

**TO:** James L. App, City Manager  
**FROM:** Joseph M. Deakin, Public Works Director  
**SUBJECT:** 4<sup>th</sup> Street Underpass Alternative Alignments  
**DATE:** March 18, 2003

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**NEEDS:** For the City Council to consider a recommendation from the Streets and Utilities Committee regarding the re-configuration of the 4<sup>th</sup> Street Underpass.

- FACTS:**
1. The 4<sup>th</sup> Street Underpass at the Union Railroad tracks was constructed in 1926. It is 15 feet wide and provides a vertical clearance of 10'-8." These dimensions accommodate only one passenger car or small truck at a time.
  2. The underpass is located at the southerly end of both Pine Street and Riverside Avenue, providing access to the southbound on and southbound off "hook ramps" at Highway 101.
  3. Estimated Average Daily Traffic Volume at the underpass is 1,220 trips.
  4. City Council adopted a General Plan Circulation Element in October 2000 which identifies the need to improve the 4<sup>th</sup> Street Underpass to:
    - achieve additional on/off ramp access to Highway 101
    - improve traffic flow into the Downtown Business District
  5. On March 19, 2002, the City Council directed staff to engage the services of URS Corporation to prepare options for the re-configuration of the underpass.

**ANALYSIS  
AND**

**CONCLUSION:** URS Corporation developed three (3) alternative alignments to re-configure the 4<sup>th</sup> Street Underpass. These alternatives were presented to the Streets and Utilities Committee on February 28, 2003.

Attached is the Detailed Technical Memorandum and Analysis submitted to the Committee. The Committee concluded that Alternative No. 2 should be adopted as the official "plan line" for the 4<sup>th</sup> Street Underpass.

Since the early 1990's, staff has applied for State Grants to fund a Feasibility Project Study Report (PSR) , the first official step towards upgrading and improving the Underpass. In 2000, SLOCOG approved \$30,000 to fund a portion of the cost to prepare the 4<sup>th</sup> Street Underpass PSR. In January 2002, the City Council appropriated an additional \$124,000 to allow the City to proceed with preparing the PSR.

The City Council is being asked to consider adopting the attached Resolution to clarify funding for this project. Council action taken on March 19, 2002 did not include the appropriate language to formally fund this project.

**POLICY**

**REFERENCE:** General Plan Circulation Element

**FISCAL**

**IMPACT:** Appropriation for this project is included in the Measure 'D' Project Budget.

- OPTIONS:**
- a. That the City Council adopt Resolution No. 03-xx:
    - 1) Accepting the Streets and Utilities Committee's recommendation that Alternative No. 2 be adopted as the favored "plan line" for the re-configuration of the 4<sup>th</sup> Street Underpass; and
    - 2) Appropriating a budget of \$154,000 under Budget Account No. 120.910.5452.676 by combining a \$30,000 San Luis Obispo Council of Governments Grant and \$124,000 from Measure 'D.'
  - b. Amend, modify or reject the above option.

Attachments (2)

- 1) Resolution
- 2) Technical Memorandum to Streets and Utilities Committee

RESOLUTION NO. 03-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES  
ADOPTING ALTERNRATIVE NO. 2 AS THE FORMAL "PLAN LINE" FOR  
RE-CONFIGURATION OF THE 4<sup>TH</sup> STREET UNDERPASS AND  
APPROPRIATING \$154,000 TO BUDGET ACCOUNT NO. 120.910.5452.676

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WHEREAS, the 4<sup>th</sup> Street Underpass at the Union Railroad tracks was constructed in 1926; it is 15-feet wide and provides a vertical clearance of 10'-8"; and

WHEREAS, the 4<sup>th</sup> Street Underpass is located at the southerly end of Riverside Avenue, serving westerly access to the southbound on and southbound off "hook ramps" at Highway 101; and

WHEREAS, City Council adopted a General Plan Circulation Element in October 2000 which identifies the need to improve the 4<sup>th</sup> Street Underpass to achieve additional on/off ramp access to Highway 101 and improve traffic flow into the Downtown Business District; and

WHEREAS, on March 19, 2002, the City Council directed staff to engage the services of URS Corporation to prepare several options for the re-configuration of the underpass; and

WHEREAS, URS Corporation developed (3) alternative alignments to re-configure the 4<sup>th</sup> Street Underpass and these alternatives were presented to the Streets and Utilities Committee on February 28, 2003; and

WHEREAS, the Streets and Utilities Committee concluded that Alternative No. 2 should be adopted as the official "plan line" for the 4<sup>th</sup> Street Underpass.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of Paso Robles does hereby adopt Alternative No. 2 as the favored "plan line" for reconfiguration of the 4<sup>th</sup> Street Underpass.

SECTION 2. The City Council of the City of Paso Robles does hereby appropriate a budget of \$154,000 under Budget Account No. 120.910.5452.676 by combining a \$30,000 SLOCOG Grant and \$124,000 from Measure 'D'.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 18<sup>th</sup> day of March 2003 by the following vote:

AYES:  
NOES:  
ABSTAIN:  
ABSENT:

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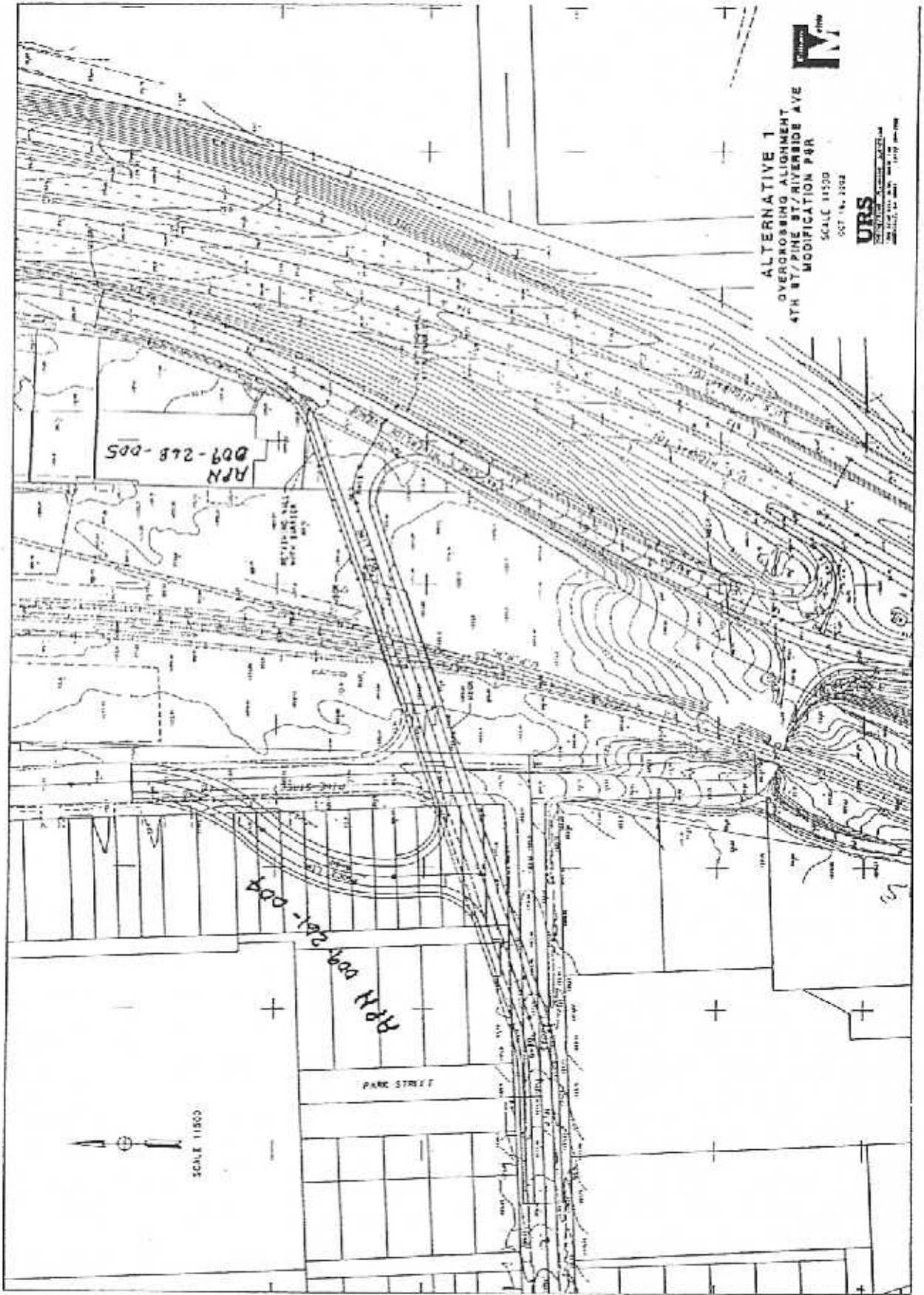
Frank R. Mecham, Mayor

ATTEST:

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Sharilyn M. Ryan, Deputy City Clerk

(154445)



**ALTERNATIVE 1**  
**OVERCROSSING ALIGNMENT**  
**4TH ST/PINE ST/RIVERSIDE AVE**  
**MODIFICATION P&R**  
 SCALE 1:1500  
 OCT 14, 2002

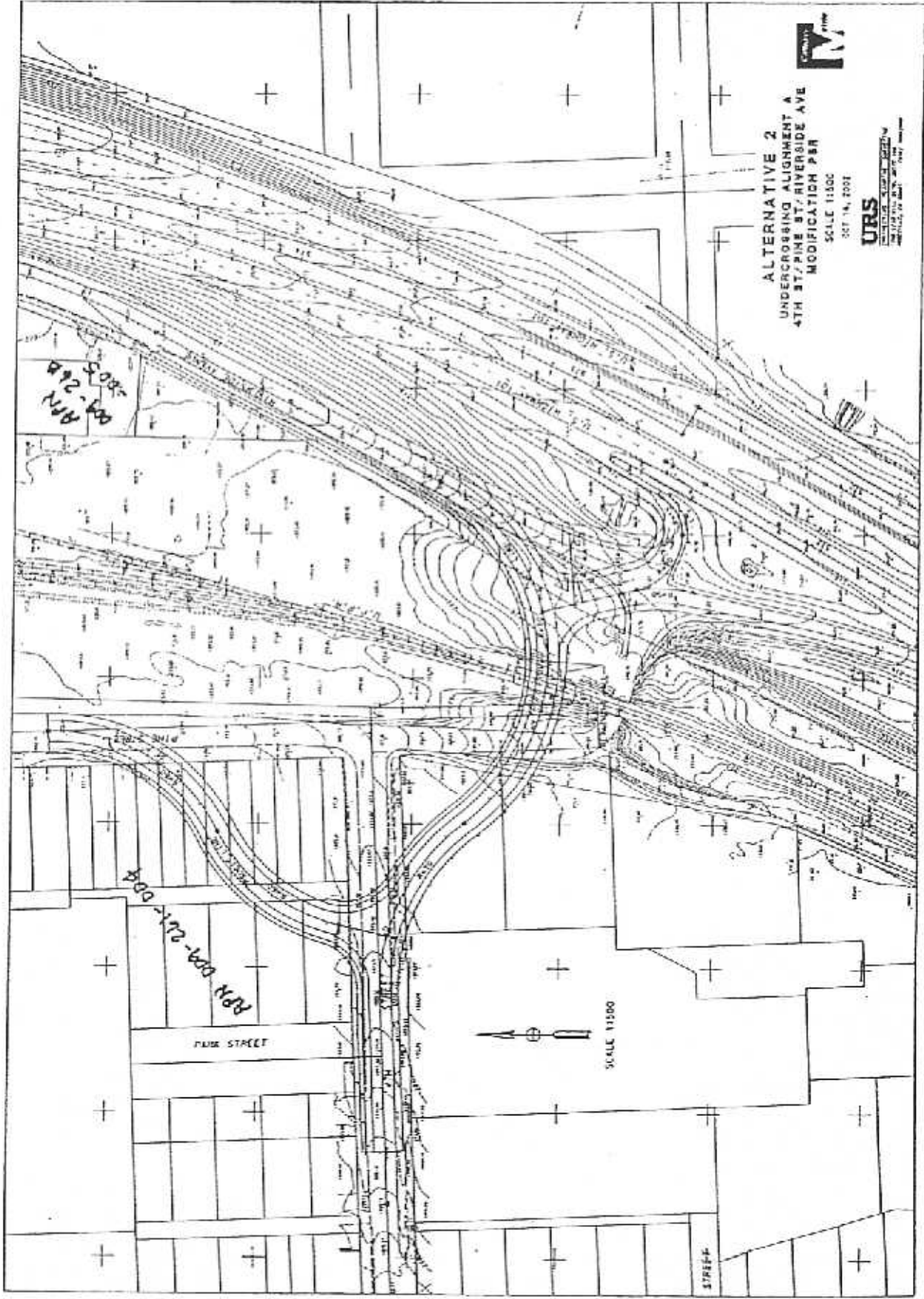
**URS**  
 CONSULTING ENGINEERS  
 1000 AVENUE OF THE STARS  
 SUITE 1000  
 FALLS CHURCH, VA 22044  
 TEL: 703/441-1000  
 FAX: 703/441-1001  
 WWW.URS-CORP.COM

SCALE 1:1500  


PARK STREET

APN 009-268-005

APN 009-261-004



ALTERNATIVE 2  
UNDERCROSSING ALIGNMENT A  
4TH ST/PINE ST/RIVERSIDE AVE  
MODIFICATION PER

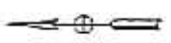


SCALE 1:1500  
OCT 14, 2001

URS  
UNIVERSITY MICROFILMS  
SERIALS ACQUISITION  
300 N ZEEB RD  
ANN ARBOR MI 48106-1500

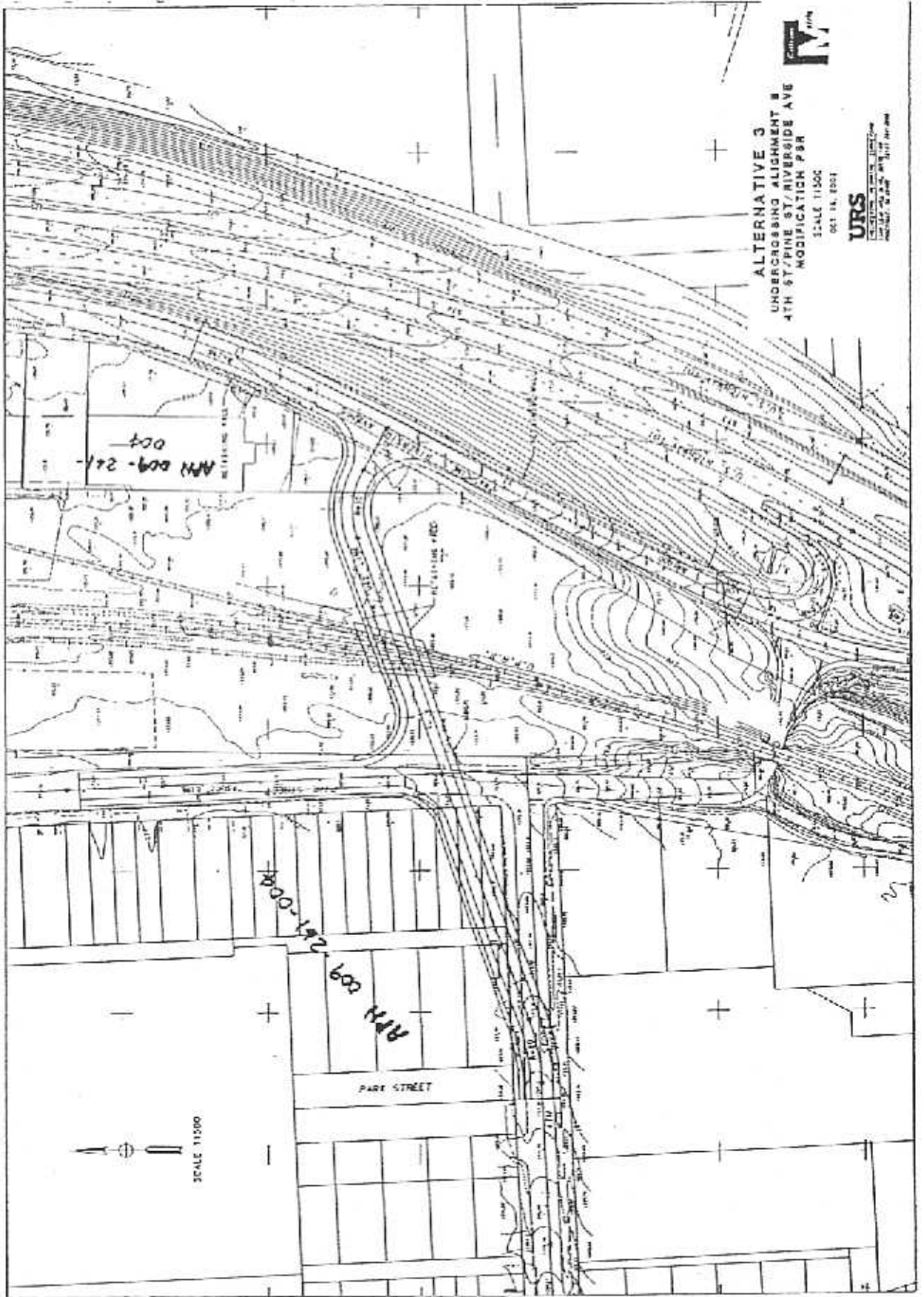
RPN  
DPM-211-004

RPN DPM-211-004  
FAIR STREET



SCALE 1:1500

STREET



ALTERNATIVE 3  
UNDERPASSING ALIGNMENT #  
4TH ST/PINE ST/RIVERSIDE AVE  
MODIFICATION PSR

SCALE 11500  
OCT 14, 2004

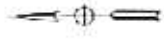


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RPH 009

PARK STREET



SCALE 11500

**TO:** Streets & Utilities Committee  
**FROM:** Ditas Esperanza *DE*  
**SUBJECT:** 4<sup>th</sup> Street Underpass Alternatives  
**DATE:** February 28, 2003

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At the January Committee meeting, staff was directed to:

- 1.) Obtain "order of magnitude" costs for each alternative:

	Alternative #1	Alternative #2	Alternative #3
Construction Cost	\$10,500,000	\$ 6,500,000	\$ 9,500,000
Right-of-Way	\$ 3,500,000	\$ 2,000,000	\$ 3,000,000
<b>TOTAL:</b>	<b>\$14,000,000</b>	<b>\$ 8,500,000</b>	<b>\$12,500,000</b>

(Note: These estimates do not include costs for design, environmental, other engineering fees or estimates.)

- 2.) Investigate the possibility of "just widening" the existing underpass:

The existing underpass structure is sub-standard. Once the City performs work on it, we will be required to bring it to current design standards. The vertical clearance on the existing underpass is less than the required 20-foot vertical clearance. Enlarging the underpass will require the roadway to be lowered having an adverse impact to the freeway ramp and may even require that it be re-aligned, and replacing the existing structure at a higher elevation may prove a challenge in the need to raise the railroad tracks.

- \* check on "just widening existing underpass to the north"
- \* give rough estimates for all 4 alternatives

## MEMORANDUM

**TO:** Streets and Utilities Committee  
**FROM:** Ditas Esperanza *DE*  
**DATE:** January 14, 2003  
**SUBJECT:** 4<sup>th</sup> Street Underpass  
Alternatives for Reconfiguration

The 4<sup>th</sup> Street Underpass at the railroad tracks was constructed in 1926, is 15-feet wide and provides a vertical clearance of 10-feet, 8-inches. These sub-standard dimensions will accommodate only one passenger vehicle or a small truck at a time. The City Council in October 2000 adopted an Update to the Circulation Element which identified the need to improve the underpass. The goal for this improvement is to:

- Achieve additional and safer on/off ramp access to Highway 101
- Improve traffic flow into the Downtown Business District

URS Corporation has developed three alternatives to re-align/improve the underpass. Attached are exhibits illustrating these alternatives along with a detailed analysis (pro/con) of each:

### Alternative 1

This alternative proposes to re-align 4<sup>th</sup> Street to the north by constructing a bridge over the railroad tracks. The most significant benefit to this alternative is that the existing railroad tracks would remain with minimum impact to the operations of Union Pacific. However, there is a need to retain portions of the City's property at 4<sup>th</sup> Street and Pine Street for this alternative.

### Alternative 2

This alternative would require the installation of an undercrossing structure beneath the railroad tracks. Temporary tracks would need to be installed for trains to use during construction which could add significant costs to the project. This alternative would also impact the existing ramps at Highway 101 and would require Caltrans' review and approval of the construction plans. As in Alternative 1, there would be a need to retain portions of the City's property at 4<sup>th</sup> and Pine Streets in order to construct this undercrossing. In addition, there would be a need to acquire property at the southwest corner of Pine and 4<sup>th</sup> Streets.

### Alternative 3

As in Alternative 2, this alignment would require installation of an undercrossing at the railroad tracks and temporary tracks would need to be installed during construction. However, Alternative 3 would not require the City to acquire property at the southwest corner of Pine and 4<sup>th</sup> Streets.



Date: October 16, 2002  
To: Ditas Esperanza - City of Paso Robles  
From: Matt Brogan, PE  
Subject: *4<sup>th</sup> Street PSR-PDS – Preliminary Alternatives Discussion*

27560365.00010 File 3-B

The following sections describe the preliminary alternatives that have been generated for the 4<sup>th</sup> Street PSR-PDS. These alternatives can also be seen in the attached exhibits and have been developed through discussions with the project design team and City staff. Please let me know if you have any questions or suggestions regarding these alternatives.

#### **Alternative 1 – Overhead**

This alternative consists of an overhead crossing of the UPRR tracks. The new 4<sup>th</sup> Street alignment begins at its intersection with Park Street, skews to the northeast, and begins its ascent over the UPRR yard. The grade along 4<sup>th</sup> Street in this location is 5%. A 1.2m (4 ft) structure depth has been assumed, and the minimum vertical clearance over the UPRR tracks is 7.01m (23 ft), which meets the UPRR minimum standard. Once the overhead passes over the minimum vertical clearance point, it begins a 7% downgrade that continues until the "T" intersection with Riverside Avenue. The typical roadway section for 4<sup>th</sup> Street will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the north side of the road.

The horizontal alignment of Riverside Avenue will remain the same, but its vertical alignment will have to be raised in order to meet the proposed intersection with the 4<sup>th</sup> Street Overhead. The new vertical alignment will begin approximately 10m (33 ft) north of the existing Caltrans ramps with a 30m (100 ft) vertical curve followed by a positive 7% grade. This 7% grade leads into a 50m (165 ft) vertical curve, which brings the roadway up to its required elevation at the 4<sup>th</sup> Street/Riverside Avenue intersection; the profile grade at this point is approximately 4m (13 ft) above the existing roadway. The 50m (165 ft) vertical curve is followed by a 7% downgrade and another 30m (100 ft) vertical curve to conform with the existing roadway. The new alignment will end approximately 5m (16 ft) from the existing driveway to the business located at APN 009-268-005. The modification of the vertical alignment will require a series of retaining walls, which are located along the east and west sides of Riverside Avenue. The typical roadway section for Riverside Avenue will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the west side of the road. The new roadway section will require Riverside Avenue to be widened slightly to the west.

One alternative shows the Pine Street/4<sup>th</sup> Street intersection to be realigned to a point approximately 30m (100 ft) west of its current location. This new alignment will go through the existing property located at APN 009-261-004. The new profile will begin at the new intersection point, which is approximately 7m (23 ft) above the existing grade. It will then proceed down a 30m (100 ft) vertical curve, a 6% downgrade, and another 30m (100 ft) vertical curve until it reaches its conform point with the existing Pine Street alignment. This alignment will not require the use of retaining walls to make its profile grade; it is assumed that sufficient right of way will be required to meet the desired profile.

A second alternative alignment for Pine Street that utilizes the existing right of way has also been shown. This alignment will require a significant rise in the profile along Pine Street, which will entail a series of retaining walls to ensure that no right of way acquisition will be required.

The typical roadway section for Pine Street will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the west side of the road.

The following is a list of pros and cons for this alternative (this listing does not differentiate issues with regard to the location of the Pine Street/4<sup>th</sup> Street intersection):

#### Pros

- An overhead minimizes impacts to UPRR and does not require a shoofly detour of UPRR tracks
- Minimizes impacts to Caltrans facilities (essentially no impact)
- Zero impacts to developable property located at the southwest corner of 4<sup>th</sup> Street/Pine Street
- Minimal drainage impacts
- Able to utilize existing alignment/right of way along Riverside Avenue
- Able to allow for pedestrian access along the 4<sup>th</sup> Street Overcrossing from Riverside Avenue to Pine Street

#### Cons

- Significant right of way impacts to APN 009-261-004 or significant retaining wall costs
- Large retaining wall adjacent to parking lot for business at APN 009-268-005
- Large retaining wall along Caltrans right of way

#### **Alternative 2 – Underpass Alignment “A”**

This alternative consists of an underpass of the UPRR tracks located approximately 25m (82 ft) north of the existing 4<sup>th</sup> Street Underpass. The horizontal alignment begins along the existing 4<sup>th</sup> Street alignment and then swings southeast with a 70m (230 ft) radius through the existing parcels at the southwest corner of 4<sup>th</sup> Street and Pine Street. The roadway will then follow a reversing curve with a radius of 70m (230 ft) underneath the UPRR property to conform with Riverside Avenue. The profile along 4<sup>th</sup> Street would begin approximately 40m (130 ft) from the Park Street intersection with a 30m (100 ft) vertical curve and then continue along a 5% downgrade to reach the necessary elevation at the underpass. Retaining walls will be used in this area to minimize the impacts to the adjacent properties. The roadway then continues along a 30m (100 ft) vertical curve underneath the UPRR tracks and up a 5% ascent to meet the existing profile of Riverside Avenue. The typical roadway section for 4<sup>th</sup> Street and Riverside Avenue will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk adjacent to the westbound lane. The new roadway section will require Riverside Avenue to be widened slightly to the west.

The existing Route 101 SB ramp terminus will have to be realigned and extended in order to “T” into the new underpass alignment. The new horizontal alignments will slightly modify the existing radii on the ramps and will extend a tangent from the existing radii to the “T” intersection with the underpass. The vertical alignment of the ramps will not significantly change with these modifications.

The new underpass will also require Pine Street to be realigned. As in the realignment of Pine Street shown in Alternative 1, the horizontal alignment will swing from the existing Pine Street alignment through the property located at APN 009-261-004 until it intersects the 4<sup>th</sup> Street underpass at a perpendicular angle. The vertical alignment will require an excavation of approximately 2m (6.5 ft) at the new Pine Street/4<sup>th</sup> Street intersection. The alignment will extend from the new intersection to the northeast along a positive grade of 4%. A 50m (165 ft) vertical curve will then be used to match the existing Pine Street grade of approximately -0.25%. The typical

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roadway section for Pine Street will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the west side of the road.

Pros and cons identified for this alternative are as follows:

#### Pros

- Minimal impacts to existing businesses; i.e. APN 009-268-005 not affected
- Minimal drainage impacts; may be able to utilize existing facilities
- Allows for possible development in area immediately east of new 4<sup>th</sup> Street/Pine Street intersection
- Allows for pedestrian access along 4<sup>th</sup> Street from Riverside Avenue to Pine Street
- Increases storage capacity for Route 101 SB ramps

#### Cons

- Significant UPRR impacts (including lengthy shoofly)
- Impacts to existing Caltrans ramps
- Significant right of way impacts to parcels on both north and south sides of 4<sup>th</sup> Street
- Significant retaining wall costs

### **Alternative 3 – Underpass Alignment “B”**

This alignment is another alternative that crosses the UPRR property with an underpass. The horizontal alignment is very similar to the one used for the overhead in Alternative 1; it leaves the existing 4<sup>th</sup> Street alignment at its intersection with Park Street and skews to the northeast. The roadway will then turn to the southeast with a 30m (100 ft) radius to “T” into Riverside Avenue. The profile will begin with a 50m (165 ft) vertical curve between the existing 4<sup>th</sup> Street grade and a 5% downgrade. The 5% downgrade will continue underneath the UPRR tracks until it reaches a 30m (100 ft) vertical curve. This vertical curve is followed by a positive 5% grade and another 30m (100 ft) vertical curve. The terminus of the underpass alignment at Riverside Avenue is approximately 3m (10 ft) below the existing pavement elevation of Riverside Avenue. The typical roadway section for 4<sup>th</sup> Street will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the north side of the road.

Riverside Avenue will remain along its existing horizontal alignment, but its vertical alignment will have to be modified to match the new underpass alignment. The profile will begin approximately 10m (33 ft) north of the existing Route 101 SB ramp terminus with a 30m (100 ft) vertical curve followed by slight upgrade of 0.50%. A 30m (100 ft) vertical curve will then connect the 0.50% grade with a 5% grade. Finally, a 30m (100 ft) vertical curve will raise the profile up to the existing grade of Riverside Avenue. A series of retaining walls will be needed to keep from encroaching onto Caltrans right of way and the business located at APN 009-268-005. The typical roadway section for Riverside Avenue will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the west side of the road. The new roadway section will require Riverside Avenue to be widened slightly to west.

The horizontal alignment of Pine Street will remain essentially the same, but its profile will also have to be modified. The profile will begin at the new intersection of Pine Street and 4<sup>th</sup> Street will be approximately 5m (16 ft) below the existing roadway grade. The roadway will then travel along a 30m (100 ft) vertical curve followed by a positive 6% grade. This 6% grade will continue until it meets another 30m (100 ft) vertical curve, which will

bring Pine Street up to its existing grade. The typical roadway section for Pine Street will consist of two 3.6m (12 ft) lanes, 2.4m (8 ft) shoulders, and a 1.5m (5 ft) sidewalk on the west side of the road.

Some pros and cons of this alternative are as follows:

#### Pros

- Zero impacts to developable property on southwest corner of 4<sup>th</sup> Street/Pine Street.
- Minimal impacts to SR101 ramps
- Able to utilize existing alignments and right of way along Riverside Avenue and Pine Street
- Allows for pedestrian access along 4<sup>th</sup> Street from Riverside Avenue to Pine Street
- Improvement in function of Route 101 exit ramps (i.e. additional of ramp storage)

#### Cons

- Significant UPRR impacts, including lengthy shoofly over multiple tracks
- Significant drainage impacts, including possible pump plant (to be determined)
- Right of way impacts to APN 009-261-004
- Significant retaining wall costs
- Large retaining wall adjacent to parking lot for business at APN 009-268-005
- Large retaining wall along Catrans right of way

CC: Jorge Aguilar – URS

Enclosures