APPENDIX H

Bridge Data

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 22C0003
Facility Carried: C. R. 41
Location : 500' E SH 16
City :
Inspection Date : 10/22/2013

Inspection Type

Routine	FC	Underwater	Special	Other
X				

Bridge Inspection Report

STRUCTURE NAME: CACHE CREEK

CONSTRUCTION INFORMATION

Year Built : 1930
Year Widened: 1949
Length (m) : 95.4

Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Two span RC thru-tied arch with two RC T-beam (4) approach spans on RC piers and winged abutments. Abutment 1 and Pier 2 are founded on timber piles surrounded by steel sheet piling. Piers 3, 4, and Abutment 5 are founded on steel H-piles.

Span Configuration : 1 @ 31.7 m (104.0'), 1 @ 32.9 m (108.0'), 2 @ 14.5 m (47.5')

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=0.54 =>17.5 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT
Operating Rating: RF=0.91 =>29.5 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT
Permit Rating : XXXXX
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.5 m (1.8') br and cu, 6.2 m (20.5') rw, 0.5 m (1.8') cu and br

Total Width: 7.3 m Net Width: 6.2 m No. of Lanes: 2 Speed: 25 mph
Min. Vertical Clearance: 4.39 m

Rail Code: 0000 Rail Description: Concrete window

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand and gravel with light bushes.

INSPECTION COMMENTARY

SCOPE AND ACCESS
The water was flowing in Span 1 during the current investigation. The water was up to 6 feet deep at Abutment 1. Pier 2, Pier 3, Pier 4, and Abutment 5 were dry at the time of the inspection. All visible elements were inspected.

The underwater inspection of Abutment 1 was performed by the SMI Underwater Investigation Team on 1/27/2009 and is on a 5 year inspection cycle. During this underwater investigation, divers noted the sheet piles at Abutment 1 were exposed up to a depth of 3 feet along a length of 16 feet on the downstream side. The next Underwater Inspection will be performed in January of 2014.

DECK AND ROADWAY
There are 1/16 to 1/8 inch wide transverse deck cracks spaced about 3 inches apart with interconnecting 1/16 inch wide longitudinal cracks in the approach spans.

There are 500 lb. to 750 lb. boulders at the left side of Abutment 1, and 100 lb. to 200 lb. boulders at the right side of the Abutment 1. Despite the size of these boulders, it appears that the scour protection at this location is not sufficient, as noted in the Hydraulics inspection report dated 2/2/01.

INSPECTION COMMENTARY

The concrete deck is abraded and there are transverse deck cracks with edge rounding up to 0.25 inch wide located at each arch suspender column in the arch spans. Corrective action is not warranted at this time.

SUPERSTRUCTURE

There are many spalls with exposed reinforcing steel present in the portion of the original structure built in 1930. Spans 3 and 4 were built in 1949. The spalls are primarily located in the soffit of the tied girders, the underside of the arches, and on the arch suspender columns. These spalls have been documented in past supplemental bridge reports dating back over 35 years ago. The condition of these spalls has not changed significantly within the past 10 years. The primary cause of the spalls is due to poor placement of the concrete and close spacing of the reinforcement which most likely prevented proper distribution of the aggregates and slurry during the concrete pour. The majority of the spalled areas are at rock pockets with shallow cover over the steel reinforcement. The exposed steel reinforcement does have surface rust but does not appear to have significant section loss.

There are hairline transverse soffit cracks with efflorescence in all bays of the approach span near Bent 2. The cracks are spaced at about 3 feet on center.

SUBSTRUCTURE

This bridge is scour critical (NBI Item 113 = 3). A scour Plan of Action, dated 8/20/2010, is filed in BIRIS.

The previous underwater investigation indicates that the sheet piles at Abutment 1 were exposed up to a depth of 3 feet along a length of 16 feet on the downstream side. This condition could not be verified during this investigation due to the depth of water at Abutment 1.

Stream section measurements were spot checked and compared with the measurements taken 1/6/2012. No significant changes were noted.

SAFE LOAD CAPACITY

A Load Rating Summary Sheet dated 1/6/2010 is on file for this structure. The current rating has been assigned based on current SM&I procedures for concrete bridges without as-built plans.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	2	590	sq.m.	590	0	0	0	0
110	Reinforced Conc Open Girder/Beam	2	116	m.	0	0	116	0	
144	Reinforced Conc Arch	2	259	m.	0	0	259	0	0
210	Reinforced Conc Pier Wall	2	22	m.	0	22	0	0	0
215	Reinforced Conc Abutment	2	15	m.	0	15	0	0	0
304	Open Expansion Joint	2	7	m.	7	0	0	0	0
311	Moveable Bearing (roller, sliding, etc.)	2	4	ea.	4	0	0	0	0
331	Reinforced Conc Bridge Railing	2	215	m.	0	0	215	0	0
358	Deck Cracking	2	1	ea.	0	1	0	0	0
361	Scour	2	1	ea.	0	0	1		

WORK RECOMMENDATIONS

WORK RECOMMENDATIONS

RecDate: 11/14/2000 Action : Sub-Scour Mitigate Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		The County should take corrective measures to avoid the scour threat to the stability of this structure.
RecDate: 07/31/1996 Action : Railing-Upgrade Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Replace the temporary K-rail with a metal beam guard rail at the left and right approaches to Abutment 1.
RecDate: 07/31/1996 Action : Super-Rehab Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Schedule this structure for extensive rehabilitation of the arches and girders. Consideration should be given to replacing this structure.

Team Leader : Ryan N. Odell

Report Author : Ryan N. Odell

Inspected By : RN.Odell/E.Hall

Ryan Odell 1/6/14

Ryan N. Odell (Registered Civil Engineer) (Date)

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	**22C0003**
(5)	INVENTORY ROUTE(ON/UNDER)- ON	140000000
(2)	HIGHWAY AGENCY DISTRICT	03
(3)	COUNTY CODE 113 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED-	CACHE CREEK
(7)	FACILITY CARRIED-	C. R. 41
(9)	LOCATION-	500' E SH 16
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	38 DEG 53 MIN 25 SEC
(17)	LONGITUDE	122 DEG 14 MIN 18.3 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

******** STRUCTURE TYPE AND MATERIAL *********

(43)	STRUCTURE TYPE MAIN:MATERIAL-	CONCRETE
	TYPE- ARCH - THRU	CODE 112
(44)	STRUCTURE TYPE APPR:MATERIAL-	CONCRETE
	TYPE- TEE BEAM	CODE 104
(45)	NUMBER OF SPANS IN MAIN UNIT	2
(46)	NUMBER OF APPROACH SPANS	2
(107)	DECK STRUCTURE TYPE- CIP CONCRETE	CODE 1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- NONE	CODE 0
B)	TYPE OF MEMBRANE- NONE	CODE 0
C)	TYPE OF DECK PROTECTION- NONE	CODE 0

********** AGE AND SERVICE **********

(27)	YEAR BUILT	1930
(106)	YEAR RECONSTRUCTED	1949
(42)	TYPE OF SERVICE: ON- HIGHWAY	1
	UNDER- WATERWAY	5
(28)	LANES:ON STRUCTURE 02 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	15
(30)	YEAR OF ADT 2008 (109) TRUCK ADT	0 %
(19)	BYPASS, DETOUR LENGTH	101 KM

********** GEOMETRIC DATA **********

(48)	LENGTH OF MAXIMUM SPAN	32.9 M
(49)	STRUCTURE LENGTH	95.4 M
(50)	CURB OR SIDEWALK: LEFT 0.5 M	RIGHT 0.5 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	6.2 M
(52)	DECK WIDTH OUT TO OUT	7.3 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	4.6 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	4.39 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	6.2 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	4.39 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0.00 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0.0 M
(56)	MIN LAT UNDERCLEAR LT	0.0 M

********** NAVIGATION DATA **********

(38)	NAVIGATION CONTROL- NOT APPLICABLE	CODE N
(111)	PIER PROTECTION-	CODE
(39)	NAVIGATION VERTICAL CLEARANCE	0.0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0.0 M

****

SUFFICIENCY RATING =	37.7
STATUS	STRUCTURALLY DEFICIENT
HEALTH INDEX	46.8
PAINT CONDITION INDEX =	N/A

********** CLASSIFICATION ********** CODE

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- LOCAL RURAL	09
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 2 WAY	2
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY- NOT APPLICABLE	0
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- COUNTY HIGHWAY AGENCY	02
(22)	OWNER- COUNTY HIGHWAY AGENCY	02
(37)	HISTORICAL SIGNIFICANCE- ELIGIBLE	2

********** CONDITION ********** CODE

(58)	DECK	6
(59)	SUPERSTRUCTURE	3
(60)	SUBSTRUCTURE	4
(61)	CHANNEL & CHANNEL PROTECTION	6
(62)	CULVERTS	N

********* LOAD RATING AND POSTING ********* CODE

(31)	DESIGN LOAD- UNKNOWN	0
(63)	OPERATING RATING METHOD- FIELD EVAL/ENG JUD	0
(64)	OPERATING RATING-	29.5
(65)	INVENTORY RATING METHOD- FIELD EVAL/ENG JUI	0
(66)	INVENTORY RATING-	17.5
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	

********** APPRAISAL ********** CODE

(67)	STRUCTURAL EVALUATION	3
(68)	DECK GEOMETRY	5
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	7
(72)	APPROACH ROADWAY ALIGNMENT	4
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	3

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- REPLACE FOR DEFICIENC	CODE 31
(76)	LENGTH OF STRUCTURE IMPROVEMENT	95.4 M
(94)	BRIDGE IMPROVEMENT COST	$1,600,800
(95)	ROADWAY IMPROVEMENT COST	$320,160
(96)	TOTAL PROJECT COST	$2,689,344
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	2010
(114)	FUTURE ADT	25
(115)	YEAR OF FUTURE ADT	2029

********** INSPECTIONS **********

(90)	INSPECTION DATE 10/13	(91) FREQUENCY	24 MO	
(92)	CRITICAL FEATURE INSPECTION:		(93) CFI DATE	
A)	FRACTURE CRIT DETAIL- NO	MO	A)	
B)	UNDERWATER INSP- YES	60 MO	B)	01/09
C)	OTHER SPECIAL INSP- NO	MO	C)	

Hydraulics Preliminary Review Form

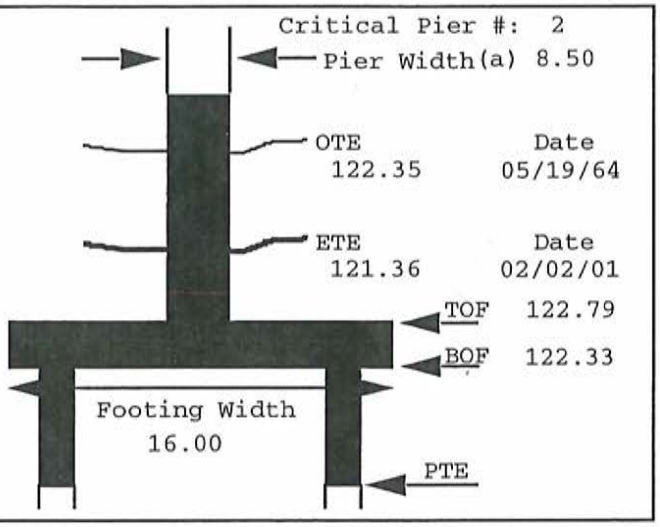
Bridge No: 22C0003 **Structure Name:** CACHE CREEK
Built : 1930 Location: 500' E SH 16
No. of Spans: 4 Features Intersected: CACHE CREEK
Length(m): 95.4 Width(m): 6.2
Struc.Type: 1 - CONCRETE 12 - ARCH - THRU

SUBSTRUCTURE

Abutment Type : V - Vertical Pile Type : U - Unknown
Foundation Type : F - Footing on Piles Pier Shape : R - Round

FLOW TRAINING WORKS & COUNTERMEASURES

Wing Walls Bank - RSP
Gabions



Pier Length (m)	:	32.5
Pier Shape (K1)	:	1.0
Angle of Attack (K2)	:	.0
Scour Limit Coefficient	:	2.4
Preliminary Scour(Ys) (Ys = Scour_Limit_Coef*K1*K2*a)	:	.00
Check Elevation (ETE-Ys/2) (m)	:	121.36
Allowable Elevation (m)	:	

Criteria : TOP: Complex Pier Scour
Not Scour Critical

1st Reviewer : M. B. Kim 2nd Reviewer : Tony Nedwick
Date : 02/28/01
Reason : Q ABC Code : C2 Item 113 : 3

Calculated Scour Elevation < Allowable Scour Elevation	Moderate probability of problems	Bridge is Scour Critical; bridge foundations determined to be unstable for calculated scour conditions.

Comments : Preliminary reason: "Q", Calc. Scour Elevation < Allowable Scour Elevation.
Detailed reason: "Y", Engineering Judgement, In.
NBIS Item: "3", Bridge is scour critical; bridge foundations determined to be unstable for calculated scour conditions.
ABC Code: "C2", Moderate probability of problems.

Bridge No.: 22C0003 **Structure Name:** CACHE CREEK

Year Built: 1930 Location: 500' E SH 16

No. of Spans: 2 Features Intersected: CACHE CREEK

Length(m): 95.4 Width(m): 6.2

Struc.Type:

1st Reviewer : M. B. Kim BIR By :

2nd Reviewer : Tony Nedwick BIR Date:

Completion Date : 03/06/01

Reason: Q	ABC Code: C2	Item 113: 3
Calculated Scour Elevation < Allowable Scour Elevation	Moderate probability of problems	Bridge is Scour Critical; bridge foundations determined to be unstable for calculated scour conditions.

Summary : Approximately 1m in depth, below the bottom of footing to the bottom of channel, was measured at the downstream end of Abutment 1 footing on 2/2/01.
Scour hole at the upstream end of Pier 2 was measured to be 0.75m(2.5') deep and 2m(6.5') wide around the circular pier nose on 2/2/01: No footing exposure was observed.

Even after a major band protection work in 1999-2000 at Abutment 1 and upstream west bank, the heavy rock slope protection has sank below the bottom of the footing at the downstream end of Abutment 1. Even after a major bank protection work in 1999-2000 at Abutment 1 and upstream west bank, the heavy rock slope protection has sank below the bottom of the footing at the downstream end of Abutment 1. The lost left wingwall due to 1995 storm was not reconstructed and protected only with rock slope protection. As the Ratings commented, sinking of the heavy rock slope protection indicates that Abutment 1 appears to be vulnerable to a major flood event and may risk the stability of the structure. Due to the unstable embankment condition and the exposure beneath the bottom of footing at Abutment 1, this structure is scour critical.

The Brease output indicates that scour depth is estimated 6.441m at Pier 2 without thalweg migration taken into consideration. The stability analysis is not conducted for the calculated scour depth due to unknown foundation at Pier 2. However, this structure becomes unstable if assumed that the existing pile tip elevation is near the as-built pile tip elevation of Abutment 1. The calculated scour depth (6.441m) is below the bottom of sheet piling (Elevation 118.963m) at Pier 2. Based on the assumption that the existing pile tip elevation at Pier 2 is near the pile tip elevation at Abutment 1, this structure is considered to be scour critical.

NBIS Item Code should be changed to "3", Bridge is scour critical; bridge foundations determined to be unstable for calculated scour conditions.

1 - CONCRETE 12 - ARCH - THRU

ABC Code should be

Comments : Preliminary reason: "Q", Calc. Scour Elevation < Allowable Scour Elevation.
Detailed reason: "Y", Engineering Judgement, In.
NBIS Item: "3", Bridge is scour critical; bridge foundations determined to be unstable for calculated scour conditions.
ABC Code: "C2", Moderate probability of problems.

California Department of Transportation
Division of Maintenance
Structure Maintenance and Investigations

Bridge

Inspection

Records

Information

System

The requested documents have been generated by BIRIS.

These documents are the property of the California Department of Transportation and should be handled in accordance with Deputy Directive 55 and the State Administrative Manual.

Records for "Confidential" bridges may only be released outside the Department of Transportation upon the execution of a confidentiality agreement.

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 22C0003
Facility Carried: C. R. 41
Location : 500' E SH 16
City :
Inspection Date : 10/12/2004

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: CACHE CREEK

CONSTRUCTION INFORMATION

Year Built : 1930
Year Widened: 1949
Length (m) : 95.4

Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Two span RC thru-tied arch with two RC T-beam (4) approach spans on RC piers and winged abutments. Abutment 1 and Pier 2 are founded on spread footings. Piers 3, 4, and Abutment 5 are founded on piles.

Span Configuration :1 @ 31.7 m (104.0'), 1 @ 32.9 m (108.0'), 2 @ 14.5 m (47.5')

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 16.3 metric tons Calculation Method: NO RATING ANALYSIS
Operating Rating: 25.4 metric tons Calculation Method: NO RATING ANALYSIS
Permit Rating : XXXXX
Posting Load : Type 3 N/A Type 3S2 N/A Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.5 m (1.8') br and cu, 6.2 m (20.5') rw, 0.5 m (1.8') cu and br

Total Width: 7.3 m Net Width: 6.2 m No. of Lanes: 2
Rail Description: Concrete window Rail Code : 0000
Min. Vertical Clearance: 4.390

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand and gravel with light bushes.

CONDITION TEXT

HISTORY

The structure consists of a two span RC through-tied arch with two RC T-beam (4) approach spans on RC piers and winged abutments. Abutment 1 and Pier 2 are founded on spread footings. Piers 3, 4, and Abutment 5 are founded on piles. The bridge was completed in 1930.

The photo record dated 1/10/95 shows that the approach embankment and entire left wingwall at Abutment 1 were washed out. Per the inspection report dated 7/31/96, large rock was placed to stabilize the embankment at Abutment 1.

The 4/12/99 inspection report noted that "The underwater investigation revealed scour at Abutment 1 with exposed sheet piling on the downstream side up to 2.7 m (9') below the bottom of footing. The sheet piles are exposed below the wingwall about 6.0 m up the embankment and up to 2.0 m below the wingwall footing."

Erosion countermeasure work (Bank Stabilization Project) was done at Abutment 1 and on the west bank up to 260 m (850') upstream in 1999. Spur dikes were constructed upstream of the bridge by this project.

CONDITION TEXT

The following conditions were noted in the Hydraulics inspection report dated 2/2/01 and have not changed significantly:

Even after major bank protection work in 1999-2000 at Abutment 1 and upstream on the west bank, the heavy rock slope protection is missing below the bottom of the footing at the downstream end of Abutment 1. There is no indication or records of reconstruction for the lost left wingwall due to the 1995 storm and the whole section is protected only with rock slope protection. The rock slope protection at Abutment 1 appears to be vulnerable to a major flood event and may risk the stability of the structure. Due to the unstable embankment condition and the exposure beneath the bottom of footing at Abutment 1, this structure is scour critical.

A primary concern for this structure is its ability to handle certain scour and seismic conditions. This concern is reinforced with the consultant report "Rumsey Bridge Investigation Report" by Northwest Hydraulic Consultants, dated October 02, 1995; and the draft consultant report "Structural Evaluation for the Rumsey Bridge #22C-03 in Yolo County", dated January 31, 1996.

WORK DONE

The vertical clearance sign attached to the portal of the bridge has been corrected.

CONDITION OF STRUCTURE

The concrete deck is abraded and there are large transverse deck cracks located at each arch suspender column.

There are many spalls with exposed reinforcing steel present in the portion of the original structure built in 1930. The spalls are primarily located in the soffit of the tied girders, the underside of the arches, and on the arch suspender columns. These spalls have been documented in past supplemental bridge reports dating back over 35 years ago. The condition of these spalls have not changed significantly within the past 10 years. The primary cause of the spalls is due to poor placement of the concrete and close spacing of the reinforcement which most likely prevented proper distribution of the aggregates and slurry during the concrete pour. The majority of the spalled areas are at rock pockets with shallow cover over the steel reinforcement. The exposed steel reinforcement does have surface rust which does not appear to have caused significant section loss of the reinforcing steel. (See attached photos.)

There are 500 lb. to 750 lb. boulders at the left side of Abutment 1, and 100 lb. to 200 lb. boulders at the right side of the Abutment 1. Despite the size of these boulders, it appears that the scour protection at this location is not sufficient, as noted in past Bridge Inspection Reports.

There are temporary k-rails placed at both sides of the approach to Abutment 1. These temporary rails are placed right on the edge of the existing scour at this location, there is little approach flare, and no impact transition.

This structure remains in poor condition as noted in past Supplemental Bridge Reports and Bridge Inspection Reports.

UNDERWATER INVESTIGATION

Pier 3, Pier 4, and Abutment 5 were dry at the time of the inspection. Abutment 1 was inspected using a Type "A", Wade / Probe, Underwater Investigation. Pier 2 was

CONDITION TEXT

inaccessible due to deep and swift water.

SCOUR

A scour hole at the left side of Abutment 1 was measured to be 1.3 m (50") below the top of the footing slope.

SIGNS

There are signs on the arch that read: Vertical Clearance 14' 4".

ELEMENT INSPECTION RATINGS

F#Elem	Element Description	Env	Total Units		Qty in each Condition State				
					St. 1	St. 2	St. 3	St. 4	St. 5
01 12	Concrete Deck - Bare	2	590	sq.m.	0	590	0	0	0
01 110	Reinforced Conc Open Girder/Beam	2	116	m.	0	114	2	0	
01 144	Reinforced Conc Arch	2	259	m.	0	0	259	0	0
01 210	Reinforced Conc Pier Wall	2	22	m.	0	22	0	0	0
01 215	Reinforced Conc Abutment	2	15	m.	0	15	0	0	0
01 304	Open Expansion Joint	2	7	m.	7	0	0	0	0
01 311	Moveable Bearing (roller, sliding, etc.)	2	4	ea.	4	0	0	0	0
01 331	Reinforced Conc Bridge Railing	2	215	m.	0	0	215	0	0
01 358	Deck Cracking	2	1	ea.	0	1	0	0	0
01 361	Scour	2	1	ea.	0	0	1	0	0

WORK RECOMMENDATIONS

RecDate: 11/14/2000
Action : Sub-Scour Mitiga
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

The County should take corrective measures to avoid the scour threat to the stability of this structure.

RecDate: 07/31/1996
Action : Super-Rehab
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Schedule this structure for extensive rehabilitation of the arches and girders. Consideration should be given to replacing this structure.

RecDate: 07/31/1996
Action : Railing-Upgrade
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Replace the temporary K-rail with a metal beam guard rail at the left and right approaches to Abutment 1.

Inspected By : Andrew W. Corker

Registered Civil Engineer

CC: Charles Ineichen, Hydraulics

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **22C0003**
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 03
(3) COUNTY CODE 113 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- CACHE CREEK
(7) FACILITY CARRIED- C. R. 41
(9) LOCATION- 500' E SH 16
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 38 DEG 53 MIN 25 SEC
(17) LONGITUDE 122 DEG 14 MIN 18.3 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE
TYPE- ARCH - THRU CODE 112
(44) STRUCTURE TYPE APPR:MATERIAL- CONCRETE
TYPE- TEE BEAM CODE 104
(45) NUMBER OF SPANS IN MAIN UNIT 2
(46) NUMBER OF APPROACH SPANS 2
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- CONCRETE CODE 1
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1930
(106) YEAR RECONSTRUCTED 1949
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 100
(30) YEAR OF ADT 1978 (109) TRUCK ADT 0 %
(19) BYPASS, DETOUR LENGTH 101 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 32.9 M
(49) STRUCTURE LENGTH 95.4 M
(50) CURB OR SIDEWALK: LEFT 0.5 M RIGHT 0.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 6.2 M
(52) DECK WIDTH OUT TO OUT 7.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 4.6 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 4.39 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 6.2 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 4.39 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NOT APPLICABLE CODE N
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 46.8
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 46.4
PAINT CONDITION INDEX = N/A

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MAJOR COLLECTOR RURAL 07
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- COUNTY HIGHWAY AGENCY 02
(22) OWNER- COUNTY HIGHWAY AGENCY 02
(37) HISTORICAL SIGNIFICANCE- ELIGIBLE 2

********** CONDITION ********** CODE

(58) DECK 5
(59) SUPERSTRUCTURE 4
(60) SUBSTRUCTURE 4
(61) CHANNEL & CHANNEL PROTECTION 6
(62) CULVERTS N

******** LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- OTHER OR UNKNOWN 0
(63) OPERATING RATING METHOD- NO RATING ANALYSIS 5
(64) OPERATING RATING- 25.4
(65) INVENTORY RATING METHOD- NO RATING ANALYSIS 5
(66) INVENTORY RATING- 16.3
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 4
(68) DECK GEOMETRY 5
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 4
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 3

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- REPLACE FOR DEFICIENC CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT 104.889 M
(94) BRIDGE IMPROVEMENT COST $919,000
(95) ROADWAY IMPROVEMENT COST $92,000
(96) TOTAL PROJECT COST $1,378,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 1999
(114) FUTURE ADT 300
(115) YEAR OF FUTURE ADT 2015

********** INSPECTIONS **********

(90) INSPECTION DATE 10/04 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- YES 60 MO B)
C) OTHER SPECIAL INSP- NO MO C)

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 22C0003
Facility Carried: C. R. 41
Location : 500' E SH 16
City :
Inspection Date : 12/04/2002
Inspection Type

Routine	Group A	Underwater	Special	Other
X				

Bridge Inspection Report

STRUCTURE NAME: CACHE CREEK

CONSTRUCTION INFORMATION

Year Built : 1930
Year Widened : 1949
Length (m) : 95.4
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Two span RC thru-tied arch with two RC T-beam (4) approach spans on RC piers and winged abutments. Abutment 1 and Pier 2 are founded on spread footings. Piers 3, 4, and Abutment 5 are founded on piles.

Span Configuration : 1 @ 31.7 m (104.0'), 1 @ 32.9 m (108.0'), 2 @ 14.5 m (47.5')

LOAD CAPACITY AND RATINGS

Design Live Load : OTHER OR UNKNOWN
Inventory Rating : 16.3 metric tons Calculation Method : NO RATING ANALYSIS
Operating Rating : 25.4 metric tons Calculation Method : NO RATING ANALYSIS
Permit Rating : XXXXX
Posting Load : Type 3 N/A Type 3S2 N/A Type 3-3 N/A

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.5 m (1.8') br and cu, 6.2 m (20.5') rw, 0.5 m (1.8') cu and br

Total Width : 7.3 m Net Width : 6.2 m No. of Lanes :2
Rail Description : Concrete window Rail Code :0000
Min. Vertical Clearance: 4.390

DESCRIPTION UNDER STRUCTURE

Channel Description :Sand and gravel with light bushes.

HISTORY

The structure consists of a two span RC thru-tied arch with two RC T-beam (4) approach spans on RC piers and winged abutments. Abutment 1 and Pier 2 are founded on spread footings. Piers 3, 4, and Abutment 5 are founded on piles. The bridge was completed in 1930.

The photo record dated 1/10/95 shows that the approach embankment and entire left wingwall at Abutment 1 were washed out. Per the inspection report dated 7/31/96, large rock was placed to stabilize the embankment at Abutment 1.

The 4/12/99 inspection report noted that "The underwater investigation revealed scour at Abutment 1 with exposed sheet piling on the downstream side up to 2.7 m (9') below the bottom of footing. The sheet piles are exposed below the wingwall about 6.0 m up the embankment and up to 2.0 m below the wingwall footing."

Erosion countermeasure work (Bank Stabilization Project) was done at Abutment 1 and on the west bank up to 260 m (850') upstream in 1999. Spur dikes were constructed upstream of the bridge by this project. (See attached photos.)

The following conditions were noted in the Hydraulics inspection report dated 2/2/01 and have not changed significantly:

Even after major bank protection work in 1999-2000 at Abutment 1 and upstream on the west bank, the heavy rock slope protection is missing below the bottom of the footing at the downstream end of Abutment 1. There is no indication or records of reconstruction for the lost left wingwall due to the 1995 storm and the whole section is protected only with rock slope protection. The rock slope protection at Abutment 1 appears to be vulnerable to a major flood event and may risk the stability of the structure. Due to the unstable embankment condition and the exposure beneath the bottom of footing at Abutment 1, this structure is scour critical.

CONDITION OF STRUCTURE

The vertical clearance sign at the west portal is missing a number. It reads: "Vertical Clearance 4'4" instead of 14'4".

There are piles of concrete forming below the tie-beams in Spans 1 and 2 near Bent 2 where existing spalls are expanding in the bottom of the tie-beams.

There is a large tree down in the channel immediately downstream of the bridge that could cause potential flood problems and backing up of the channel during high water flows.

The following conditions have been noted in previous bridge inspections and have not changed significantly:

The concrete deck is abraded and there are large transverse deck cracks located at each arch suspender column.

There are many spalls with exposed reinforcing steel present on the portion of the original structure built in 1930. The spalls are primarily located on the soffit of the tied girders, soffit of the arches, and on the arch suspender columns. These spalls have been documented in past supplemental bridge reports dating back over 35 years ago. The condition of these spalls have not changed significantly within the past 10 years. The primary cause of the spalls is due to poor placement of the concrete and close spacing of the reinforcement which most likely prevented proper distribution of the aggregates and slurry during the concrete pour. The majority of the spalled areas are at rock pockets with shallow cover over the steel reinforcement. The exposed steel reinforcement does have surface rust which does not appear to have caused significant section loss of the reinforcing steel. (See attached photos.)

A primary concern for this structure is its ability to handle certain scour and seismic conditions. This concern is reinforced with the consultant report "Rumsey Bridge Investigation Report" by Northwest Hydraulic Consultants, dated October 02, 1995; and the draft consultant report "Structural Evaluation for the Rumsey Bridge #22C-03 in Yolo County", dated January 31, 1996.

This structure remains in poor condition as outlined several times in past Supplemental Bridge Reports and Bridge Inspection Reports. The scour will continue to be a threat to the stability of this structure.

SCOUR

Footing exposure was measured at 1.35 m in depth below the bottom of the footing at the upstream end of Abutment 1. A scour hole at the upstream end of Pier 2 was measured at 0.75 m (2.5') deep and 2.0 m (6.5') wide around the circular pier nose. No footing exposure was observed.

SIGNS

There are signs on the arch that state: Vertical Clearance 14' 4".

ELEMENT INSPECTION RATINGS

F# Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01 12	Concrete Deck - Bare	2	590	sq.m.	0	590	0	0	0
01 110	Reinforced Conc Open Girder/Beam	2	116	m.	0	116	0	0	
01 144	Reinforced Conc Arch	2	259	m.	0	0	259	0	
01 210	Reinforced Conc Pier Wall	2	22	m.	0	22	0	0	
01 215	Reinforced Conc Abutment	2	15	m.	0	15	0	0	
01 304	Open Expansion Joint	2	7	m.	7	0	0	0	0
01 311	Moveable Bearing (roller, sliding, etc.)	2	4	ea.	4	0	0	0	0
01 331	Reinforced Conc Bridge Railing	2	215	m.	0	0	215	0	
01 358	Deck Cracking	2	1	ea.	0	1	0	0	0
01 361	Scour	2	1	ea.	0	0	1		

WORK RECOMMENDATIONS

RecDate: 12/04/2002	EstCost:		Remove the large tree from the channel immediately downstream from the bridge.
Action : Bridge-Misc	StrTarget:	6 MONTHS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		
RecDate: 12/04/2002	EstCost:		Correct the vertical clearance sign at the west portal of the bridge.
Action : Bridge-Misc	StrTarget:	2 YEARS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		
RecDate: 11/14/2000	EstCost:		The County should take corrective measures to avoid the scour threat to the stability of this structure.
Action : Sub-Scour Mitiga	StrTarget:	2 YEARS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		
RecDate: 07/31/1996	EstCost:		Schedule this structure for extensive rehabilitation of the arches and girders. Consideration may be given to replacement of this structure.
Action : Super-Rehab	StrTarget:	2 YEARS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		
RecDate: 07/31/1996	EstCost:		Replace the temporary K-rail with a metal beam guard rail at the left approach to Abutment 1.
Action : Railing-Replace	StrTarget:	2 YEARS	
Work By: LOCAL AGENCY	DistTarget:		
Status : PROPOSED	EA:		

Inspected By : Patti B. Clawson

Patti B. Clawson
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
PATTI B. CLAWSON
63380
EXP 9-30-06
CIVIL
STATE OF CALIFORNIA

CC: Steve Jaques, Hydraulics

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	22C0003
(5)	INVENTORY ROUTE(ON/UNDER)- ON	140000000
(2)	HIGHWAY AGENCY DISTRICT	03
(3)	COUNTY CODE 113 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED-	CACHE CREEK
(7)	FACILITY CARRIED-	C. R. 41
(9)	LOCATION-	500' E SH 16
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	38 DEG 53 MIN 25 SEC
(17)	LONGITUDE	122 DEG 14 MIN 18.3 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

******** STRUCTURE TYPE AND MATERIAL *********

(43)	STRUCTURE TYPE MAIN:MATERIAL-	CONCRETE
	TYPE- ARCH - THRU	CODE 112
(44)	STRUCTURE TYPE APPR:MATERIAL-	
	TYPE- TEE BEAM	CODE 100
(45)	NUMBER OF SPANS IN MAIN UNIT	2
(46)	NUMBER OF APPROACH SPANS	2
(107)	DECK STRUCTURE TYPE- CIP CONCRETE	CODE 1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
A)	TYPE OF WEARING SURFACE- CONCRETE	CODE 1
B)	TYPE OF MEMBRANE- NONE	CODE 0
C)	TYPE OF DECK PROTECTION- NONE	CODE 0

********** AGE AND SERVICE **********

(27)	YEAR BUILT	1930
(106)	YEAR RECONSTRUCTED	1949
(42)	TYPE OF SERVICE: ON- HIGHWAY	1
	UNDER- WATERWAY	5
(28)	LANES: ON STRUCTURE 02 UNDER STRUCTURE	00
(29)	AVERAGE DAILY TRAFFIC	100
(30)	YEAR OF ADT 1998 (109) TRUCK ADT	%
(19)	BYPASS, DETOUR LENGTH	101 KM

********** GEOMETRIC DATA **********

(48)	LENGTH OF MAXIMUM SPAN	32.9 M
(49)	STRUCTURE LENGTH	95.4 M
(50)	CURB OR SIDEWALK: LEFT .5 M RIGHT	.5 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	6.2 M
(52)	DECK WIDTH OUT TO OUT	7.3 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	4.6 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	4.39 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	6.2 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	4.39 M
(54)	MIN VERT UNDERCLEAR REF- NOT H/RR	0 M
(55)	MIN LAT UNDERCLEAR RT REF- NOT H/RR	0 M
(56)	MIN LAT UNDERCLEAR LT	0 M

********** NAVIGATION DATA **********

(38)	NAVIGATION CONTROL- NOT APPLICABLE	CODE N
(111)	PIER PROTECTION-	CODE
(39)	NAVIGATION VERTICAL CLEARANCE	0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0 M

****

SUFFICIENCY RATING =	46.8
STATUS	STRUCTURALLY DEFICIENT
HEALTH INDEX	47.6
PAINT CONDITION INDEX	N/A

********** CLASSIFICATION ********** CODE

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- MAJOR COLLECTOR RURAL	07
(100)	DEFENSE HIGHWAY- NOT STRAHNET	0
(101)	PARALLEL STRUCTURE- NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC- 2 WAY	2
(103)	TEMPORARY STRUCTURE-	
(105)	FED.LANDS HWY-	
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL- ON FREE ROAD	3
(21)	MAINTAIN- COUNTY HIGHWAY AGENCY	02
(22)	OWNER- COUNTY HIGHWAY AGENCY	02
(37)	HISTORICAL SIGNIFICANCE- ELIGIBLE	2

********** CONDITION ********** CODE

(58)	DECK	5
(59)	SUPERSTRUCTURE	4
(60)	SUBSTRUCTURE	4
(61)	CHANNEL & CHANNEL PROTECTION	6
(62)	CULVERTS	N

******** LOAD RATING AND POSTING ********* CODE

(31)	DESIGN LOAD- OTHER OR UNKNOWN	0
(63)	OPERATING RATING METHOD- NO RATING ANALYSIS	5
(64)	OPERATING RATING-	25.4
(65)	INVENTORY RATING METHOD- NO RATING ANALYSI	5
(66)	INVENTORY RATING-	16.3
(70)	BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED-	A
	DESCRIPTION- OPEN, NO RESTRICTION	

********** APPRAISAL ********** CODE

(67)	STRUCTURAL EVALUATION	4
(68)	DECK GEOMETRY	5
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	7
(72)	APPROACH ROADWAY ALIGNMENT	4
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	3

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- REPLACE FOR DEFICIENC CODE	31
(76)	LENGTH OF STRUCTURE IMPROVEMENT	104.89 M
(94)	BRIDGE IMPROVEMENT COST	$919,000
(95)	ROADWAY IMPROVEMENT COST	$92,000
(96)	TOTAL PROJECT COST	$1,378,000
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	1999
(114)	FUTURE ADT	300
(115)	YEAR OF FUTURE ADT	2015

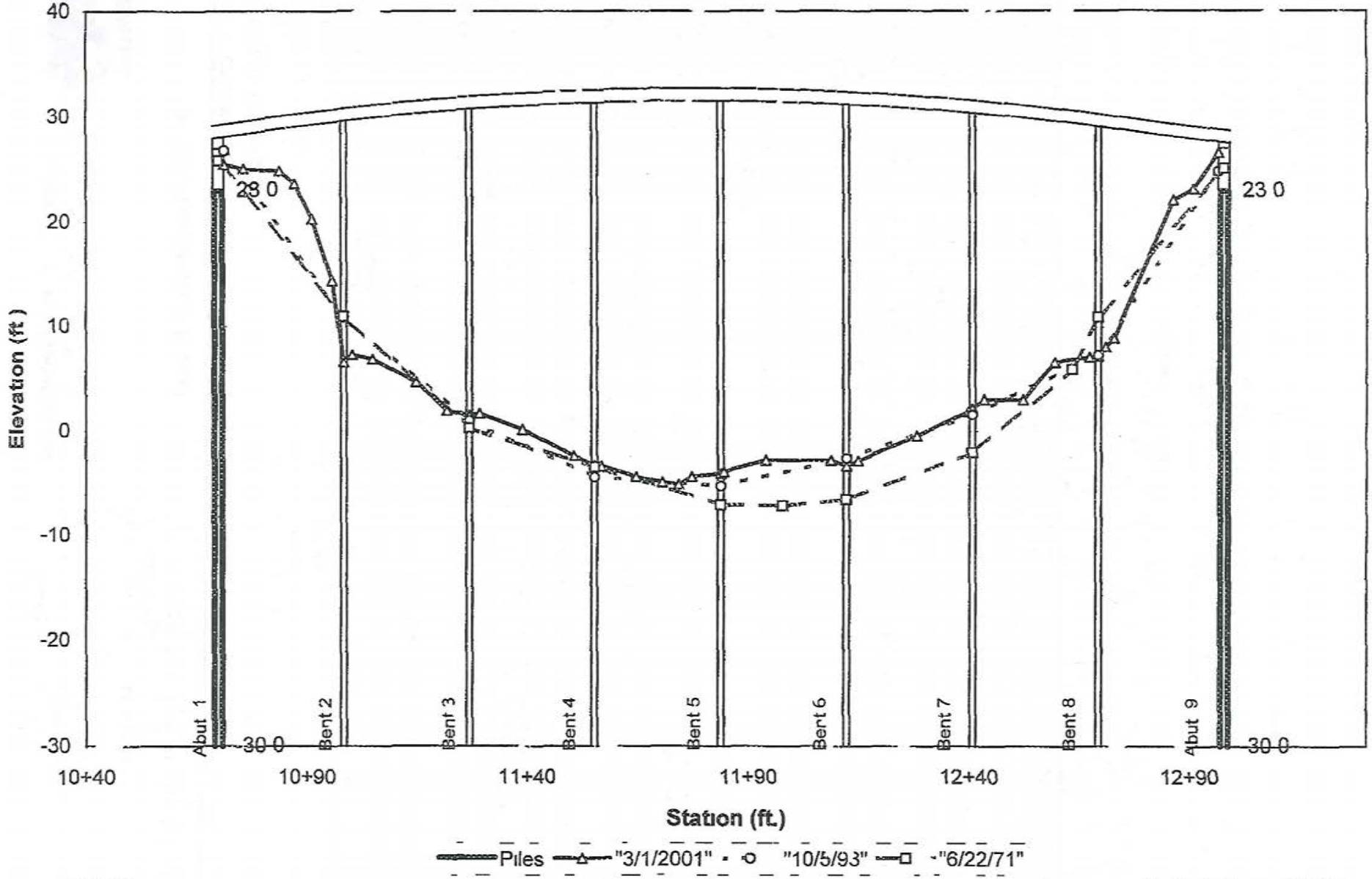
********** INSPECTIONS **********

(90)	INSPECTION DATE 12/02 (91) FREQUENCY	24 MO
(92)	CRITICAL FEATURE INSPECTION:	(93) CFI DATE
A)	FRACTURE CRIT DETAIL- NO -1 MO	A)
B)	UNDERWATER INSP- NO -1 MO	B)
C)	OTHER SPECIAL INSP- NO -1 MO	C)

Bridge ID 22c0003

Yolo Co CR158

Elk Slough - Upstream



22c0025

By M B Kim on 3/12/01

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Caltrans

Bridge Inspection Report

Bridge Number : **22C0003**
Facility Carried: **COUNTY ROAD 41**
Location : **500' E SH 16**
City :
Inspection Date : **14-NOV-00**

Inspection Type

Routine	Group A	Underwater	Special	Other
X				

Name : CACHE CREEK

CONSTRUCTION INFORMATION

Year Built : 1930
Year Widened : 1949
Length (m) : 95.4

Skew (degrees): 0
No. of Joints : 3
No. of Hinges : 0

Description of Structure : RC thru-tied arch, RC T-beam (4). RC piers and winged abutments. Pier 4 and Abutment 5 on piles.

Span Configuration : 1 @ 31.7 m (104.0'), 1 @ 32.9 m (108.0'), 2 @ 14.5 m (47.5')

LOAD CAPACITY AND RATINGS

Design Live Load : OTHER OR UNKNOWN
Inventory Rating : 16.3 metric tons — Calculation Method : NO RATING ANALYSIS
Operating Rating : 25.4 metric tons — Calculation Method : NO RATING ANALYSIS
Permit Rating : XXXXX
Posting Load : Type 3 N/A english tons Type 3S2 N/A english tons Type 3-3 N/A english tons

DESCRIPTION ON STRUCTURE

Bridge width : 0.5 m (1.8') r and cu, 6.2 m (20.5') rw, 0.5 m (1.8') cu and r

Total Width : 7.3 m — Net Width : 6.20 m — No. of Lanes : 2
Rail Description : Concrete window — Rail Code : 0000
Min. Vertical Clearance : 4.390 m

DESCRIPTION UNDER STRUCTURE

Channel Description : Sand and gravel with light bushes.

CONDITION OF STRUCTURE

This bridge remains in the same poor condition as previously reported.

The scour at Abutment 1 has been filled with rocks. There is no scour problem observed at Bent 2. All elements of the structure were inspected by either visual or probing.

There was 0.5 m water in the channel.

The concrete deck is abraded and there are large transverse deck cracks located at each arch suspender column.

There are many spalls with exposed reinforcing steel present on the portion of the original structure built in 1930. The spalls are primarily located on the soffit of the tied girders, soffit of the arches, and on the arch suspender columns. These spalls have been documented in past supplemental bridge reports dating back over 35 years ago. The condition of these spalls have not changed significantly within the past 10 years. The primary cause of the spalls is due to poor placement of the concrete and close spacing of the reinforcement which most likely prevented proper distribution of the aggregates and slurry during the concrete pour. The majority of the spalled areas are at rock pockets with shallow cover over the steel reinforcement. The exposed steel reinforcement does have surface rust which does not appear to have caused significant section loss of the reinforcing steel. This structure continues to perform in practically the same condition as noted in previous Supplemental Bridge Reports.

A primary concern for this structure is its ability to handle certain scour and seismic conditions. This concern is reinforced with the consultant report "Rumsey Bridge Investigation Report" by Northwest Hydraulic Consultants, dated October 02, 1995; and the draft consultant report "Structural Evaluation for the Rumsey Bridge #22C-03 in Yolo County", dated January 31, 1996.

This structure remains in poor condition as outlined several times in past supplemental bridge reports. The scour will continue to be a threat to the stability of this structure.

Printed on : 12-MAR-2001 10:14:11 AM

Bridge No.: 22C0003 **Location: 500' E SH 16** **Inspection Date: 14-NOV-00**

SIGNS

There are signs on the arch that state: Vertical Clearance 14' 4".

ELEMENT LEVEL INSPECTION RATINGS

F#	Elem No.	Element Description	Env	Total Units Quantity	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01	12	Concrete Deck - Bare	3	590 sq.m.	0	590	0	0	0
01	110	Reinforced Conc Open Girder/Beam	3	116 m.	0	116	0	0	0
01	144	Reinforced Conc Arch	3	259 m.	0	0	259	0	0
01	210	Reinforced Conc Pier Wall	3	22 m.	0	22	0	0	0
01	215	Reinforced Conc Abutment	3	15 m.	0	15	0	0	0
01	304	Open Expansion Joint	2	7 m.	7	0	0	0	0
01	311	Moveable Bearing (roller, sliding, etc.)	2	4 ea.	4	0	0	0	0
01	331	Reinforced Conc Bridge Railing	3	215 m.	0	0	215	0	0
01	358	Deck Cracking	2	1 ea.	0	1	0	0	0

WORK RECOMMENDATIONS

Replace the temporary K-rail with a metal beam guard rail at the left approach to Abutment 1.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
1	31-JUL-1996	County Agency	40003X96213X		

Schedule this structure for extensive rehabilitation of the arches and girders. Consideration may be given to replacement of this structure.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
2	31-JUL-1996	County Agency	40003X96213X		

The County should take corrective measures to avoid the scour threat to the stability of this structure.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
3	14-NOV-2000	County Agency	40003X00319X		

Inspected By : Bari Nekaien

Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
RICHARD P. JORGENSEN
No. C52420
Exp. 12-31-02
CIVIL
STATE OF CALIFORNIA

cc : Steve Jaques, Hydraulics
Tony Nedwick, Hydraulics
Mike Wayne Johnson, ABME

Printed on : 12-MAR-2001 10:14:11 AM

Bridge No.: 22C0003 **Location: 500' E SH 16** **Inspection Date: 14-NOV-00**

STRUCTURE INVENTORY AND APPRAISAL REPORT

IDENTIFICATION

(1)	STATE NAME - CALIFORNIA	069
(8)	STRUCTURE NUMBER	22C0003
(5)	INVENTORY ROUTE(ON/UNDER) - ON	1 40 000000
(2)	HIGHWAY AGENCY DISTRICT	03
(3)	COUNTY CODE 113 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED - CACHE CREEK	
(7)	FACILITY CARRIED - COUNTY ROAD 41	
(9)	LOCATION - 500' E SH 16	
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK - NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	38 DEG 53 MIN 30 SEC
(17)	LONGITUDE	122 DEG 14 MIN 18 SEC
(98)	BORDER BRIDGE STATE CODE	% SHARE %
(99)	BORDER BRIDGE STRUCTURE NUMBER	

STRUCTURE TYPE AND MATERIAL

(43)	STRUCTURE TYPE MAIN: MATERIAL - CONCRETE TYPE - ARCH - THRU	CODE 1 12
(44)	STRUCTURE TYPE APPR: MATERIAL - CONCRETE TYPE - TEE BEAM	CODE 104
(45)	NUMBER OF SPANS IN MAIN UNIT	2
(46)	NUMBER OF APPROACH SPANS	2
(107)	DECK STRUCTURE TYPE CIP CONCRETE	CODE 1
(108)	WEARING SURFACE / PROTECTIVE SYSTEM:	
	A) TYPE OF WEARING SURFACE - CONCRETE	CODE 1
	B) TYPE OF MEMBRANE - NONE	CODE 0
	C) TYPE OF DECK PROTECTION - NONE	CODE 0

AGE AND SERVICE

(27)	YEAR BUILT	1930
(106)	YEAR RECONSTRUCTED	1949
(42)	TYPE OF SERVICE: ON - HIGHWAY	1
	UNDER - WATERWAY	5
(28)	LANES: ON STRUCTURE 02 UNDER STRUCTURE	
(29)	AVERAGE DAILY TRAFFIC	100
(30)	YEAR OF ADT 1998 (109) TRUCK ADT	%
(19)	BYPASS, DETOUR LENGTH	101 KM

GEOMETRIC DATA

(48)	LENGTH OF MAXIMUM SPAN	32.9 M
(49)	STRUCTURE LENGTH	95.4 M
(50)	CURB OR SIDEWALK: LEFT .5 M RIGHT	.5 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	6.2 M
(52)	DECK WIDTH OUT TO OUT	7.3 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	4.6 M
(33)	BRIDGE MEDIAN - NO MEDIAN	0
(34)	SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	4.39 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	6.2 M
(53)	MIN VERT CLEAR OVER BRIDGE RDWY	4.39 M
(54)	MIN VERT UNDERCLEAR REF - NOT H/RR	0 M
(55)	MIN LAT UNDERCLEAR RT REF - NOT H/RR	0 M
(56)	MIN LAT UNDERCLEAR LT	0 M

NAVIGATION DATA

(38)	NAVIGATION CONTROL - NOT APPLICABLE	CODE N
(111)	PIER PROTECTION -	CODE
(39)	NAVIGATION VERTICAL CLEARANCE	0 M
(116)	VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40)	NAVIGATION HORIZONTAL CLEARANCE	0

SUFFICIENCY RATING = 46.8

STATUS = STRUCTURALLY DEFICIENT

HEALTH INDEX = 47.65

CLASSIFICATION

(112)	NBIS BRIDGE LENGTH - YES	Y
(104)	HIGHWAY SYSTEM - NOT ON NHS	0
(26)	FUNCTIONAL CLASS - MAJOR COLLECTOR RURAL	07
(100)	DEFENSE HIGHWAY - NOT STRAHNET	0
(101)	PARALLEL STRUCTURE - NONE EXISTS	N
(102)	DIRECTION OF TRAFFIC - 2 WAY	2
(103)	TEMPORARY STRUCTURE -	
(105)	FEDERAL LANDS HIGHWAY -	
(110)	DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20)	TOLL - ON FREE ROAD	3
(21)	MAINTAIN - COUNTY HIGHWAY AGENCY	2
(22)	OWNER - COUNTY HIGHWAY AGENCY	2
(37)	HISTORICAL SIGNIFICANCE - ELIGIBLE	2

CONDITION

(58)	DECK	5
(59)	SUPERSTRUCTURE	4
(60)	SUBSTRUCTURE	6
(61)	CHANNEL & CHANNEL PROTECTION	6
(62)	CULVERTS	N

LOAD RATING AND POSTING

(31)	DESIGN LOAD - OTHER OR UNKNOWN	0
(63)	OPERATING RATING METHOD - NO RATING ANALYSIS	5
(64)	OPERATING RATING -	25.4
(65)	INVENTORY RATING METHOD - NO RATING ANALYSIS	5
(66)	INVENTORY RATING -	16.3
(70)	BRIDGE POSTING - Equal to or above legal loads	5
(41)	STRUCTURE OPEN, POSTED OR CLOSED - DESCRIPTION - OPEN, NO RESTRICTION	A

APPRAISAL

(67)	STRUCTURAL EVALUATION	4
(68)	DECK GEOMETRY	5
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	7
(72)	APPROACH ROADWAY ALIGNMENT	4
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	6

PROPOSED IMPROVEMENTS

(75)	TYPE OF WORK - REPLACE FOR DEFICIENCY	CODE 31
(76)	LENGTH OF STRUCTURE IMPROVEMENT	104.889 M
(94)	BRIDGE IMPROVEMENT COST	$919,000
(95)	ROADWAY IMPROVEMENT COST	$92,000
(96)	TOTAL PROJECT COST	$1,378,000
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	1999
(114)	FUTURE ADT	300
(115)	YEAR OF FUTURE ADT	2015

INSPECTIONS

(90) INSPECTION DATE 11/00 (91) FREQUENCY 24 MO

(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE

A)	FRACTURE CRIT DETAIL - NO	-1 MO	A)
B)	UNDERWATER INSP - NO	-1 MO	B)
C)	OTHER SPECIAL INSP - NO	-1 MO	C)

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DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Caltrans

Bridge Number : 22C0003
Facility Carried: C.R. #41
Location : 500' E SH 16
City :
Inspection Date : 12-APR-99

Inspection Type

Routine	Group A	Underwater	Special	Other
X				

Bridge Inspection Report

Name : CACHE CREEK

CONSTRUCTION INFORMATION

Year Built : 1930
Year Widened : 1949
Length (m) : 95.4

Skew (degrees): 0
No. of Joints : 3
No. of Hinges : 0

Description of Structure : RC thru-tied arch, RC T-beam (4). RC piers and winged abutments. Pier 4 and Abutment 5 on piles.

Span Configuration : 1 @ 31.7m (104.0'), 1 @ 32.9m (108.0'), 2 @ 14.5m (47.5')

LOAD CAPACITY AND RATINGS

Design Live Load : OTHER OR UNKNOWN
Inventory Rating : 16.3 metric tons
Operating Rating : 25.4 metric tons
Permit Rating : XXXXX
Posting Load : Type 3 N/A english tons

Calculation Method : NO RATING ANALYSIS
Calculation Method : NO RATING ANALYSIS

Type 3S2 N/A english tons Type 3-3 N/A english tons

DESCRIPTION ON STRUCTURE

Bridge width : 0.5m (1.8') r and cu, 6.2m (20.5') rw, 0.5m (1.8') cu and r
Total Width : 7.3 m
Net Width : 6.20 m
No. of Lanes : 2
Rail Description : Concrete window
Rail Code : 0000
Min. Vertical Clearance : 4.390 m

DESCRIPTION UNDER STRUCTURE

Channel Description : Sand and gravel with light bushes.

CONDITION OF STRUCTURE

The concrete deck is abraded and there are large transverse deck cracks located at each arch suspender column.

There are many spalls with exposed reinforcing steel present on the portion of the original structure built in 1930. The spalls are primarily located on the soffit of the tied girders, soffit of the arches, and on the arch suspender columns. These spalls have been documented in past supplemental bridge reports dating back over 35 years ago. The condition of these spalls have not changed significantly within the past 10 years. The primary cause of the spalls is due to poor placement of the concrete and close spacing of the reinforcement which most likely prevented proper distribution of the aggregates and slurry during the concrete pour. The majority of the spalled areas are at rock pockets with shallow cover over the steel reinforcement. The exposed steel reinforcement does have surface rust which does not appear to have caused significant section loss of the rienforcing steel. This structure continues to perform in practically the same condition as noted in previous Supplemental Bridge Reports.

A primary concern for this structure is its ability to handle certain scour and seismic conditions. This concern is reinforced with the consultant report "Rumsey Bridge Investigation Report" by Northwest Hydraulic Consultants, dated 2 October 1995; and the draft consultant report "Structural Evaluation for the Rumsey Bridge #22C-03 in Yolo County", dated January 31, 1996.

This structure remains in poor condition as outlined several times in past supplemental bridge reports. The scour conditions stated below continue to be a threat to the stability of this structure.

SCOUR

This structure has scour below the footing at Abutment 1 and the footing at Pier 2. Both footings are cast on sheet piles. There was an underwater investigation of the structure on 3 December 1998 to investigate the scour. The underwater investigation revealed scour at Abutment 1 with exposed sheet piling on the downstream side up to 2.7 meters (9 feet) below the bottom of the footing. The scour tapers up to no scour at the rock slope protection on the upstream side. The scour at Abutment 1 also extends up along the right wingwall which is also founded on sheet piling. The sheet piles are exposed below the wingwall about 6 meters up the embankment and up to 2 meters below the wingwall footing.

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Bridge No.: 22C0003 **Location: 500' E SH 16** **Inspection Date: 12-APR-99**

The underwater investigation also determined that scour exists at Pier 2 along the Span 1 side of the footing. Sheet piles below the Pier 2 footing are exposed up to 1.3 meters below the footing in the middle of the pier and extends downstream and upstream to the left and right end of the pier with no exposed sheet piles.

A stream section was taken with the use of the boogie board and depth detector. See the attached stream section.

SIGNS

There are signs on the arch that state: Vertical Clearance 14' 4".

ELEMENT LEVEL INSPECTION RATINGS

F#	Elem No.	Element Description	Env	Total Units Quantity	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
01	12	Concrete Deck - Bare	3	590 sq.m.	0	590	0	0	0
01	110	Reinforced Conc Open Girder/Beam	3	116 m.	0	116	0	0	0
01	144	Reinforced Conc Arch	3	259 m.	0	0	259	0	0
01	210	Reinforced Conc Pier Wall	3	22 m.	0	22	0	0	0
01	215	Reinforced Conc Abutment	3	15 m.	0	15	0	0	0
01	304	Open Expansion Joint	2	7 m.	7	0	0	0	0
01	311	Moveable Bearing (roller, sliding, etc.)	2	4 ea.	4	0	0	0	0
01	331	Reinforced Conc Bridge Railing	3	215 m.	0	0	215	0	0
01	358	Deck Cracking	2	1 ea.	0	1	0	0	0

WORK RECOMMENDATIONS

Replace the temporary K-rail with a metal beam guard rail at the left approach to Abutment 1.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
1	31-JUL-1996	County Agency	40003X96213X		

Schedule this structure for extensive rehabilitation of the arches and girders. Consideration may be given to replacement of this structure.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
2	31-JUL-1996	County Agency	40003X96213X		

Repair the scour at Abutment 1 and Pier 2.

Item#	Rec. Date	Work By	Work Id.	Prog. Method	Cost
3	12-APR-1999	County Agency	40003X99102X		

Inspected By : Michael W. Johnson

Michael W. Johnson
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
MICHAEL WAYNE JOHNSON
No. C56644
Exp. 6/30/01
CIVIL
STATE OF CALIFORNIA

CC : Steve Ng - Hydraulics

Printed on : 22-APR-1999 04:26:40 PM

SMS12001 AAAB

Bridge No.: 22C0003 **Location: 500' E SH 16** **Inspection Date: 12-APR-99**

CHANNEL X-SECTION

Profile : Downstream

Profile Date : 12-APR-99

Measured From : Top of Rail

Location	Horiz(m)	Vert(m)	Comments
Measured from B.B. at A1	2.70	11.20	About 5 feet from A1
	7.00	10.00	
	9.90	10.90	
	17.20	13.00	
End of first arch	28.70	10.20	
	55.20	7.20	Stream depth past gravel bar
	25.10	10.60	
	21.00	12.40	
	12.70	11.80	
Span 1 side of Pier 2	31.40	8.10	

Profile : Upstream

Profile Date : 12-APR-99

Measured From : Top of Rail

Location	Horiz(m)	Vert(m)	Comments
Measured from B.B.	4.50	8.40	6.6m from top of rail to water surface
First arch suspender col.	6.80	10.80	
	12.20	12.70	6.6m from top of rail to water surface.
	16.00	12.70	
	17.00	12.10	
	20.00	11.20	
	24.00	10.30	
End of first arch	28.00	9.00	
Span 1 side of Pier 2	31.00	8.40	
Span 2 side of Pier 2	33.60	7.20	
Edge of Stream	36.40	6.90	
Top of gravel bar	41.30	8.50	
Edge of Stream	48.30	6.60	
	52.80	7.20	6.6m from top of rail to water surface
	57.30	7.20	
	59.00	7.20	
Top footing Pier 3	64.10	6.80	
Water Surface	64.10	6.50	
Edge of Water	66.60	6.60	
Pier 4	81.20	3.90	
Abutment 5	94.00	3.50	

Printed on : 22-APR-1999 04:26:40 PM

Bridge No.: 22C0003 **Location: 500' E SH 16** **Inspection Date: 12-APR-99**

STRUCTURE INVENTORY AND APPRAISAL REPORT

IDENTIFICATION

(1) STATE NAME - CALIFORNIA	069
(8) STRUCTURE NUMBER	22C0003
(5) INVENTORY ROUTE(ON/UNDER) - ON	1 40 000000
(2) HIGHWAY AGENCY DISTRICT	03
(3) COUNTY CODE 113 (4) PLACE CODE	00000
(6) FEATURE INTERSECTED - CACHE CREEK	
(7) FACILITY CARRIED - C.R. #41	
(9) LOCATION - 500' E SH 16	
(11) MILEPOINT/KILOMETERPOINT	0
(12) BASE HIGHWAY NETWORK - NOT ON NET	0
(13) LRS INVENTORY ROUTE & SUBROUTE	
(16) LATITUDE	38 DEG 53 MIN 30 SEC
(17) LONGITUDE	122 DEG 14 MIN 18 SEC
(98) BORDER BRIDGE STATE CODE % SHARE	%
(99) BORDER BRIDGE STRUCTURE NUMBER	

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL - CONCRETE	
TYPE - ARCH - THRU	CODE 1 12
(44) STRUCTURE TYPE APPR: MATERIAL - CONCRETE	
TYPE - TEE BEAM	CODE 104
(45) NUMBER OF SPANS IN MAIN UNIT	7
(46) NUMBER OF APPROACH SPANS	2
(107) DECK STRUCTURE TYPE CIP CONCRETE	CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:	
A) TYPE OF WEARING SURFACE - CONCRETE	CODE 1
B) TYPE OF MEMBRANE - NONE	CODE 0
C) TYPE OF DECK PROTECTION - NONE	CODE 0

AGE AND SERVICE

(27) YEAR BUILT	1930
(106) YEAR RECONSTRUCTED	1949
(42) TYPE OF SERVICE: ON - HIGHWAY	1
UNDER - WATERWAY	5
(28) LANES: ON STRUCTURE 02 UNDER STRUCTURE	
(29) AVERAGE DAILY TRAFFIC	100
(30) YEAR OF ADT 1998 (109) TRUCK ADT	%
(19) BYPASS, DETOUR LENGTH	101 KM

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN	32.9 M
(49) STRUCTURE LENGTH	95.4 M
(50) CURB OR SIDEWALK: LEFT .5 M RIGHT	.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB	6.2 M
(52) DECK WIDTH OUT TO OUT	7.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS)	4.6 M
(33) BRIDGE MEDIAN - NO MEDIAN	0
(34) SKEW 0 DEG (35) STRUCTURE FLARED	NO
(10) INVENTORY ROUTE MIN VERT CLEAR	4.39 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR	6.2 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY	4.39 M
(54) MIN VERT UNDERCLEAR REF - NOT H/RR	0 M
(55) MIN LAT UNDERCLEAR RT REF - NOT H/RR	99.9 M
(56) MIN LAT UNDERCLEAR LT	0 M

NAVIGATION DATA

(38) NAVIGATION CONTROL - NO CONTROL	CODE 0
(111) PIER PROTECTION - NONE - REEVALUATE	CODE 5
(39) NAVIGATION VERTICAL CLEARANCE	0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR	M
(40) NAVIGATION HORIZONTAL CLEARANCE	0

SUFFICIENCY RATING = 46.8

STATUS = STRUCTURALLY DEFICIENT

HEALTH INDEX = 47.64

CLASSIFICATION

	CODE
(112) NBIS BRIDGE LENGTH - YES	Y
(104) HIGHWAY SYSTEM - NOT ON NHS	0
(26) FUNCTIONAL CLASS - MAJOR COLLECTOR RURAL	07
(100) DEFENSE HIGHWAY - NOT STRAHNET	0
(101) PARALLEL STRUCTURE - NONE EXISTS	N
(102) DIRECTION OF TRAFFIC - 2 WAY	2
(103) TEMPORARY STRUCTURE -	
(105) FEDERAL LANDS HIGHWAY -	
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET	0
(20) TOLL - ON FREE ROAD	3
(21) MAINTAIN - COUNTY HIGHWAY AGENCY	2
(22) OWNER - COUNTY HIGHWAY AGENCY	2
(37) HISTORICAL SIGNIFICANCE - ELIGIBLE	2

CONDITION

	CODE
(58) DECK	5
(59) SUPERSTRUCTURE	4
(60) SUBSTRUCTURE	6
(61) CHANNEL & CHANNEL PROTECTION	6
(62) CULVERTS	N

LOAD RATING AND POSTING

	CODE
(31) DESIGN LOAD - OTHER OR UNKNOWN	0
(63) OPERATING RATING METHOD - NO RATING ANALYSIS	5
(64) OPERATING RATING -	25.4
(65) INVENTORY RATING METHOD - NO RATING ANALYSIS	5
(66) INVENTORY RATING -	16.3
(70) BRIDGE POSTING - Equal to or above legal loads	5
(41) STRUCTURE OPEN, POSTED OR CLOSED -	A
DESCRIPTION - OPEN, NO RESTRICTION	

APPRAISAL

	CODE
(67) STRUCTURAL EVALUATION	4
(68) DECK GEOMETRY	5
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71) WATER ADEQUACY	7
(72) APPROACH ROADWAY ALIGNMENT	4
(36) TRAFFIC SAFETY FEATURES	0000
(113) SCOUR CRITICAL BRIDGES	6

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK - REPLACE FOR DEFICIENCY	CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT	104.889 M
(94) BRIDGE IMPROVEMENT COST	$919,000
(95) ROADWAY IMPROVEMENT COST	$92,000
(96) TOTAL PROJECT COST	$1,378,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE	1999
(114) FUTURE ADT	300
(115) YEAR OF FUTURE ADT	2015

INSPECTIONS

(90) INSPECTION DATE 04/99 (91) FREQUENCY 24 MO

(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE

A) FRACTURE CRIT DETAIL -	NO	-1 MO	A)
B) UNDERWATER INSP -	NO	-1 MO	B)
C) OTHER SPECIAL INSP -	NO	-1 MO	C)

Printed on : 22-APR-1999 04:26:40 PM

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.1-90)

Bridge No. 22C-0003

Location 03-Yol-Co.Rd. (Dist.,Co.,Rte.,PM,City)

Date of Investigation 7/31/96

Name CACHE CREEK (Co.Rd. #41)

RATINGS:

71 Waterway Adequacy 7 **61 Channel & Channel Protection** 6 **72 Approach Rdwy Align.** 4

TYPE OF INVESTIGATION/REPORT

Biennial	X	**Group A**		**Other**	
Damage		**Underwater**		**Office**	

WORK NOT DONE

The last two Supplementary Bridge Reports have recommended to either do extensive repairs or replace the arch spans. No work has been done.

CONDITION OF STRUCTURE

The poor quality concrete continues to deteriorate. The aggregates and reinforcement are very poorly bonded. In arch Spans 1 and 2 the deterioration of the concrete and reinforcement has progressed to the point where roughly 1/3 of the total areas of the spandrel columns and arch ribs have either spalled or have impending spalls over corroding reinforcement. Below the deck, both girders in Span 2 have spalled or have impending spalls full length and width at the soffit level. In Span 1, the girders are in a similar condition but to a smaller extent. The floor beams have some large spalls.

The Abutment 1 left wingwall and approach rail has fallen into the river. Large rock has been backfilled to stabilize the embankment and K-rail has been placed along the roadway. The repair is satisfactory except that there is a two meter gap between the end of the K-rail and the bridge rail.

WORK RECOMMENDED

1. Replace the temporary K-rail at Abutment 6 left with a metal beam guard rail.

2. Schedule this structure for extensive rehabilitation of the arches and girders. Consideration may be given to replacement of this structure.

Leo Gallagher
Reviewed and Approved by

Pete J. Whitfield
Registered Civil Engineer

No. 38652
Exp. 9-30-99
CIVIL
STATE OF CALIFORNIA

LG/PJW:zbt

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

ELEMENT LEVEL INSPECTION-(ELI)

BRIDGE NUMBER: 22C0003 (1–8) | FRAME: 01 (9) | INSPECTION DATE: 03 15 94 / 07/31/96 (11–16)

INFORMATION ONLY - NOT FOR UPDATE

SCOUR CRITICAL..... NO
GROUP A INVESTIGATION..... NO
FRACTURE CRITICAL..... NO
ELIGIBLE FOR RAIL UPGRADE.. NO
UNDERWATER INVESTIGATION... NO

DISTRICT: 03
COUNTY: YOL
ROUTE:
POSTMILE:
NAME:

DEL	ELE #	ELEMENT DESCRIPTION	ENV	TOTAL QUANTITY	UNITS	QUANT CONDITION STATE 1	QUANT CONDITION STATE 2	QUANT CONDITION STATE 3	QUANT CONDITION STATE 4	QUANT CONDITION STATE 5
	12	CONCRETE DECK - BARE	3	1	EA		1			
	110	REINFORCED CONCRETE OPEN GIRDER	3	116	M	116	116			
	144	REINFORCED CONCRETE ARCH	3	259	M			259		
	210	REINFORCED CONCRETE PIER WALL	3	22	M		22			
	215	REINFORCED CONCRETE ABUTMENT	3	15	M	15	15			
	331	CONCRETE BRIDGE RAILING	3	215	M			215		

18 19 | 22 23 | 28 | 33 | 38 | 43 | 48

07/30/96 04A M. SALEEN MITHWANI

BY: Lee Gallagher

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 22C-0003

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.1-90)

Location 03-Yol-C.R.
Dist.,Co.,Rte.,PM,City

Date of Investigation 3/15/94

Name CACHE CREEK (Co. Rd. #41)

RATINGS:

71 Waterway Adequacy 7 **61 Channel & Channel Protection** 6 **72 Approach Rdwy Align.** 4

TYPE OF INVESTIGATION/REPORT

Biennial	X	**Group A**		**Other**	
Damage		**Underwater**		**Office**	

REVISIONS
DATA: 114 Future ADT: Deck 300 115 Yr. of Future ADT: Deck 2012

WORK NOT DONE
The last Supplementary Bridge Report recommended either a replacement of the arch spans for the near future or extensive repairs to be completed as soon as possible. The County did initiate request for funding for repairs but has since withdrawn this request. Mr. Thomas Tracy, Assistant Director for Yolo County Public Works, indicated during a recent telephone conversation that the county currently has no plans to repair or replace the structure.

CONDITION OF STRUCTURE
This structure remains in the same condition as described by Mr. Loftin in the 1992 Supplementary Bridge Report:

"In Arch Spans 1 and 2, built in 1930, the deterioration of the concrete and reinforcement has progressed to the point where roughly 1/3 of the total areas of the spandrel columns and arch ribs have either spalled or have impending spalls over corroding reinforcement. Below the deck, both girders in Span 2 have spalled or have impending spalls full length and width at the soffit level. In Span 1, the girders are in a similar condition but to a smaller extent. The floor beams have some large spalls. The exposed reinforcement still has not lost cross-sectional areas to any great extent. The concrete, after 62 years of service, is obviously low in strength. The aggregates and reinforcement are very poorly bonded. The approach spans, built in 1949, are in fairly good condition."

In the above mentioned telephone conversation, Mr. Tracy further stated that several long time residents of the area had approached him during a field review of the structure and indicated that the bridge had been in its current deteriorated state almost as long as they could remember. This information is confirmed by various bridge reports dating back to 1964. However, these same bridge reports seem to indicate a gradual increase in the level of deterioration.

WORK RECOMMENDED
Regardless of how long the bridge has been in this deteriorated state, it is recommended that county either repair or replace the arch spans. Lack of action could shorten the useful life of the structure.

PONTIS INSPECTION
A PONTIS inspection form for this investigation is attached.

G. Setberg

Gudmund Setberg
Registered Civil Engineer
GS/wb

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION (ATTACHMENT A)

PONTIS DATA FORM - PIA

BRIDGE NUMBER	FRAME	INSPECTION DATE
22C0003	01	31594
1 8	9	11 16

INFORMATION ONLY - NOT FOR UPDATE	
SCOUR CRITICAL	NO
CATEGORY A	NO
FRACTURE CRITICAL	NO
ELIGIBLE FOR RAIL UPGRADE	NO
UNDERWATER INSPECTION	NO

DISTRICT 03
COUNTY YOL
ROUTE
POSTMILE
NAME

DEL	ELE #	ELEMENT DESCRIPTION	ENV	TOTAL QUANTITY	UNITS	QUANT CONDITION STATE 1	QUANT CONDITION STATE 2	QUANT CONDITION STATE 3	QUANT CONDITION STATE 4	QUANT CONDITION STATE 5
	10	REINFORCED CONCRETE OPEN GIRDER		116	M	116				
	26	REINFORCED CONCRETE ARCH		259	M			259		
	49	CONCRETE PIER WALL		22	M		22			
	51	CONCRETE ABUTMENT		15	M	15				
	1202	CONCRETE BRIDGE RAILING		215	M			215		
	1122	CONCRETE DECK - BARE		1	EA		1			
18 19				22 23		28	33	38	43	48

12/24/93 04A G. SETBERG BY:

4 21 94

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 22C-0003

SUPPLEMENTARY BRIDGE REPORT
DS-M19(REV.1-90)

Location 03-Yol-C.R.
Dist.,Co.,Rte.,PM,City

Date of Investigation 3/27/92

Name CACHE CREEK

RATINGS:

58 Deck 5 59 Superstructure 3 60 Substructure 5 71 Waterway Adequacy 7

61 Channel & Channel Protection 6 62 Culvert NA 72 Approach Rdwy Align. 4

TYPE OF INVESTIGATION/REPORT

Biennial	X	Category A		Other	
Damage		Underwater		Office	

CONDITION OF STRUCTURE

In Arch Spans 1 and 2, built in 1930, the deterioration of the concrete and reinforcement has progressed to the point where roughly 1/3 of the total areas of the spandrel columns and arch ribs have either spalled or have impending spalls over corroding reinforcement. Below the deck, both girders in Span 2 have spalled or have impending spalls full length and width at the soffit level. In Span 1, the girders are in a similar condition but to a smaller extent. The floor beams have some large spalls. The exposed reinforcement still has not lost cross-sectional areas to any great extent. The concrete, after 62 years of service, is obviously low in strength. The aggregates and reinforcement are very poorly bonded. The approach spans, built in 1949, are in fairly good condition.

The channel was in good condition. A stream profile is included with this report.

RECOMMENDATIONS

Either replacement of the arch spans should be planned for the near future or a contract for extensive repairs should be completed as soon as feasible. Repairs will extend the life of the structure. However, other rehabilitation projects will be necessary periodically to keep the structure in service for any long period of time.

D. D. Loftin
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
D. DARRYL LOFTIN
No. 11161
Exp. 12/31/02
CIVIL
STATE OF CALIFORNIA

DDL/pfa-10192

cc: W.B. Lindsey, Hydraulics
DDLoftin

BRIDGE NO. 22C-03 US-Route 50 DIST. CO. RTE. File

BRIDGE CACHE CREEK

PROFILE O.S. (East) SIDE MEASURED FROM : Top of Deck . DATE 3/27/92

From BB	Horz.	Vert.	Comment
Abut 1	9.0'	23.2'	Top of PCC footing @ O.S. Face
	9.0'	25.3'	Face of PCC footing
Water surface		23.2'	
℄ Pier 2	108.3'	25.8'	
℄ Pier 3	212'	13.1'	
℄ Pier 4	264.'	11.8'	
Face Abut 5	312.3'	7.1'	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No: 22C-0003

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.1-90)

Location 03-Yol-Co.Rd.
Dist.,Co.,Rte.,PM,City

Date of Investigation 5-30-91

Name CACHE CREEK-RUMSEY (Co.Rd. #41)

RATINGS:

58 Deck 5 | 59 Superstructure 4 | 60 Substructure 6 | 71 Waterway Adequacy 7

61 Channel & Channel Protection 6 | 62 Culvert N | 72 Approach Rdwy Align. 4

CODES:

21 Custodian 02 | 22 Owner 02 | 26 Functional Classification: Deck 09 | Under NA

41 Str Open, Posted or Closed A | 107 Deck Type 1 | 108 Wearing Surface/Prot Sys 100

Max Col/Pier Ht. Under 20' | 111 Pier/Abut. Prot. NA

55 Min Lat Underclr on Rt. NA | 54 Min Vert Underclr NA | 112 NBIS Bridge Length Y

DATA:

51 Bridge Width (NET) 20.5' | 109 Average Daily Trucks (% of ADT): Deck NA Under NA

114 Future ADT: Deck 100 Under NA | 115 Yr. of Future ADT: Deck 2010 Under NA

Number of Intermediate Joints: @ Hinges 0 @ Bents 1

TYPE OF INVESTIGATION/REPORT

Biennial X | Category A | Other

Damage | Underwater | Office

WORK NOT DONE

Corrective work to prevent further corrosion of reinforcement has not been initiated as recommended since 1980. SUPH

CONDITION OF STRUCTURE

Areas of defective concrete in the individual members of the tied arch spans continue to spall. The condition has been documented in Bridge Reports dating back to 1964 in Caltrans records.

As noted in past reports the defective concrete is confined to the periphery of individual members and has minimal effect on the capacity of the structure. The threat to the structure is potential corrosion of main reinforcement which is exposed due to the spalling away of its concrete cover.

No significant changes were noted in the general condition of the structure.

The west approach pavement is cracked and about 1 inch low relative to the deck surface.

BRIDGE NO. 22C-0003	
SHEET 2	DATE 5-30-91

WORK RECOMMENDED

Chip out remainder of defective concrete, sandblast reinforcement and protect steel with epoxy paint or equal.

Level west approach.

William R. Baker
Registered Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
WILLIAM R. BAKER
NO. 16500
EXP. 06/30/93
CIVIL
STATE OF CALIFORNIA

WRB/ms-17291

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

Bridge No. 22C-0003

SUPPLEMENTARY BRIDGE REPORT

DS-M19(REV.9/88)

Location 3-Yol-Co.Rd.
Dist.,Co.,Rte.,PM,City

Date of Investigation 5-23-89

Name CACHE CREEK-RUMSEY (Co.Rd. #41)

CONDITION RATING:

Deck 5 Superstructure 4 Substr.&Pipes 5
Channel & Channel Protection 5 Culvert N Widenable? No

TYPE OF INVESTIGATION/REPORT

BIENNIAL X DAMAGE
CATEGORY A OTHER
UNDERWATER OFFICE

CONDITION OF STRUCTURE

The poor quality concrete in the arch members dating from its construction, is unchanged aside from the spalling away of the defective material.

The earliest report on file which describes the condition, (4-8-64) was diagnostic and the remarks are relevant today. The defective zones are confined to the periphery of the members and their existence does not threaten the integrity of the structure.

Exposure of the reinforcement to the elements does threaten the structure but this investigator found no extensive corrosion of primary reinforcement.

The general condition of structure is not significantly changed.

WORK NOT DONE

Corrective work to prevent further corrosion of reinforcement has not been initiated as recommended since 1980. SUPH

WORK RECOMMENDED

Do previously recommended work to protect reinforcing steel. Sandblasting steel and protecting with pneumatically applied concrete has been suggested as a method.

William R. Baker

WRB/ms

REGISTERED PROFESSIONAL ENGINEER
William R. Baker
No. 16500
Exp. 6-30-93
CIVIL
STATE OF CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 2/75)

Bridge No. 22C-3

Location 3-Yol-Co.Rd.
Dist - Co - Rte - PM - City

Date of Investigation March 25, 1987

Name CACHE CREEK (Co.Rd. #41)

CONDITION RATING: **APPRAISAL RATING:**

Deck 5 Superstructure 3 Substr. & Pipes 5 Overall 3

Channel & Channel Protection 5 Retaining Walls N

Widenable? Yes ☐ No ☒ Conditional ☐

Action Required: Yes ☒ No ☐

CONDITION OF STRUCTURE:

Concrete deterioration throughout the tied arch superstructure spans has been documented in Caltrans records dating back to 1964.

No accelerated changes were noted, only gradual spalling of cracked areas and progressing corrosion of exposed reinforcement.

No other changes were noted. The structure is in poor condition but is repairable.

RECOMMENDED WORK:

Clean steel and repair deteriorated concrete as previously recommended.

William R. Baker

WRB/nlc

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-M19 (REV. 2/75)

Bridge No. 22C-03

Location 3-Yol-Co.Rd.
Dist - Co - Rte - PM - City

Date of Investigation April 22, 1985

Name CACHE CREEK (on Co.Rd. #41, 500' E of S.H. 16)

CONDITION RATING: **APPRAISAL RATING:**

Deck 5 Superstructure 3 Substr. & Pipes 5 Overall 3

Channel & Channel Protection 5 Retaining Walls N

Widenable? Yes ☐ No ☒ Conditional ☐

Action Required by County Yes ☒ No ☐

CONDITION OF STRUCTURE

The spalls on the girder soffits as well as those on the arch and spandrels have not been repaired as recommended previously. An estimate of the area of unsound concrete was made during this investigation to more graphically illustrate this problem.

LOCATION	AREA OF SPALLS (SQ. FT.)
Girder Soffit #1 Span #1	60 Sq. Ft.
Girder Soffit #2 Span #1	20 Sq. Ft.
Girder Soffit #1 Span #2	90 Sq. Ft.
Girder Soffit #2 Span #2	44 Sq. Ft.
Arch #1 Span #1	25 Sq. Ft.
Spandrels 1	4 Sq. Ft.
2	3 Sq. Ft.
3	3 Sq. Ft.
4	6 Sq. Ft.
5	6 Sq. Ft.
6	1 Sq. Ft.
Arch #2 Span #1	10 Sq. Ft.
Spandrels 1	0 Sq. Ft.
2	2 Sq. Ft.
3	2 Sq. Ft.
4	1 Sq. Ft.
5	1 Sq. Ft.
6	3 Sq. Ft.

DS-M18 (REV. 6/75)

BRIDGE NO.	
22C-03	
SHEET	DATE
Two	April 22, 1985

CONDITION OF STRUCTURE (continued)

Arch #1 Span #2	25
Spandrels 1	4
2	7
3	4
4	1
5	0
6	0
Arch #2 Span #2	22
Spandrels 1	2
2	10
3	3
4	5
5	4
6	0

CONDITION OF STRUCTURE (continued)

The spalled areas noted uniformly display sections of corroding square rebar. The exposure of this rebar to the elements over time will result in loss of structural section with a corresponding drop in allowable load capacity. Considering the large area of spalls on this structure it would be advisable to consider a contract to repair the spall damage as soon as possible. Past experience with spall repair of this type dictates that the estimate of spalled area be increased by 50% if a contract is to be let for repair. The spalling appears to be the result of a variety of construction errors including the use of poorly graded river run aggregate without vibration during placement as well as minimal cover distances over the reinforcing steel.

The Abutment #1 approach is settling and was approximately 1" low at the paving notch at the time of inspection.

RECOMMENDATIONS

The spalled areas noted should be repaired as soon as possible. Repair procedures are as follows:

1. Remove all of the loose unsound concrete from the vicinity of the spall.

2. Clean the exposed corroding rebar to a gray metal finish by sandblasting.

DS-M18 (REV. 6/75)

BRIDGE NO.	
22C-03	
SHEET	DATE
Three	April 22, 1985

RECOMMENDATIONS (continued)

3. Patch the spalled areas using epoxy, grout, or air blown mortar.

   Air blown mortar is recommended for a patching material if this operation is sent out to contract because of its ease of application. Should the county elect to use its own forces it would be advisable to use epoxy or grout which would be move suited to patching in small increments as time and expenses allow.

   Provide an AC leveling course at the Abutment #1 approach to reduce impact forces on the structure.

C.A. Copelan

C. A. Copelan
C-36301

CAC/lo

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-B10 (REV. 2/75)

Bridge No. 22C-03

Location 03-YOL-C.R.
Dist - Co - Rte - PM - City

Date of Investigation August 3, 1983

Name CACHE CREEK (on C.R. #41, 500' E of S.H. 16)

CONDITION RATING: **APPRAISAL RATING:**

Deck 5 Superstructure 3 Substr. & Pipes 5 Overall 3

Channel & Channel Protection 5 Retaining Walls N

Widenable? Yes ☐ No ☒ Conditional ☐

Action Required by County: Yes ☒ No ☐

PREVIOUS REPORT

August 12, 1981

CONDITION OF STRUCTURE

The spalls on the girder soffitts have not been repaired as previously recommended. A large amount of rusty rebar remains exposed.

The superstructure displays a large number of spalls as well as incipient spalls. This condition is deteriorating rapidly, if standard maintenance procedures are not employed, a reduction in load capacity or closure of the structure could result.

RECOMMENDATIONS

1. Remove unsound concrete, clean all rusty rebar and patch spalls.

C. A. Copelan.

C. A. Copelan
C-036301

REGISTERED PROFESSIONAL ENGINEER
CRAIG A. COPELAN
No. 36301
CIVIL
STATE OF CALIFORNIA

Book #1 out 7/17

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTARY BRIDGE REPORT
DS-819 (REV. 2/75)

Bridge No. 22C-03

Location 03-Yol-C.R.
Dist - Co - Rte - PM - City

Date of Investigation August 12, 1981

Name CACHE CREEK (on C.R. #41, 500' E. of S.H. 16)

CONDITION RATING: **APPRAISAL RATING:**

Deck 5 Superstructure (3) Substr. & Pipes 5 Overall 3

Channel & Channel Protection 5 Retaining Walls N

Widenable? Yes ☐ No ☒ Conditional ☐

Action Required by ~~District~~ County Yes ☒ No ☐

PREVIOUS REPORT: June 10, 1980

CONDITION OF STRUCTURE
The superstructure is in the same generally poor condition that is was in during the previous report.

Many of the spalls, especially on the two girder soffits of Spans #1 & #2, have increased in size. A considerable amount of rusty reinforcement is now exposed.

WORK RECOMMENDED
1. Clean rusty reinforcement and patch spalls.

Frank C. Heggli

Frank C. Heggli

FCH/ls

REGISTERED PROFESSIONAL ENGINEER
FRANK C. HEGGLI
No. 11248
CIVIL
STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DS-M58 (REV. 4-80)

Bridge No. 22C-03

Other No. 41-14.90

P.U.C. No.

REVISED
ORIGINAL
REPORT

Location 03-Yol-C.R.
Dist - Co - Rte - PM - City

Date of Investigation June 10, 1980

Name CACHE CREEK (On C.R. #41, 500' E. of S.H. 16)

Lat. 38° 53.5' Long. 122° 14.3'

STRUCTURAL DATA AND HISTORY

Year Built 1930 Arches 1949 Appr By Co. Contract No. Unknown

Date of Revisions

Designed by: B.D. ☐ Co. Plans Avail. @ Only Approach Spans

Description: R. C. thru tied arch, R. C. T-Beam (4). R. C. piers and winged abutments. Pier #4 and Abutment #5 on piles.

Spans 1 at 104', 1 at 108', 2 at 47.5'

Length 312.7' Skew None Design LL Unknown

Ratings: ASSIGN Inventory H15 Operating H18 Permit XXXXX

DESCRIPTION – ON STRUCTURE

Bridge Width 1.8' R. & cu - 20.5' Rd.Wy - 1.8' cu & R

Total Width 24' Lanes 2 Tracks None

Median None Rail Type Conc window (0000)

Vert. Clearance over deck 14' - 5" Appr. Rdwy. Width 15'

Wearing Surface None Deck Seal None

Alignment "T" intersection to tangent

DESCRIPTION – UNDER STRUCTURE

Roadway Section None

Clearances: Vert. Horiz.: Lt. Rt.

Lanes Tracks Pumpplant: None ☐ See Br. No.

Facilities Crossed Creek

cc:

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
BRIDGE REPORT
DS-M58A (REV. 10/79)

Bridge No. 22C-03

Date June 10, 1980

DESCRIPTION – HYDRAULICS

Channel Sand and gravel with light bushes

Navigable: Yes [ ] No [x] Clearances: Vert. ..... Horiz. .....

MAINTENANCE

Custodian County Owner County

ORIGINAL CONDITION RATING		ORIGINAL APPRAISAL	
Deck	5	Overall	3
Superstructure	4	Deck Geometry	4
Substructure & Pipes	5	Underclearances Vert.	N
Channel & Channel Protection	5	Horiz.	N
Retaining Walls	N	Safe Load Capacity	5
Approach Rdwy. Alignment	4	Waterway Adequacy	7
Estimated Remaining Life	15	Approach Rdwy. Alignment	4

Widenable? Yes [ ] No [x] Conditional [ ]

Average Daily Traffic & Year 100 (1978)

Bypass Detour Length 63 mi.

Action Required: Yes [x] No [ ]

Posting Required: None [x] Load [ ] Speed [ ]

Seismic Retrofit Not required

ENCROACHMENTS

2 - 1" pipes are attached to the downstream side of the bridge.
A watergage is at the downstream end of Bent #2.

SIGN

Vertical clearance 14' - 4"

DS-M18 (REV. 6/75)

BRIDGE NO. 22C-03	
SHEET 3	DATE June 10, 1980

CONDITION OF STRUCTURE

Underside of structure:

Floor beam #1 in Span #1 has 4' long spall with exposed rebar.
Floor beam #1, #2, #3 in Span #2 have long spalls with exposed rebar.
Left truss of S#2, longitudinal girder has two spalls in its soffit about 2' long by width of the member with exposed rebar.

Right truss of Span #2, longitudinal girder has 3 spalls approximately 2' long by member width. This member also has about 20' of edge spalls.

Deck: heavy transverse cracks, and is worn exposing aggregate.

Abutment #1: large vertical spall between the backwall and the abutment at its downstream side.

Span #1: Arch above roadway.

At the SE corner there is a heavy spall exposing reinforcement about 5' long.

At the NE corner incipient spalls appear in the arch.

The #6 spandrel on the downstream sidehhas an 18" long spall.

Span #2: Many incipient spalls in all spandrel columns.

In addition to the above mentioned defects, incipient spalls show throughout both Spans #1 & #2. Spans #3 and #4 are in a relatively good condition.

LOAD CAPACITY

The approach spans were calculated and are capable of sustaining all combinations of Legal Loads and the State's largest permit load.

Because of the condition of the arch spans this structure should be limited to legal loads only.

DS-M18 (REV. 6/75)

BRIDGE NO. 22C-03	
SHEET 4	DATE June 10, 1980

WORK RECOMMENDED

All of the spalls should be repaired, this appears to be a major project because of the number of spalls.

Frank C. Heggli

Frank C. Heggli

DIST	ROUTE	COUNTY	STRU. NO	POSTMILE	RATING WIDTH=FT	STRU TYPE	YR ORIG CONST	
03	CORD	22 C	0003	.	024.0	CG	48	NOV. 28, 1979

INFLUENCE LINE FOR CRITICAL INVENTORY RATING POINT SPAN 2 10TH POINT 10

MEM NO	LEFT	.1	.2	.3	.4	.5	.6	.7	.8	.9	RIGHT
1	0.0	0.469	0.910	1.294	1.592	1.777	1.819	1.692	1.365	0.810	0.0
2	0.0	-1.066	-2.274	-3.483	-4.549	-5.330	-5.686	-5.473	-4.549	-2.772	0.0

THE CRITICAL OPERATING RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

THE CRITICAL PURPLE RATING POINT IS THE SAME AS THE CRITICAL INVENTORY RATING POINT

2 RUMSEY BRIDGE ACROSS CACHE CREEK (22C-03)
3 RATING OF NORTH APPROACH SPAN ONLY (T-BEAM)
4 NO PLANS AVAILABLE FOR ORIGINAL ARCH BRIDGE.
5 ASSUMED NO A.C.

DIST	ROUTE	COUNTY	STRU. NO	POSTMILE	RATING WIDTH-FT	STRU TYPE	YR ORIG CONST	
03	CORD	22 C	0003	.	024.0	C0	48	NOV. 28, 1979

	RATING FACTOR	PT	SPAN	ULT MOM CAP TOP IN COM	ULT MOM CAP BOT IN COM	POS HS20 MOMENT	NEG HS20 MOMENT	POS PURP MOMENT	NEG PURP MOMENT	DEAD LOAD MOMENT	SECONDARY MOMENT
INV	0.97	10	2	0.0	2276.6	282.8	-738.0	407.5	-1041.0	-565.0	0.0
OPER	1.61	10	2	0.0	2276.6	282.8	-738.0	407.5	-1041.0	-565.0	0.0
PURP	1.14	10	2	0.0	2276.6	282.8	-738.0	407.5	-1041.0	-565.0	0.0

THE NUMBER OF AXLES ON THE TRUCK THAT CAUSES THE PURPLE RATING FACTOR IS 13.
FC = 1.00 FY = 33.

IF THE REPORTED ULTIMATE MOMENT CAPACITY IS 0. IT WAS DETERMINED NOT TO BE CRITICAL

2 RUMSEY BRIDGE ACROSS CACHE CREEK (22C-03)
3 RATING OF NORTH APPROACH SPAN ONLY (T-BEAM)
4 NO PLANS AVAILABLE FOR ORIGINAL ARCH BRIDGE.
5 ASSUMED NO A.C.

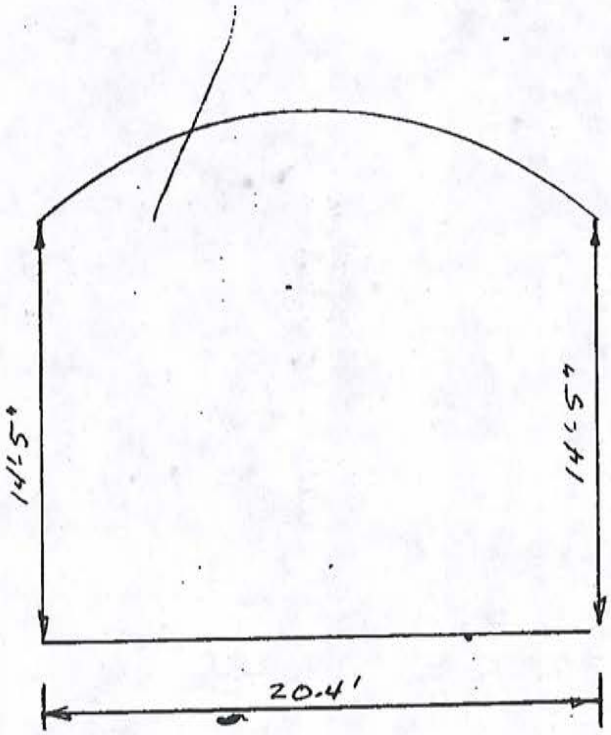
STATE OF CALIFORNIA DIVISION OF STRUCTURES
DEPARTMENT OF TRANSPORTATION

CLEARANCE DIAGRAM – SINGLE

DS-M47 (REV 6/75)

NAME	BRIDGE NO.	DRAWN BY	DATE
CACHE CREEK	22C-03	FCH	8-27-79
DIST-CO-RTE-PM-CITY: 03-401-C.R.		REVISED BY	DATE

CLEARANCE DIAGRAM



LOOKING AHEAD ON ROUTE C.R. #41

Bridge No. 22C-3

Sheet 1

BRIDGE ALTERED
SEE REVISED
ORIGINAL REPORT

BRIDGE REPORT

Date of Investigation April 8, 1964

General Description

Name CACHE CREEK (Rumsey) III-Yol-Co.Rd.

Location On County Road 41 (~~FAS 1155~~) 0.1 mile north of State Rte ~~50~~ 16 (Dist.-Co.-Rt.-Sec.)

Description RC through tied arch and RC (4) girder. RC piers and RC wing abutments all founded on piles.

Approximate skew None

Spans 2 @ 104.0, 2 @ 47.5 ft. c/c

Total length 312 ft.

Roadway width 20.4' between concrete curbs Sidewalks None

Alignment Tangent

Width Commensurate with adjacent roadway

Standard of design Arch spans - Unknown. Girder spans - M15-44

Waterway Appears adequate. Moderate velocity.

Vertical clearance 14.3' @ curb line
15.7' @ centerline under RC strut. [illegible])

History

Date built 1930(orig.) 1949(N.spans) By County Contract No. 14DC39(Gir. spns)

Designed by Lengthening - C. E. Seage, Consulting Engr., San Francisco

Plans Reconstruction plans on file in the Bridge Department

Remarks

HCJ:js
cc: Yolo County (2)
District III

SEE SUPPLEMENTARY REPORT OF

FORM BD-23
EST. 688, 87230 11-58 SM SPO

FORM BD-24 (REV. 8-63)

BRIDGE No. 22C-3
SHEET 2
DATE April 8, 1964

POSTING

This structure has never been posted by the Director and there are no posting signs at the site.

CONDITION

There are many rock pockets in the transverse concrete floorbeams of the arch spans and in the RC tie members of the arches, particularly in the tie members of the second spans. Many of the reinforcing bars are exposed and this reveals the primary cause for the rock pockets. The mat of steel is so close that it would be extremely difficult to do a good job getting concrete through or around it.

The exposed reinforcing bars are in good condition with very little rusting.

There are numerous cracks in the vertical members and the arches of the first two spans at and near the corners of the members. Tapping indicates that the concrete along these cracks is generally loose and may do some spalling in the future. However, all indications are that the loose sections are very shallow and are confined to the corners; the structural capacity has not been affected to any significant degree.

There are many cracks in the concrete deck slab, mostly transverse and mostly over the floorbeams. None are considered to be serious.

Some scouring has occurred around the center pier of the arch spans. This condition does not appear to be serious; the plans for the reconstruction contract of 1949 show piles under this pier.

The two northerly spans are in generally good condition.

In general, this structure is in fair to good condition.

CAPACITY

There are no indications of distress in the structure and it is considered to be safe for all combinations of legal loads.

POSTING RECOMMENDATIONS

None, the bridge is safe for legal loads.

This capacity rating may be considered effective only as long as the structure remains in essentially the same condition as at present.

H. C. Johnson
Assoc. Bridge Engineer
Civil Engr. Lic. No. 10557

BRIDGE NO. 22C-3

Sheet 1

BRIDGE REPORT

Office Report

Date of ~~inspection~~ March 26, 1959

General Description

Name CACHE CREEK (RUMSEY) III-Yol-Co.Rd.

Location 0.1 miles north of Jct.Rte.~~50~~ 16 at Rumsey on Co.Rd. FAS~~1155~~ (Dist.-Co.-Rt.-Sec.)

Description RC thru tied arch, RC (4) girder. RC piers and RC wing abutments with Pier #3,4 and Abutment #5 on piles.

Approximate skew none.

Spans 2@ 104.0', 2@ 47.5' c/c (S&N)

Total length 312'

Roadway width 20.4' between RC curbs Sidewalks none

Alignment Tangent

Width Commensurate with adjacent roadway.

Standard of design H15-44 (new portion)

Waterway probably adequate

Vertical clearance ~~Unimpaired~~ under -------- (See diagram)

History

Lengthened-1949

Date built Orig.1930 By County Contract No. 14DC39

Designed by Revision-C.E. Seage, Consult. Engr., San Francisco

Plans On file in the Bridge Dept.

to Dist. Lr Fwd to Co. 5-4-60

REMARKS

A. M. Peters Jr.

SEE SUPPLEMENTARY REPORT OF

FORM BD-23
EST. 668. 87230 11-58 5M SPO

CACHE CREEK @ RUMSEY

III-Yol-Co.Rd.

Following data included in Preliminary Report sent to Basement Files on 4-14-49.

1-27 page Preliminary Report which had appended or included (by G. H. Brumund dated October, 1940):

Site plan and profile
County plans of existing structure (2 sheets)
High water and bridge profile.
Photographs.
Preliminary Estimate and General Plan

4-14-49 B.P.O.

Bridge No. #22C-3
Sheet 1a

Name CACHE CREEK @ RUMSEY Location III-Yol-Fas-1155
Dist.-Co.-Rt.-Sec.

Summary of Construction, Maintenance and Alteration Work

CONT. OR W. O. No.	DATE	DESCRIPTION	W. O. AMOUNT	FINAL COST
14-DC-39	8/6/48	Reconstruct Bridge. Chapter 20 funds = $1,639.29 FAS & State funds = 69,832.15 $71,471.44	$82,000.00	$71,471.44

FORM DD 27 STATE PRINTING OFFICE

As-Built Plans

RAIL DETAIL

SECTION "A-A"

RAIL DETAIL AT PIER

PANEL DETAIL

SECTION "B-B"

ABUTMENT FOOTING PLAN-SECTION "C-C"

ABUTMENT FOOTING & WINGWALL DETAILS

END VIEW

END POST DETAIL

YOLO COUNTY
STATE OF CALIFORNIA
FOR WAR COUNTY HIGHWAY CONSTRUCTION PROJECTS

RECONSTRUCTION OF RUMSEY BRIDGE ACROSS CACHE CREEK DETAILS-ABUTMENTS AND RAILING

COUNTY ROAD NUMBER 41

CLARENCE E. SEALS — CONSULTING ENGINEER
582 MARKET ST. SAN FRANCISCO, CALIF.

DATE May 7 1943
SCALE AS NOTED

220 C 3

PLAN NO. 3

1472

ELEVATION EXISTING SPANS

ELEVATION NEW SPANS

PLAN EXISTING SPANS

PLAN NEW SPANS

LOCATION MAP

LOCATION PLAN

PROFILE GRADE

NOTES

REFERENCE PLANS

YOLO COUNTY
STATE OF CALIFORNIA

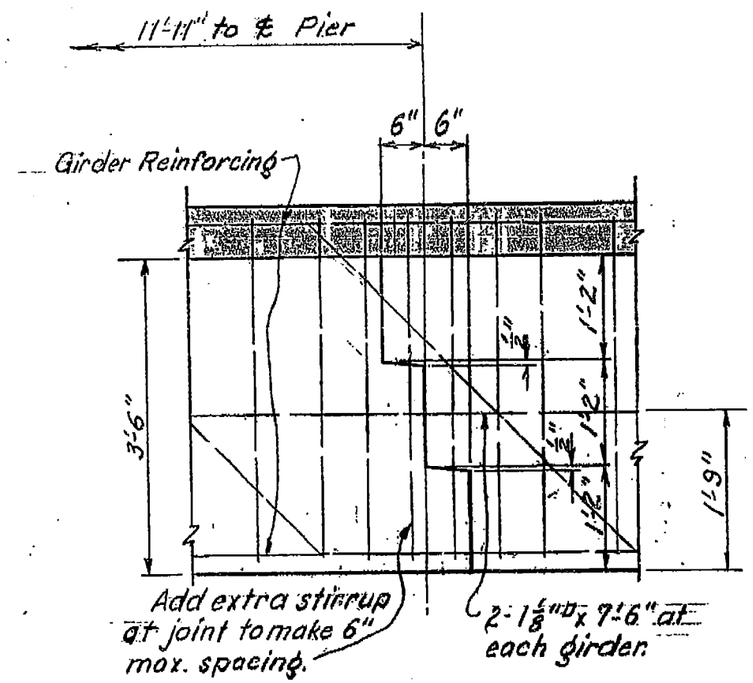
RECONSTRUCTION OF RUMSEY BRIDGE ACROSS CACHE CREEK
GENERAL PLAN

DRAWN BY DCD DATE 10-20-48
CHECKED BY WCK 10-21-48
APPROVED

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS
BRIDGE DEPARTMENT

DIST.	COUNTY	ROUTE	SECTION
III	Yol	FAS	

JOB Rumsey Bridge Across Cache Creek 22C-3



CONSTRUCTION JOINT IN GIRDER

Scale: ¾"=1'0"

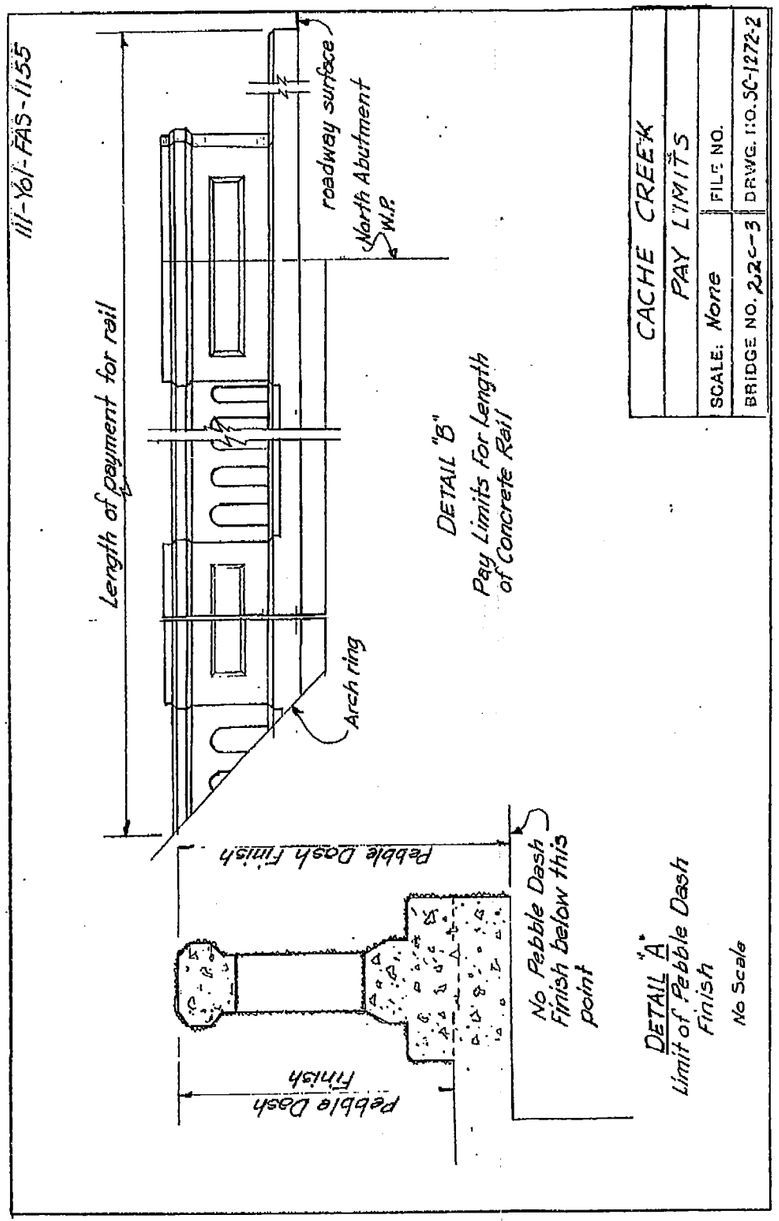
530

DRAWING No. SC-1272-1

FORM BD-93, REV. 8954
51852 6-48 3M SPO

LD-3-403

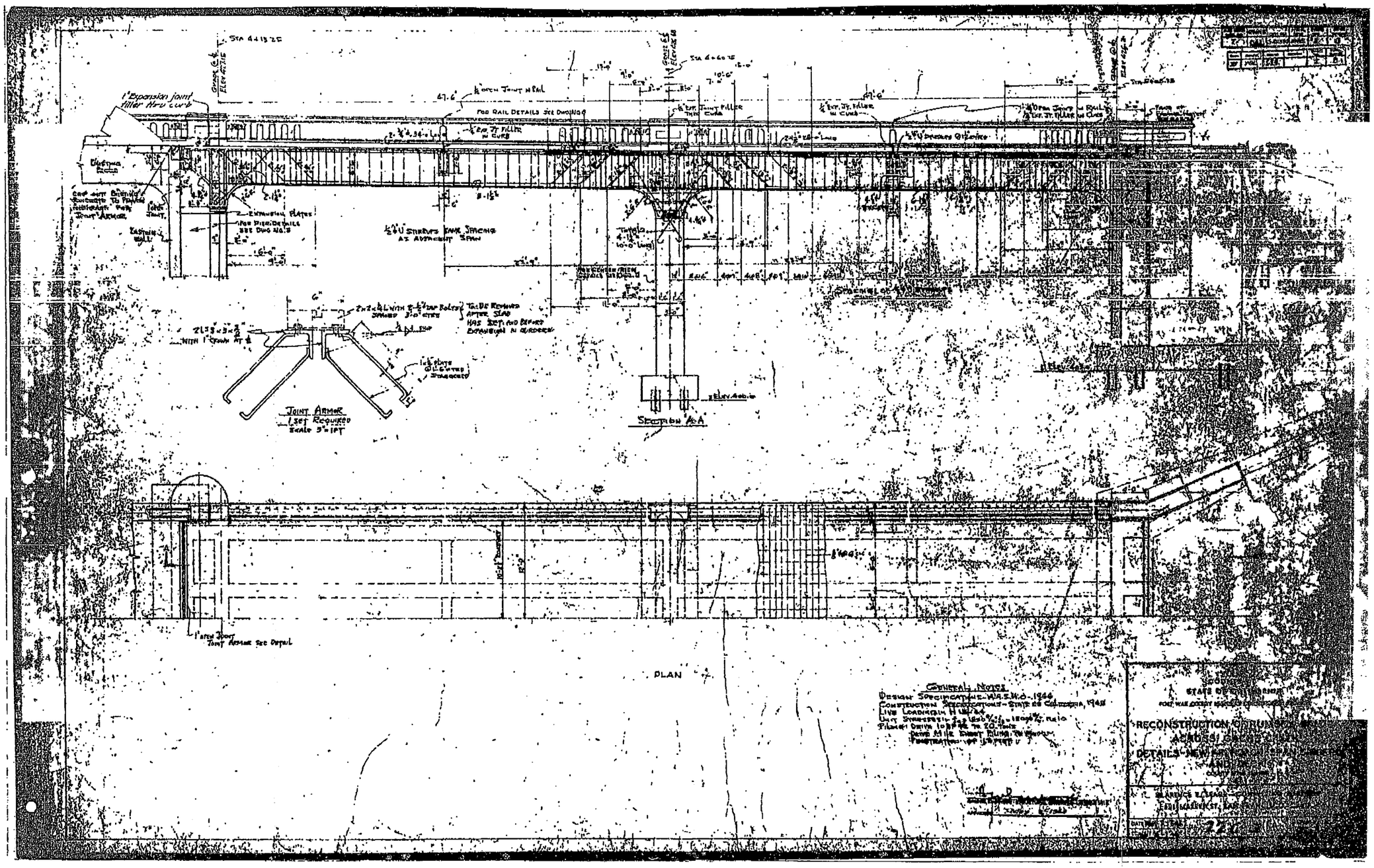
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS
BRIDGE DEPARTMENT



CACHE CREEK	
PAY LIMITS	
SCALE: None	FILE NO.
BRIDGE NO. 22C-3	DRWG. NO. SC-1272-2

LD-3-403

531



SECTION A-A

SECTION B-B

SOUTH ABUTMENT PLAN

SECTION E-E

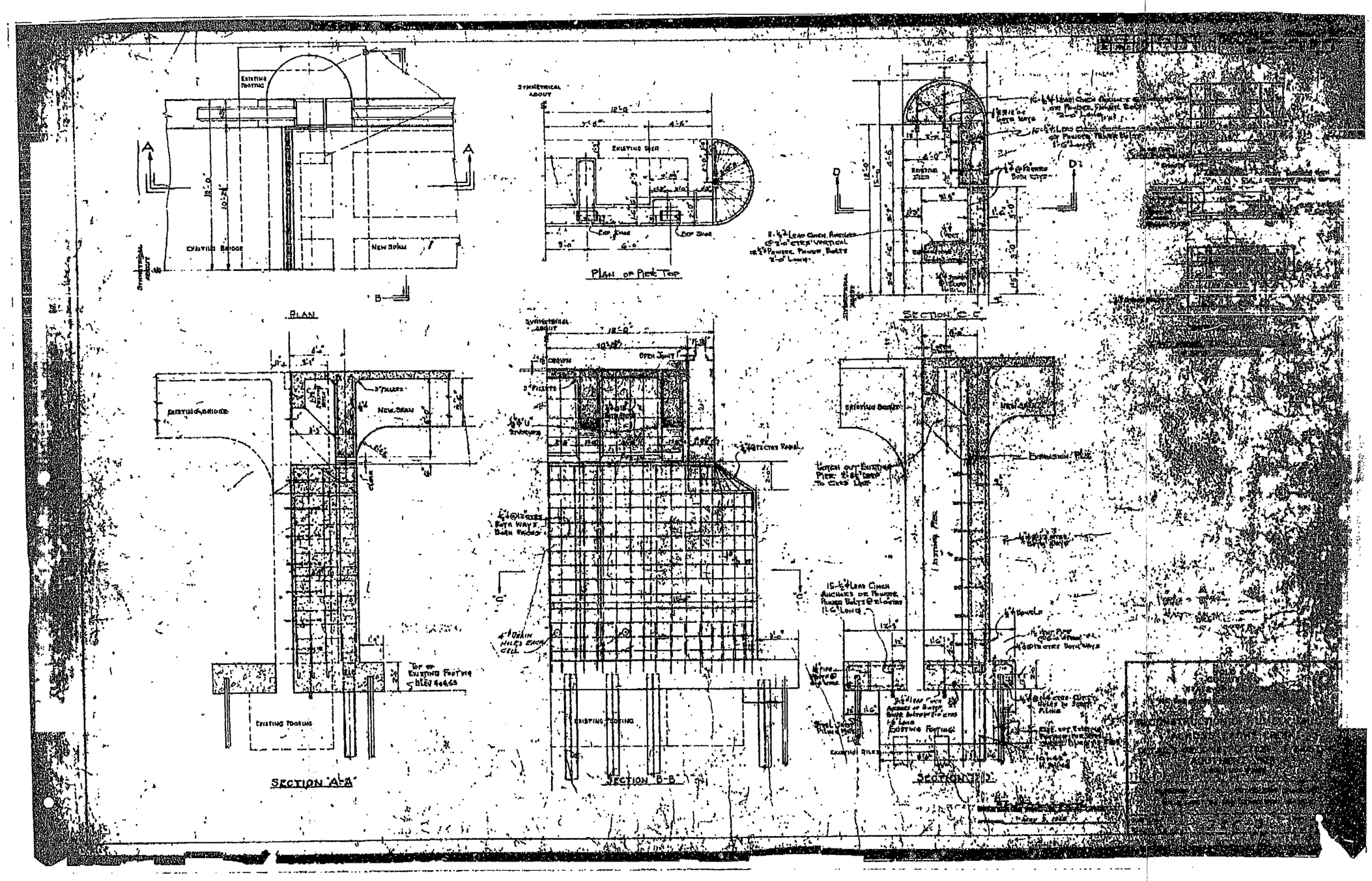
SECTION F-F

PLAN

YOLO COUNTY
STATE OF CALIFORNIA

RECONSTRUCTION OF RUMSEY BRIDGE
ACROSS CACHE CREEK
DETAILS-NEW APPROACH SPAN AND
SOUTH ABUTMENT RECONSTRUCTION

226


PLAN
SECTION A-A
Plan on Pier Top
SECTION B-B
SECTION C-C
SECTION D-D
EXISTING BRIDGE
NEW SPAN
EXISTING FOOTING
EXISTING PIER
SYMMETRICAL ABOUT
OPEN JOINT
EXISTING PILES
Top of Existing Footing
Excavate Around
Trench out Existing Pier 2'-6" Deep to Grade Line
Expansion Plate
Steel Grid Pile Point Protection
Existing Piles
Existing Footing

PLAN-PIER NR 1

ELEVATION

SECTION A-A

PLAN-ABUTMENT PIER

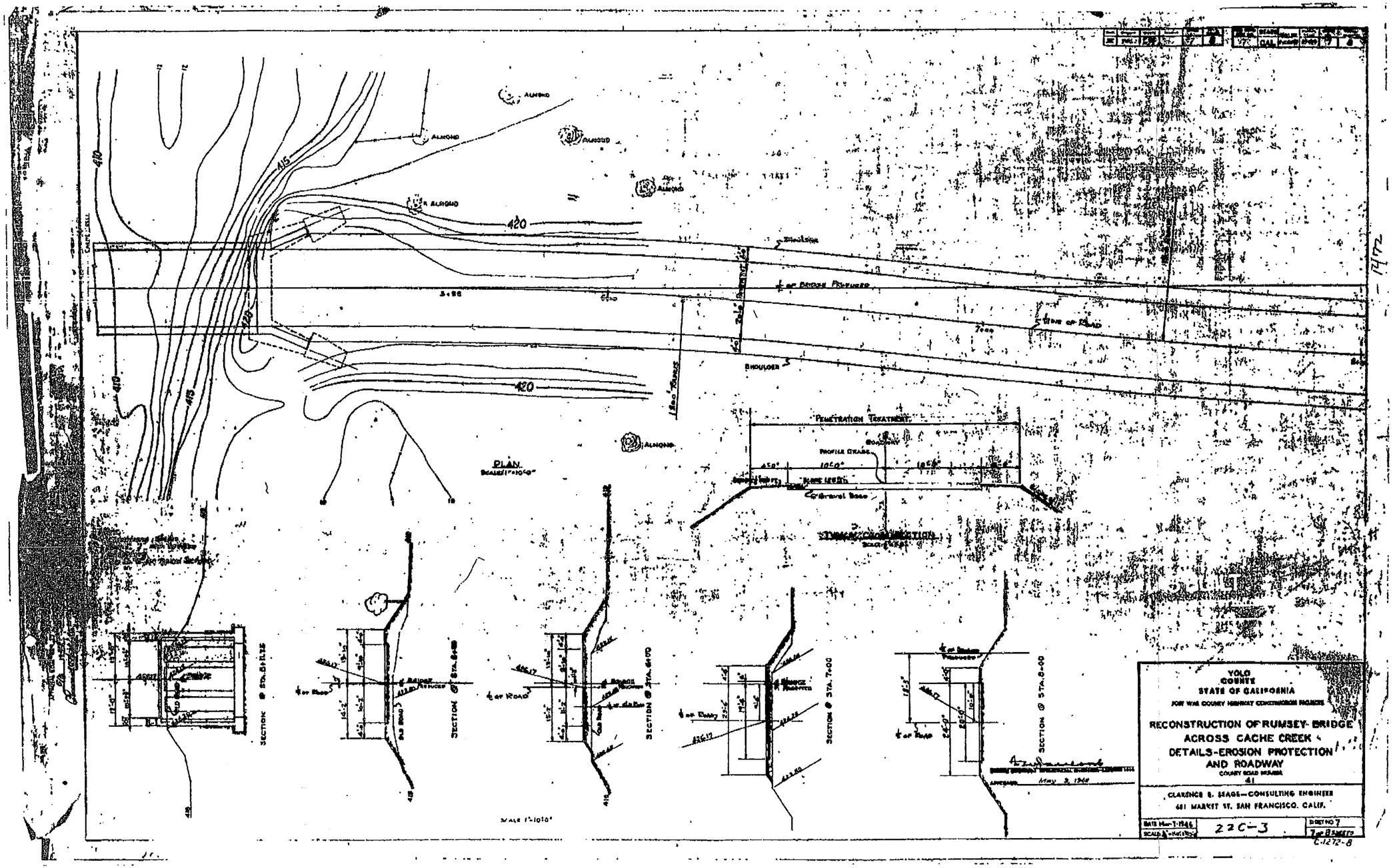
ELEVATION

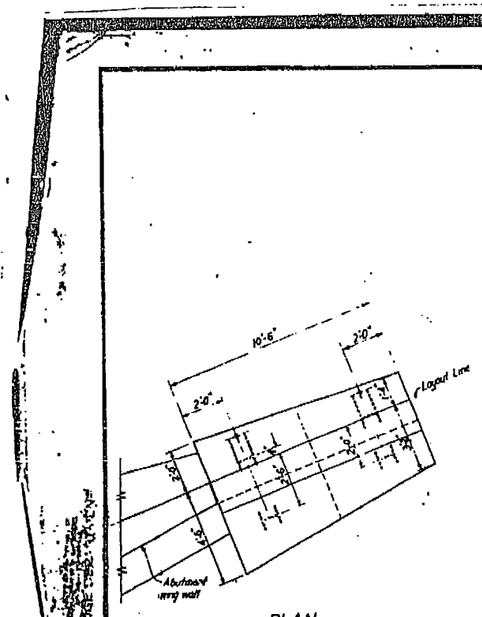
SECTION C-C

YOLO COUNTY
STATE OF CALIFORNIA

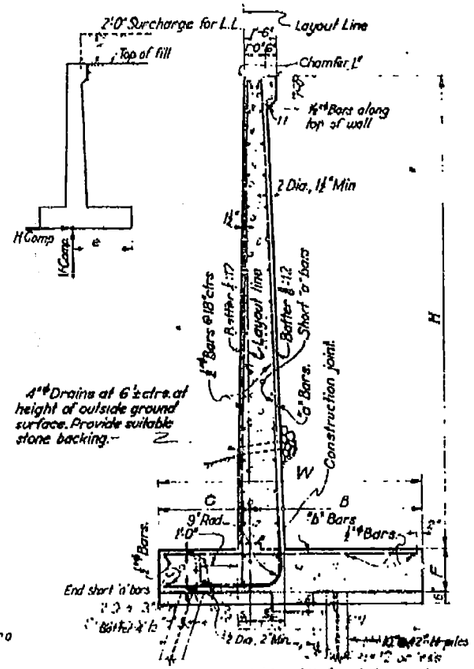
RECONSTRUCTION OF RUMSEY BRIDGE
ACROSS CACHE CREEK
DETAILS-FENDER PIERS

CLARENCE E. SEARS — CONSULTING ENGINEER
SACRAMENTO, CALIFORNIA

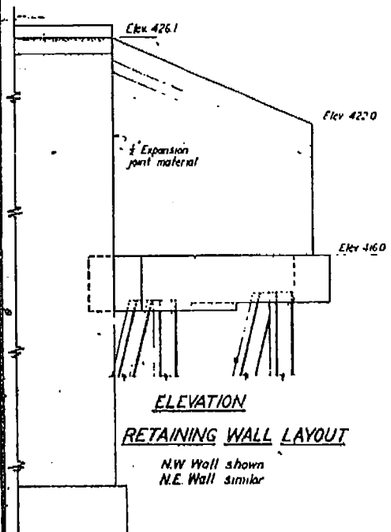

ALMOND
ALMOND
ALMOND
ALMOND
ALMOND
410
415
420
420
5+00
Shoulder
Shoulder
PLAN
Scale 1"=10'
PENETRATION TREATMENT
PROFILE GRADE
Gravel Base
SECTION @ STA. 5+00
SECTION @ STA. 6+00
SECTION @ STA. 7+00
SECTION @ STA. 8+00
May 3, 1945
YOLO
COUNTY
STATE OF CALIFORNIA
FOR WAR COUNTY HIGHWAY CONSTRUCTION PROJECTS
RECONSTRUCTION OF RUMSEY BRIDGE
ACROSS CACHE CREEK
DETAILS-EROSION PROTECTION
AND ROADWAY
COUNTY ROAD NUMBER
41
CLARENCE B. EAGE—CONSULTING ENGINEER
681 MARKET ST. SAN FRANCISCO, CALIF.
DATE May 1 1945
SCALE As Indicated
22C-3
SHEET NO 7
No. SHEETS
C-1272-B



PLAN



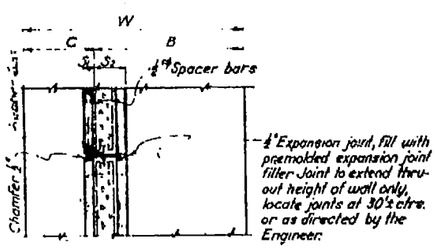
SECTION



ELEVATION

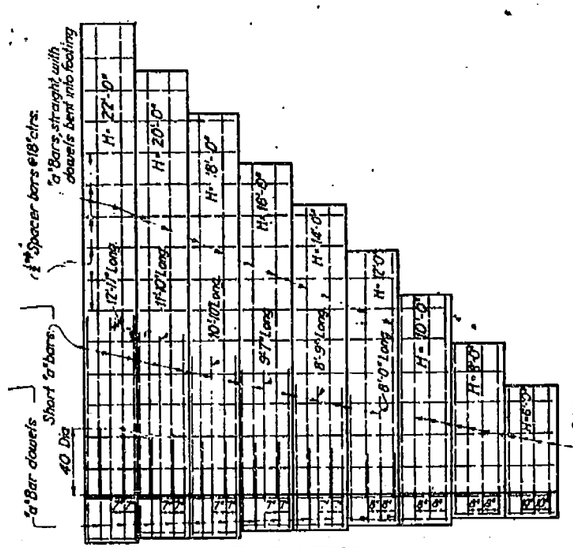
RETAINING WALL LAYOUT

N.W Wall shown
N.E. Wall similar



½" Expansion joint, fill with premolded expansion joint filler. Joint to extend thru-out height of wall only, locate joints at 30'± ctrs. or as directed by the Engineer.

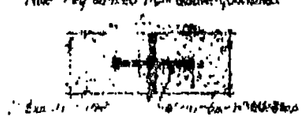
PLAN OF EXPANSION JOINT



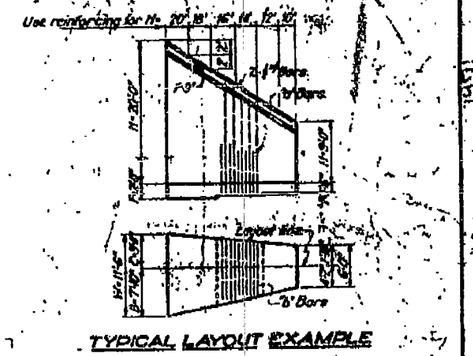
ELEVATION

TABLE OF REINFORCING STEEL DIMENSIONS & DATA									
H	22'	20'	18'	16'	14'	12'	10'	8'	6'
W	12'-6"	11'-6"	10'-6"	9'-6"	8'-6"	7'-6"	6'-6"	5'-6"	4'-6"
C	4'-0"	3'-8"	3'-4"	3'-0"	2'-8"	2'-4"	2'-0"	1'-8"	1'-4"
B	8'-6"	7'-10"	7'-2"	6'-6"	5'-10"	5'-2"	4'-6"	3'-10"	3'-2"
F	2'-2"	2'-0"	2'-0"	1'-8"	1'-8"	1'-6"	1'-6"	1'-3"	1'-3"
S1	5¾"	5"	4½"	4"	3½"	3"	2½"	2"	1½"
S2	1'-8¼"	1'-7½"	1'-6¾"	1'-6"	1'-5¼"	1'-4½"	1'-3¾"	1'-3"	1'-2½"
"a" Bars	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"
"b" Bars	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"	11 #6 @ 7"
Conc C.F.F.C.	62.25	54.07	46.01	38.07	33.84	27.57	22.92	18.65	13.65
Steel Lbs/Ft	354.70	265.71	205.79	147.66	107.97	69.31	50.87	33.58	25.20
Toe Pres	4,700	4,300	3900	3550	3200	2900	2350	1900	1500
H Comp Lbs	12,100	10,300	8,640	6,890	5,550	4,250	3,210	2,175	1,440
V Comp Lbs	29,700	25,500	21,300	17,600	14,000	11,000	8,300	6,150	4000
e	8.25'	7.55'	6.80'	6.15'	5.50'	4.85'	4.15'	3.50'	2.80'

Note: Key shown from above footing



Key for use on rock



TYPICAL LAYOUT EXAMPLE

NOTES

All concrete to be Class "A" concrete
All reinforcing steel to be of structural grade deformed bars, and where bars are spliced they shall lap at least 40 diameters
When the footing rests on a rock foundation "W" may be decreased to 0.4(H+F+2') making all the reduction in "B" leaving "C", "S" and "F" unchanged
Design data:- f_c=1000 ‰, f_s=18000 ‰, v=150 ‰, n=10, earth=120 lbs/cu.ft. and equivalent fluid=36 lbs/sq.ft./ft. of height.
Wall is designed for 2'-0" surcharge. For a greater surcharge a special design will be required.
Vertical bars to be doweled only when they extend more than 10' above top of footing.
Except as noted above.
W=½(H+3'-0"), C=⅓(H+2'-0"), B=⅓(H+3'-6").

RUMSEY BRIDGE
ACROSS CACHE CREEK

CANTILEVER RETAINING WALL
2' LEVEL SURCHARGE

SCALE. NONE	FILE NO.
BRIDGE NO. 22C-3	DRAWING NO. [illegible]

[illegible]
May 3, 1948

SCALE
Use test only when
[illegible]