

Bridge Condition Report

Structure #: 016-4000

Briarwood Lane at Salt Creek

October 31 2011

Prepared For:

Palatine Township Road District

530 North Smith Street

Palatine, IL 60067



HAEGER ENGINEERING
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I. Administrative Data

Region: Northeast
District: 1
County: Unincorporated Cook County
Road District: Palatine Township Road District
Route: Briarwood Lane
Section: 10-25151-90-BR
Proposed Letting Date: 1st Quarter 2012
Structure Number: 016-4000
Location: Briarwood Lane at Salt Creek crossing located east of Plum Grove Road/Meacham Road, west of IL Route 53, north of Algonquin Road, and south of Euclid Avenue in the Plum Grove Estates Subdivision.

II. Roadway / Structure Data

Roadway Classification: Local Street - Urban
ADT (Current): 650
Inventory Rating HS: 20
Operating Rating HS: 27.2
Sufficiency Rating: 81

Construction / Reconstruction / Repair History:

Year Constructed: 1954
Structure Type: 3-cell (three 12' wide x 7' high cells) cast-in-place box culvert with attached wingwalls.
Repair History: 1988: The deck waterproofing membrane and wearing surface was completely removed and replaced. Remedial work such as patching and grouting work was also performed.
2008: Portion of existing bridge wall that was struck and damaged by a vehicle was repaired.

III. Structure Condition Data

See following Attachments for additional information:

Attachment A: S-107 Master Structure Report
Structure Summary Report
Attachment B: S-104 Inspection / Appraisal Report
S-105 Inventory Turnaround Report
Attachment C: Cook County Highway Department Memorandum dated January 16, 2008 for Cost Estimates - Alternate 1 and 2 repairs based on CCHD inspection.
Attachment D: Structure Photos.
Attachment E: Abbreviated Existing Structure Plans. Per Palatine Township Road District, no plans for existing structure are available and thus none have been provided.

Per attachments A & B, there are issues with the existing deck geometry and the structure lacks permanent safety railing. Further there are also issues with the approach roadway alignment to the bridge. Per Attachment C, based on 2007 inspection performed by the Cook County Highway Department the observable repair costs required to rehabilitate the existing structure range from \$235,000 to \$370,000. Per the alternative estimates approximately 30% of the top and bottom of the deck slabs will need partial depth repairs and 20% will require full depth repairs, while 10% of the interior walls and 54 square feet the wingwalls will need repairs. It should be noted that neither alternate includes the approach re-alignment of

Briarwood Lane or the widening of crossing. Further deterioration of the bridge has also probably occurred since 2007 inspection which will cause for higher rehabilitation costs than noted in the 2008 estimates possibly bringing those costs to approximately \$250,000 to \$400,000.

IV. Discussions and Recommended Scope of Work:

After reviewing the rehabilitation costs and other issues including but not limited to the following:

- Age of existing structure (constructed in 1954, so almost 60 years old) with useful life of a cast-in-place culvert being approximately 50 years.
- Intolerable Deck geometry (appraisal rating: 3).
- Lack of permanent safety railings (appraisal rating: 2).
- Approach roadway alignment (appraisal rating: 6).
- Roadway width at crossing.

Given all the above, the Palatine Township Road District has determined that a full structure replacement is warranted, in-lieu of a band-aid short-term repairs, and has decided to pursue a complete structure removal and replacement to bring the crossing up to today's standards as best as possible given the existing site constraint conditions as well as re-alignment of Briarwood Lane to provide improved structure approach alignment from that of the existing condition. Several options were looked at for the structure replacement:

- Precast concrete box culverts sections.
- Free span bridge system or precast pre-stressed concrete box beams.
- 3-sided precast concrete structure.

The box culvert option was eliminated due to the inner walls and debris accumulation that has been a problem in the past with the existing structure. The free span bridge or precast pre-stressed box beam option was eliminated as adequate clearance requirements could not be met from the high water elevation to the bottom of the beams without the vertical approach grades to the bridge being too steep or significant change to the profile of the centerline of the roadway overflow which is not feasible given the existing site constraints. The 3-sided precast single-span structure was therefore determined to be the best replacement solution. The proposed 3-sided single span structure will have an open area that is larger than that of the existing structure without any inner wall and the proposed centerline of roadway overflow profile below the FIS 100 Year Base Flood Elevation of 709.77 was designed to generally match that of the existing centerline roadway overflow profile.

Due to existing conditions constraints and location of existing low points in the roadway on either side of the existing crossing, a design variance from the three of freeboard requirement will be required. Based on previous discussions with the IDOT Bureau of Local Roads and Streets the variance would almost certainly be granted in this instance.

The anticipated cost for the complete structure replacement with 3-sided precast structure and to also re-align the approach roadway and related improvements is estimated to be approximately \$850,000. Funding for this work will be from Township Bridge Program Funds and Palatine Township Road District Funds.

The project is anticipated to be bid out by the Palatine Township Road District in the first quarter of 2012 with construction occurring in the summer of 2012 during low creek flows. Briarwood Lane will be closed throughout the duration of the construction to through traffic from Long Acres Lane to Crestwood Drive, so that the existing structure can be completely removed and replaced with the proposed single span 3-sided precast structure with wingwalls and the road will be re-aligned. Access will be provided for local residents along Briarwood in the construction area and detour routing will be provided to route other motorists around bridge closure.

Attachment A

S-107 Master Structure Report
Structure Summary Report

Illinois Department of Transportation
Structures Information Management System
Master Structure Report (S-107)

Date: 5/2/2011
Page 1

05/02/11 01:48PM CCHD DESIGN BUREAU 3126039957 p.04

Structure Number: 016-4000 District: 1

Inventory Data	
Facility Carried:	BRIARWOOD
Feature Crossed:	SALT CR
Bridge Remarks:	0.5 E PLUM GR P18
Bridge Status:	1 OPEN - NO RESTRICT
Status Remarks:	04/1988
Maint County:	016 COOK
Maint Responsibility:	09 TOWNSHIP OR ROAD DISTRICT
Service On/Under:	1 HIGHWAY
Reporting Agency:	3 COUNTY
Main Span Matl/Type:	1 CONCRETE
Nbr Of Main Spans:	3
Approaches	
Near #1 Matl/Type:	0 FL / 0 None
Near #2 Matl/Type:	0 None / 0 None
Far #1 Matl/Type:	0 No Toll
Far #2 Matl/Type:	0 FL / 0 None
Median Width/Type:	0 FL / 0 None
Guardrail Type L/R:	0 None / 0 None
Toll Facility Indicator:	0 No Toll
Latitude:	42 D 04 M 16.19 S Longitude: 88 D 02 M 5.17 S
Deck Structure Type:	A CIP CON NORMALLY FORM
Sidewalks Under Structure:	0 None
Key Route On Data	Key Route Under Data
Key Route Nbr:	TOWNSHIP OR ROAD DISTRICT
Station:	3512
Segment:	25
Linked:	Y
Township/Road Dist	016 COOK
Municipality	0000 PALATINE
Urban Area:	1051
Functional Class:	90 LOCAL STREET, (URBAN)
** CLEARANCES **	South/East North/West
Max Rdwy Width:	000.0
Horizontal:	021.4
Min Vertical:	99Ft 11In
10 Ft Vertical:	99Ft 11In
Lateral:	99Ft 11In
Designation	Kind
Route #1:	1 Mainline
Route #2:	4 FAS, CH, or TR's Unmarked
Route #3:	
Inventory Rating:	20.0 (236)
Operating Rating:	27.2 (249)
Design Load:	99 UNKNOWN
Design Structure Thickness:	12.0 SD: FO:
Inventory Rating:	20.0 (236)
Operating Rating:	27.2 (249)
Design Load:	99 UNKNOWN
Design Structure Thickness:	12.0 SD: FO:
Structure Length:	41.0
AASHTO Bridge Length:	39.0
Length of Long Span:	12.0
Bridge Roadway Width:	20.0
Appr Roadway Width:	20.0
Deck Width:	27.6
Sidewalk Width Right:	0.0
Sidewalk Width Left:	0.0
Navigation Control:	0 No
Navigation Horiz Clear:	0
Navigation Vert Clear:	0
Culvert Fill Depth:	0.3
Number Culvert Cells:	3
Culvert Opening Area:	252.0
Culvert Cell Height:	7.00
Culvert Cell Width:	12.00
Rate Method:	
Load Rating Date:	01/01/1901
Crossing 1 Nbr:	
Crossing 1 Nbr:	
RR Lateral Underclear:	00.0
RR Vertical Underclear:	00 Ft 00 In
Station:	
Segment:	
Linked:	
Natl. Hwy System:	
Inventory Direction:	
Curr AADT Yr/Count:	
Est Truck Percentage:	
Number Of Lanes:	
One Or Two Way:	
Bypass Length:	
Future AADT Yr/Cnt:	
Designated Truck Rte:	
Special Systems:	
Designation	Kind
Route #1:	1 Mainline
Route #2:	4 FAS, CH, or TR's Unmarked
Route #3:	
Inventory Rating:	20.0 (236)
Operating Rating:	27.2 (249)
Design Load:	99 UNKNOWN
Design Structure Thickness:	12.0 SD: FO:
Inventory Rating:	20.0 (236)
Operating Rating:	27.2 (249)
Design Load:	99 UNKNOWN
Design Structure Thickness:	12.0 SD: FO:
Structure Length:	41.0
AASHTO Bridge Length:	39.0
Length of Long Span:	12.0
Bridge Roadway Width:	20.0
Appr Roadway Width:	20.0
Deck Width:	27.6
Sidewalk Width Right:	0.0
Sidewalk Width Left:	0.0
Navigation Control:	0 No
Navigation Horiz Clear:	0
Navigation Vert Clear:	0
Culvert Fill Depth:	0.3
Number Culvert Cells:	3
Culvert Opening Area:	252.0
Culvert Cell Height:	7.00
Culvert Cell Width:	12.00
Rate Method:	
Load Rating Date:	01/01/1901
Crossing 1 Nbr:	
Crossing 1 Nbr:	
RR Lateral Underclear:	00.0
RR Vertical Underclear:	00 Ft 00 In
Station:	
Segment:	
Linked:	
Natl. Hwy System:	
Inventory Direction:	
Curr AADT Yr/Count:	
Est Truck Percentage:	
Number Of Lanes:	
One Or Two Way:	
Bypass Length:	
Future AADT Yr/Cnt:	
Designated Truck Rte:	
Special Systems:	
Designation	Kind
Route #1:	1 Mainline
Route #2:	4 FAS, CH, or TR's Unmarked
Route #3:	

Illinois Department of Transportation
Structures Information Management System
Master Structure Report (S-107)

Structure Number: 016-4000 District: 1

Data Related to Inspection Information

Inspection Intervals
Routine NBIS: 24 MOS Underwater: 0 MOS One Truck At A Time: 0 Tons
Fracture Critical: 0 MOS Special: N Tons
Bridge Posting Level: 5 No Posting Required

Maximum Allowable Posting Limits
Combination Type 3S-1: 0 Tons
Combination Type 3S-2: 0 Tons

Inspection Date: 05/14/2010 Inspection Temperature: 60 Deg. F
Deck: N NOT APPLICABLE
Superstructure: N NOT APPLICABLE
Substructure: N NOT APPLICABLE
Culvert: 6 SATISFACTORY CONDITION - MINOR DETERIORATION
Channel and Protection: 7 GOOD CONDITION - SOME MINOR PROBLEMS
Structural Evaluation: 6 EQUAL TO PRESENT MINIMUM CRITERIA
Deck Geometry: 3 INTOLERABLE - HIGH PRIORITY FOR CORRECTION
Underclearance-Vert/Lat.: N NOT APPLICABLE
Waterway Adequacy: 7 BETTER THAN PRESENT MINIMUM CRITERIA
Approach Roadway Align: 6 EQUAL TO PRESENT MINIMUM CRITERIA
Bridge Railing Appraisal: 2 Doesn't Meet Standards
Approach Guardrail: 111 Does Not Exist Does Not Exist
Pier Navig Protection: N N/A

Inspection by (Name): J. TAPIA 1
Utilities Attached: 9 ELECTRIC
N N/A
N N/A
G BITUMINOUS OVERLAY
F NONE
J NONE
14.0
Last Paint Date:
Inspection Remarks:

*** Actual Posted Limits ***
Single Unit Vehicles: Tons
Combination Type 3S-1: Tons
Combination Type 3S-2: Tons
One Truck At A Time: Tons
Last Paint Type:

Underwater Inspection/Appraisal Information

Inspection Date: Inspection Category: Inspection Method: Inspection By: Appraisal Rating:
Temperature: Inspection Method:
Inspected By:
Inspection Remarks:

Scour Critical Information

Rating: 8 CALCULATED SCOUR ABOVE FOOTING Evaluation Method: B Rational Analysis
Analysis Date: 04/10/2006 Analysis By: CENTRAL BUREAU B&S

Construction Information

Year: 1954 Original Reconstructed
Route: Sta: Sta:
Section Nbr: Sta: Sta:
Contract Nbr: Sta: Sta:
Fed Aid Pr #: UNKNOWN
Built By: 0

Flood Design Frequency: 0 YRS Drainage Area: 0 Acre
Flood Design Q (CFS): 0
Flood Design Nat H W E: 0
Flood Des Open Prop: 0 SF Flood Base Nat H W E: 0

Proposed Improvement

Cost Estimate Year: Length: *** Costs in Dollars ***
Type of Work: Bridge Cost:
Done By: Roadway Cost:
Remarks: Total Project Cost:

Miscellaneous

Fracture Critical Members: No
Microfilm Data Recorded: No

Waterway Information

Illinois Department of Transportation
Structures Information Management System
Structure Summary Report

Date: 05/03/2011
Page: 1

Structure Number: 016-4000

District: 1

Inventory Data									
Facility Carried:	BRIARWOOD	Bridge Name:	BRIARWOOD CULVERT	Sufficiency Rating:	81.0	Structure Length:	41.0		
Feature Crossed:	SALT CR	Location:	0.5 E PLUM GR P18	HBP Eligible:	No	AASHTO Bridge Length:	39.0		
Bridge Remarks:		Status Date:	04/1988	Replaced By:	000-0000	Length of Long Span:	12.0		
Bridge Status:	1			Replaces:	000-0000	Bridge Roadway Width:	20.0		
Status Remarks:				Last Update Date:	01/06/2011	Appr Roadway Width:	20.0		
Maint County:	016 COOK	Maint Township:	25 PALATINE	Parallel Structure:	None	Deck Width:	27.6		
Maint Responsibility:	09 TOWNSHIP OR ROAD DISTRICT			Multi-Level Structure Nbr:		Sidewalk Width Right:	0.0		
Service On/Under:	1 HIGHWAY	5 /	WATERWAY	Skew Direction:	N	Sidewalk Width Left:	0.0		
Reporting Agency:	3 COUNTY			Skew Angle:	00 D 00 M 00 S	Navigation Control:	0	No	
Main Span Mat/Type:	1 CONCRETE			Structure Flared:	No	Navigation Horiz Clear:	0		
Nbr Of Main Spans:	3	Nbr Of Approach Spans:	0	Historical Significance:	No	Navigation Vert Clear:	0		
Approaches									
Near #1 Mat/Type:				Border Bridge State:		Culvert Fill Depth:	0.3		
Near #2 Mat/Type:				Bdr State SN:		Number Culvert Cells:	3		
Far #1 Mat/Type:				Bdr State % Responsibility:		Culvert Opening Area:	252.0		
Far #2 Mat/Type:				Structural Steel Wt	0	Culvert Cell Height:	7.00		
Median Width/Type:	0 Ft. / 0			Substructure Material:		Culvert Cell Width:	12.00		
Guardrail Type L/R:	0None			Rated By:	N N/A	Rate Method:			
Toll Facility Indicator:	0 No Toll			Load Rating Date:	01/01/1901	Railroad Crossing Info			
Latitude:	42 D 04 M 16.19 S	Longitude:	88 D 02 M 5.17 S	Design Load:	99 UNKNOWN	Crossing 1 Nbr:			
Deck Structure Type:	A CIP CON	NRMLLY FORM		Deck Structure Thickness:	12 SD: N	Crossing 1 Nbr:			
Sidewalks Under Structure:	0 None					RR Lateral Underclear:	00	Ft	00
						RR Vertical Underclear:	00	Ft	In
Key Route On Data					Key Route Under Data				
Key Route Nbr:	TOWNSHIP OR ROAD DISTRICT	3512	Station:	000.500	Station:				
Appurtenances	Main Route	00.000	Segment:	25	Segment:				
Inventory County:	016 COOK		Linked:	Y	Linked:				
Township/Road Dist	25 PALATINE		Natl. Hwy System:	Not on NHS	Natl. Hwy System:				
Municipality	0000		Inventory Direction:		Inventory Direction:				
Urban Area:	1051		Curr AADT Yr/Count:	2010 / 650	Curr AADT Yr/Count:	/			
Functional Class:	90 LOCAL STREET, (URBAN)		Est Truck Percentage:	3	Est Truck Percentage:				
** CLEARANCES **	South/East	North/West	Number Of Lanes:	2	Number Of Lanes:				
Max Rdwy Width:	000.0		One Or Two Way:	2 Two-Way	One Or Two Way:				
Horizontal:	021.4	000.0	Bypass Length:	1	Bypass Length:				
			Future AADT Yr/Cnt:	2021 / 744	Future AADT Yr/Cnt:	/			
			Designated Truck Rte:	NONE	Designated Truck Rte:				
Lateral:			Special Systems:	No	Special Systems:				
*** Marked Route On Data ***					*** Marked Route Under Data ***				
Route #1:	1 Mainline	Designation	Kind	Number	Designation	Kind	Number		
Route #2:									
Route #3:									

Date: 05/03/2011
Page: 2

District: 1

Data Related to Inspection Information									
*** Inspection Intervals ***		*** Maximum Allowable Posting Limits ***				***			
Routine NBIS:	24 MOS	Underwater:	0 MOS	One Truck At A Time:	Combination Type 3S-1:	Bridge Posting Level:			
		Special:	N	Single Unit Vehicles:	Combination Type 3S-2	5	No Posting Required		
Inspection/Appraisal Information									
Inspection Date:	05/14/2010	Inspection Temperature:	60Deg. F						
Deck:	N	NOT APPLICABLE							
Superstructure:	N	NOT APPLICABLE							
Substructure:	N	NOT APPLICABLE							
Culvert:	6	SATISFACTORY CONDITION - MINOR DETERIORATION							
Channel and Protection:	7	GOOD CONDITION - SOME MINOR PROBLEMS							
Structural Evaluation:	6	EQUAL TO PRESENT MINIMUM CRITERIA							
Deck Geometry:	3	INTOLERABLE - HIGH PRIORITY FOR CORRECTION							
Underclearance-Vert/Lat.:	N	NOT APPLICABLE							
Waterway Adequacy:	7	BETTER THAN PRESENT MINIMUM CRITERIA							
Approach Roadway Align:	6	EQUAL TO PRESENT MINIMUM CRITERIA							
Bridge Railing Appraisal:	2	Doesn't Meet Standards							
Approach Guardrail:	111	Does Not Exist		Does Not Exist					
Pier Navig Protection:	N	N/A							
Underwater Inspection/Appraisal Information									

Inspection Date:

Temperature:

Inspection Category:

Inspection Method:

Appraisal Rating:

Underwater Inspection/Appraisal Information

Scour Critical Information				Miscellaneous	
Rating:	8	CALCULATED SCOUR ABOVE FOOTING	B	Rational Analysis	
Analysis Date:		04/10/2006			No
Construction Information			Waterway Information		
Year:	1954	Original		Flood Design Frequency:	0 YRS
Route:			Reconstructed	Drainage Area:	0 Acre
Section Nbr:			Sta:	Flood Design Q (CFS):	0
Contract Nbr:				Flood Design Nat H W E:	0
Fed Aid Pr#:				Flood Des Open Prop:	0 SF
Built By:	0	UNKNOWN		Flood Base Nat H W E:	0

Attachment B

S-104 Inspection / Appraisal Report
S-105 Inventory Turnaround Report

**Illinois Department of Transportation
Structures Information Management System
Inspection/Appraisal Report (S-104)**

Date: 5/2/2011

Structure Number: 016-4000

District: 1	Maintenance County: COOK	Municipality:
	Maint Township: PALATINE	
Maint Resp: TOWNSHIP OR ROAD DI	Reporting Agency: COUNTY	
Bridge Status: OPEN - NO RESTRICT	StatusDate: 04/1988	
Sufficiency Rating: 81.0	HBP Eligibility: No	
Key Route On: TOWNSHIP OR ROAD DISTRICT 3	Sta: 000.500	Spur/Alt: Main Route
Key Rt Under:	Sta:	Spur/Alt:
Inventory Rating: HS 20.0	Operating Rating: HS 27.2	
Required Posting (Tons) - Single Unit Vehicles:	Combination Type 3S-1:	Combination Type 3S-2:
Inspection Intervals (Mo.) - Routine: 24	Fr. Crit.: N/A	Underwater: N/A
		Special: N

COMPUTER GENERATED APPRAISAL ITEMS

Item #	Item Name	Appraisal
(67)	Structural Evaluation:	6 EQUAL TO PRESENT MINIMUM CRITERIA
(68)	Deck Geometry:	3 INTOLERABLE - HIGH PRIORITY FOR CORRECTION
(69)	Underclearance:	N NOT APPLICABLE

Item #	Item Name	Last Inspection	Current Inspection
(90)	Inspection Date:	05/14/2010	___/___/___
(90C)	Inspection Temperature (Fahrenheit):	60	___
(90A)	Inspection by Name:	J. TAPIA 1	___
(108A-C)	Wearing Surface and Protective System:	G F J	___
(108D)	Total Deck Thickness (In.):	14.0	___
(58)	Deck Condition:	N	___
(36)	Railing Appraisal:	2 1 1 1	___
(59C)	Utilities Attached To Structure:	9 N N	___
(59A)	Last Paint Date (MM/YYYY):		___/___/___
(59B)	Last Paint Type:		___
(59)	Superstructure Condition:	N	___
(60)	Substructure Condition:	N	___
(61)	Channel and Channel Protection Condition:	7	___
(111)	Pier Navigation Protection Condition:	N	___
(62)	Culvert Condition:	6	___
(71)	Waterway Adequacy Appraisal:	7	___
(72)	Approach Roadway Alignment Appraisal:	6	___

Actual Posted Vehicle Restrictions

(70D2)	Posted One Truck At A Time:	___
(70A2)	Single Unit Vehicle Weight Limit (Tons):	___
(70B2)	Combination Vehicle Type 3S-1 Wt. Limit (Tons):	___
(70C2)	Combination Vehicle Type 3S-2 Wt. Limit (Tons):	___

(90B) Remarks (Last Inspection):

Remarks (Current Inspection):

Illinois Department of Transportation
Structures Information Management System
Inventory Turnaround Report (S-105)

Date: 5/2/2011

05/02/11 01:48PM

CCHD DESIGN BUREAU

3126039957

p.03

Structure Number: 016-4000

District: 1 Maintenance County: COOK

Maintenance Township: PALATINE

Municipality:

Key Route On: TOWNSHIP OR ROAD DISTRICT 3512 Sta: 000.500

Seg: 25 Spur/Alt: Main Route

Bridge Status: OPEN - NO RESTRICT

Status Date: 04/1988

Sufficiency Rating: 81

Key Rt Under: No

HBP Eligible:

***** Screen 1 *****

Item No. / Name	Existing Values	Revisions	Item No. / Name	Existing Values	Revisions
(7) Facility Carried: BRIARWOOD			(101) Parallel Designation:	N	
(6) Feature Crossed: SALT CR			(8E) Replaced By Struct Number:	000-0000	
(9) Location: 0.5 E PLUM GR P18			(8D) Replaces Structure Number:	000-0000	
(7A) Bridge Name: BRIARWOOD CULVERT			(49) Structure Length (Ft.):	41.0	
(38) Maintenance County:	016		(112) AASHTO Bridge Length (Ft.):	39.0	
(381) Maintenance Township:	25		(51) Bridge Roadway Width (Ft.):	20.0	
(21) Maintenance Resp:	09		(32) Approach Roadway Width (Ft.):	20.0	
(42) Service On/Under:	15		(52) Deck Width (Ft.):	27.6	
(22A) Reporting Agency:	3		(107A) Deck Type/Thickness (In.):	A	
(20) Toll Facility:	0		(48) Length of Longest Span (Ft.):	12.0	
(35) Structure Flared:	0		(45/6) Nbr Spans Main/Approach:	3 0	
(31) Design Load:	99		(43A/B) Main Span Material/Type:	1 19	
(31A) Struct Steel Weight (Lbs.):	0		(44AN/BN) Near Appr Span Matr/Type #1:		
(60A/B) Substr Matr:			(44AN/BN) Near Appr Span Matr/Type #2:		
(8A1) Bridge Remarks (Existing):			(44AF/BF) Far Appr Span Matr/Type #1:		
			(44AF/BF) Far Appr Span Matr/Type #2:		

Bridge Remarks (Revised):

Item No. / Name	Existing Values	Revisions	Item No. / Name	Existing Values	Revisions
(34A) Skew Dir/Angle (DG-MN-SEC):	N / 00 00		(202) Traffic Permits Rte Sec Nbr:		
(33) Bridge Median Type:	0		(8B) Multi-Level Structure Number:	3	
(33A) Bridge Median Width (Ft):	0		(62A) Culvert Cells (Count):	12.00	
(38) Navigation Control:	0		(62B) Culvert Cell Width (Ft.):	7.00	
(39) Navigation Vert Clear (Ft):	0		(62C) Culvert Cell Height (Ft.):	252.0	
(40) Navigation Horiz Clea (Ft):	0.0		(62D) Culvert Opening Area (Sq. Ft.):	0.3	
(50A) Sidewalk Width On - Right (Ft):	0.0		(62E) Culvert Fill Depth (Ft.):	42 D 04 M 16.19 S	
(50B) Sidewalk Width On - Left (Ft):	0.0		(16) Latitude:	88 D 02 M 5.17 S	
(50C) Sidewalks Under Structure:	0		(17) Longitude:		
(36E) Guardrails On - Right:	0		(98A) Border Bridge State Number:		
(36F) Guardrails On - Left:	0		(98B) Border Bridge Adj State (% Resp):	0	
(8C) RR Crossing Numbers:			(99) Border Bridge Number Existing:		
(55B1) RR Lateral Underclearance (Ft.):	00.0				
(54B3) RR Vert Underclearance (Ft. - In.):	00 - 00				

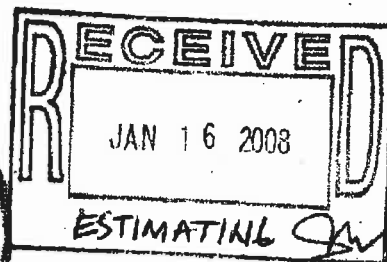
Attachment C

CCHD Memorandum and Alternate 1&2 Rehabilitation Cost Estimates

cc: F. Williams
Struct. Div.
Maranan

**HIGHWAY DEPARTMENT
MEMORANDUM**

To: Mr. Mark Johnson
From: Structural Division
Date: January 16, 2008
Subject: Cost Estimate Request
Briarwood Lane at Salt Creek
Structure No. 016-1000



Attached for your use in preparing a cost estimate are two alternative preliminary summary of quantities for the subject improvements. A brief description of each improvement for the proposed bridge rehabilitation is mentioned below. Please provide the Structural Division with a cost estimate for this project for programming purposes.

Description of Improvement for Alternative # 1

The proposed improvement includes the removal and replacement of the stone parapet with a concrete bridge railing with rustication finish, the removal and reinstallation of the existing bridge lighting, removal and replacement of concrete headwall to accommodate the proposed concrete parapet wall and new twelve (12) foot lanes, the removal and replacement of the guardrail with traffic barrier terminal, type 6 and traffic barrier terminal, type 1 with bituminous shoulders. The removal and replacement of the bituminous surface with a sheet water proofing membrane system. Perform structural repair of concrete to the triple box culvert and wing walls. Perform deck slab repairs near deck drains, relocate deck drains, and perform epoxy crack sealing and all collateral work as necessary to complete the project.

Description of Improvement for Alternative # 2

The proposed improvement includes the removal and replacement of the guardrail with traffic barrier terminal, type 6 and traffic barrier terminal, type 1 with bituminous shoulders. The removal and replacement of the bituminous surface with a sheet water proofing membrane system. Perform structural repair of concrete to the triple box culvert and wing walls. Perform deck slab repairs near deck drains, replace deck drains, and perform epoxy crack sealing and all collateral work as necessary to complete the project.

If you have any questions, please contact Guillermo Ramos @ ext. 3-1741


Frank Williams, P.E., S.E.

FW: NS: GJR131741

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Brianwood Lane @ Salt Creek
Structure No. 016-4000
Preliminary Cost Estimate, Alternate # 1

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Cutting Bituminous Surface	Foot	42	15.00	630.00
2	Bituminous Surface Material (3 1/2 IN)	Sq. Yd.	94	35.00	3,290.00
3	Bituminous Material (Prime Coat)	Gal	47	2.00	94.00
4	Hot-Mix Asphalt Surface Course, MFC "D", IL-12.5 OR 9.5, N70	Ton	16	70.00	1,050.00
5	Guardrail Removal	Foot	131	10.00	1,310.00
6	Traffic Barrier Terminal, Type 6	Each	3	2,800.00	8,400.00
7	Traffic Barrier Terminal, Type 1	Each	3	2,200.00	6,600.00
8	Bituminous Shoulder, Superpave, 6 Inch	Sq. Yd.	12	150.00	1,800.00
9	Work Zone Pavement Marking Removal	Sq. Ft.	4628	1.00	4,628.00
10	Pavement Marking Tape, Type III, 4 Inch	Foot	800	1.30	1,040.00
11	Engineer's Field Office, Type A	Cal. Mo.	4	3,000.00	12,000.00
12	Traffic Protection	Lump Sum	1	17,000.00	17,000.00
13	Concrete Removal	Cu. Yd.	12.6	2,500.00	31,500.00
14	Formed Concrete Repair, Depth Equal to or Less Than 5 Inch	Sq. Ft.	340**	150.00	51,000.00
15	Formed Concrete Repair, Depth Greater Than 5 Inch	Sq. Ft.	60**	200.00	12,000.00
16	Concrete Superstructures	Cu. Yd.	2.3	5,000.00	11,500.00
17	Removal and Reinstallation of Existing Lighting	Lump Sum	1	10,000.00	10,000.00
18	Deck Slab Repair, Partial Depth	Sq. Yd.	75***	500.00	37,500.00
19	Deck Slab Repair (Full Depth, Type 1)	Sq. Yd.	50***	700.00	35,000.00
20	Deck Slab Repair (Full Depth, Type 2)	Sq. Yd.	50***	750.00	37,500.00
21	Concrete Bridge Railing	Foot	96	125.00	12,000.00
22	Cleaning Existing Box Culvert, 12' X7'	Foot	83	35.00	2,905.00
23	Sheet Waterproofing Membrane System	Sq. Yd.	112	50.00	5,600.00
24	Deck Drains	Each	6	400.00	2,400.00
25	Reinforcement Bars, Epoxy Coated	Lb.	5150	5.00	25,750.00
26	Epoxy Crack Sealing	Foot	150	42.00	6,300.00
27	Seeding, Class 2	Acre	0.1	5,000.00	500.00
28	Nitrogen Fertilizer Nutrient	Lb.	9	4.50	40.50
29	Phosphorous Fertilizer Nutrient	Lb.	9	4.50	40.50
30	Potassium Fertilizer Nutrient	Lb.	9	4.50	40.50
31	Erosion Control Blanket	Sq. Yd.	484	3.20	1,548.80
32	Impact Attenuators, Temporary (NON-REDIRECTIVE)	Each	2	4,500.00	9,000.00
33	Impact Attenuators, Relocate (NON-REDIRECTIVE)	Each	2	850.00	1,700.00
34	Temporary Concrete Barrier	Foot	42	70.00	2,940.00
35	Relocate Temporary Concrete Barrier	Foot	42	55.00	2,310.00
36	Top Soil Furnish and Place	Sq. Yd.	484	6.00	2,904.00
37	Contract Extra Work Items	Lump Sum	1	10,000.00	10,000.00
				TOTAL	369,421.30

**It was estimated that the top and bottom slabs required 30% of Deck Slab Repair, Partial and 20% of Deck Slab Repair (Full Depth) Types 1 & 2.
 ***It was estimated that the 54 sq. ft. of wingwall need repairs, and 20% of the bottom of the top slab requires repair, and 10 % of the interior wall require repairs.

For pay item No. 25 an addition of 600 lbs. of reinforcement bars was added in the event that section loss is encounter during deck slab repairs.

COMMENT -

— IS PROTECTIVE SHIELD NECESSARY?

— DETOUR ROUTING

**Briarwood Lane @ Salt Creek
Structure No. 016-4000**

Preliminary Cost Estimate, Alternate #2 (No Stone Parapet Replacement)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Cutting Bituminous Surface	Foot	42	16.00	630.00
2	Bituminous Surface Removal (3 1/2 IN)	Sq. Yd.	94	35.00	3,280.00
3	Bituminous Material (Prime Coat)	Gal	47	2.00	94.00
4	Hot Mix Asphalt Surface Course, MIX "D", IL-12.5 OR 9.5, N70	Ton	15	70.00	1,050.00
5	Guardrail Removal	Foot	131	10.00	1,310.00
6	Traffic Barrier Terminal, Type 6	Each	3	2,800.00	8,400.00
7	Traffic Barrier Terminal, Type 1	Each	3	2,200.00	6,600.00
8	Bituminous Shoulder, Superpave, 6 Inch	Sq. Yd.	12	150.00	1,800.00
9	Engineer's Field Office, Type A	Cal. Mo.	3	3,000.00	9,000.00
10	Formed Concrete Repair, Depth Equal to or Less Than 6 Inch	Sq. Ft.	340**	150.00	51,000.00
11	Formed Concrete Repair, Depth Greater Than 6 Inch	Sq. Ft.	60**	200.00	12,000.00
12	Deck Slab Repair, Partial Depth	Sq. Yd.	75***	500.00	37,500.00
13	Deck Slab Repair, (Full Depth, Type 1)	Sq. Yd.	50***	700.00	35,000.00
14	Deck Slab Repair, (Full Depth, Type 2)	Sq. Yd.	50***	750.00	37,500.00
15	Deck Drains	Each	6	400.00	2,400.00
16	Cleaning Existing Box Culvert, 12' X7'	Foot	83	35.00	2,905.00
17	Sheet Waterproofing Membrane System	Sq. Yd.	112	50.00	5,600.00
18	Reinforcement Bars, Epoxy Coated	Lb.	600	5.00	3,000.00
19	Epoxy Crack Sealing	Foot	150	42.00	6,300.00
20	Seeding, Class 2	Acre	0.1	5,000.00	500.00
21	Nitrogen Fertilizer Nutrient	Lb.	9	4.50	40.50
22	Phosphorous Fertilizer Nutrient	Lb.	9	4.50	40.50
23	Potassium Fertilizer Nutrient	Lb.	9	4.50	40.50
24	Erosion Control Blanket	Sq. Yd.	484	3.20	1,548.80
25	Top Soil Furnish and Place	Sq. Yd.	484	6.00	2,904.00
26	Contract Extra Work Items	Lump Sum	1	5,000.00	5,000.00
				TOTAL	235,453.30

** It was estimated that the top and bottom slabs required 30% of Deck Slab Repair, Partial and 20% of Deck Slab Repair (Full Depth) Types
*** It was estimated that the 54 sq. ft. of wingwall need repairs, and 20% of the bottom of the top slab requires repair, and 10 % of the interior wall require repairs.

600 lbs. of reinforcement bars was added in the event that section loss is encounter during deck slab repairs.

COMMENT :

— TRAFFIC PROTECTION ?

— DETOUR ROUTING OR STAGING ?

Attachment D

2011 Structure Photos



Existing Structure – Upstream Side



Existing Structure – Upstream Side East Wingwall



Existing Structure – Upstream Side West Wingwall



Existing Structure – Upstream Non-Structural Decorative Wall



Existing Structure – Downstream Side



Existing Structure – Downstream Side East Wingwall



Existing Structure – Downstream Side West Wingwall



Existing Structure – Downstream Non-Structural Decorative Wall

Attachment E

Abbreviated Existing Structure Plans
(Existing Structure Plans Not Available)