

Bridge Location
N 30° 04' 33.12" W 97° 55' 4.02"



DATE: 19 NOV 2014
COUNTY: 105
CONT-SEC: RR00-00
STR: 001

ROADWAY OVER BRIDGE

Looking North

Photo 1



ELEVATION

Looking Southwest

Photo 2



DATE: 19 NOV 2014
COUNTY: 105
CONT-SEC: RR00-00
STR: 001

UPSTREAM VIEW
FROM BRIDGE

Looking West

Photo 3



DOWNSTREAM VIEW
FROM BRIDGE

Looking East

Photo 4



DATE: 19 NOV 2014
COUNTY: 105
CONT-SEC: RR00-00
STR: 001

SUPERSTRUCTURE

Looking North

Photo 5



STREAM UNDER BRIDGE

Looking East

Photo 6



DATE: 19 NOV 2014
COUNTY: 105
CONT-SEC: RR00-00
STR: 001

BRIDGE RAIL SPALLS AT NE TRANSITION

Looking Northwest

Photo 7

NOTE: A few very minor spalls in the outside face of the concrete bridge rail at the NE approach guardfence bolted rail transition connection.



BRIDGE RAIL SPALL AT SE BRIDGE CORNER

Looking East

Photo 8

NOTE: Very minor shallow cosmetic spall in the top of the concrete bridge rail at the SE bridge corner.



DATE: 19 NOV 2014

COUNTY: 105

CONT-SEC: RR00-00

STR: 001

REMAINS OF TEMPORARY
CONSTRUCTION BRACING

Looking South

Photo 9

NOTE: Two temporary timber construction x-braces remain in the 2nd span from the North over the creek channel.



DATE: 19 NOV 2014

COUNTY: 105

CONT-SEC: RR00-00

STR: 001

CRACKING IN MIDDLE
BENT SUPPORT

Looking North

Photo 10

NOTE: Typical minor vertical to diagonal cracking and some "map-cracking" of the middle bent cap support over both columns. No significant loss of strength has occurred as a result of this condition.



DATE: 19 NOV 2014

COUNTY: 105

CONT-SEC: RR00-00

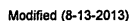
STR: 001

IMPACT DAMAGED SW
APPROACH GUARDFENCE

Looking South

Photo 11

NOTE: One 25 ft. section of the SW approach guardfence (located ~ 60 ft. South of the SW bridge corner) has moderate deformations due to impact.



District: 14 County: 105 Cont-Sec: RR00-00 Structure: 001 Route: Ruby Ranch Rd.
 Feature Crossed: Onion Creek Inspector: Charles T. Stone, P.E. Date: 11/19/2014
 Company Name: Stone Structural Engineering (F-192) Maintenance Section: HOA

1. Roadway - Wearing Surface	5. Superstructure - Bearings	9. Substructure - Other	13. Structural Paint System
2. Roadway - Deck	6. Superstructure - Other	10. Channel & Channel Protection	14. Vertical Clearance Signs
3. Roadway - Other	7. Substructure - Abutments	11. Retaining Walls or Rip Rap	15. Culvert
4. Superstructure - Main Member	8. Substructure - Bents & Piers	12. Approaches	16. Other -

Priority Level: **Critical:** Actions required within 30 days. **Urgent:** Actions required within 6 months. **Routine:** Actions required within 24 months.

STATE OF TEXAS
 REGISTERED PROFESSIONAL ENGINEER
 CHARLES T. STONE
 66374
 11-28-14

Include on following lists: ☐ - Overht. Load Damage (☐ - Unrepaired Damage ☐ - Repaired Damage ☐ - Insignificant Damage)

<input type="checkbox"/> - 2 Column Bent (G.S.)	<input type="checkbox"/> - Pin & Hanger	<input type="checkbox"/> - Scour Critical	<input type="checkbox"/> - Floating Bearing Pads
<input type="checkbox"/> - Element Rating 4 or Less	<input type="checkbox"/> - Fracture Critical	<input type="checkbox"/> - Underwater Inspection	<input type="checkbox"/> - Box Beam w/Cracks
<input type="checkbox"/> - Special Access Inspection	<input type="checkbox"/> - Load Posting	<input type="checkbox"/> - Vertical Clearance Sign Adjustment	<input type="checkbox"/> - Culvert blocked w/Silt
<input type="checkbox"/> - Delayed Ettringite Formation	<input type="checkbox"/> -	<input type="checkbox"/> -	<input type="checkbox"/> -

District: 14 County: 105 Cont-Sec: RR00-00 Structure: 001 Route: Ruby Ranch Rd.

District Maintenance Office Comments

Date: _____ Comments By: _____

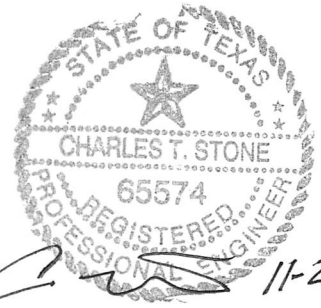
Follow-up Actions Taken

Description	Date	Verified By



Modified (12-5-2000)
for Microsoft Word 7.0, WIN95 & NT

Bridge Summary Sheet



11-28-14

District: 14 County: 105 Cont-Sec: RR00-00 Structure: 001 Route: Ruby Ranch Rd.
Feature Crossed: Onion Creek Inspector's Signature: [Signature] Date: 11/19/2014
Company Name: Stone Structural Engineering (Texas Firm Reg. F-192) Ruby Ranch HOA

Selected Component Description and Rating:

	Inspection Rating (1085)	Inventory Rating		Operating Rating	
		H	HS	H	HS
Concrete Deck	8	-	-	-	-
Prestressed Concrete Beams (Assumed Load Ratings)	8	-	20	-	27
Concrete Substructure (Assumed Load Ratings)	7	-	20	-	27
Channel	6	-	-	-	-

Comments and/or Upgrade Recommendations (if applicable):

Concrete member sizes, span/depth ratios and a 1995 date built indicate this bridge was constructed to carry legal truck loads.

Approach guardfence does not meet current safety standards.

Load Posting Limits for Present Condition (if applicable):

Inventory		Operating		OTHER 1	WEIGHT LIMIT AXLE OR TANDEM LBS. R12-2Tb 2	WEIGHT LIMIT TANDEM AXLE LBS. R12-2Tc 3	WEIGHT LIMIT GROSS LBS. AXLE OR TANDEM LBS. R12-4Tb 4	WEIGHT LIMIT GROSS LBS. TANDEM AXLE LBS. R12-4Tc 5	LOAD ZONED BRIDGE W12-5 6
Legal	lbs Gross		lbs Gross						
Legal	lbs Tandem Axle		lbs Tandem Axle						
	lbs Axle or Tandem		lbs Axle or Tandem						
	Sign Code		Sign Code						

Posting Recommendation: Load Posting is Not Required.

Previous Load Posting Recommendations:

<u> </u> R12-2Tb	<u> </u> None
<u> </u> R12-2Tc	<u> </u> lbs Gross
<u> </u> R12-4Tb	<u> </u> lbs Tandem Axle
<u> </u> R12-4Tc	<u> </u> lbs Axle or Tandem

Observed Load Posting at Bridge:

<u> </u> R12-2Tb	<u>X</u> None
<u> </u> R12-2Tc	<u> </u> lbs Gross
<u> </u> R12-4Tb	<u> </u> lbs Tandem Axle
<u> </u> R12-4Tc	<u> </u> lbs Axle or Tandem
<u> </u> Other (desc.):	<u> </u>

Material Needed

- R12-2Tb
- R12-2Tc
- R12-4Tb
- R12-4Tc
- W12-5
- Posts
- Hardware Sets
- Decals



Advanced Warning
(optional)

Sign Code	
Condition Code	
Maintenance Need	

Bridge
Approach

Bridge
Approach

Advanced Warning
(optional)

- | | | | | |
|---------------------------|--------------------------|------------------------|---------------------------|------------------------|
| A. Visible & Legible | D. Improper Position | G. Sign Missing | K. Clean Sign | N. None |
| B. Obscured by Vegetation | E. Damaged Beyond Repair | H. Sign & Post Missing | L. Reposition Sign | P. Replace Sign |
| C. Sign Needs Cleaning | F. Sign Down | J. Clear Vegetation | M. Reposition Sign & Post | S. Replace Sign & Post |



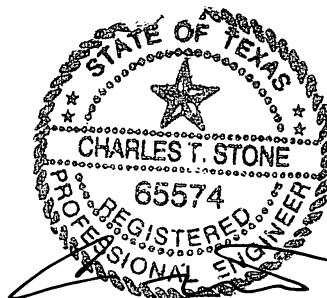
Bridge Inspection Record

Modified (12-5-2000)

for Microsoft Word 7.0, WIN95 & NT

District: 14 County: 105 Cont-Sec: RROO-00 Structure: 001 Route: Ruby Ranch Rd.
 Description: 4- simple span Prestressed Concrete Beam Bridge on concrete cap & column supports.
 Feature Crossed: Onion Creek Inspector's Signature: [Signature] Date: 11/19/2014
 Company Name: Stone Structural Engineering (Texas Firm Reg. F-192)

- N- Not applicable
- 9- Excellent condition
- 8- Very good condition - no problems noted
- 7- Good condition - some minor problems
- 6- Satisfactory condition - minor deterioration of structural elements (limited)
- 5- Fair condition - minor deterioration of structural elements (extensive)
- 4- Poor condition - deterioration significantly affects structural capacity
- 3- Serious condition - deterioration seriously affects structural capacity
- 2- Critical condition - bridge should be closed until repaired
- 1- Failing condition - bridge closed but repairable
- 0- Failed condition - bridge closed and beyond repair



11-28-14

Enter a rating for each element of each component. The rating should equal or exceed the minimum rating listed to the left of each element. Component ratings should equal the lowest rating of any element of the component. Fully supportive comments are to be made hereon or on attachments for all ratings of 7 or below.

Min.	Deck (Item 58)	Rating
1	Deck -Rating <u>Concrete on Pre-cast Panels</u>	<u>8</u> 1.
6	Wearing Surface	N
6	Joints, Expansion, Open <u>Steel Armored</u>	<u>8</u>
6	Joints, Expansion, Sealed	N
6	Joints, Other	N
6	Drainage System	<u>7</u> 2.
6	Curbs, Sidewalks & Parapets	N
6	Median Barrier	N
6	Railings <u>Std. T502 Concrete</u>	<u>7</u> 3.
7	Railing Protective Coating	N
7	Delineation (curve Markers)	N
	Other	N

Comments:

- The concrete bridge deck is in very good condition with only insignificant surface imperfections.
- Minor sediment build-up along the toes of the bridge rails and in the rail drain slots slightly impedes deck drainage.
- The bridge rails have minor temperature & shrinkage cracking and a few minor cosmetic spalls. (See Photos #7 & #8). This minor cracking and spalling does not adversely affect the strength or serviceability of the bridge rails.

Min.	Superstructure (Item 59)	Rating
0	Main Members - Steel	N
0	Main Members - Concrete <u>P.S. Beams</u>	<u>8</u> 1.
0	Main Members - Timber	N
0	Main Members - Connections	N
1	Floor System Members	N
1	Floor System Connections	N
5	Secondary Members	N
5	Secondary Members Connections	N
6	Expansion Bearings <u>Elastomeric Pads</u>	<u>8</u>
6	Fixed Bearings <u>Elastomeric Pads</u>	<u>8</u>
6	Steel Protective Coating	N
	Other	N
	Component Rating	<u>8</u>

Comments:

- Prestressed concrete beams are in very good condition. Two temporary timber construction x-braces remain in the 2nd span from the North over the creek channel. (See Photo #9).

Min.	Substructure (Item 60)	Rating	
0	Abutment Caps <u>Concrete</u>	<u>8</u>	
0	Above Ground	<u>N</u>	
0	Below Ground or Foundation <u>Unknown</u>	<u>8</u>	
5	Backwalls & Wingwalls <u>Concrete</u>	<u>8</u>	1.
0	Intermediate Supports		
	Caps - Concrete	<u>7</u>	2.
	Caps - Steel	<u>N</u>	
	Caps - Timber	<u>N</u>	
	Above Ground - Concrete <u>Columns</u>	<u>8</u>	3.
	Above Ground - Steel	<u>N</u>	
	Above Ground - Timber	<u>N</u>	
	Above Ground - Masonry	<u>N</u>	
	Below Ground or Foundation <u>Unknown</u>	<u>8</u>	
5	Collision Protection System	<u>N</u>	
6	Steel Protective Coating	<u>N</u>	
	Component Rating	<u>7</u>	

Comments:

1. A few insignificant vertical cracks in the abutment backwalls.
2. Minor vertical to diagonal cracking & some "map-cracking" in the middle bent cap over both columns. (See Typical Photo #10). No significant loss of strength due to this condition.
3. Insignificant scaling and abrasion of the concrete columns and tie-beams in the splash-zone of the middle and North interior bent supports.

Min.	Channel (Item 61)	Rating	
0	Channel Banks	<u>6</u>	1.
0	Channel Bed	<u>8</u>	
5	Rip Rap, Toe Walls & Aprons	<u>7</u>	2.
5	Dikes	<u>N</u>	
5	Jetties	<u>N</u>	
5	Other	<u>N</u>	
	Component Rating	<u>6</u>	

Comments:

1. Moderate bank erosion around the root-system of a large tree on the SW upstream channel bank.
2. Minor shifting and settlement of both concrete rip rap slopes. Minor vegetation growth through the construction joints of both rip rap slopes.

Min.	Culvert (Item 62)	Rating
0	Top Slabs	<u>N</u>
0	Bottom Slabs or Footing	<u>N</u>
0	Abutments & Intermediate Supports	<u>N</u>
5	Headwalls & Wingwalls	<u>N</u>
	Other	<u>N</u>
	Component Rating	<u>N</u>

Comments:

<<<<<< Continued from Item 65 Approaches >>>>>>

5. The sight-distance is slightly limited due to the horizontal roadway curve at the North approach.

Min.	Approaches (Item 65)	Rating	
0	Embankments	<u>8</u>	
4	Embankment Retaining Walls	<u>N</u>	
5	Slope Protection	<u>7</u>	1.
5	Roadway	<u>7</u>	2.
6	Relief Joints	<u>N</u>	
6	Drainage	<u>8</u>	
6	Guardfence	<u>6</u>	3.
7	Delineation	<u>7</u>	4.
7	Sight Distance	<u>7</u>	5.
	Other	<u>N</u>	
	Component Rating	<u>6</u>	

Comments:

1. Minor settlement (less than 1") in the concrete rip rap adjacent to the NE corner wingwall.
2. Asphalt approaches have recently been sealed. A few minor sealed cracks in the North asphalt approach.
3. Moderate impact damage to the SW corner approach guardfence. (See Photo #11).
4. One amber delineator is faded on the East bridge rail.

Min.	Miscellaneous	Rating	
7	Signs	<u>N</u>	
7	Illumination	<u>N</u>	
7	Warning Devices	<u>N</u>	
7	Utility Lines	<u>N</u>	
	Other <u>Traffic Safety Features</u>	<u>7</u>	1.

Comments:

1. The concrete bridge rails are standard T502 crash-tested rails. The approach guardfence is obsolete and does not meet current standards. Approach guardfence standards have changed since this bridge was constructed.



Modified 12-5-2000)
for Microsoft Word 7.0, WIN95 & NT

Bridge Inventory Record

District: 14 County: 105 Cont-Sec: RR00-00 Structure: 001 Route: Ruby Ranch Rd.
Feature Crossed: Onion Creek Inspector's Signature: Charles T. Stone, P.E. Date: 11/19/14
Company Name: Stone Structural Engineering (F-192)
Location: 1.2 miles South of FM 967 Maintenance Section: Ruby Ranch HOA
Latitude: N 30° 04' 33.12" Longitude: W 97° 55' 4.02" Milepoint: NA

General Description:

4- simple span Prestressed Concrete Beam Bridge on concrete cap and two-column concrete supports.

Bridge is on a two-way paved suburban roadway with low traffic volume.

Bridge has standard T502 concrete bridge rails with obsolete approach guardfence.

Bridge Length: 310 ft. Deck Width: 29.5 ft. Lanes On: 2 Lanes Under: 0
Skew Angle: 0 Deg. ☐ Lt. Fwd. ☐ Rt. Fwd. Bridge Rail: Std. T502 Concrete
Clear Width Between: 26.7 ft. ☐ Curbs, ☒ Rails, ☐ Pvm. Edges Approach Rdwy. Width: 21 ft.

Deck Type: Concrete Deck on Precast Concrete Panels.

Surfacing: No Separately Applied Wearing Surface. Vertical Over-Clearance: _____ ft. ☒ Unimpaired

Stringers: Spans: 1 thru 4

Type: Prestressed Concrete Beams Size: Type IV (54" Depth) Number: 4

Spacing: 7-10" c-c Controlling Span Length (C-C bearings): ~ 76.2 ft.

Stringers: Spans: _____ (Nominal Span Lengths = 77.5 ft.)

Type: _____ Size: _____ Number: _____

Spacing: _____ Controlling Span Length (C-C bearings): _____ ft.

Stringers: Spans: _____

Type: _____ Size: _____ Number: _____

Spacing: _____ Controlling Span Length (C-C bearings)- _____ ft.

Est Deck Overtopping Freq: ☐ >100 ☒ 11 - 100 ☐ 3 - 10 ☐ < 3

Est Approach Overtop. Freq: ☒ >100 ☐ 11 - 100 ☐ 3 - 10 ☐ < 3

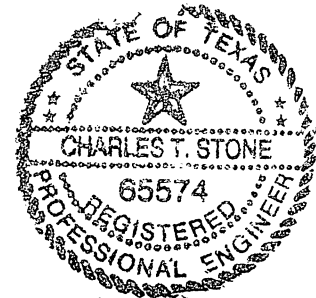
Horizontal / Vertical Alignment: Fair / Good

Date Built / Design Load: 1995 / Unknown (Design Plans not Available)

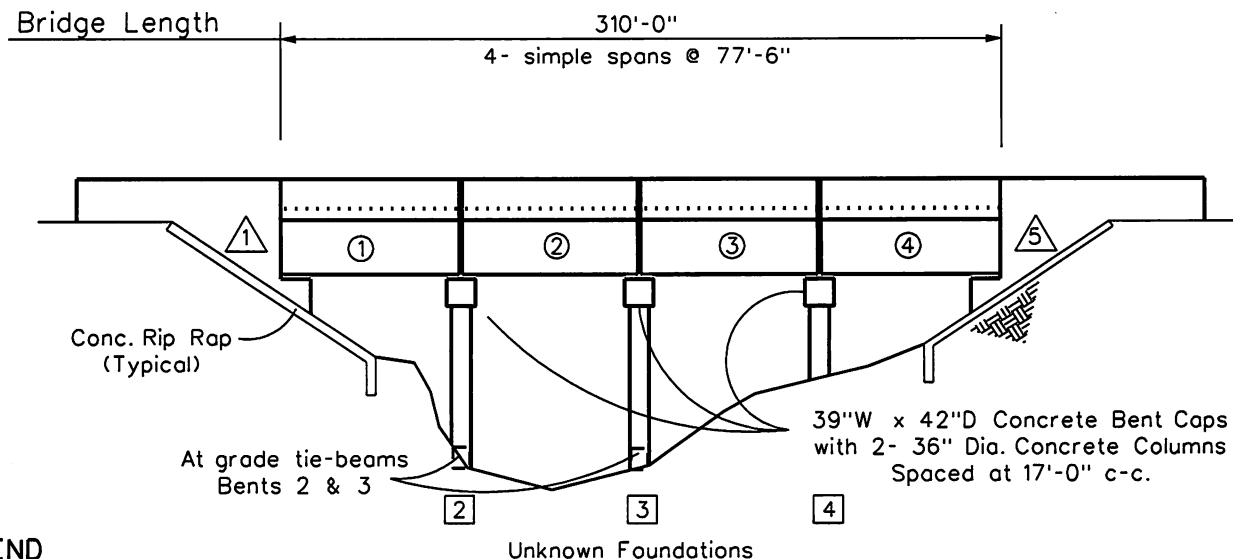
Regulatory / Advisory Speeds: 35 mph (Speed Limit) / No Advisory Speed

Posted Load Restriction: None. ☒ None

Comments:



Charles T. Stone 11-28-14
Signature Date

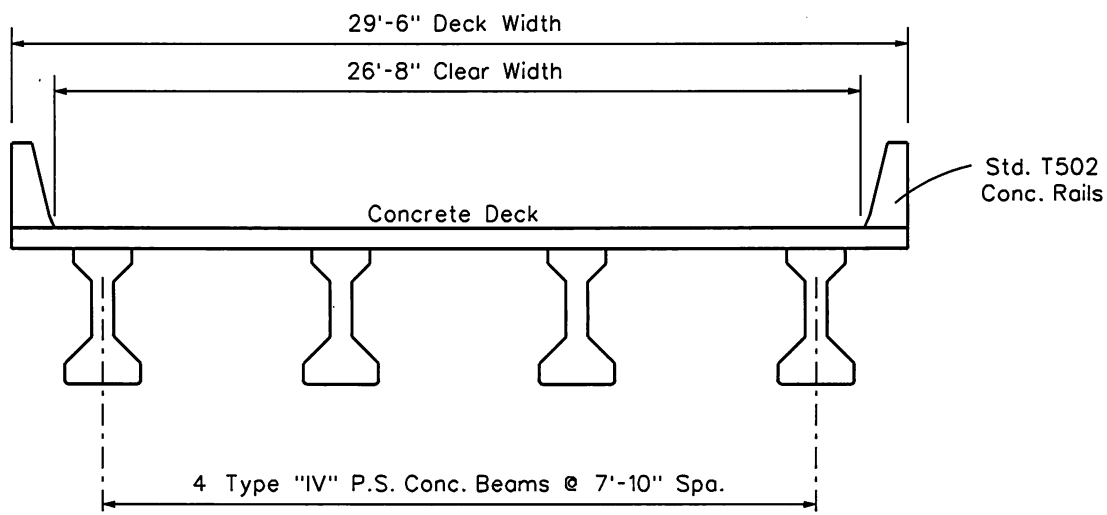


LEGEND

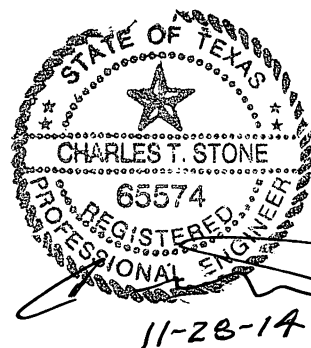
- Span Numbers
- △ Abutment Numbers
- Bent Numbers

SIDE VIEW

(Looking East / Downstream)



SPANS 1 THRU 4





Modified (12-7-2000)
for Microsoft Word 7.0, WIN95 & NT

Channel Cross-Section Measurements Record

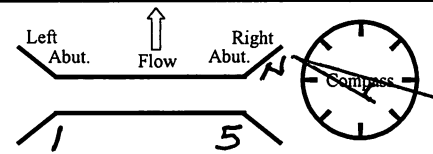
District: 14 County: 105 Cont-Sec: RR00-00 Structure 001 Route: Ruby Ranch Rd.

Feature Crossed: Onion Creek

If measurements were taken with any device other than a drop line or tape measure, please describe method in comment section.

Reference Features:

- | | | | |
|-------------------|-------------------|------------------|-------------------|
| A. Top of Railing | B. Edge of Deck | C. Top of Curb | D. Top of Parapet |
| E. Sidewalk | F. Top of Cap | G. Water Surface | H. Channel |
| I. Rigid Rip-Rap | J. Rubble Rip-Rap | K. | L. |



Bent #	Notes (Item 44)	Total Horiz. Dist.	Stone Structural Eng.															
			Company Name				Company Name				Company Name				Company Name			
			Date: 11/19/2014				Date:				Date:				Date:			
			<input checked="" type="checkbox"/> Upstream		<input type="checkbox"/> Downstream		<input type="checkbox"/> Upstream		<input type="checkbox"/> Downstream		<input type="checkbox"/> Upstream		<input type="checkbox"/> Downstream		<input type="checkbox"/> Upstream		<input type="checkbox"/> Downstream	
			Distance from Last Bent	Top Ref.	Bot. Ref.	Vertical Distance	Distance from Last Bent	Top Ref.	Bot. Ref.	Vertical Distance	Distance from Last Bent	Top Ref.	Bot. Ref.	Vertical Distance	Distance from Last Bent	Top Ref.	Bot. Ref.	Vertical Distance
1	North Abut.	0'	0	A	I	8.7'												
			+38'		I/H	28.4'												
			+50'		H	29.3'												
			+70'			33.5'												
2	North Bent	77.5'	77.5'			37.0'												
			+7'			38.0'												
			+25'			38.8'												
			+45'			40.5'												
			+62'			39.3'												
			+70'			38.0'												
3	Middle Bent	155'	77.5'			37.7'												
			+4'			36.9'												
			+19'			27.8'												
			+37'			26.0'												
4	South Bent	232.5'	77.5'			24.3'												
			+25'		H	23.8'												
			+45'		H/I	23.0'												
5	South Abut.	310'	77.5'	A	I	8.3'												
	Deck Ref.	-	-	A	B	2.8'												
	Low Beam	-	-	A	F	8.2'												
	Water Level	-	-	A	G	Dry												

District: 14 County: 105 Cont-Sec: RR00 -00 Structure: 001 Route: Ruby Ranch Rd.

Company Name: Stone Structural Engineering (F-192) Signature:  Date: 11/19/2014

Comments:

Measurements taken on the upstream side of the bridge with a dropline.

Bridge foundation types and depths are unknown. (Design Plans not Available).

Stream bed has low probability of scour/erosion due to rock subgrade.

Company Name: _____ Signature: _____ Date: _____

Comments:

Company Name: _____ Signature: _____ Date: _____

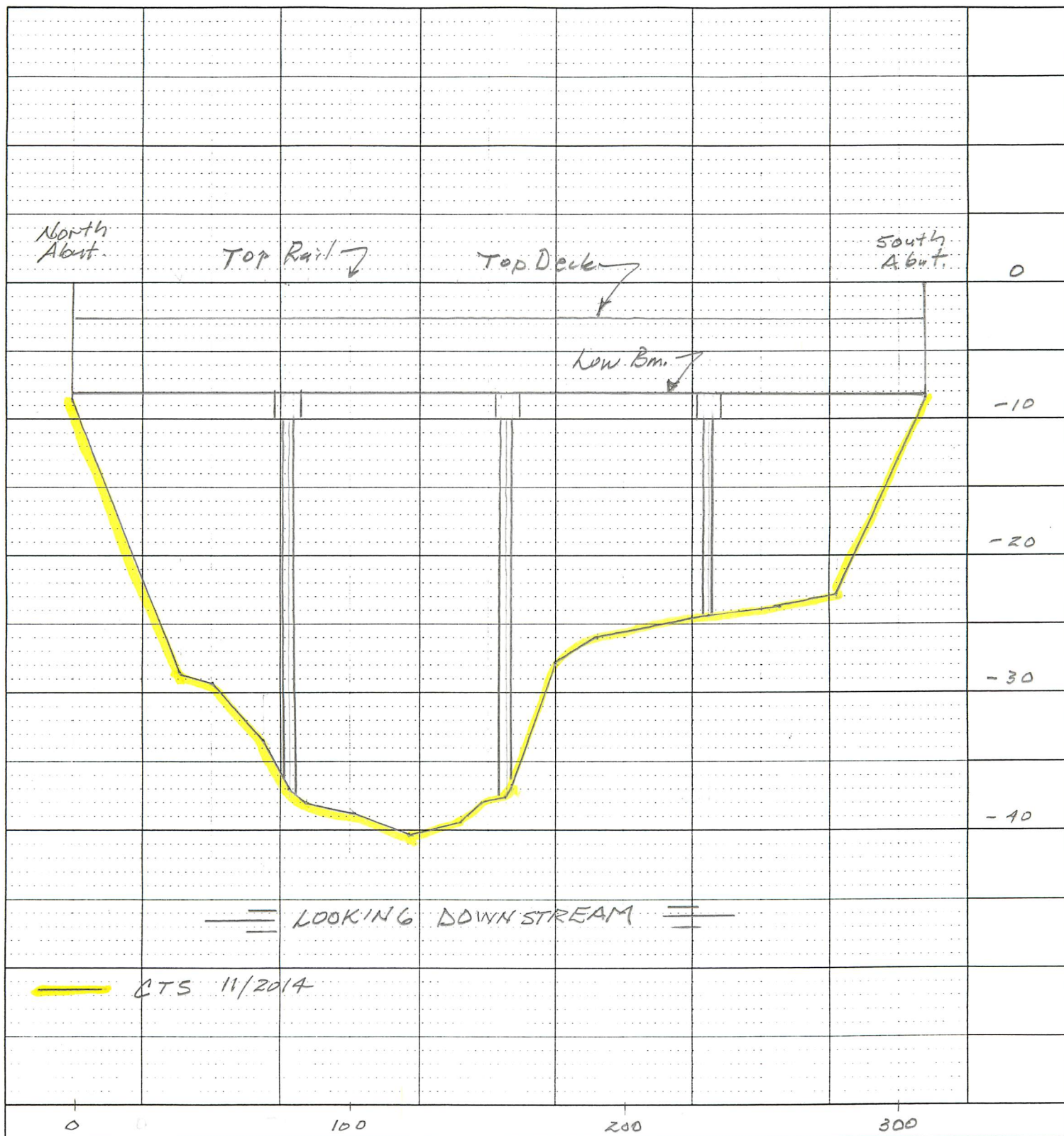
Comments:

Company Name: _____ Signature: _____ Date: _____

Comments:

District 14 County 105 Cont-Sec RR00-00 Structure 001 Route Ruby Ranch Rd.
@ Onion Creek

CHANNEL PROFILE SHEET





Modified (12-5-2000)
for Microsoft Word 7.0, WIN95 & NT

Bridge Structural Condition History

District: 14 County: 105 Cont-Sec: RR00-00 Structure 001 Route: Ruby Ranch Rd.
Feature Crossed: Onion Creek

Date	Event-Prime Consultant I-Initial R-Routine S-Special D-Damage ID-In Depth	Load Rating				Load Posting			1085					
		Inventory		Operating		O-Observed R-Recommended	Sign Type	Qty	Condition Ratings					
		H	HS	H	HS				58	59	60	61	62	
1995	Bridge Built					O-								
						R-								
11/19/2014	I- Stone Structural	-	20	-	27	O-None			8	8	7	6	N	
						R-None								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								
						O-								
						R-								

Example of a bridge having current posting of 12000 lbs. Gross and 7500 lbs. Axle or Tandem (R12-4Tb); 2 signs; and posting still recommended.

11-23-92	R- XYZ Engineering	5.2	3.0	10.1	6.9	O- 12000-7500	4	2	6	4	6	7	N
						R- Retain							

Sign Types

1

2

3

4

5

OTHER

R12-2Tb

R12-2Tc

R12-4Tb

R12-4Tc