

Colorado Department of Transportation
Structure Inspection and Inventory Report (English Units)

Highway Number (ON) 5D: 025A

Mile Post (ON)11: 209.191 mi

Bridge Key: F-16-OG Inspection Date: 3/27/2012 Sufficiency Rating: 36.0 SD

Rgn/Sectn 2E/2M:	68	Hist Signif 37:	5	UW Inspection Date 93B:	
Trans Region 2T:	02	Posting status 41:	A	SI Date 93C:	
County Code 3:	031	Service on/un 42A/B:	7 1	Bridge Cost 94:	\$ 0
DENVER		Main Mat/Desgn 43A/B:	4 6	Roadway Cost 95:	\$ 0
Place Code 4:	00000	Appr Mat/Desgn 44A/B:	0 0	Total Cost 96:	\$ 0
non-city		Main Spans Unit 45:	12	Year of Cost Estimate 97:	
Rte.(On/Under)5A:	1	Approach Spans 46:	0	Brdr Brdg Code/% 98A/B:	
Signing Prefix 5B:	1	Horiz Clr 47:	39.0 ft	Border Bridge Number 99:	
Level of Service 5C:	7	Max Span 48:	124.6 ft	Defense Highway 100:	1
Directional Suffix 5E:	0	Str Length 49:	1,378.4 ft	Parallel Structure 101:	N
Feature Intersected 6:		Curb Wdth L/R 50A/B:	0.0 ft 0.0 ft	Direction of Traffic 102:	1
US 6 ML		Width Curb to Curb 51:	39.0 ft	Temporary Structure 103:	
Facility Carried 7:		Width Out to Out 52:	42.0 ft	Highway System 104:	1
RAMP TO I 25 NBND		Deck Area:	57,893. sq. ft	Fed Lands Hiway 105:	0
Alias Str No.8A:		Min Clr Ovr Brdg 53:	99.99	Year Reconstructed 106:	0000
		Min Undrclr Ref 54A:	H	Deck Type 107:	1
Prll Str No. 8P		Min Undrclr 54B:	17.3 ft	Wearing Surface 108A:	6
		Min Lat Clrnce Ref R 55A:	H	Membrane 108B:	2
Location 9:	328.05117409:	Min Lat Undrclr R 55B:	8.0 ft	Deck Protection 108C:	0
JCT I25 + SH6 IN DENVER		Min Lat Undrclr L 56:	4.00000004:	Truck ADT 109:	14 %
Max Clr 10:	99.99	Deck 58:	7	Trk Net 110:	1
BaseHiway Net12:	0	Super 59:	3	Pier Protection 111:	#
IrsinvRout 13A:	0000000000	Sub 60:	8	NBIS Length 112:	Y
IrssubRout No13B:	00	Channel/Protection 61:	N	Scour Critical 113:	N
Latitude 16:	39d 43' 27"	Culvert 62:	N	Scour Watch 113M:	0
Longitude 17:	105d 00' 53"	Oprtng Rtg Method 63:	1 LF Load Fact	Future ADT 114:	26,640
Range18A:	68 W	Operating Rating 64:	77.1	Year of Future ADT 115:	2025
Township18B:	68	Inv Rtnng Method 65:	1	CDOT Str Type 120A:	SBGC
Section18C:	4	Inventory Rating 66:	36.0	CDOT Constr Type 120B:	10
Detour Length 19:	3.2 mi	Asph/Fill Thick 66T:	004 "in"	Inspection Indic 122A:	
Toll Facility 20:	3	Str. Evaluation 67:	3	Inspection Trip 122AA:	
Custodian 21:	1	Deck Geometry 68:	9	Scheduling Status 122B:	
Owner 22:	1	Undrclr Vert/Hor 69:	4	Maintenance Patrol 123:	7
Functional Class 26:	11	Posting 70:	5	Expansion Dev/Type124:	D
Year Built 27:	1989	Waterway Adequacy 7:	N	Brdg Rail Type/Mod 125A/B:	R 0
Lanes on 28A:	2	Approach Alignment 72:	6	Posting Trucks 129A/B/C:	0 0 0
Lanes Under 28B:	16	Type of Work 75A:		Str Rating Date 130:	11/13/1996
ADT 29:	18,000	Work Done By 75B:		Special Equip 133:	-1
Year of ADT 30:	2005	Length of Improvment 76:	0.0 ft	Vert Clr N/E 134A/B/C:	N 27.83 27.83
Design Load 31:	6	Insp Team Indicator 90B:	WHITE TEAM	Vert Clr S/W 135A/B/C:	S 27.83 27.83
Apr Rdwy Width 32:	150.9 ft	Inspector Name 90C:	STADIGM	Vertical Clr Date:	10/10/2005
Median 33:	0	Frequency 91:	24 months	Weight Limit Color: 139:	0
Skew 34:	99.00 °	FC Frequency 92A:	24	Str Billing Type:	U
Structure Flared 35:	0	UW Frequency 92B:	-1	Userkey 1 - System:	ONSYS
Sfty Rail 36a/b/c/d:	1 1 1 1	SI Frequency 92C:	-1	Userkey 7-Update Indic:	
Rail ht36h:	36 "in"	FC Inspection Date 93A:	3/27/2012		

Inspector Name: STADIGM

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Element Inspection Report

Elm/En	Description	Units	Total Qty	% in 1	CS 1	% in 2	CS 2	% in 3	CS 3	% in 4	CS 4	% in 5	CS 5
26/4	Conc Deck/Coatd Bars	(SF)	57,893	100 %	57,893	0 %	0	0 %	0	0 %	0	0 %	0
102/4	Paint Stl Box Girder	(LF)	2,756	100 %	2,756	0 %	0	0 %	0	0 %	0	0 %	0
205/4	R/Conc Column	(EA)	10	100 %	10	0 %	0	0 %	0	0 %	0	0 %	0
210/4	R/Conc Pier Wall	(LF)	105	100 %	105	0 %	0	0 %	0	0 %	0	0 %	0
233/4	P/S Conc Cap	(LF)	355	100 %	355	0 %	0	0 %	0	0 %	0	0 %	0
234/4	R/Conc Cap	(LF)	105	100 %	105	0 %	0	0 %	0	0 %	0	0 %	0
307/4	Modular Expansion Jt	(LF)	132	100 %	132	0 %	0	0 %	0	0 %	0	0 %	0
314/4	Pot Bearing	(EA)	28	100 %	28	0 %	0	0 %	0	0 %	0	0 %	0
331/4	Conc Bridge Railing	(LF)	402	98 %	392	2 %	10	0 %	0	0 %	0	0 %	0
333/1	Other Bridge Railing	(LF)	2,354	98 %	2,314	1 %	20	1 %	20	0 %	0	0 %	0
340/1	Superstr Cnc Coating	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
341/1	Substr Conc Coating	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
356/4	Steel Fatigue SmFlag	(EA)	7	0 %	0	100 %	7	0 %	0	0 %	0	0 %	0
359/4	Soffit Smart Flag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0

Elem/Env	Description	Element Notes
26/4	Conc Deck/Coatd Bars	Asphalt thickness varies from 3 inches on the Left, to 5 inches on the Right. Transverse, longitudinal, and random cracks throughout; all have been sealed. A sealed longitudinal seam running the entire length of the Right shoulder.
102/4	Paint Stl Box Girder	Timber deck framing remains in place in Spans 1 through 6 along with construction debris, making inspection work difficult. No significant leakage into the box girders, with no rust. The exterior gray paint is discolored and chalking in areas. Minor cracks in girder web stiffener welds, at the intermediate diaphragms, per SMART FLAG 356; (see 2006 PHOTOS).
205/4	R/Conc Column	Columns at Piers 2 through 6, and 8 through 12. Pier 4 has tire scuff marks at the base. Piers 10 and 11 have minor chips at the bases. All columns have vertical and horizontal hairline shrinkage cracks.
210/4	R/Conc Pier Wall	Pier walls at 1, 7, and 13 are in good condition.
233/4	P/S Conc Cap	Post-tensioned caps at Piers 2 through 6, and 8 through 12. All look good.
234/4	R/Conc Cap	At Piers 1, 7, and 13. Pier 1 cap has hairline vertical cracks on the Rear face, and one vertical crack on the Left face. Pier 13 has a few vertical and horizontal cracks, otherwise all look good.

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Elem/Env	Description	Element Notes
307/4	Modular Expansion Jt	Modular expansion joints above Piers 1, 7, and 13. Openings across glands at each range from 1.50 inches, to 2 inches. Joints are full of sand, and appear to be in good condition. A few glands on the Left sides at P1 and P7 are starting to pull from the extruded sections. Joints at #1 and #13 are abrupt when driving over them. Actively leaking at Pier #1, and the Left side at Pier #13. Look OK when viewed from the bottom, one spring is collapsed at P7; (see 2012 PHOTO).
314/4	Pot Bearing	Pot bearing 1A sets off center of the stainless steel plate, but within limits; (see 4/1990 PHOTO).
331/4	Conc Bridge Railing	Concrete Jersey barriers on Lt. side partially in Span 1 (40 LF), and Rt. side from Spans (1 - 3). Both have vertical cracks spaced 2 to 5 feet apart. Some light scaling on faces, with exposed rebar. A few minor spalls and chips on top of both rails. Many tire scuff marks due to curvature.
333/1	Other Bridge Railing	Coated chain link fencing is mounted to the concrete Jersey Barrier almost the entire length on the Left side; and from Pier 4 to Pier 13 on the Right. 20 Feet of fencing has been damaged along the Right side over Span 4, with one post missing, and spalling concrete around a few posts. Left side damage at Pier 11; 5 posts are missing or broken, the chain link material is missing. Light to moderate vertical cracks on both sides, most with efflor. Many rust stained areas from the posts, on the Left rail.
340/1	Superstr Cnc Coating	Coating on the overhangs looks OK.
341/1	Substr Conc Coating	On pier walls, columns, and caps; looks OK.
356/4	Steel Fatigue SmFlag	Minor cracks from poor weld terminations in web stiffener to web welds at intermediate diaphragm connections in Girder B; in Spans 1 (two locations), 6, 8, 10, 11, and 12. See the copy of the framing plans in the folder for locations, (also see 2006, and 2010 PHOTOS).
359/4	Soffit Smart Flag	Steel stay-in-place deck forms on the deck bottom are in good condition. Transverse cracks with efflor. in overhangs, spaced about 2 feet to 8 feet apart, full length of both sides. One 1/2 square foot void in the expansion joint haunch section, in the Right overhang at P13.

Maintenance Activity Summary

MMS Activity	Description	Recommended	Status	Target Year	Est Cost
352.01	Cln & Wash	2/21/2002	-1	2015	500

Clean out drains.

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Maintenance Activity Summary

MMS Activity	Description	Recommended	Status	Target Year	Est Cost
**354.02	Suprstr	3/25/2010	-1	2012	3000

Grind out the poor weld terminations at the locations shown on the framing plans. These have been documented, since the original construction of bridge, and none have propagated as of the 2010 inspection. See PHOTOS.

**354.04	Suprstr	2/21/2002	-1	2015	40000
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WEAR FULL FACE RESPIRATOR! Remove dead pigeons in various states of decomposition, nests, bird dung (Pier 1, Span 1; Pier 7, Spans 6 and 7, and Pier 13, Span 12). Add hinged aluminum screen doors at Piers 1, 7 (2 for each box), and 13. (8 total) These doors need to be installed to stop pigeons from entering and building nests in Spans. Consider removing or dismantle timber formwork from inside of the steel box girders in Spans (1 - 6), and Spans (7 - 12) are mostly removed and ok for inspectors. Remove all construction debris.

Bridge Notes

All drain inlets are plugged with sand and debris.
 Access holes in the bottom flanges, and diaphragms at Piers 1 and 13. Bucket truck at Pier 1, and a tall 8 foot ladder is needed at Pier 13, which can be placed over the rail at the Right on the Pier Cap gore area for an exit. **WEAR FULL FACE RESPIRATORS!**
 Clearance inside box girders is 5 ft. - 4 inches, and access holes at piers are 28 inches by 16 inches.
 Forms have been left in place in Spans (1 - 6) with construction debris. Dead Pigeons in various states of decomposition, nests, bird dung, (Pier 1, Span 1; and Pier 7, Spans 6 and 7; and Pier 13, Span 12), (see 2006 & 2010 PHOTOS). Spans (7 - 12) have majority of formwork removed, and no maintenance needs to be done to remove formwork in these spans.
 Portals at Piers 1, 6, and 7 need light weight hinged doors (plastic, plexiglas with small holes for ventilation).
 Near the field splice in Span 6B at diaphragm connections; two nuts are missing. A racoon family living in Girder A at P7, during the 2012 inspection.
 Superstructure lowered to a Condition State 3 due to fatigue cracks in weld terminations.

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Inspection Notes

TIME: 10:25 TEMP: 60 WEATHER: Clear

Inspected Box Girder B on 3/29/2010, and did not inspect Box Girder A due to confined space issues.Box A entered during the 2012 inspection.

Scope:

NBI: Element: Underwater: Fracture Critical: Other: Type: Regular NBI

Inspector: STADIGM

Inspection Team:

Inspection Date: 03/27/2012

Inspector

Inspector