CONNECTICUT DEPARTMENT OF TRANSPORTATION

The Honorable Emil H. Frankel, Acting Commissioner

PRELIMINARY APPLICATION FOR THE LOCAL BRIDGE PROGRAM

Preliminary application is hereby made by the Town/City/Borough of **CITY OF NEW HAVEN** for possible inclusion in the Local Bridge Program for Fiscal Year **2009** for the following structure:

Bridge Location: **East Rock Road over Mill River**

Bridge Number: **04418** Length of Span: **84** feet

Sufficiency Rating: **44.98** Priority Rating: **41.647**

Evaluation & Rating Performed by: _____ State Forces __XX__ Others

If Others, Name of Professional Engineer: **Mahmood A. Mohammed, P.E.**

Connecticut Professional Engineers License Number: **21463**

Engineering Firm: **HAKS**

Engineer's Address: **Centerpoint Executive Park, 306 Industrial Park Rd., Suite 201, Middletown, CT 06457**

Engineer's E-mail Address: **mmohammed@haks.net**

Description of Existing Condition of Structure: *(attach description)* **BRI-19**

Description of Project Scope: _____ *(note repair code; attach narrative/preliminary plans & specifications).*

Municipal Official to Contact *(name & title)*: **Richard H. Miller, PE, LS, City Engineer**

Mailing Address: **200 Orange Street, 5th Floor, New Haven, CT 06510**

Telephone: **203-946-8105** FAX: **203-946-8093**

E-mail: **rmiller@newhavenct.net**

Schedule: (Anticipated Dates)

Public Hearing Conducted:	**December 3, 2008**
Design Completion:	**September 2009**
Property Acquisition Completion:	**None Anticipated**
Utilities Coordination Completion:	**September 2009**
Construction Advertising:	**October 2009**
Supplemental Application Submission:	**September 2009**
Start of Construction:	**Spring 2010**
Completion of Construction:	**Fall 2010**

Preliminary Cost Figures:

Preliminary Engineering Fees (Include Breakdown of Fees) *(Not to Exceed 15% of Construction Costs)*	**$ 54,000**
Rights-of-Way Cost (If applicable)	_____
Municipally Owned Utility Relocation Cost	_____
Estimated Construction Costs (Include Detailed Estimate)	**$360,000**
Construction Engineering (Inspection, Materials Testing) *(Not to Exceed 15% of Construction Cost)*	**$ 54,000**
Contingencies *(10% of Construction Costs Only)*	**$ 36,000**
Total Estimated Project Cost	**$504,000**

Financial Aid Data:

Federal Reimbursement: *(Limited to qualifying bridges – See Appendix 1)*
Total Estimated Project Cost multiplied by 80%:

Federal Aid Request $ 463,200

State Local Bridge Project Grant: *(Cannot be combined with Federal reimbursement)*

Allowable Grant Percentage **32.90%** of Total Cost (*see Appendix 2*).

Project Grant Request **$165,816**

State Local Bridge Project Loan: *(Maximum 50% of total project cost)*

Project Loan Request **$252,000(the City may elect to fund the state loan portion of the project.)**

I hereby certify that the above is accurate and true, to the best of my knowledge and belief. I also certify that this form has not been modified in any way from that distributed by the Department of Transportation for FY 2009.

Signature: _____
(Chief Elected Official, Town Manager, or other Officer Duly Authorized)

Date: 4-29-08

Return completed applications to:

Mr. Stanley C. Juber
Administrator of the Local Bridge Program
Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, Connecticut 06131-7546

Do not use this form after May16, 2008

Bridge Numb 04418

Inspected By: _____ & _____

Sufficiency Rating 44.98
Previous Inspection Date 8/11/2007

BS&E Received ☐ Data Entry By: _____
Copies Made ☐ Data Entry Date: _____

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BRIDGE SAFETY & EVALUATION

STRUCTURE EVALUATION

SHEET 1 OF 2 FORM BRI-19 REV 10/00

SHEET_____ OF_____

90) Inspection Date	Inspection Team	91) Freque	Class:
	23	24	03
Indepth Insp	Deck Survey	Access	Flagman
10/23/2001		0	

CRITICAL FEATURE INSPECTIONS

	Type	Frequency	Team	Date
Fracture:	G	24	20	8/11/2007
Uwater:				
Special:				

RED FLAG

IDENTIFICATION

Bridge Name
Town Name NEW HAVEN Town Code 52070
5) Inventory Route:
A) Record Type 1 D) Route Number 00000
B) Signing Prefix 5 City Street E) Directional Suffix 0 NA
C) Level of Service 0 None of the bel
6) Feature Intersected MILL RIVER
7) Facility Carried: EAST ROCK ROAD
9) Location AT JUNCT W FARNUM DRIVE
11) Milepoint 0.37 Miles
16) Latitude 41deg 19 min 48.00 sec deg min sec
17) Longitude 72deg 54 min 30.00 sec deg min sec
98) Border Bridge:
A) State Code B) Percent Responsibility %
C) Border Town Name
99) Border Bridge Structure No

STRUCTURE TYPE AND MATERIAL

43) Structure Type, Main:
A) Material 3 Steel B) Design Type 11 Arch - Deck
44) Structure Type, Approach:
A) Material 0 Other B) Design Type 0 Other
45) Number of Spans, Main Unit 1
46) Number of Approach Spans 0
107) Deck Structure Type 4 Closed Grating
108) Wearing Surface/Protective System:
A) Type of Wearing Surface 6 Bituminous
B) Type of Membrane 1 Built-up
C) Type of Deck Protection 0 None

AGE AND SERVICE

27) Year Built 1900 106) Year Reconstructed 1984
42) Type of Service:
A) On 5 Highway-pedestrian B) Under 5 WATERWAY
28) Number of Lanes:
A) On 2 B) Under 0
29) Average Daily Traffic 1700 Half ADT?: No
109) Percent Truck 3%
30) Year of ADT 2007
19) Bypass, Detour Length 1miles

GEOMETRIC DATA

48) Length of Max Span 84ft
49) Structure Length 84ft
50) Curb or Sidewalk Widths:
A) Left 5.5ft B) Right 5.5ft
51) Brg Rdwy width,curb-curb 20.0ft
52) Deck Width, Out-Out 31.0ft
32) Approach Roadway Width 30ft
33) Bridge Median 0 No Median
Deck Area 2604 sqft
34) Skew Angle 0deg
35) Structure Flared 0
10)Inv. Rte. Min. Vert Clearance 99ft 99in
47) Log Inv. Rte. Total Horiz Clr.: 20.0ft
47) RLog Inv. Rte. Total Horiz. Clr.: ft
53) Min Vert Clearance Over Bridge 99ft 99in
54) Min Vert Under Clearance N Ref 0ft 0in Ref
55) Min Lat Under Clearance on Right N Ref 99.9ft Ref
56) Min Lat Under Clearance on Left 0.0ft

BRIDGE COMMENTS

Structure is similar in type to Minnesota structure that collapsed August 2007. ADT is estimated based on 1% increase per year.

STRUCTURE EVALUATION

SHEET 2 OF 2 FORM BRI-19 REV 10/00

SHEET_____ OF_____

Bridge Number	04418	NBIS Length
Town Name	NEW HAVEN	Yes 84
Facility Carried	EAST ROCK ROAD	
Feature Crossed	MILL RIVER	

Inspected By: _____ & _____

CLASSIFICATION

112) NBIS Bridge Length	Yes	
104) Highway System	0	Off System
26) Functional Class	8	Rural Minor Collector
100) Defense Highway	0	Not Defense Highway
101) Parallel Structure	N	No parallel structure exists
102) Direction of Traffic	2	2-way traffic
103) Temporary Structure		
110) Designated National Network	0	Not on national network
20) Toll	3	On Free Road
21) Maintain	4	City or Municipal Highway Agency
22) Owner	4	City or Municipal Highway Agency
Report Class	L	LOCAL
37) Historical Significance	3	Possibly eligible for National Register

WATERWAY

DrainageBasinCode	7108	
38) Navigation Control	0	No navigation control on waterway
39) Navigation Vert Clr.	0	40) Navigation Horiz Clr. 0
116) Vert-Lift Brg Nav Min		
111) Pier Abutment Protection		

PROPOSED IMPROVEMENTS

75A) Type of Work Proposed		
75B) Work Done By		
76) Length of Struct. Improvement	0	ft
94) Bridge Improvement Cost	$ 0	
95) Roadway Improvement Cost	$ 0	
96) Total Project Cost	$ 0	
97) Year of Improvement Cost Est.	0	
114) Future ADT	0	115) Year Future ADT 0
List No.		Project No.
Advertised		

POSTED SIGNS & UTILITIES

Other Posted Signs 1				
Other Posted Signs 2				
Actual P.L. Single Unit Truck	17 tons	Actual P.L. 4Axle Truck	tons	
Rec. P.L. Single Unit Truck	17 tons	Rec. P.L. 4Axle Truck	tons	
Actual P.L. Semi-TrailerTruck	24 tons	Actual P.L. 3S2 Truck	tons	
Rec. P.L. Semi-TrailerTruck	24 tons	Rec. P.L. 3S2 Truck	tons	
Rec. P.L. All Vehicles	tons	Actual P.L. All Vehicles	tons	
Posted Vert Clearance On Bridge	ft in		ft	ft in
Posted Vert UnderClearance	ft in		ft	ft in
Posted Speed Limit	mph			mph
Utility				

LOAD RATING AND POSTING

31) Design Load	0	Evaluation Code	L	
63) Operating Rating Type	1	Year of Evaluation	1996	
64) Operating Rating	24.0	70) Bridge Posting	1	
65) Inventory Rating Type	1	41) Structure Status	P	
66) Inventory Rating	14.0			

CONDITION

	Rating	By
58) Deck	3	
59) Superstructure	6	
60) Substructure	6	
61) Channel & Chan. Protection	7	
62) Culverts	N	

APPRAISALS

	Rating	By
67) Structure Evaluation	4	
68) Deck Geometry	2	
69) Under Clear Vert & Horiz	N	
71) Waterway Adequacy	7	
72) Approach Rdwy Alignment	6	
113) Scour Critical	5	

Items 58 Thru 72 Checked By: _____

36) Traffic Safety Features:

A) Bridge Railings	0	
B) Transitions	0	
C) Approach Guardrail	0	
D) Approach Guardrail End	1	

OTHER FEATURES

Fence Required	No	Barrel Ladder	No	
Fence Present	No	Stand Pipes	No	
Fence Height	0.0 ft	Cat Walks	No	
Fence Type		Movable Inspection System	No	
Fence Material		Loose Concrete Checked?	Yes	
Fence Top Type				

INSPECTION COMMENTS

Proposed Next Indepth Insp Year	2011
Senior	consultant
Supervisor	consultant

REVIEWED BY: _____ Date _____

Bridge No.	04418	**Inspected by:**	Laszlo Vers
Town:	New Haven	**Inspected by:**	M. Mohammed, M. Waite
Feature Carried:	East Rock Road	**Date Inspected:**	08/11/07
Feature Crossed:	Mill River	**Project No.:**	170-2729

04418

Photo # 1: Bridge ID.

Photo # 2: South elevation.

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Photo # 3: North elevation.

Photo # 4: Bridge from west approach.

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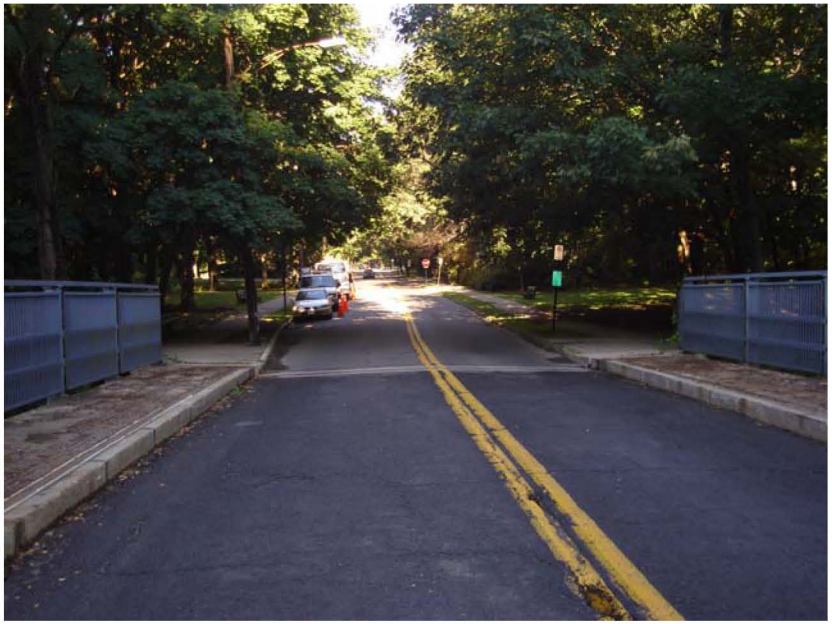

Photo # 5: West approach from bridge.

Photo # 6: Bridge from east approach.

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Photo # 7: East approach from bridge.

Photo # 8: Typical superstructure.

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Photo # 9: Bridge overlay with numerous longitudinal and transverse cracks.

Photo # 10: Several pot holes, cracking and raveling along the center line of the bridge overlay.

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Photo # 11: Area of missing bridge overlay at the northeast corner along the east abutment deck joint header. Missing area has exposed the top portion of the concrete filled grid deck, the concrete is soft.

Photo # 12: Typical condition of the underside of concrete filled grid deck at the northeast corner. The SIP forms are completely corroded away with areas of damp and soft concrete.

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Photo # 13: Northeast corner, the first deck purlin from north has 5” long x full height (bottom section of the I-beam) perforation in the web over the bearing area (end floorbeam top flange).

Photo # 14: Northeast corner, the fifth deck purlin from north, 18” long section of the purlin at the end is in serious condition (perforations in the web or paper thin). Fourth deck purlin from north is in similar condition.

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Photo # 15: Typical condition of the underside of concrete filled grid deck at the southwest corner. The SIP forms are completely corroded away with areas of damp and soft concrete.

Photo # 16: Concrete filled deck at the southwest corner between the third and fourth purlin from south. SIP forms are completely corroded away with areas of soft concrete and efflorescence.

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Photo # 17: Southwest corner, the second deck purlin from south has a 5” long x 2” high perforation in the web over the bearing area.

Photo # 18: Typical curb, sidewalk and railing configuration.

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Photo # 19: Both sidewalks have severe scale, numerous spalls, exposed steel grid and ponding water. North sidewalk shown.

Photo # 20: Typical condition of the stay-in-place forms on the underside of the sidewalks with moderate to heavy rust and isolated perforations.

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Photo # 21: Typical short PVC weep pipe draining onto the stay-in-place forms.

Photo # 22: West abutment compression seal deck joint, looking north. The concrete bridge header is hollow for full length x full width. The south end of the header (approx. 2' from the curb) is loose for ± 2' when tapped with a hammer.

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Photo # 23: East abutment compression seal deck joint, looking north. The concrete bridge header is hollow for full length x full width. Bituminous patch with cracks and spall in header at the southeast corner.

Photo # 24: Broken joint seal/gland at the east abutment along the north curb.

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Photo # 25: Typical arch rib bearing. South arch rib bearing at east abutment shown.

Photo # 26: North arch bearing at the west abutment. Bearing shoe with light to moderate rust and impacted rust between the web reinforcement plate and bearing shoe.

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Photo # 27: Floor beam FB6 bearing at the north arch. Impacted rust between the bearing plates.

Photo # 28: Floor beam FB6 at the west abutment backwall. Moderate to heavy rust on the bottom flange and bottom of web with section loss. Note: Accumulation of debris on the bottom flange.

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Photo # 29: Floor beam FB6' at the east abutment. Moderate to heavy rust on the bottom flange with section loss.

Photo # 30: South arch bottom flange at floor beam FB1. There is impacted rust up to 1-1/8" between the cover plates.

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Photo # 31: Bottom flange of the north arch at the east abutment. Rivets have up to 90% head loss.

Photo # 32: North arch center pin. Bottom flange plates are in contact, 3/8" gap (at south edge) between the top flanges.

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Photo # 33: Typical section loss of the arch rib web behind the sway bracing connections.

Photo # 34: Spandrel column at the north arch and west abutment. Impacted rust between the spandrel column flanges and gusset plates.

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Photo # 35: Typical stone masonry abutment, east abutment shown.

Photo # 36: Northwest wingwall with random areas of missing mortar.

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Photo # 37: Upstream of Mill River.

Photo # 38: Down stream of Mill River.

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Photo # 39: Northeast approach guide rail with impact damage. The 1st four posts have been knocked off the anchorage pads

Photo # 40: Same location as photo #39. Note: Rear anchor bolts are sheared off.

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Photo # 41: West approach pavement has settlement and cracking along the joint header.

Photo # 42: Condition of the pavement at the east approach.

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Photo # 43: Northwest approach sidewalk near deck joint. Gap between the top of backwall and sidewalk is filled with process.

Photo # 44: Southwest approach sidewalk near deck joint with up to 2-1/2" of settlement.

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Photo # 45: Southwest approach sidewalk at end of parapet with settlement due to undermining.

Photo # 46: Same location as photo #45 showing the undermining underneath the sidewalk.

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Photo # 47: End of the southeast approach sidewalk with 1' high drop off at walking trail

Photo # 48: End of the northeast approach sidewalk with up to 10" high drop off at walking trail.