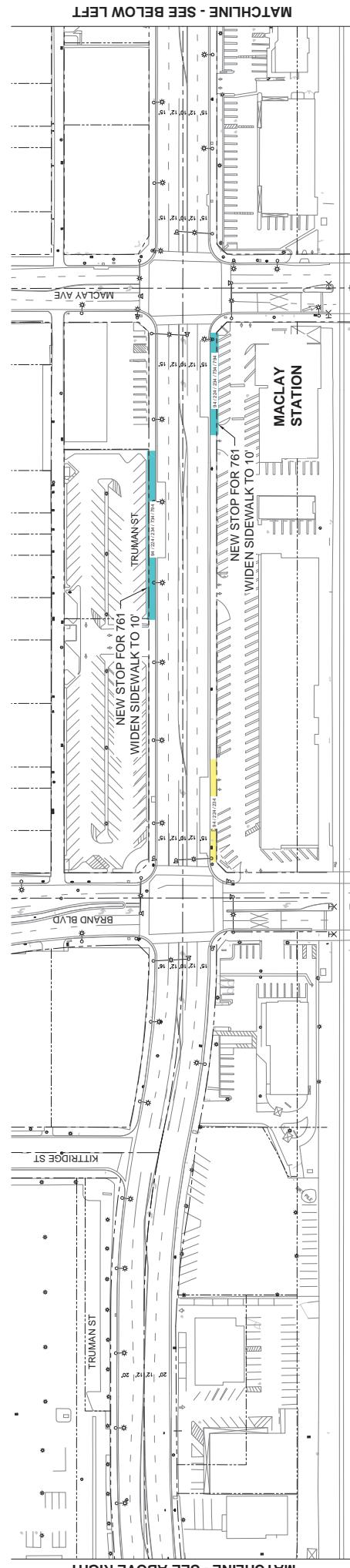
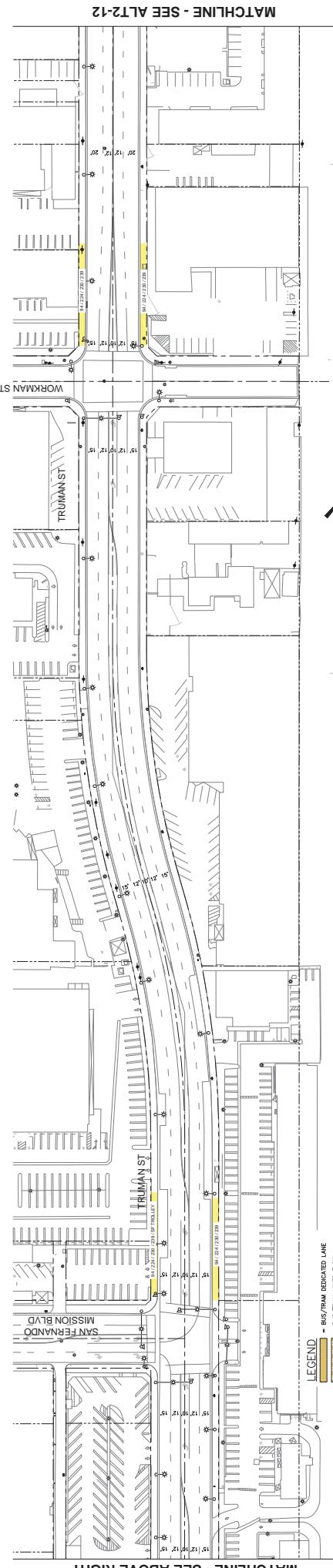
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 201
Aliso Viejo, California 92656-2012

Tel: (714) 266-1010 Fax: (714) 266-1078

LEGEND

- BUS/TRAM DEDICATED LANE
- BUS/TRAM PEAK FLOW
- S/W NARROWINGS
- EXISTING STOP
- PROP./UPGRADED STATION
- DRAFTED STOP
- REMOVED ON STREET PARKING

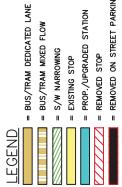


ALTERNATIVE 2 - BRT MEDIAN RUNNING

KOA CORPORATION

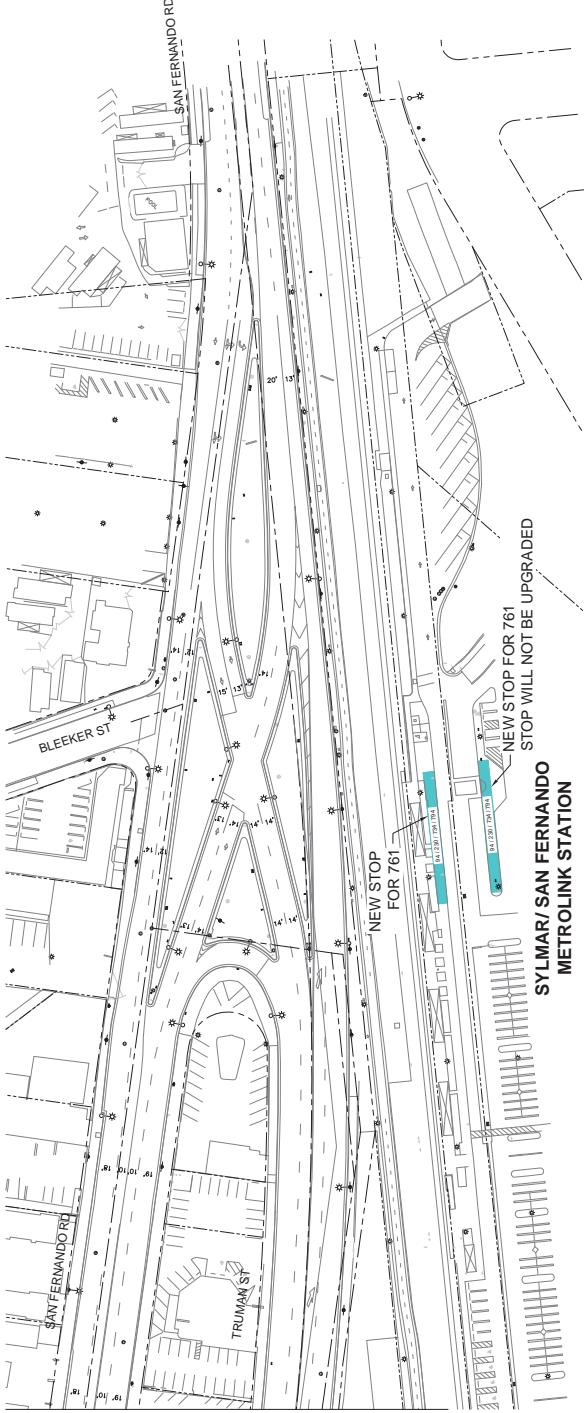
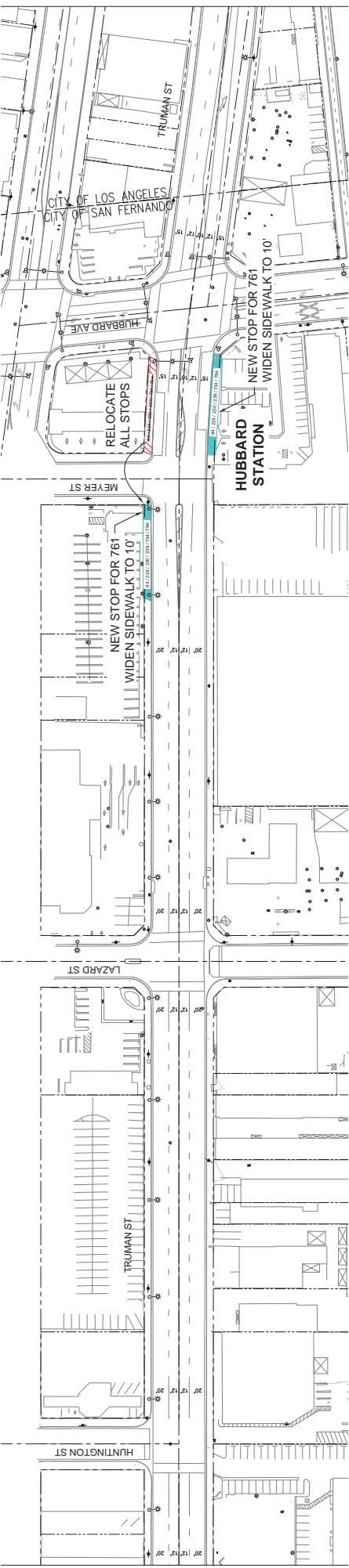
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 201
City of Industry, California 91748-2012
(626) 264-1110 Fax: (626) 264-1108



METRO

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT2-12



MATCHLINE - SEE BELOW LEFT

MATCHLINE - SEE ALT-11

MATCHLINE - SEE ABOVE RIGHT

2

ALTERNATIVE 3 - TRAM MEDIAN RUNNING

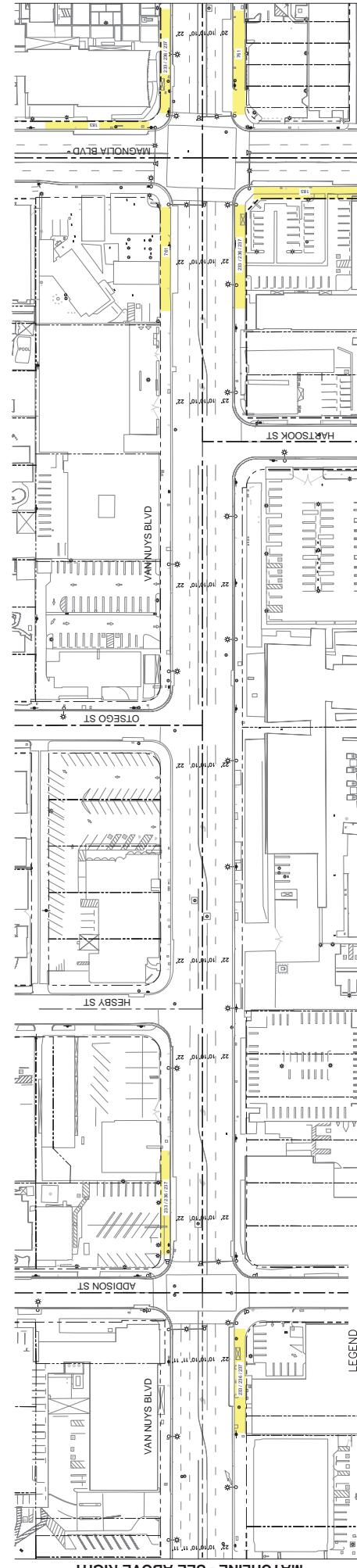
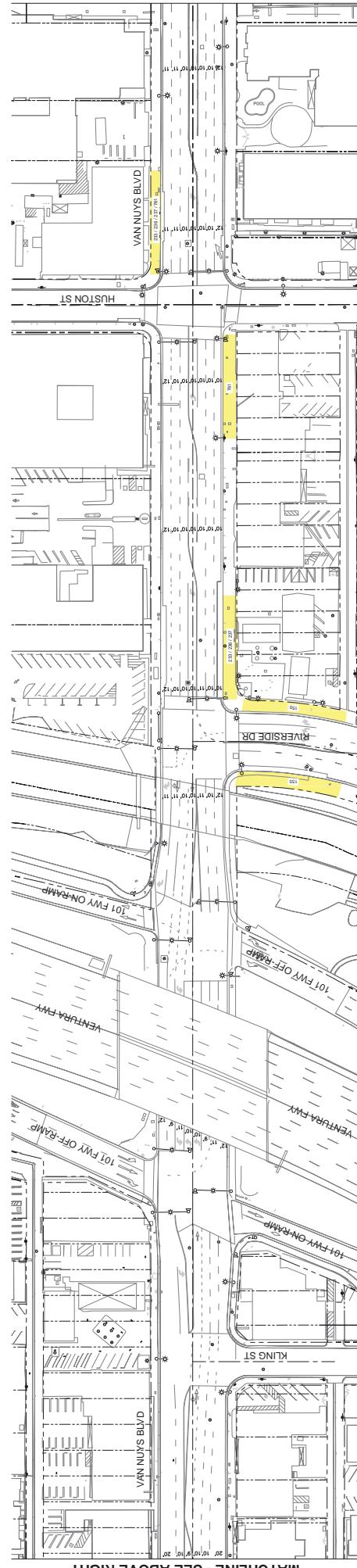
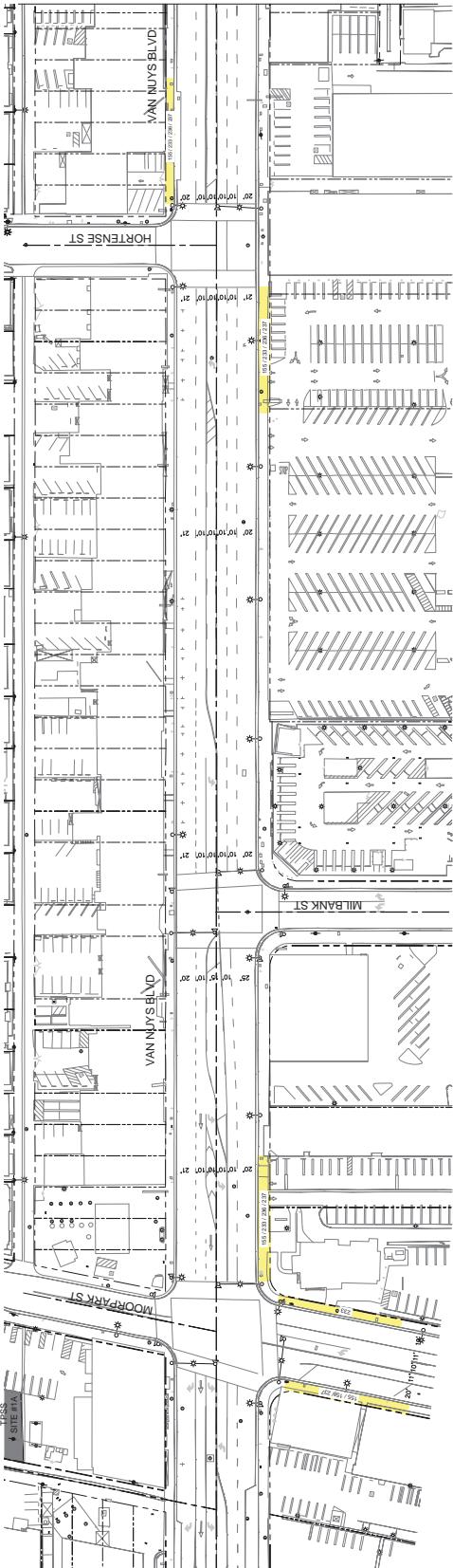
KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
(714) 266-1110, Fax: (714) 266-1105

LEGEND

- BUS/TRAM DEDICATED LANE
- BUS/TRAM MIXED FLOW
- SAN HARBOR OR WINDING
- EXISTING TRAM STOP
- PROPOSED TRAM STOP
- REMOVED STOP

MATCHLINE - SEE SHEET ALT3-1
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR

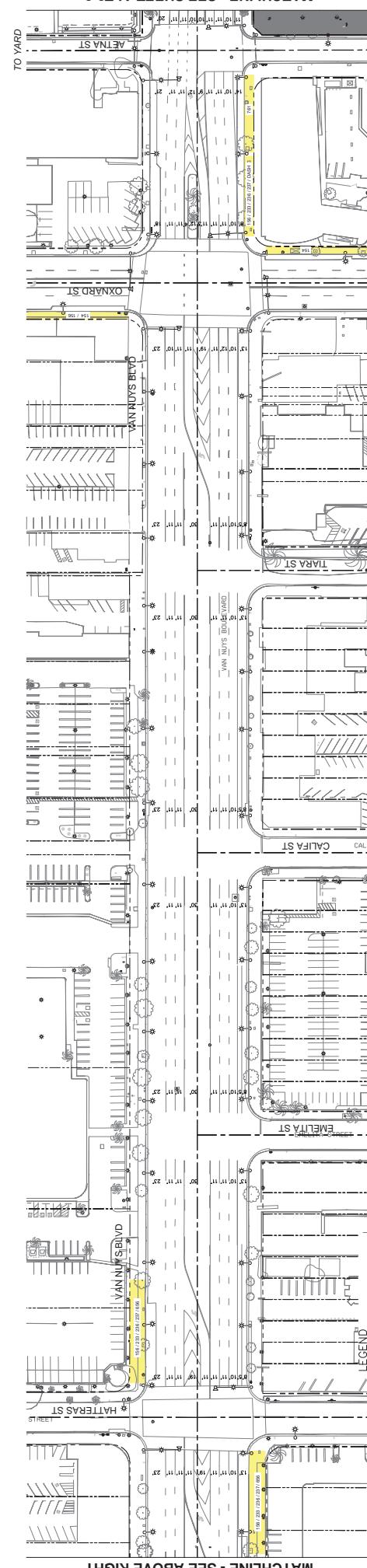
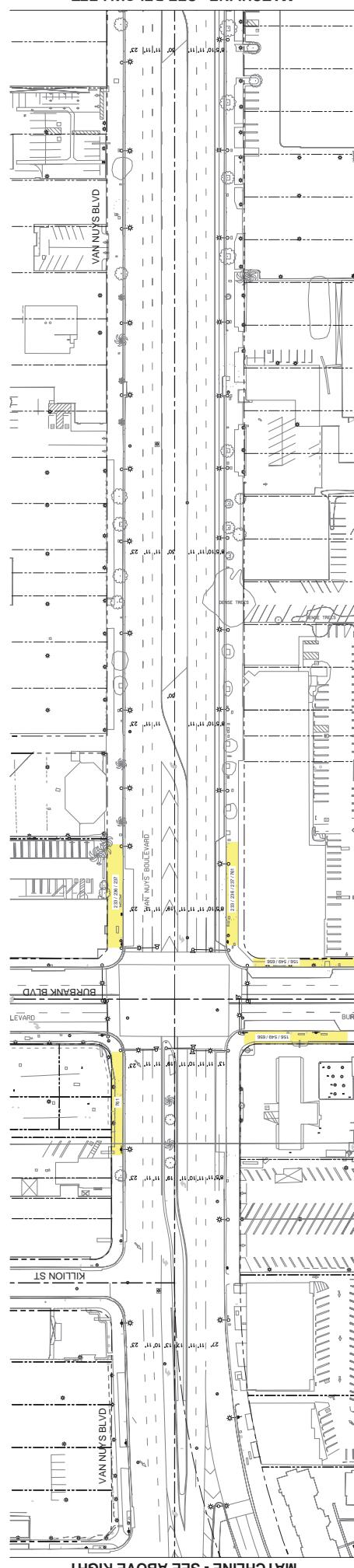
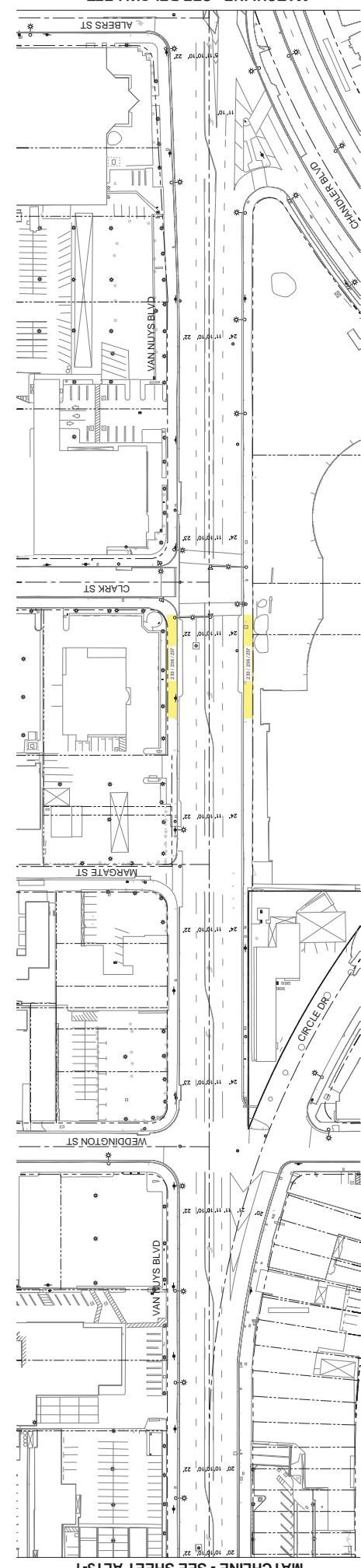


ALTERNATIVE 3 - TRAM MEDIAN RUNNING

KOA CORPORATION

PLANNING & ENGINEERING
110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
Tel: (800) 365-1100 Fax: (714) 459-7008

MATCHLINE - SEE SHEET ALT-3-2
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR



MATCHLINE - SEE SHEET ALT-3-1

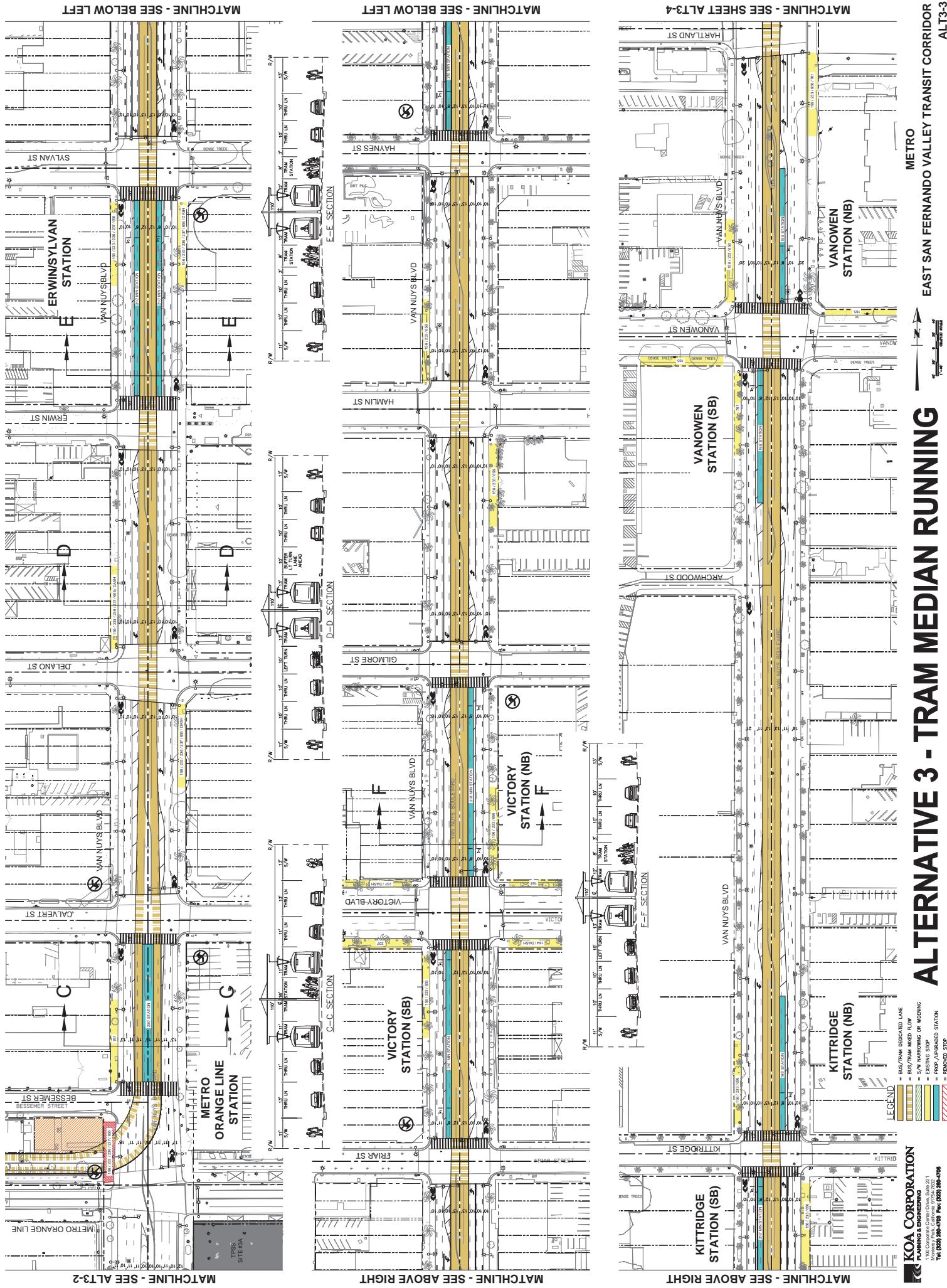
MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE SHEET ALT-3-3

LEGEND

- BUS/TRAM DEDICATED LANE
- BUS/TRAM MIXED FLOW
- SAN NARROWING OR WIDENING
- EXISTING STOP
- PROP. APPROVED STOP
- REMOVED STOP

ALTERNATIVE 3 - TRAM MEDIAN RUNNING



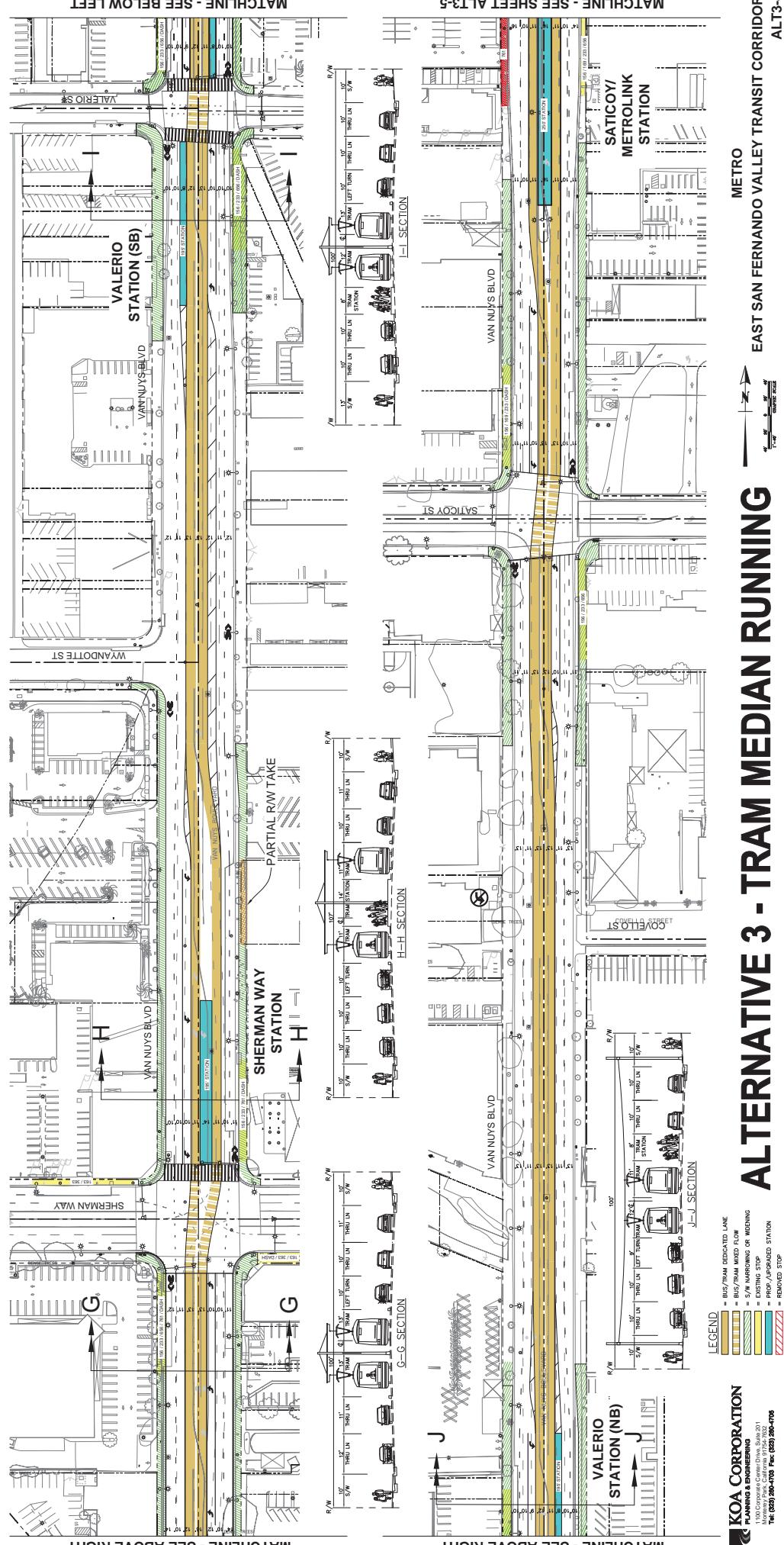
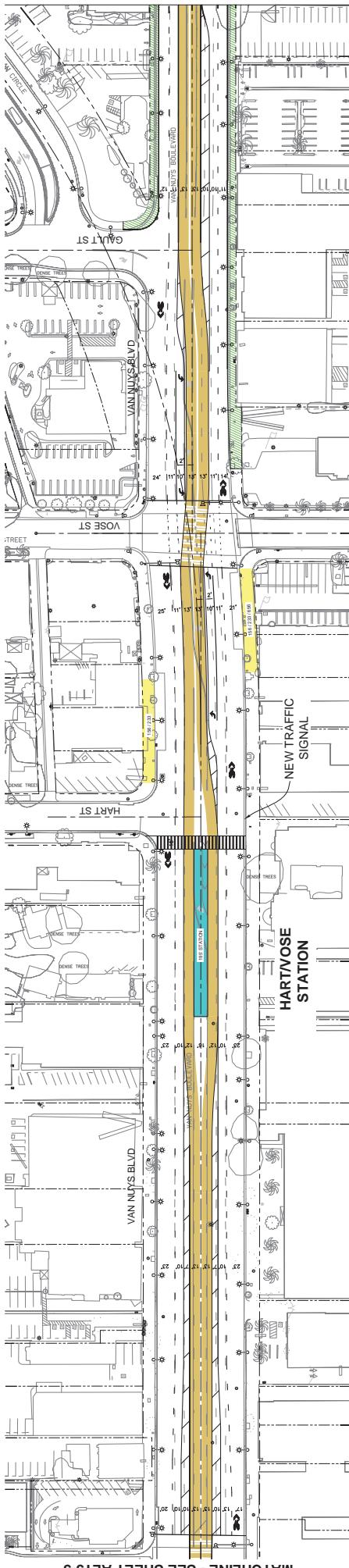
ALTERNATIVE 3 - TRAM MEDIAN RUNNING

KOA CORPORATION

PLANNING & ENGINEERING
110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
(714) 266-1010 Fax: (714) 266-1078

METRO

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-4



ALTERNATIVE 3 - TRAM MEDIAN RUNNING

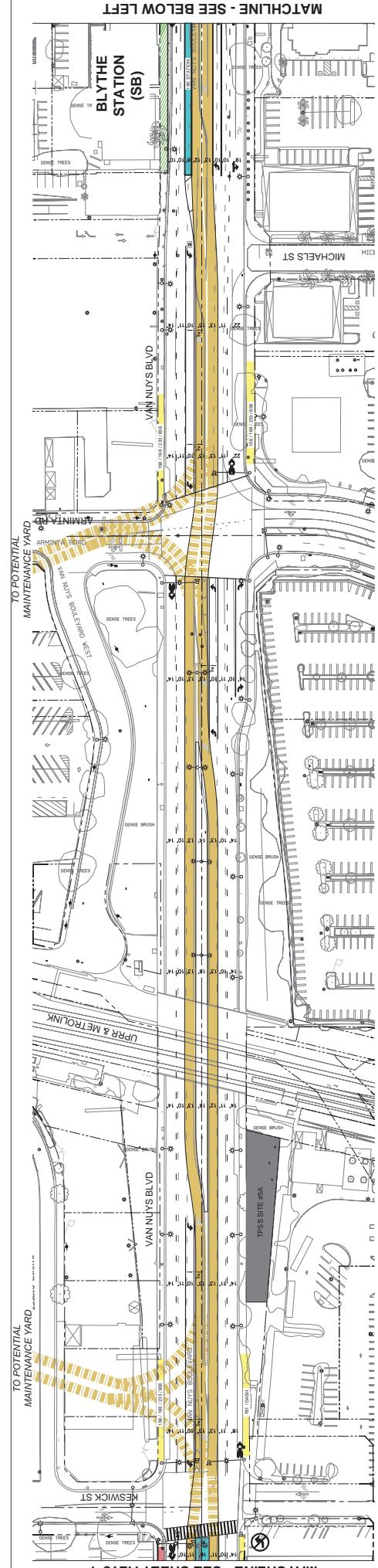
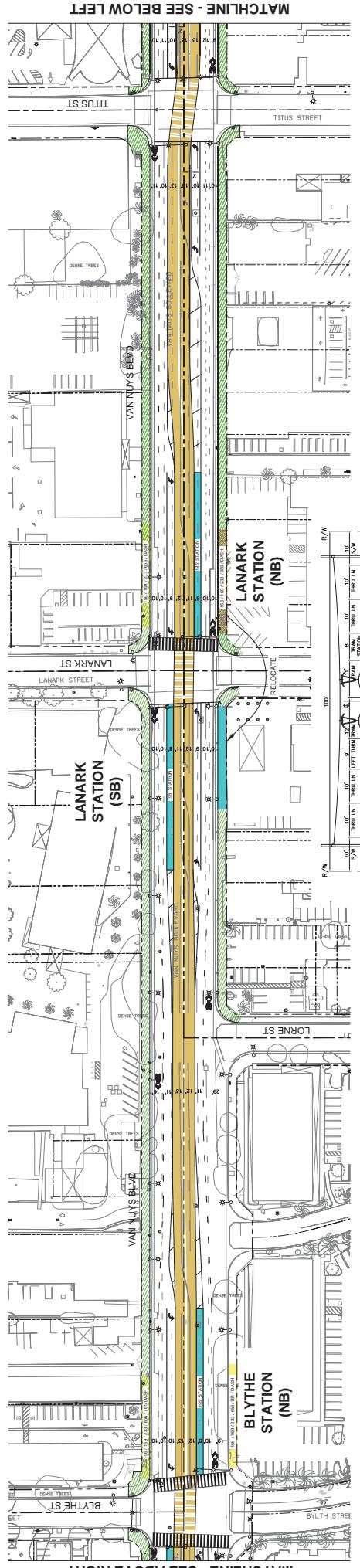
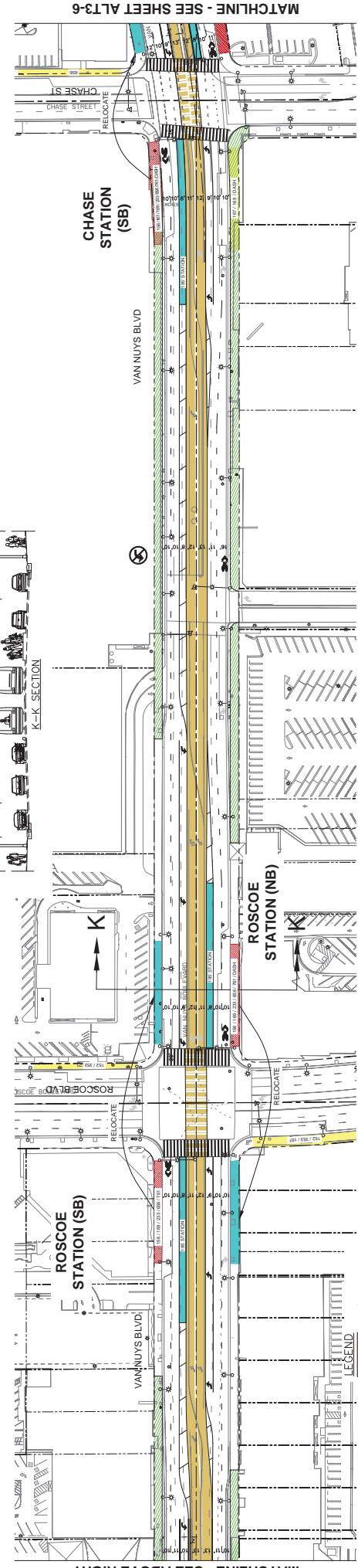
KOA CORPORATION

PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-2002
Tel: (714) 265-1110 Fax: (714) 265-1108

METRO

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-5



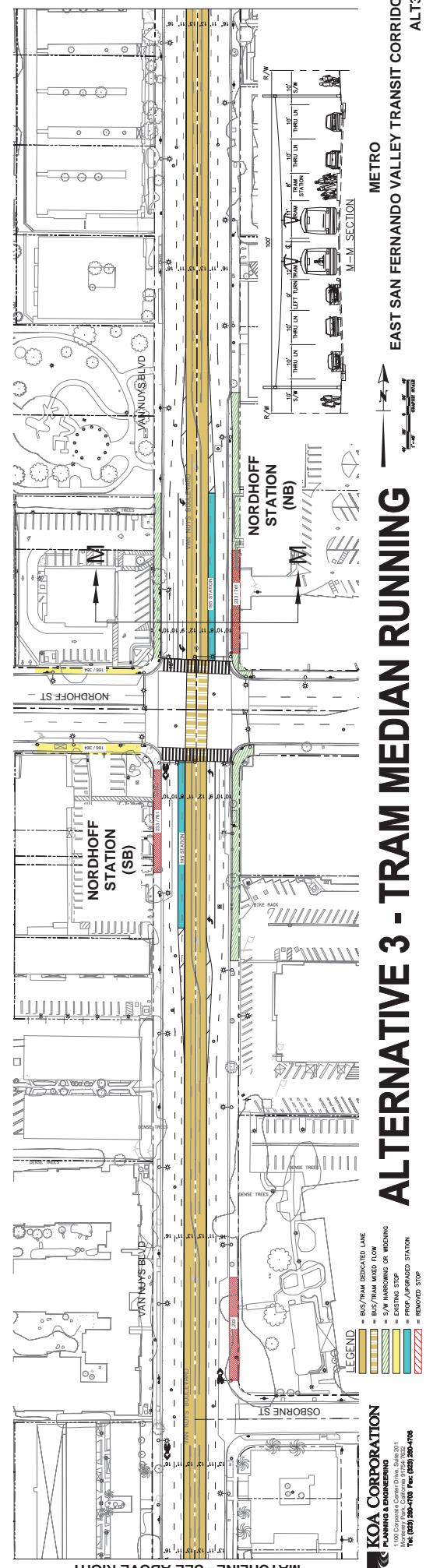
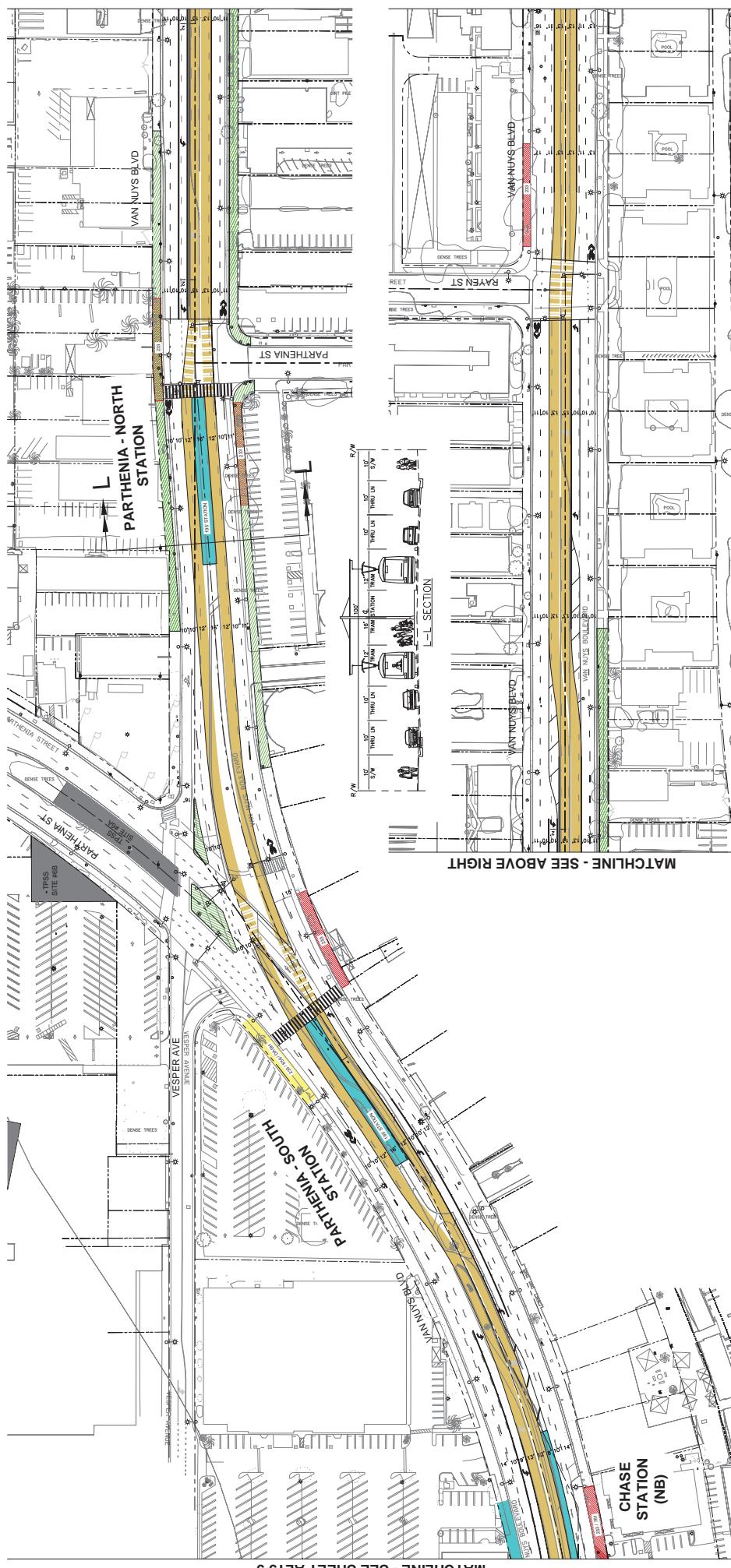
ALTERNATIVE 3 - TRAM MEDIAN RUNNING

MATCHLINE - SEE SHEET ALT3-7
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-6

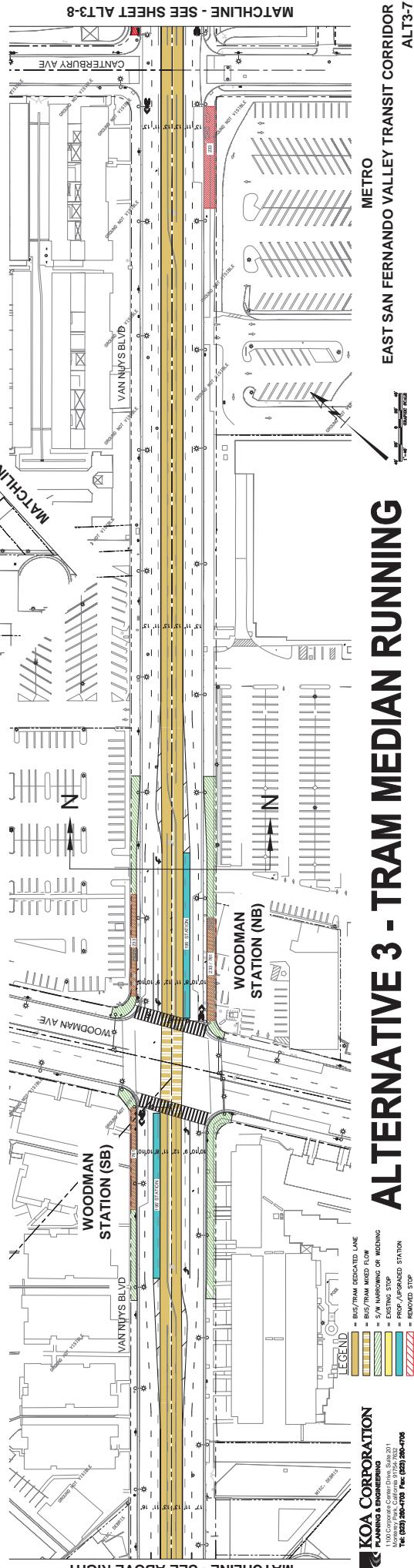
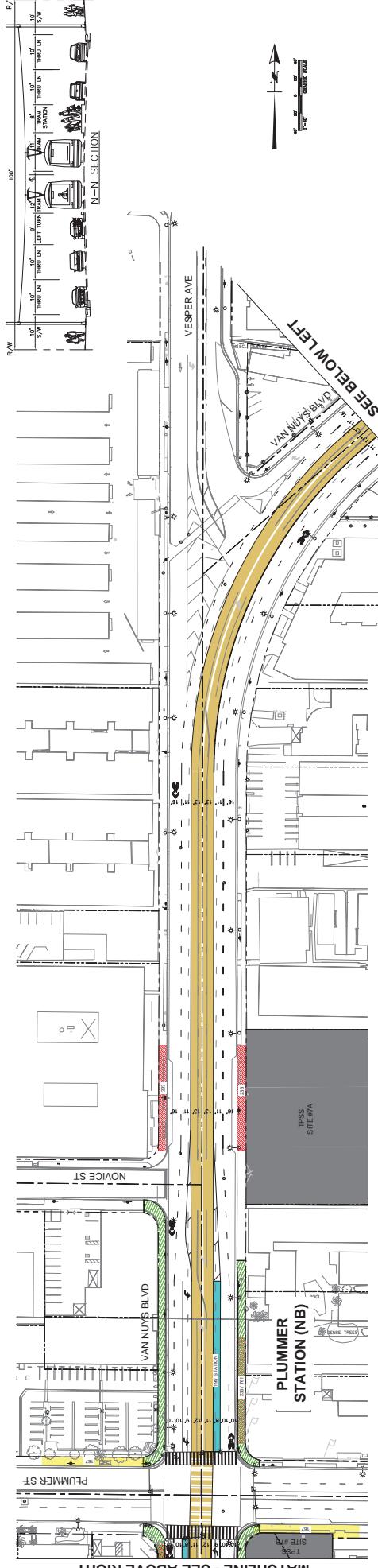
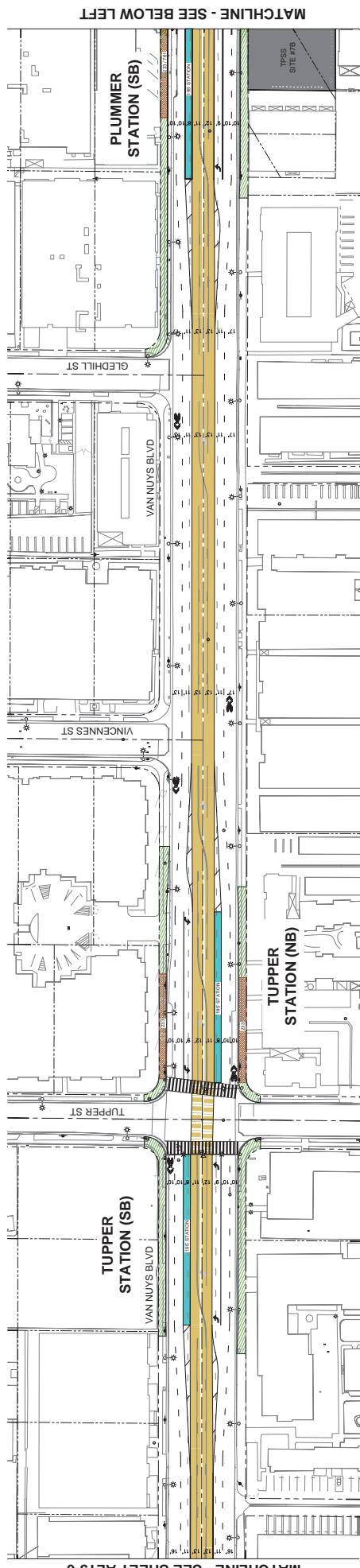
KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656-7002
Tel: (800) 267-1110 Fax: (714) 266-7078

LEGEND
 ■ BUS/TRAM DEDICATED LANE
 ■ BUS/TRAM MIXED FLOW
 ■ S/N HARROWING OR WIDENING
 ■ EXISTING STATION
 ■ PROP. A/B/C/D/E STOP
 ■ REMOVED STOP



ALTERNATIVE 3 - TRAM MEDIAN RUNNING



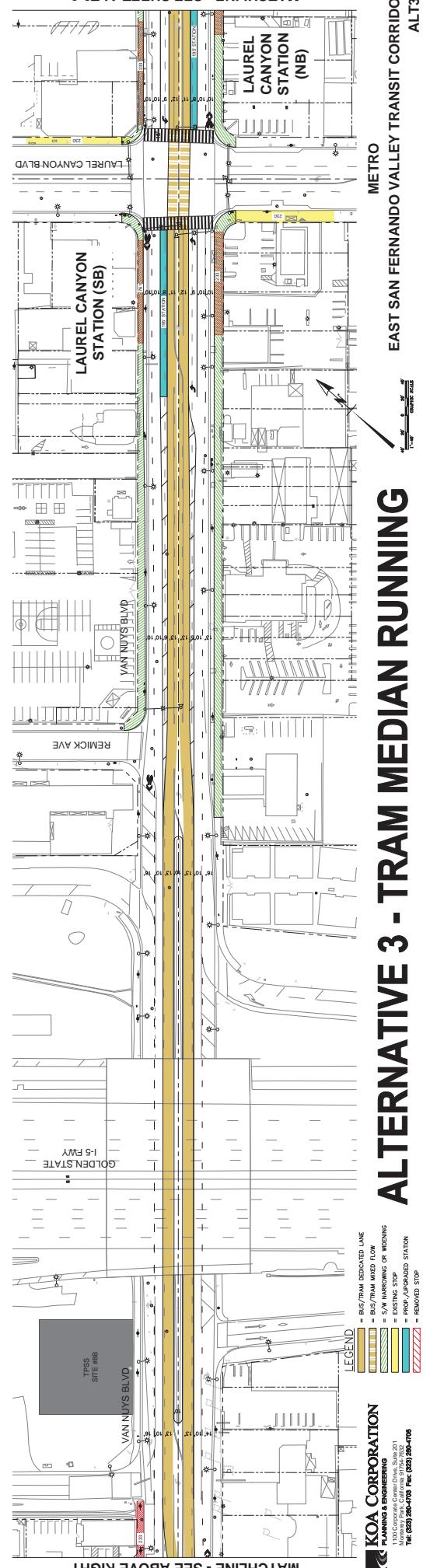
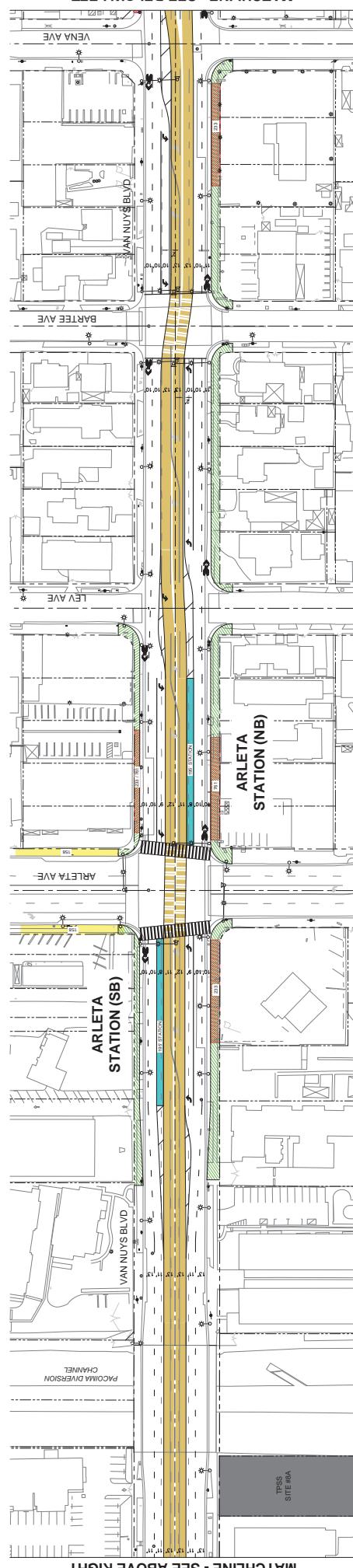
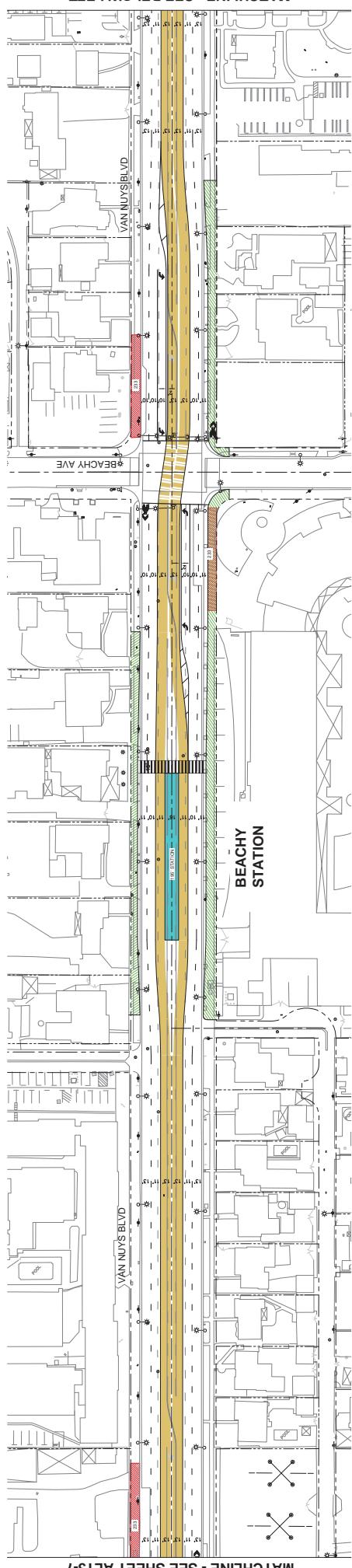
ALTERNATIVE 3 - TRAM MEDIAN RUNNING

MATCHLINE - SEE SHEET ALT3-8
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-8

LEGEND

KOA CORPORATION
PLANNING & ENGINEERING

110 Corporate Center Drive, Suite 301
Aliso Viejo, California 92656
Tel: (714) 266-1100, Fax: (714) 266-1105

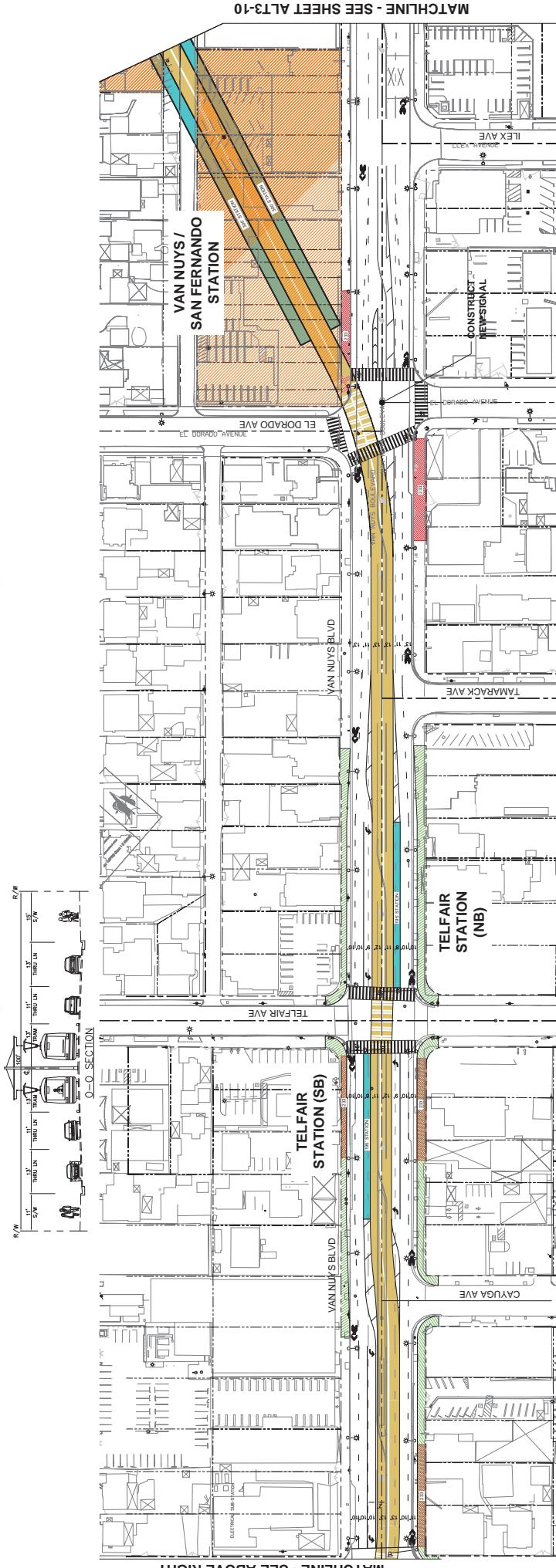
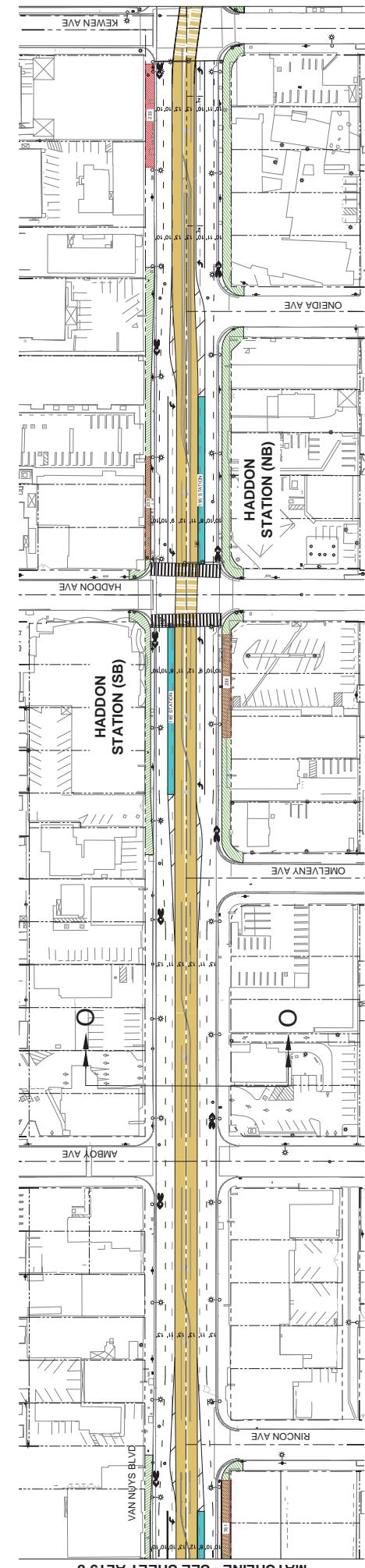


ALTERNATIVE 3 - TRAM MEDIAN RUNNING

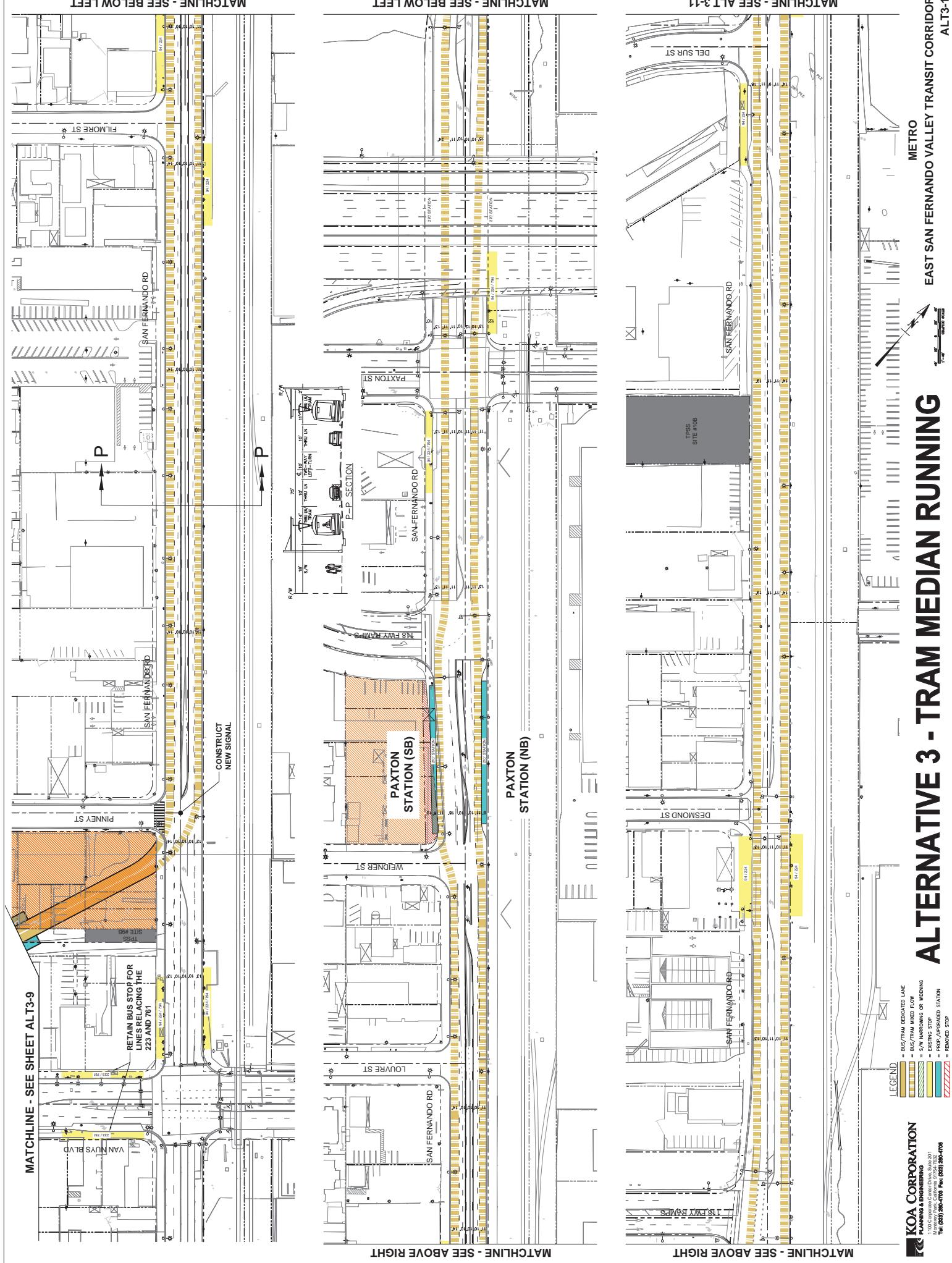
METRO
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-9

LEGEND

	BUS/TRAM DEDICATED LANE
	BUS/TRAM MIXED FLOW
	SAN MARSHING OR WIDENING
	EXISTING STOP
	PROP. APPROVED STATION
	REMOVED STOP



ALTERNATIVE 3 - TRAM MEDIAN RUNNING



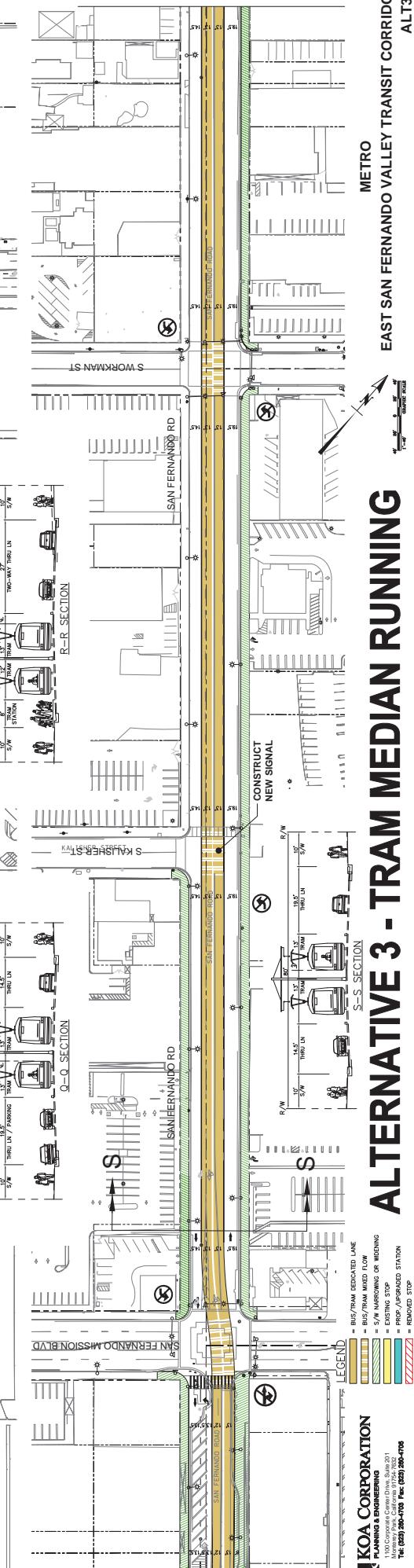
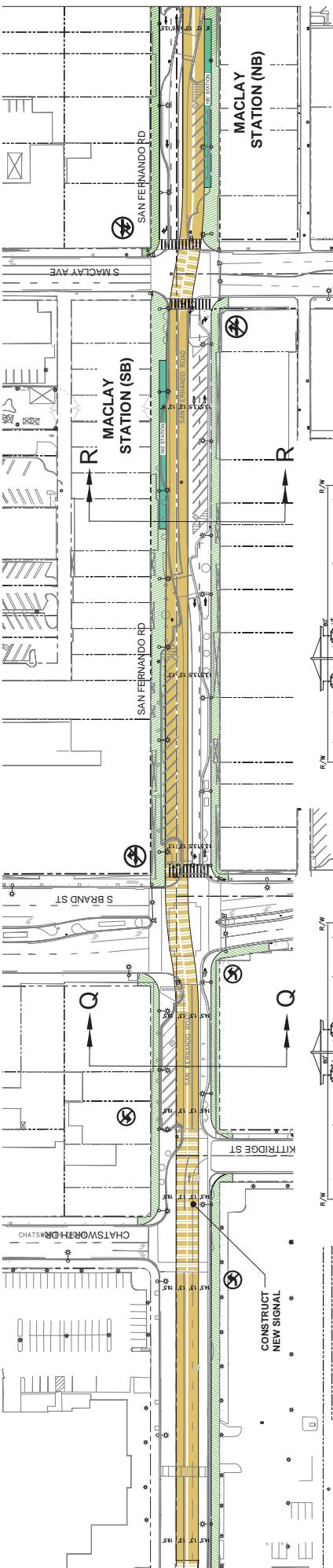
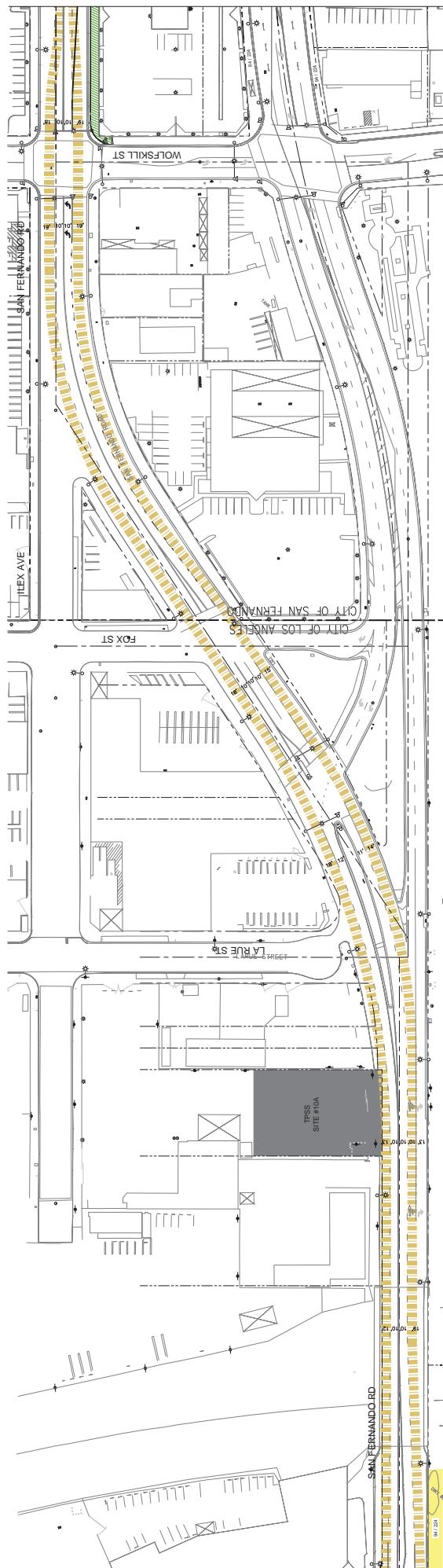
ALTERNATIVE 3 - TRAM MEDIAN RUNNING

KOA CORPORATION

PLANNING & ENGINEERING
110 Corporate Center Drive, Suite 201
Aliso Viejo, California 92656-7002
Tel: (714) 266-1110 Fax: (714) 266-1105

MATCHLINE - SEE ALT3-11
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-12

MATCHLINE - SEE ALT3-12
EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-11



MATCHLINE - SEE ALT3-10

MATCHLINE - SEE ABOVE RIGHT

MATCHLINE - SEE BELOW LEFT

MATCHLINE - SEE ALT3-12

LEGEND

- = BUS/TRAM DEDICATED LANE
- = BUS/TRAM MEDIAN FLOW
- = SAN HARBORING OR MIRROR
- = EXISTING STOP
- = PROP. APPROVED STOP
- = REMOVED STOP

ALTERNATIVE 3 - TRAM MEDIAN RUNNING

KOA CORPORATION
PLANNING & ENGINEERING

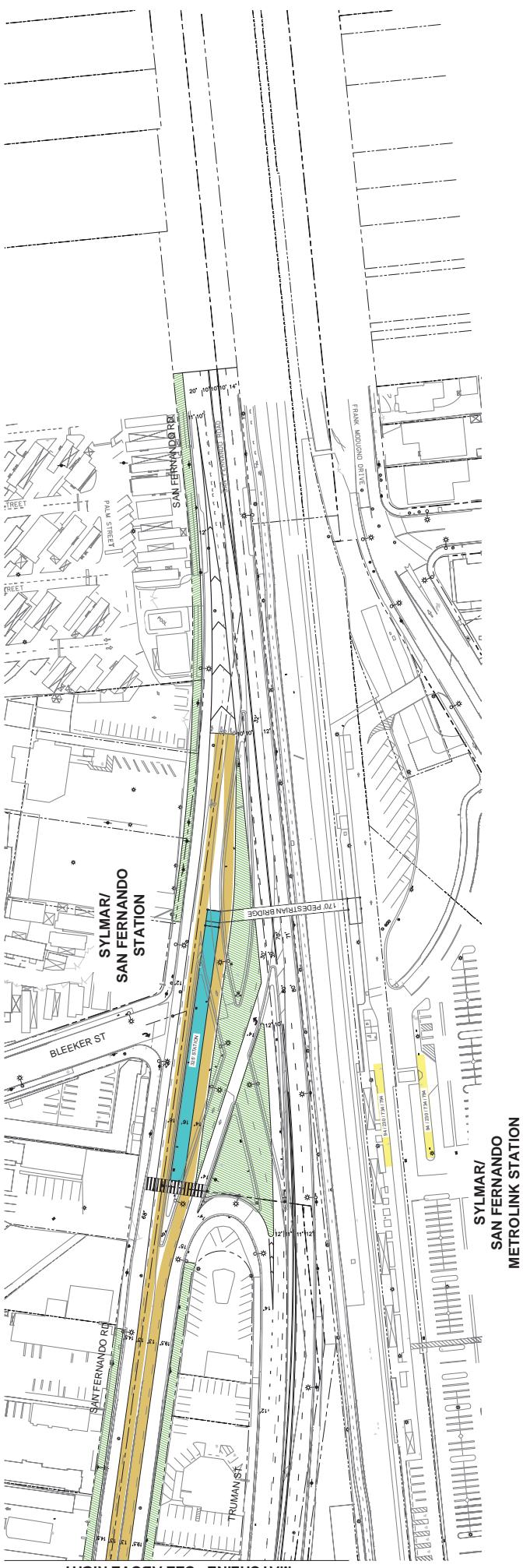
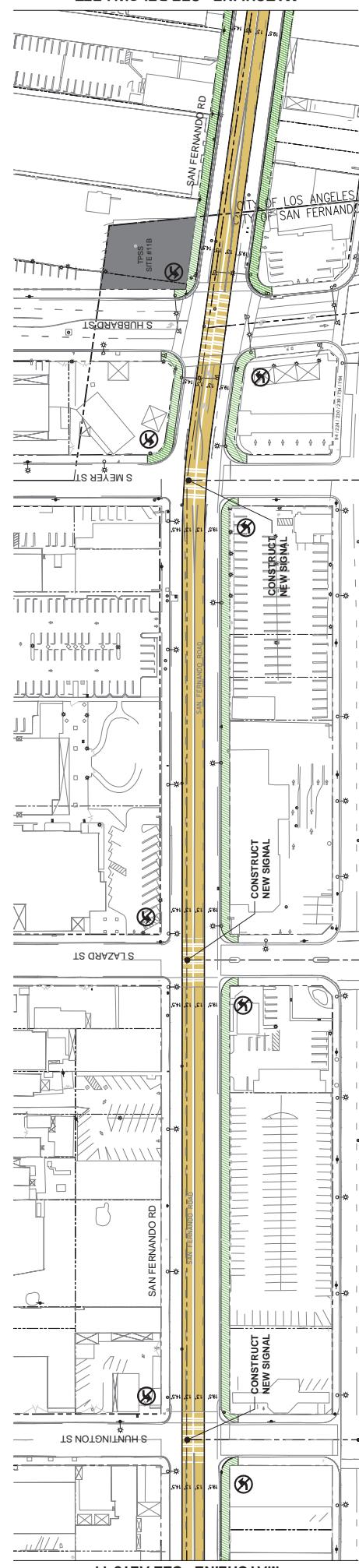
110 Corporate Center Drive, Suite 301
Irvine, California 92614-2012
Tel: (714) 266-1100 Fax: (714) 266-1105

LEGEND

- BUS/TRAM DEDICATED LANE
- BUS/TRAM MIXED FLOW
- SAN MARCING OR WIDENING
- EXISTING STOP
- PROP. ADDED STATION
- REMOVED STOP

METRO

EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
ALT3-12

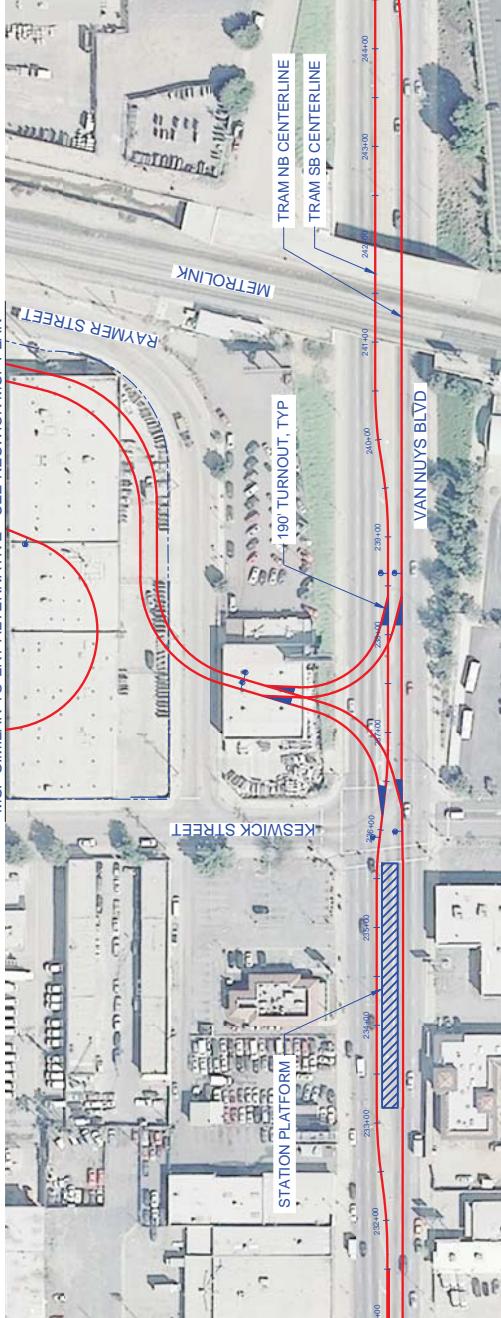


MATCHLINE - SEE ALT3-11

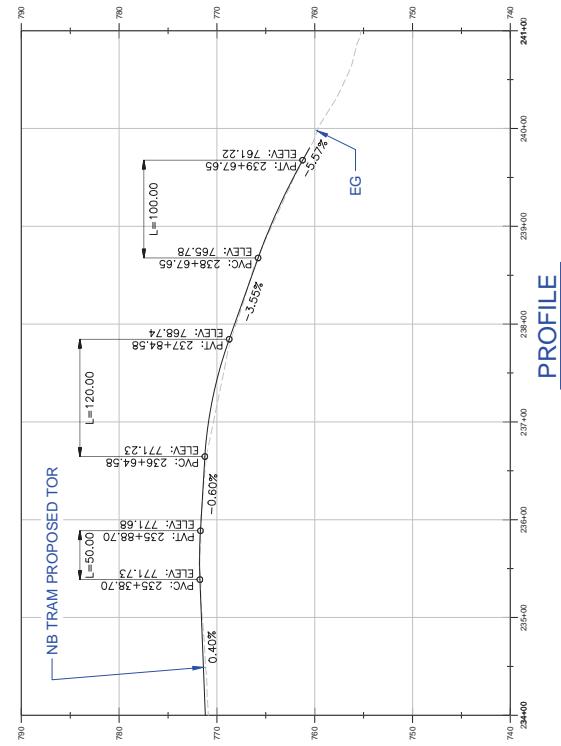
MATCHLINE - SEE ABOVE RIGHT

ALT3-12

MSF SIMILAR TO LRT ALTERNATIVE - SEE KESWICK MSF PLAN

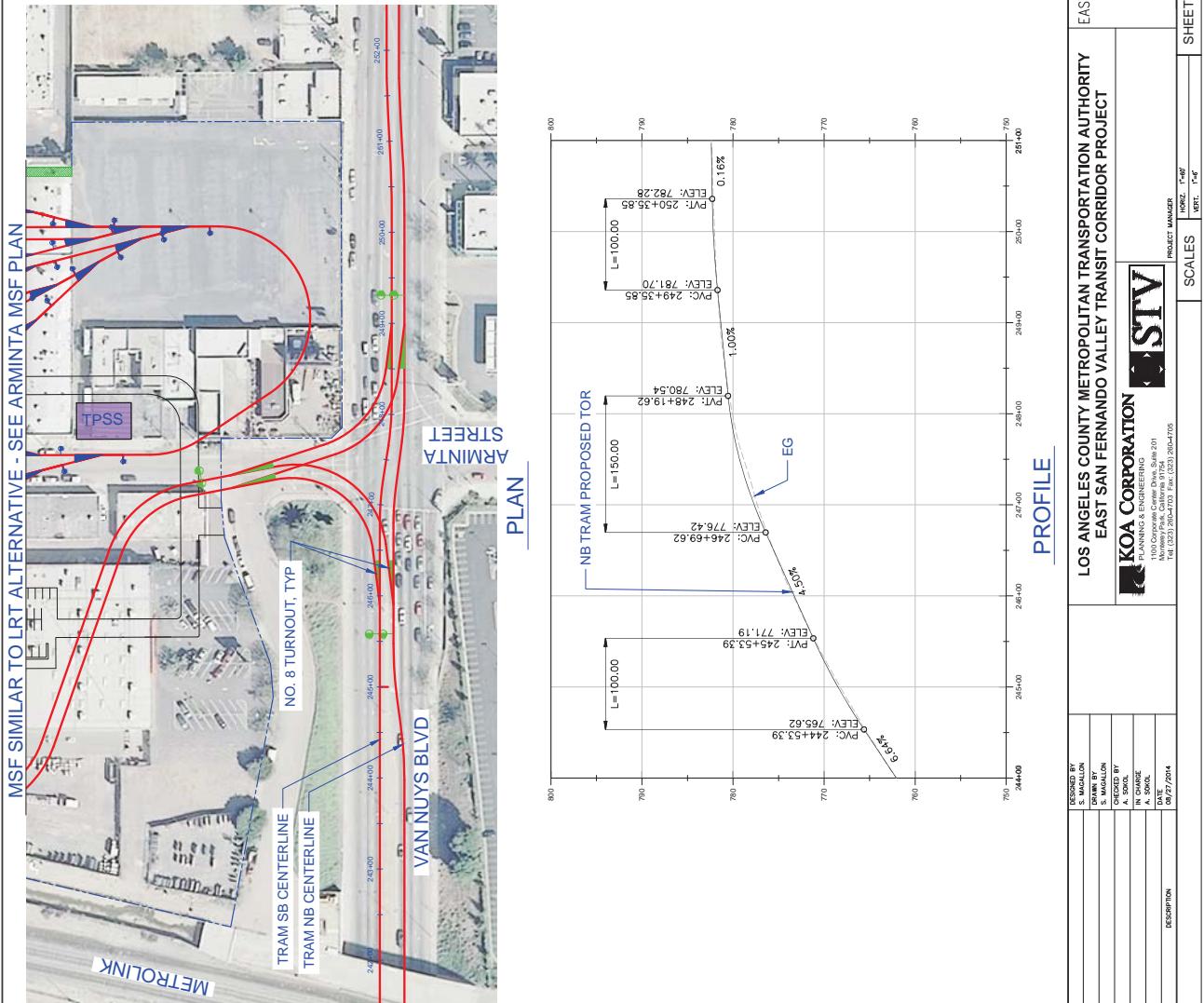


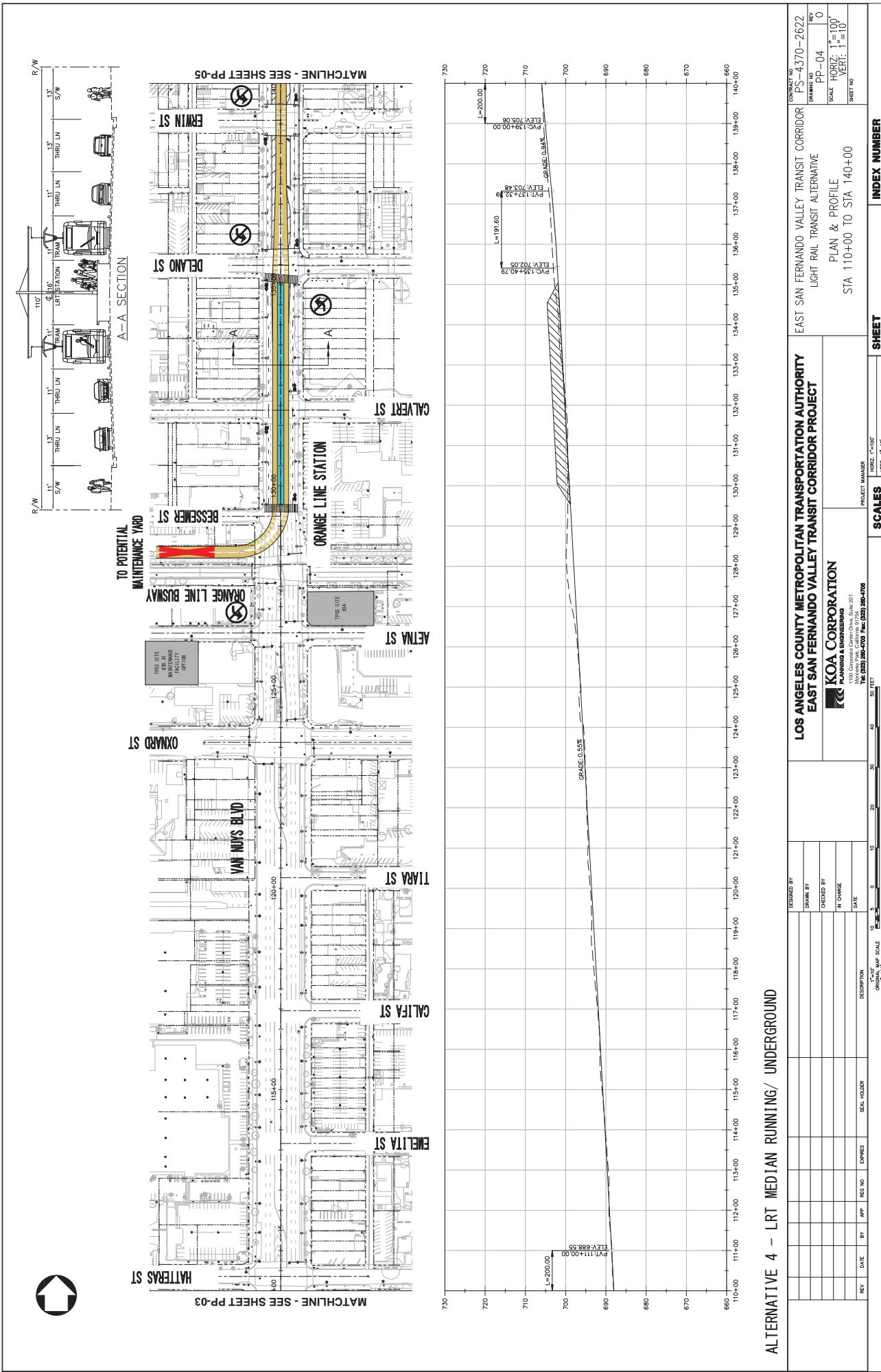
PLAN

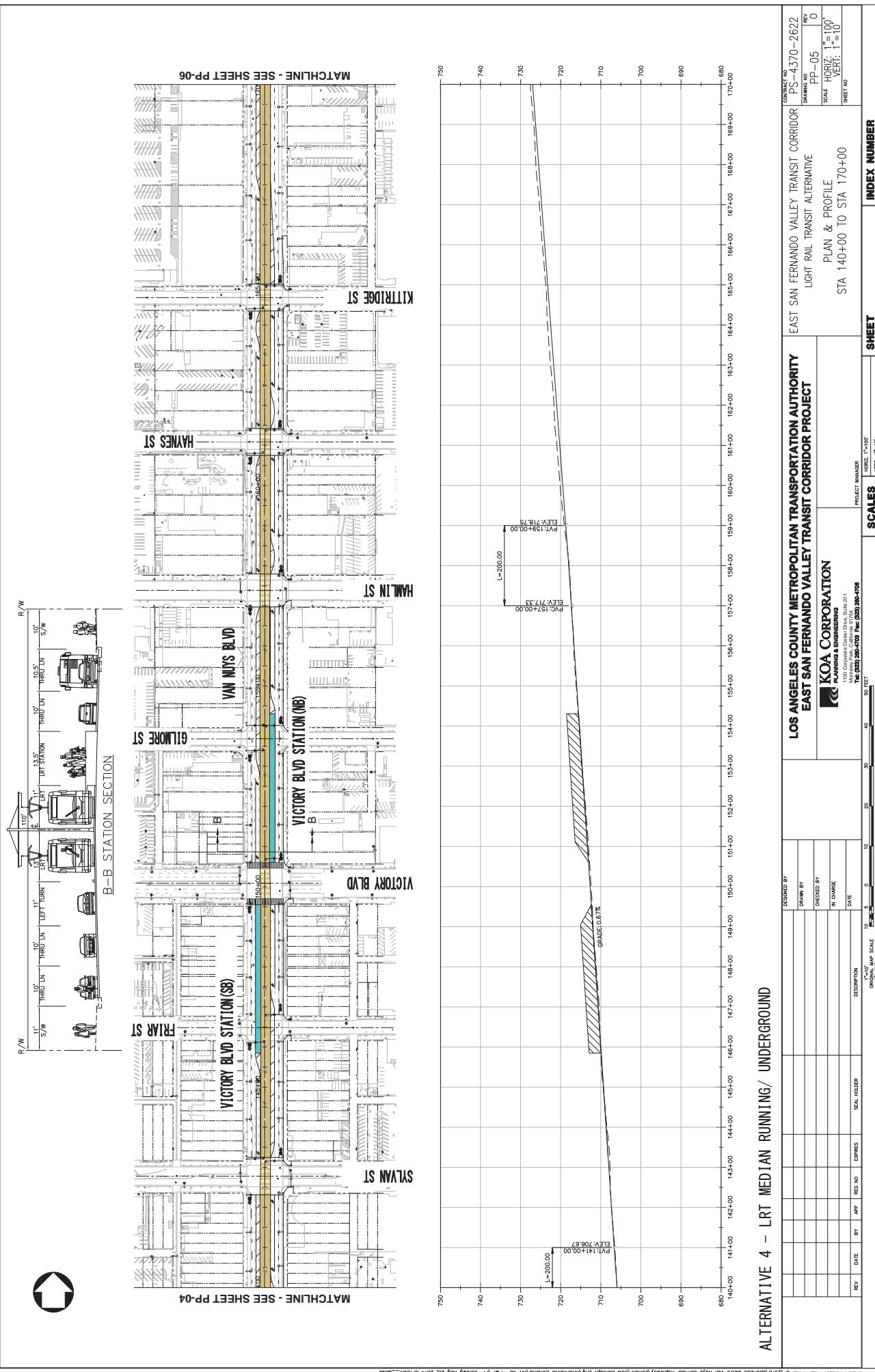


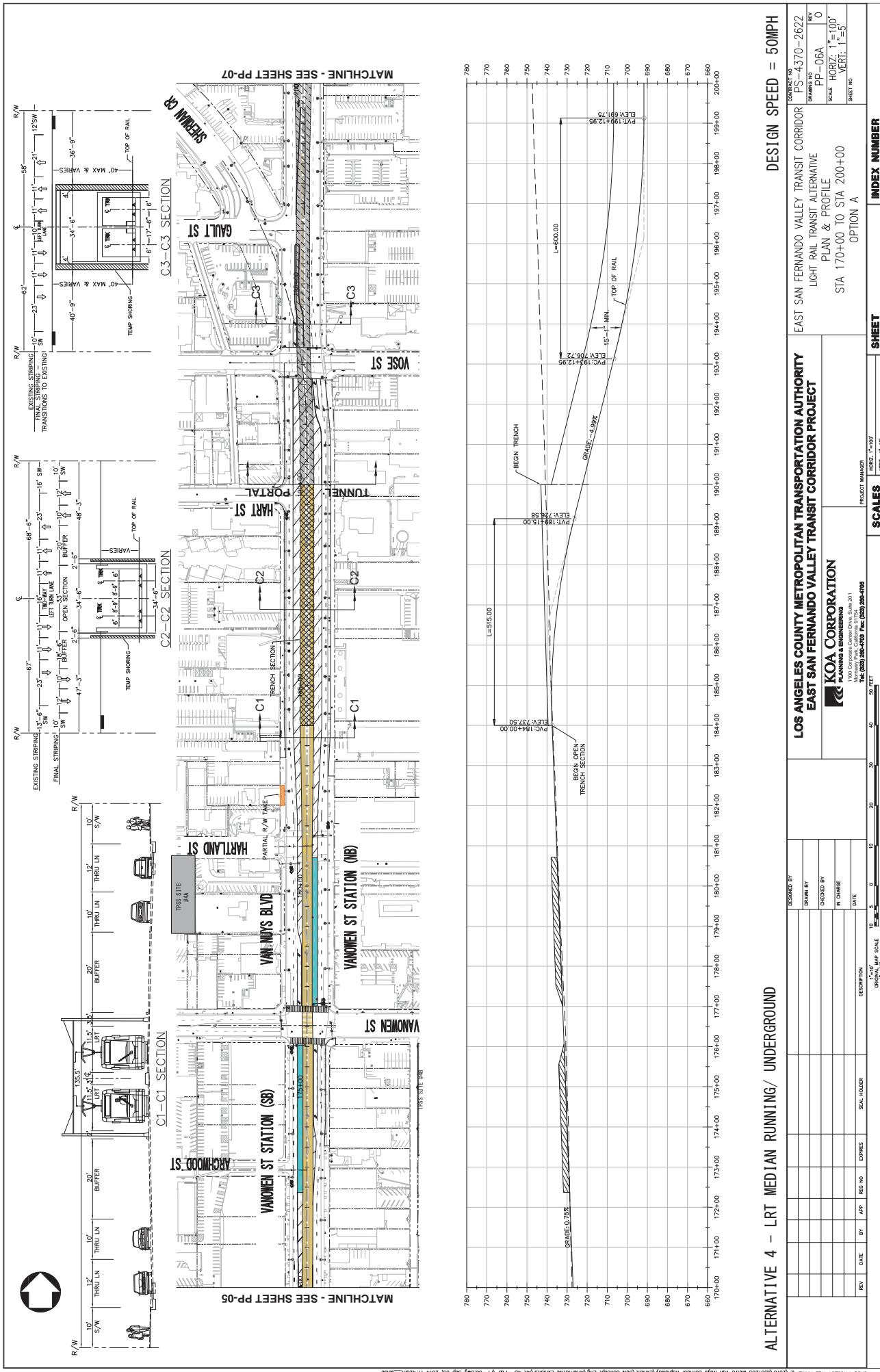
PROFILE

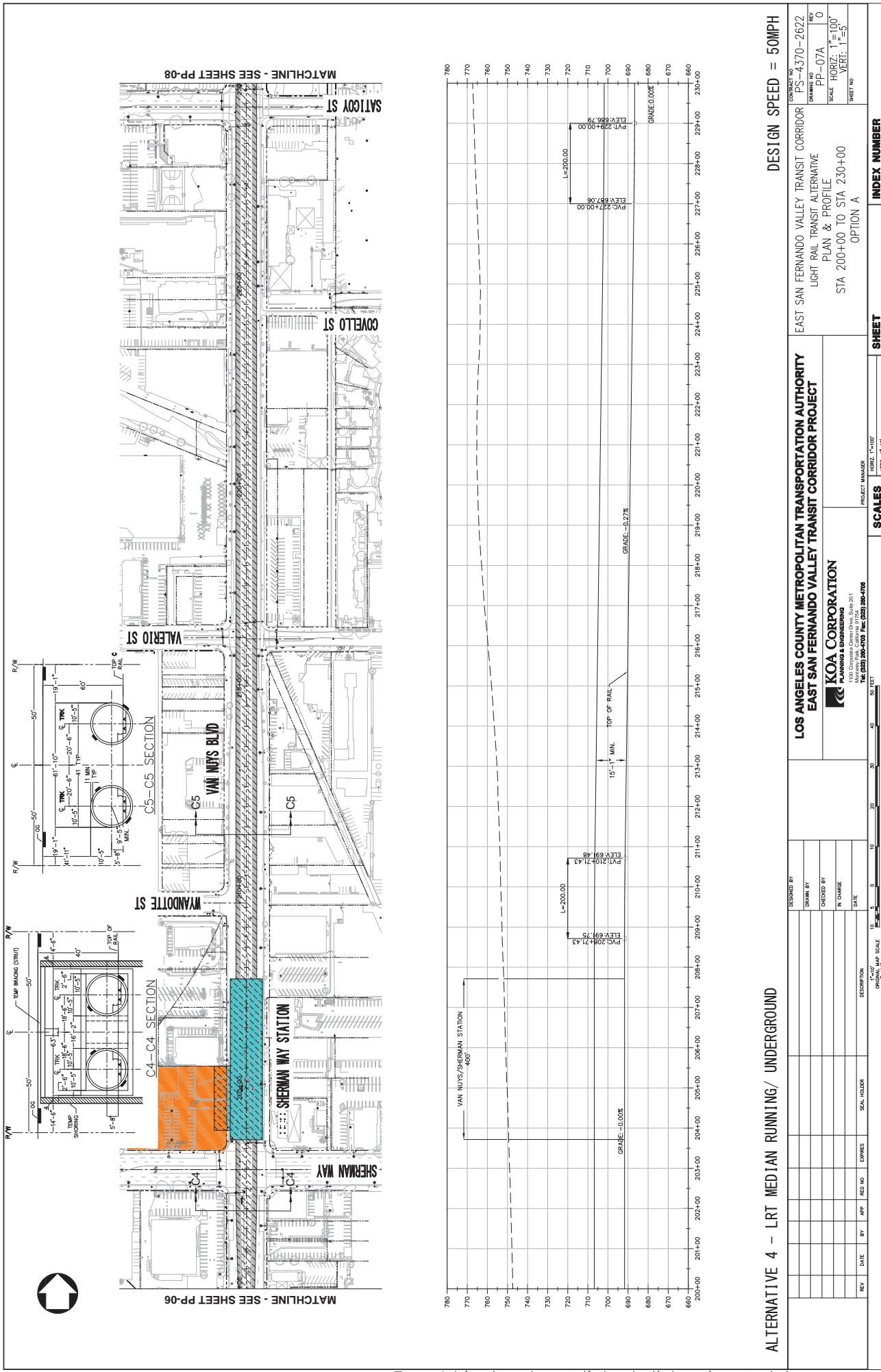
DESIGNED BY S. MALLON DRAWN BY S. MALLON CHECKED BY A. SPOOK CHIEF ENGINEER IN CHARGE A. SPOOK DATE 6/27/2014		CONTRACT NO. PS-370-2622 DRAWING NO. 0001-001-CAG PROJECT NO. OK-Trade-Bus-X-Trol-MSF-Keswick-Tram-2014-CAG-dwg Aug 27, 2014 3:47pm FILE # 161-12321-201-4703 Fax: (323) 285-2705		SCALE HORIZ: 1" = 60' SCALE VERT: 1" = 6' SHEET NO. 0	
KOA CORPORATION PLANNING & ENGINEERING 14001 Crenshaw Boulevard #700 Los Angeles, CA 90025 Tel: (323) 285-2705 Fax: (323) 285-2705		EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR TRAM ALTERNATIVE MAINTENANCE FACILITY KESWICK OPTION - MSF CONNECTION TRACKS STV PROJECT MANAGER A. SPOOK 6/27/2014		INDEX NUMBER SHEET SCALES HORIZ. 1" = 60' VERT. 1" = 6'	

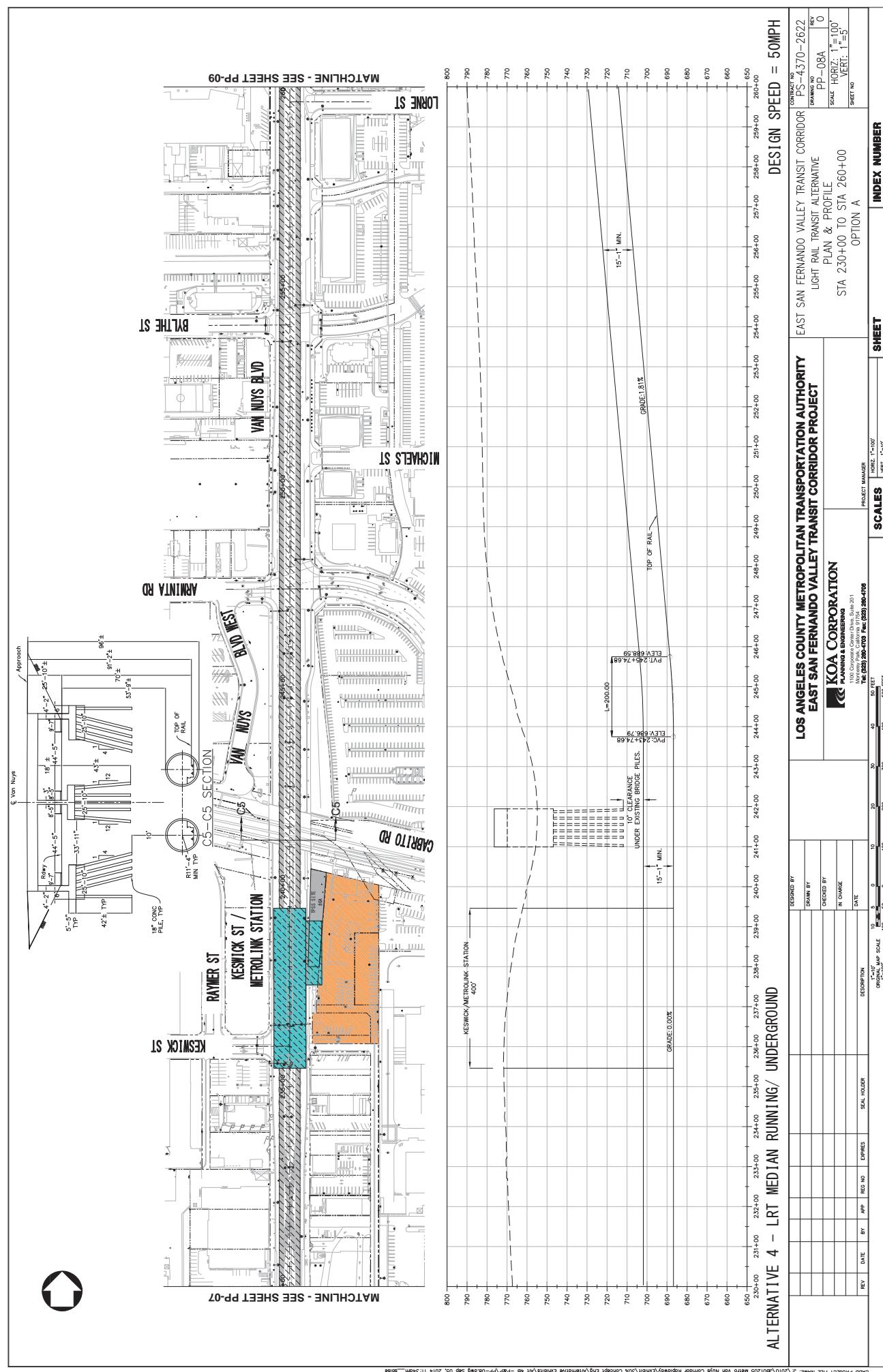


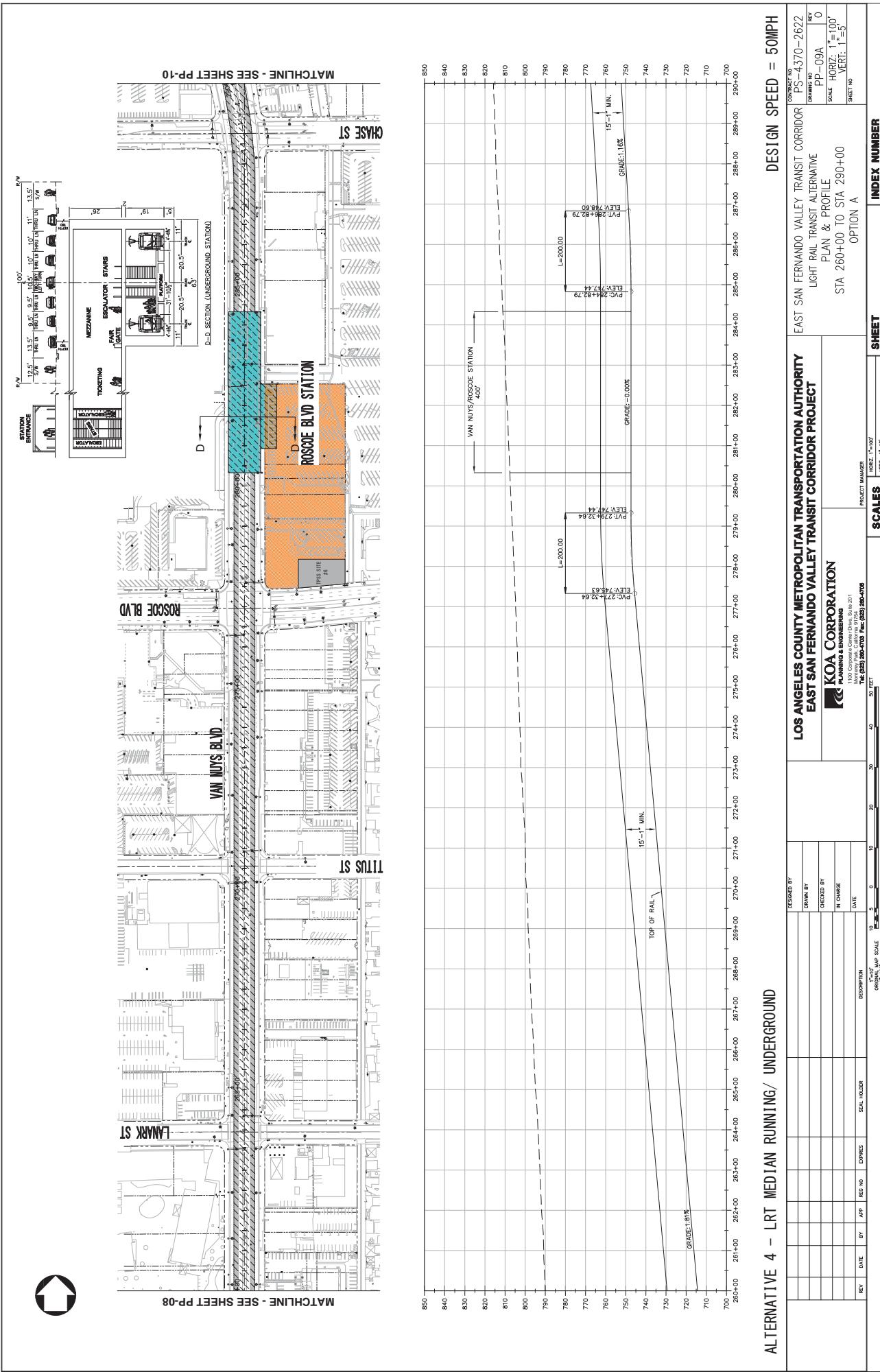


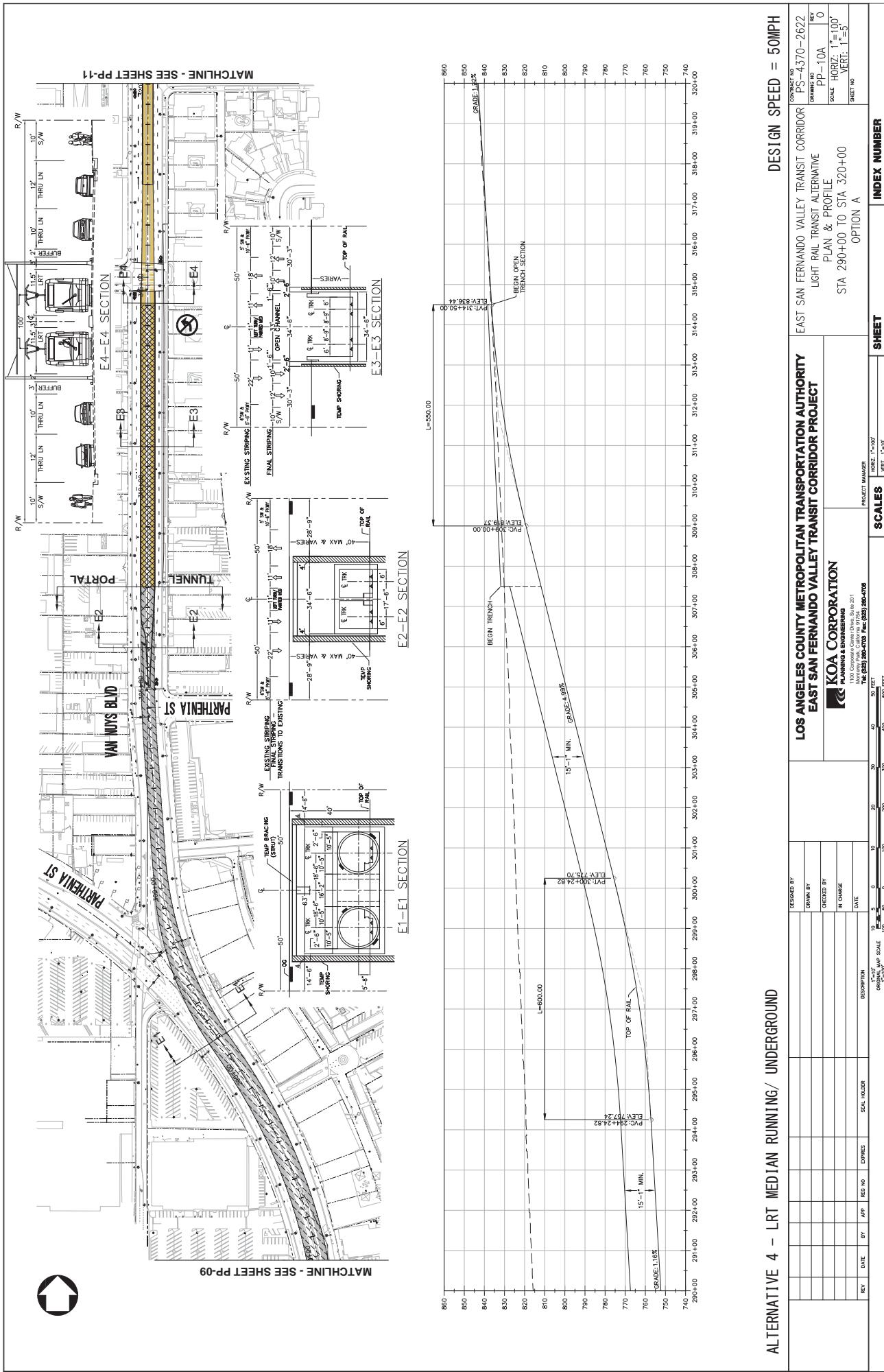


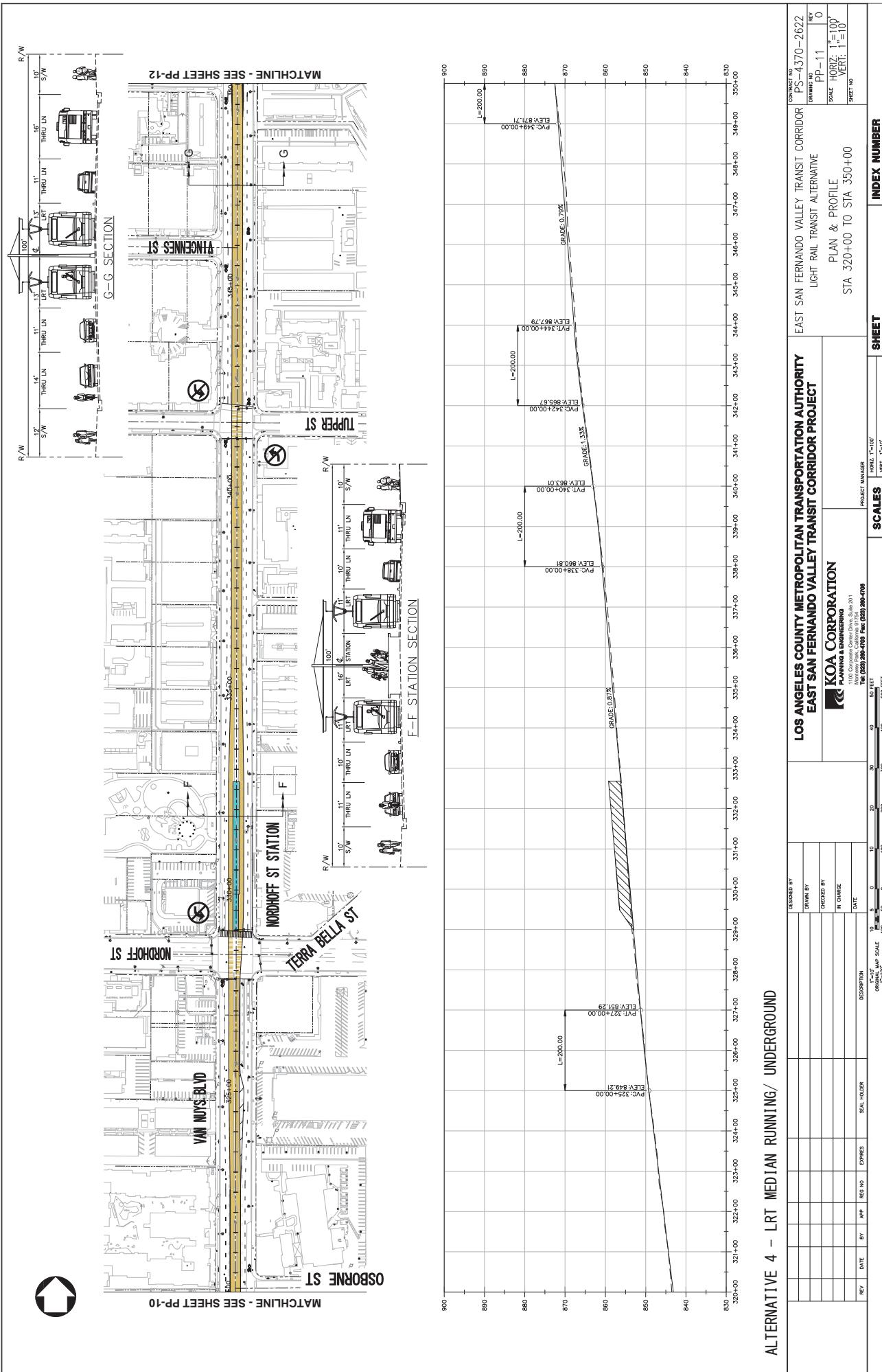


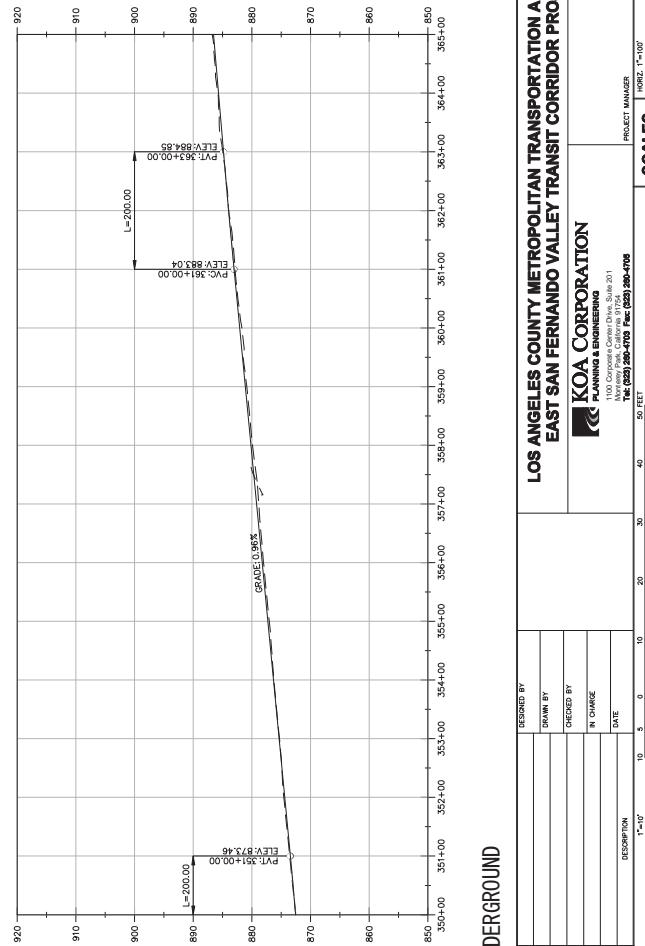
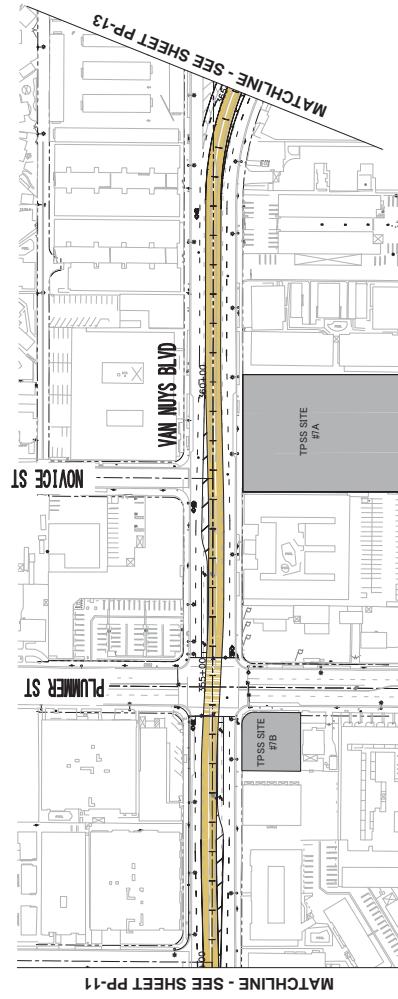






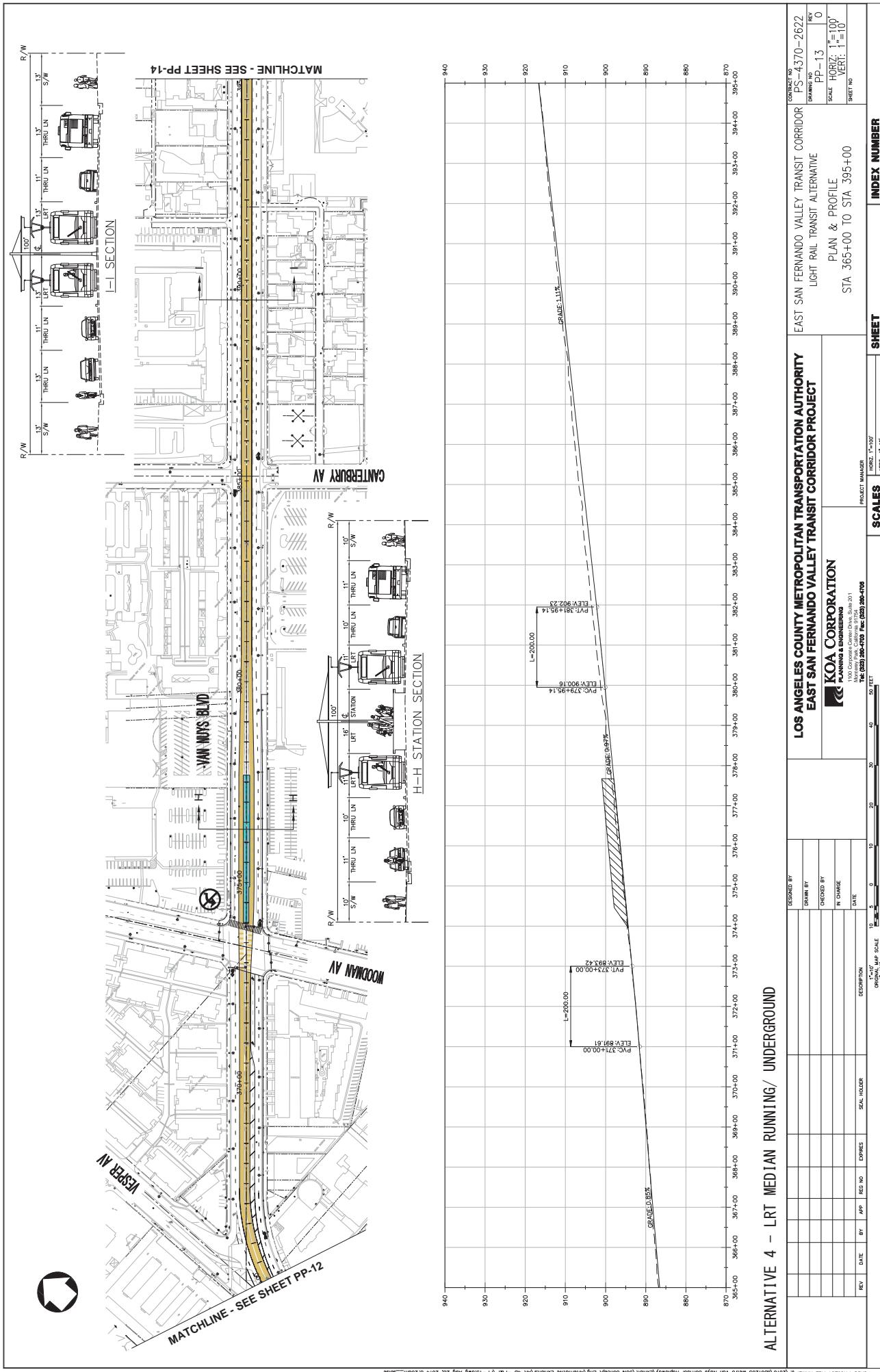


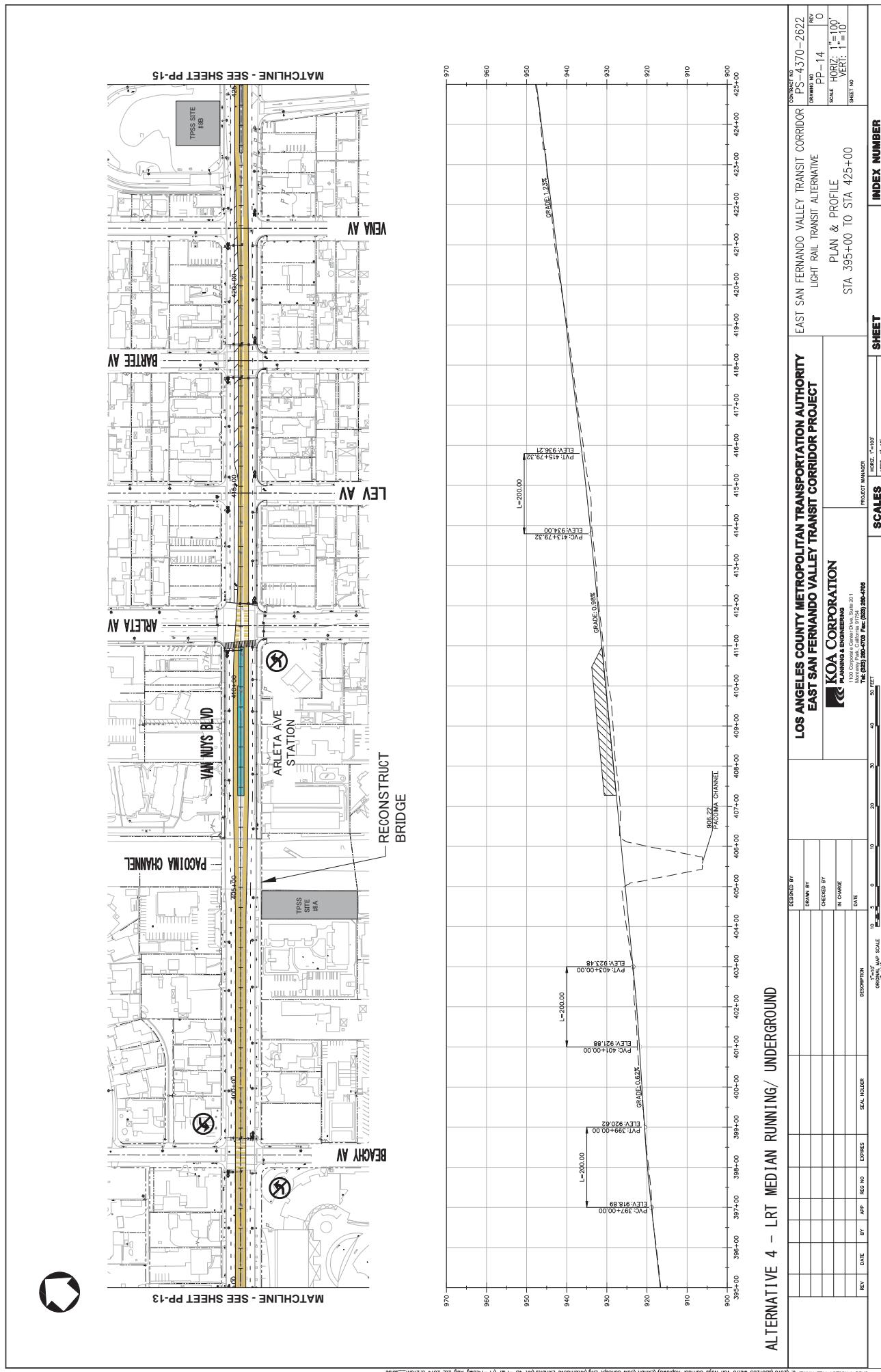


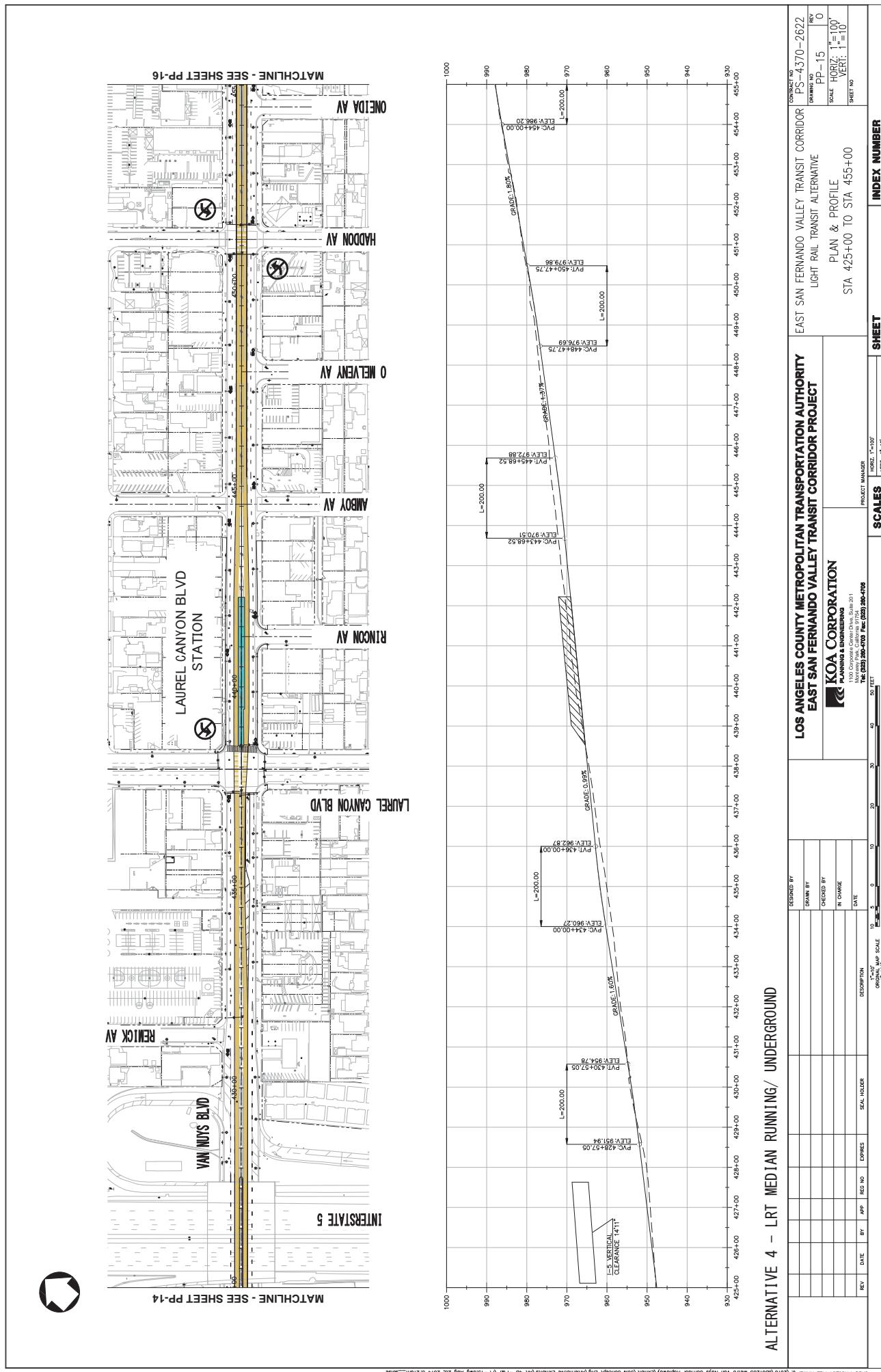


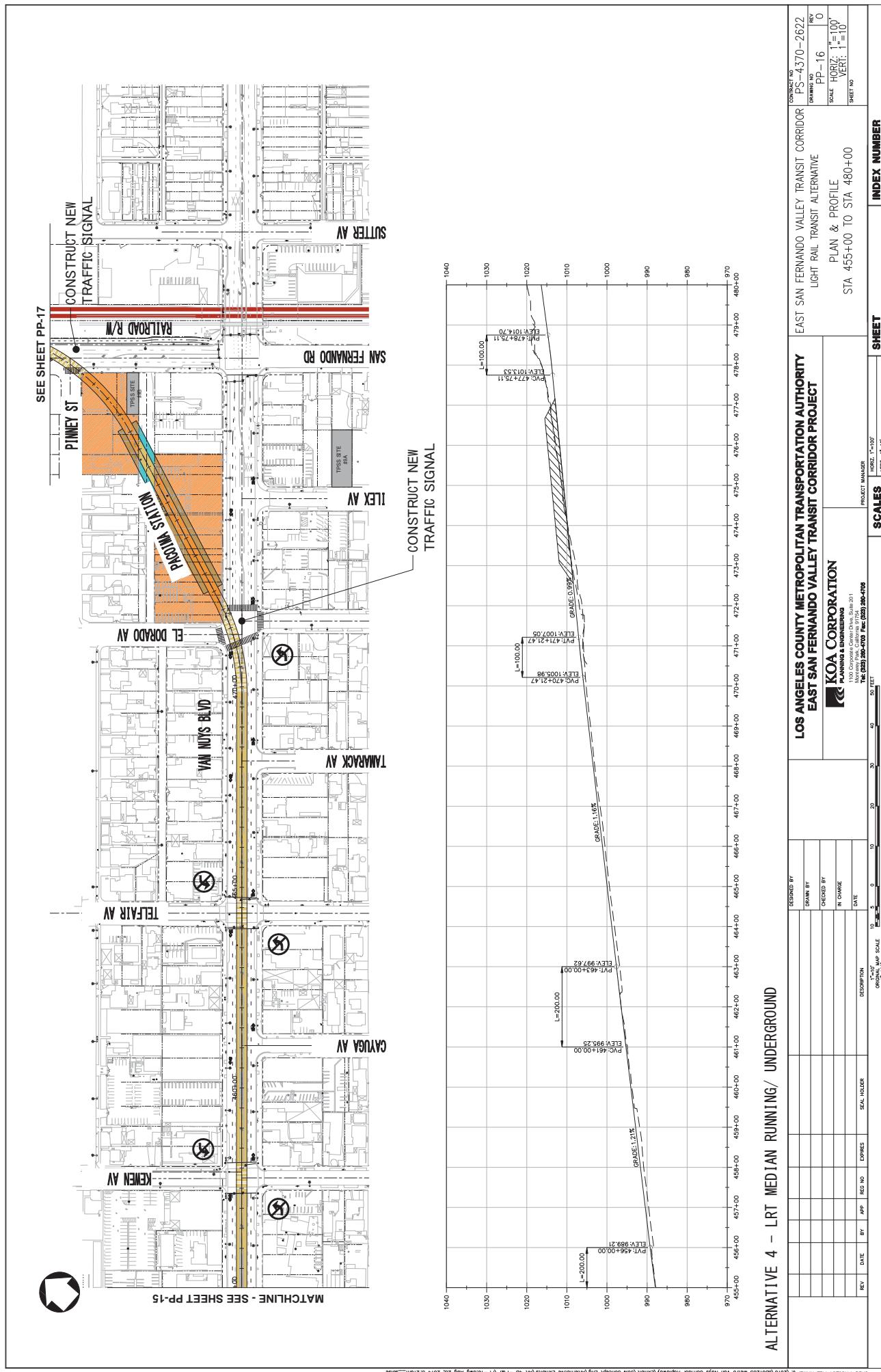
ALTERNATIVE 4 – LRT MEDIAN RUNNING/ UNDERGROUND

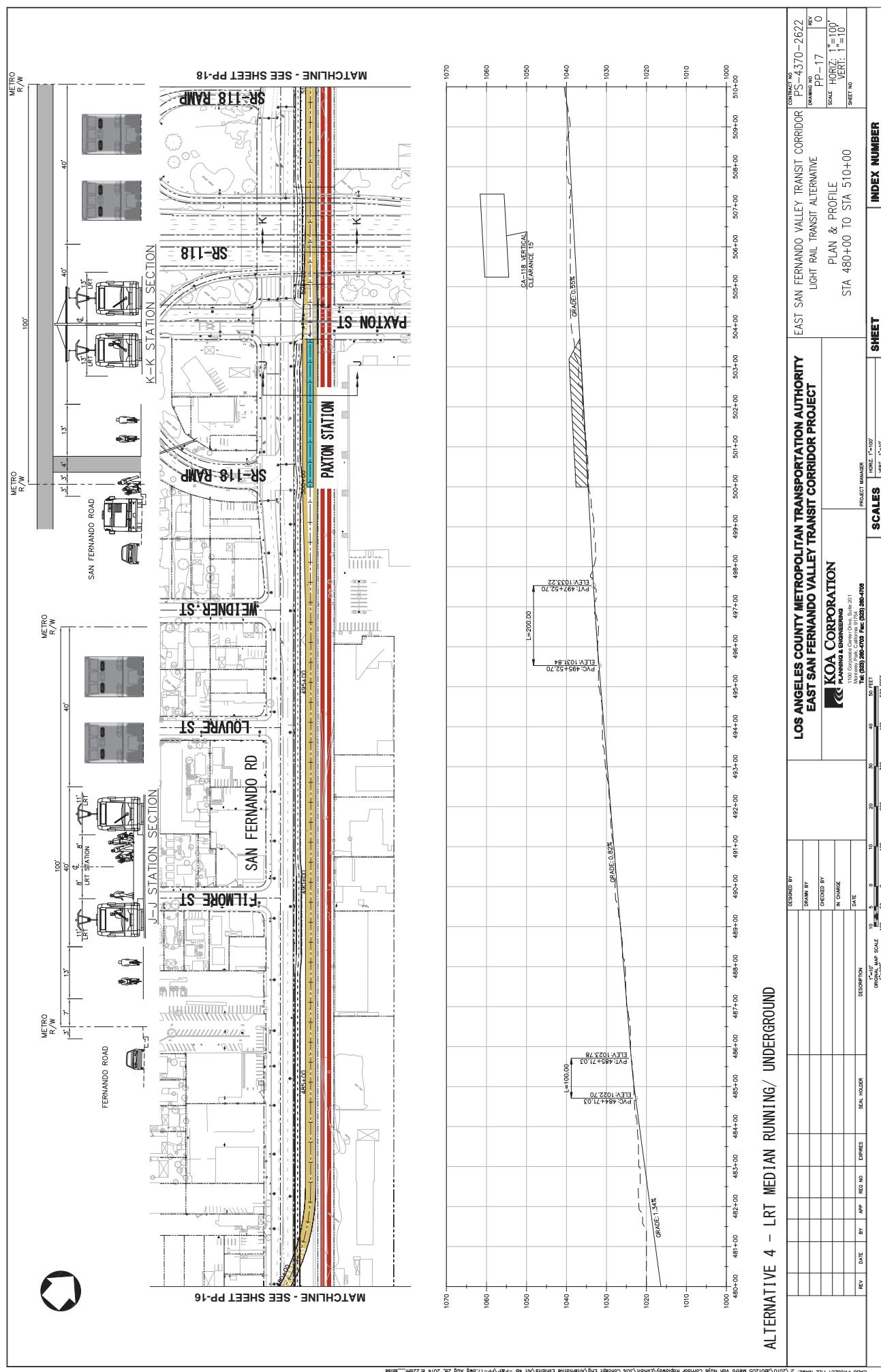
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR PROJECT										EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR		CONTACT NO PS-370-2622	
										LIGHT RAIL TRANSIT ALTERNATIVE		DRAWING NO PP-12	
										PLAN & PROFILE		SCALE NO 100	
										STA 350+00 TO STA 365+00		SHEET NO 10	
KEY	DATE	BY	APP	REC NO	EXPIRES	SEAL HOLDER	DESCRIPTION	DATE	CHOOSED BY	DRAWN BY	CHECKED BY	IN CHARGE	SHEET
							ON 2010/08/07 1:1000 SCALE	10/07/2010					INDEX NUMBER
							50 FEET	50	50	50	50	500 FEET	
							200	200	200	200	200	400	
							300	300	300	300	300	450	
							400	400	400	400	400	500	
							500	500	500	500	500	550	

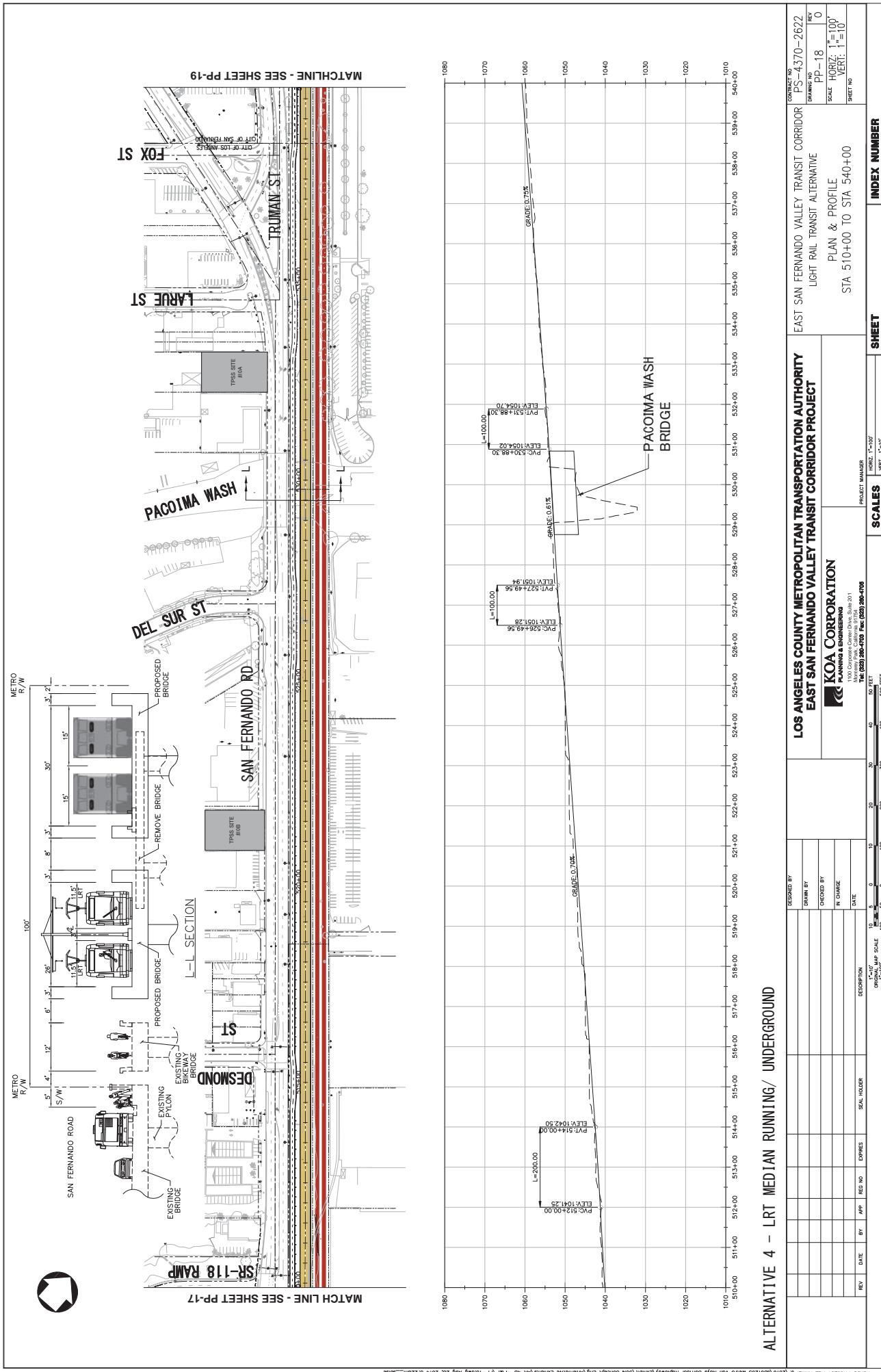


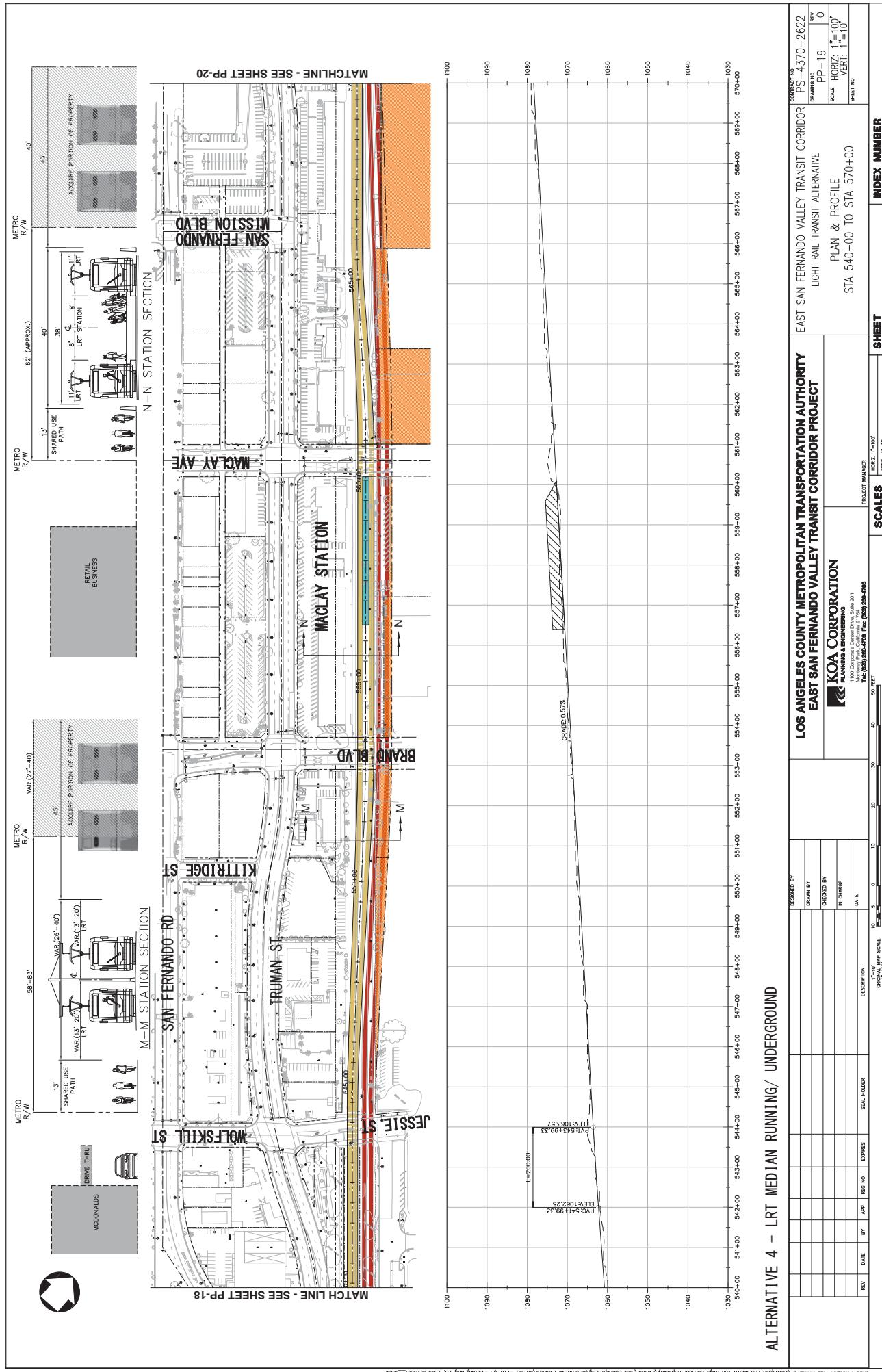


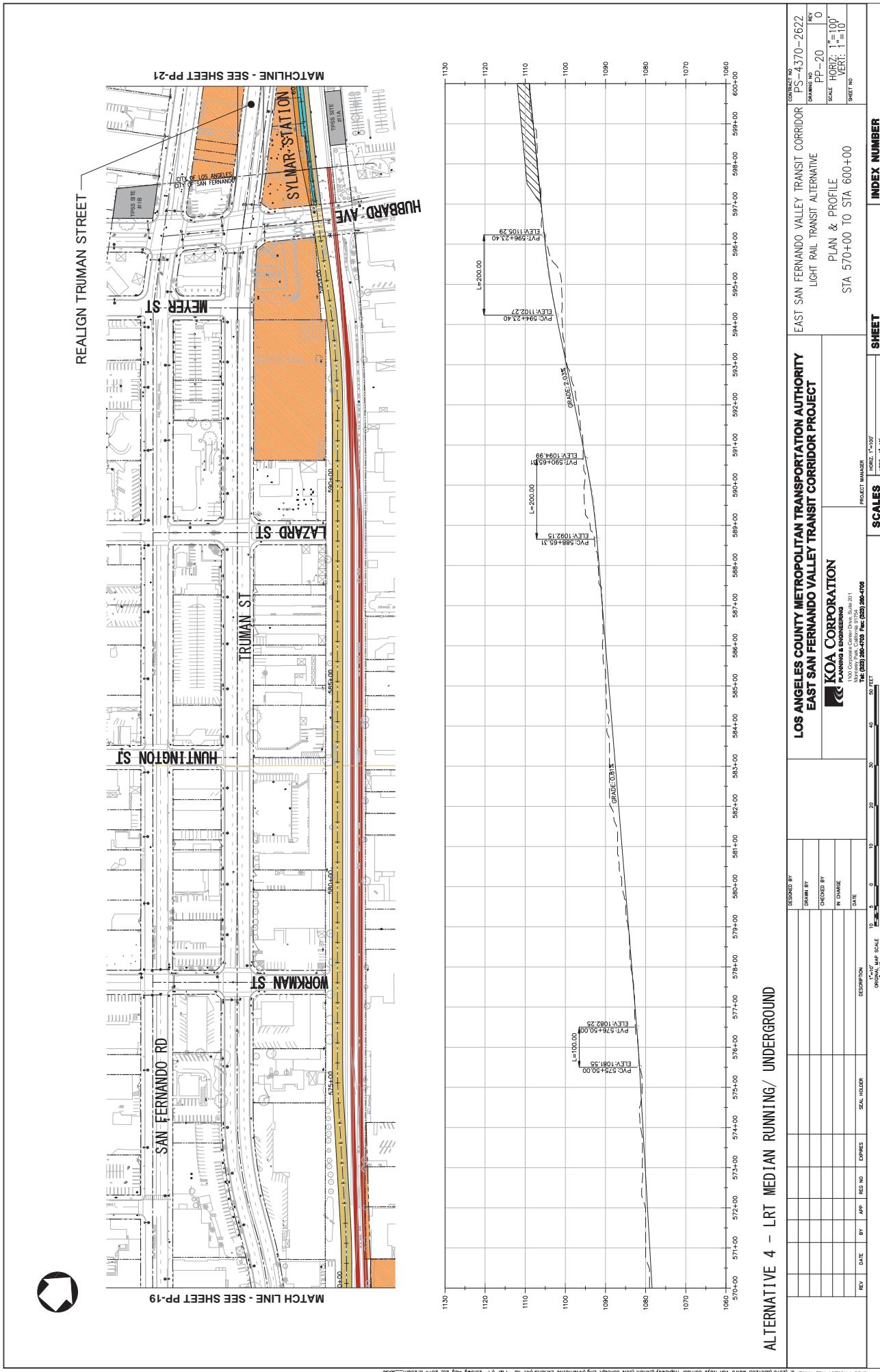






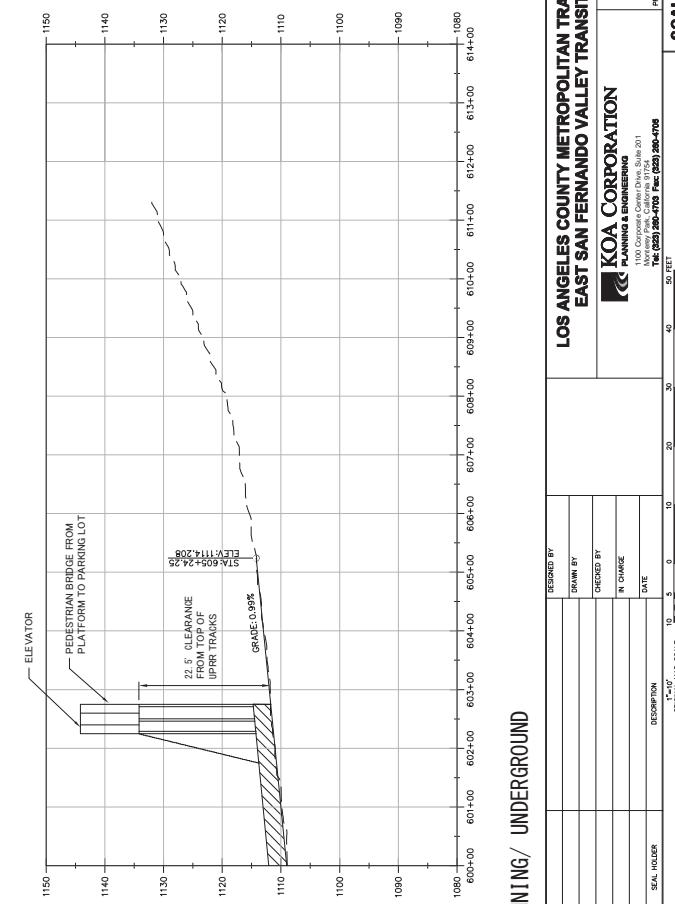
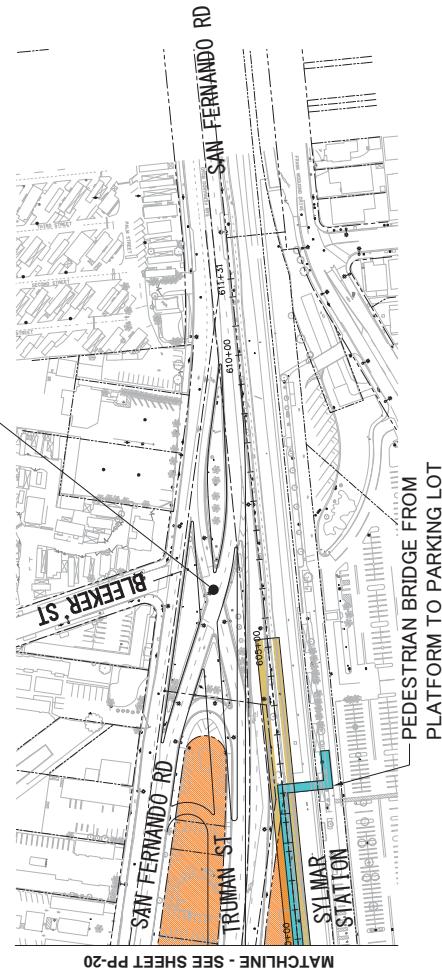


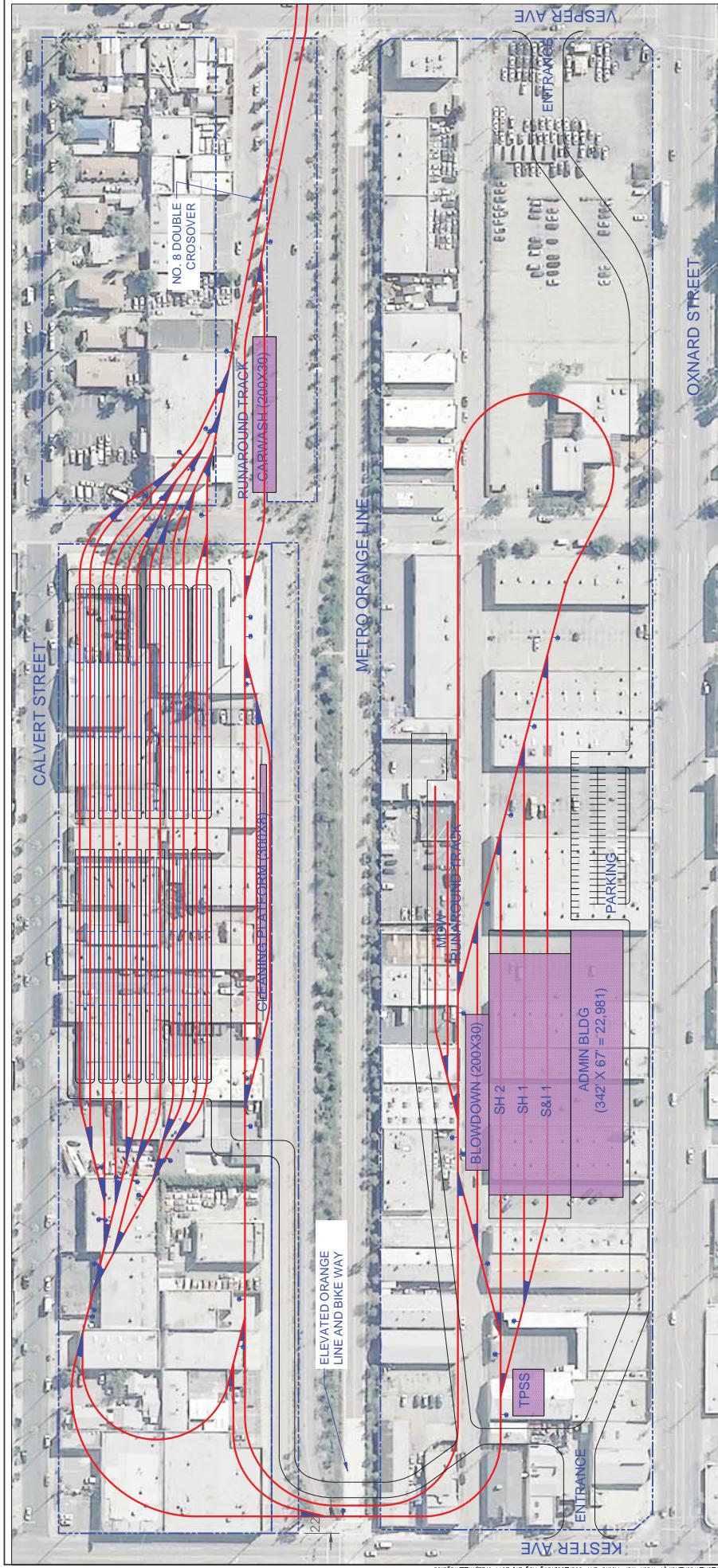






REALIGN INTERSECTION



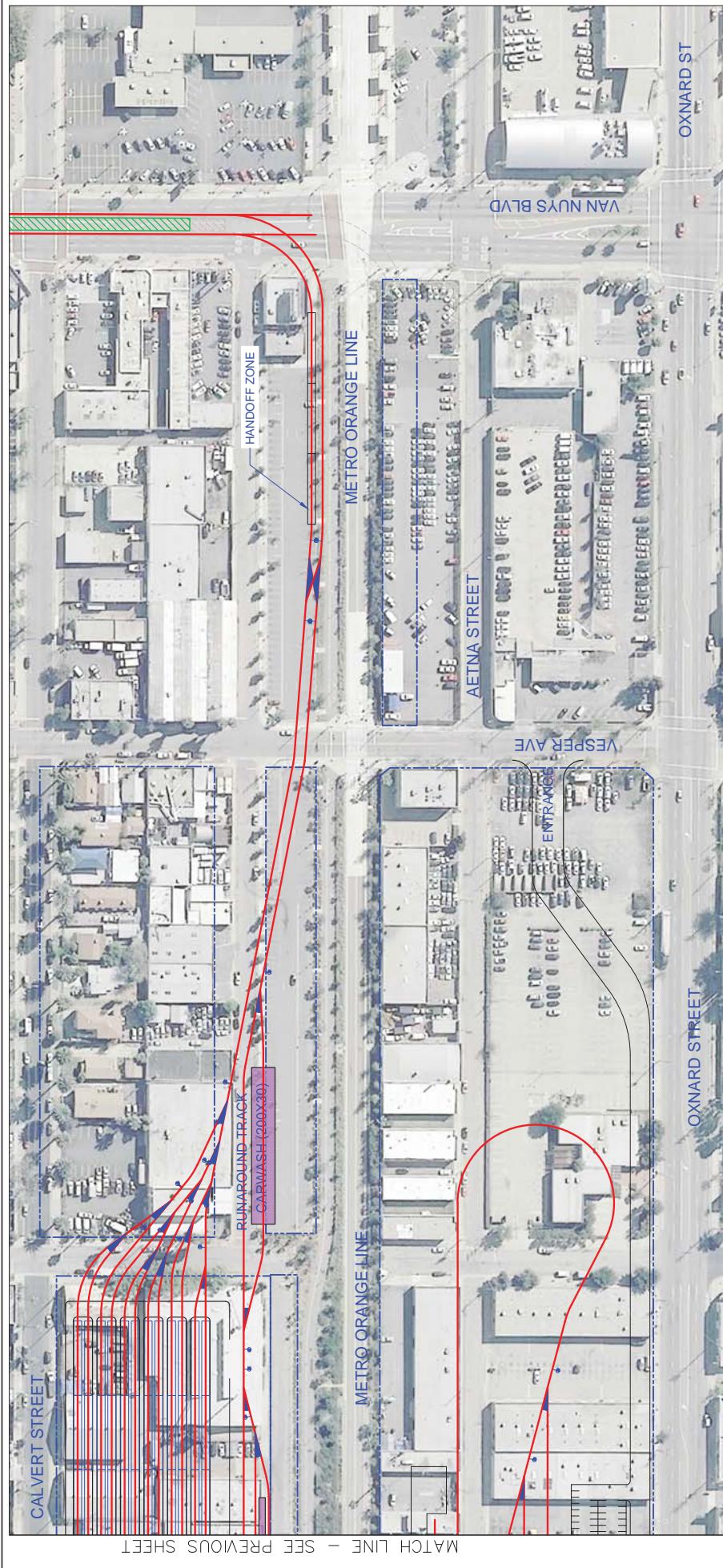


PROJECT NAME: EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR	LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY		EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR
	LIGHT RAIL TRANSIT ALTERNATIVE	Maintenance Facility	
DESIGNED BY: L. TESSELL-LENS DRAWN BY: S. MARILLON	CONTRACT NO: PS-370-2622	SCALE HORIZ: 1"=60'	0
CHIEF COORD BY: D. GRIFFIN	DRAWING NO:	SCALE VERT:	N/A
IN CHARGE: A. SPOOK	DATE:	INDEX NUMBER:	
DESCRIPTION:	REV.	DATE	SCALES
		BY APP	VERT. N/A
		RED. NO.	SHEET
		EXPIRE	INDEX NUMBER
		SEAL HOLDER	

STV PROJECT MANAGER

KOA CORPORATION PLANNING & ENGINEERING 1000 North Figueroa Street, Suite 2000, Los Angeles, CA 90012 Tel: (213) 220-4703 Fax: (213) 220-4705

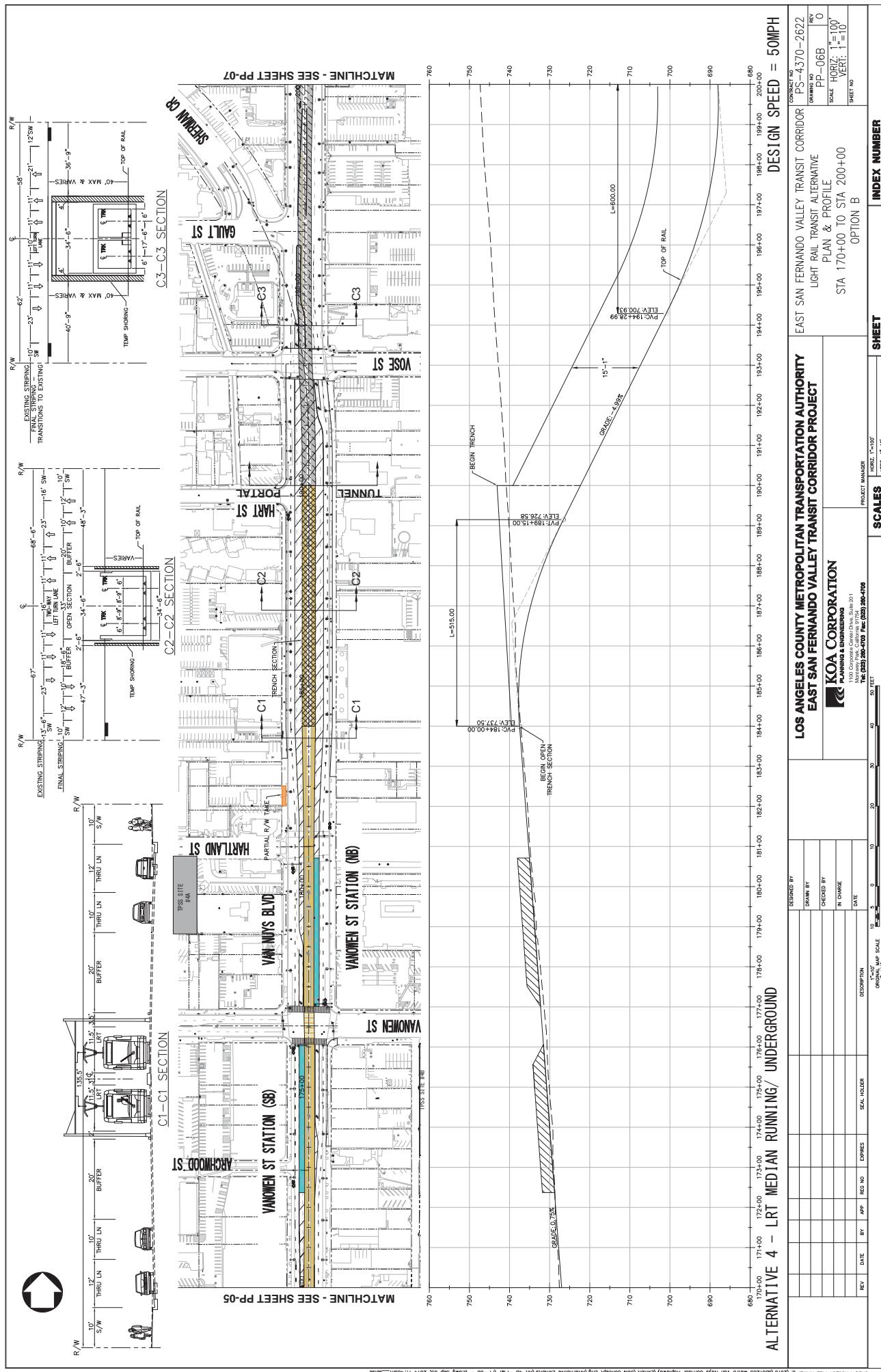
1st Fl 1000 North Figueroa Street, Suite 2000, Los Angeles, CA 90012 Tel: (213) 220-4703 Fax: (213) 220-4705

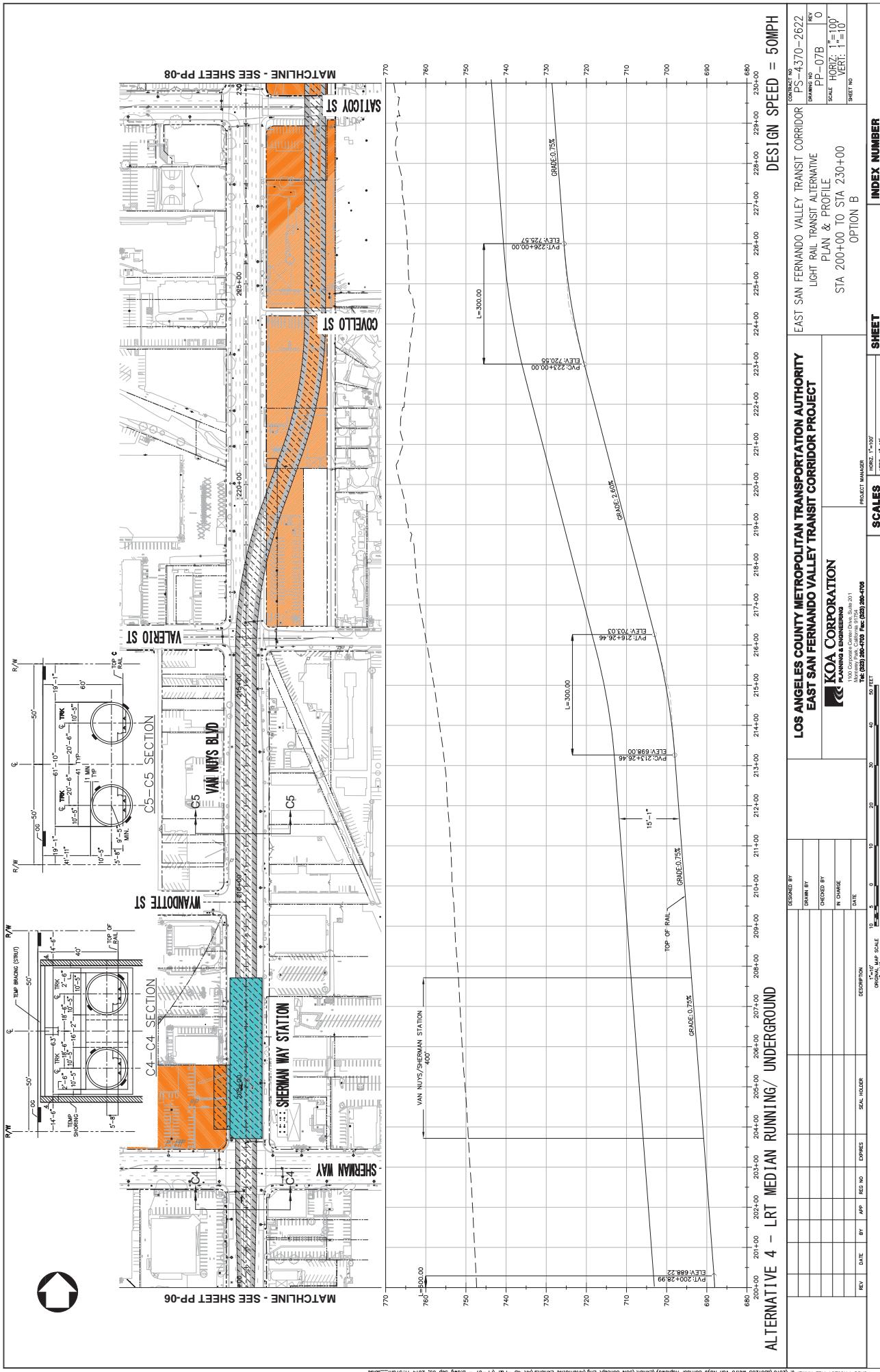


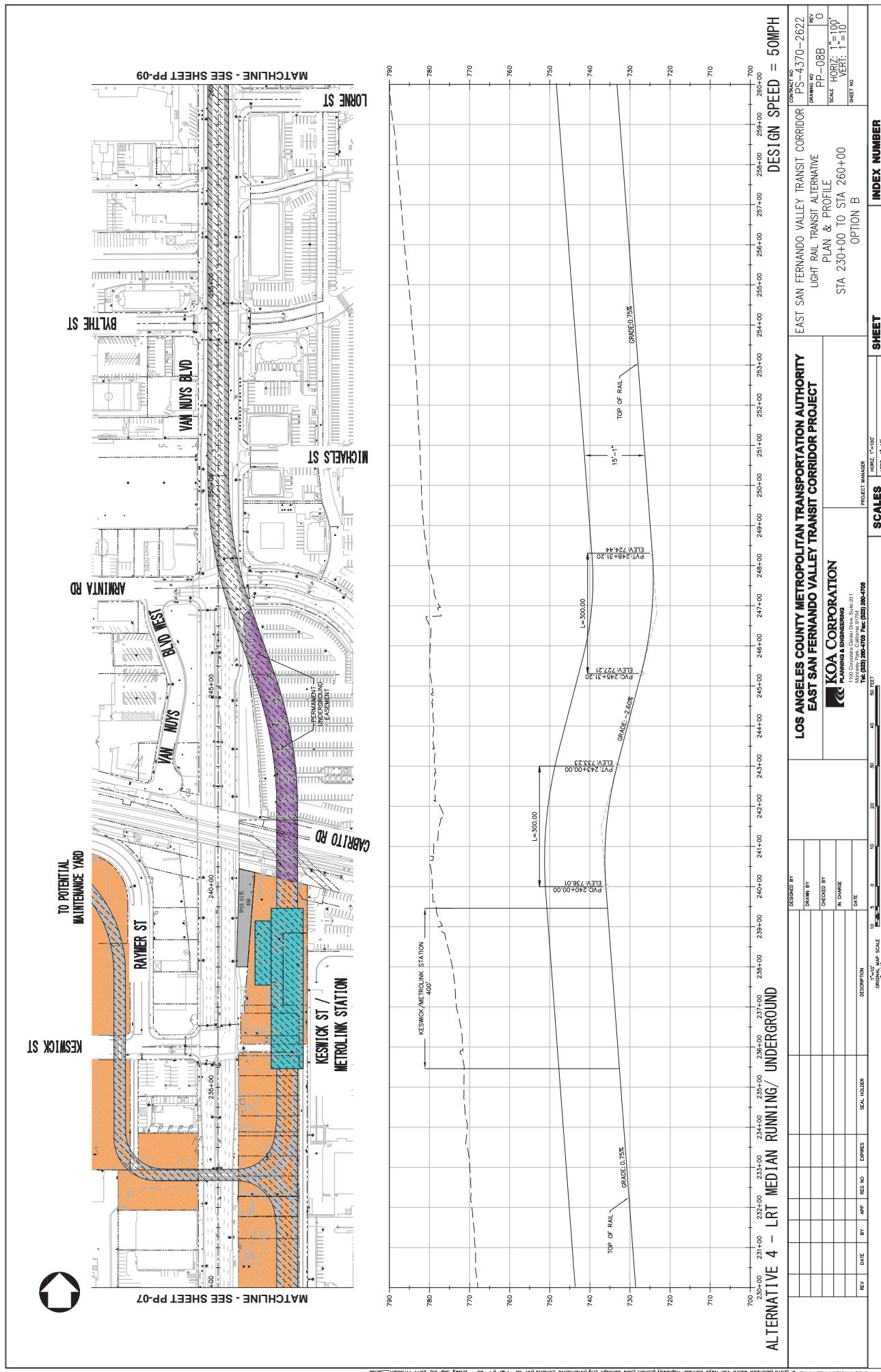
NOTE: SECURITY TOWER VS. CCTV

**MSF SITE: 30.0 ACRES
STORAGE CAPACITY: 24 - 3 CAR TRAINS
72 CARS TOTAL
190FT RADIUS TURNOUTS
MIN RADIUS = 100'**

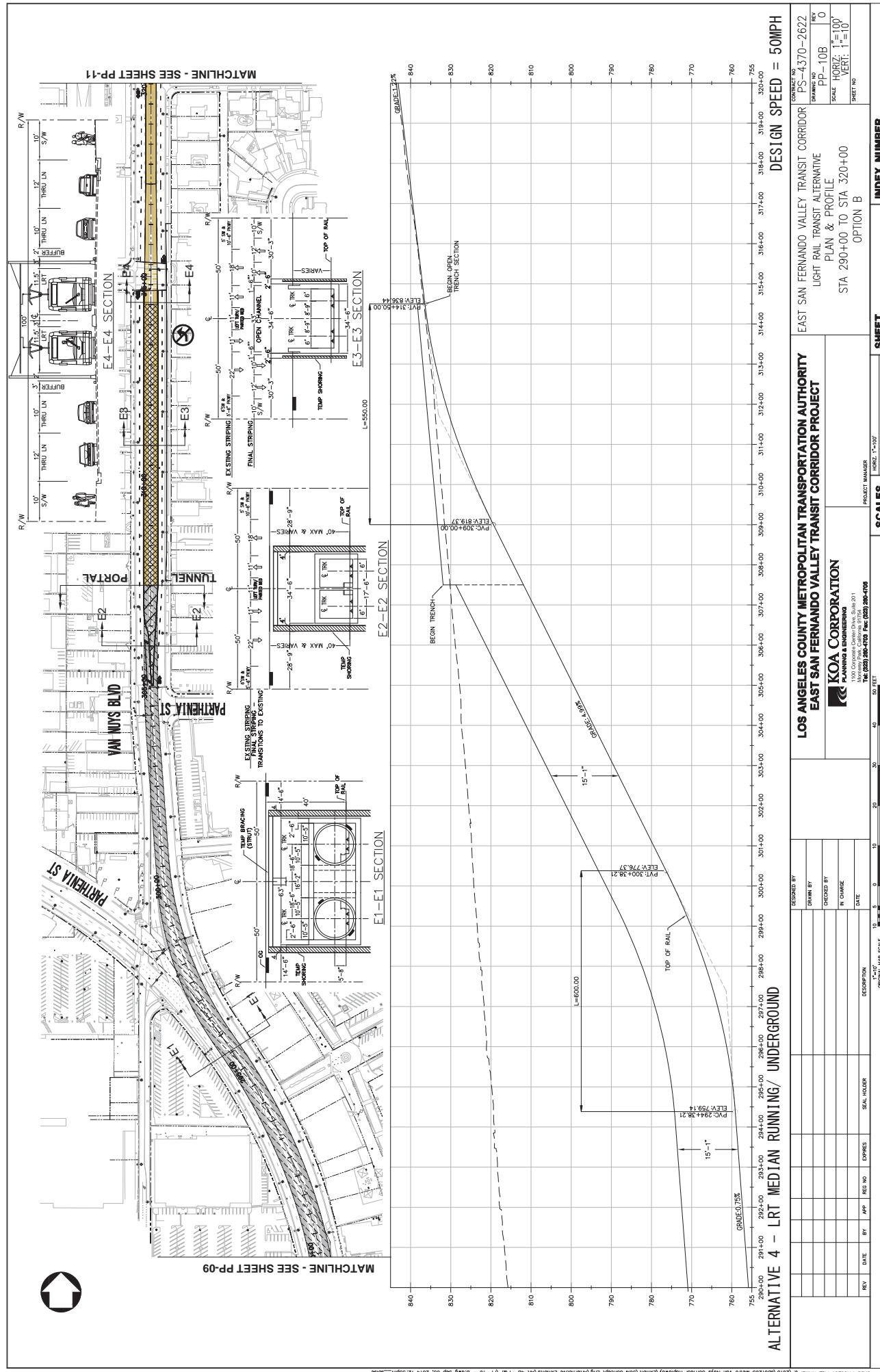
		LOS ANGELES COUNTY METROPOLITAN TRANSIT AUTHORITY EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR PROJECT		EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR LIGHT RAIL TRANSIT ALTERNATIVE MAINTENANCE FACILITY AETNA - 3 CAR TRAINS	
DESIGNED BY L. TERRILL-LENS DRAWN BY S. MARLON CHECKED BY D. HARRIS IN CHARGE A. SPOOK DATE 09/27/14	REVISION REV DATE 09/27/14	PROJECT MANAGER KOA CORPORATION PLANNING & ENGINEERING 1000 North Figueroa Street, Suite 2000 Los Angeles, California 90012 (213) 260-4703 Fax: (213) 260-4705	SCALES HOZ: 1"=60' VERT: N/A	SHEETS HOZ: 1"=60' VERT: N/A	INDEX NUMBER
CONTRACT NO: PS-370-2622 DRAWING NO: 0 SCALE HORIZ: 1"=60' SCALE VERT: N/A SHEET NO:					

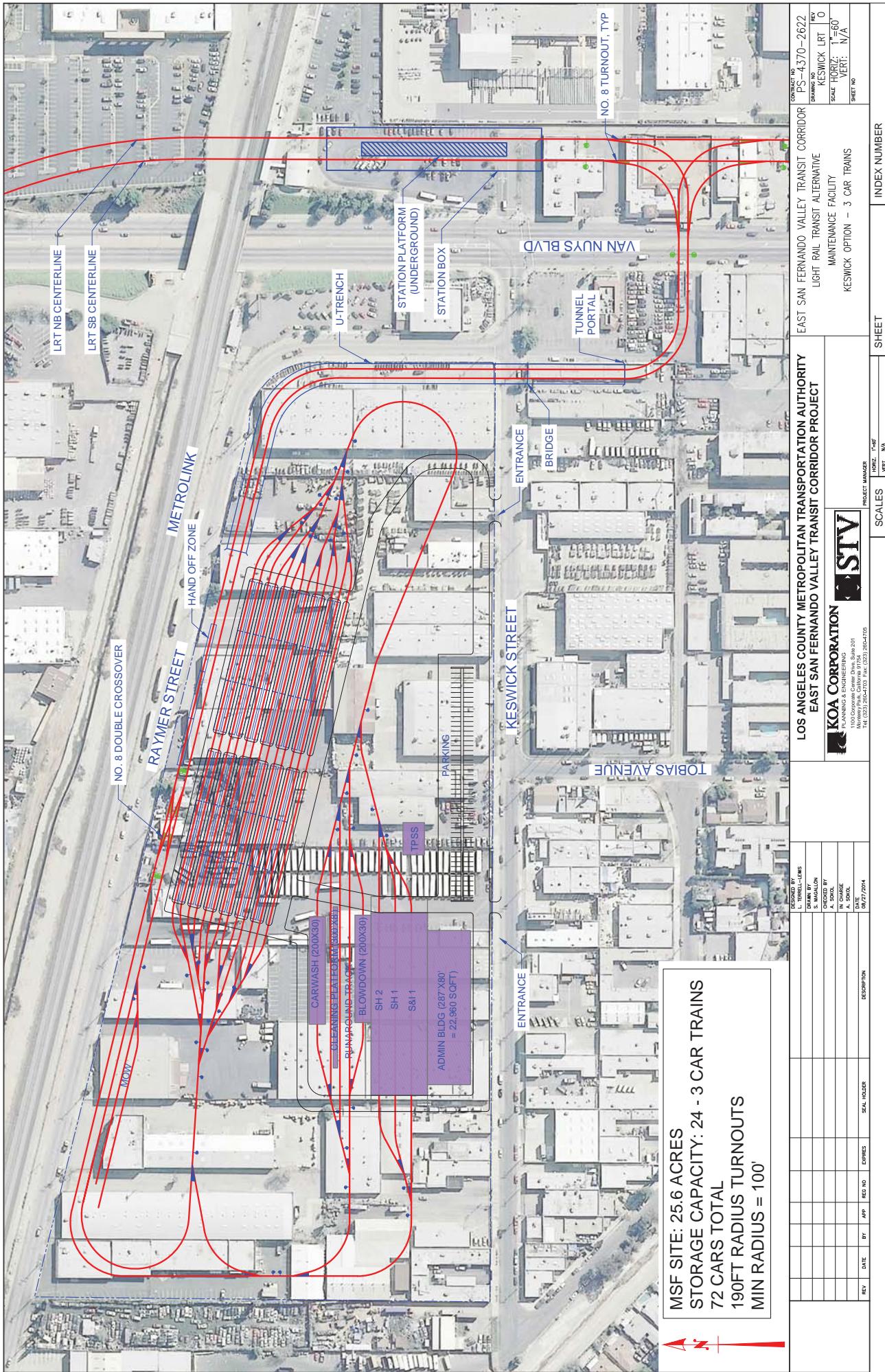


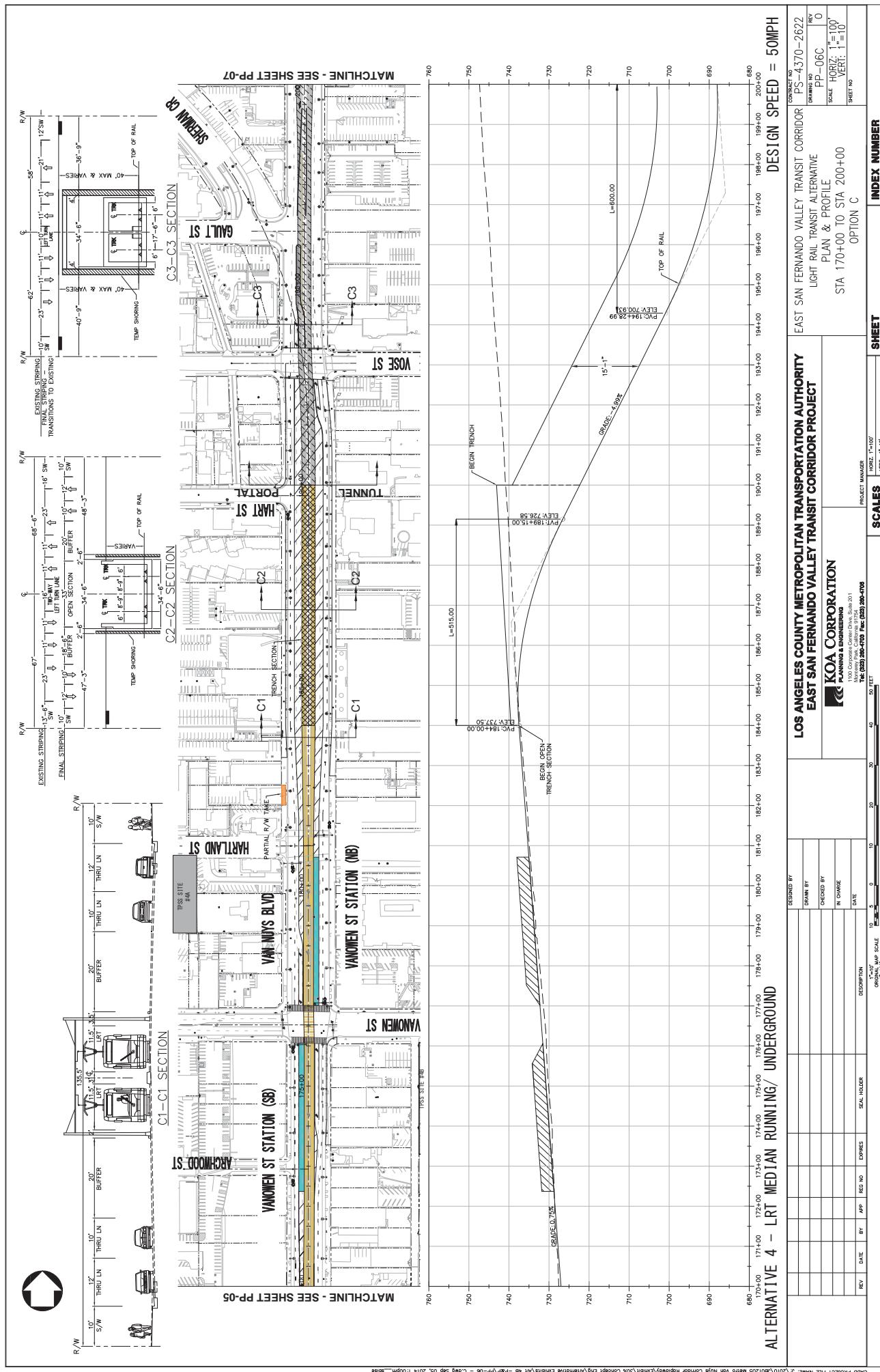


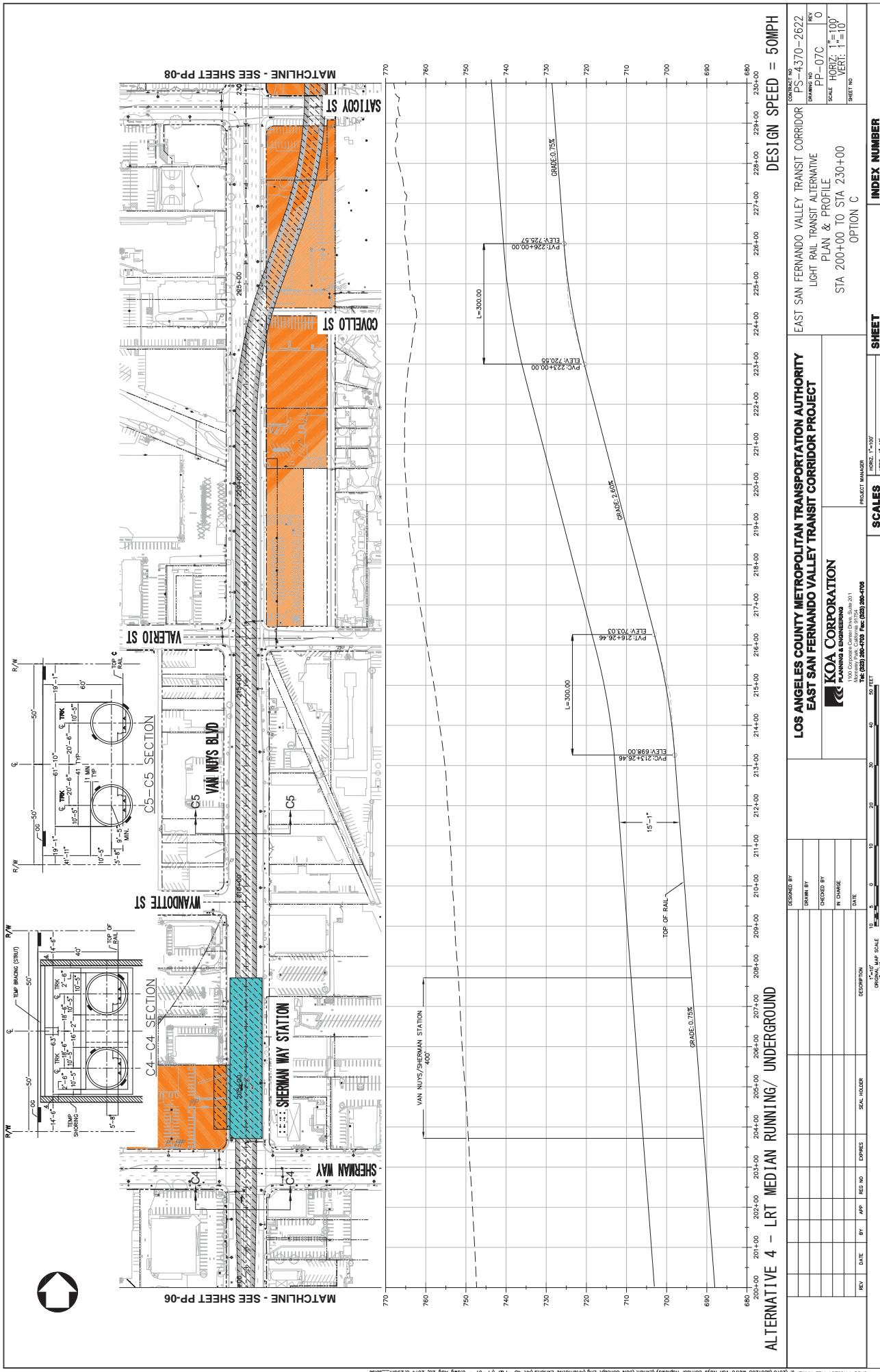


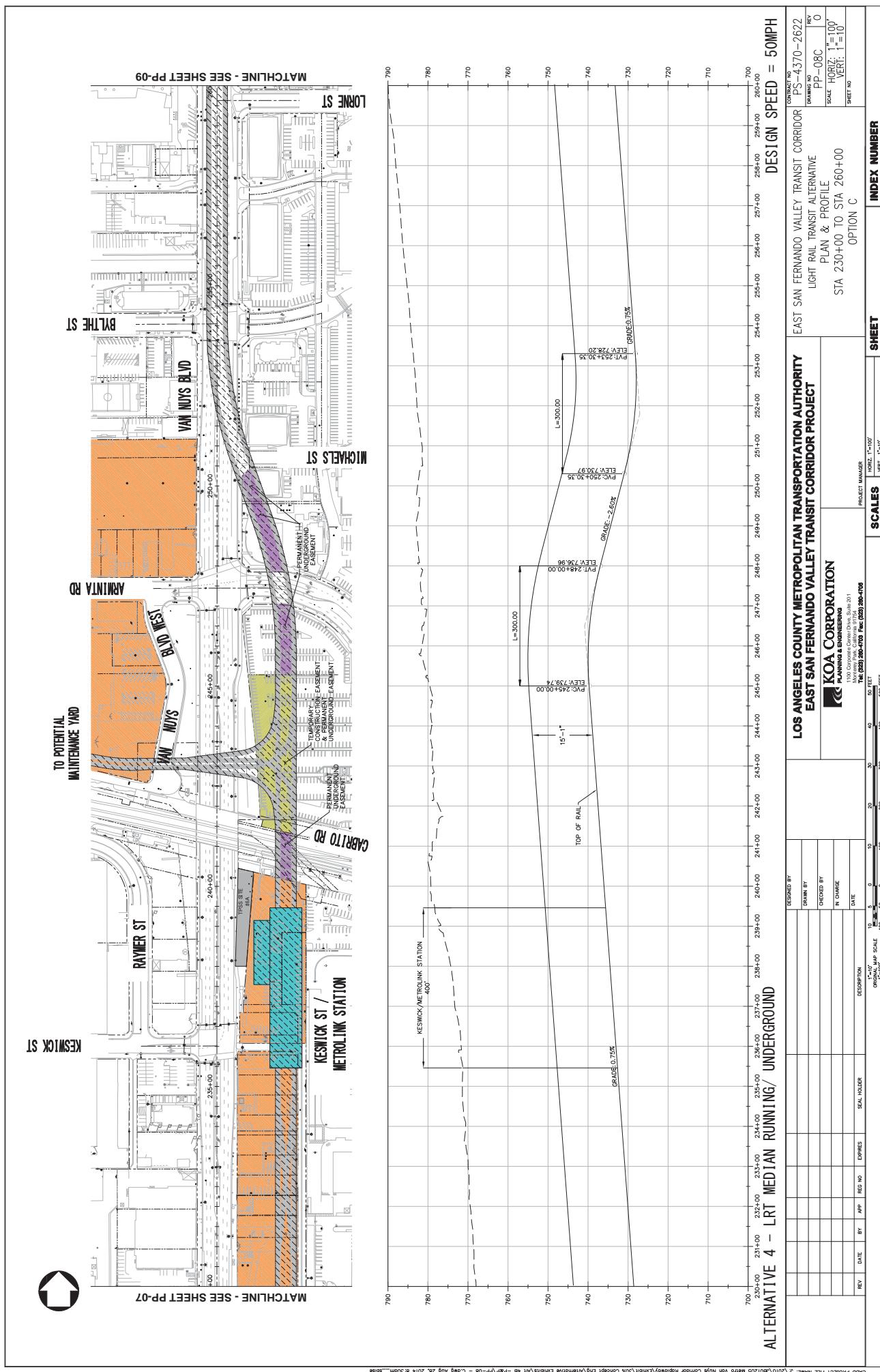




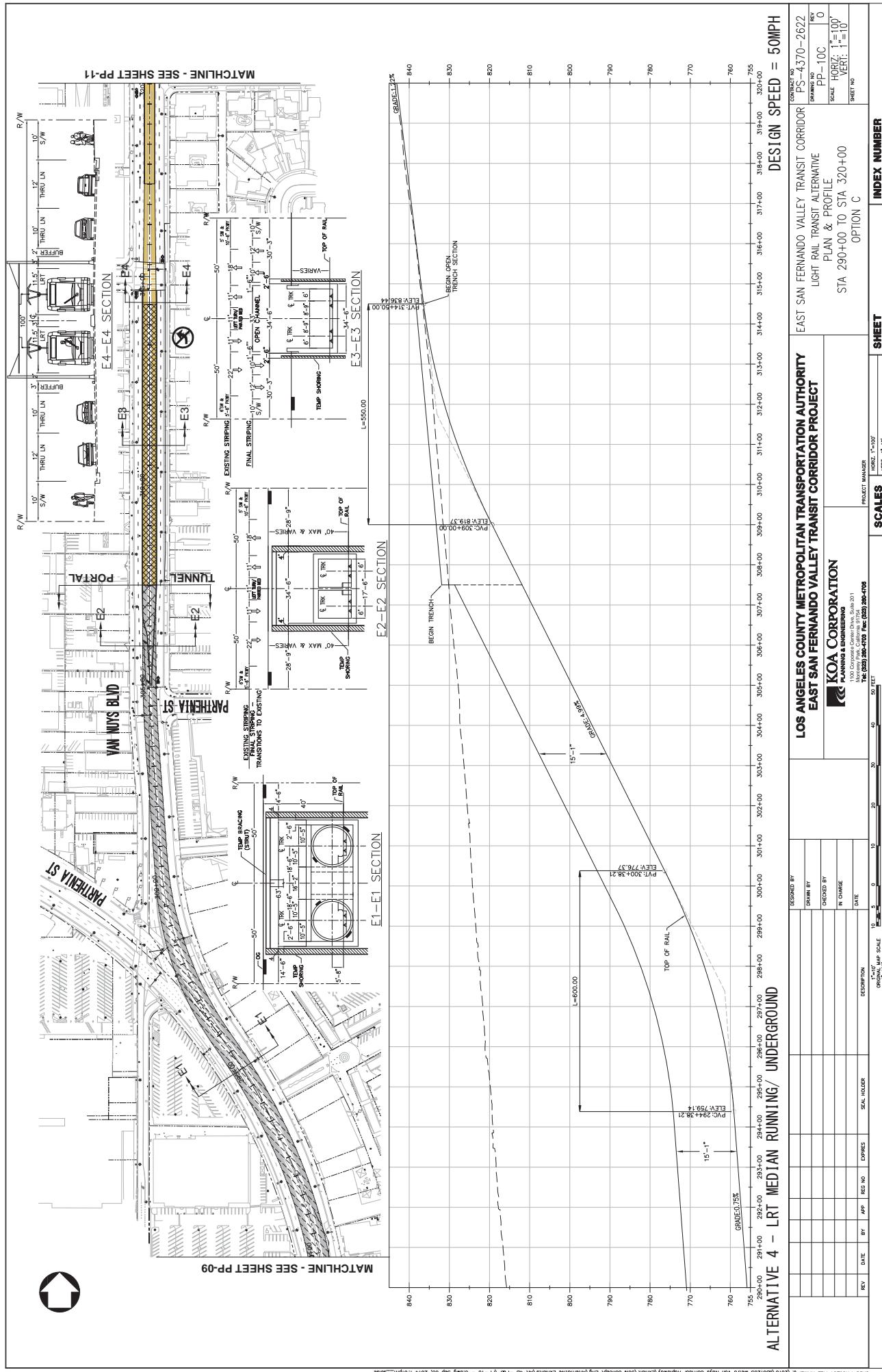


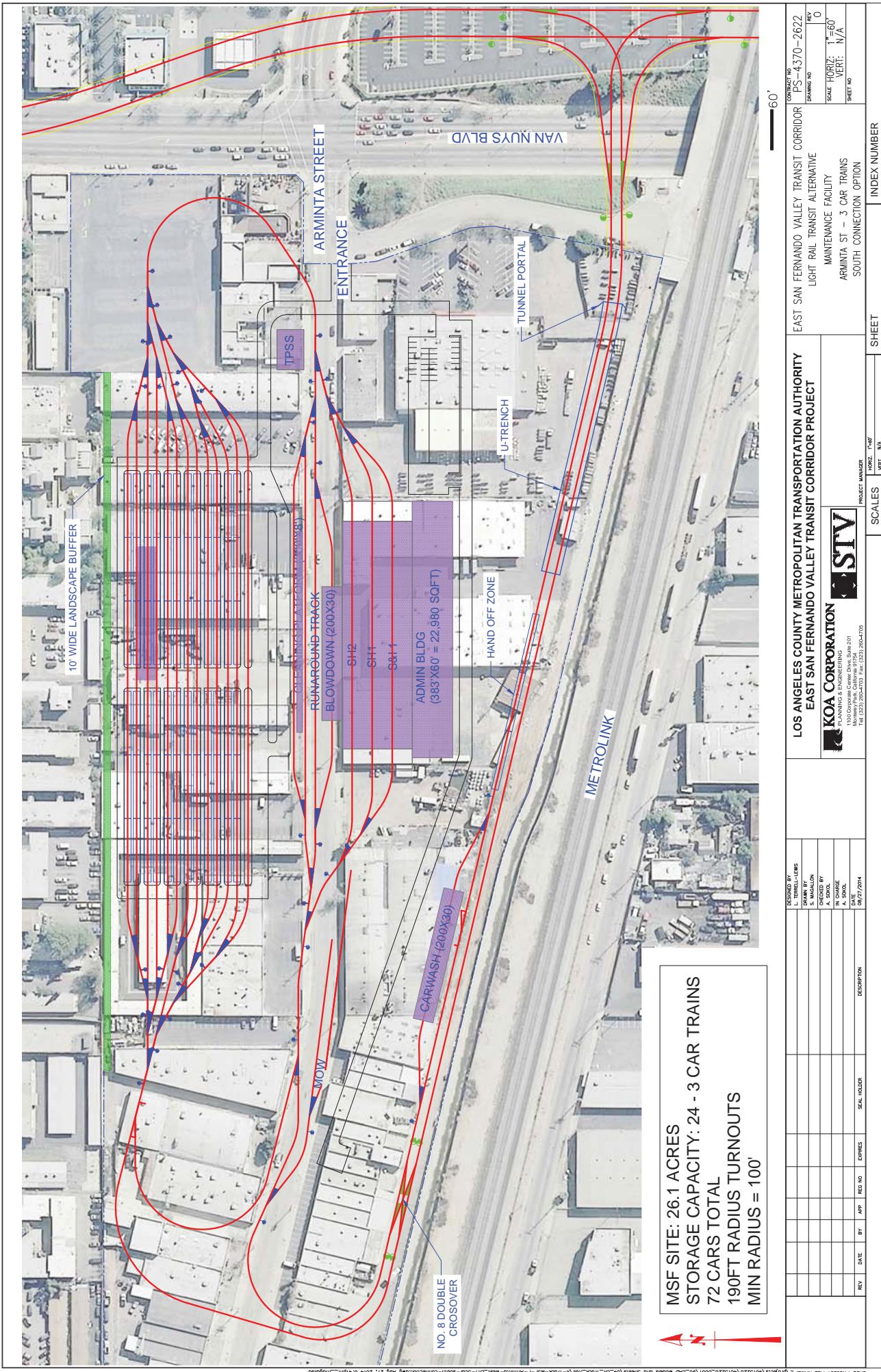


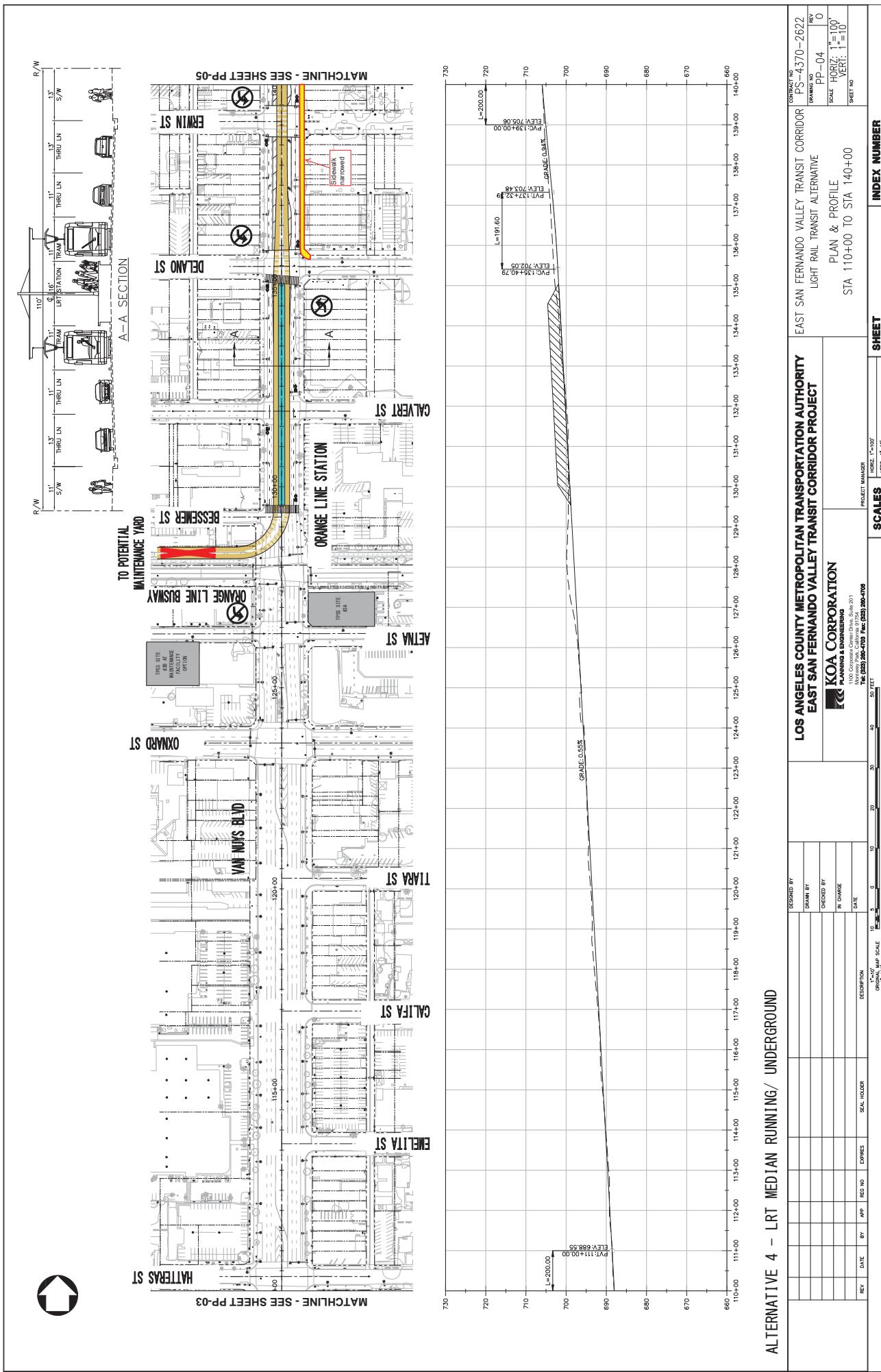


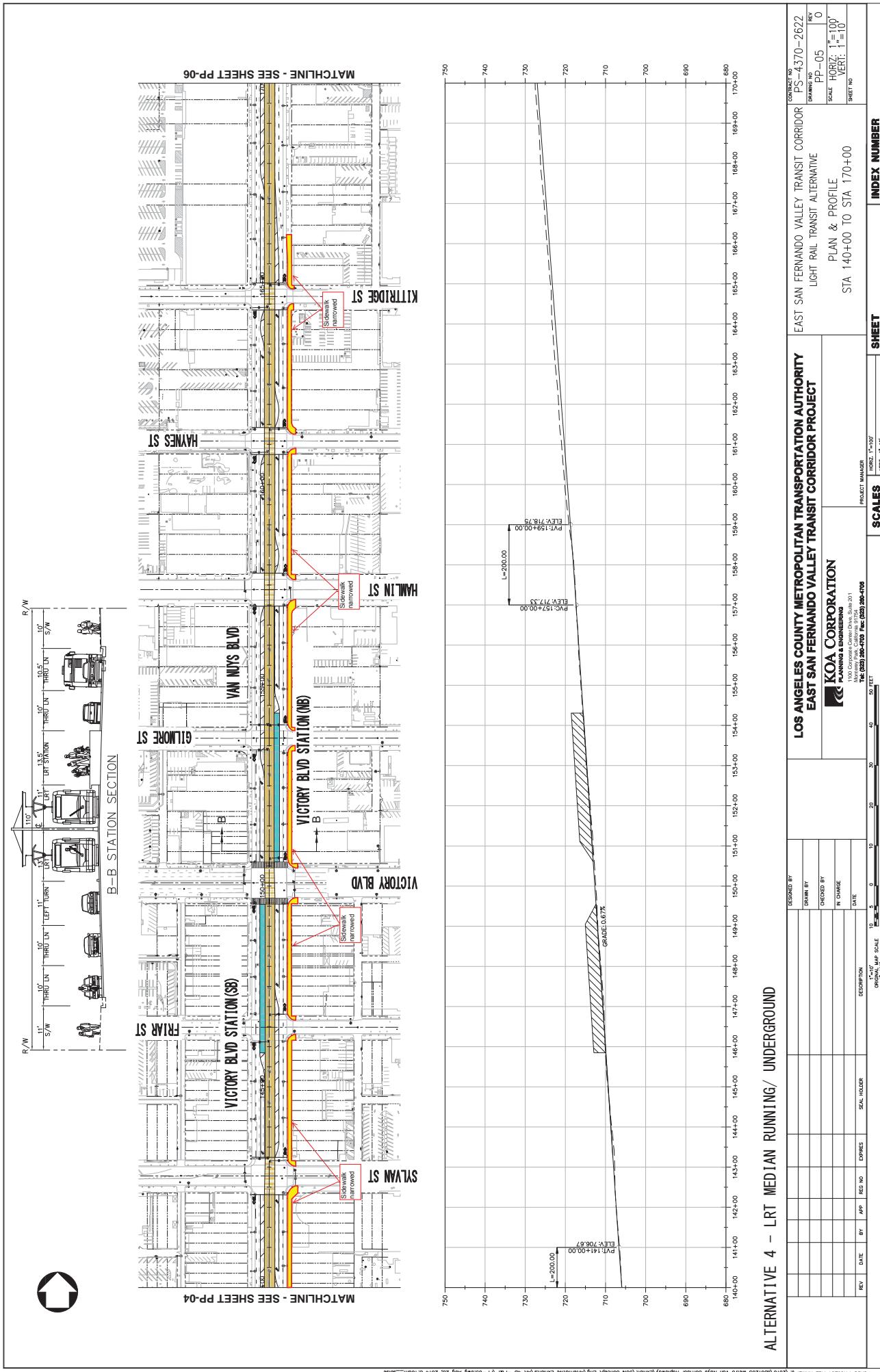


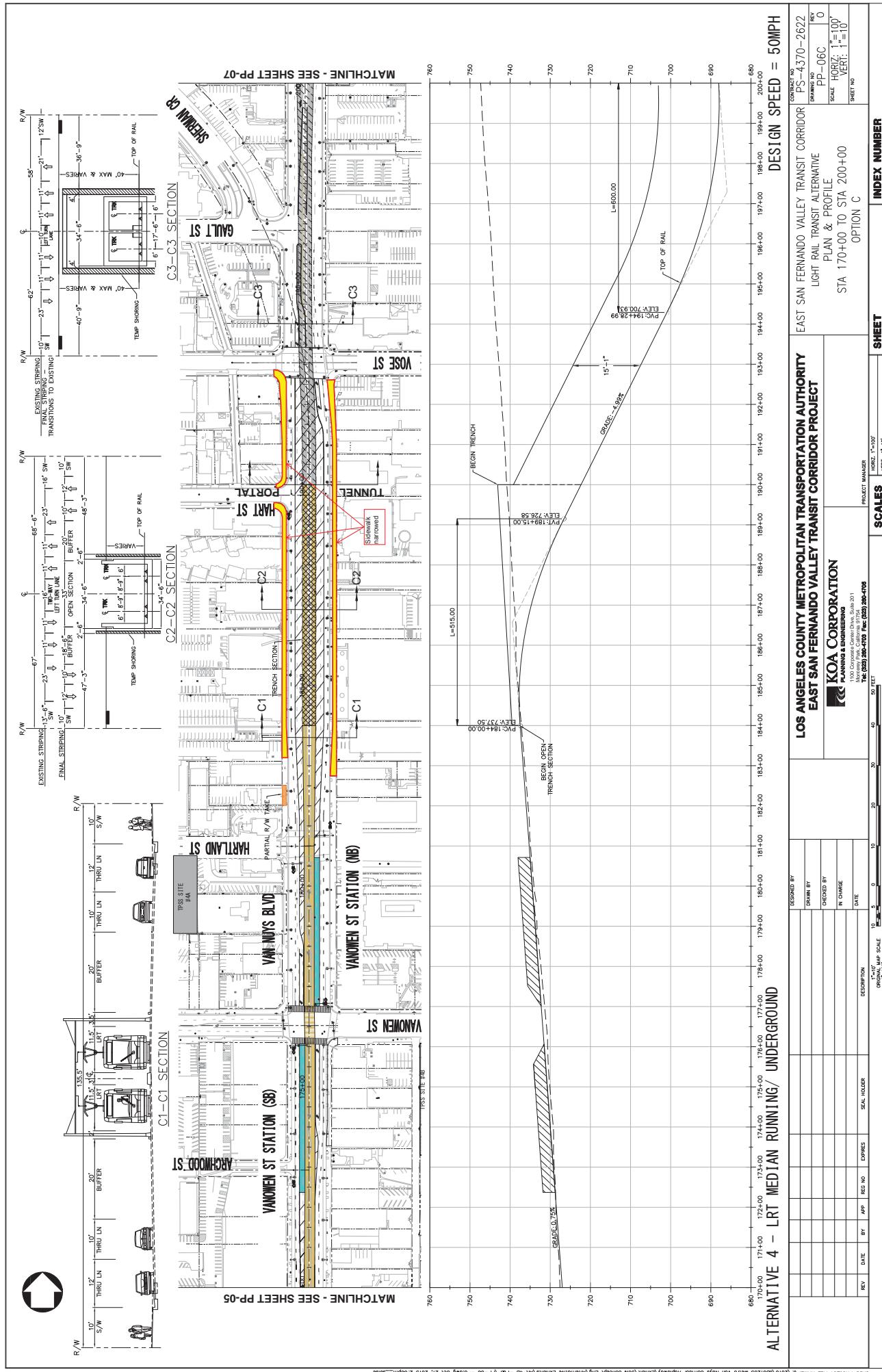


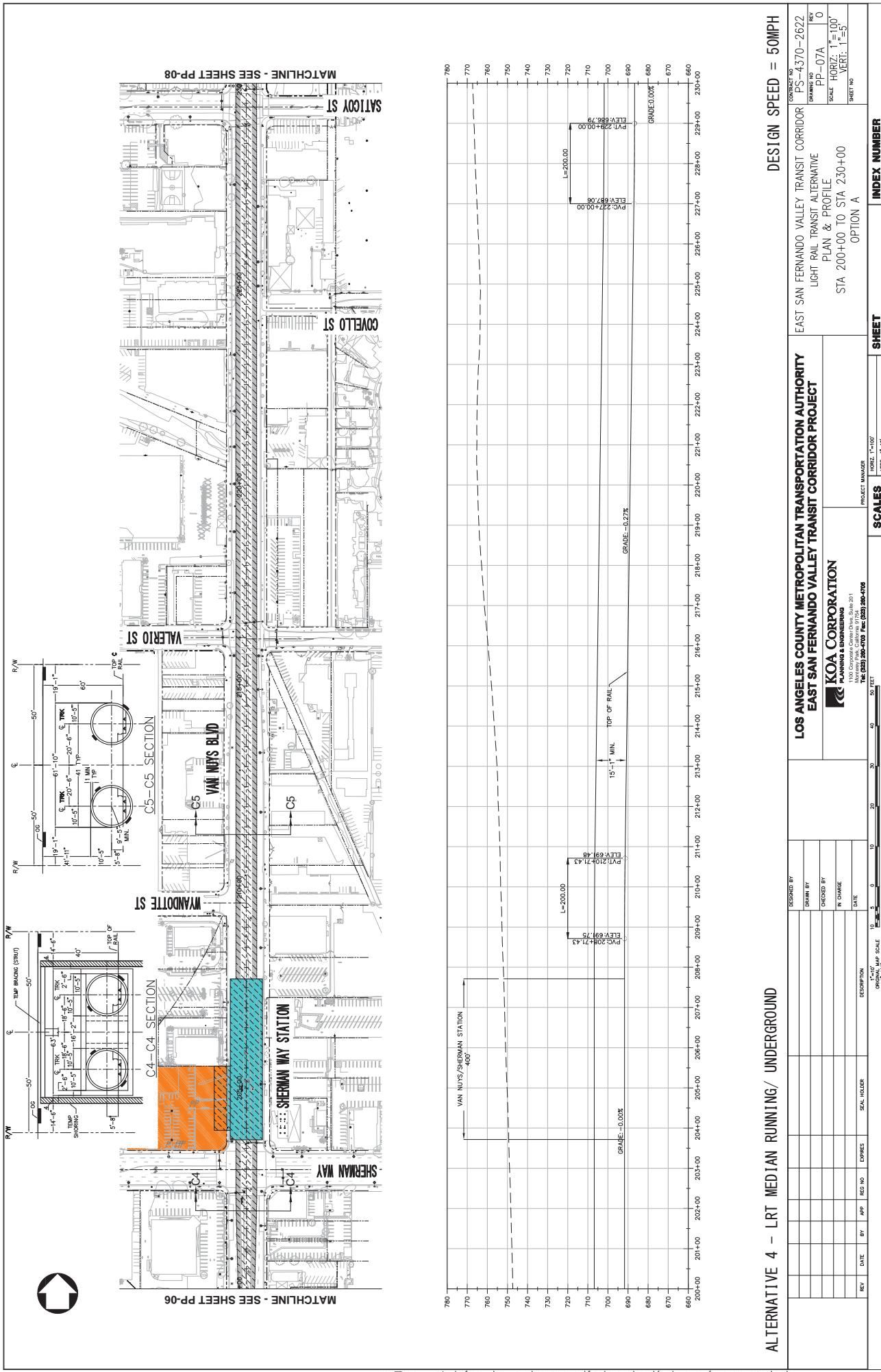


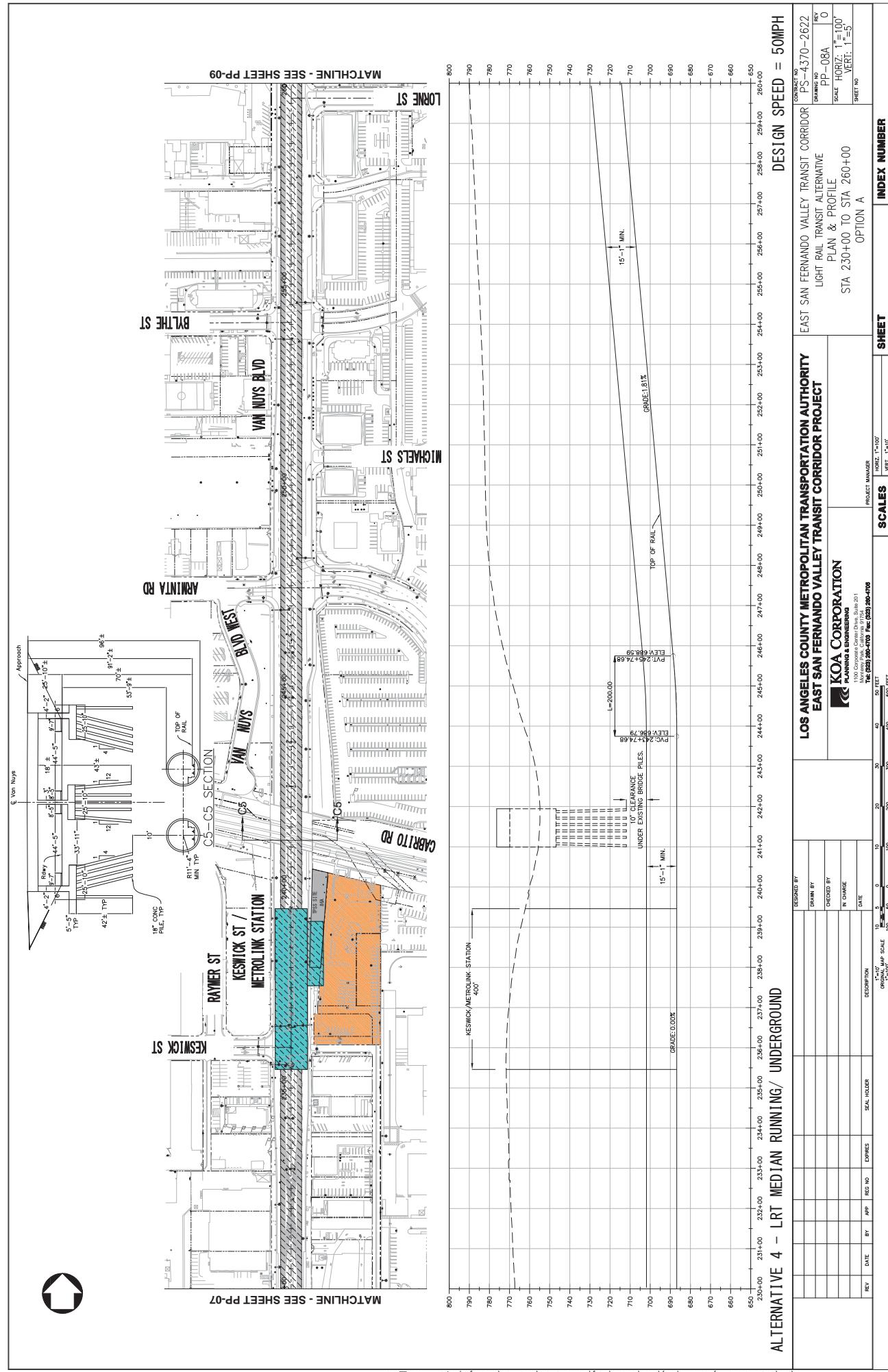


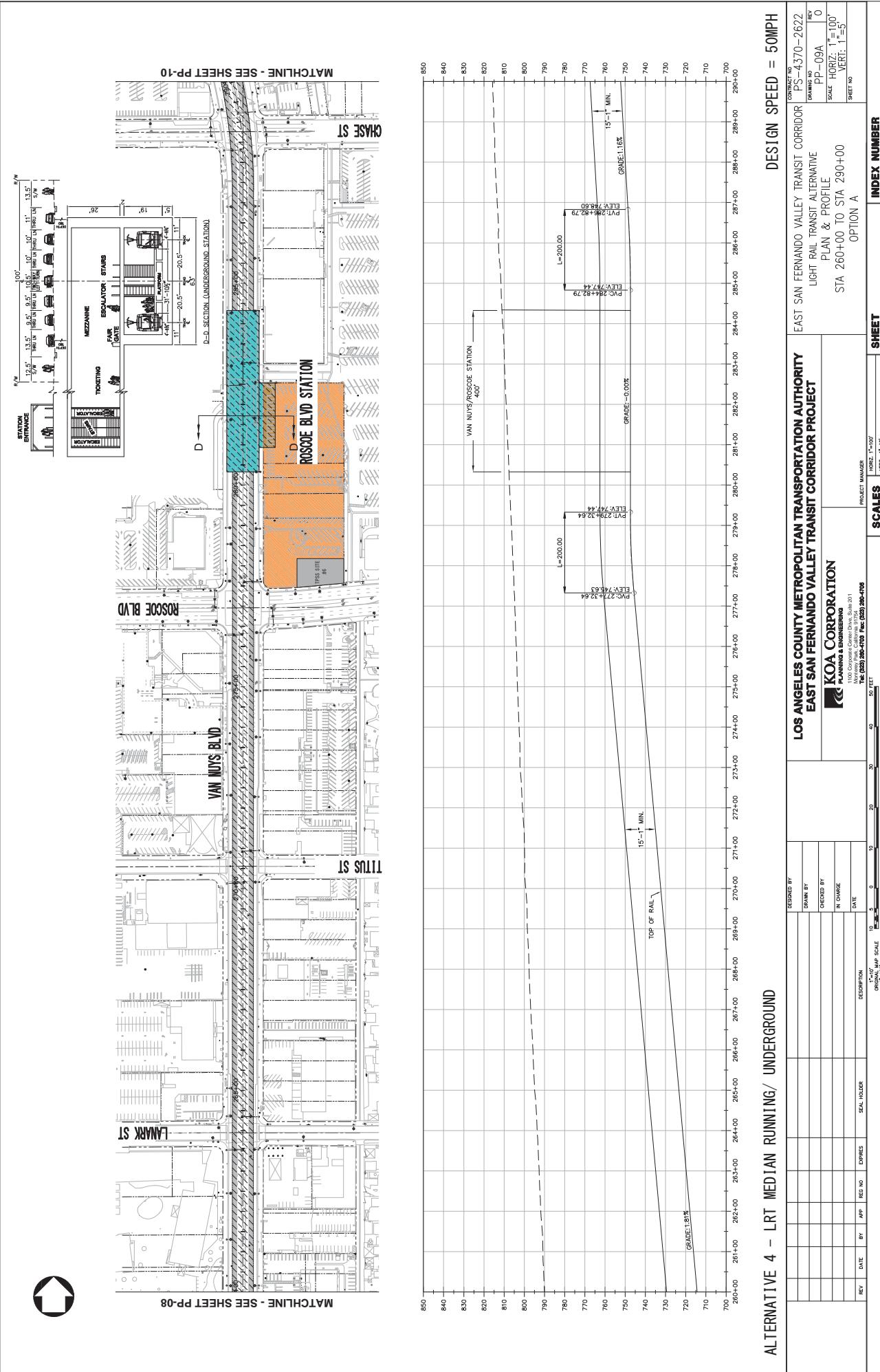


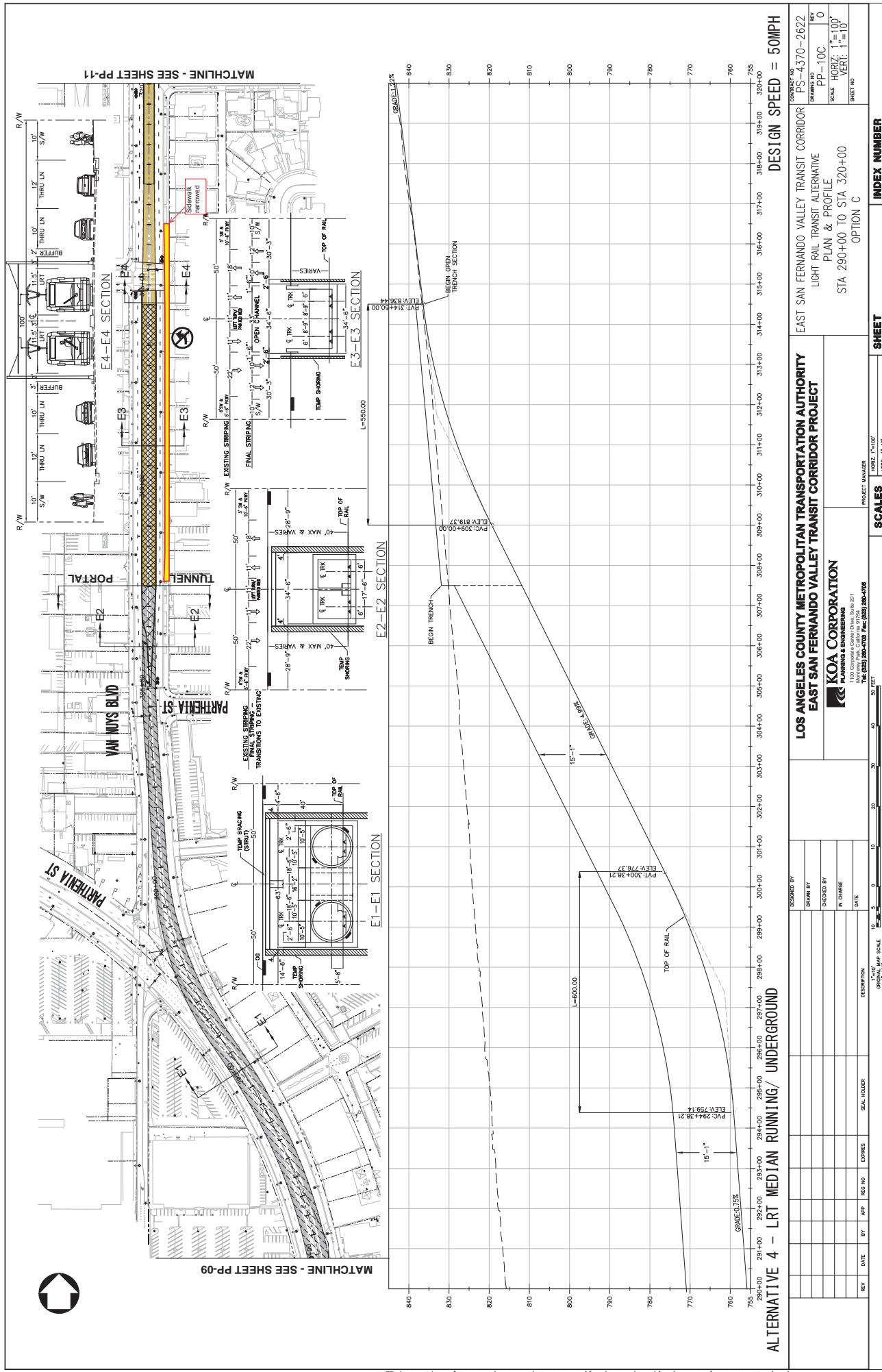


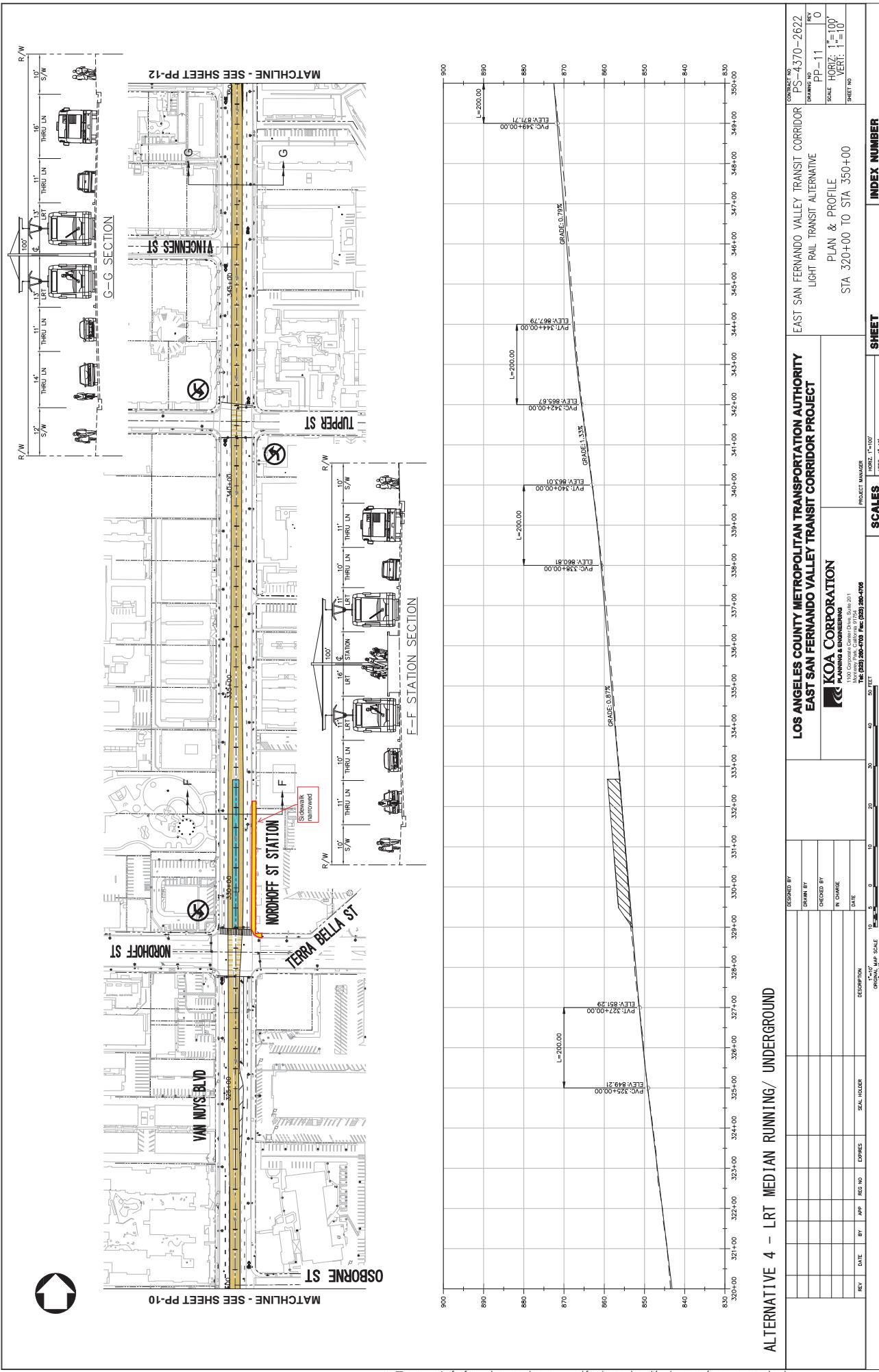


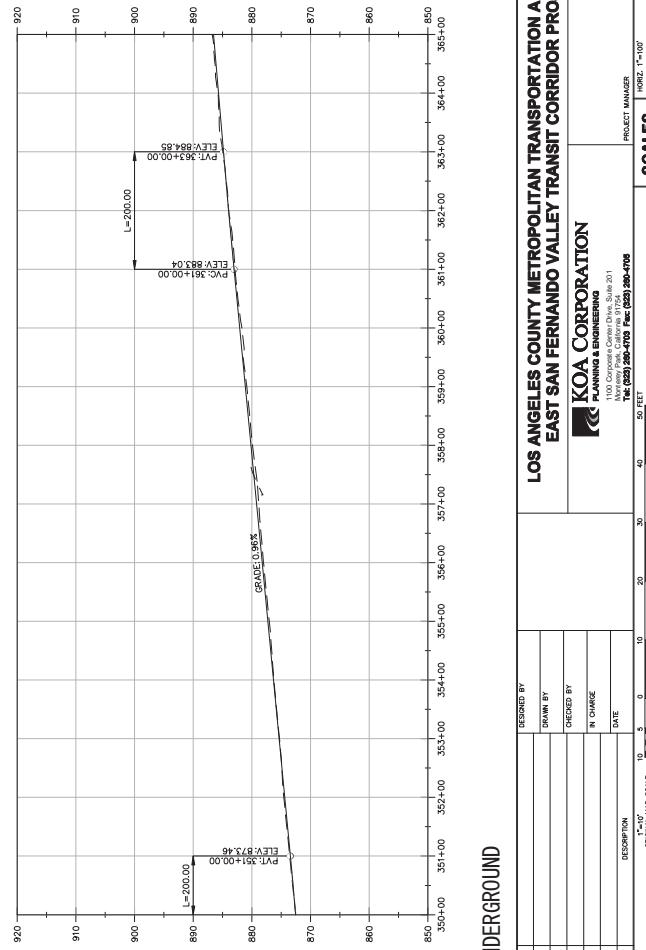
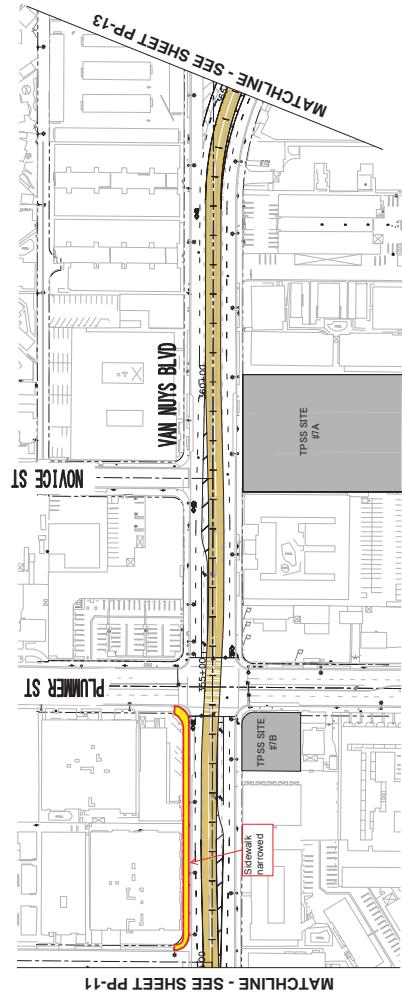




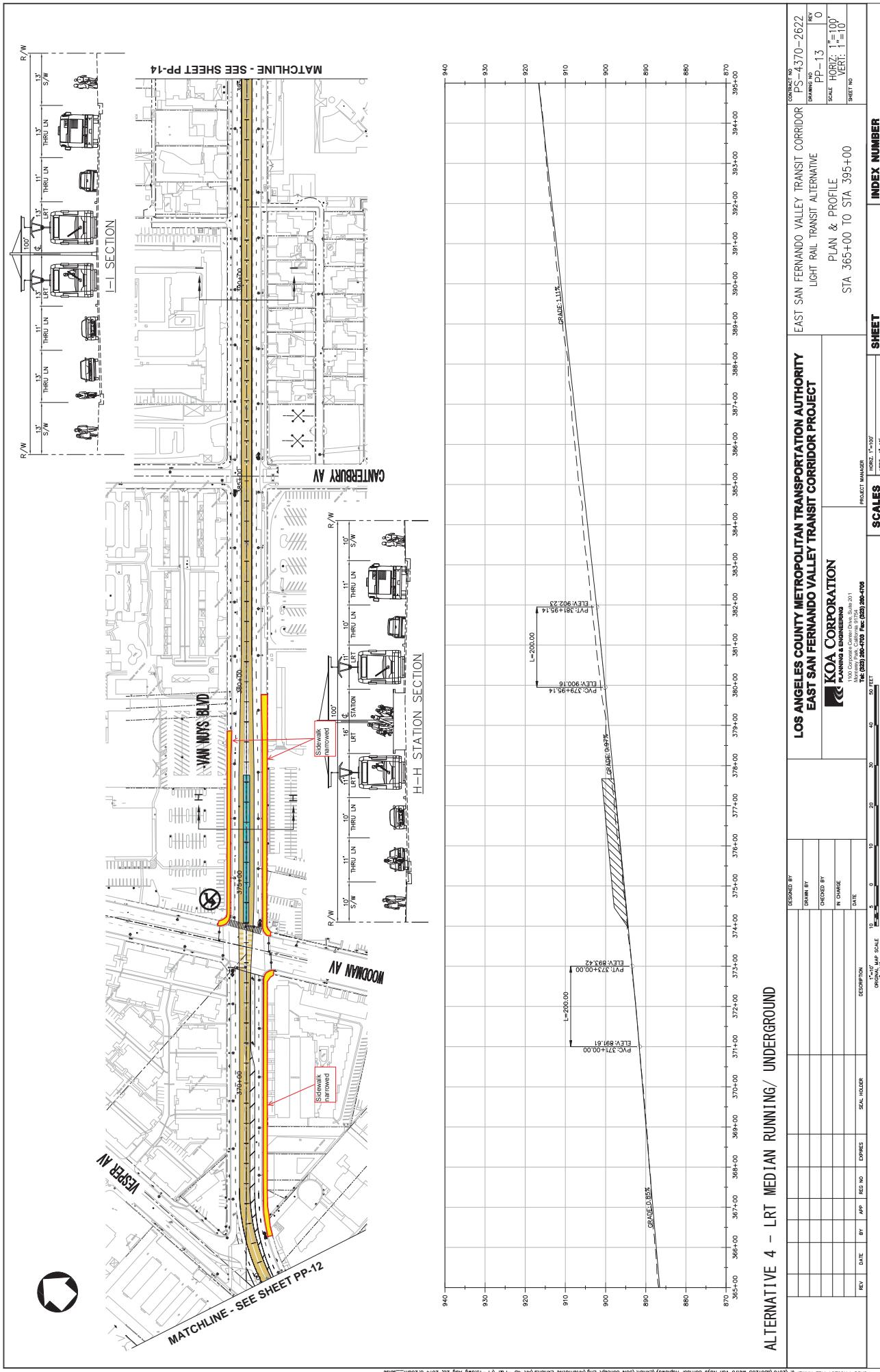


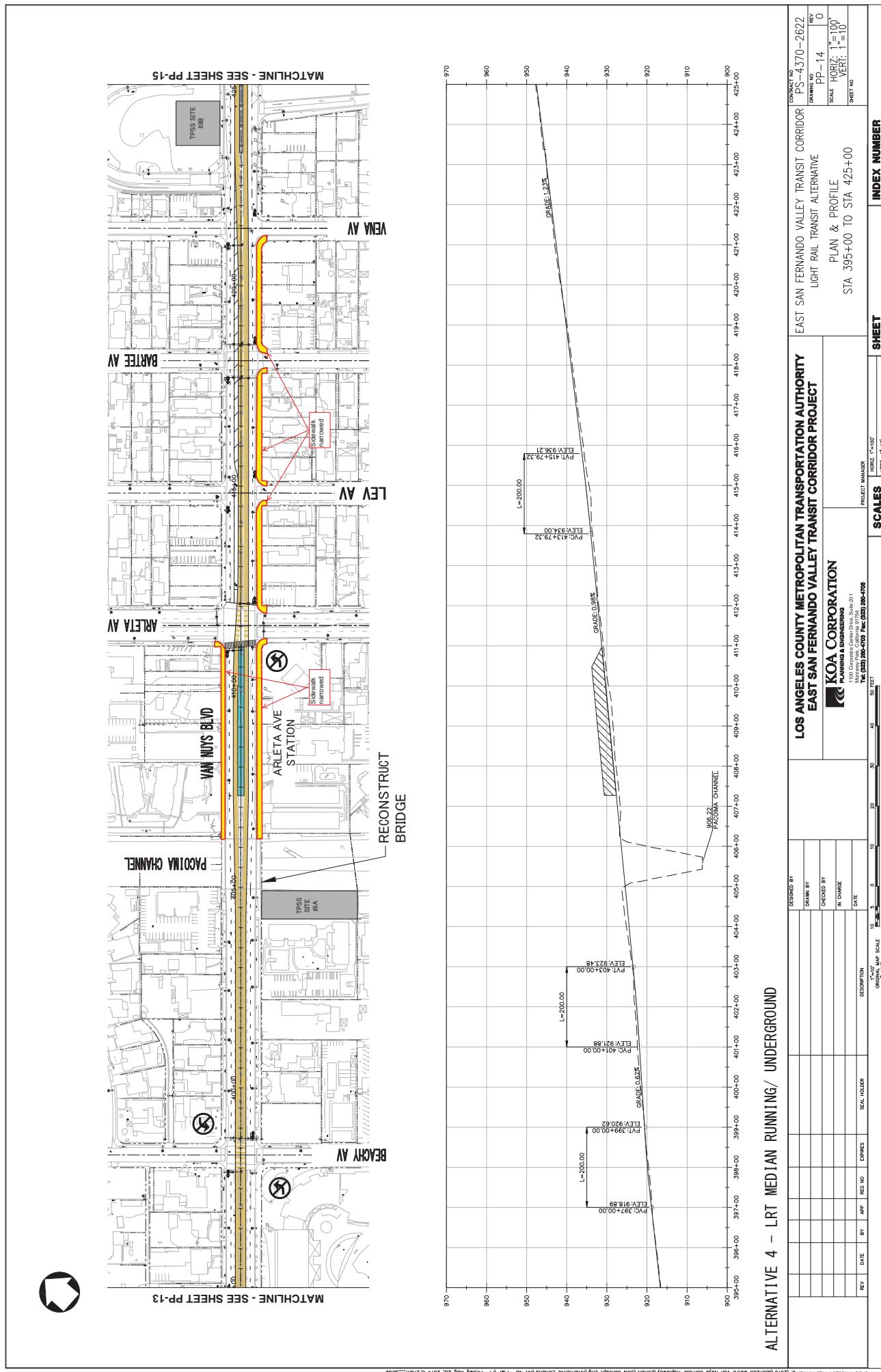


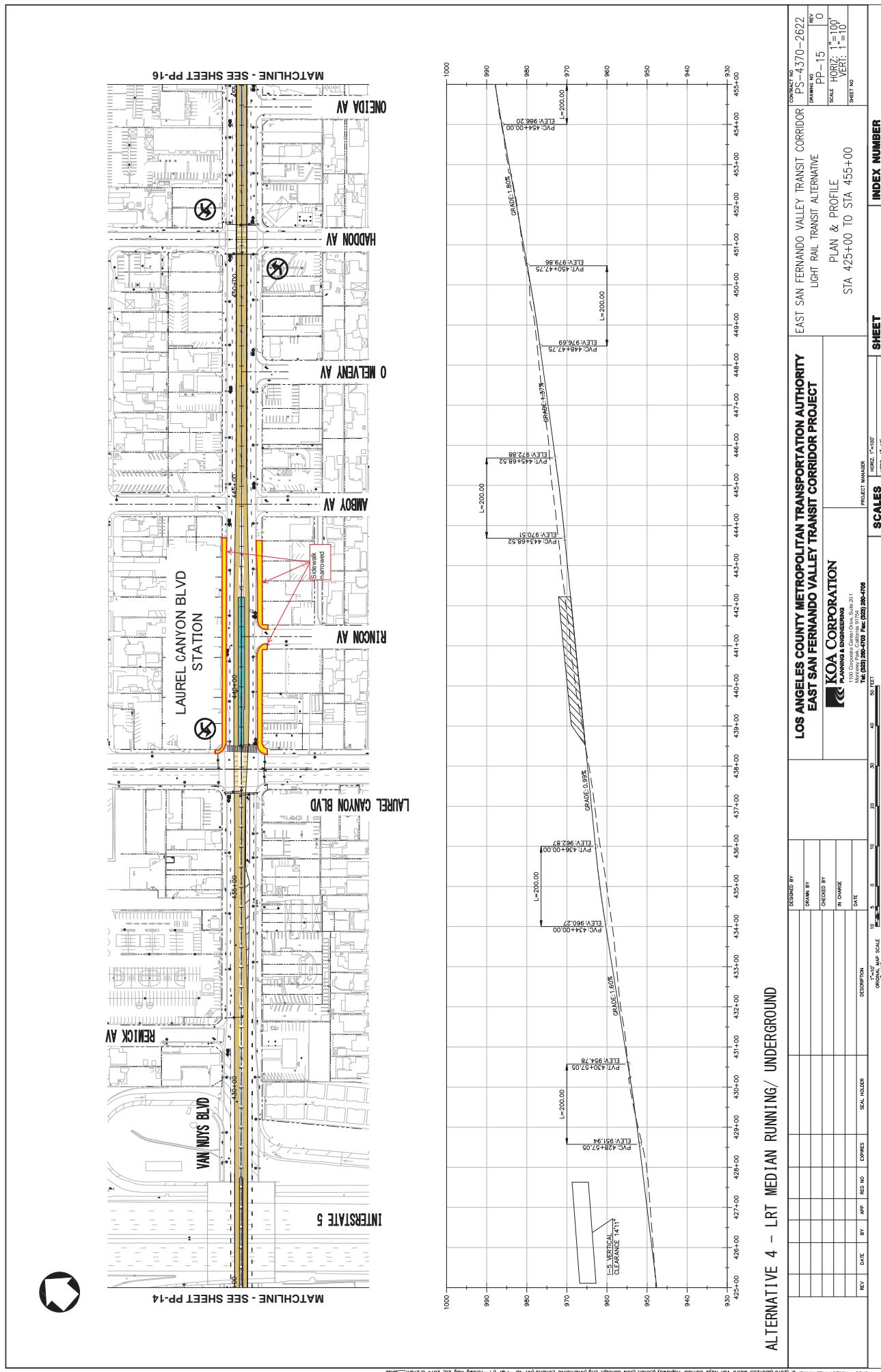


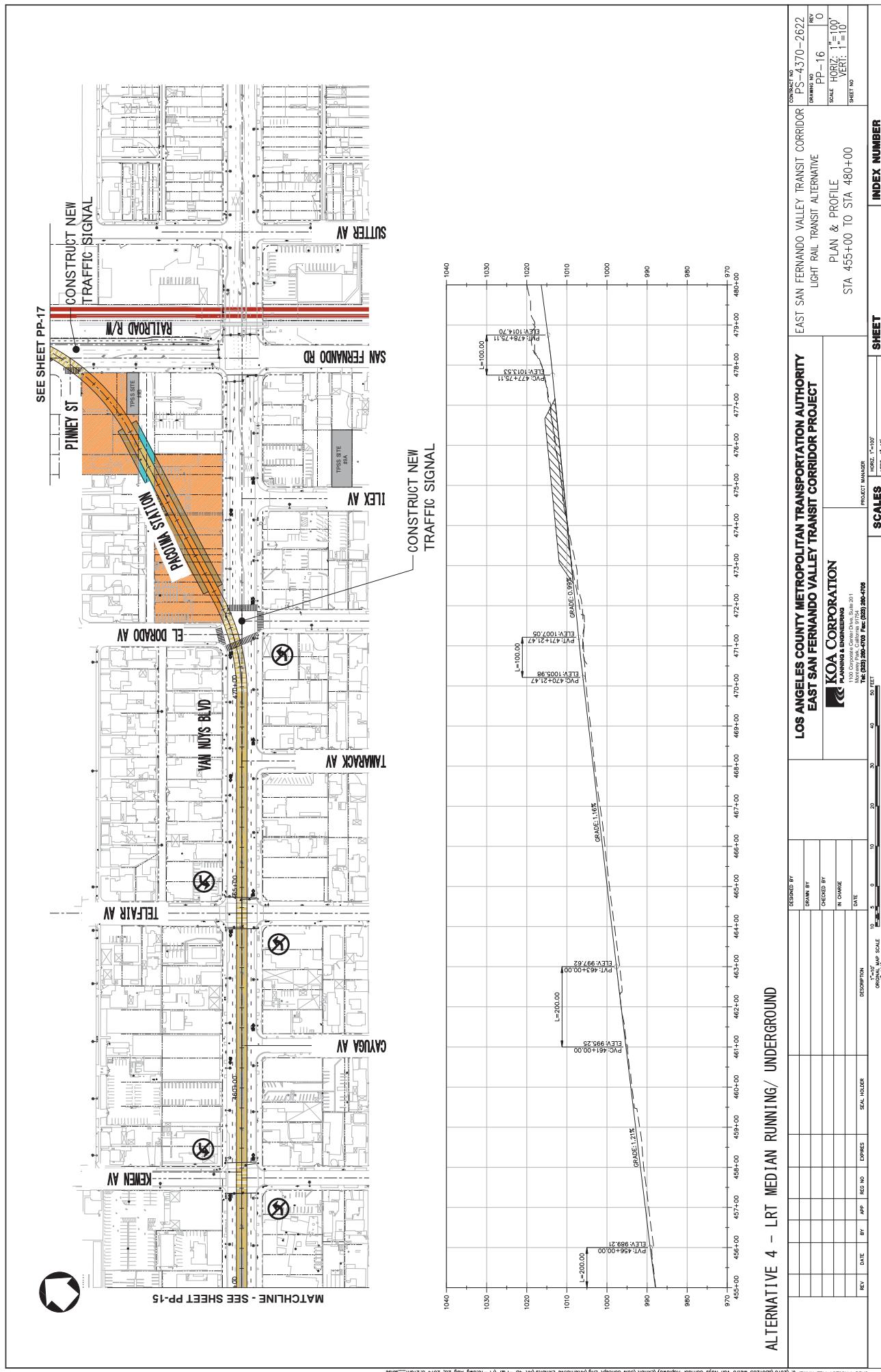


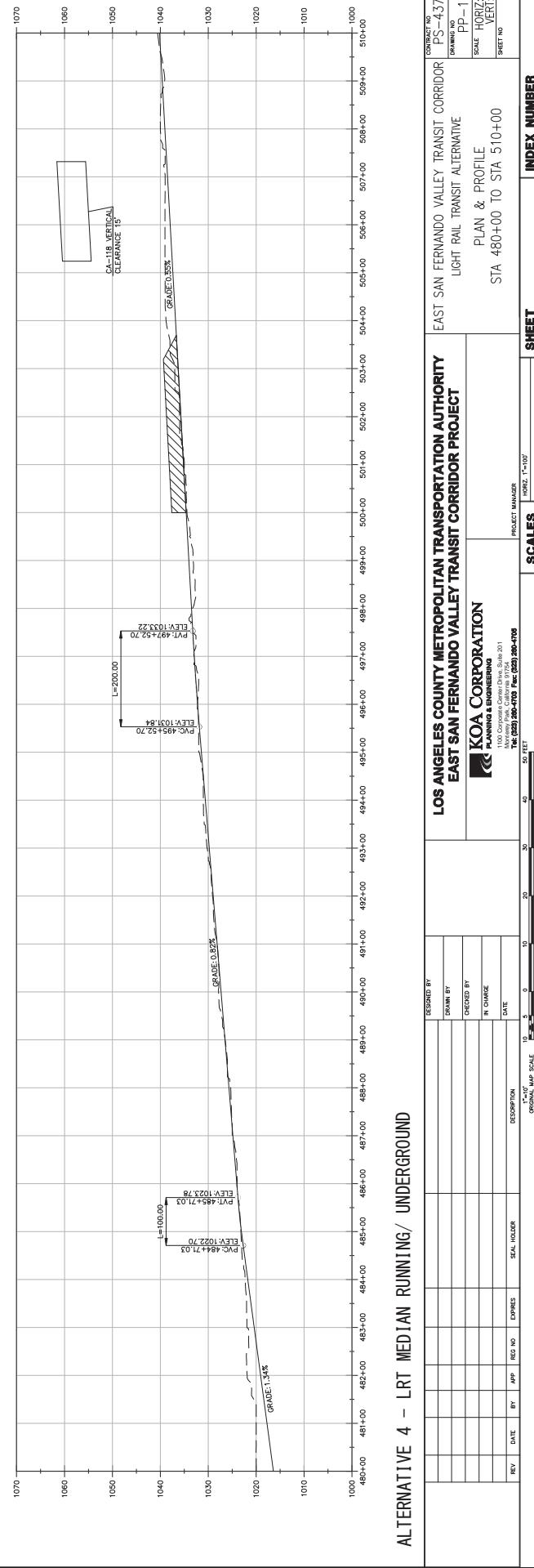
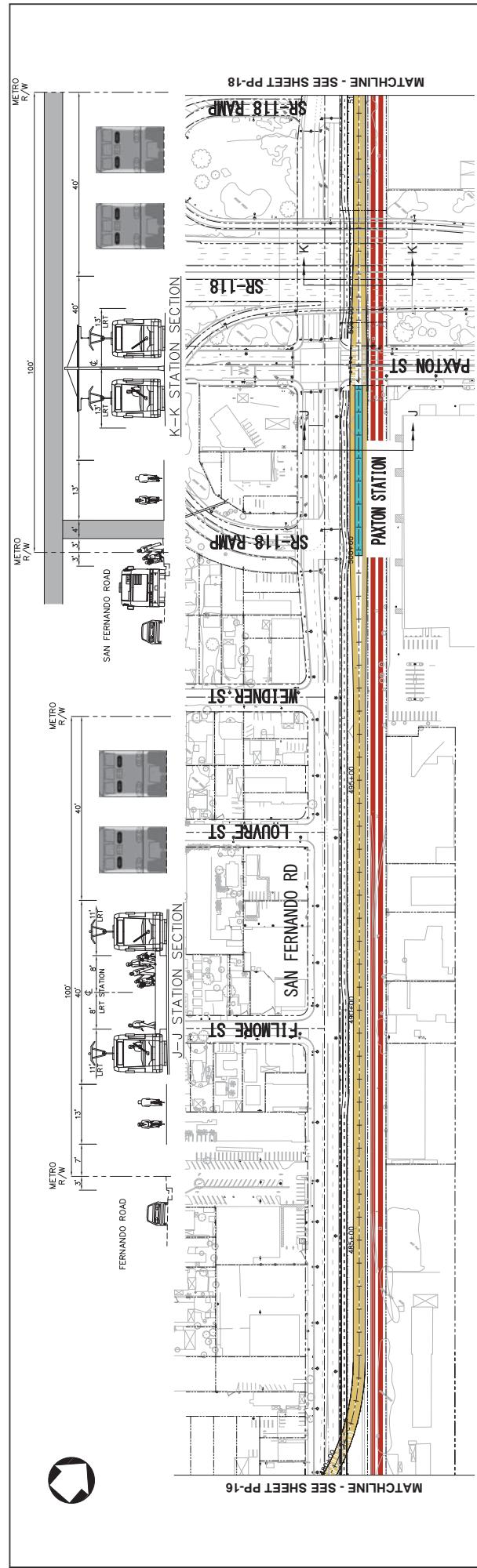
ALTERNATIVE 4 – LRT MEDIAN RUNNING/ UNDERGROUND

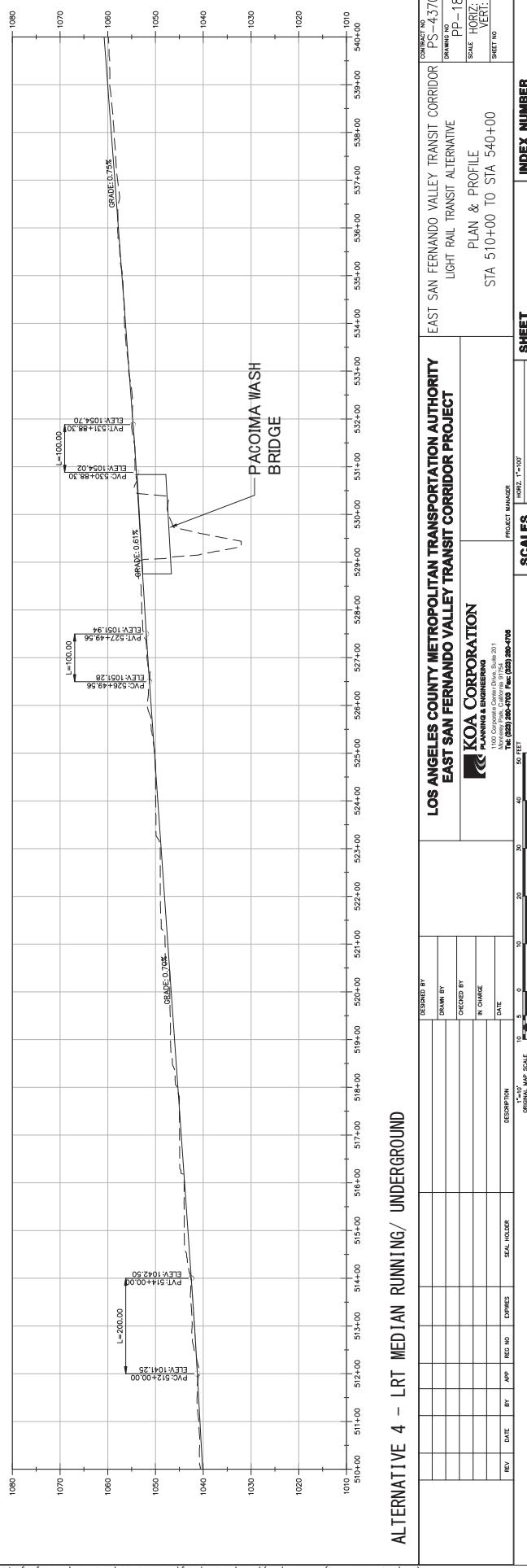
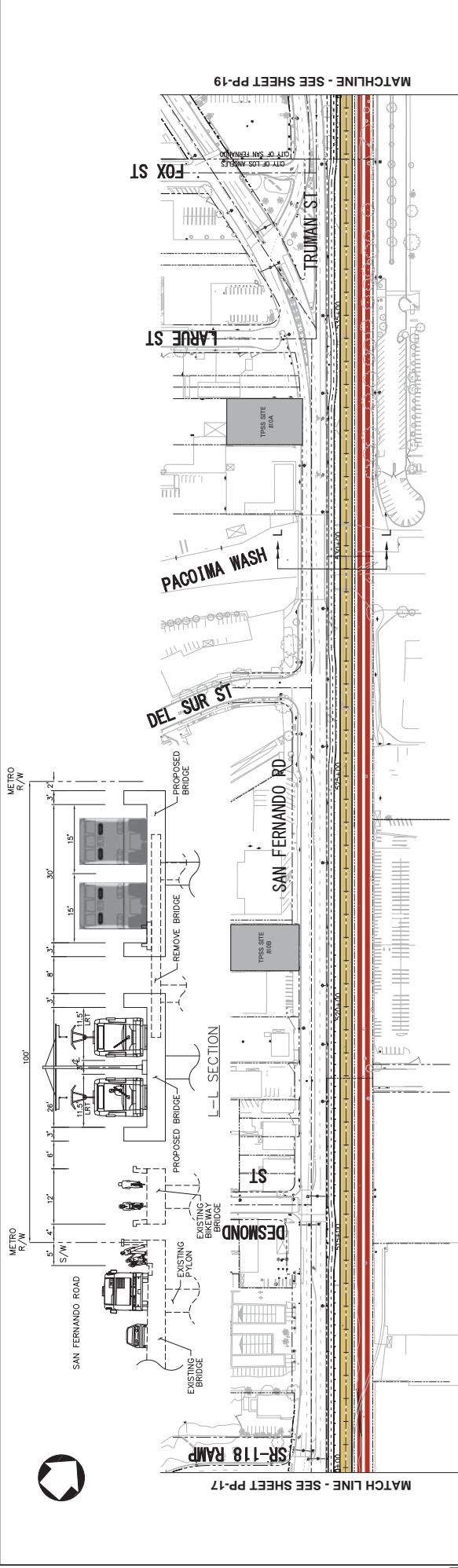


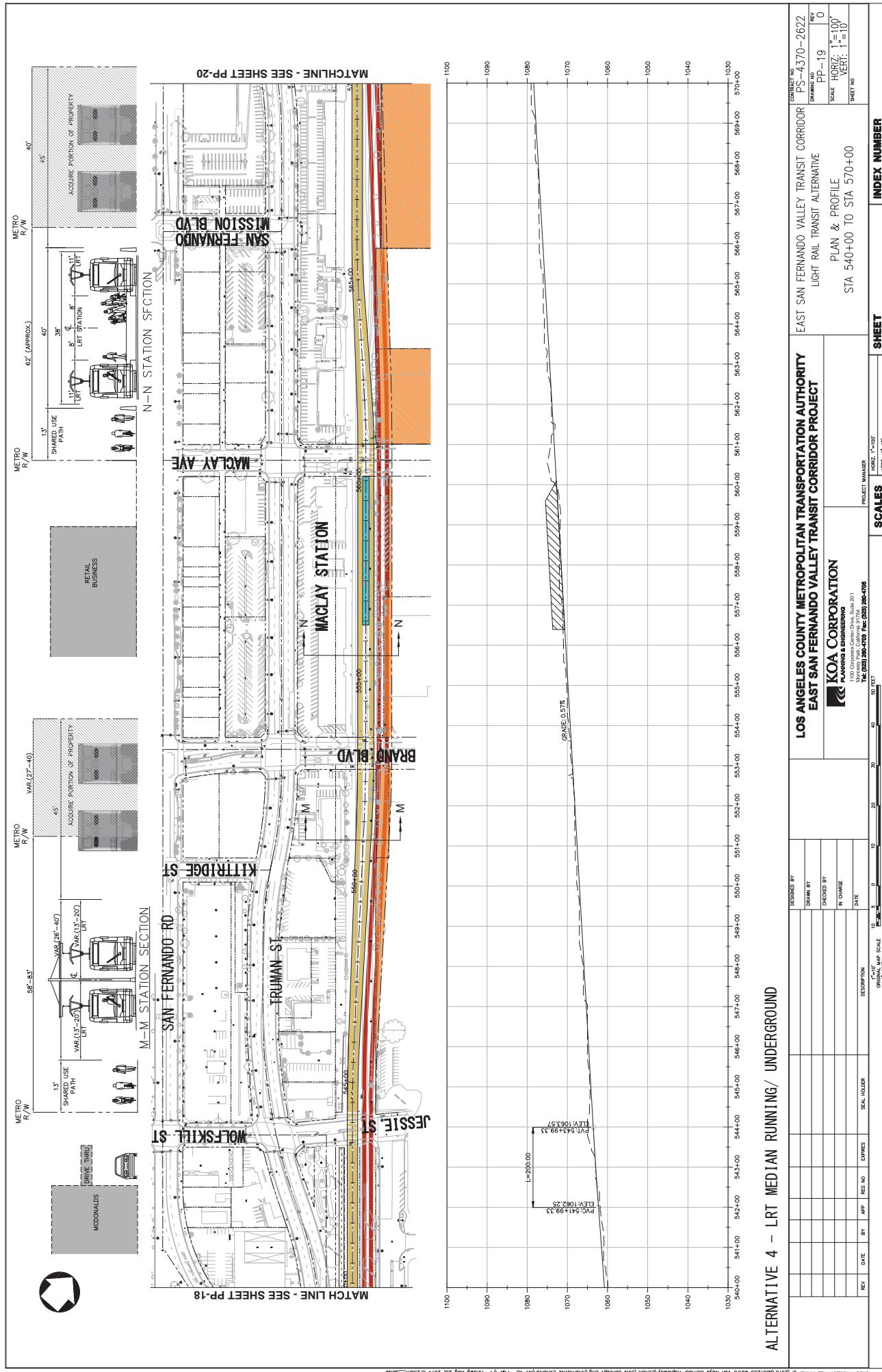


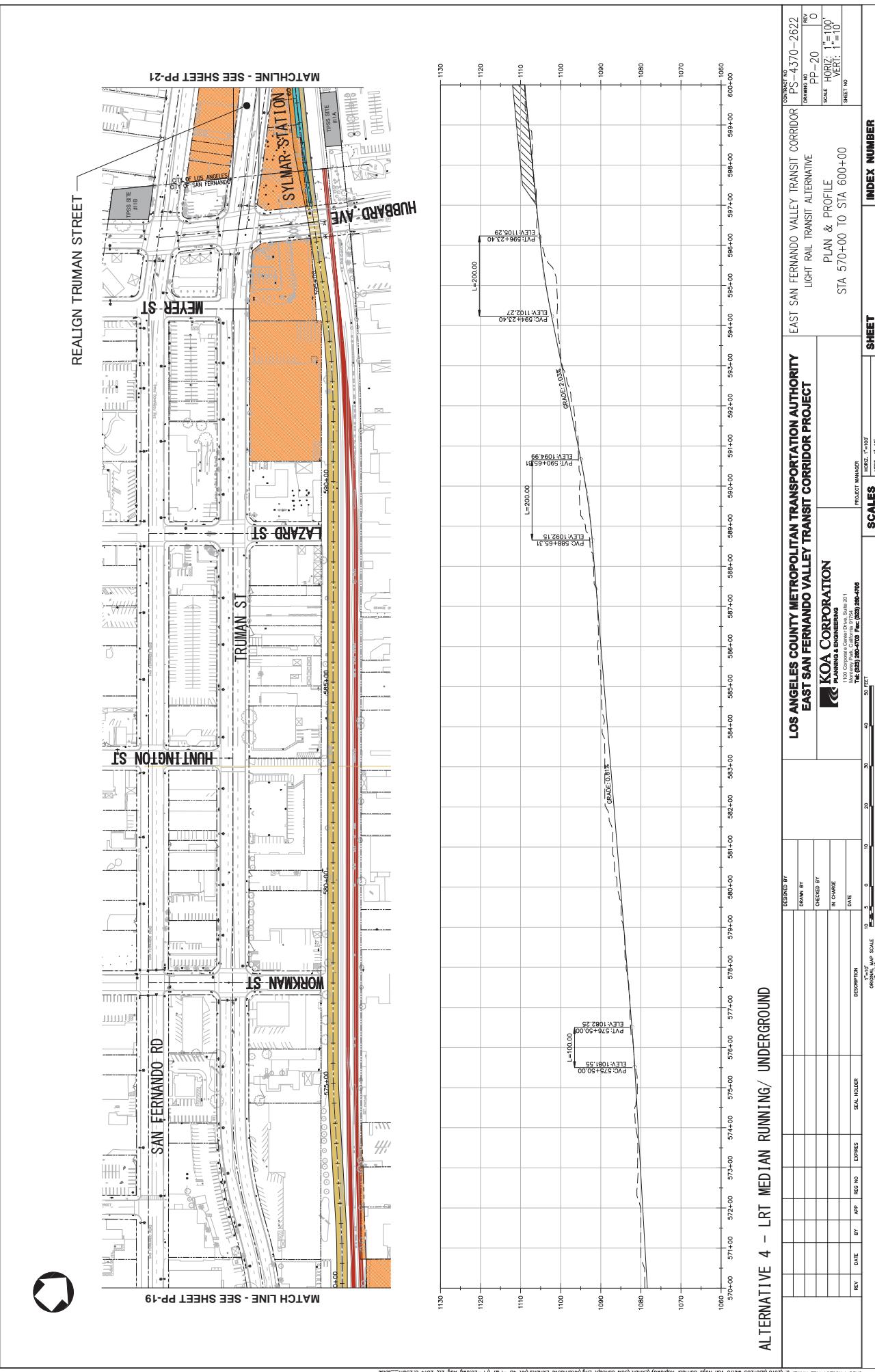






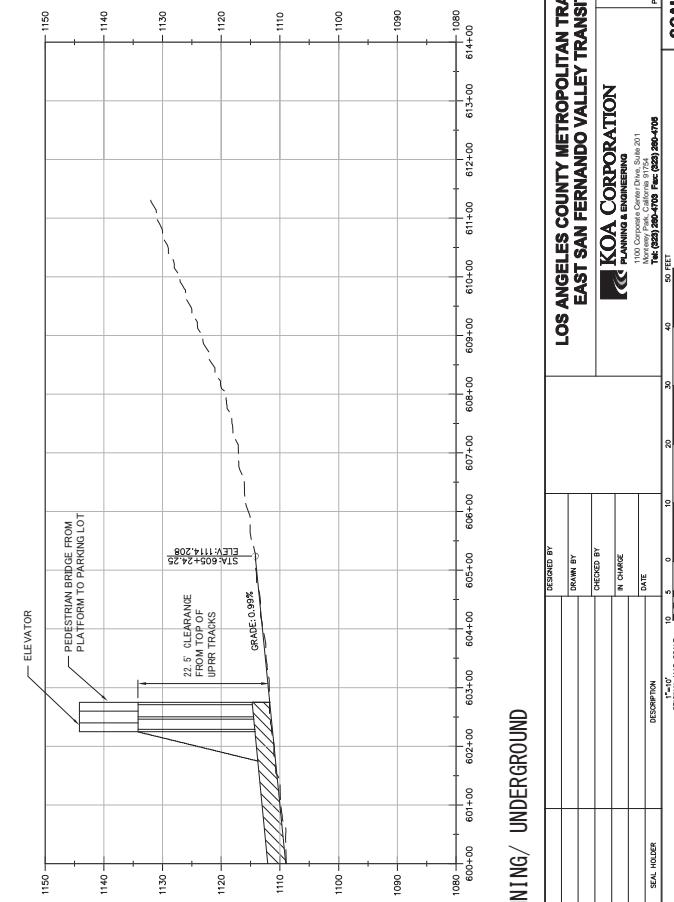
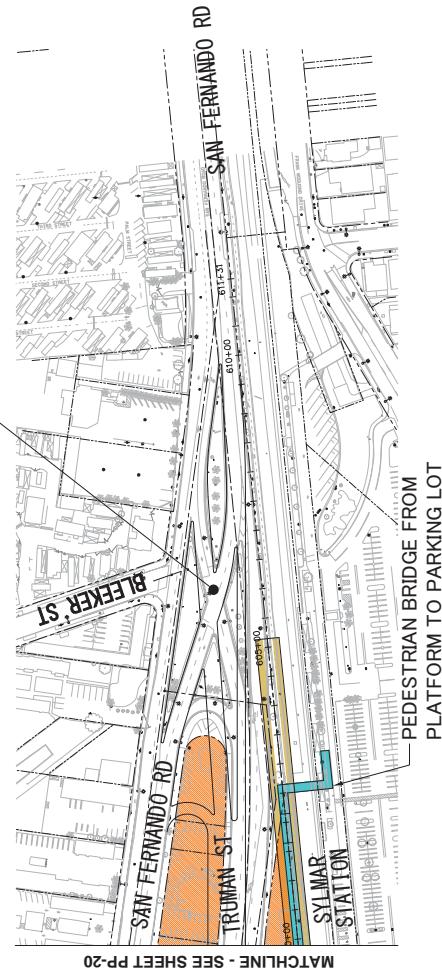


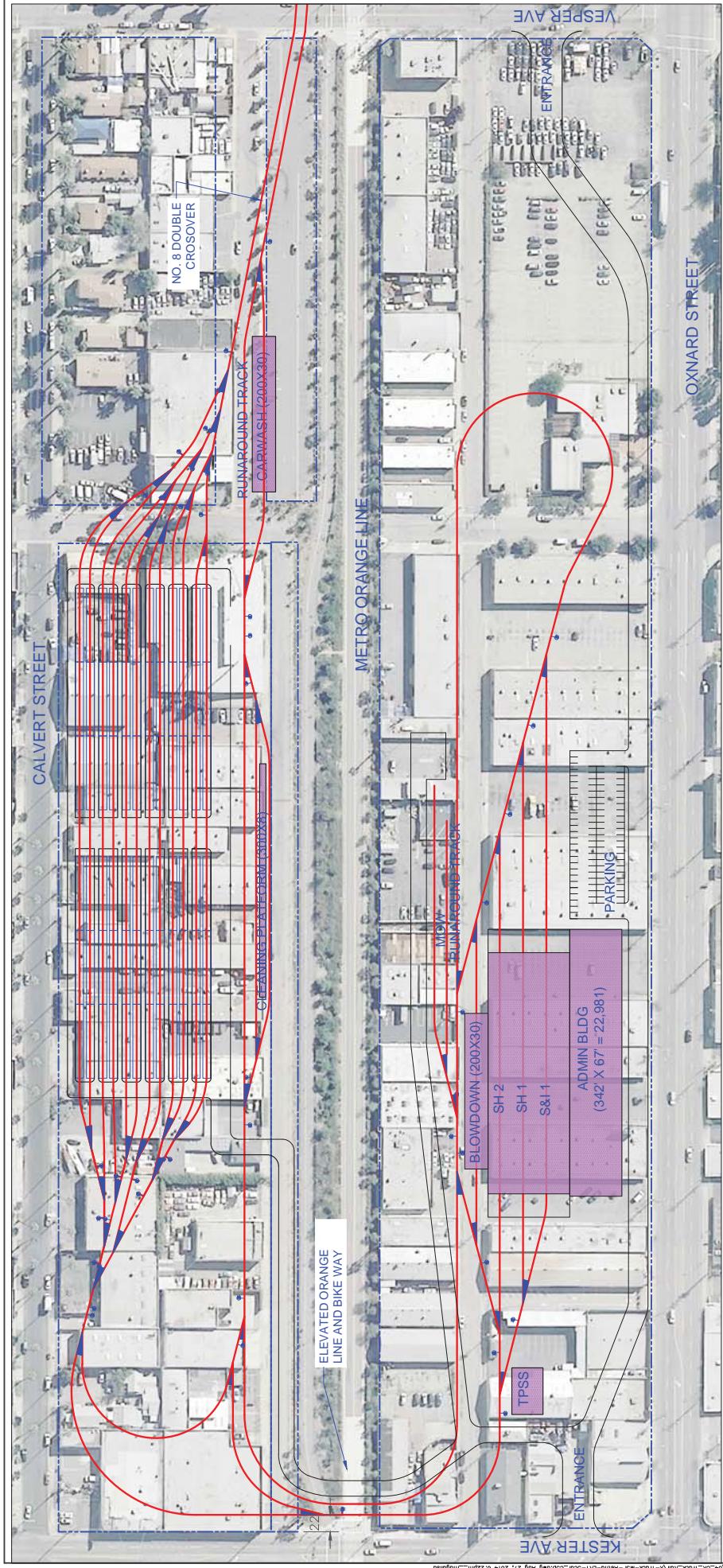




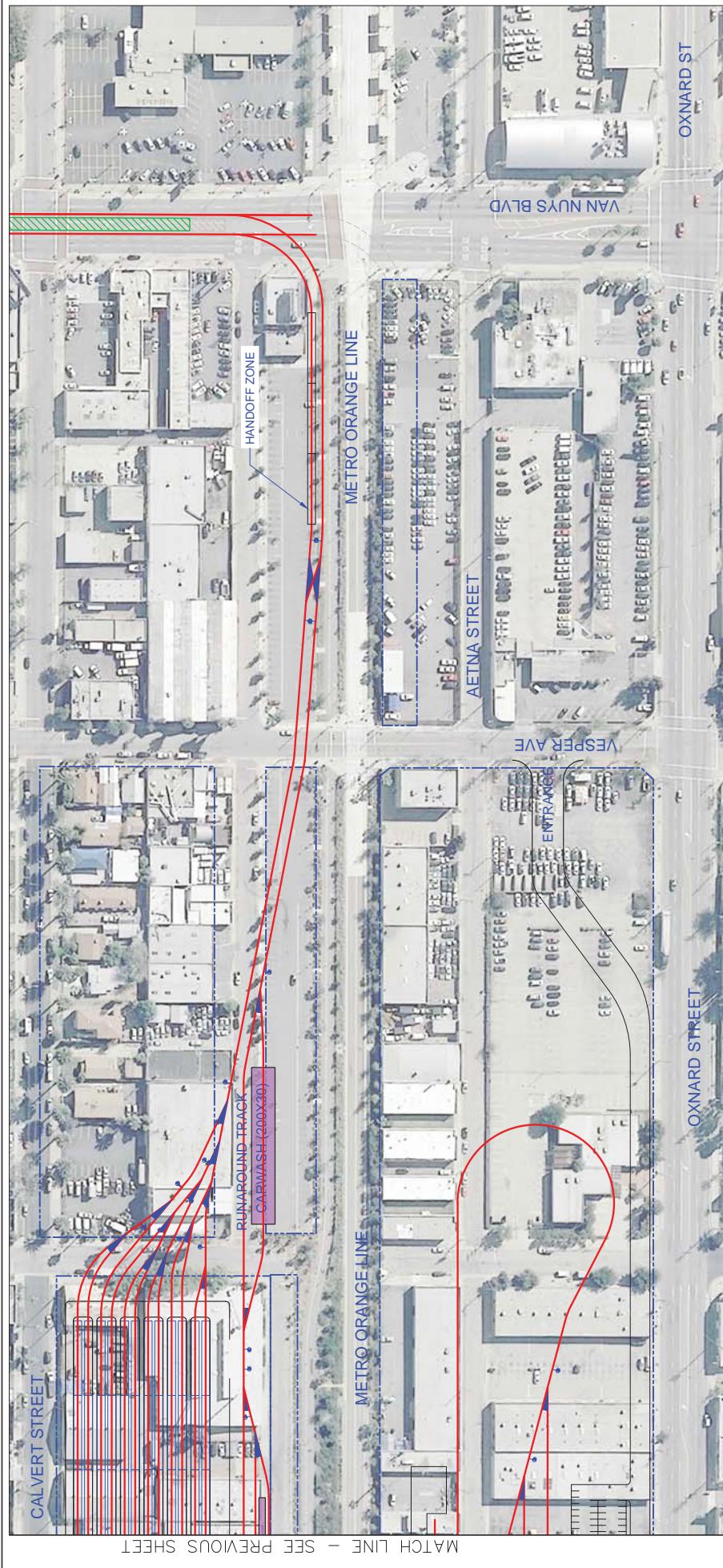


REALIGN INTERSECTION





PROJECT NAME: EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR	LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY		EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR	
	PLANNING & ENGINEERING	KOA CORPORATION	LIGHT RAIL TRANSIT ALTERNATIVE	CONTACT NO. PS-370-2622
	Planning & Engineering	PLANNING & ENGINEERING	Maintenance Facility	DRAWING NO. 0
	1611 Saticoy Street, Suite 200, Los Angeles, CA 90015	1611 Saticoy Street, Suite 200, Los Angeles, CA 90015	AETNA - 3 CAR TRAINS	SCALE HORIZ: 1"=60'
	Tel: (213) 260-4703 Fax: (213) 260-4705		VERT: N/A	SCALE VERT: N/A
REV	DATE	BY	HORZ: 1"=60'	SHEET NO.
				INDEX NUMBER



NOTE: SECURITY TOWER VS. CCTV

MSF SITE: 30.0 ACRES
STORAGE CAPACITY: 24 - 3 CAR TRAINS
72 CARS TOTAL
190FT RADIUS TURNOUTS
MIN RADIUS = 100'

DESIGNED BY: L. TERRILL-LENS DRAWN BY: S. MARION CHECKED BY: D. HARRIS IN CHARGE: A. SPOOK DATE: 09/27/14	LOS ANGELES COUNTY METROPOLITAN TRANSIT AUTHORITY EAST SAN FERNANDO VALLEY TRANSIT CORRIDOR PROJECT		CONTACT NO: PS-370-2622 DRAWING NO: 0 SCALE HORIZ: 1" = 60' MAINTENANCE FACILITY AETNA - 3 CAR TRAINS SHEET NO: N/A
	KOA CORPORATION PLANNING & ENGINEERING 1000 North Figueroa Street, Suite 2000 Los Angeles, California 90010 (213) 260-4703 Fax: (213) 260-4705		
REV	DATE	BY	SCALES HORIZ: 1" = 60' VERT: N/A
			SHEET
			INDEX NUMBER