

# Seventh Street Bridge Aesthetics Meeting #1

January 14, 2015



# Agenda

- Housekeeping, Introductions and Agenda-Judith Buethe
- Welcome—David Leamon
- Project overview- Hans Strandgaard, PE
- Examples of bridge components and their significance-Will Henderson and Don MacDonald, FAIA
- Schedule and Opportunities for public review and feedback
- Questions and Answers
- Outline for Meeting #2



# Purpose and Need

- Correct structural and hydraulic deficiencies, including restoring full truck carrying capacity
- Expand vehicular capacity of the 7<sup>th</sup> Street corridor
- Improve safety for vehicles, bicyclists, and pedestrians



# Purpose and Need

## Structural and Hydraulic Deficiencies

- Sufficiency rating of 2.0 (range is from 0 (low) to 100 (high))
- The low sufficiency rating is due to structural deficiencies due to excessive deflections, functional deficiencies (width), and load restrictions (4 tons)
- The structure is also vulnerable to collapse during an earthquake or flood event.

The sufficiency rating is one of the worst in California, and the structural and functional deficiencies must be corrected and load carrying capacity restored.



# Bridge Deficiencies



# Bridge Deficiencies



# Bridge Deficiencies



# Bridge Deficiencies



# Bridge Deficiencies



# Purpose and Need

## Vehicular Capacity of the 7<sup>th</sup> Street Corridor

- Important two-lane arterial roadway that carries traffic to and from downtown Modesto
- Currently, 15,719 average trips per day (ADT)
- Projected future ADT estimated at 23,000.
- Corridor will operate at unacceptable level of service “F” in the future if not widened
- Stanislaus Council of Governments 2011 and 2014 Regional Transportation Plans have identified the need to increase the 7<sup>th</sup> Street Bridge vehicular capacity from two lanes to four lanes



# Purpose and Need

## Vehicle, Bicycle, and Pedestrian Safety

- Narrow, substandard pedestrian walkway along each side
- Vehicles and bicycles have to share a single narrow travel lane with no shoulder
- The substandard walkways and lack of bicycle facilities is inconsistent with the City of Modesto Non-Motorized Transportation Master Plan, which calls for a complete network of bikeways, walkways, trails, and paths
- The Modesto Non-Motorized Transportation Master Plan designates a Class II Bike Lane along the 7<sup>th</sup> Street Bridge corridor.



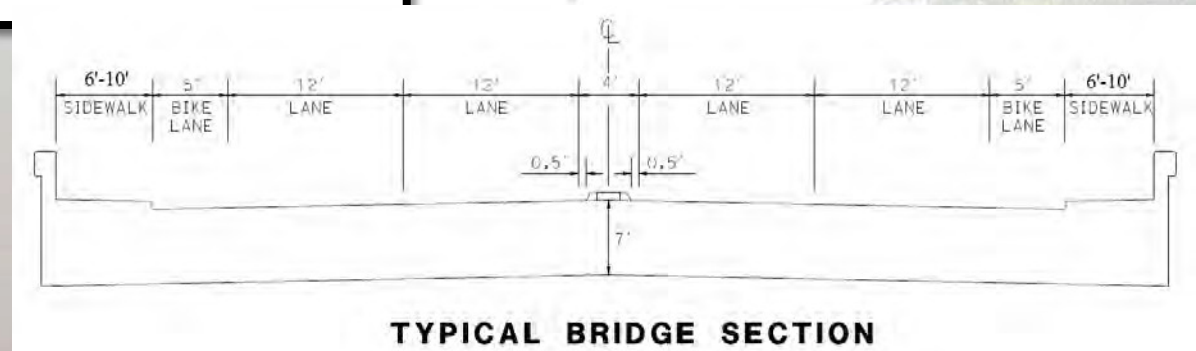
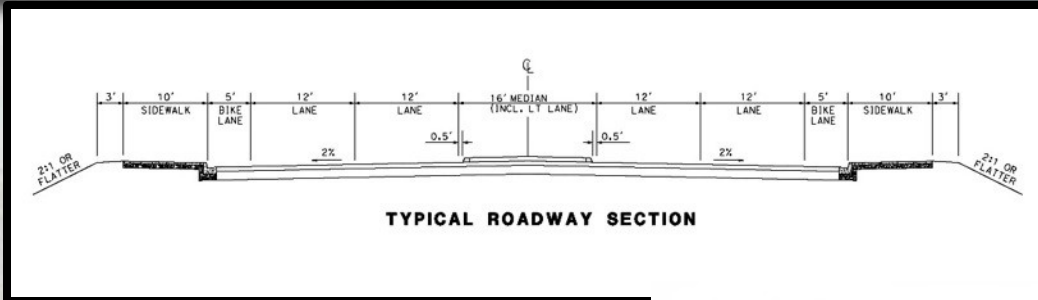
# Bridge Deficiencies



# Bridge Deficiencies



# Proposed Facility



- 4-lane facility
- Design for 35 mph speed limit on 7th Street
- Accommodate trucks (both turning movements & weight)



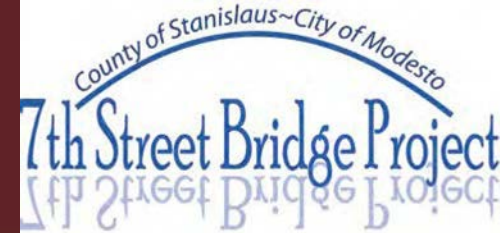
# 100 Year Old Historic Bridge

- Bridge is eligible for listing in the National Register of Historic Places (NRHP)
- Eligible for listing in the California Register of Historical Resources (CRHR)
- Designed by well-known concrete bridge engineers John B. Leonard and William Day, and also featured unique architectural elements by architect Fay Spangler

How do we honor the old bridge? What should the new bridge look like if it will be there for the next 100 years?



# Seventh Street Bridge Aesthetics Meetings



- Opportunity for the public to contribute ideas about how the replacement structure should look
- The ideas collected at today's meeting will be evaluated by the team's architect and then presented at aesthetics Meeting #2 for further discussion
- The ideas that are well received by the public during Meeting #2 will be considered during the final design of the new structure within the project funding limitations



# Don MacDonald Architects

- Donald MacDonald is Principal of DMA.
  - 35 years of bridge architecture experience, AIA fellow
  - Master of Science in Architecture - Columbia University
- Will Henderson CA Licensed Architect
  - 15 years of experience.
  - University of Oregon
- The firm's projects have included:
  - New Bay Bridge
  - Cooper River Bridge in Charleston
  - 9th Street Bridge in Modesto
  - many more across the U.S.



# Bridge Architecture Intro

## 1. Basic Bridge Elements



## 2. Bridge Viewpoints



## 3. 7<sup>th</sup> Street Bridge Design



# Bridge Components

“When the history of our time is written, posterity will know us not by a cathedral or temple, but by a bridge.”

- Montgomery Schuyler, 1877,  
writing about John Roebling’s Brooklyn Bridge



# Abutments



# Piers



# Box Girders



# Precast Girders



# Arches



# Structural Spans



# Underside of Structure



# Vehicle Lanes



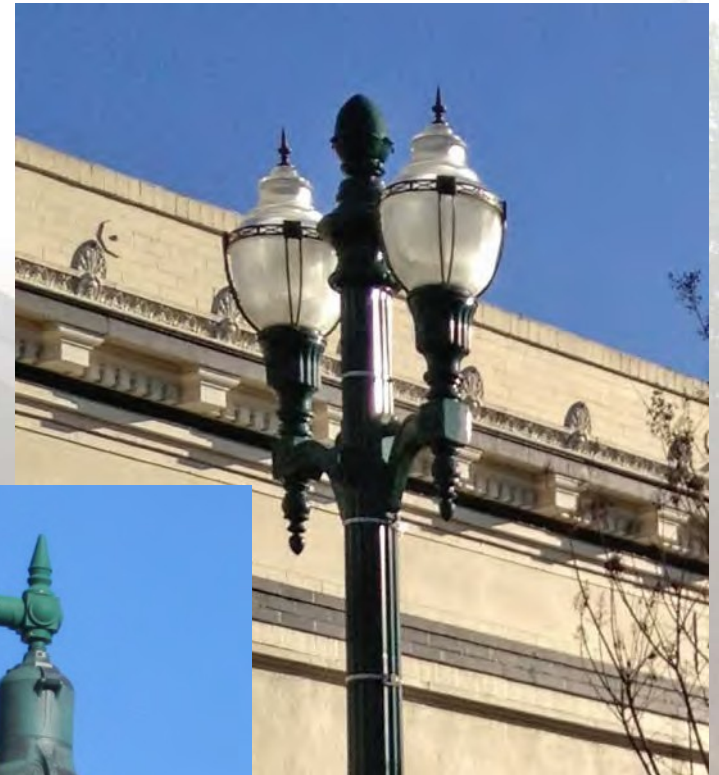
# Pedestrian/Bicycle Lanes



# Barriers



# Safety Lighting



# Traffic Signage



# Overlooks



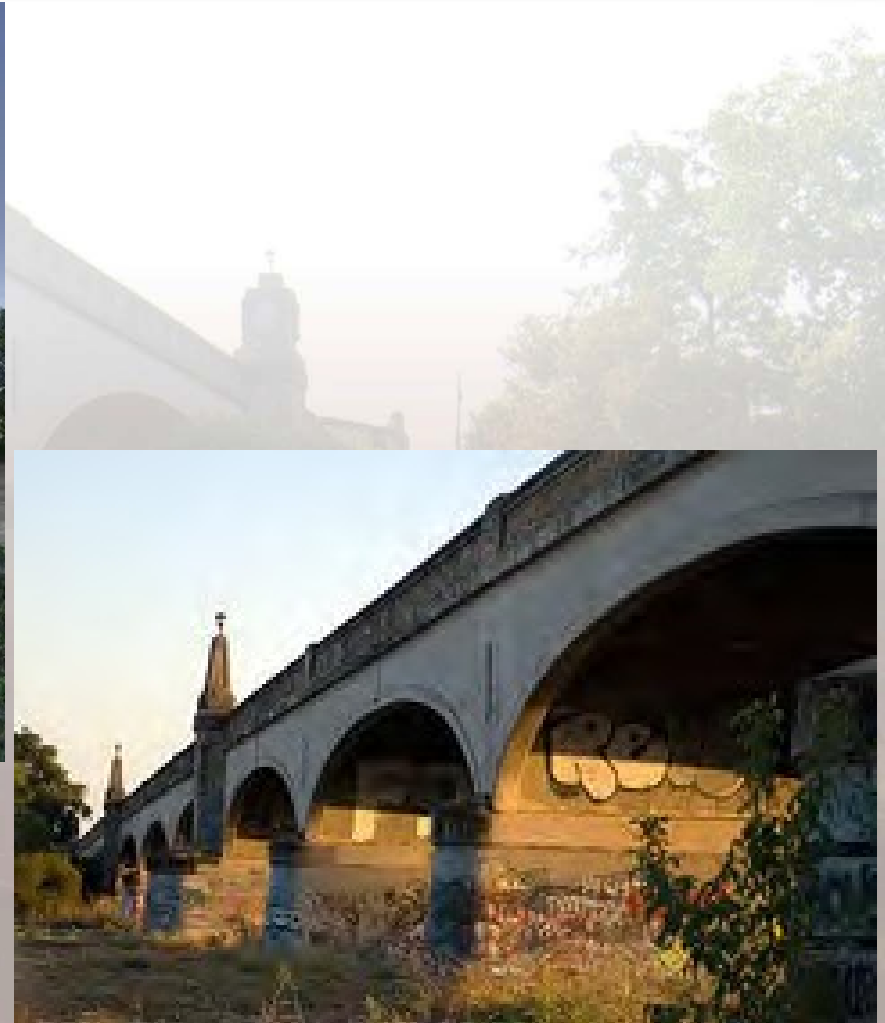
# Public Art



# Decorative Lighting



# Color and Finish



# History



# Bridge Viewpoints

“When an individual forms an aesthetic impression of a bridge, where the bridge is viewed *from* will strongly affect his or her impression.”

“Since the viewer’s aesthetic reactions to the bridge will be almost completely created by his or her visual perceptions, we must be aware that what people *perceive* is not always what is *there*.”

- Frederick  
Gottemoeller, 1998



# Drivers' Viewpoint



# Pedestrians' Viewpoint



# Bicyclists' Viewpoint



# Viewpoint from a bridge



# Park Users' Viewpoint



# River Users' Viewpoint



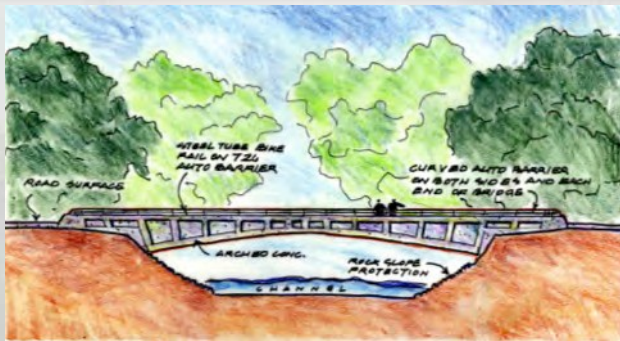
# Viewpoint From Afar



# 7<sup>th</sup> Street Bridge Design



# Design Tools

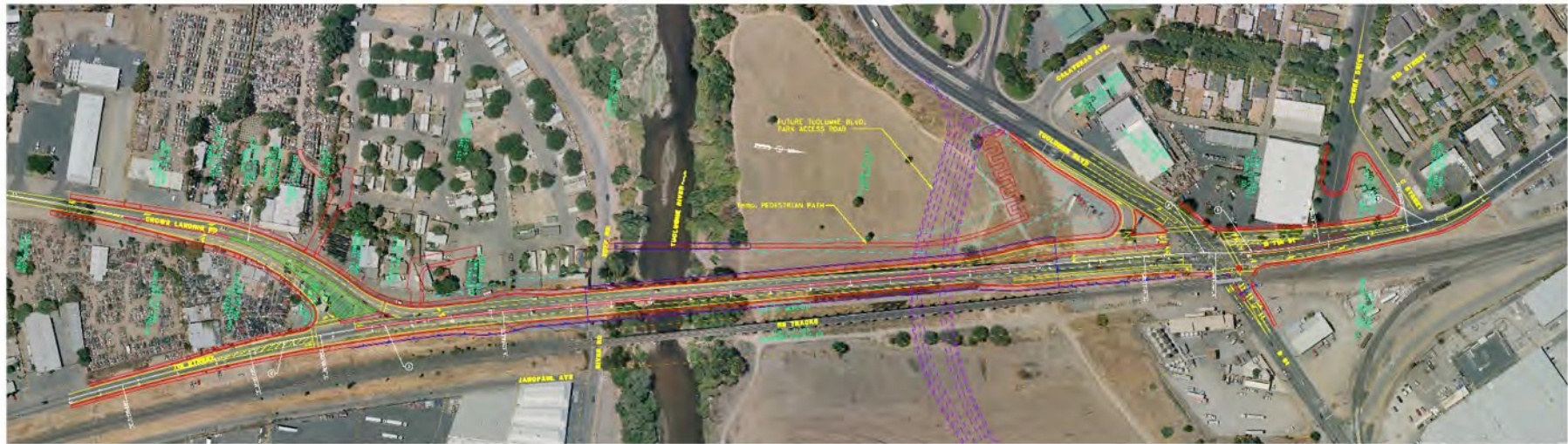


# Alternative 2A/2B - Existing Alignment-Close Bridge

07 / 25 / 2014

## 7th STREET BRIDGE REPLACEMENT GEOMETRIC APPROVAL DRAWING (ALT. 2A/2B)

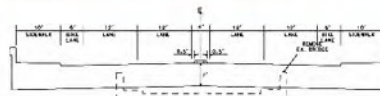
CURVE DATA				
NO.	PC	PT	PI	LC
1	812.00	824.00	818.00	120.00
2	824.00	836.00	830.00	120.00
3	836.00	848.00	842.00	120.00
4	848.00	860.00	854.00	120.00
5	860.00	872.00	866.00	120.00
6	872.00	884.00	878.00	120.00
7	884.00	896.00	890.00	120.00
8	896.00	908.00	902.00	120.00



SCALE: 1" = 100'



TYPICAL ROADWAY SECTION



TYPICAL BRIDGE SECTION

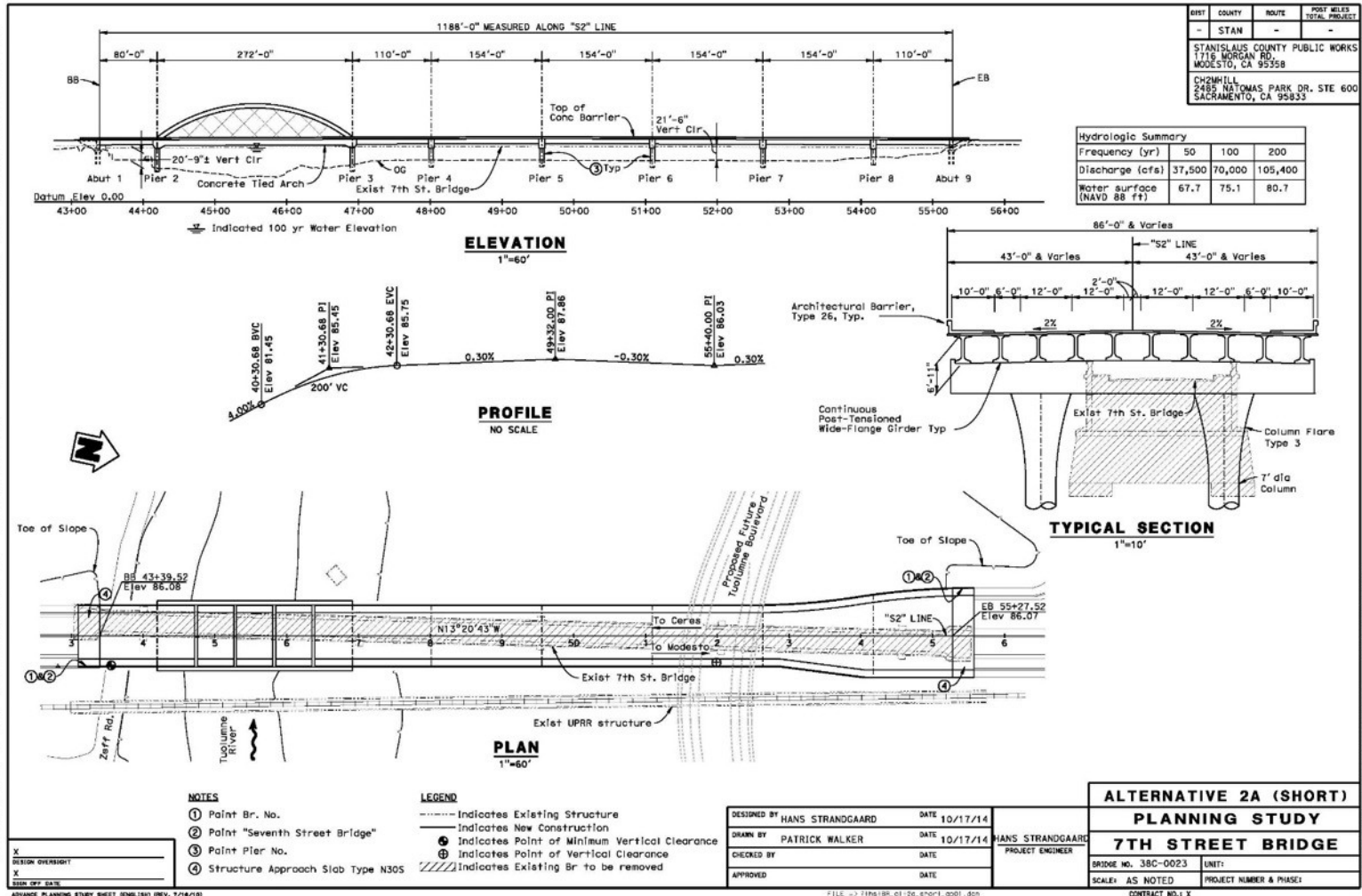
APN	OWNER	TOTAL AREA SQ. FT.	TAKE AREA SQ. FT.	TAKE TYPE
038-001-001	Fairbank & Maricopa Fairbank	65,175.49	10,517.37	PARTIAL
038-001-002	Baroness Air Farming	169,863.13	8,312.13	PARTIAL
038-001-003	Larry Bess	81,524.14	1,521.30	PARTIAL
038-001-004	Munichman Farms	18,788.13	1,396.03	PARTIAL
038-001-005	Topline & Topline Kossin	13,403.38	13,403.38	FULL
038-001-006	Topline & Topline Kossin	17,874.36	1,160.36	PARTIAL
038-001-007	Cooper Associates	19,248.34	2,263.30	PARTIAL/ADJUDICATED
038-001-008	Surfline WCC LLC	431,849.4	15,028.30	PARTIAL
038-001-009	David J. Moreno	25,236.38	143.00	PARTIAL
038-001-010	Modesto Electric Supply Co.	79,406.12	5,577.11	PARTIAL
038-001-011	City of Modesto	676,057.43	82,602.74	PARTIAL

EXISTING BRIDGE WILL BE DEMOLISHED AND TRAFFIC WILL BE TEMPORARILY RE-ROUTED ALONG 8TH STREET.



# Bridge Alternative 2A

PREPARED FOR THE STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



# New 7<sup>th</sup> Street Bridge

## Alternative 2A Rendering

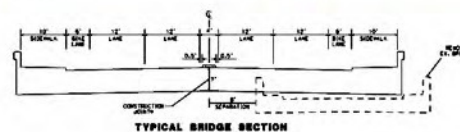
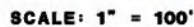


County of Stanislaus ~ City of Modesto  
7th Street Bridge Project

County of Stanislaus ~ City of Modesto  
7th Street Bridge Project

**7th STREET BRIDGE REPLACEMENT  
GEOMETRIC APPROVAL DRAWING (ALT. 3)**

no.	R	Δ	T	L
1	2000.00	98°28'16.51"	113.08	223.57
2	2000.00	04°01'32.33"	105.38	210.33
3	1000.00	12°50'45.26"	112.51	226.20
4	2100.00	09°51'06.33"	107.33	214.47
5	1000.00	17°04'05.00"	162.35	312.31
6	510.00	24°02'26.19"	104.63	213.88

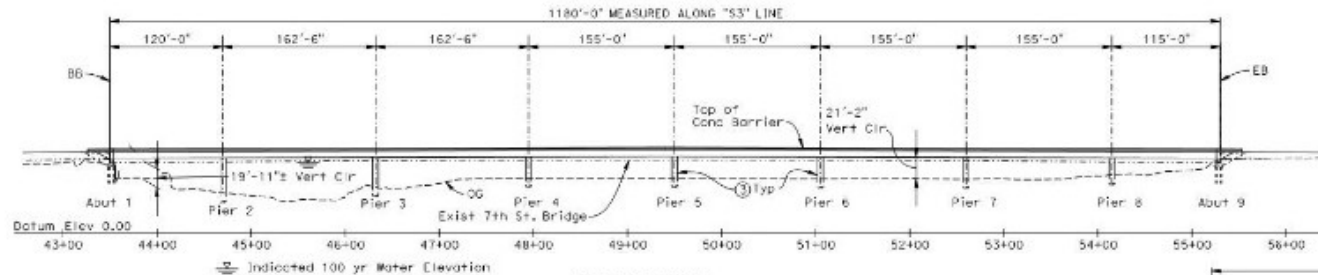


SPN	OWNER	TOTAL AREA SQ FT	TOTAL AREA SQ FT	TAXE TYPE
038-002-001	Estacion & Records Division	93,123.49		PARTIAL
038-002-002	Bonanza air Foregate	169,663.73	7,860.61	PARTIAL
038-002-005	Munichmeyer tract	18,766.55	18,766.55	FULL
038-002-006	Porting & rigging supplies	12,622.36	12,622.09	FULL
038-002-013	Porting & rigging supplies	12,622.36	12,622.09	FULL
038-002-015	Coker street	17,068.98	17,068.98	FULL
038-002-015	Burnham M&C LLC	91,249.44	120,954.94	PARTIAL/PARTIAL
038-002-016	Davis L. warano	20,366.34	48,261.34	PARTIAL
040-010-005	Willis Electric Supply Co.	78,408.12	53,511.1	PARTIAL/PARTIAL
040-010-006	City of Bogalusa	86,762.36		FULL
040-010-008	City of Bogalusa	54,100.90	2,012.50	FULL

BRIDGE WILL BE BUILT IN 2 STAGES MAINTAINING TRAFFIC ALONG 7TH STREET DURING CONSTRUCTION.

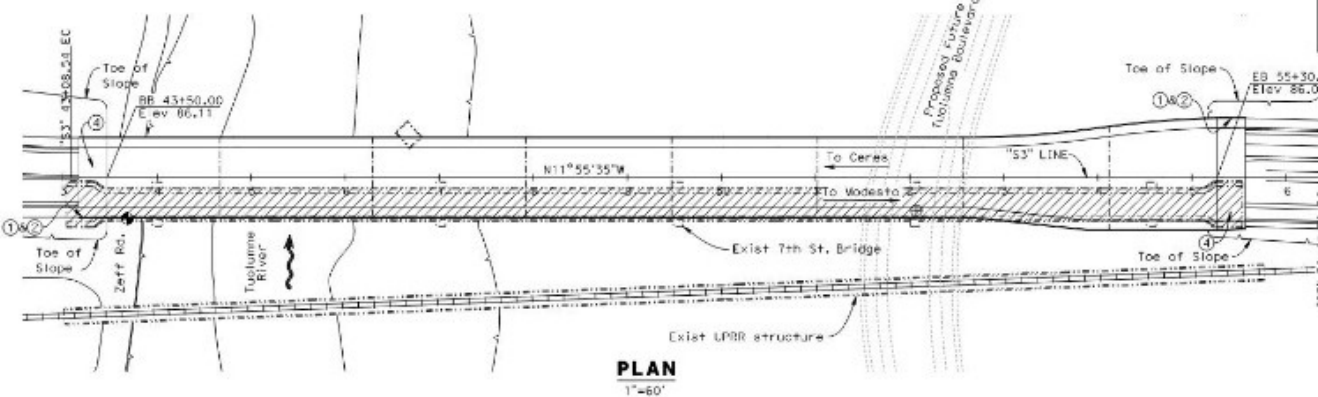
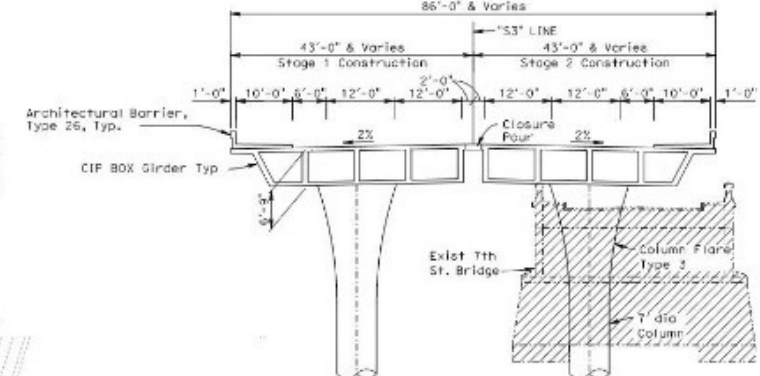
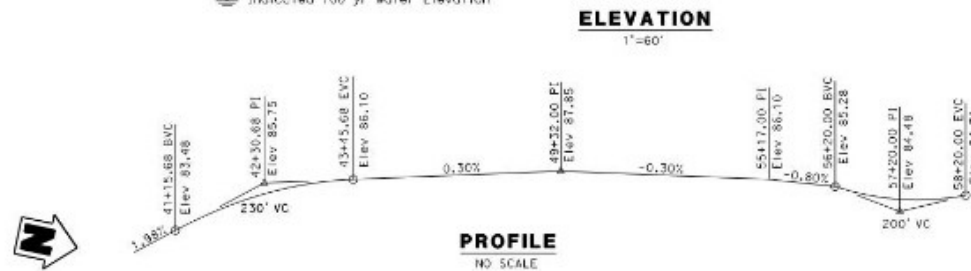


# Bridge Alternative 3



DIST	COUNTY	ROUTE	POST MILES 30' IN. PROJECT
-	STAN	-	-
STANISLAUS COUNTY PUBLIC WORKS 1715 WORKMAN RD. MODESTO, CA 95358			
CHOWHILL 2485 NATOMAS PARK DR., STE. 600 SACRAMENTO, CA 95833			

Hydrologic Summary			
Frequency (yr)	50	100	200
Discharge (cfs)	32,000	70,000	105,400
Water surface (NAVD 88 ft)	-	75.1	79.7



## NOTES

- Point Br. No.
- Point "Seventh Street Bridge"
- Point Pier No.
- Structure Approach Slab Type N305

## LEGEND

- Indicates Existing Structure
- Indicates New Construction
- Indicates Point of Minimum Vertical Clearance
- Indicates Point of Vertical Clearance
- Indicates Existing Br. to be removed

DESIGNED BY	JENNIFER ELWOOD	DATE	06/06/14
DRAWN BY	PATRICK WALKER	DATE	06/06/14
CHECKED BY		DATE	
APPROVED		DATE	

HANS STRANDGAARD  
PROJECT ENGINEER

52

## ALTERNATIVE 3 PLANNING STUDY 7TH STREET BRIDGE

BRIDGE NO. 38C-0023	UNIT
SCALE: AS NOTED	PROJECT NUMBER & PHASE:

# Alternative 4 - Rehabilitate Existing Bridge

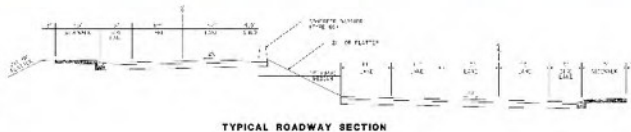
07 / 25 / 2014

## 7th STREET BRIDGE REPLACEMENT GEOMETRIC APPROVAL DRAWING (ALT. 4)

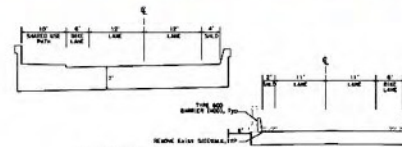
SCALE: 1" = 100'



STATION	DATE	BY	REVISION
1+00.00	07/25/14	WJ	1.00
1+00.00	07/25/14	WJ	1.01
1+00.00	07/25/14	WJ	1.02
1+00.00	07/25/14	WJ	1.03
1+00.00	07/25/14	WJ	1.04
1+00.00	07/25/14	WJ	1.05
1+00.00	07/25/14	WJ	1.06
1+00.00	07/25/14	WJ	1.07
1+00.00	07/25/14	WJ	1.08
1+00.00	07/25/14	WJ	1.09
1+00.00	07/25/14	WJ	1.10
1+00.00	07/25/14	WJ	1.11
1+00.00	07/25/14	WJ	1.12
1+00.00	07/25/14	WJ	1.13
1+00.00	07/25/14	WJ	1.14
1+00.00	07/25/14	WJ	1.15
1+00.00	07/25/14	WJ	1.16
1+00.00	07/25/14	WJ	1.17
1+00.00	07/25/14	WJ	1.18
1+00.00	07/25/14	WJ	1.19
1+00.00	07/25/14	WJ	1.20
1+00.00	07/25/14	WJ	1.21
1+00.00	07/25/14	WJ	1.22
1+00.00	07/25/14	WJ	1.23
1+00.00	07/25/14	WJ	1.24
1+00.00	07/25/14	WJ	1.25
1+00.00	07/25/14	WJ	1.26
1+00.00	07/25/14	WJ	1.27
1+00.00	07/25/14	WJ	1.28
1+00.00	07/25/14	WJ	1.29
1+00.00	07/25/14	WJ	1.30
1+00.00	07/25/14	WJ	1.31
1+00.00	07/25/14	WJ	1.32
1+00.00	07/25/14	WJ	1.33
1+00.00	07/25/14	WJ	1.34
1+00.00	07/25/14	WJ	1.35
1+00.00	07/25/14	WJ	1.36
1+00.00	07/25/14	WJ	1.37
1+00.00	07/25/14	WJ	1.38
1+00.00	07/25/14	WJ	1.39
1+00.00	07/25/14	WJ	1.40
1+00.00	07/25/14	WJ	1.41
1+00.00	07/25/14	WJ	1.42
1+00.00	07/25/14	WJ	1.43
1+00.00	07/25/14	WJ	1.44
1+00.00	07/25/14	WJ	1.45
1+00.00	07/25/14	WJ	1.46
1+00.00	07/25/14	WJ	1.47
1+00.00	07/25/14	WJ	1.48
1+00.00	07/25/14	WJ	1.49
1+00.00	07/25/14	WJ	1.50
1+00.00	07/25/14	WJ	1.51
1+00.00	07/25/14	WJ	1.52
1+00.00	07/25/14	WJ	1.53
1+00.00	07/25/14	WJ	1.54
1+00.00	07/25/14	WJ	1.55
1+00.00	07/25/14	WJ	1.56
1+00.00	07/25/14	WJ	1.57
1+00.00	07/25/14	WJ	1.58
1+00.00	07/25/14	WJ	1.59
1+00.00	07/25/14	WJ	1.60
1+00.00	07/25/14	WJ	1.61
1+00.00	07/25/14	WJ	1.62
1+00.00	07/25/14	WJ	1.63
1+00.00	07/25/14	WJ	1.64
1+00.00	07/25/14	WJ	1.65
1+00.00	07/25/14	WJ	1.66
1+00.00	07/25/14	WJ	1.67
1+00.00	07/25/14	WJ	1.68
1+00.00	07/25/14	WJ	1.69
1+00.00	07/25/14	WJ	1.70
1+00.00	07/25/14	WJ	1.71
1+00.00	07/25/14	WJ	1.72
1+00.00	07/25/14	WJ	1.73
1+00.00	07/25/14	WJ	1.74
1+00.00	07/25/14	WJ	1.75
1+00.00	07/25/14	WJ	1.76
1+00.00	07/25/14	WJ	1.77
1+00.00	07/25/14	WJ	1.78
1+00.00	07/25/14	WJ	1.79
1+00.00	07/25/14	WJ	1.80
1+00.00	07/25/14	WJ	1.81
1+00.00	07/25/14	WJ	1.82
1+00.00	07/25/14	WJ	1.83
1+00.00	07/25/14	WJ	1.84
1+00.00	07/25/14	WJ	1.85
1+00.00	07/25/14	WJ	1.86
1+00.00	07/25/14	WJ	1.87
1+00.00	07/25/14	WJ	1.88
1+00.00	07/25/14	WJ	1.89
1+00.00	07/25/14	WJ	1.90
1+00.00	07/25/14	WJ	1.91
1+00.00	07/25/14	WJ	1.92
1+00.00	07/25/14	WJ	1.93
1+00.00	07/25/14	WJ	1.94
1+00.00	07/25/14	WJ	1.95
1+00.00	07/25/14	WJ	1.96
1+00.00	07/25/14	WJ	1.97
1+00.00	07/25/14	WJ	1.98
1+00.00	07/25/14	WJ	1.99
1+00.00	07/25/14	WJ	2.00



TYPICAL ROADWAY SECTION

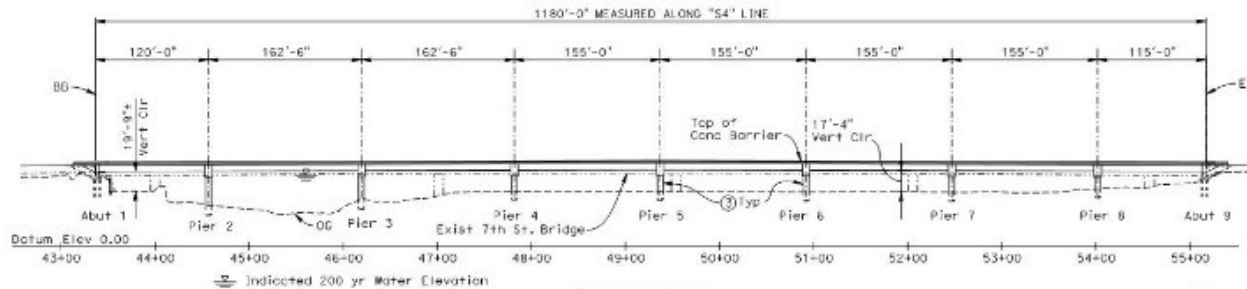


TYPICAL BRIDGE SECTION (ALTERNATIVE 4)

APN	OWNER	10% AREA (SQ FT)	10% AREA (SQ FT)	TAKE TYPE
033-009-001	Estimote & Record Estimator	85,123.45	20,811.46	PARTIAL
033-009-002	Estimote & Record Estimator	18,263.75	7,882.11	PARTIAL
033-009-003	Estimote & Record Estimator	18,788.23	18,788.23	FULL
033-009-004	Estimote & Record Estimator	17,423.28	17,423.28	FULL
033-009-005	Estimote & Record Estimator	10,816.30	10,816.30	FULL
033-009-006	Estimote & Record Estimator	15,068.38	15,068.38	FULL
033-009-007	Estimote & Record Estimator	101,848.41	101,848.41	PARTIAL/SHOULDER
033-009-008	Estimote & Record Estimator	20,126.38	20,126.38	PARTIAL
033-009-009	Estimote & Record Estimator	79,786.12	79,786.12	PARTIAL/SHOULDER TAKE
033-009-010	City of Modesto	816,171.41	101,848.41	FULL
033-009-011	City of Modesto	54,100.38	1,361.02	PARTIAL
033-009-012	Estimote & Record Estimator	20,126.38	20,126.38	PARTIAL
033-009-013	Estimote & Record Estimator	816,171.41	816,171.41	FULL

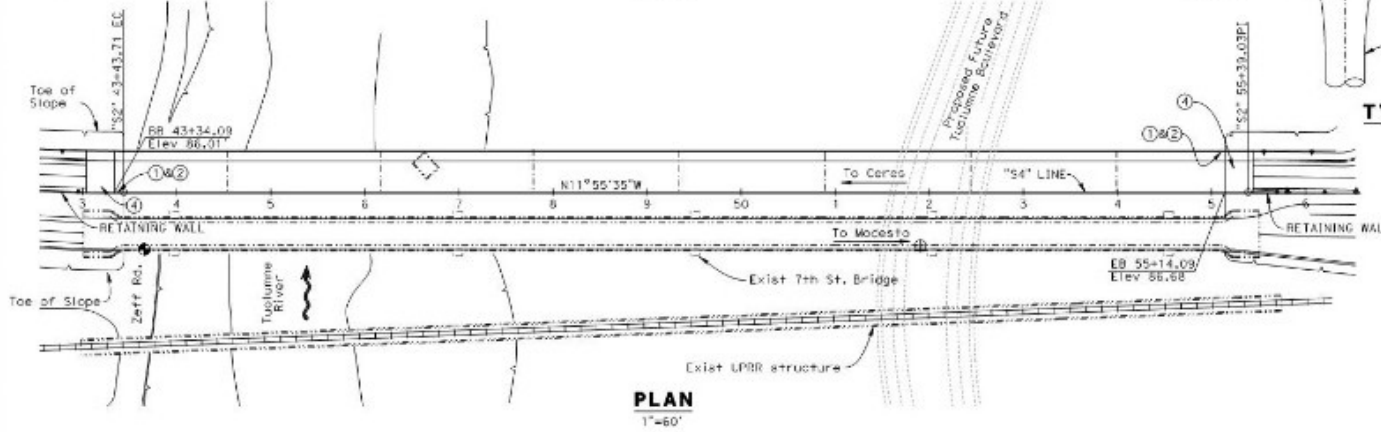
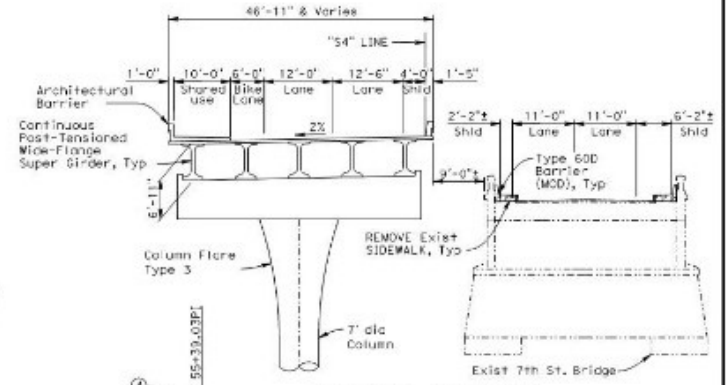
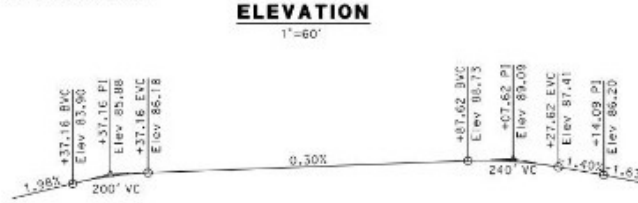


# Bridge Alternative 4



DIST	COUNTY	ROUTE	POST MILE
-	STAN	-	-
STANISLAUS COUNTY PUBLIC WORKS 17th WORKING SD MODESTO, CA 95358			
CHOWHILL 2485 NATOMAS PARK DR, STE 600 SACRAMENTO, CA 95833			

Hydrologic Summary			
Frequency (yr)	50	100	200
Discharge (cfs)	32,000	70,000	105,400
Water surface (NAVD 88 ft)	-	75.2	80.6



**NOTE**  
 Existing 7th Street Bridge to be retrofitted and rehabilitated in accordance with the "Final Rehabilitation and Retrofit Strategy Report" dated 2013.

- NOTES**
- Point Br. No.
  - Point "Seventh Street Bridge, Left"
  - Point Pier No.
  - Structure Approach Slab Type N305

- LEGEND**
- Indicates Existing Structure
  - Indicates New Construction
  - Indicates Point of Minimum Vertical Clearance
  - Indicates Point of Vertical Clearance
  - Indicates Portion Existing Br to be removed

DESIGNED BY	JENNIFER ELWOOD	DATE	
DRAWN BY	PATRICK WALKER	DATE	
CHECKED BY		DATE	
APPROVED		DATE	

HANS STRANDGAARD  
 PROJECT ENGINEER

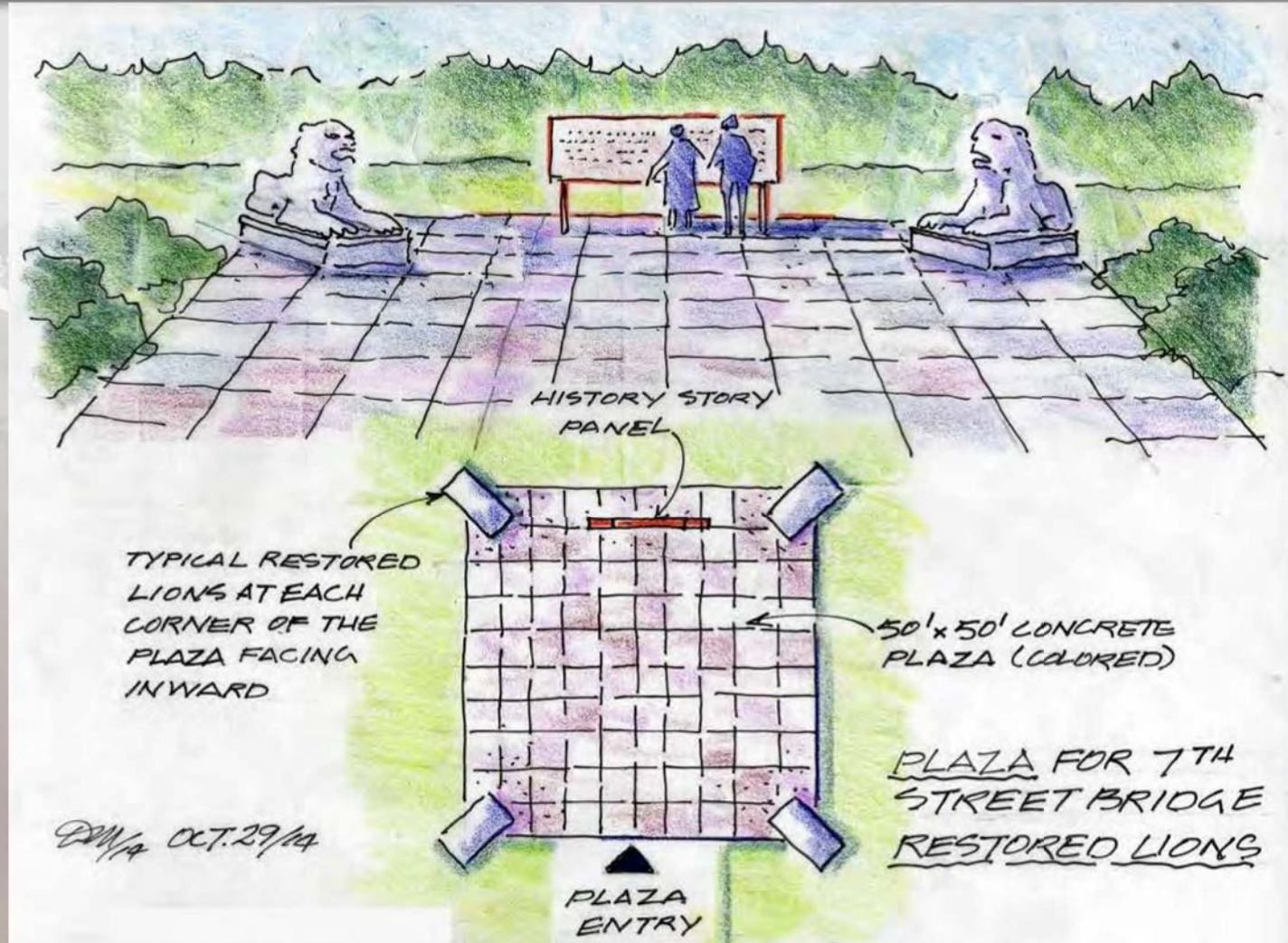
ALTERNATIVE 4 PLANNING STUDY	
7TH STREET BRIDGE	
BRIDGE NO. 38C-0023 R/L	UNIT
SCALE: AS NOTED	PROJECT NUMBER & PHASE:

# New 7<sup>th</sup> Street Bridge

## Alternative 2B, 3, & 4 Rendering



# New 7<sup>th</sup> Street Bridge Plaza



# How does cost impact aesthetics? What aesthetic elements would you prioritize?

Alternative	Bridge Cost	Project Cost	Staging	Type	Comments
2A	\$42.6m	\$55.6m	No	Arch Span, Precast Approaches	Temporary Pedestrian Bridge
2B	\$24.0m	\$37.0m	No	Precast Spans	Temporary Pedestrian Bridge
3	\$32.3m	\$50.0m	Yes	Box Girder	Built in two stages
4	\$33.8m	\$47.5m	Yes	Box Girder	Retrofit Existing Bridge

- Aesthetic improvements normally limited to 5% of bridge cost, so \$1-2million maximum



# What is the schedule?

- Alternatives Developed 2013-2014
- Environmental Studies 2013-2014
- Draft Project Report Late 2014
- Environmental Doc complete Late 2015
- Bridge Aesthetic Workshops Jan and Feb, 2015
- Type Select Bridge Mid 2015
- Final Design 2015-2016
- Right-of-Way Acquisition 2016
- Construction 2017-2019



# Public Involvement Opportunities

- ~~• Community Advisory Group Meeting Oct 3, 2013~~
- ~~• Public Scoping Meeting Oct 14, 2013~~
- ~~• Public Comment Period on the Notice of Preparation thru Oct 30, 2013~~
- ~~• Community Advisory Group Meeting Jan 9, 2014~~
- ~~• Public Outreach Meeting (Alternatives) Feb 24, 2014~~
- Bridge Aesthetic Workshops in January and February 2015
- Public Comment Period on the Draft EIR in Summer 2015
- [www.7thStreetBridge.org](http://www.7thStreetBridge.org)



# Public Input and Review

- What aesthetic details are appropriate for this bridge in this community?
- Structure above and below the roadway
  - Prominent or discreet
- Bridge spans over the park and river
  - Use of the park by whom?
  - Use of the river by whom?
- Bike/pedestrian pathway
  - Mixed or separated by curbs or traffic barriers
  - Transparency of the handrails and auto barriers



# Public Input and Review

- Location of pathways around outside or inside of the arches
- Patterns and colors on the pathways, piers, deck profiles, buttresses, and retaining walls
- Potential location of safety lights and decorative lights (no lighting under the structure)
- Signage and their support structures, light poles, and their relationship to the bridge's architectural vocabulary



# Public Input and Review

- What new image is important to the stakeholders?
- Use of modern bridge heads similar in concept to the lions?
- Location of the outlooks on the bridge and the entries?
- What manmade and natural forms could influence the design of this new bridge to regionalize its place in this environment?



# Public Input and Review

- Historic place making for the reuse of the four landmark lions and their pedestals?
  - Location should be out of the lower flood plain
  - Location would also have an extensive storyboard showing the history of the existing bridge



# Questions and Answers (30 minutes)

- Questions and Answers?
- On the cards handed out, please write down your thoughts and ideas about the aesthetics of the bridge and the bridge elements discussed



# Meeting #2

- Agenda will include results of Meeting #1
  - Input from the stakeholders is used to make the decisions influencing the final bridge design
- Illustrate three bridge types detailed in full elevation (tied arch, box girder, and precast girders)
- Illustrate close-up details of these structures
  - Box girder bridge – superstructure and substructure
  - Precast girder bridge – superstructure and substructure
  - Tied arch bridge – superstructure and substructure
  - Abutment walls



# Meeting #2

- Illustrate bike/pedestrian sidewalk concepts
- Illustrate the outside pathway and the inside pathway at the tied arch
- Illustrate the patterns and colors on the pathways, piers, deck profiles, buttresses, and retaining walls
- Illustrate options for safety & decorative lighting
  - Combined lighting for above
  - Separate LED fixtures for the safety and decorative lighting



# Meeting #2

- Illustrate modern bridge heads with regional significance
- Illustrate options for outlook locations
  - At the bridge entries
  - On the structure, over the river, over the park
- Illustrate options for the historical place marking for the landmark lions
- Meeting #2 will be held in February or March



# 7<sup>th</sup> Street Bridge Design

