

## BRIDGE NO. 05939

18080 - CROMWELL  
NORTH ROAD EXTENS.  
over  
COLES BROOK

Routine Inspection

6/06/2016

Inspected by: Team 5



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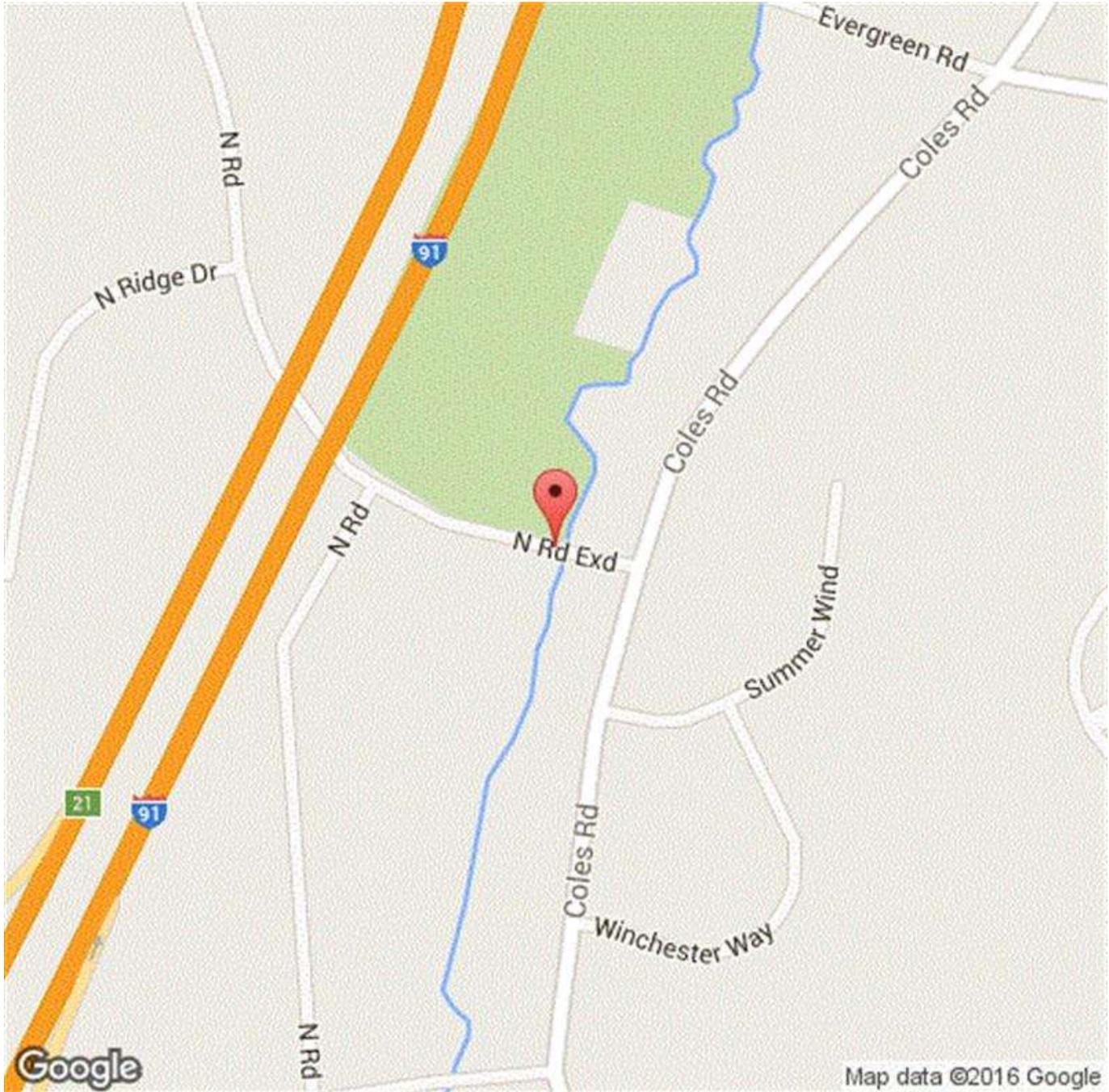
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Form: Location  
Inspection type: Routine  
Inspection Date: 6/06/2016  
Inspected by: Team 5

Bridge No: 05939

Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS



Location Map # 1  
190 feet West of Coles Road

665 feet East of Interstate-91 (Bridge Nos. 0  
3081 & 0 3082)

Form: BRI-19, Rev. 2/15  
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## STRUCTURE INVENTORY & APPRAISAL

### INSPECTION

Structurally Deficient  Functionally Obsolete   
Sufficiency Rating   
(90) Inspection Date  (91) Frequency   
Indepth Insp  Proposed next Indepth Year   
Deck Survey Date  Class   
Access  Flagman   

	Frequency	Date	Type
Fracture	<input type="text"/>	<input type="text"/>	<input type="text"/>
Underwater	<input type="text"/>	<input type="text"/>	<input type="text"/>
Special	<input type="text"/>	<input type="text"/>	<input type="text"/>

### IDENTIFICATION

Bridge Name   
Town Code - Name   
(5) Inventory Route  
(A) Record Type   
(B) Signing Prefix   
(C) Level of Service   
(D) Route Number.   
(E) Dir Suffix   
(6A) Featured Intersected   
(6B) Critical Facility Indicator   
(7) Facility Carried   
(9) Location   
(11) Mile Post  Miles  
(16) Latitude  Deg.  Min.  Sec.  
(17) Longitude  Deg.  Min.  Sec.  
(98) Border Bridge  
(A) State Code  (B) Percent Responsibility  %  
(C) Border Town Name   
(99) Border Bridge Structure No.

### STRUCTURE TYPE & MATERIALS

(43) Structure Type, Main  
A) Material   
B) Design Type   
(44) Structure Type, Approach  
A) Material   
B) Design Type   
(45) Number of Spans, Main Unit   
(46) Number of Approach Spans   
(107) Deck Structure Type   
(108) Wearing Surface/Protection Systems  
A) Type of Wearing Surface   
B) Type of Membrane   
C) Type of Deck Protection   
Substructure  
A) Material   
B) Design Type   
Paint  
Type   
Year   
Comment

### GEOMETRIC DATA

(48) Length of Maximum Span  ft.  
(49) Structure Length  ft.  
(50) Curb or Sidewalk Widths  
A) Left  ft.  in. B) Right  ft.  in.  
(51) Bridge Roadway Width Curb to Curb  ft.  in.  
(52) Deck Width, Out to Out  ft.  in.  
(32) Approach Roadway Width  ft.

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(33) Bridge Median   
Deck Area  sq. ft.  
(34) Skew Angle  deg.  
(35) Structure Flared   
(10) Inv. Rte. Min. Vert. Clearance  ft.  in.  
(47) Inv. Rte. Total Horiz. Clr.  ft.  in.  
Log Inv. Rte. Total Horiz. Clr.  ft.  in.  
RLog Inv. Rte. Total Horiz. Clr.  ft.  in.  
(53) Min. Vert. Clearance Over Bridge  ft.  in.  
(54) Log-Min. Vert. Underclearance  ref.  ft.  in.  
(55) Min. Lat Underclearance on Right  ref.  ft.  in.  
(56) Min. Lat Underclearance on Left  ft.  in.

**CONDITION**

(58) Deck   
(59) Superstructure   
(60) Substructure   
(61) Channel & Channel Protections   
(62) Culverts   
(36) Traffic Safety Features  
A) Bridge Railings   
B) Transitions   
C) Approach Guardrail   
D) Approach Guardrail Ends

**WATERWAY**

Drainage Basin Waterway   
(38) Navigation Control   
(39) Navigation Vertical Clearance  ft.  
(40) Navigation Horiz. Clr.  ft.  
(111) Pier/Abutment Navigation   
(116) Vert-Lift Brg Nav Min  ft.  in.

**AGE AND SERVICE**

Year Built  (106) Year Reconstructed   
(42) Type of Service  
A) On   
B) Under   
(28) Number of Lanes  
A) On  B) Under   
(29) Average Daily Traffic   
Is Above Half ADT?   
(109) Percent Truck  %  
(30) Years of ADT   
(19) Bypass, Detour Length  Miles

**APPRAISALS**

(67) Structural Evaluation   
(68) Deck Geometry   
(69) Underclearances, Vert. & Horiz.   
(71) Waterway Adequacy   
(72) Approach Roadway Alignment   
(113) Scour Critical

**COMMENTS**

North Road Extension - Inventory Route Log Direction - East..

**CLASSIFICATION**

(112) NBIS Bridge Length   
(104) Highway System   
(26) Functional Class   
(100) Defense Highway   
(101) Parallel Structure   
(102) Direction of Traffic

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(103) Temporary Structure	<input type="text"/>
(110) Designated National Network	0 - Inventory route not on network
(20) Toll	3 - On Free Road
(21) Maintain	03 - Town or Township Highway Agency
(22) Owner	03 - Town or Township Highway Agency
Report Class	L - LOCAL
(37) Historical Significance	5 - Not eligible for National Register

POSTED SIGNS

Other Posted Sign 1	<input type="text" value="0 - Blank"/>		
Other Posted Sign 2	<input type="text" value="0 - Blank"/>		
	Actual	Recomended	
Posted Load Single Unit Truck	<input type="text"/>	<input type="text"/>	tons
Posted Load Semi-Trailer Truck	<input type="text"/>	<input type="text"/>	tons
Posted Load 4 Axle Truck	<input type="text"/>	<input type="text"/>	tons
Posted Load 3S2 Truck	<input type="text"/>	<input type="text"/>	tons
All Vehicles	<input type="text"/>	<input type="text"/>	tons
Posted Vert. Clearance on Bridge	<input type="text"/> ft.	<input type="text"/> in.	
Posted Vert. Underclearance	<input type="text"/> ft.	<input type="text"/> in.	
Posted Speed Limit on Bridge	<input type="text" value="35"/> m.p.h.		

OTHER FEATURES

Fence Required	<input type="text" value="No"/>
Fence Present	<input type="text" value="No"/>
Fence Type	<input type="text"/>
Fence Height	<input type="text" value="0"/>
Fence Material	<input type="text"/>
Fence Top Type	<input type="text"/>
Barrel Ladders	<input type="text" value="No"/>
Stand Pipes	<input type="text" value="No"/>
Catwalks	<input type="text" value="No"/>
Moveable Inspection System	<input type="text" value="No"/>
Haunches Present over Roadway	<input type="text"/>
Utilities	<input type="text" value="1   Gas"/>

PROPOSED IMPROVEMENTS

(75A) Type of Work Proposed	<input type="text"/>
(75B) Work Done By	<input type="text"/>
(76) Length of Structure Improvement	<input type="text"/> ft.
(94) Bridge Improvement Cost	\$ <input type="text"/>
(95) Roadway Improvement Cost	\$ <input type="text"/>
(96) Total Project Cost	\$ <input type="text"/>
(97) Year of Improvement Estimate	<input type="text"/>
(114) Future ADT	<input type="text" value="780"/>
(115) Year of Future ADT	<input type="text" value="2034"/>
DOT Bridge Program List No	<input type="text"/>
Project No	<input type="text"/>
Advertised Date	<input type="text"/>

LOAD RATING & POSTING

(31) Design Load	<input type="text" value="0 - Unknown"/>
(63) Operating Rating Type	<input type="text" value="0 - Field evaluation and documented engineering judgment"/>
(64) Operating Rating	<input type="text" value="58"/>
(65) Inventory Rating Type	<input type="text" value="0 - Field evaluation and documented engineering judgment"/>
(66) Inventory Rating	<input type="text" value="36"/>
Evaluation Code	<input type="text" value="J - Judgement Rating"/>
Year of Evaluation	<input type="text" value="2000"/>
(70) Bridge Posting	<input type="text" value="5 - Equal to or above legal loads"/>
(41) Structure Status	<input type="text" value="A - Open"/>

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INSPECTOR'S SIGNATURES:

1) \_\_\_\_\_ Date: 06/07/2016

*Dal Fuldinski pe*

2) \_\_\_\_\_ Date: 06/09/2016

*Andrew R. Farina*

3) \_\_\_\_\_ Date:

4) \_\_\_\_\_ Date:

P.E. SIGNATURE:

Date: 06/09/2016

*Dal Fuldinski pe*

P.E. #

Reviewed By:

Date: 06/09/2016

*Dal Fuldinski pe*

Form: BRI-18, Rev. 1/14  
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## FIELD INSPECTION REPORT

Location:	0.1 MI E OF I-91	Year Built:	1980	Snooper Required:	<input type="checkbox"/>
Main Material:	3 - Steel	Year Rebuilt:		Snooper Used:	<input type="checkbox"/>
Main Design:	19 - Culvert (includes frame)				

<u>Inspectors:</u>	<u>Visits:</u>
Lead Inspector: Andrew Ferrara	Visit Date: Temp: Start Time: End Time:
Inspector: Task:	06/06/2016 78 11:20 AM 01:55 PM
Area, 5 BSE - Inspector	
Ferrara, Andrew BSE - Inspector	
Pawlikowski, Dave BSE - TE3	

58. DECK: North Road extension - Inventory Route Log Direction - West to East.. Overall Rating: **N**

Rating

Overlay:	6	Bituminous Concrete Pavement with Approximately 8 feet of Ballast exhibits: Numerous Random Transverse and Longitudinal Cracks, Crack Width Approximately up to 1-1/2 inch.. Numerous Areas of Map Cracking, Crack Width up to Approximately 1 inch.. Several Cracks Have Been Sealed but are Reopening; Cracks are Filled with Sand and Silt with Vegetation Growth.. Numerous Random Areas of Bituminous Concrete Spalling Located Along the Map, Transverse and Longitudinal Cracks; Bituminous Concrete Spalled Areas up to Approximately 3 inches deep.. There is a 10' x 6' bituminous patch in the eastbound lane for the 8 inch diameter Gas Main.
Deck - Str. Condition:	N	
Curbs:	7	Bituminous Concrete Curbs exhibit: Several Random Vertical and Transverse Cracks; Crack Width up to Approximately 2 inches..
Median:	N	
Sidewalks:	N	
Parapet:	N	
Railing:	N	
Paint:	N	
Fence:	N	
Drains:	N	
Lighting Standard:	N	

Overall Utility Condition Rating

Utility Type/Size

1   Gas	8 inch diameter Gas Main Located in Roadway Ballast - North Road Extension East Bound..
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Construction Joints: N

Expansion Joint: N

Haunches Present over travelway?

APPROACH CONDITION:

Overall Rating: 6

Rating

Approach Slab: N

Relief Joints: N

Approach Guide Rail: 5

Wood Post with Two Cable Wire Rope Rail system:

Timber Post exhibit Numerous Checks and Splits up to Approximately 3/8 inch Wide By 4 inches Deep by the Full Height of the Timber Post..

One isolated post on the northeast with an 18" high x 8" wide x 3" deep split.

Numerous Timber Posts exhibit Minor to Advanced Decay up to Approximately 6 inches deep..

Several Random Slightly Tipped Timber Posts..

Steel Cables exhibit Areas of Light Rust with Slight Pitting and Slightly Loose..

Approach Pavement: 6

Bituminous Concrete Approach Pavement exhibits:

Numerous Random Transverse and Longitudinal Cracks, Crack Width Approximately up to 1-1/2 inch..

Numerous Areas of Map Cracking, Crack Width up to Approximately 1 inch..

Several Cracks Have Been Sealed but are Reopening; Cracks are Filled with Sand and Silt with Vegetation Growth..

Numerous Random Areas of Bituminous Concrete Spalling Located Along the Map, Transverse and Longitudinal Cracks; Bituminous Concrete Spalled Areas up to Approximately 3 inches deep..

Bituminous Concrete Curbs exhibit:

Several Random Vertical and Transverse Cracks; Crack Width up to Approximately 2 inches..

Approach Embankment: 8

Traffic Safety Features

Bridge Railings: N

Transitions: N

Approach Guardrails: N

Approach Guardrail Ends: N

59. SUPERSTRUCTURE:

Overall Rating: N

Rating

Bearing Devices: N

Stringers: N

Girders: N

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Floor Beams:	N	
Trusses - General:	N	
Trusses - Portals:	N	
Trusses - Bracing:	N	
Paint:	N	
Rust:	N	
Machinery Movable Span:	N	
Rivets & Bolts:	N	
Welds - Cracks:	N	
Timber Decay:	N	
Concrete Cracking:	N	
Collision Damage:	N	
Member Alignment:	N	
Deflection Under Load:	N	
Vibration Under Load:	N	
Stand Pipes:		
Catwalks:		
Movable Inspection System:		
Barrel Ladders:		

Are Barrel Ladders OSHA Compliant?

60. SUBSTRUCTURE:

Overall Rating:

Rating

Abutments - Stem:	N	
Abutments - Backwall:	N	
Abutments - Footings:	N	
Abutments - Settlement:	N	
Abutments - Wingwalls:	N	
Piers/Bents - Caps:	N	
Piers/Bents - Pile Bent:	N	
Piers/Bents - Columns:	N	
Piers/Bents - Footings:	N	
Piers/Bents - Settlement:	N	
Erosion - Scour:	N	
Concrete Crack - Spall:	N	
Steel Corrosion:	N	
Paint:	N	
Timber Decay:	N	
Collision Damage:	N	
Debris:	N	

61. CHANNEL AND CHANNEL PROTECTION:

Overall Rating:

Rating

Channel - Scour:	5	<p>Moderate to Heavy Streambed Scour Located at the Inlet and Outlet; This Condition has Exposed the Inlet and Outlet Cutoff Walls..</p> <p>Inlet Cutoff Wall Exposed up to Approximately 28 inches High by 18 feet Long..</p> <p>Outlet Cutoff Wall Exposed up to Approximately 26 inches High by 23 feet Long..</p> <p>Inlet Span No. 1 Freeboard Measurement Approximately 6 feet 11 1/8 inches with a Water Depth Approximately 5 inches..</p> <p>Inlet Span No. 2 Freeboard Measurement Approximately 6 feet 9 29/32 inches with a Water Depth Approximately 5 inches..</p> <p>Water Depth at Inlet Varies Approximately 4 inches to 30 inches..</p> <p>Water Depth Upstream Varies Approximately 4 inches to 36 inches..</p> <p>Outlet Span No. 1 Freeboard Measurement Approximately 7 feet 00 inches with a Water Depth Approximately 4 inches..</p> <p>Outlet Span No. 2 Freeboard Measurement Approximately 6 feet 11 1/2 inches with a Water Depth Approximately 3 inches..</p> <p>Water Depth at Outlet Varies Approximately 4 inches to 35 inches..</p> <p>Water Depth Downstream Varies Approximately 2 inches to 24 inches..</p> <p>Freeboard Measurement Taken Crown of the Arch Pipe to the Waterline..</p>
Embankment - Erosion:	5	Light to Moderate Embankment Erosion Exposing Brush and Tree Roots Upstream and Downstream..
Debris:	5	<p>Moderate to Heavy Accumulation of Debris {Leaves, Grass, Brush, Tree Limbs &amp; Logs} Laying Along the Upstream and Downstream Channel Embankments..</p> <p>Light to Moderate Accumulation of Yard Debris {Leaves, Weeds &amp; Grass Clippings} Laying at the Upstream and Downstream Channel Embankments..</p> <p>A 14 inch diameter Tree is Lying in the Upstream Channel Approximately 25 feet North of the Culvert Inlet..</p>
Vegetation:	6	Light to Moderate Vegetation Growth {Grass, Brush & Trees} Growing Along the Upstream and Downstream Channel Embankments; Brush Overhanging into Channel & Trees Leaning into Channel..
Channel Change:	5	<p>The Stream Approaches and Enters at a Moderate to the Culvert Centerline; There is Encroachment Located Along the Northeast Channel Embankment, Which is Contributing to the Migration of the Channel to the West..</p> <p>The Stream Exist with the Culvert Centerline..</p> <p>Rip Rap {Rip Rap Size Varies Approximately 24 inch to 36 inch diameter} Placed Across the Channel Downstream Approximately 25 feet From the Culvert Outlet.. This Condition is Causing a Ponding of the Stream Flow at the Culvert Outlet - Water Depth Varies Approximately 3 inches to 35 inches..</p>
Fender - System:	N	
Spur Dikes and Jetties:	N	
Rip Rap:	5	There is rip rap placed along the bottom of all wingwalls. Some of the rip rap at the northwest corner has been displaced into the channel.

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No Rip Rap Located Along the Exposed Inlet and Outlet Cutoff Walls..

62. CULVERTS AND RETAINING WALLS:

Two Single Spans Corrugated Steel Arch Pipe Culvert..  
 Span No. 1: 10 feet 11 inch {Span} by 7 feet 1 inch {Rise} by 70 feet 6 inches {Length}..  
 Span No. 2: 10 feet 11 inch {Span} by 7 feet 1 inch {Rise} by 70 feet 6 inches {Length}..  
 Steel Corrugation Size: 6 inch by 2 inch by 10 gage {0.1380 inch thickness} {Field Measurement Corrugation Thickness Approximately 1/8 inch}..

Overall Rating: 3

Rating

Barrel:	N	
Concrete:	N	
Steel:	3	<p>Corrugated Steel Arch Pipes exhibit:</p> <p>The asphalt coating below the springline exhibits numerous areas missing with heavy rust to heavy laminar rust exposed; worst area is the interface of the lower side plates and the invert plates.</p> <p>Cell # 1:</p> <p>The lower corner plates at the interface of the invert plates exhibits heavy rust conditions. Typically a band 18" wide x full length on both stems, located just above and below the average water line. The exposed steel has pronounced thinning and is easily dented with a hammer.</p> <p>The lower corner plates and invert plates from the inlet end in 5' on both stems exhibit a 2' wide band of heavy laminar rust. Numerous perforations holes up to 5" long x 2" wide and can be probed up to 3" below the invert. The remaining steel in this area can be easily perforated with a hammer.</p> <p>The lower corner plates and invert plates from the outlet in 10' on both stems exhibit a 2' wide band of heavy laminar rust. Several perforations holes up to 5" long x 2" wide and can be probed up to 3" below the invert. The remaining steel in this area can be easily perforated with a hammer.</p> <p>The remainder of the invert plates exhibits heavy rust areas with pronounced thinning.</p> <p>The bolted circumferencing seam at the 46'-02" mark has nine missing nuts and several that are not fully engaged.</p> <p>Span No. 1 East Springline from the 19' mark to the 34' mark has horizontal cracking in the inner lower bolt line. Cracks are up to 5" long {Approximately 2 1/2 inches Long on Each Side of the Bolt} x 3/16" open with minor kinking noted. Note: 2-1/2" of steel remain till the cracks connect. Field note "Location A".</p> <p>Span No. 1 East Springline from the 50' mark to the 51' mark has horizontal cracking in the lower inner bolt line. Cracks are up to 3" long {Approximately 1 1/2 inches Long on Each Side of the Bolt} x 1/16" open. Field note "Location "B".</p> <p>Cell # 2:</p> <p>The lower corner plates at the interface of the invert plates exhibits heavy rust conditions. Typically a band 20" wide x full length on both stems, located just above and below the average water line. The exposed steel has pronounced thinning and is easily dented with a hammer.</p> <p>The east side of the lower corner plates and invert plates exhibits heavy laminar rust conditions which can be easily perforated full length of the cell, typical condition on the west stem from the inlet in 10'.</p> <p>Span No. 2 East Springline from the 25' mark to the 31.5' mark has horizontal cracking in the lower inner</p>

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bolt line. Cracks are up to 4" long {Approximately 2 inches Long on Each Side of the Bolt} x 1/8" open. Note: 4" of steel remaining till cracks connect. Field note "Location "C".

The lower corner plates and invert plates from the outlet in 10' on both stems exhibit a 2' wide band of heavy laminar rust. Numerous perforations holes up to 6-1/2" long x 3" wide and can be probed up to 8" below the invert and up to 16" laterally. The remaining steel in this area can be easily perforated with a hammer.

An undermined area at the outlet is 7' long x up to 4" high and can be probed up to 33" deep.

The remainder of the invert plates exhibits heavy rust areas with pronounced thinning.

Timber: N

Headwall: 5

Concrete Headwalls/Cradles exhibit:

North {inlet}:  
A 1/4" open vertical crack located under cell # 1 on the east side.

A full height x 3/16" open x 7/16" misaligned vertical crack located over cell # 2.

A full width {16"} horizontal crack between both cells open up to 1/8" wide with 1/8" misalignment.

South {outlet}:  
A full height x 1/4" open x 5/8" misaligned vertical crack located over cell # 1.

A full height x 1/8" wide x 1/4" misaligned vertical crack with adjacent spalling {8" x 6" x 2" D} located over cell # 2.

A diagonal crack open 1/8" x 1/8" misaligned with adjacent spalling {19" x 10" x 2.5" D} located at the lower east corner of cell # 2.

A 1/16" wide vertical crack located under the west side of cell # 2.

A full length band of heavy to severe scale +/- 6" high x 3" deep located under both cells.

A small void under the invert of cell # 1 can be probed up to 8" deep.

A 7' long x 4" high x up to 33" deep void below the invert at the outlet of cell # 2.

Cutoff Wall: 6

Concrete Cutoff Wall exhibit:

The cutoff walls at the inlet and outlet are exposed due to local scour.

The inlet cut-off wall is exposed 18' long x up to 28" high.

The outlet cut-off wall is exposed 23' x up to 26" high.

Debris: 8

Basically the cells are clean.

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Retaining Wall System: 7	Reinforced concrete wingwalls exhibit:  Light to Medium Scale Located Above and Below Waterline..  Southeast wingwall exhibits a horizontal hairline crack with efflorescence.
Footing: N	Not visible.

LOAD POSTING:

Rating

Single Unit (Tons):	<input type="text"/>
Semi Trailer (Tons):	<input type="text"/>
4 Axle (Tons):	<input type="text"/>
3S2 (Tons):	<input type="text"/>
All Vehicles:	<input type="text"/>
Advanced Warning:	N
Warning At Bridge:	<input type="text"/>
Legibility:	N
Visibility:	N

VERTICAL CLEARANCE POSTING

Min. Vert Under Clearance:	<input type="text"/>	Ft	<input type="text"/>	In	Spans over waterway.
Posted Clearance Under Bridge:	<input type="text"/>	Ft	<input type="text"/>	In	<input type="text"/>
Posted Clearance On Bridge:	<input type="text"/>	Ft	<input type="text"/>	In	<input type="text"/>
Advanced Warning:	False				
Warning At Bridge:	<input type="text"/>				
Legibility:	<input type="text"/>				
Visibility:	<input type="text"/>				

NOTES / COMMENTS:

Character of Traffic: Light volume, mixed weights.

Additional Notes:

There is no Bridge ID.

The bridge is logged from west to east, which is consistent with the previous inspection report.

Coles Brook flows from north to south.

Waders used for the inspection.

Additional Comments:

National Bridge Elements  
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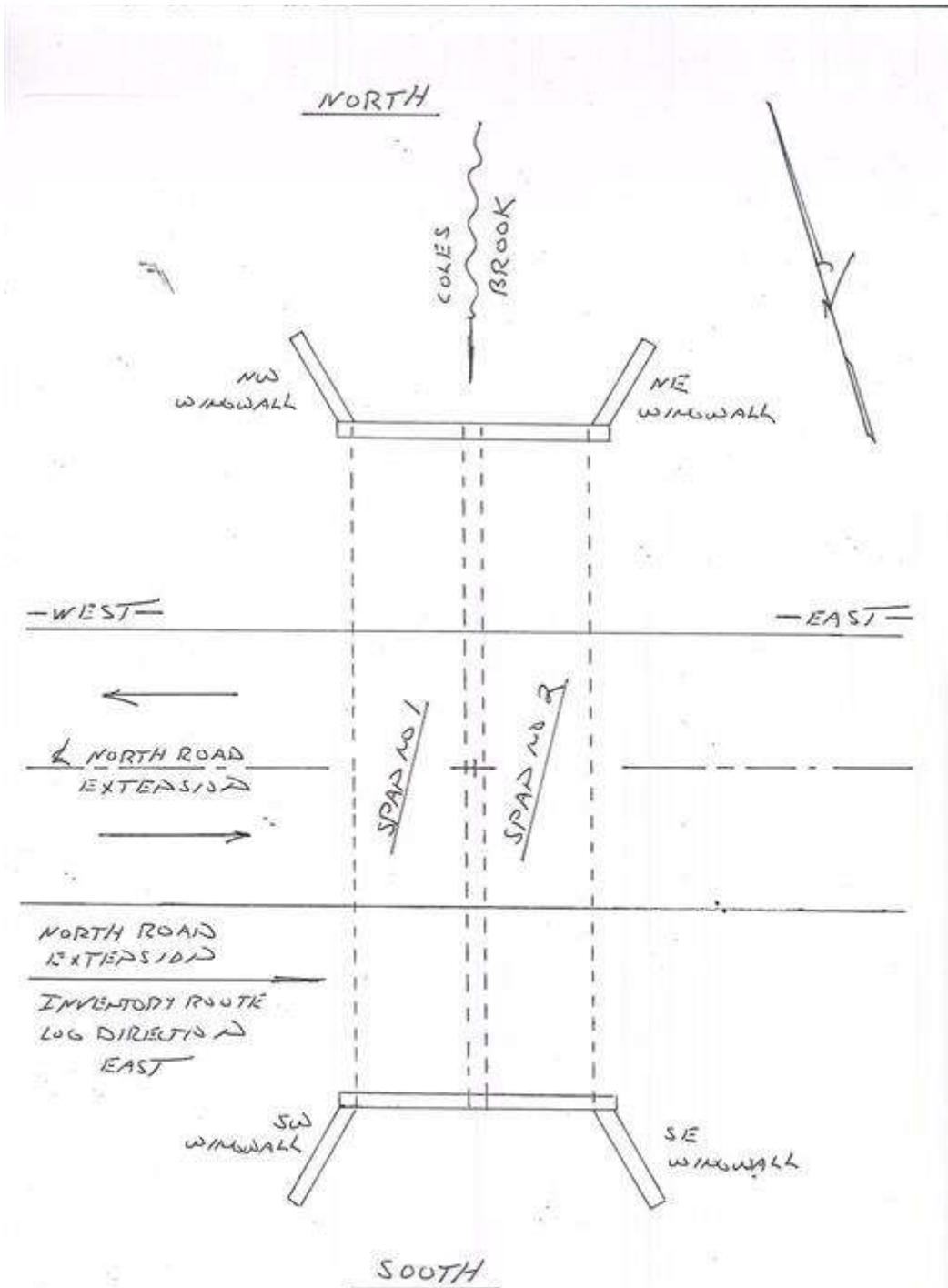
	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
240 - Steel Culvert	Mod.	141	ft.	0	0	49	92
	Moderate "Distortion item 1900" noted throughout the inner portions on both cells.						
1000 - Corrosion		113				44	69
1010 - Cracking		23					23
1020 - Connection		1				1	
1900 - Distortion							
6000 - Scour		4				4	

Sketches

Inspection type: Routine  
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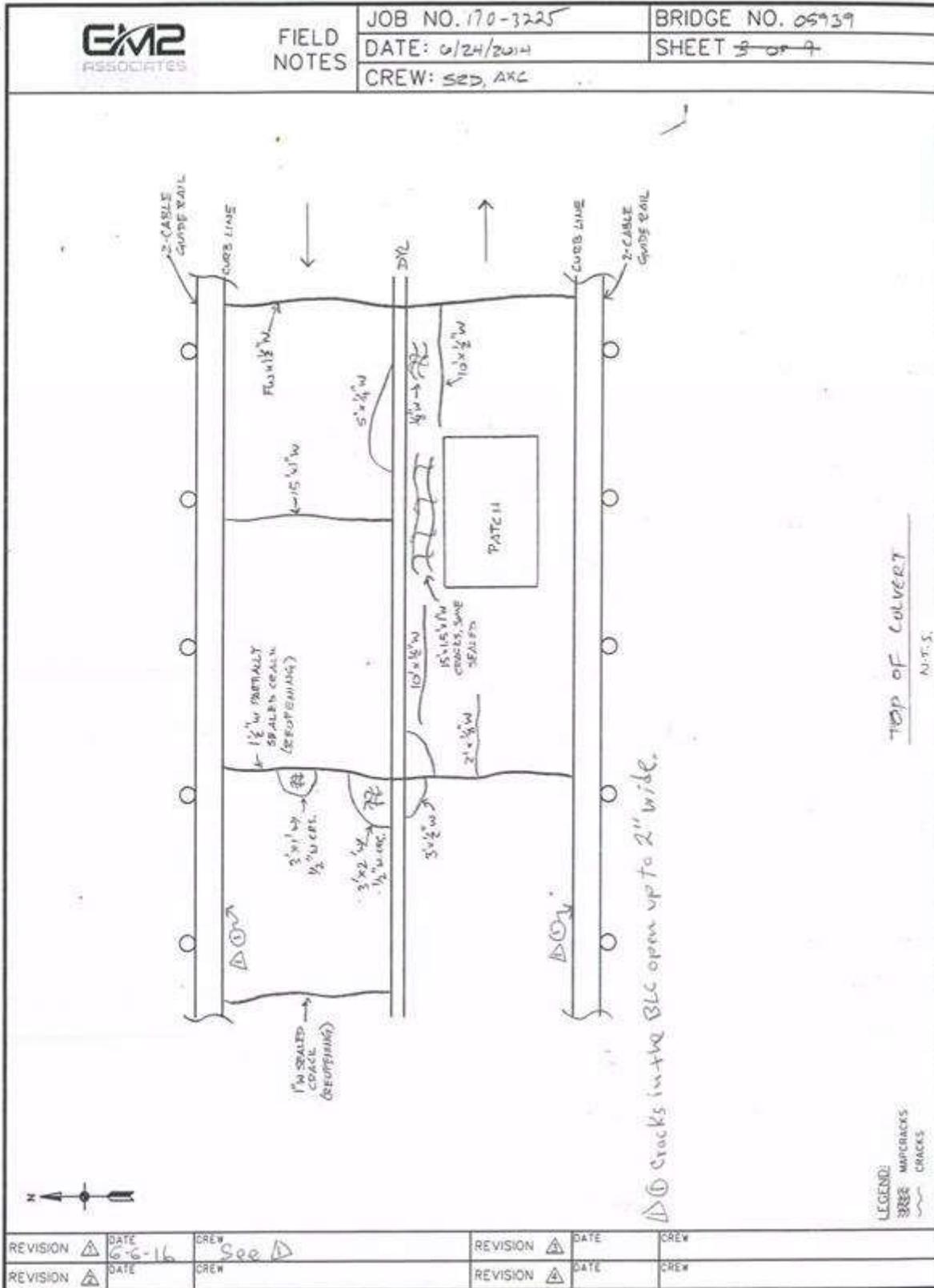
Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS

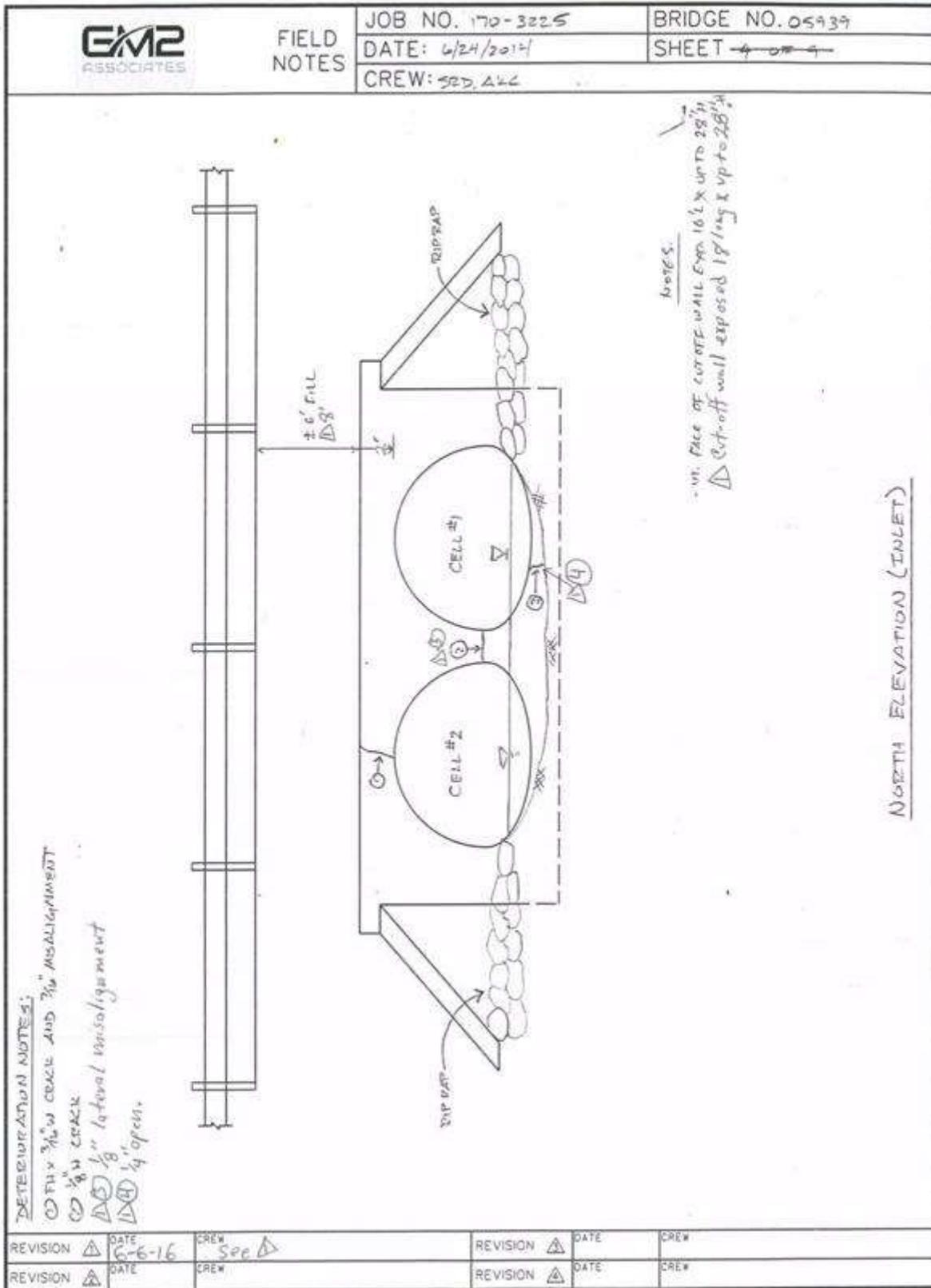


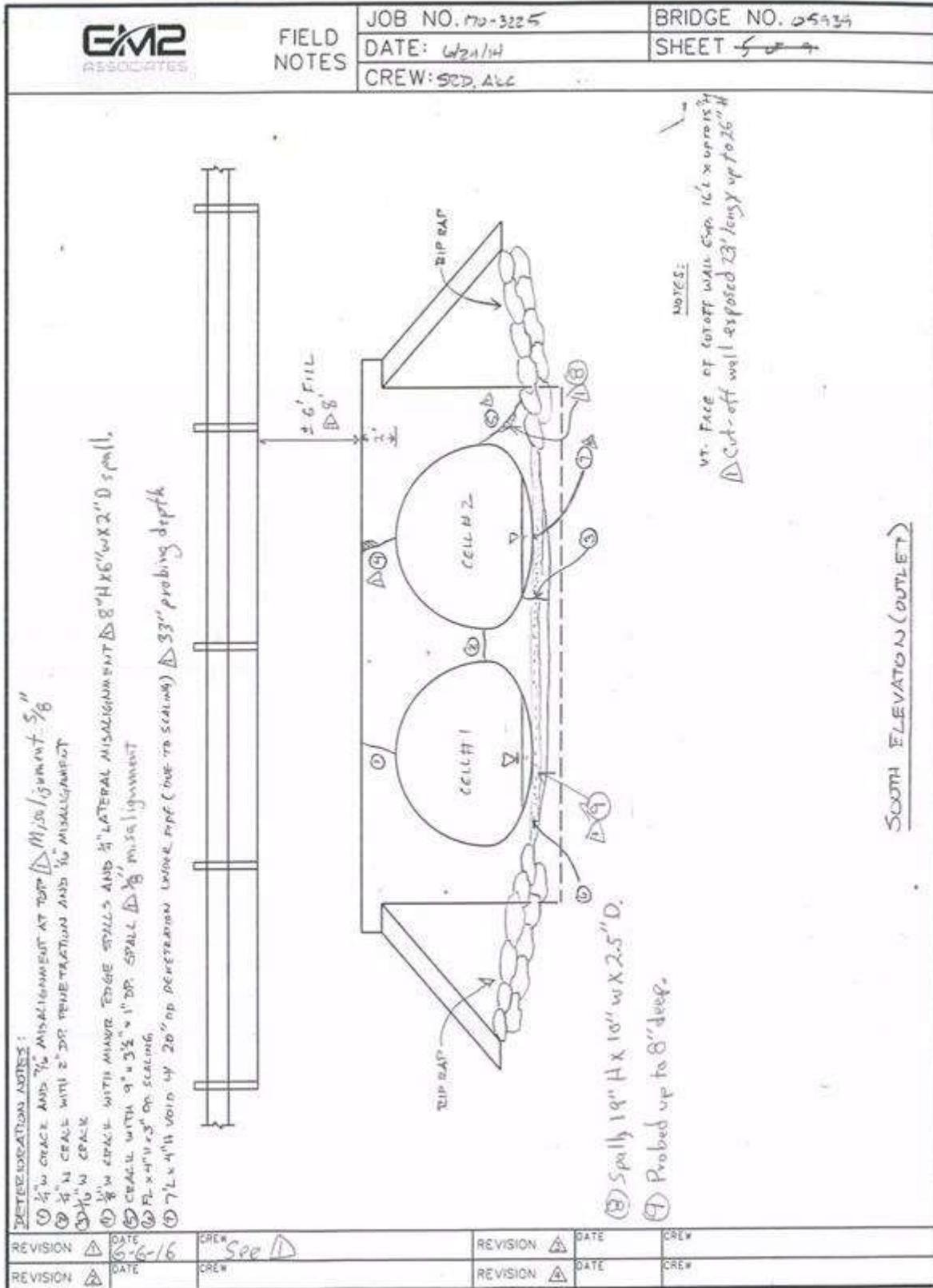
BRIDGE NO 05939 - CROMWELL

NORTH ROAD EXTENSION OVER COLES BROOK

PLAN VIEW - NOT TO SCALE

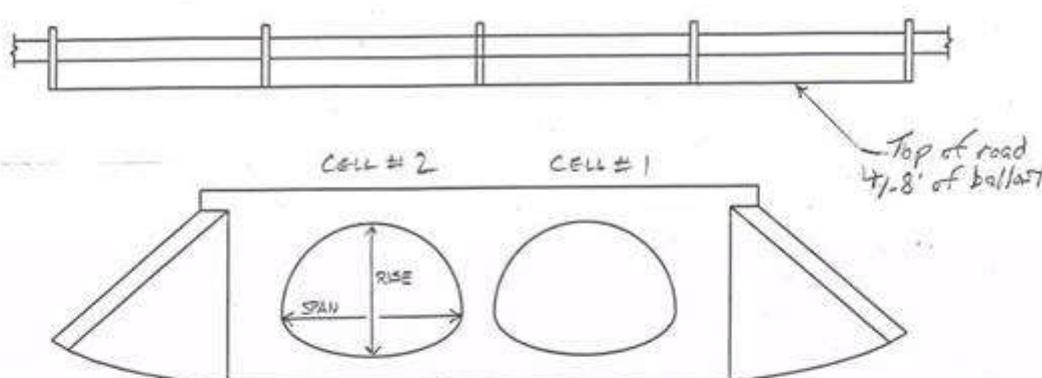






	FIELD NOTES	JOB NO. 170-3225	BRIDGE NO. 05939
		DATE: 6/24/2014	SHEET 6 OF 7
		CREW: SRD, AKC	



ELEVATION @ INLET

(N.T.S.)  
 Measurements taken under Concrete Headwalls

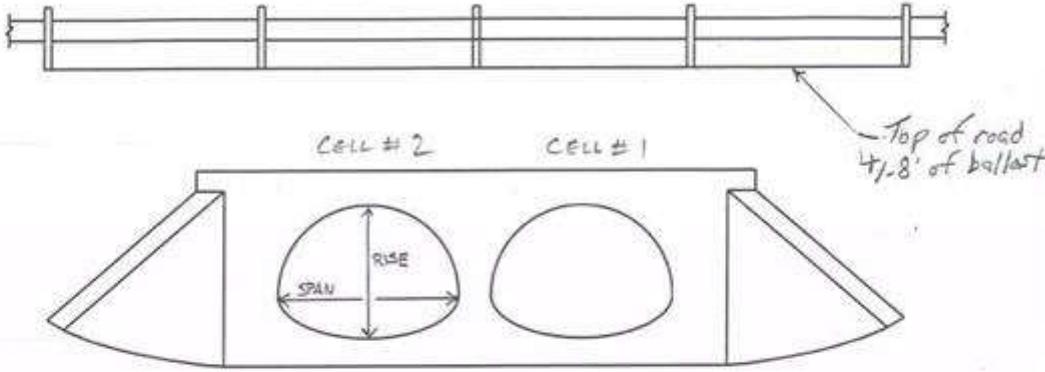
MEAS.	CELL # 1				CELL # 2			
	INLET	MIDDLE	OUTLET	DATE	INLET	MIDDLE	OUTLET	DATE
SPAN	10'-8 <sup>3</sup> / <sub>8</sub> "	11'- <sup>1</sup> / <sub>2</sub> "	10'-10"	6/24/14	10'-9 <sup>1</sup> / <sub>2</sub> "	11'- <sup>3</sup> / <sub>4</sub> "	10'-8 <sup>3</sup> / <sub>4</sub> "	6/24/14
RISE	7'-3 <sup>1</sup> / <sub>2</sub> "	6'-7 <sup>1</sup> / <sub>2</sub> "	7'-5 <sup>3</sup> / <sub>8</sub> "	6/24/14	7'- <sup>3</sup> / <sub>8</sub> "	6'-7 <sup>1</sup> / <sub>2</sub> "	7'-2 <sup>1</sup> / <sub>8</sub> "	6/24/14
Cell #1	Inlet 20'	Inlet 20'	Inlet 34 <sup>1</sup> / <sub>2</sub> "	Outlet 20'	Outlet 3'	All locations are Painted		
6-6-16 ← Cell #1 →								
SPAN	10'-11 <sup>3</sup> / <sub>16</sub> "	11'-01 <sup>21</sup> / <sub>32</sub> "	11'-00 <sup>1</sup> / <sub>2</sub> "	11'-00 <sup>27</sup> / <sub>32</sub> "	10'-11 <sup>1</sup> / <sub>8</sub> "			
RISE	6'-11 <sup>27</sup> / <sub>32</sub> "	6'-05 <sup>13</sup> / <sub>16</sub> "	6'-07 <sup>1</sup> / <sub>2</sub> "	6'-07"	6'-10 <sup>27</sup> / <sub>32</sub> "			
SPAN								
RISE								
SPAN								
RISE								

REVISION	△	DATE	CREW	REVISION	△	DATE	CREW
REVISION	△	DATE	CREW	REVISION	△	DATE	CREW

	FIELD NOTES	JOB NO. 170-3225	BRIDGE NO. 05939
		DATE: 6/24/2014	SHEET 6 OF 9
		CREW: SBD, AKC	



Top of road  
+1.8' of ballast

ELEVATION @ INLET  
(N.P.S.)

Measurements taken under Concrete Headwalls

MEAS.	CELL #1				CELL #2			
	INLET	MIDDLE	OUTLET	DATE	INLET	MIDDLE	OUTLET	DATE
SPAN	10'-8 3/4"	11'-1/2"	10'-10"	6/24/14	10'-9 1/2"	11'-3/4"	10'-8 3/4"	6/24/14
RISE	7'-3 1/4"	6'-7 1/2"	7'-5 7/8"	6/24/14	7'-3 3/8"	6'-7 1/2"	7'-2 1/2"	6/24/14
Cell #1	Inlet 5'	Inlet 20'	Inlet 34'2"	Outlet 20'	Outlet 5'	All locations are painted		
6-6-16 ← Cell #2 →								
SPAN	10'-11 7/16"	11'-11 5/32"	11'-00 3/4"	11'-00 5/16"	10'-11 1/32"			
RISE	6'-10 23/32"	6'-07 1/16"	6'-07 1/2"	6'-07 3/8"	6'-11 15/16"			
SPAN								
RISE								
SPAN								
RISE								

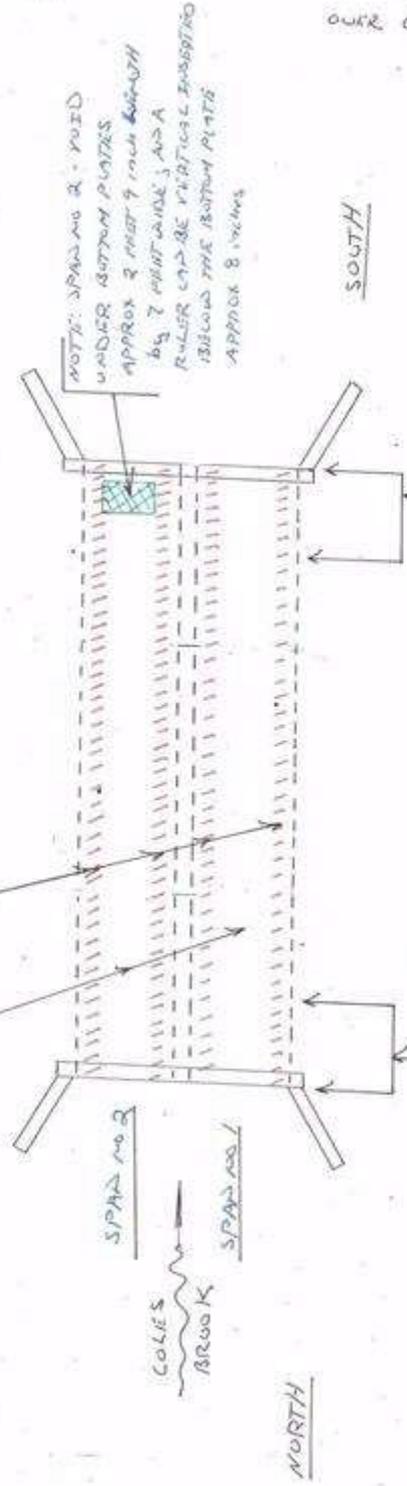
REVISION	△	DATE	CREW	REVISION	△	DATE	CREW
REVISION	△	DATE	CREW	REVISION	△	DATE	CREW

BRIDGE NO 05939 - CROMWELL - NORTH ROAD EXTENSION  
OVER COLES BROOK

PLAN VIEW  
JUNE 6, 2016  
NOT TO SCALE

NOTE: BOTTOM PLATES EXHIBIT AN AREA OF WEAR AND TEAR WITH PROMINENT HEAVY LAMINAR RUST WITH PROMINENT THINNING; THIS CONDITION IS FULL LENGTH OF ALL PIPE SPANS 1 & 2

NOTE: CORNER & BOTTOM PLATES EXHIBIT AN AREA OF EXTENSIVE HEAVY LAMINAR RUST WITH PROMINENT THINNING & NUMEROUS AREAS OF DELFOIDAL & MICROPITTING AS WELL AS STAIN WITH HAMMERS; THIS CONDITION IS APPROX 18 INCHES WIDE OF EACH SIDE HEAVY LAMINAR RUST



NOTE: SPAN NO 2 - VOID UNDER BOTTOM PLATES APPROX 2 FEET 9 INCH WIDE BY 2 INCH WIDE, AS A RULER CAN BE VERTICAL INSERTED BELOW THE BOTTOM PLATE APPROX 8 INCHES

NOTE: NUMEROUS RUST NODULES UP TO APPROX 6" x 4" by 3" are located at EXIST'G OUTLET - SPAN NO 1 & 2 FOR APPROX 10 FEET LENGTH OF PIPE

10 FEET	10 FEET	30 FEET	40 FEET	60 FEET	70.5 FEET
+	+	+	+	+	+

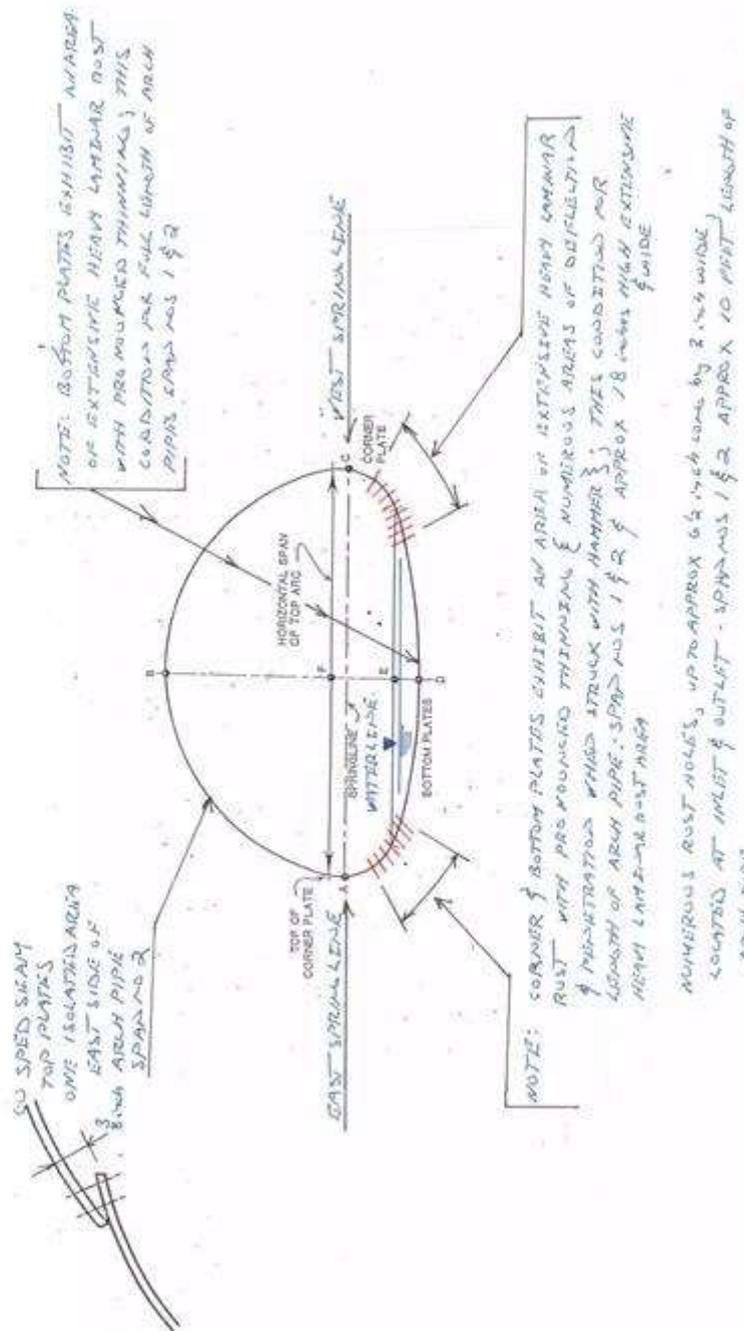
PREPARED BY: DAVID MAUSLIKOWSKI P.E. - STAFF - BRIDGE MAINTENANCE JUNE 9, 2016

BRIDGE NO 05939 - CROMWELL - NORTH ROAD EXTENS. (D)  
OVER COLES ROAD

JUNE 6, 2016

ARCH PIPE CROSS SECTION

NOT TO SCALE

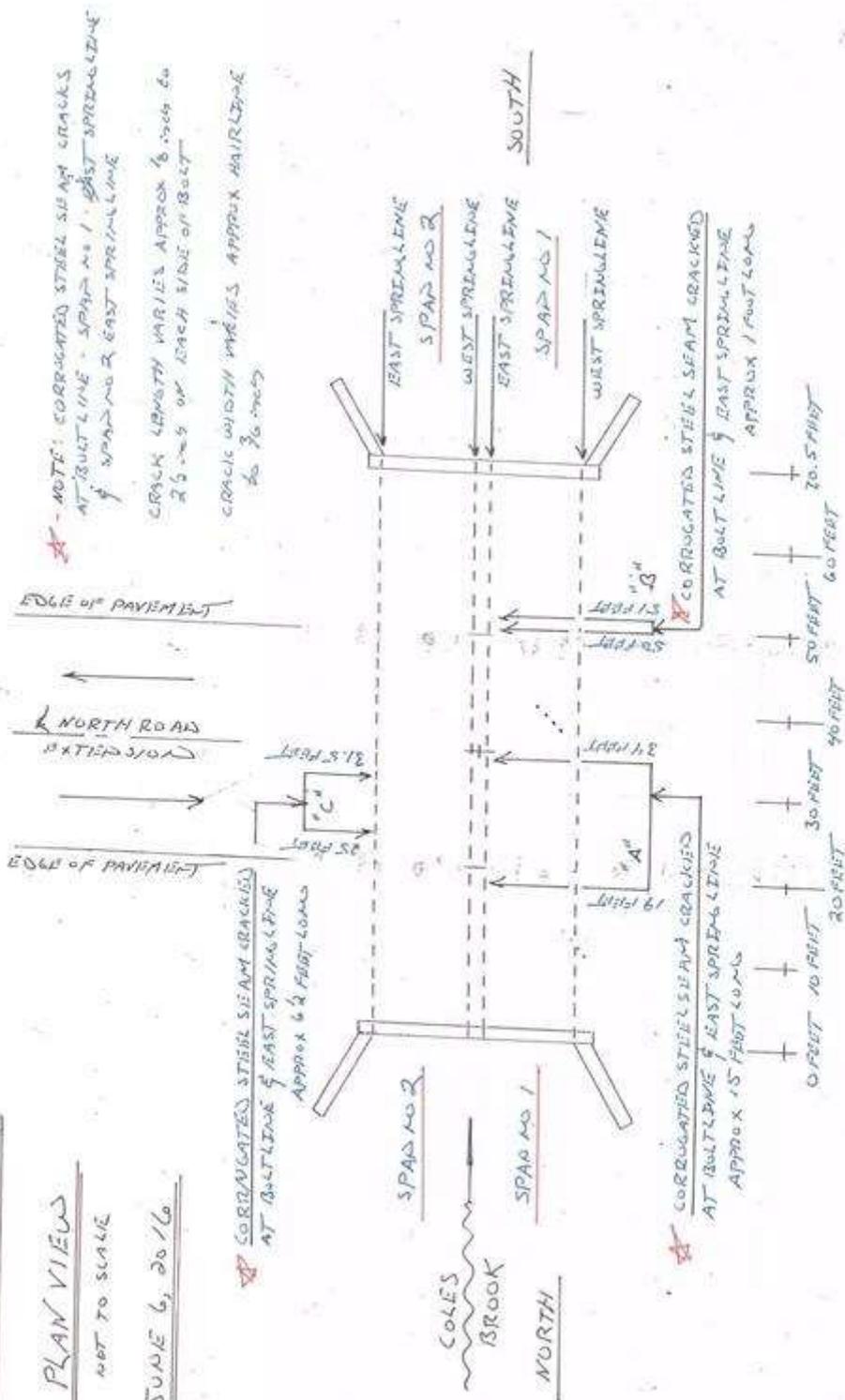


PREPARED BY: DAVID PAWLIKOWSKI AT THE CT DOT - BRIDGE SAFETY. JUNE 9, 2016

BRIDGE NO 05939 - CROMWELL - NORTH ROAD EXTENSION OVER COLES BROOK

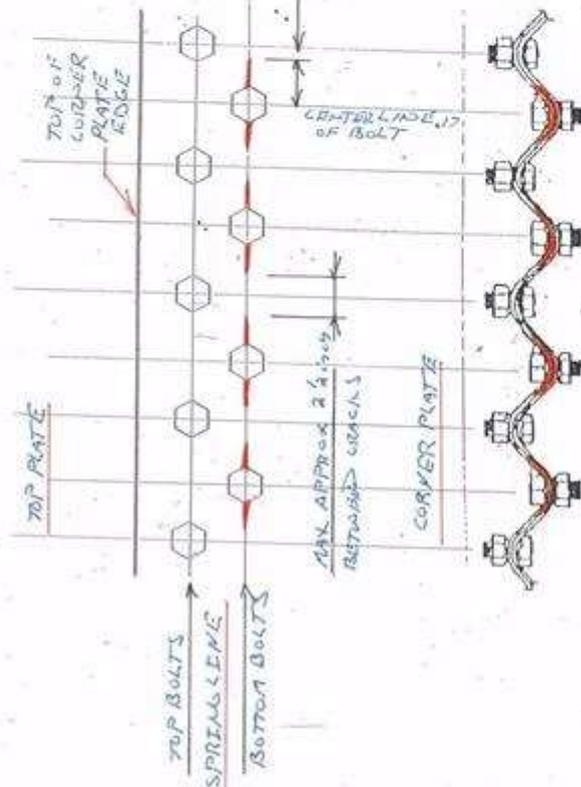
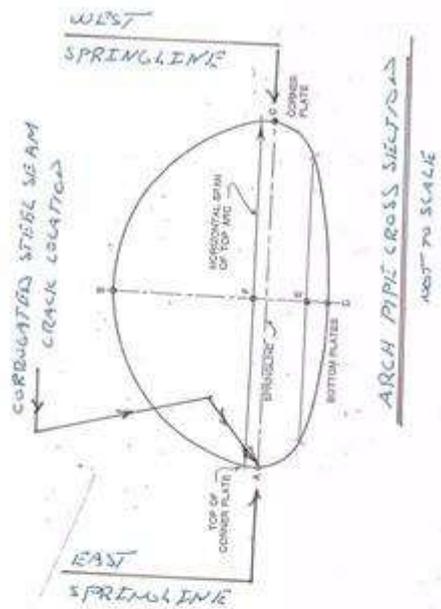
PLAN VIEW  
NOT TO SCALE

JUNE 6, 2016



PREPARED BY: DAVID PAWLIKOWSKI PW - CT DOT - BRIDGE SAFETY JUNE 8, 2016

BRIDGE NO 0 5939 - CROMWELL  
NORTH ROAD EXTENS/02 OVER COLES ROAD  
JUNE 6, 2016



NOTE: CORRUGATED STEEL SPAN CRACKS AT BOLTLINE - SPAN NOT EAST SPRINGLINE & SPAN NOT WEST SPRINGLINE  
CRACK LENGTH VARIES APPROX 1/8 inch to 2 1/2 inch on EACH SIDE OF BOLT  
CRACK WIDTH VARIES APPROX HAIRLINE to 1/16 inch

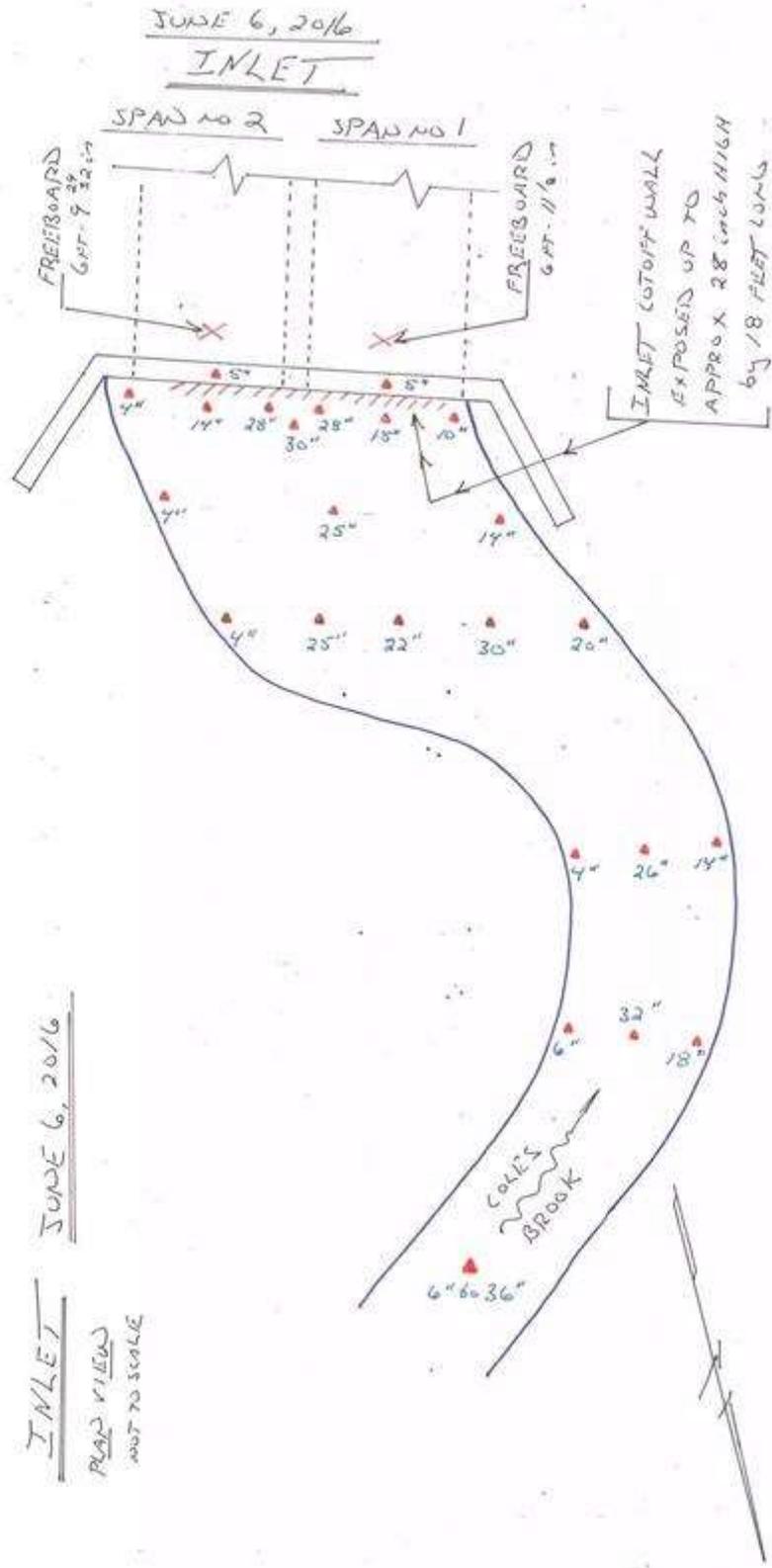
PREPARED BY: DAVID PASLIKOWSKI/pe - CT DOT BRIDGE SAFETY - JUNE 8, 2016

BRIDGE NO 05939 - CROMWELL - NORTH ROAD EXTENSION OVER COLES BROOK

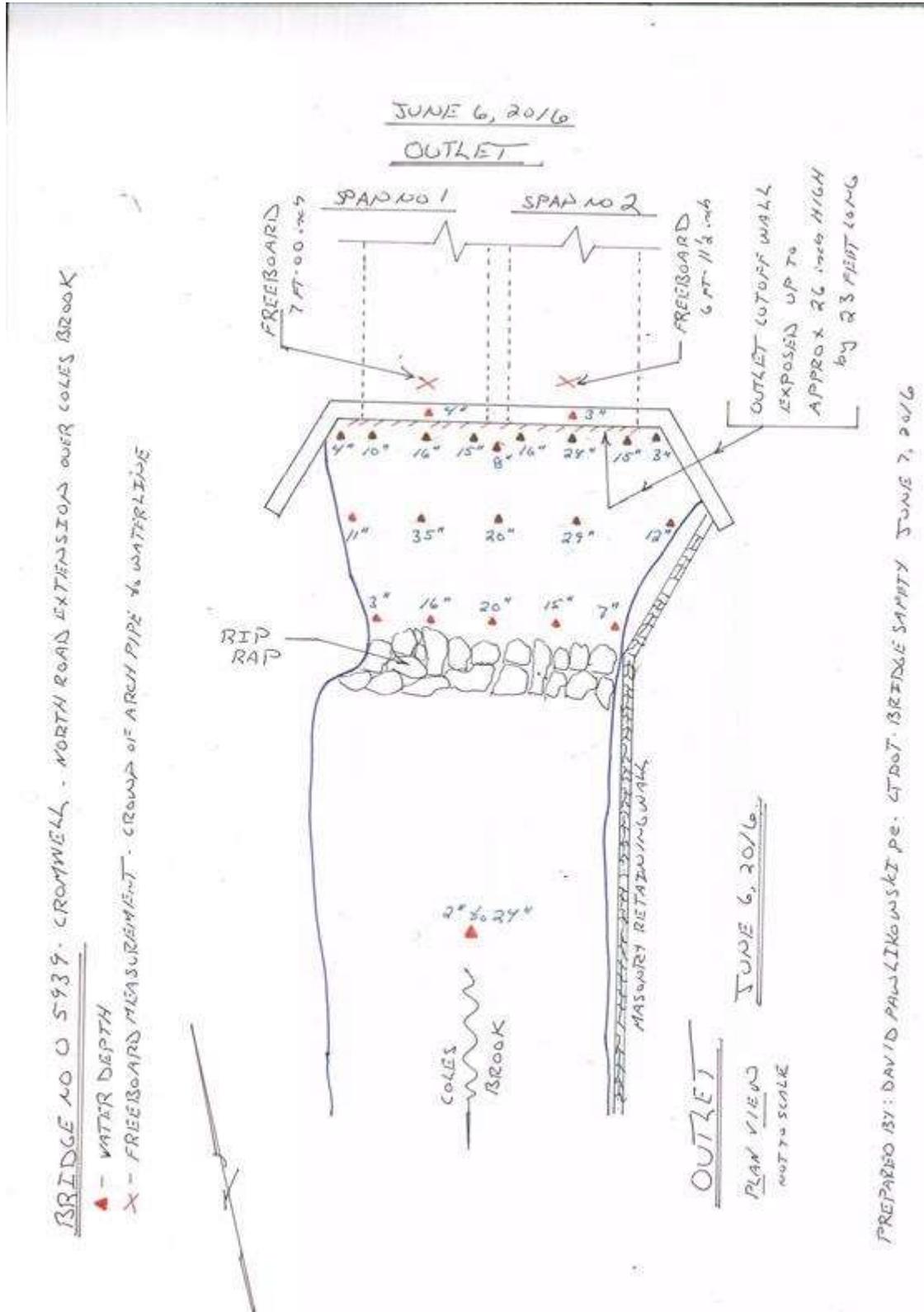
- ▲ - WATER DEPTH
- X - FREE BOARD MEASUREMENT - CROWN OF ARCH RISE TO WATERLINE

INLET JUNE 6, 2016

ROAD VIEW  
NOT TO SCALE



PREPARED BY: DAVID PAULKOWSKI P.E. - CT DOT - BRIDGE SAFETY - JUNE 8, 2016



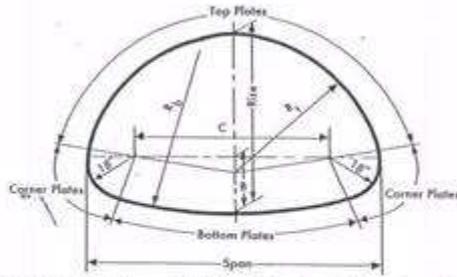


Table 1-21 Sizes and Layout Details--Structural Plate Steel Pipe-Arches  
 6 in. x 2 in. Corrugations--Bolted Seams  
 18-inch Corner Radius  $R_c$

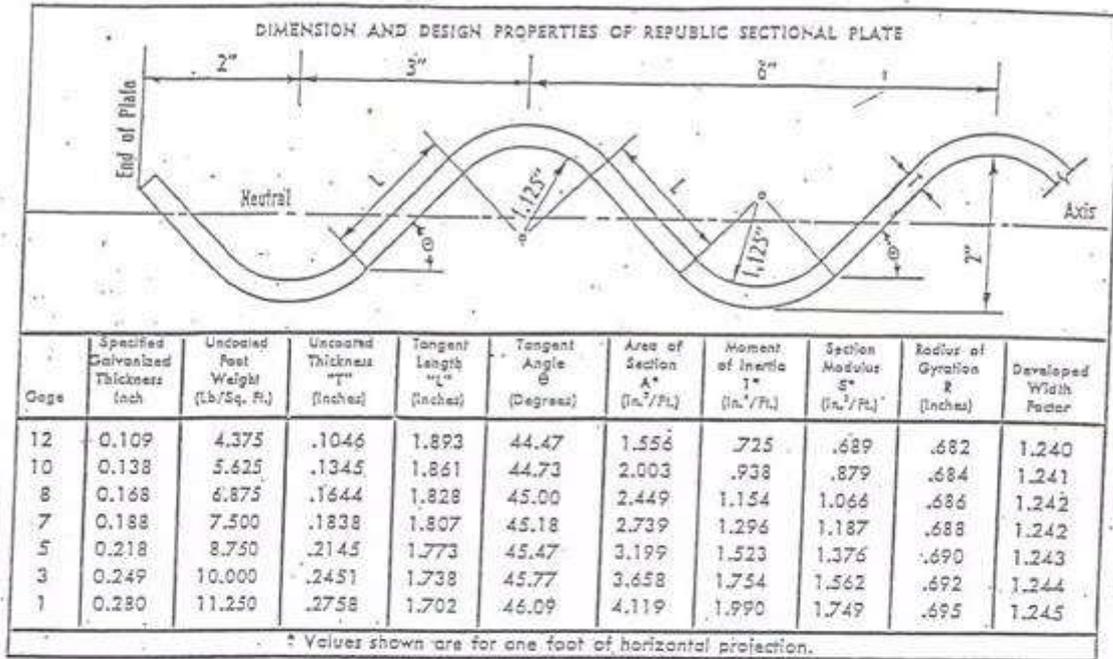
Dimensions		Waterway Area in Sq Ft	Layout Dimensions			No. of Plates	Periphery	
Span Ft.-In.	Rise Ft.-In.		# in In.	$R_1$ in Ft.	$R_2$ in Ft.		N	$N'$
6-1	4-7	22	21.0	3.07	6.36	5	22	66
6-4	4-9	24	20.5	3.18	8.22	5	23	69
6-9	4-11	26	22.0	3.42	6.96	5	24	72
7-0	5-1	28	21.4	3.53	8.68	5	25	75
7-3	5-3	31	20.8	3.63	11.35	6	26	78
7-8	5-5	33	22.4	3.88	9.15	6	27	81
7-11	5-7	35	21.7	3.98	11.49	6	28	84
8-2	5-9	38	20.9	4.08	15.24	6	29	87
8-7	5-11	40	22.7	4.33	11.75	7	30	90
8-10	6-1	43	21.8	4.42	14.89	7	31	93
9-4	6-3	46	23.8	4.68	12.05	7	32	96
9-6	6-5	49	22.9	4.78	14.79	7	33	99
9-9	6-7	52	21.9	4.86	18.98	7	34	102
10-3	6-9	55	23.9	5.13	14.86	7	35	105
10-8	6-11	58	26.1	5.41	12.77	7	36	108
10-11	7-1	61	25.1	5.49	15.03	7	37	111
11-5	7-3	64	27.4	5.78	13.16	7	38	114
11-7	7-5	67	26.3	5.85	15.27	8	39	117
11-10	7-7	71	25.2	5.93	18.03	8	40	120
12-4	7-9	74	27.5	6.23	15.54	8	41	123
12-6	7-11	78	26.4	6.29	18.07	8	42	126
12-8	8-1	81	25.2	6.37	21.45	8	43	129
12-10	8-4	85	24.0	6.44	26.23	8	44	132
13-5	8-5	89	26.3	6.73	21.23	9	45	135
13-11	8-7	93	28.9	7.03	18.39	9	46	138
14-1	8-9	97	27.6	7.09	21.18	9	47	141
14-3	8-11	101	25.3	7.16	24.80	9	48	144
14-10	9-1	105	28.9	7.47	21.19	9	49	147
15-4	9-3	109	31.6	7.78	18.90	9	50	150
15-6	9-5	113	30.2	7.83	21.31	10	51	153
15-8	9-7	118	28.8	7.89	24.29	10	52	156
15-10	9-10	122	27.4	7.96	28.18	10	53	159
16-5	9-11	126	30.1	8.27	24.24	10	54	162
16-7	10-1	131	28.7	8.33	27.73	10	55	165

Dimensions are to inside crests and are subject to manufacturing tolerances.

10 FT - 11 IN { SPAN }  
 7 FT - 1 IN { RISE }  
 70 FT - 6 IN { LENGTH }

CORRUGATED STEEL ARCH PIPE

BRIDGE NO 05939 - CROMWELL  
 NORTH ROAD EXTENSIONS OVER COLES BROOK



CORRUGATED STEEL SIZE

6 inch by 2 inch by 1/8 inch thickness

- PER FIELD MEASUREMENT

STANDARD GAGES

GAGE	APPROXIMATE THICKNESS
12	0.109" 3/4"
10	0.138" 3/4"
8	0.168" 1/2"
7	0.188" 3/8"
5	0.218" 3/8"
3	0.249" 1/2"
1	0.280" 3/2"

BRIDGE NO 05939

CROMWELL

NORTH ROAD EXTENSION

0062

COLES BROOK

**Bridge No. 0 5939**  
**Town of Cromwell**  
**North Road Extension over Coles Brook**

**Span No. 1 - Span & Rise Measurements of a Corrugated Steel Arch Pipe**

Date:	24-Jun-14	24-Jun-14	6-Jun-16	6-Jun-16	6-Jun-16	6-Jun-16	6-Jun-16
Location	Horizontal Span	Vertical Rise	Horizontal Span	Vertical Rise	Horizontal Span	Vertical Rise	Horizontal Span
5 feet Inlet			10' - 11 3/16"	6' - 11 27/32"			
20 feet Inlet			11' - 1 21/32"	6' - 5 13/16"			
34 ft. 2 1/4 in.	11' - 00 1/2"	6' - 7 1/2"	11' - 00 3/4"	6' - 7 1/2"			
20 feet Outlet			11' - 00 27/32"	6' - 7"			
5 feet Outlet			10' - 11 1/8"	6' - 10 27/32"			

Inlet  
 Inlet  
 Middle  
 Outlet  
 Outlet

Notes: Corrugated Steel Arch Pipe - 10 feet 11 inches {span} by 7 feet 1 inch {rise} by 70 feet 6 inches {length}  
 Corrugation Size 6 inch by 2 inch by 10 gage {0.1380 inch thickness}  
 Field Measurement Corrugation Thickness Approximately 1/8 inch  
 Horizontal Measurement - Span Length {10 feet - 11 inches} {131 inches}  
 Vertical Measurements - Pipe Rise {7 feet - 1 inch} {85 inches}  
 Approximately 8 feet of Ballast & Bituminous Concrete Pavement  
 Location - 5 feet Inlet from Inlet {North Side of Structure}; 20 feet Inlet from Inlet {North Side of Structure};  
 34 ft. 2 1/4 in. from Inlet {North Side of Structure} {Middle - Centerline of Culvert};  
 20 feet Outlet from Outlet {South Side of Structure}; 5 feet Outlet from Outlet {South Side of Structure}

**Bridge No. 0 5939  
Town of Cromwell  
North Road Extension over Coles Brook**

**Span No. 2 - Span & Rise Measurements of a Corrugated Steel Arch Pipe**

Date:	24-Jun-14	24-Jun-14	6-Jun-16	6-Jun-16	6-Jun-16	Vertical Rise	Horizontal Span	Vertical Rise	Horizontal Span
Location	Horizontal Span	Vertical Rise	Horizontal Span	Vertical Rise	Horizontal Span	Vertical Rise	Horizontal Span	Vertical Rise	Horizontal Span
5 feet Inlet			10' - 11 7/16"	6' - 10 29/32"					
20 feet Inlet			11' - 1 15/32"	6' - 4 11/16"					
34 ft. 2 1/4 in.	11' - 00 3/4"	6' - 7 1/2"	11' - 1"	6' - 7 9/32"					
20 feet Outlet			11' - 00 5/16"	6' - 7 3/8"					
5 feet Outlet			10' - 11 11/32"	6' - 11 15/16"					

29

Notes: Corrugated Steel Arch Pipe - 10 feet 11 inches {span} by 7 feet 1 inch {rise} by 70 feet 6 inches {length}  
Corrugation Size 6 inch by 2 inch by 10 gage {0.1380 inch thickness}

Field Measurement Corrugation Thickness Approximately 1/8 inch

Horizontal Measurement - Span Length {10 feet - 11 inches} {131 inches}

Vertical Measurements - Pipe Rise {7 feet - 1 inch} {85 inches}

Approximately 8 feet of Ballast & Bituminous Concrete Pavement

Location - 5 feet Inlet from Inlet {North Side of Structure}; 20 feet Inlet from Inlet {North Side of Structure};

34 ft. 2 1/4 in. from Inlet {North Side of Structure} {Middle - Centerline of Culvert};

20 feet Outlet from Outlet {South Side of Structure}; 5 feet Outlet from Outlet {South Side of Structure}

Form: Asset Photos  
Inspection type: Routine  
Inspection Date: 6/06/2016  
Inspected by: Team 5

Bridge No: 05939

Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS



Photo Number: 1

East approach looking westbound.

Photo Taken: 06/06/2016



Photo Number: 2

West approach looking eastbound.

Photo Taken: 06/06/2016



Photo Number: 3

Photo Taken: 06/06/2016

View of the wearing surface over the structure.



Photo Number: 4

Photo Taken: 06/06/2016

Rail system on the south side {outlet}.



Photo Number: 5

Photo Taken: 06/06/2016

Rail system on the north side.



Photo Number: 6

Photo Taken: 06/06/2016

Inlet {north} elevation.



Photo Number: 7

Photo Taken: 06/06/2016

View looking upstream, note the tree across and in the channel located +/- 25' from the structure.



Photo Number: 8

Photo Taken: 06/06/2016

Base of the tree on the northeast embankment.

Form: Asset Photos  
Inspection type: Routine  
Inspection Date: 6/06/2016  
Inspected by: Team 5

Bridge No: 05939

Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS

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Photo Number: 9

Outlet {south} elevation.

Photo Taken: 06/06/2016



Photo Number: 10

View looking downstream.

Photo Taken: 06/06/2016



Photo Number: 11

Northwest wingwall.

Photo Taken: 06/06/2016



Photo Number: 12

Northeast wingwall.

Photo Taken: 06/06/2016



Photo Number: 13

Southwest wingwall.

Photo Taken: 06/06/2016



Photo Number: 14

Southeast wingwall.

Photo Taken: 06/06/2016



Photo Number: 15

View through cell # 1.

Photo Taken: 06/06/2016



Photo Number: 16

Typical heavy rust conditions on the lower corner plates and invert plates.

Photo Taken: 06/06/2016

Form: Asset Photos  
Inspection type: Routine  
Inspection Date: 6/06/2016  
Inspected by: Team 5

Bridge No: 05939

Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS

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Photo Number: 17

General view of the top plates {intrados}.

Photo Taken: 06/06/2016



Photo Number: 18

General view through cell # 2.

Photo Taken: 06/06/2016



Photo Number: 19

Typical condition of the upper bolt lines in cell # 1.

Photo Taken: 06/06/2016



Photo Number: 20

Typical condition of the upper bolt lines in cell # 2.

Photo Taken: 06/06/2016



Photo Number: 21

Photo Taken: 06/06/2016

Heavy rust conditions on the invert plates, typical throughout both cells.



Photo Number: 22

Photo Taken: 06/06/2016

Another view of typical heavy rust conditions throughout.

Form: Asset Photos  
Inspection type: Routine  
Inspection Date: 6/06/2016  
Inspected by: Team 5

Bridge No: 05939

Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS



Photo Number: 23

Photo Taken: 06/06/2016



Photo Number: 24

Photo Taken: 06/06/2016



Photo Number: 25

Photo Taken: 06/06/2016

Heavy rust conditions with thin dentable and easily perforated steel at the interface of the lower corner plates and the invert plates, typical throughout both cells.



Photo Number: 26

Photo Taken: 06/06/2016

Large perforation holes at the outlet end of A-2.



Photo Number: 27

Photo Taken: 06/06/2016

Horizontal cracking in the inner lower bolt line in cell # 1.



Photo Number: 28

Photo Taken: 06/06/2016

Horizontal cracking in the inner lower bolt line in cell # 2.

Form: Asset Photos  
Inspection type: Routine  
Inspection Date: 6/06/2016  
Inspected by: Team 5

Bridge No: 05939

Town: CROMWELL  
Carried: NORTH ROAD EXTENS.  
Crossed: COLES BROOK  
Inventory Route: Non-NHS



Photo Number: 29

Photo Taken: 06/06/2016

Active and past leakage noted in the lower bolt lines, typical in both cells.