



Council Agenda Report

From: David Athey, City Engineer

Subject: Standard Details and Specifications Update

Date: January 16, 2018

Facts

1. The City Council adopted the City's current Road Standards Drawings A-1 through A-8, on August 20, 2013. These standards were incorporated into the City's Standard Details and Specifications (City Standards) by Resolution No.13-120 (Attachment 1).
2. City Standard Drawings A-1 through A-8 provide design guidelines for new roads, and were developed in conformance with the City's General Plan Circulation Element to account for all users including children, persons with disabilities, seniors, bicyclists, and regular automobile and traffic.
3. The Circulation Element advances the concept of narrower streets that are safe to walk, cross, calm speeding, link neighborhoods and maintain the City's small town character. Standard Drawings A-1 through A-8 were developed to be consistent with these concepts.
4. The purpose of the City Standards is to provide minimum standards for the design, materials and methods of construction for streets, storm drains, water, and sewer mains in the City.
5. The City Engineer periodically updates the City Standards to address new construction methods, new materials, new uses, or to provide guidance for design and construction.
6. Items that are not included in the City Standards are constructed according to the latest edition of the Caltrans Standards or the American Public Works Association Green Book, or as approved by the City Engineer.
7. Recent road rehabilitation projects and the associated re-striping have generated concerns regarding lane width and the need to provide guidance on travel, bicycle, and parking lane widths.
8. Concerns have also been raised regarding the Creston and Sherwood Road plans related to lane width and truck routes.
9. Staff has also received concerns regarding private vs public road signage and the difficulty in determining road status by residents and City Staff.
10. In response to the concerns regarding lane width and public vs. private road signage, the City Engineer has developed the following amendments to the City Standards:
 - a. Addition of a new Section IV-1.D - Road and Lane Width Guidance for New Roads, Existing Roads and Road Striping, Marker, and Legend Projects.
 - b. Modification of Standard Drawing C-15 to clarify the private road signs will be reflective green lettering on a reflective white background.
11. These amendments do not propose a modification of existing road standards. Existing standards will be re-evaluated as part of a Comprehensive Review in 2018. The Comprehensive Review will occur after the City's Circulation Element and the Bicycle and Pedestrian Master Plans are adopted by the City Council. The comprehensive will include a review of road, stormwater, water, and sewer standards and drawings. The City Engineer will be soliciting input and feedback from engineers,

developers, interested parties as well as City Water and Wastewater staff as part of an inclusive update process. The 2018 City Standard Update is anticipated to be presented to Council by the end of 2018.

Options

1. Take no action
2. Approve Attachment 4, Resolution 18-XXX, Amendments to the Department of Public Works Standard Details and Specifications
3. Refer back to staff for additional analysis

Analysis and Conclusions

Background. The City's standard road sections have evolved over time and are periodically updated in response to advances in road design, geometrics related to vehicle technology (horse and buggy to Teslas), limited road maintenance funding, and the realization that society cannot solely build its way out of transportation congestion. The 2014 Standards recognize these limitations and reflect the City's path toward innovative transportation solutions. However, one of the challenges with standards is they cannot address every situation that may arise. The City Standards recognize this fact and therefore place the responsibility for working out the details with the City Engineer.

Recently, several striping projects have raised concerns that some lanes are too narrow and drivers are experiencing major discomfort while driving. Driver discomfort while driving through intersections or through road segments partly regulates driver behavior. The more uncomfortable a motorist feels, the slower the motorist typically drives. This is why traffic engineers often use treatments like lane narrowing, chicanes (serpentine curves not related to topography), bike lane buffers, and signage to slow traffic to the road's design or desired speed limit (i.e. 25 MPH in residential or commercial zones). However, there is a point of diminishing returns on narrow striping and safety and convenience must also be considered when designing road striping. Therefore, in response to recent concerns regarding striping, the City Engineer has developed a lane striping guidance matrix to address striping configurations concerns and continue to provide solutions to the City's transportation challenges.

Current Street Standards. Currently there is minimal guidance for determining lane widths and striping for existing roads in the City Standards. Engineers often interpret lane widths by using the City Standards Typical Street Section Drawings. In addition, engineers use the current Bicycle and Pedestrian Master Plan, various Specific Plans requirements, traffic studies, and existing striping patterns to determine new striping layouts. In addition, there are other considerations that designer's need to consider including the City's designated transit routes (Attachment 2) and truck routes (Attachment 3). Lastly, the width of the road also plays a major factor in determining lane striping. Underpinning all of these resources is the California Manual of Uniform Traffic Control Devices, which provides standards of construction for striping, markers, and legends.

Proposed Lane Width Matrix. In response to concerns related to lane striping, and recognizing the differing design conditions that are considered during striping and road design, the City Engineer developed written guidance for inclusion in the City Standards. The written guidance addresses three conditions: New Roads, Existing Roads, and Road Striping, Markers and Legends. A matrix table that lists the conditions to be considered and the associated design guidance is also included with the written guidance. The matrix table includes typical conditions that engineers should consider during design including: Truck and Transit Routes, Excess Road Width, Narrow Road Width, roads with Existing Bike Lanes, roads with Two Way Left Turn Lane, Routes to School and Crosswalks. The proposed text and Table 1 – Road and Lane Width Guidance – is included below.

The proposed Road and Lane Width Guidance is meant to be an aid for engineers when designing roads, rehabilitation, or maintenance projects. The guidance is not designed to be all inclusive or address every conditions. Some options require more consideration than others do. For example eliminating parking is often difficult and requires consultation with surrounding landowners prior to implementation. Engineers

must continue to base design decisions on engineering judgement or an engineering study. It is anticipated that the guidance will be beneficial and ensure that all road configurations considerations are taken into effect prior to construction.

Proposed City Standard Language:

IV-I.D Road and Lane Width Guidance

The following road and lane width guidance should be considered during the design of new roads, completion of existing roads, and re-striping of roads after paving maintenance or rehabilitation projects. The following guidance is meant as an aid to design and must not be construed as requirements or a replacement for engineering judgement or an engineering study.

- 1) New Roads:
 - a. New roads shall be designed in accordance with the minimum standards contained herein. The design guidance listed in Table 1 can be considered for new roads. However, the City Engineer must approve design exceptions prior to construction. Design Alternatives must comply with Section II-2.

- 2) Existing Roads:
 - a. Existing roads that are not completely constructed should continue to follow the previously approved road section. The Consultant should contact the City to verify the desired road section.
 - b. Exceptions to 2).a will be considered by the City Engineer in order to address stormwater runoff, topography, a specifically adopted plan line that changes the width, eliminates parking, a road classification change (local to arterial), or other factor. Table 1 provides conditions where a design alternative may be warranted.

- 3) Road Striping, Marker, and Legend Projects:
 - a. Projects that will require striping plans include road maintenance or rehabilitation projects, road widening projects that add new parking, bike, or travel lanes, or new road construction projects. Any project that obliterates or reduces the visibility of striping, markers, or legends must replace it in kind or at the City Engineer's direction. Changes to road striping must be approved by the City Engineer prior to construction.
 - b. Road striping often requires balancing existing road uses, surrounding land use, and available road width. Table 1 provides guidance on lane width for existing roads. Striping, markers, and legends shall be designed and constructed in conformance with the California Manual of Uniform Traffic Control Devices, latest edition.

**Table 1
Road and Lane Width Guidance**

Condition	Guidance			
	Arterials/Collectors	Local Roads (Transit Routes)	Parking	Bike Lanes
Truck and Transit Routes	Consider increasing striping width of truck lane up to 12 feet, number 1 lane remains at 11 or 10 feet on four lane roads.	Consider increasing striping width of lanes up to 11 feet to accommodate transit coaches.	Consider eliminating parking on one or both sides of Arterial streets to provide lane width for truck or transit routes and or bike lanes.	Consider providing bike lane buffers to provide space between bikes and the travel lane.
Excess Road Width – Where existing road width is wider than needed.	Consider increasing striping width of truck lane up to 12 feet, number 1 lane remains at 11 or 10 feet on truck and transit routes.	Lane striping width should follow the appropriate road standard, unless speeding, a dangerous condition, or other factor exists that warrants narrowing lane width.	Consider Increasing parking lane width up to 8 feet (preference is to provide bike lane buffers)	Consider providing bike lane buffers to provide more space between bikes and travel lanes where class II bike lanes exist.
Narrow Road Width – where existing road or right-of-way is narrower than needed.	Preference is given to maintaining existing travel lane width or widening the road to achieve minimum widths for all lanes.	Preference is given to maintaining existing travel lane width unless speeding, a dangerous condition, or other factor exists that warrants narrowing lane width.	Consider eliminating parking to provide lane width for travel, center turn, bike buffers and/or bicycle lanes on arterials.	Consider share the road signage or share the lane markings where a street is designated for class II bike lanes.
Roads with existing class II bike Lanes	Consider bike lane buffers if extra road width is available.	Consider widening the bicycle lanes to 6 feet if road width is available.	Consider eliminating parking to provide lane width for travel, center turn, bicycle buffers and/or bicycle lanes.	Consider providing bike lane buffers to provide more space between bike and travel lanes where class II bike lanes exist.
Two Way Left Turn Lane (TWLTL)	Preference for the TWLTL to be at least as wide as the narrowest travel lane, but generally not less than 10 feet. The TWLTL can be narrowed to provide width to travel or bike lanes.	N/A	Consider eliminating one or both parking lanes or narrowing the parking lane to 7 feet to provide width for a TWLTL.	Consider share the road signage and markings where designated by the Bicycle and Pedestrian Master Plan.
Routes to School	Consider traffic calming measures including decreasing lane width, chicanes, or signage to slow traffic speeds near school zones.	Consider traffic calming measures including decreasing lane width to modify traffic speeds near school zones.	Consider using parking lanes as bike lane buffers. Parking lanes can be narrowed to 7 feet to provide Bike Lane buffers.	Preference should be given to bike lane buffers for routes to elementary schools.
Crosswalks	Consider using bulb-outs, islands and flashing warning signage to enhance safety when warranted	Consider using bulb-outs, islands and flashing warning signage to enhance safety when warranted.	Consider eliminating a parking space(s) to accommodate crosswalk enhancements such as curb extensions.	N/A

Private Street Sign Policy

The City's current standards require road signs at intersections. Street name signage is currently displayed above a stop sign or on a separate pole. Street signs have a reflective green background and white letters. Currently, the City does not differentiate private or public streets through signage. This has led to confusion by both residents and City employees. Therefore, Standard Drawing C-15 is recommended to be modified to indicate that private streets will be signed with reflective white signs with green lettering. This will allow residents and the City to quickly determine street ownership status. This recommended addition to Standard Drawing C-15 is consistent with current San Luis Obispo County and City of Atascadero street signage standards.

Fiscal Impact

There will likely be impacts to capital project budgets, maintenance budgets, or private development projects if roads are widened to accommodate wider lane widths. It is difficult to quantify fiscal impacts to each type of project because each project is road specific. However, staff estimates that for every one foot per lane of additional pavement over a 1,000-foot stretch of two-lane road, road maintenance costs by approximately \$54,000 over a 10-year period. One-time construction costs are also anticipated to rise because of increase road widths.

Recommendation

Option 2 - Approve Resolution 18-XXX (Attachment 4), amending the Department of Public Works Standard Details and Specifications.

Attachments

1. Resolution 13-120 – 2013 Adoption of Street Standards and Details
2. Transit Routes
3. Truck Routes
4. Resolution 18-XXX, A Resolution of the City Council of the City of Paso Robles Adopting Amendments to the Department of Public Works Standard Details and Specifications

Attachment 1

Resolution no. 13-120

RESOLUTION NO. 13-120

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES ADOPTING AMENDMENTS TO DEPARTMENT OF PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS

WHEREAS, the Circulation Element advances policy for street design to account for all users including pedestrians, children, persons with disabilities, seniors and bicyclists along with typical auto traffic; and

WHEREAS, the Circulation Element advances the concept of narrower streets that are safe to cross or walk along, that calm traffic, offer places to meet people, link neighborhoods and generally maintain a small town character; and

WHEREAS, key principles of the Economic Strategy include maintaining safe, healthy, and attractive physical environments including streetscapes.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

That the City Council of the City of Paso Robles does hereby approve and adopt Standard Drawings A – 1 through A – 8 attached heron as exhibits to the Department of Public Works Standard Details and Specifications.

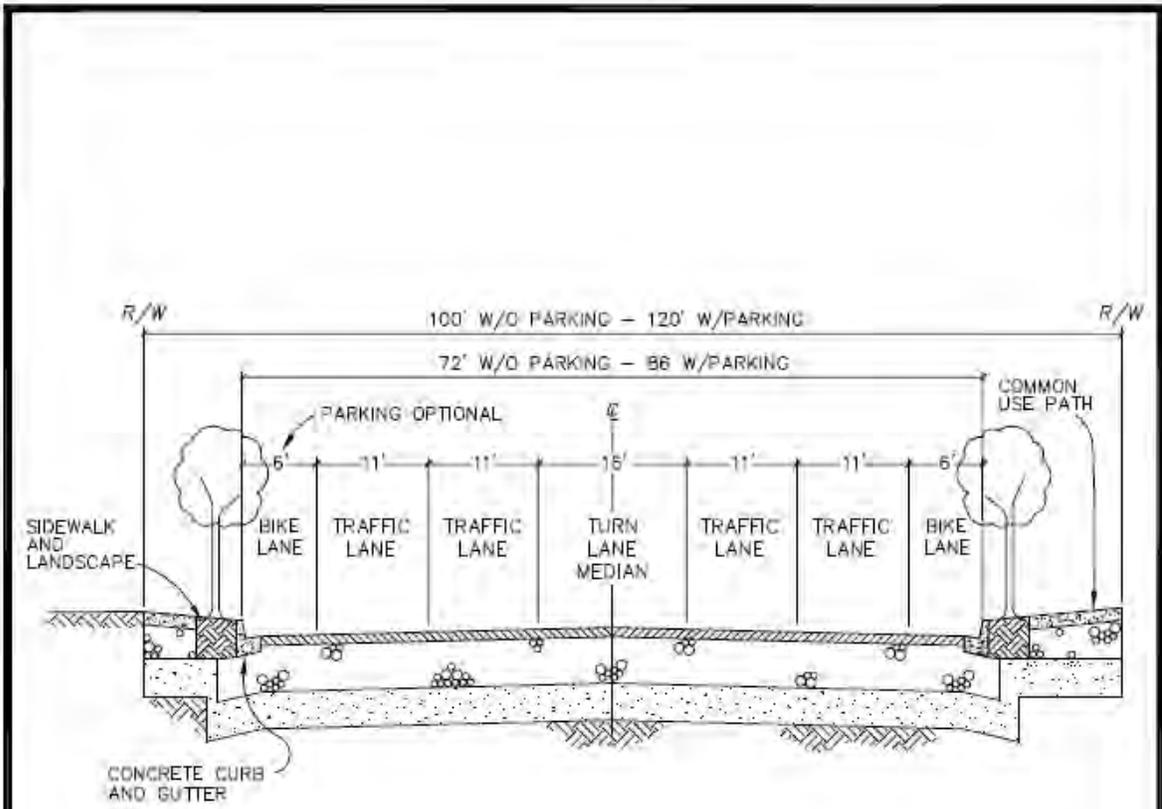
PASSED AND ADOPTED by the City Council of the City of Paso Robles this 20th day of August, 2013 by the following vote:

AYES: Strong, Martin, Steinbeck, Hamon
NOES: Picanco
ABSTAIN:
ABSENT:


Duane Picanco, Mayor

ATTEST:

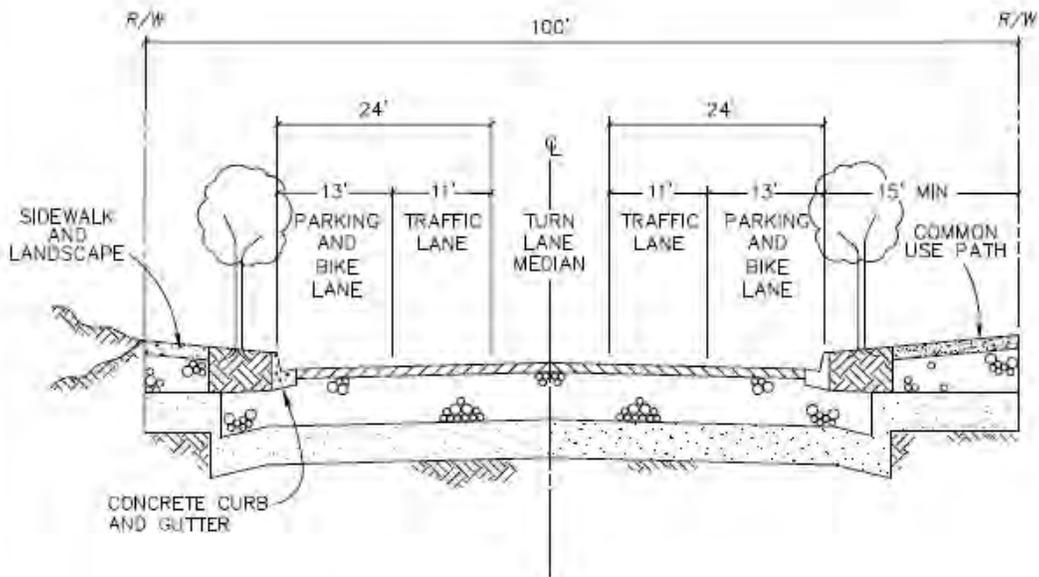
Caryn Jackson, Deputy City Clerk



4 LANE ARTERIAL

TRAFFIC INDEX: 8.0
 DESIGN SPEED: 35.0 MPH

DRAWN BY: KGE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO.
DESIGNED BY: JF		A-1
DATE: 08/13	4 LANE ARTERIAL (DIVIDED)	
FILE NAME: PR-A-1.DWG		

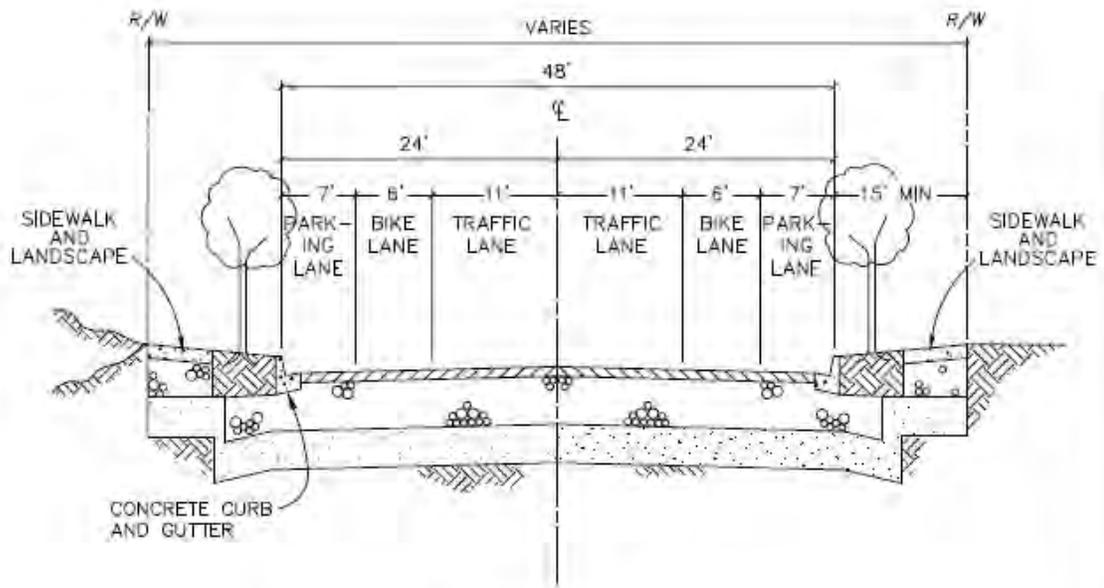


2-LANE DIVIDED ARTERIAL

TRAFFIC INDEX: 8.0
 DESIGN SPEED: 35 MPH

DRAWN BY: KCE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO.
DESIGNED BY: JF		A-2
DATE: 08/13	2-LANE DIVIDED ARTERIAL	
FILE NAME: PR-A-2.DWG		

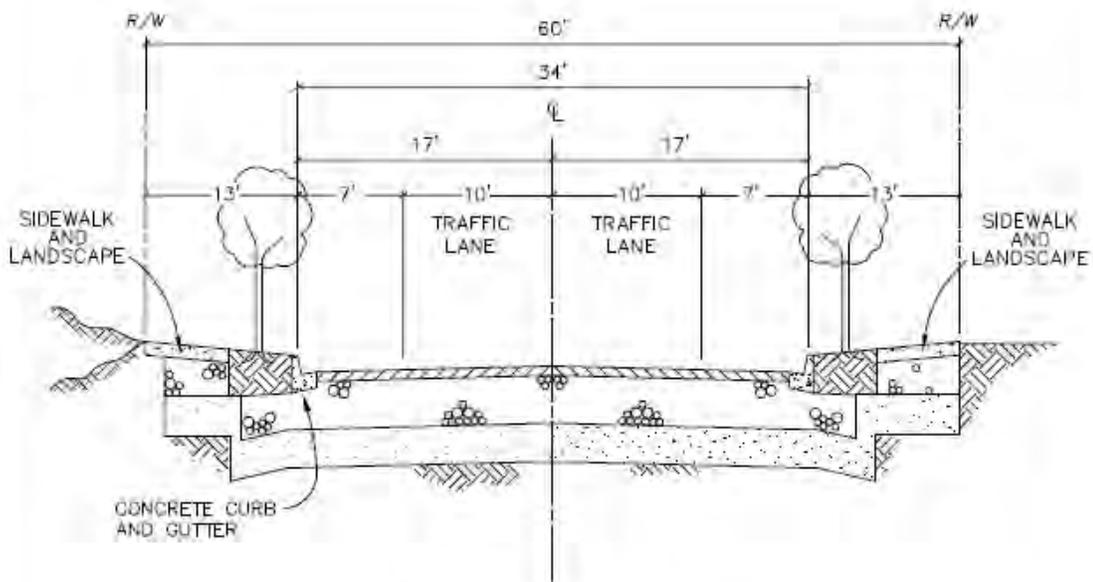
CC Resolution 13-120 Page 3 of 9



2-LANE UNDIVIDED ARTERIAL

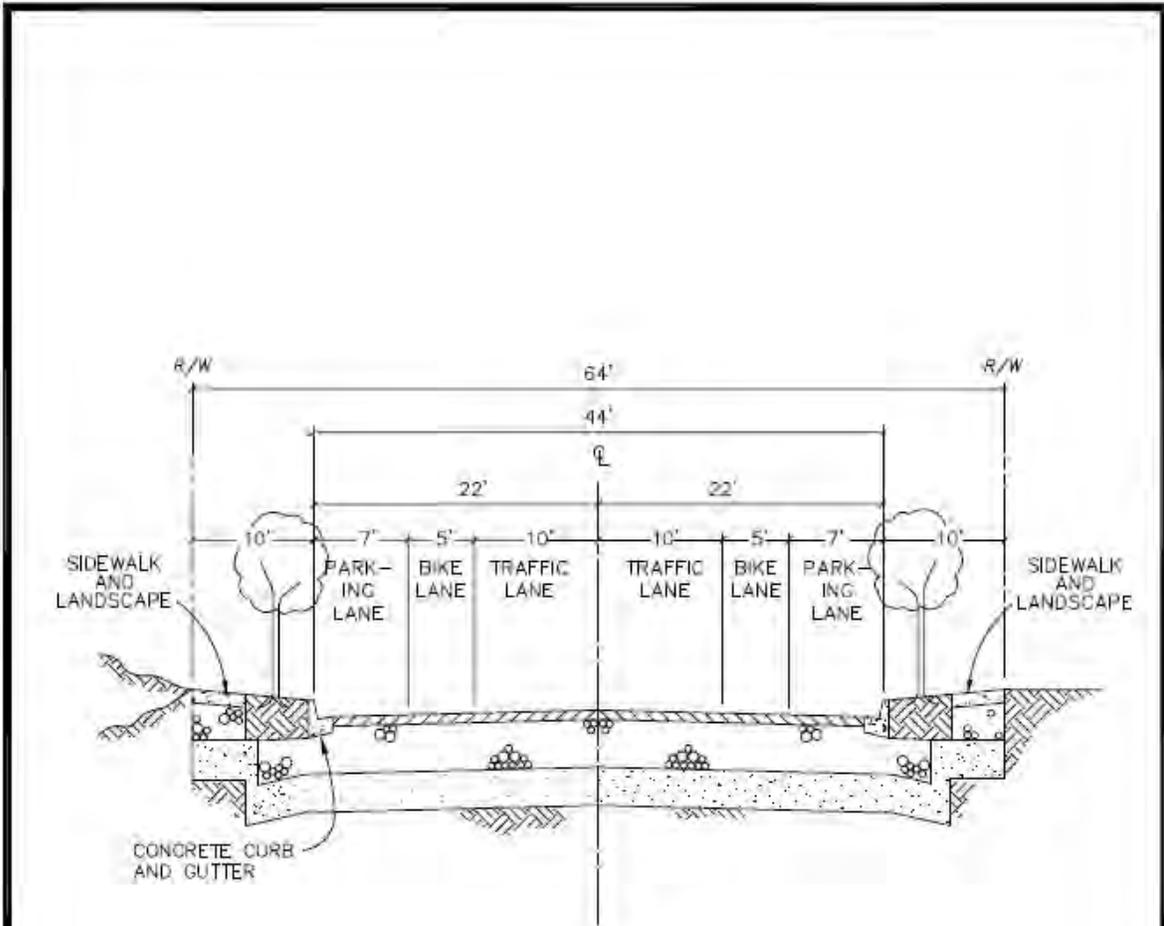
TRAFFIC INDEX: 7.0
 DESIGN SPEED: 35 MPH

DRAWN BY: KGE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO.
DESIGNED BY: JF		
DATE: 08/13	2-LANE UNDIVIDED ARTERIAL	A-3
FILE NAME: PR-A-3.DWG		



LOCAL STREET
 TRAFFIC INDEX: 6.0
 DESIGN SPEED: 25 MPH

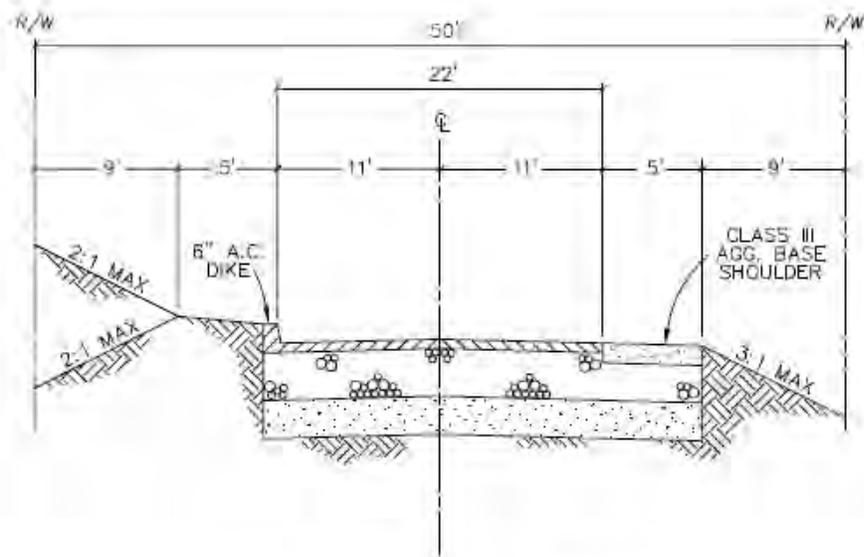
DRAWN BY: KGE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO:
DESIGNED BY: JF		LOCAL STREET
DATE: 08/13		
FILE NAME: PR-A-4.DWG		



LOCAL STREET
WITH CLASS II BIKE LANES

TRAFFIC INDEX: 6.0
DESIGN SPEED: 25 MPH

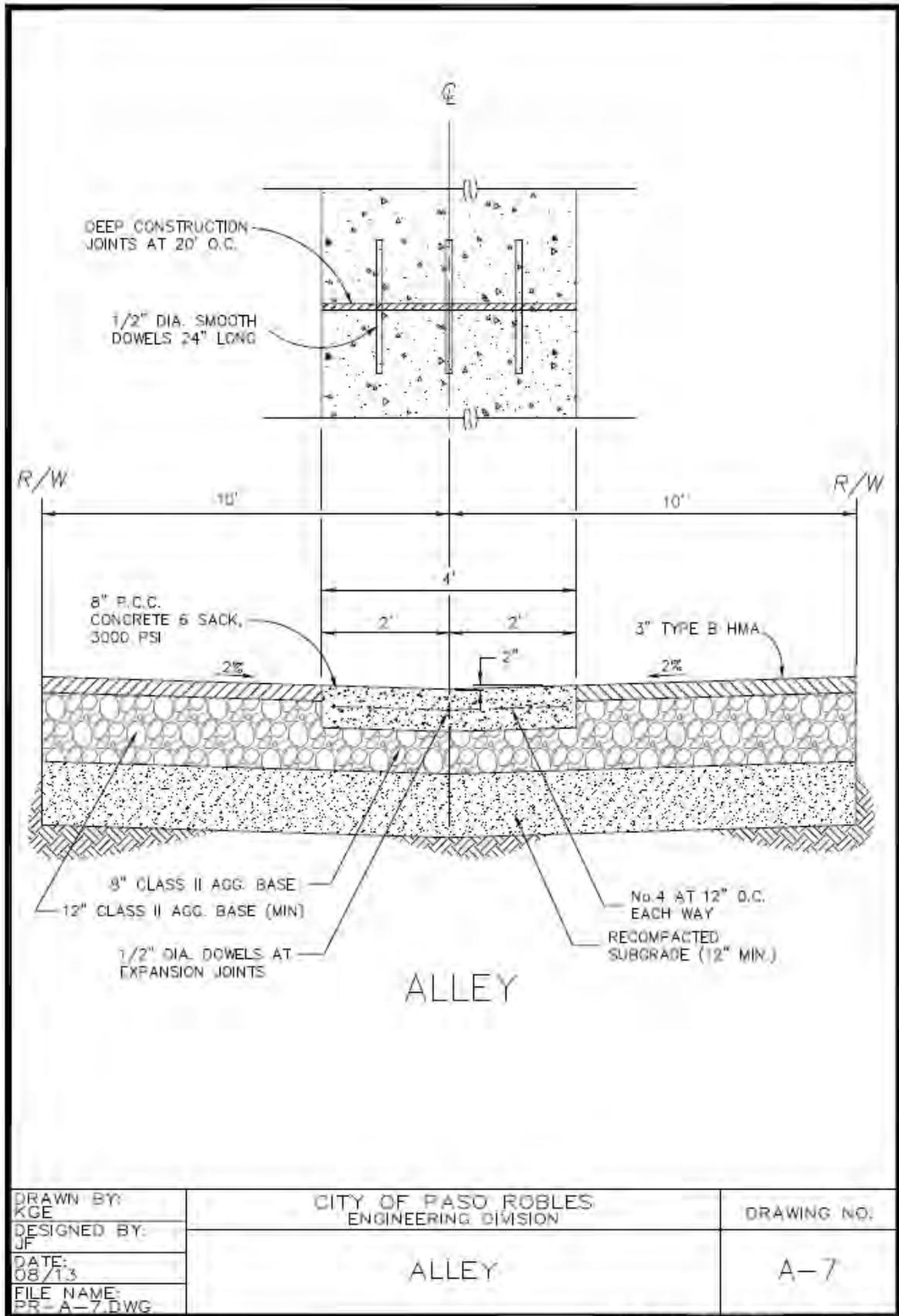
DRAWN BY: KGE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO.
DESIGNED BY: JF		A-5
DATE: 08/13	LOCAL STREET WITH CLASS II BIKE LANES	
FILE NAME: PR-A-5.DWG		



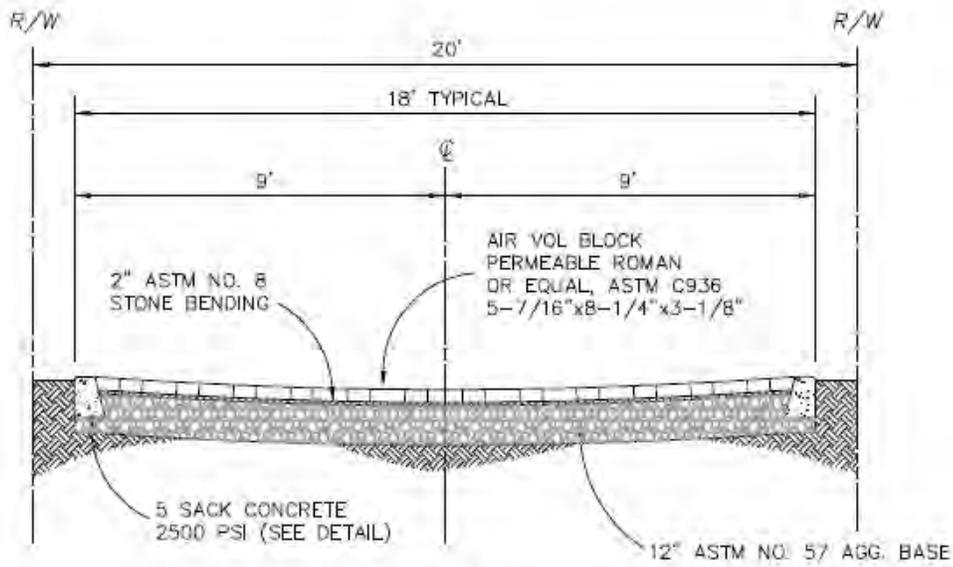
RURAL LOCAL STREET

TRAFFIC INDEX: 6.0
 DESIGN SPEED: 25 MPH

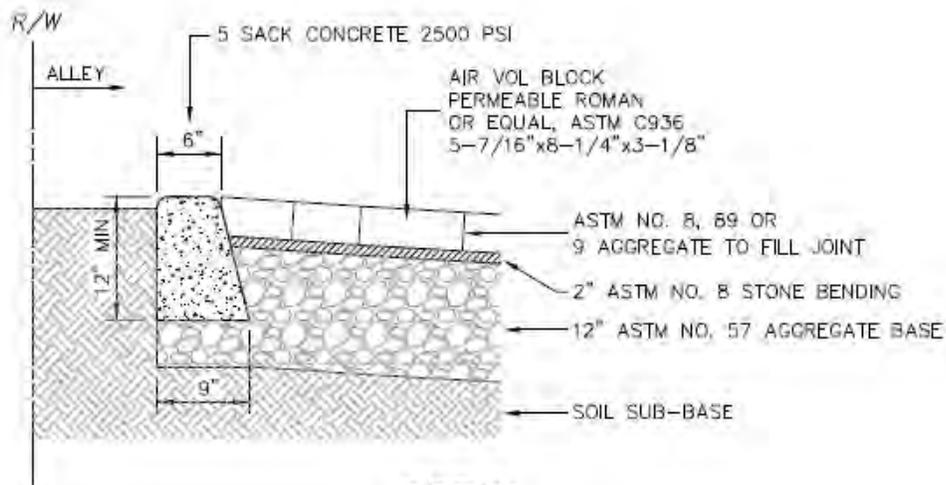
DRAWN BY: KCE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO.:
DESIGNED BY: JF		A-6
DATE: 08/13	RURAL LOCAL STREET	
FILE NAME: PR-A-6.DWG		



CC Resolution 13-120 Page 6 of 9



ALLEY

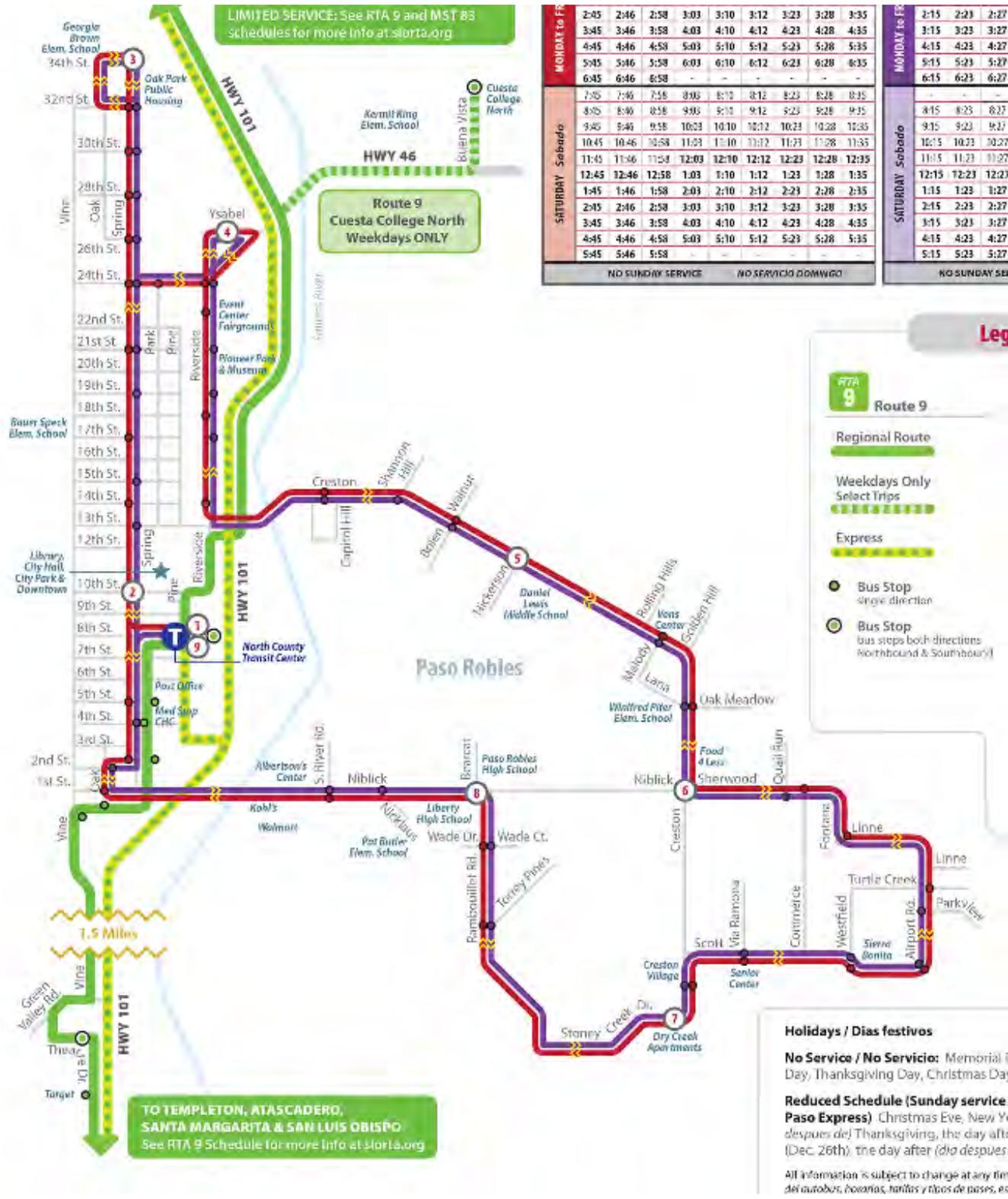


DETAIL

PAVER BLOCK ALLEY

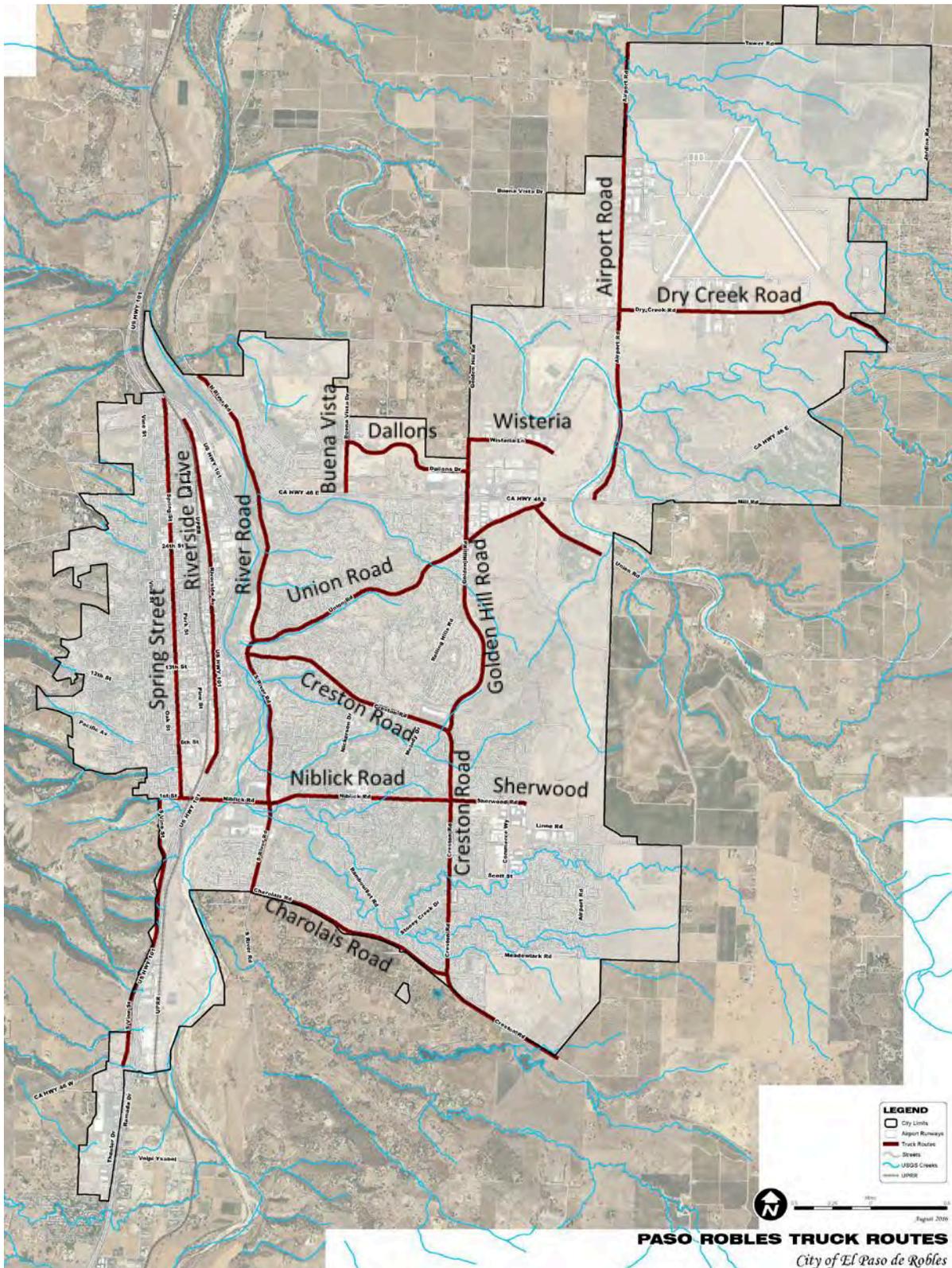
DRAWN BY: KGE	CITY OF PASO ROBLES ENGINEERING DIVISION	DRAWING NO.
DESIGNED BY: JF		A-8
DATE: 02/13	PAVER BLOCK ALLEY	
FILE NAME: PR-A-8.DWG		

Attachment 2 Current Transit Routes



Attachment 3

Truck Routes



Attachment 4

Resolution 18-xxx

RESOLUTION NO. 18-XXX

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EL PASO DE ROBLES ADOPTING AMENDMENTS TO THE DEPARTMENT OF PUBLIC WORKS STANDARD DETAILS AND SPECIFICATIONS

WHEREAS, Resolution No. 13-120 adopted amendments that approved and adopted Standard Drawings A – 1 through A – 8 in conformance with the policies for street design to account for all users including pedestrians, children, persons with disabilities, seniors, bicycle traffic and typical auto traffic ; and

WHEREAS, the Engineering Standards implement the Circulation Element’s concepts that narrower streets are safer to walk or cross, calm traffic, offer people places to meet and enjoy, link neighborhoods and generally maintain a small town character; and

WHEREAS, the Engineering Standards are minimum standards and do not address every aspect of complete streets and road design; and

WHEREAS, the City desires to provide additional design guidance in the Engineering Standards to be considered in the design of new roads, existing roads and striping, marking, and legend projects.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EL PASO DE ROBLES DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. All of the above recitals are true and correct and incorporated herein by reference.

Section 2. The City Council hereby approves and adopts Section IV-1.D attached hereto as Exhibit A, to the Department of Public Works Standard Details and Specifications, and incorporated herein by reference.

APPROVED this ____ day of _____, 20__, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Steven W. Martin, Mayor

ATTEST:

Kristen L. Buxkemper, Deputy City Clerk

Exhibit A

Road and Lane Width Guidance

IV-I.D Road and Lane Width Guidance

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Crosswalks	Consider using bulb-outs, islands and flashing warning signage to enhance safety when warranted	Consider using bulb-outs, islands and flashing warning signage to enhance safety when warranted.	Consider eliminating a parking space(s) to accommodate crosswalk enhancements such as curb extensions.	N/A