

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

Highway Number (ON) 5D: 085B

Mile Post (ON)11: **200.400 mi**

Bridge Name: F-16-YE Inspection Date: **8/23/2012** Sufficiency Rating: **96.1** **Not Eligible**

| | | | | | |
|------------------------|------------------|---------------------------|------------------|----------------------------|--------------|
| NBI Reporting ID: | F-16-YE | Hist Signif 37: | 5 | UW Inspection Date 93B: | |
| Rgn/Sectn 2E/2M: | 68 | Posting status 41: | A | SI Date 93C: | 11/26/2004 |
| Trans Region 2T: | 02 | Service on/un 42A/B: | 6 4 | Bridge Cost 94: | \$ 725,788 |
| County Code 3: | 035 | Main Mat/Desgn 43A/B: | 5 05 | Roadway Cost 95: | \$ 72,579 |
| DOUGLAS | | Appr Mat/Desgn 44A/B: | 0 0 | Total Cost 96: | \$ 1,088,681 |
| Place Code 4: | 00000 | Main Spans Unit 45: | 12 | Year of Cost Estimate 97: | 2006 |
| non-city | | Approach Spans 46: | 0 | Brdr Brdg Code/% 98A/B: | |
| Rte.(On/Under)5A: | 1 | Horiz Clr 47: | 30.0 ft | Border Bridge Number 99: | |
| Signing Prefix 5B: | 3 | Max Span 48: | 163.4 ft | Defense Highway 100: | 0 |
| Level of Service 5C: | 1 | Str Length 49: | 1,728.8 ft | Parallel Structure 101: | N |
| Directional Suffix 5E: | 0 | Curb Wdth L/R 50A/B: | 0.0 ft 0.0 ft | Direction of Traffic 102: | 1 |
| Feature Intersected 6: | | Width Curb to Curb 51: | 30.0 ft | Temporary Structure 103: | |
| US 85/C470 ML | | Width Out to Out 52: | 33.0 ft | Highway System 104: | 1 |
| Facility Carried 7: | | Deck Area: | 57,051. sq. ft | Fed Lands Hiway 105: | 0 |
| SBUS85TOEBC470RMP | | Min Clr Ovr Brdg 53: | 99.99 | Year Reconstructed 106: | 0000 |
| Alias Str No.8A: | | Min Undrclr Ref 54A: | H | Deck Type 107: | 2 |
| | | Min Undrclr 54B: | 24.5 ft | Wearing Surface 108A: | 6 |
| Prll Str No. 8P | | Min Lat Clrnce Ref R 55A: | H | Membrane 108B: | 1 |
| | | Min Lat Undrclr R 55B: | 25.0 ft | Deck Protection 108C: | 1 |
| Location 9: | | Min Lat Undrclr L 56: | 25.0 ft | Truck ADT 109: | 8 % |
| JCT US 85 & SH 470 | | Deck 58: | 8 | Trk Net 110: | 1 |
| Max Clr 10: | 328.1 ft | Super 59: | 8 | Pier Protection 111: | # |
| BaseHiway Net12: | 1 | Sub 60: | 8 | NBIS Length 112: | Y |
| IrsinvRout 13A | 000000085B | Channel/Protection 61: | N | Scour Critical 113: | N |
| IrsSubRout No13B: | 00 | Culvert 62: | N | Scour Watch 113M: | 0 |
| Latitude 16: | 39d 34' 02" | Optrng Rtg Method 63: | 8 LRFR by RF H | Future ADT 114: | 48,945 |
| Longitude 17: | 105d 01' 57" | Operating Rating 64: | 65.1 | Year of Future ADT 115: | 2028 |
| Range18A: | 68 W | Inv Rtnng Method 65: | 8 | CDOT Str Type 120A: | CBGCP |
| Township18B: | 68 | Inventory Rating 66: | 39.1 | CDOT Constr Type 120B: | 10 |
| Section18C: | 6 | Asph/Fill Thick 66T: | 003 "in" | Inspection Indic 122A: | |
| Detour Length 19: | 0.6 mi | Str. Evaluation 67: | 8 | Inspection Trip 122AA: | |
| Toll Facility 20: | 3 | Deck Geometry 68: | 4 | Inspection Schedule ID: | ODD AUG C19 |
| Custodian 21: | 1 | Undrclr Vert/Hor 69: | 7 | Maintenance Patrol 123: | 30 |
| Owner 22: | 1 | Posting 70: | 5 | Expansion Dev/Type124: | D |
| Functional Class 26: | 12 | Waterway Adequacy 7: | N | Brdg Rail Type/Mod 125A/B: | R 1 |
| Year Built 27: | 2011 | Approach Alignment 72: | 8 | Posting Trucks 129A/B/C: | 0 0 0 |
| Lanes on 28A: | 1 | Type of Work 75A: | 33 | Str Rating Date 130: | 11/30/2010 |
| Lanes Under 28B: | 17 | Work Done By 75B: | 1 | Special Equip 133: | |
| ADT 29: | 39,000 | Length of Improvment 76: | 232.9 ft | Vert Clr N/E 134A/B/C: | X 99.99 0 |
| Year of ADT 30: | 2008 | Insp Team Indicator 90B: | WHITE TEAM | Vert Clr S/W 135A/B/C: | X 99.99 0 |
| Design Load 31: | A | Inspector Name 90C: | CHURCHESK | Vertical Clr Date: | 5/5/1905 |
| Apr Rdwy Width 32: | 30.0 ft | Frequency 91: | 24 months | Weight Limit Color: 139: | 0 |
| Median 33: | 0 | FC Frequency 92A: | | Str Billing Type: | IIC |
| Skew 34: | 0.00 ° | UW Frequency 92B: | | Userkey 1 - System: | ONSYS |
| Structure Flared 35: | 0 | SI Frequency 92C: | | Userkey 7-Update Indid: | |
| Sfty Rail 36a/b/c/d: | 1 1 1 1 | FC Inspection Date 93A: | | | |
| Rail ht36h: | 44 "in" | | | | |

Inspector Name: CHURCHESK

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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 |
|--------|----------------------|-------|-----------|--------|--------|--------|------|--------|------|--------|------|--------|------|
| 36/4 | Prcst Pnl Cnc Dk+AC | (SF) | 57,051 | 100 % | 57,051 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 104/4 | P/S Conc Box Girder | (LF) | 3,450 | 100 % | 3,450 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 210/4 | R/Conc Pier Wall | (LF) | 117 | 100 % | 117 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 215/4 | R/Conc Abutment | (LF) | 66 | 100 % | 66 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 233/4 | P/S Conc Cap | (LF) | 312 | 100 % | 312 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 300/4 | Strip Seal Exp Joint | (LF) | 180 | 100 % | 180 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 314/4 | Pot Bearing | (EA) | 8 | 100 % | 8 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 321/4 | R/Conc Approach Slab | (EA) | 2 | 100 % | 2 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 325/4 | Slope Prot/Berms | (EA) | 2 | 100 % | 2 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 326/4 | Bridge Wingwalls | (EA) | 4 | 100 % | 4 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 333/4 | Other Bridge Railing | (LF) | 3,458 | 100 % | 3,458 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 340/4 | Superstr Cnc Coating | (EA) | 1 | 100 % | 1 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 341/4 | Substr Conc Coating | (EA) | 1 | 100 % | 1 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |
| 359/4 | Soffit Smart Flag | (EA) | 1 | 100 % | 1 | 0 % | 0 | 0 % | 0 | 0 % | 0 | 0 % | 0 |

| Elem/Env | Description | Element Notes |
|----------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 36/4 | Prcst Pnl Cnc Dk+AC | 3 Inches asphalt (Stone Mastic Asphalt). Looks good. Precast concrete panels between girders on deck bottom. |
| 104/4 | P/S Conc Box Girder | Couple of chips in bottom flange of Girder 12A (about 15 ft. from Pier 13), and in Girder 5A. Poor consolidation of concrete (with some exposed rebar) at bottom of access hole through intermediate diaphragm in Girder 8B. (See 2012 Photo) Some hairline cracking in bottom flange of Girder 7B at Pier 7, near access hole. Some hairline cracking in intermediate diaphragms, and in diaphragms at piers. |
| 210/4 | R/Conc Pier Wall | Moderate vertical crack on forward face of Pier 8 wall, about 15 - 20 ft. above ground. Some hairline random shrinkage cracks, and vertical cracks. |
| 215/4 | R/Conc Abutment | MSE walls with concrete facing panels behind Pier 1 and Pier 13. Look good. |
| 233/4 | P/S Conc Cap | Some light vert. cracks in face, and at end of some, along construction joint where "end cap" was placed (light longit. cracking in bottom of some at same location). |
| 300/4 | Strip Seal Exp Joint | Two single-gland joints above Pier 1, Pier 7, and Pier 13. (See 2012 Photo) Fwd. joint at Pier 1 is open 1 inch, and rear jt. open 1½ inches. Both joints at Pier 7 open 1 inch. Fwd. joint at Pier 13 open 2 inches, and rear joint open 1 inch. Some debris in all. |
| 314/4 | Pot Bearing | One pot bearing below each girder at Pier 1 and Pier 13, and one pot bearing below each girder (for each span) at Pier 7. Look good from ground level. |
| 321/4 | R/Conc Approach Slab | Asphalt covered. Look good. |

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| Elem/Env | Description | Element Notes |
|----------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 325/4 | Slope Prot/Berms | No slope at Abutment 13 / Pier 13. Erosion control blankets were placed on top of dirt at Abutment 1 / Pier 1 slope. |
| 326/4 | Bridge Wingwalls | U-type MSE abutment wings. Look good. |
| 333/4 | Other Bridge Railing | 44 Inch high concrete Type R bridge rail (Jersey Barrier), with 3 ft. high debris fence on most (6½ ft. high in areas above C-470 and R/R tracks). Typ. hairline to light vert. cracks in concrete portion, some with efflorescence. LED lights embedded in the right rail (outside edge of curve). |
| 340/4 | Superstr Cnc Coating | Looks good. |
| 341/4 | Substr Conc Coating | Looks good. |
| 359/4 | Soffit Smart Flag | Precast concrete panels between girders on deck bottom. Some hairline trans. cracks, and few hairline longit. cracks, with efflor., in cast-in-place portions of deck. |

Bridge Notes

Built On Project ES6 0852-103_17679

Access holes through pier diaphragms are 3 ft. W x 2 ft. H x 3 ft. deep. They are also about 2½ ft. above bottom flanges which makes them difficult to cross through.

There is no access through Pier 7 from Span 6 to Span 7.

Access doors at Pier 1 are about 15 ft. above ground.

Consider using A-40 to access Girders in Spans 1 - 6, and the bearings at Pier 1 and Pier 7.

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Inspection Notes

Temperature: 63°
Time: 9:20
Weather: Partly Cloudy
Interior of both girders was accessed from Span 7 to Span 12 this inspection.

Scope:

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

Team Leader Inspection Check-off:

- FCM's
- Posting Signs
- Essential Repair Verification
- Vertical Clearance
- Stream Bed Profile

Inspection Team:

Inspection Date: 08/23/2012

Inspector: CHURCHESK

Inspector (Team Leader)