

TOWN OF BLADENSBURG

REQUEST FOR BID Bridge Repairs



Issued by:

**TOWN OF BLADENSBURG
4229 Edmonston Road
Bladensburg, Maryland 20710**

Tel: 301-927-7048

RFB -04 - 2024

**Issue Date: April 15, 2024
Proposal Due Date: May 15, 2024 at 3:00 p.m.**

Advertisement

TOWN OF BLADENSBURG REQUEST FOR BIDS– Bridge Repairs RFB 004-2024

The Town of Bladensburg requests sealed bid proposals from qualified firms to provide Bridge Repairs, as more fully described in these Request for Proposal (“RFB”) documents.

Two (2) Electronic copies of the bid proposal must be submitted on the specified forms, in full compliance with the requirements specified in the Bid Documents, sent by email no later than May 15, 2024, **at 3:00 p.m. EST.**

Any questions about the RFB or the project services must be submitted to the Project Manager no later than May 1, 2024 at 2:00 p.m. EST.

Copies of the RFB Documents may be downloaded from the Town’s website at <https://bladensburgmd.gov>. Requests for printed copies should be directed to the Town of Bladensburg, 4229 Edmonston Road, Bladensburg, Maryland 20710, Monday - Friday 8:00 a.m. - 5:00 p.m. (telephone 301-927-7048).

The Town of Bladensburg is an Equal Opportunity Employer. Unlawful discrimination based on race, religion, sex, age, ethnicity, ancestry or national origin, physical or mental disability, color, marital status, sexual orientation, gender identity, genetic information, political affiliation or other unlawful basis is expressly prohibited is expressly prohibited.

The Town reserves the right to reject any and all bids based on the Town's best interest. The Project Manager for this contract is Purnell Hall, telephone 301-927-7048; e-mail: phall@bladensburgmd.gov and clerk@bladensburgmd.gov

TOWN OF BLADENSBURG

REQUEST FOR BIDS – Bridge Repairs

RFB 004- 2024

SECTION 1: SCOPE OF WORK AND TOWN BACKGROUND

1.1 Scope of Work

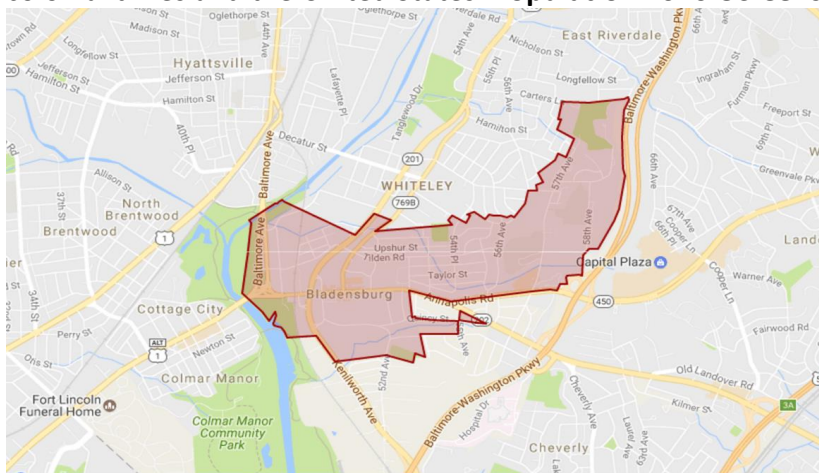
The Town of Bladensburg seeks a qualified individual or firm to complete bridge repairs for certain locations. A successful proposal should demonstrate the company's ability to meet the following objectives:

1. Repair Issues noted on the engineering reports for the following locations:
 - a. Spring Rd.
 - b. 54th Place
 - c. Taylor St.
 - d. Upshur St.
 - e. Varnum St.

Note: Engineering Reports from 2021 are attached, the Public Work Supervisor Purnell Hall, Phall@bladensburgmd.gov may modify or remove smaller items from the scope that may be repaired in house. Please contact Mr. Hall for further information. To schedule an appointment please contact him directly.

1.2 Background and Resources – Town of Bladensburg

The Town of Bladensburg is located along the Anacostia River in Prince George's County, Maryland. The Town is north and east of Washington, DC. Bladensburg's roots reach as far back as the 1720s. The town has witnessed and played a major role in much of the history of colonial times and the United States. **Population 2020 US Census – 9,657**



Mission: The Town of Bladensburg is a vibrant and exciting destination that offers superior services and opportunities to all community stakeholders in a clean and safe environment, promoting redevelopment, investment and diversity.

Vision: Bladensburg is an ethical and responsive government that provides high-quality customer service committed to creating a culturally and economically viable community.

Core values: Bladensburg CARES exemplifies the values we hold in the delivery of excellent public service to residents, property owners and stakeholders of the Town.

Collaboration – We value effective partnerships.

Accountability – We recognize our individual and collective roles and responsibility for service and program delivery.

Responsiveness – We value prompt customer service.

Ethics and Efficiency – We are ethical and efficient in our operations.

Service Excellence to the Community – We value efficient, high-quality service in everything we do.

SECTION 2: RFB AND BID SUBMITTAL PROCESS

2.1 RFB Issuance

Upon issuance, the RFB will be posted to the Town’s website at <https://bladensburgmd.gov> as well as other RFB distribution websites. The Town may send notification of the issuance of the Bridge Repairs RFB to certain potential bidders. This notification does not in any way indicate prequalification of said bidders. No pre-bid meeting is scheduled. Potential bidders with questions about the RFB or its process may contact Purnell Hall, Project Manager, no later than May 15, 2024, at 3:00 p.m. EST. Contact information is: 301-927-7048; e-mail: phall@bladensburgmd.gov. For questions received by the deadline, we anticipate issuance of an addendum by May 1, posting the responses on the Town’s website.

2.2 Proposal Submittal Requirements

All interested parties shall submit proposals by the submittal deadline. Responses must include the following:

1. Cover Letter/Memo: Briefly introduce your company and express interest in the project.
2. Cost Estimate: A detailed labor, materials, and other relevant expenses breakdown.
3. A List of References from at least three similar projects.

2.3 RFB Addenda (if any)

If the Town must amend the RFB, either in response to submitted bidder questions (see section 3.1 above) or to clarify provisions in the RFB, any addenda issued will be posted on the Town’s website. It is the bidder’s responsibility to check whether any addenda has been issued and to comply with any provisions or changes contained in the addenda. Bidder will be asked to acknowledge receipt of any addenda on their bid submittal form.

2.4 Bid Submittal Requirements

Bidders may bid only on the entire contract. In order to be considered complete, all bid submittals must include the specified number of copies of the various forms in the Bid Documents, listed as follows:

Form	Electronic
Bid Proposal Packet	2
Information Regarding the Bidder Form	2
Affidavits:	2
Non-Collusion Affidavit	2
Affidavit With Respect To Non-Conviction, Non- Suspension And False Pretenses	2

Bid proposals should be Sent electronically and titled **Bridge Repairs**, and delivered to: phall@bladensburgmd.gov and clerk@bladensburgmd.gov

no later than **May 15, 2024 at 3:00 p.m. EST**. Late submittals will not be accepted.

The submittal shall include the specified documents, organized in the following manner to facilitate review:

- a. Bid Proposal Submittal Packet and supplemental documents
- b. Information Regarding the Bidder
NOTE: The information requested on this form may be submitted in a separate document so long as all requested information is provided and numbered according to the form.
- c. Affidavits

SECTION 3: BID EVALUATION

3.1 Evaluation Criteria

The Town will evaluate the responses received from each bidder. Prior to the selection of the apparent successful bidder, bidders shall be available to meet with the Town to discuss their responses to the RFB, inclusion of required criteria, and other items deemed appropriate by the Town. If an award is made as a result of this RFB, it shall be awarded to the bidder whose proposal is most advantageous to the Town. In determining which proposal is best, the Town will consider the bid price and the experience, qualifications, references, responsibility, and currently available facilities of the Bidder to perform the work.

1. Experience and Qualifications: Relevant experience in similar projects.
2. Cost Competitiveness: The reasonableness of the cost estimate.

3. References: Past client references and project success stories.

3.2 Right to Cancel

The Town reserves the right to change any aspect of, terminate, or delay this RFB, the RFB process and/or the program which is outlined within this RFB at any time, and notice shall be given in a timely manner thereafter. The Town reserves the right to reject any or all proposals, and to exercise its sole discretion to best serve the interests of the Town.

3.3 Other Provisions

- a. Responses to this RFB will become the property of the Town, and will form the basis of negotiations of an agreement between the Town and the apparent selected bidder.
- b. The Town is not liable and will not be responsible for any costs incurred by any bidder(s) for the preparation and delivery of the RFB responses, nor will the Town be liable for any costs incurred prior to the execution of an agreement, including, but not limited to, presentations by RFB finalists to the Town.
- c. The Town reserves the right, at its sole discretion, to waive minor administrative irregularities contained in any proposal.
- d. The Town reserves the right to make an award without further discussion of the proposal submitted. Therefore, the proposal should be submitted initially with the bidder's most favorable terms.
- e. Bidder may withdraw a proposal that has been submitted at any time up to the RFB closing date and time. To accomplish this, a written request signed by an authorized bidder representative must be submitted to the Project Manager. The bidder may submit another proposal at any time up to the RFB closing date and time. Bidders will be held to the terms of the bid for 90 days.
- f. As a result of the selection of a bidder to supply products and/or services, the Town is neither endorsing nor suggesting that the bidder's product or services are the best or only solution. The bidder agrees to make no reference to the Town in any literature, promotional material, brochures, sales presentation or the like without the express written consent of the Town.
- g. Any information contained in the proposal that is proprietary must be clearly designated. Marking the entire proposal as proprietary will be neither accepted nor honored.
- h. A bid bond is not required.
- i. A performance bond is not required.
- j. A payment bond is not required.
- k. Throughout this RFB, associated documents and sample consultant agreement, the title "bidder", "bidder" and/or "consultant" may be used interchangeably. Each of these terms refers to the individual or firm submitting a bid proposal to the Town of Bladensburg in response to this RFB.

- I. The Town's payment terms are net 30 days. It is anticipated that progress payments under the contract will be made based on measurable milestones.

3.4 Contract Award

Following a staff recommendation, the Mayor and Council of the Town of Bladensburg will make a contract award at the earliest possible date after the date set for receipt of proposals. It is anticipated that the contract will be awarded on a lump sum basis, in the best interest of the Town.

The successful bidder shall be required to execute a contract in a form satisfactory to the Town, in substantially the same form as attached hereto, within 10 days of the award of the contract. The Town reserves the right to cancel the award of the contract at any time prior to execution of the contract without liability on the part of the Town.

If the successful bidder fails to execute the contract as required, the award may be annulled and the contract awarded to the second lowest responsible bidder, and such bidder shall fulfill every stipulation embraced herein, as if he were the original party to whom the award was made, or the Town may reject all of the bids, as its interest may require.

TO BE SUBMITTED WITH BID

TOWN OF BLADENSBURG
Bridge Repairs – RFB 004-2024
Bid Proposal Form

TOWN OF BLADENSBURG
4229 Edmonston Road
Bladensburg, MD 20710

BID DUE: May 15, 2024
TIME: 3:00 p.m. EST

(Name of Bidder)

hereby submits the following proposal for the Lighting Project 57th Avenue. Having carefully examined the Request for Proposals, related documentation, the proposed Consultant Agreement and **Addenda Numbered** _____ (indicate numbers or N/A if none issued), and having received clarification on all items of conflict or upon which any doubt arose, and understanding that all prices bid will remain in effect throughout the term of the contract, whether completed at one time or in interrupted phases, the undersigned proposes to furnish all labor, equipment, materials, etc., required by the documents for the entire work, all in strict accordance with the contract documents.

Provide unit and hourly pricing for specific tasks and personnel.

SPECIAL TERMS AND CONDITIONS

- A. Failure to properly and completely fill in all blanks may be cause for rejection of this proposal.
- B. In addition to completing this Bid Proposal Form with bid price, Bidder should provide an estimate of budget and resources required.
- C. It is understood that the proposal price will be firm for a period of 90 calendar days from the proposal opening date, and that, if the undersigned is notified of acceptance of this proposal within this time period, the Bidder shall execute a contract for the above stated compensation.

Name of Bidder

Signature

Date

Name and Title of Individual Authorized to Bind Bidder

TO BE SUBMITTED WITH PROPOSAL

Non-Collusion Affidavit

_____, being duly sworn on oath, deposes and says:

That he/she is the

(Owner, Partner, Title if on behalf of a Corporation)

of _____,
(Name of Business, Corporation or Partnership)

the party submitting the Proposal; that no officer of the said Corporation has nor has any person, firm or corporation acting on its behalf; agreed, conspired, connived or colluded to produce a deceptive show of competition in the compilation of the Proposal being submitted herewith; and that the said Corporation has not in any manner, directly or indirectly, entered into any agreement, participated in any collusion to fix the Proposal Price of the Proposer herein or any competitor, or otherwise taken any action in restraint of free competitive bidding in connection with the contract for which the Proposal is submitted; that in making this Affidavit, the affiant represents that she has personal knowledge of the matters and facts herein stated. The Affiant hereby declares and affirms under the penalties of perjury that the foregoing is true to the best of her knowledge and information.

To be signed by a duly authorized Officer.

_____(SEAL)
Name

Title _____

Date: _____

TO BE SUBMITTED WITH PROPOSAL

AFFIDAVIT WITH RESPECT TO NON-CONVICTION, NON-SUSPENSION AND FALSE PRETENSES

I hereby affirm that:

1. I am the _____ (Title) and duly authorized representative of

_____ (Name of Business Entity) whose address is
_____ and that I possess the legal authority to make
this affidavit on behalf of myself and the firm for which I am acting.
2. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees directly involved in obtaining contracts with the State, or any county, bi-county or multi-county agency or subdivision of the State have been convicted, or in an official investigation or other proceeding admitted in writing or under oath, acts or omissions which constitute bribery, attempted bribery or conspiracy to bribe under the provisions of Criminal Law Article of the Annotated Code of Maryland or under the laws of any state or the federal government (conduct prior to July 1, 1977 is not required to be reported); and
3. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees directly involved in obtaining contracts with the State, or any county, bi-county or multi-county agency or subdivision of the State have been convicted under a State or federal law or statute of any offense enumerated in §16-203 of the State Finance and Procurement Article; and
4. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees directly involved in obtaining contracts with the State, or any county, bi-county or multi-county agency or subdivision of the State have been found civilly liable under a State or federal antitrust statute as provided in §16-203 of the State Finance and Procurement Article.
5. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the best of my knowledge, any of its officers, directors, or partners or any of its employees who will provide, directly or indirectly, supplies, services, architectural services, construction related services, leases of real property, or construction have been debarred or suspended under this subtitle.
6. Except as described in Paragraph 7 below, neither I nor the Business Entity nor, to the

best of my knowledge, information and belief, any officer, director, partner, member or associate thereof; nor any of its employees directly involved in obtaining contracts with the Town, has been convicted of false pretenses, attempted false pretenses or conspiracy to commit false pretenses under the laws of any state or federal government, based upon acts committed after July 1, 1981.

7. State "none" below or, as appropriate, list any suspension, debarment, conviction, plea or admission described in Paragraph 2 - 6 above, with the circumstances, date, court, official or administrative body, the individuals involved and their position with the firm, and the sentence or disposition, if any.

I acknowledge that this affidavit is to be furnished, where appropriate, to the Town of Bladensburg under Section 16-311 of the State of Maryland Finance and Procurement Article of the Annotated Code of Maryland. I acknowledge that, if the representations set forth in this affidavit are not true and correct, the Town of Bladensburg may terminate any contract awarded and take any other appropriate actions. I further acknowledge that I am executing this affidavit in compliance with Section 16-309 of the State Finance and Procurement Article of the Annotated Code of Maryland, which ordains that any person convicted of bribery (upon acts committed after July 1, 1977) in furtherance of obtaining a contract from the State or any subdivision of the State of Maryland shall be disqualified from entering into a contract with the Town.

I further affirm that the business entity is properly registered to do business in the State of Maryland, or is not required to be registered.

I do solemnly declare and affirm under the penalties of perjury that the contents of the affidavit are true and correct.

Date

Signature

Printed Name

TO BE SUBMITTED WITH BID

**TOWN OF BLADENSBURG
Bridge Repairs
Information Regarding the Bidder**

NOTE: The information requested on this form may be submitted in a separate document as long as all requested information is provided and numbered according to this form.

1. Name of Bidder: _____
(Individual/Firm/Corporation)

Business Address: _____

Telephone Number: (____) _____

E-mail address: _____

2. Is the business incorporated? _____ Yes _____ No

Non-Corporation Business

3. If response to item #2 above is No, list the name and business and residence address of each individual having a 10% or greater financial interest in the business.

<u>Name</u>	<u>Business Address</u>	<u>Residence Address</u>
-------------	-------------------------	--------------------------

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Corporate Business Entities - Please answer items 4 and 5

4. List the names of all officers of the corporation, their business and residence addresses and the date on which they assumed their respective offices.

<u>Name</u>	<u>Office</u>	<u>Residence and Business Address</u>	<u>Date Office Assumed</u>
-------------	---------------	---	--------------------------------

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

-
5. List the names of all members of the current Board of Directors, and their business and residence addresses.

<u>Name</u>	<u>Business Address</u>	<u>Residence Address</u>

6. Please provide the following information concerning work that you have done within the last 5 years which is similar to the Bid work.

FOR WHOM PERFORMED	CONTRACT AMOUNT	DATE COMPLETED	CONTACT'S NAME/ TELEPHONE NUMBER

7. Bidders will answer the following questions: (The word "you" refers to any individual, partnership, partner and/or corporation and its officers.)

a. Have you ever failed to complete any work awarded to you? _____

If yes, state where and why: _____

b. Have you ever been affiliated with some other organization that failed to complete a contract? _____

If yes, state name of individual and reason therefor. _____

c. With what other businesses are you affiliated? _____

d. Please provide at least 3 references, including any Maryland governmental units or agencies for which you have worked on a similar project. Include the name and telephone number of your contact with each. _____

- e. Identify all unsuccessful bidders, materialmen, and suppliers that you intend to use in performing the work under the Contract, and specify the work each is expected to perform.

Dated this _____ day of _____, 20__.

Name of Bidder

By: _____

Printed Name: _____

Title: _____

Prince George's County



2021 BRIDGE INSPECTION REPORT March 25, 2021



BRIDGE NO. P-BL01001

SPRING ROAD

OVER

STREAM

Prepared by



Prince George's County

2021 BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01001

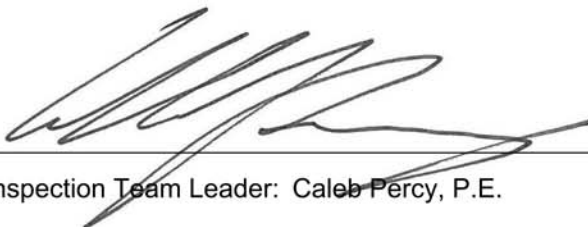
SPRING ROAD

OVER

STREAM

Prepared by




Inspection Team Leader: Caleb Percy, P.E.

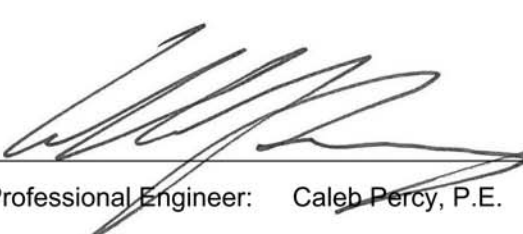
5/4/2021

Date


Inspector: Daria Ross

5/4/2021

Date


Professional Engineer: Caleb Percy, P.E.



5/4/2021

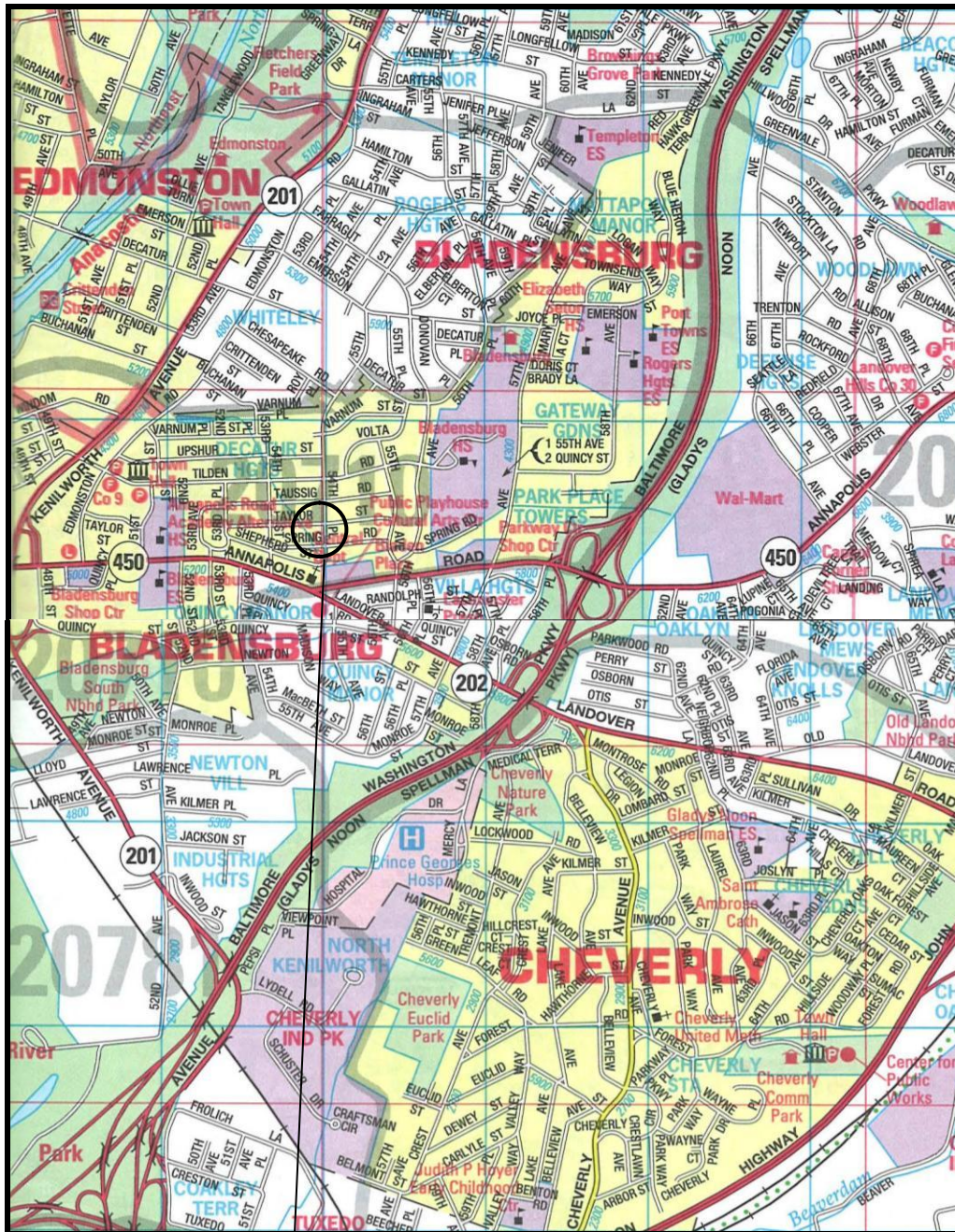
Date

Professional Certification: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 39263, Expiration Date: June 27, 2022.

The condition report and recommendations presented herein are based on a visual inspection of accessible portions of the existing structure. No responsibility is assumed by Century Engineering, Inc. for the presence of any latent structural defects that cannot be detected by such visual inspection.

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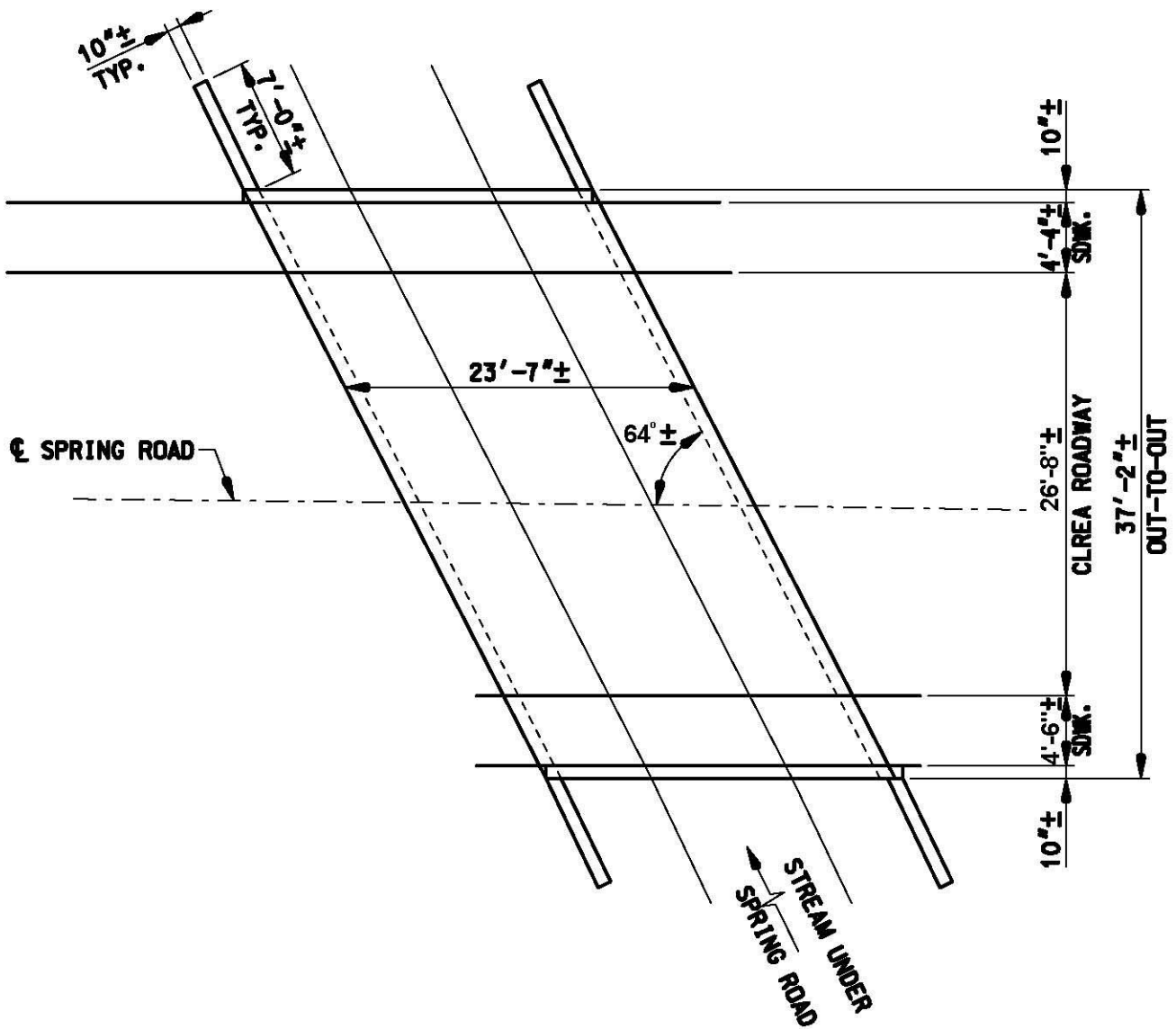
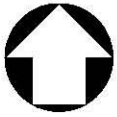
Bridge No. P-BL-01R

ADC Street Grid Location: 5410-B10

LOCATION MAP

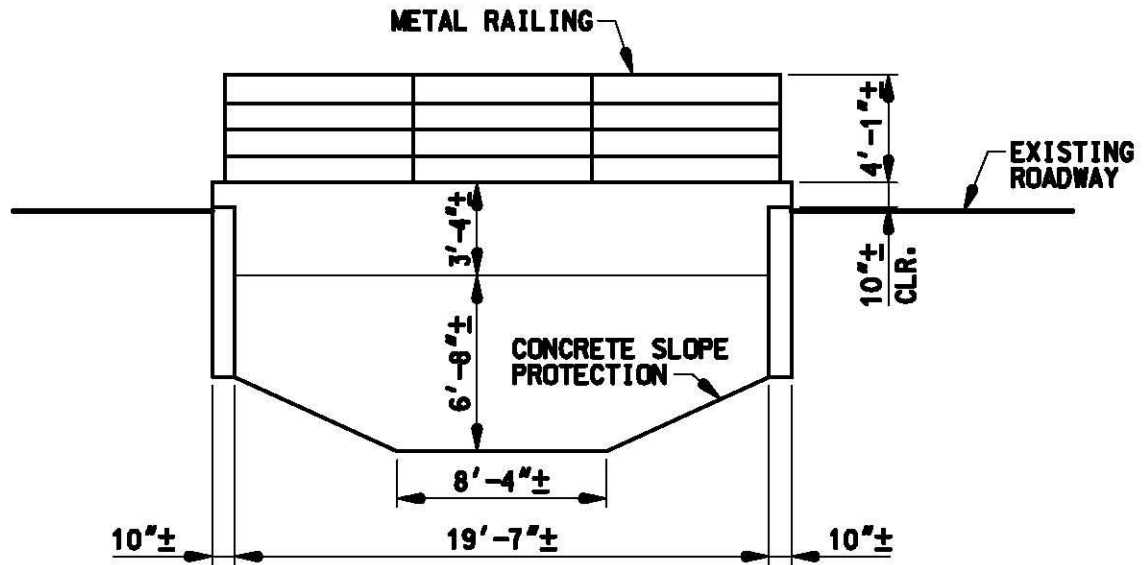
Copyright ADC, The Map People, by Permission
 Permitted Use Number 02282018

BRIDGE NO. PBL01 - SPRING ROAD OVER STREAM

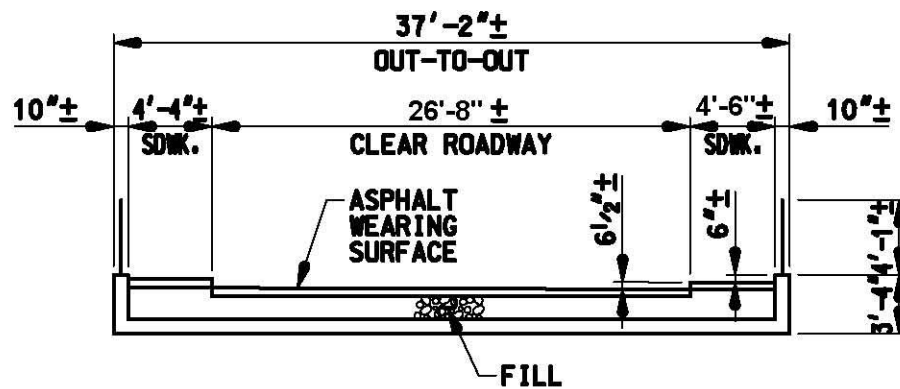


P L A N
NOT TO SCALE

BRIDGE NO. PBL01 - SPRING ROAD OVER STREAM



ELEVATION
NOT TO SCALE



TYPICAL SECTION
NOT TO SCALE

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL01R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name SPRING ROAD Crossing STREAM Photos 20
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

DESCRIPTION:

Single-span concrete rigid-frame bridge with an asphalt wearing surface. The substructure consists of concrete rigid-frame wall abutments. There is concrete slope and channel protection under the bridge and upstream and downstream of the bridge. The structure carries two lanes of traffic and two sidewalks. The stream flows from south to north under the bridge. The numbering convention for the bridge is from the north and the west.

OVERALL LENGTH:	<u>23'-7"</u>	CLEAR ROADWAY:	<u>26'-8"</u>
YEAR BUILT:	<u>1958</u>	POSTED LOAD:	
YEAR REHABILITATED:		SINGLE, LBS	<u>24,000 lbs. G.V.W.</u>
POSTED SPEED LIMIT:	<u>25 M.P.H.</u>	COMBINATION, LBS	<u>44,000 lbs. G.C.W.</u>
		BEAM SPACING:	<u>-</u>
MAP COORDINATES:	<u>12-F6</u>	NUMBER OF BEAMS:	<u>-</u>
	<u>5410-B10</u>	SIZE OF BEAMS:	<u>-</u>

ROADWAY APPROACHES:

Section 26'-8" asphalt roadway with one lane in each direction.

Alignment Both approaches are straight.

Profile Fairly level east approach, upgrade toward west.

Traffic Barrier No approach traffic barrier.

REVIEW OF ITEM 113 - SCOUR POTENTIAL RATING: 8P

Item 113 was previously rated an 8P, which implies that the structure is a culvert type structure with a paved bottom. Based on the observed conditions, this rating is still valid and does not require reevaluation.

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL01R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name SPRING ROAD Crossing STREAM Photos 20
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

REVIEW OF PREVIOUS REPORT:

A 2019 Bridge Inspection Report prepared by Sabra & Associates, Inc. was available and used for comparison purposes. The overall condition of the structure appeared to be essentially the same as noted in the previous report with the following exceptions:

1. There is a full width longitudinal crack with efflorescence in the soffit of the top slab 10'-0" from the south end.
2. There is a crack with efflorescence in the West Abutment.

LIVE LOAD RATINGS:

The load ratings were re-calculated by Mercado Consultants, Inc. during the 2013-14 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The condition of the structure has not changed significantly due to deterioration, damage or rehabilitation since the 2013 inspection. The load ratings for the Maryland Legal Load Vehicles are as follows:

<u>Truck</u>	<u>Gross Vehicle Weight</u>	<u>Inventory</u>	<u>Operating</u>
H-15	15 tons	25 tons	42 tons
HS-20	36 tons	45 tons	75 tons
Type 3	33 tons	33 tons	55 tons
Type 3S2	40 tons	61 tons	99 tons

The structure is currently posted for 24,000 lbs. G.V.W. and 44,000 lbs. G.C.W. Based on the above ratings, we recommend adjusting the posting to 66,000 lbs. G.V.W. and 80,000 lbs. G.C.W.

The recommendation for posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

SI&A CONDITION RATING SUMMARY:

<u>Item</u>	<u>Current</u>	<u>2019</u>	<u>2017</u>	<u>2015</u>
Deck (Item 58) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Superstructure (Item 59) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Substructure (Item 60) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Channel and Channel Protection (Item 61) -	<u>6</u>	<u>6</u>	<u>7</u>	<u>7</u>
Culvert (Item 62) -	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No.	<u>P-BL01R</u>	Bridge Type	<u>SINGLE-SPAN CONCRETE RIGID-FRAME</u>	Year Built	<u>1958</u>
Name	<u>SPRING ROAD</u>	Crossing	<u>STREAM</u>	Photos	<u>20</u>
Inspection Date	<u>03/25/2021</u>	Inspection Crew	<u>C. Percy, D. Ross</u>		
Waterway Adequacy (Item 71) -	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	
Approach Roadway Alignment (Item 72) -	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>	
Bridge Sufficiency Rating (BSR) -	<u>96.0</u>	<u>96.0</u>	<u>96.0</u>	<u>96.0</u>	
Routine Inspection Frequency -	<u>24 months</u>	<u>24 months</u>	<u>24</u>	<u>24</u>	
Date of Inspection -	<u>03/25/2021</u>	<u>03/05/2019</u>	<u>03/20/2017</u>	<u>03/09/2015</u>	
Partial Interim Inspection Frequency -	<u>N/A</u>				

Load Rating Summary:

The load ratings were re-calculated by Mercado Consultants, Inc. during the 2013-14 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The condition of the structure has not changed significantly due to deterioration, damage or rehabilitation since the 2013 inspection. The load ratings for the Maryland Legal Load Vehicles and Permit Vehicles are as follows:

<u>Vehicle</u>	<u>Gross Vehicle Weight</u>	<u>Inventory Rating (Tons)</u>	<u>Operating Rating (Tons)</u>
HL-93	36 tons		
H-15	15 tons	25.0	42.0
T-3	33 tons	33.0	55.0
T-4	35 tons	33.0	57.0
HS-20	36 tons	45.0	75.5
T-3S2	40 tons	61.0	99.9
150K	75 tons	67.0	99.9
90K Permit	45 tons	43.0	72.0
90K Mobile Crane	45 tons	41.5	69.5
90K Cargo	45 tons	53.0	88.5
80K Cargo	40 tons	61.0	99.9
120K Vehicle	60 tons	57.5	96.5
108K Mobile Crane	54 tons	47.0	78.5
120K Mobile Crane	60 tons	58.0	97.0

The structure is currently posted for 24,000 lbs. G.V.W and 44,000 lbs. G.C.W. Based on the above ratings, we recommend adjusting the posting to 66,000 lbs. G.V.W. and 80,000 lbs. G.C.W.

The recommendation for posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

2021 BRIDGE INSPECTION REPORT

Bridge No. P-BL01R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name SPRING ROAD **Crossing** STREAM **Photos** 20
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

BRIDGE INSPECTOR'S RECOMMENDATIONS FOR MAINTENANCE REPAIRS

DESCRIPTION	COUNTY ITEM NUMBER	QUANTITY	UNIT COST	TOTAL COST
<u>Immediate:</u>				
1 Install flared and turned down end treatments at the corners of the structure.	20	4 EA	\$1150/EA	\$4,600
2 Repair the settled Northeast and Southeast Sidewalk and Curb.	7	48 SF	\$14/SF	\$672
3 Install object markers at all four corners of the bridge.	81	4 EA	\$200/EA	\$800
4 Replace the bridge railing with a crash tested bridge railing.	101	46 LF	\$150/LF	\$6,900
5 Install an advance posting sign at the nearest intersection on the East Approach.	82	1 EA	\$500/EA	\$500
Subtotal (Immediate Items)				\$13,472
<u>Routine:</u>				
1 Repair minor spall in underside of deck.	1	1 CF	\$225/CF	\$225
2 Repair spalls in slope protection.	6	15 CF	\$50/CF	\$750
3 Repair bent and disconnected top rail in fence at Southwest Wingwall.	101	1 LS	\$250/LS	\$250
Subtotal (Routine Items)				\$1,225
<u>Preventative:</u>				
1 Remove vegetation overgrowing all the slope protections.	102	1 LS	\$300/LS	\$300
2 Adjust load posting signs to 66,000 lbs. for single-unit vehicles and 80,000 lbs. for combination-unit vehicles.	83	3 EA	\$250/EA	\$750
Subtotal (Preventative Items)				\$1,050
Total:				\$15,747

Immediate Repairs - Severe Defects that may affect the serviceability of the structure or are missing safety features that present a hazard to the public. Immediate repairs should be scheduled within 12 months of notification.

Routine Repairs - Moderate defects that do not presently affect the serviceability of the structure. Routine repairs should be scheduled, and given priority, within the current maintenance schedule.

Preventative Repairs - Minor defects that do not presently affect the serviceability of the structure. Preventative repairs should be scheduled within the current maintenance schedule.

2021 BRIDGE INSPECTION REPORT

GEOMETRY

Bridge No. P-BL01R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958

Name SPRING ROAD Crossing STREAM Photos 20

Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

MAP COORDINATE	5410-B10	12-F6	NEW ADC	OLD ADC
SKEW WITH HORIZONTAL (DEGREES)	26			
STRUCTURE TYPE	Single-span Concrete Rigid Frame			
OVERALL LENGTH	23'-7"			
NO. OF SPAN	0001	NO. OF CELLS		
SPAN LENGTH	S020S			
VERTICAL CLEARANCE	A - < 10'			
OUT-TO-OUT (FEET)	0372			
ROADWAY WIDTH (FEET)	26'-8"			
APPROACH ROADWAY WIDTH	00	027	00	
SHOULDER WIDTH	N	N	N	N
CURB/SIDEWALK WIDTH	043	043		
NO OF BEAMS	-			
SIZE OF BEAMS	-			
BEAM SPACINGS	-			
ABUTMENT TYPE	MATERIAL 1 - Concrete	TYPE 7 - Non-definable	CODE 1 - Predominant Feature	
ABUTMENT FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None	CODE 0 - Entire Structure	
PIER TYPE	MATERIAL N - Not Applicable	TYPE	CODE	
PIER FOOTING	MATERIAL N - Not Applicable	TYPE OF PILE	CODE	
WINGWALL TYPE	MATERIAL 1 - Concrete	TYPE	CODE	
WINGWALL FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE	CODE	
BEARING TYPE	1ST BEARING A	2ND BEARING A	3RD BEARING A	
SPAN OF CULVERT	N			
RISE OF CULVERT	N			
CULVERT WALL THICKNESS (IN)	-			

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL01R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name SPRING ROAD **Crossing** STREAM **Photos** 20
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

58 DECK	CONDITION RATING	
1. Wearing Surface	7	Type - Asphalt
2. Deck - Topside	-	
3. Deck - Underside	7	Type - Concrete
4. Curbs	7	Type - Concrete
5. Median	-	
6. Sidewalks	7	Type - Concrete
7. Parapets	7	Type - Concrete
8. Railing	6	Type - Four-strand steel pipe railing
9. Roadway Joints	-	
10. Drainage System	-	Type - Inlet
11. Lighting Standards	-	
12. Utilities	-	Overhead lines along south side and both approaches, crossing Spring Road at the West Approach
13. Other		
Inspector's Condition Rating (58)		7

58.1 - The asphalt wearing surface is in good condition with minor wear throughout.

58.3 - The soffit is in good condition. There are a few exposed form ties and graffiti throughout the underside of the deck. There are hairline map cracks at the north end and a 2" long x 2" wide x 1/2" deep spall in the underside of the top slab at the north end approximately 5' from the West Abutment. There is a full-width longitudinal crack with efflorescence 10'-0" from the south end (see Photo 7). There are random hairline cracks throughout with rust stains and small pop-out spalls at the southeast corner.

58.4 - The curbs are in good condition. There are a few random minor spalls in both curbs.

58.6 - There are a few minor pop-out spalls and areas of moderate scaling in the sidewalks (see Photo 8). The sidewalk joints have minor debris and vegetative growth. Panel 2 from the bridge on the Northeast Sidewalk has a full-length x up to 1/4" wide longitudinal crack (refer to Photo 8). There is differential settlement up to 2 1/2" in the Northeast Sidewalk (see Photo 9). The Northeast Sidewalk and Curb have separated up to 2" adjacent to the storm drain inlet. The Southeast Sidewalk has settled up to 3 3/4" adjacent to a storm drain inlet (see Photo 10); however, the sidewalk does not extend beyond this location.

58.7 - There are hairline vertical cracks in the parapets at the base of the railing posts. There is a hairline vertical crack with light efflorescence at the base of Post 2 of the North Railing. Due to insufficient cover, there is a small pop-out spall with exposed corroded reinforcement in the exterior

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

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face of the North Parapet approximately 5' from the East Abutment.

58.8 - There is light to moderate surface rust throughout both railings. There are no anchor bolts in the base plates of all the bridge railing posts (see Photo 11). There are four cracked/poor welds at the bottom rail to post connections at the North Railing (see Photo 12). The South Railing is slightly leaning to the south (see Photo 13).

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL01R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name SPRING ROAD Crossing STREAM Photos 20
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

59 SUPERSTRUCTURE

Number of Spans 1
Type of Construction Concrete Rigid-Frame

		CONDITION RATING	
1. Bearing Devices		-	
2. Girders or Beams		-	
3. Stringers		-	
4. Floor Beams		-	
5. Diaphragms/Crossframes		-	
6. Paint		-	
7. Other	Top Slab	7	Type - Rigid-frame top slab
8. Rivets or Bolts		-	
9. Welds - Cracks		-	
10. Rust		-	
11. Timber Decay		-	
12. Concrete Cracking		7	
13. Collision Damage		-	
14. Deflection Under Load		7	
15. Alignment of Members		7	
16. Vibrations Under Load		7	
17. Fracture Critical Members		-	

Inspector's Condition Rating (59) 7

59.7 - See Item 58.3

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL01R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
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Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

60 SUBSTRUCTURE

CONDITION RATING

1. Abutments	-Wingwalls	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">7</div>	Concrete	
	-Backwalls	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Stems	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">7</div>		
	-Footings	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>	Concrete	
	-Piles	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Scour/Erosion	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">7</div>		
	-Settlement	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">7</div>		
	Overall Abutment Rating	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">7</div>	Abutment Type	- Concrete rigid-frame
2. Piers or Bents	-Caps	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Columns/Shaft	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Footings	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>	-	
	-Piles	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Scour/Erosion	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Settlement	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	Overall Pier Rating	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>	Pier Type	
3. Pile Bents	-Caps	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
	-Piles	<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
4. Concrete Cracking or Spalling		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">7</div>		
5. Steel Corrosion		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
6. Timber Decay		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
7. Other _____		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
8. Debris on Seats		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
9. Paint		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
10. Collision Damage		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		
11. Overall Undermining/Scour		<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; text-align: center; line-height: 20px;">-</div>		

Inspector's Condition Rating (60) 7

60.1 - Only the top 3'-0" of the rigid frame abutment walls are visible for inspection. There is graffiti throughout both abutments. There are isolated vertical hairline cracks in the East and West Abutments. There is a crack with efflorescence in the West Abutment (see Photo 14).

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL01R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
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Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

There is vegetation overgrowth at all wingwalls. The joint material is deteriorating and bulging at the joints between the wingwalls and the structure (see Photo 15). There is a 6" high x 1" wide x 1" deep edge spall in the Northwest Wingwall along the joint with the structure. There is a hairline diagonal crack and hairline map cracking in the Southeast Wingwall.

Fence: There is a chain-link fence along the wingwalls and slope protection. There is typical minor rust, vegetation growth, and misalignments throughout the fence. Embankment erosion has exposed the fence post footing at the end of the Northwest Wingwall. The top fence rail is bent and disconnected adjacent to the Southwest Wingwall.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL01R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name SPRING ROAD Crossing STREAM Photos 20
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

61 CHANNEL AND CHANNEL PROTECTION

	CONDITION RATING	
1. Channel Scour	<input type="text" value="7"/>	
2. Embankment Erosion	<input type="text" value="7"/>	
3. Drift/Debris	<input type="text" value="6"/>	
4. Vegetation	<input type="text" value="7"/>	
5. Channel Alignment	<input type="text" value="7"/>	
6. Fender System	<input type="text" value="-"/>	
7. Spur Dikes and Jetties	<input type="text" value="-"/>	
8. Riprap/Slope Protection	<input type="text" value="5"/>	Type - Concrete

Inspector's Condition Rating (61)

61.1 - The stream channel and banks are lined with concrete. There is up to 2" deep abrasion along the concrete channel, causing a 2" high gap at the interface with the concrete-lined banks.

61.3 - There is debris accumulation under the bridge at the north end along the East Slope Protection.

61.4 - There is heavy vegetation overgrowing all four slope protections.

61.5 - The stream flows from south to north under the structure. The upstream channel curves to the east and the downstream channel is straight.

61.8 - There are random up to 1/8" wide cracks throughout the concrete slopes. There is minor vegetation growth in the slope protection joints at several locations. The weep holes in the downstream slope protection are fully clogged. There are patched areas with up to 1/8" wide cracks at the base of the upstream slope protection. The Northwest Slope Protection has fractured adjacent to the Northwest Wingwall due to a tree growing through the concrete (see Photo 16). There is a full-height crack with a spall at the base in the Southeast Slope Protection (see Photo 17). There is a 1/4" wide crack with adjacent minor spalling in the Northeast Slope Protection adjacent to a 12" pipe outlet (see Photo 18). There is a 6'-0" long x 3" high x full-depth spall along the base of the Northeast Slope Protection. There is a 1/2" wide x full-height crack/fracture in the Northeast Slope Protection approximately 12' from the bridge (see Photo 19).

**2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS**

Bridge No. P-BL01R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
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Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

71 WATERWAY ADEQUACY

Opening	<input type="text" value="Good"/>	Fair	Poor
Alignment	Good	<input type="text" value="Fair"/>	Poor
Frequency of Overtopping	Remote	<input type="text" value="Slight"/>	Occasional Frequent

Inspector's Condition Rating (71)

2021 BRIDGE INSPECTION REPORT CONDITION RATING FORMS

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Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

72 APPROACH ROADWAY ALIGNMENT APPRAISAL RATING

1. Vertical Alignment	E	Good	Fair	Poor	Flat
	W	Good	Fair	Poor	- Slight upgrade from structure
2. Horizontal Alignment	E	Good	Fair	Poor	- Straight roadway
	W	Good	Fair	Poor	
3. Speed Limit Reduction		None	Minor	Substantial	
4. Sight Distance		Adequate	Not Adequate		

Inspector's Condition Rating (72) 8

APPROACH ROADWAY

CONDITION RATING

5. Approach Traffic Barrier	-	
6. Approach Pavement	7	
7. Approach Embankments	7	
8. Approach Slabs	-	
9. Relief Joints	-	
10. Signing - Legibility and Visibility	Good	Fair Poor
11a. Roadway Speed Limit	25 M.P.H.	11b. Posted Bridge Speed Limit n/a
12. Posted Load Limits	24,000 lbs. G.V.W. 44,000 lbs. G.C.W.	
13. Traffic Safety Features		
a. Bridge Railing	0	1 N Type - Four Strand Steel Pipe railing
b. Transitions	0	1 N Type - No Approach Traffic Barrier
c. Approach Traffic Barrier	0	1 N Type - No Approach Traffic Barrier
d. Approach Traffic Barrier Ends	0	1 N Type - No Approach Traffic Barrier

72.5 - There are no traffic barriers at the structure.

72.6 - The approaches are in good condition with minor wear throughout. There is a 3'-0" long x 1/16" wide transverse crack in the East Approach Roadway.

72.10 - There are no object markers at the structure. Both postings signs are in place at the structure. The advanced posting sign is in place at the nearest intersection on the West Approach. There is not an advance posting sign in place at the nearest intersection on the East Approach.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

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Name SPRING ROAD **Crossing** STREAM **Photos** 20
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

The bridge is currently posted for 24,000 lbs. for single-unit vehicles and 44,000 lbs. for combination-unit vehicles (see Photo 20).

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



1. West Approach Looking East



2. East Approach Looking West

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



3. North (Downstream) Elevation



4. South (Upstream) Elevation

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



5. Looking North (Downstream)



6. Looking South (Upstream)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



7. Deck - Full-width Longitudinal Crack with Efflorescence in Soffit



8. Sidewalk - Typical Scaling and Full-length Longitudinal Crack in Panel 2 of Northeast Sidewalk

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



9. Sidewalk - Differential Settlement Between Panels in Northeast Sidewalk



10. Sidewalk - Settlement of Southeast Sidewalk at Storm Drain Inlet



11. Railing - Typical Missing Bolts at Base of Railing Posts



12. Railing - Cracked Weld at Bottom Rail Connection of North Railing

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



13. Railing - South Railing Leaning to the South



14. Abutment - Crack with Efflorescence in West Abutment

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



15. Wingwall - Bulging Joint at Southeast Wingwall



16. Slope Protection - Fractured Northwest Slope Protection Due to Tree Growing Through Concrete

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



17. Slope Protection - Full-height Crack with Bottom Spall in Southeast Slope Protection



18. Slope Protection - Spall in Northeast Slope Protection Adjacent to Storm Drain Outfall

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL01R - SPRING ROAD OVER STREAM



19. Slope Protection - Full-height Crack in Northeast Slope Protection 12' from Bridge



20. Signage - Load Posting Sign at East Approach

STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER: P-BL01001

IDENTIFICATION

FORM 1 OF 13

(8) STRUCTURE NUMBER:	<input type="text" value="2"/>	<input type="text" value="00000"/>	Major Structure	<input type="text" value="P-"/>	<input type="text" value="BL01"/>	<input type="text" value="01"/>	Major Structure > 20' 0"	<input type="text" value="0"/>	Single Structure
(8) FHWA NUMBER:	<input type="text"/>								
(7) FACILITY CARRIED:	<input type="text" value="SPRING ROAD"/>								
(6) FEATURE INTERSECTED:	<input type="text" value="STREAM"/>								
(255) FEDERAL SUBMITTAL INDICATOR:	<input type="text" value="Y"/>	Yes							
(262) NAME OF STRUCTURE:	<input type="text"/>								
(27) YEAR BUILT:	<input type="text" value="1958"/>		(106) YEAR RECONSTRUCTED:	<input type="text" value="1981"/>					
(263) ADDITIONAL RECONSTRUCTION YEARS:	<input type="text" value="N"/>		<input type="text" value="N"/>						
(1) STATE CODE:	<input type="text" value="243"/>	Maryland	(2) DISTRICT CODE:	<input type="text" value="03"/>	03				
(3) COUNTY CODE:	<input type="text" value="033"/>	GEORGE'S	(4) PLACE CODE:	<input type="text" value="07850"/>					
(5) INVENTORY ROUTE:	<input type="text" value="1"/>	Route carried "on" the structure	<input type="text" value="5"/>	City Street	<input type="text" value="1"/>	Mainline	<input type="text" value="00092"/>	<input type="text" value="0"/>	Always
		(Route Prefix)				(Level of Service)	(Number)	(Direction)	
(9) LOCATION:	<input type="text" value="100 FT N. OF 54TH PLACE"/>								
(11) MILEPOINT:	<input type="text" value="000090"/>								
(12) BASE HIGHWAY NETWORK:	<input type="text" value="0"/>	Inv. Route is NOT on the Base Network							
(266) GIS ROUTE ID:	<input type="text"/>								
(267) GIS MILEPOINT:	<input type="text"/>								
(268) SCENIC ROUTE:	<input type="text" value="N"/>								
(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:	<input type="text"/>								
(16) LATITUDE:	(A)	<input type="text" value="38562319"/>	(B)	<input type="text" value="38562292"/>	(C)	<input type="text" value="38562283"/>	(D)	<input type="text" value="38562306"/>	
(17) LONGITUDE:	(A)	<input type="text" value="076552920"/>	(B)	<input type="text" value="076552919"/>	(C)	<input type="text" value="076552880"/>	(D)	<input type="text" value="076552884"/>	
(28) LANES ON:	<input type="text" value="02"/>	LANES UNDER:	<input type="text" value="00"/>						
(42) TYPE OF SERVICE ON:	<input type="text" value="5"/>	Highway-Pedestrian							
TYPE OF SERVICE UNDER:	<input type="text" value="5"/>	Waterway							
(98) BORDER STATE:	<input type="text"/>	BORDER STATE'S SHARE %:				<input type="text"/>			
(99) BORDER STATE'S NUMBER:	<input type="text"/>								

CLASSIFICATION

FORM 2 OF 13

(104) HWY SYSTEM:	<input type="text" value="N"/>	No, Inventory Route is not on the NHS	(103) TEMPORARY STRUCTURE:	<input type="text"/>	
(105) FEDERAL LANDS HWYS:	<input type="text" value="0"/>	Not applicable	(110) NATIONAL NETWORK:	<input type="text" value="N"/>	No, the inventory route is not part of the national network for trucks.
(26) FUNCTIONAL CLASS:	<input type="text" value="19"/>	Urban Local	(20) TOLL:	<input type="text" value="3"/>	On free road
(100) DEFENSE HWY:	<input type="text" value="0"/>	The inventory route is not a STRAHNET route	(21) MAINTENANCE:	<input type="text" value="04"/>	City or Municipal Highway Agency
(101) PARALLEL STRUCTURE:	<input type="text" value="N"/>	No parallel structure	(22) OWNER:	<input type="text" value="04"/>	City or Municipal Highway Agency
(102) DIRECTION:	<input type="text" value="2"/>	2-way traffic	(37) HISTORICAL SIGNIFICANCE:	<input type="text" value="5"/>	Not eligible

TRAFFIC

(19) DETOUR: 01
(29) ADT: 000250
(114) FUTURE ADT: 000375

(109) TRUCK ADT %: 05
(30) ADT YEAR: 2019
(115) FUTURE ADT YEAR: 2039

FORM 3 OF 13

STRUCTURE TYPE AND MATERIAL

(43) STRUCT TYPE: A Concrete 07 Rigid Frame
(44) STRUCT TYPE - APPR: 0 Not Applicable 00 Other
(232) BOX CULVERT ON PILES: 0 None
(208) STRUCT TYPE - WIDENED/EXTENDED: N N N
(219) SLOPE PROTECTION: 1 Concrete
(228) FOOTING - ABUTMENT: 1 Concrete 0 None 0 Entire Structure
(229) SUBSTRUCT ABUTMENT: 1 Concrete 7 Non-definable 1 Predominant Feature
(230) FOOTING - PIER: N Not Applicable
(231) PIER TYPE: N Not Applicable
(242) BEARING TYPE: A A A
(108) WEARING SURFACE: 6 Bituminous 0 None 0 None
(243) JOINT TYPE: A Pourable Seal A Pourable Seal A Pourable Seal
(206) STRUCT SUBTYPE - MAIN: N Not Applicable (207) STRUCT SUBTYPE - APPR: N Not Applicable
(257) SCOUR PROTECTION: 4 (270) CONC. DECK SPECIAL TYPE: N Not Applicable
(221) STRUCTURAL STEEL: N Not Applicable (233) DECK - COMP/NON-COMP: 0 Non-Composite
(107) DECK STRUCTURE TYPE: 1 Concrete Cast-in-Place (259) STAY-IN-PLACE FORMS: N
(235) PARAPET: 02 Concrete-Rectangular
(236) RAILING: 3 Steel 9 - Other 0 None 0 - None
(237) FENCING: 0 None 0 - None
(278) PAINT SYSTEM: N Not Applicable
(344) PAINT COLOR/NUMBER: N Not Applicable
(345) YEARS PAINTED: N

FORM 4 OF 13

BRIDGE NUMBER: P-BL01001

GEOMETRICS

FORM 5 OF 13

(112) NBIS BRIDGE LENGTH:	<input type="text" value="Y"/>	(49) STRUCTURE LENGTH:	<input type="text" value="0000240"/>		
(210) NUMBER OF SPANS:	<input type="text" value="0001"/>	(45) # SPANS IN MAIN UNIT:	<input type="text" value="001"/>		
(46) # APPROACH SPANS:	<input type="text" value="0000"/>	(209) CONTINUOUS SPANS:	<input type="text" value="N"/>		
(48) LENGTH MAX SPAN:	<input type="text" value="0020"/>	(238) # STRINGERS - ORIGINAL:	<input type="text" value="00"/>		
(240) SPACING - ORIGINAL:	<input type="text" value="N"/>	(239) # STRINGERS - WIDENED:	<input type="text" value="00"/>		
(241) SPACING - WIDENED:	<input type="text" value="N"/>	(33) BRIDGE MEDIAN:	<input type="text" value="0"/>		
(50) CURB/SIDEWALK WIDTHS:	<input type="text" value="043"/>	(205) MEDIAN WIDTH:	<input type="text" value="000"/>		
(51) DECK CURB-CURB WIDTH:	<input type="text" value="0267"/>	(32) APPROACH ROAD WIDTH:	<input type="text" value="00"/>	<input type="text" value="027"/>	<input type="text" value="00"/>
(52) DECK OUT-OUT WIDTH:	<input type="text" value="0372"/>	(10) INVENT ROUTE, MIN VERT CLEAR:	<input type="text" value="9999"/>		
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	<input type="text" value="9999"/>		(47) INVENT ROUTE, TOTAL HORIZ CLEAR:	<input type="text" value="267"/>	
(54) MIN. VERT. UNDERCLEARANCE:	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="A"/>	< 10'	
(55) MIN. LAT. CLEARANCE (RIGHT):	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="000"/>		
(56) MIN. LAT. CLEARANCE (LEFT):	<input type="text" value="000"/>		(342) HORIZ CLEARANCE (ON):	<input type="text" value="00267"/>	<input type="text"/>
(34) SKEW, IN DEGREES:	<input type="text" value="26"/>	(280) HORIZ CLEARANCE (UNDER):	<input type="text" value="N"/>	<input type="text"/>	
(35) STRUCTURE FLARED:	<input type="text" value="N"/>	(253) NUMBER OF CELLS:	<input type="text" value="N"/>		
(256) SPAN OF CELLS:	<input type="text" value="N"/>	(254) RISE:	<input type="text" value="N"/>		
		(258) EARTH FILL:	<input type="text" value="N"/>		
		(343) CENTERLINE LENGTH (Culverts/Pipes):	<input type="text" value="N"/>		
(223) SHOULDER WIDTHS:	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	
(264) TYPE AND SPAN:	<div>CRF 23'-7"</div>				

BRIDGE NUMBER: P-BL01001

LOAD RATINGS AND POSTINGS

(41) STATUS: Posted for load
(31) DESIGN LOAD: HS 20
(398) PEDESTRIAN LOADING:
(399) RAILROAD LOADING:
(70) POSTING: Equal to or above legal loads
(65) METHOD USED TO DETERMINE INVENTORY RATING: 1 Load Factor (LF)
(63) METHOD USED TO DETERMINE OPERATING RATING: 1 Load Factor (LF)

(224) WEIGHT POSTED:

(New Split)

(66) INVENTORY RATING:

(64) OPERATING RATING:

(400) DATE OF RATING:

	INVENTORY RATING	OPERATING RATING
HL-93 Vehicle	(402)	(401)
H-15 Vehicle	(404) 250	(403) 420
T3 (Dump Truck) Vehicle	(406) 330	(405) 550
T4 Reduced Lift Axle Vehicle	(408) 330	(407) 570
HS Vehicle	(410) 450	(409) 755
3S2 Vehicle	(412) 610	(411) 999
150K Vehicle	(414) 670	(413) 999
90K Permit Combination Vehicle	(416) 430	(415) 720
90K Mobile Crane Vehicle	(418) 415	(417) 695
90K Cargo Vehicle	(420) 530	(419) 885
80K Cargo Vehicle	(422) 610	(421) 999
120K Vehicle	(424) 575	(423) 965
108K Mobile Crane Vehicle	(426) 470	(425) 785
120K Mobile Crane Vehicle	(428) 580	(427) 970

(225) SPEED LIMIT ON STRUCTURE:

(226) MIN VERT CLEARANCE OVER ROADWAY POSTED:

Posting signs not required

(227) MIN VERT UNDERCLEARANCE POSTED:

Posting signs not required

FORM 6 OF 13

BRIDGE NUMBER: P-BL01001

CONDITION INSPECTION

FORM 7 OF 13

	Inspection Month	(91) Frequency	Due Date	(90) Inspection Date	(290) Inspection Report Completion Date
Routine Inspection	03	24	03/25/2023	03/25/2021	06/25/2019

Critical Feature Inspections	(291) Inspection Month	(92) Frequency	Due Date	(93) Critical Feature Inspection Date
(A) Fracture Critical Members		N		
(B) Underwater Inspection		N		
(C) Special Inspection		N		
(D) Hands-on Railroad		N		
(E) Confined Space		N		
(F) Ultrasonic Testing (UT) Pin		N		
(G) Ultrasonic Testing (UT) Anchor		N		
(H) Post Tensioning Bar		N		
(I) Cathodic Protection		N		
(J) Consultant		N		
(K) Movable Bridge		N		
(L) Suspension Bridge		N		
(M) Cable		N		
(N) Monitor		N		
(P) Flood				
(Q) Damages				
(R) Inquires				

(58) DECK:	7	Good Condition	(59) SUPERSTRUCTURE:	7	Good Condition
(60) SUBSTRUCTURE:	7	Good Condition	(61) CHANNEL/PROTECTION:	6	Bank slump. widespread minor damage
(62) CULVERTS:	N	Not Applicable			
(310) INSPECTION DATA UPDATE DATE:	03/05/2015		(312) LEAD INSPECTOR:	Caleb Percy, P.E.	
(311) INSPECTION TEAM:	YCE		(313) BRIDGE INSPECTOR:	Daria Ross	
(314) HOURS TO INSPECT:	003	(316) DECK PLANKING %:	00	(315) DECK PUNCTURES %:	00
(317) DECK PATCHING %:	00	(318) BLOCKING:	00	(319) POWER WASHING:	N
(320) IDENTIFICATION NO.:	N	(321) INVENTORY DIRECTION:	SOUT H	(323) PERMIT:	N
(324) NIGHT WORK:	N	(325) WEEKEND WORK:	N		
(322) LOOKING TOWARD:	ROUTE 450				
(326) MAINTENANCE OF TRAFFIC STANDARDS:					
(327) MOT COMMENTS:					
(328) LOCATION OF MIN. VERT. UNDERCLEARANCE:					

BRIDGE NUMBER: P-BL01001

(329A) CRITICAL FINDINGS: (329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: ☒ Posting signs not required

(340) INSPECTION EQUIPMENT:

<input type="text" value="W"/>	Waders	<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	

(333) MHOI: (334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION:

(336) ADVANCED NOTIFICATION COMMENTS:

BRIDGE NUMBER: P-BL01001

APPRAISAL

FORM 8 OF 13

(67) STRUCTURAL EVALUATION:

7
N
6

BSR
96.0

 (68) DECK GEOMETRY:

5
8

(69) UNDERCLEARANCE:

(71) WATERWAY ADEQUACY:

(36) TRAFFIC SAFETY FEATURES

RAILINGS:

0

 Does NOT meet Standards

TRANSITIONS:

0

 Does NOT meet Standards

APPROACH BARRIER:

0

 Does NOT meet Standards

APPROACH BARRIER ENDS:

0

 Does NOT meet Standards

(113) SCOUR EVALUATION:

8P

 Bridge is a culvert-type structure with paved bottom.

(DT) DEDUCT CODE:

Z

--

(STAT) STATUS:

0

 Not Deficient

NAVIGATION

FORM 9 OF 13

(38) NAVIGATION CONTROL:

0

 (39) NAV VERT CLEARANCE:

000

(40) NAV HORIZONTAL CLEARANCE:

0000

(111) PIER/ABUTMENT PROTECTION:

--

(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:

--

(247) DESIGN YEAR STORM:

000

 (248) RUN-OFF Q:

000000

(249) DRAINAGE AREA:

000000

 (250) STRUCTURE IN TIDAL AREA:

0

 0

(251) HIGH WATER ELEVATION:

000

(252) YEAR HIGH WATER ELEVATION - LATEST:

0000

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 13

(201) CONTRACT NUMBERS:

(203) SHA SPEC- YEAR:

0000

N

N

N

(204) AASHTO SPEC-YEAR:

0000

N

N

N

(75) TYPE OF PROPOSED WORK:

--

--

 (76) LENGTH OF IMPROVEMENT:

000000

(94) BRIDGE IMPROVE COST:

000000

 (95) ROADWAY IMPROVE COST:

000000

(96) TOTAL PROJECT COST:

000000

 (97) YEAR OF IMPROVEMENT:

--

BRIDGE NUMBER: P-BL01001

MISCELLANEOUS

FORM 11 OF 13

(244) SIGNS ON STRUCTURE: 0

(245) BRIDGE ROADWAY LIGHTING: 0

(246) PROVISION FOR ROADWAY LIGHTING: 0

(260) UTILITIES - ON:

Not Applicable
 Not Applicable
 Not Applicable
 Not Applicable
 Not Applicable

(261) UTILITIES - UNDER:

Not Applicable
 Not Applicable
 Not Applicable
 Not Applicable
 Not Applicable

REMARKS:

NOISE BARRIER

FORM 12 OF 13

(501) TYPE:

(502) ALIGNMENT:

(503) LENGTH: (504) MAXIMUM HEIGHT:

(505) FOUNDATION TYPES:

(506) FOUNDATION LENGTH:

(507) PANEL WIDTH:

(508) NUMBER OF SPECIAL PANEL(S):

(509) PANEL MATERIAL:

(510) FACING (Acoustic Treatment):

(511) PANEL FINISH:

(512) PANEL COLOR:

(513) FEDERAL COLOR:

(514) STACKED PANELS:

(515) NOISE BARRIER POST MATERIAL:

(516) ACCESS DOORS:

(517) FIRE HYDRANTS:

(518) RETROFITS:

RETAINING WALL

FORM 13 OF 13

(550) TYPE:

(551) ALIGNMENT:

(552) SEGMENT LENGTH(S):

(553) MAX. EXPOSED HEIGHT:

(554) FOUNDATION TYPES:

(555) TIEBACK:

(556) FACING:

(557) WITH FENCE OR RAIL:

(558) WITH NOISE BARRIER:

(559) PURPOSE:

Structure Inventory and Appraisal Sheet

NATIONAL BRIDGE INVENTORY

STRUCTURE INVENTORY AND APPRAISAL

IDENTIFICATION

(1) STATE NAME:..... **Maryland** CODE..... **243**
 (8) STRUCTURE NO:..... **2-00000-P--BL01-01-0**
 (5) INV RTE (ON/UNDER):..... **1-5-1-00092-0**
 (2) STATE HIGHWAY DEPARTMENT DISTRICT:..... **03**
 (3) COUNTY CODE:..... **033** (4) STATE CODE:.. **07850**
 (6) FTR INTRS:..... **STREAM**
 (7) FACILITY CARRIED:..... **SPRING ROAD**
 (9) LOCATION:..... **100 FT N. OF 54TH PLACE**
 (11) MILEPOINT:..... **000090**
 (12) BASE HIGHWAY NETWORK:..... **0**
 (16) LATITUD **38562319**. (17) LONGITUDE:.. **076552920**
 (98) BORDER BRIDGE STATE % Share.....
 (99) BORDER BRIDGE STRUCT NO.....

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL
 TYPE..... CODE..... **A 07**
 (44) STRUCTURE TYPE APPR: MATERIAL
 TYPE..... CODE..... **0 00**
 (45) NUMBER OF SPANS IN MAIN UNIT:..... **001**
 (46) NUMBER OF APPROACH SPANS:..... **0000**
 (107) DECK STRUCTURE TYPE..... **1**
 (108) WEARING SURFACE/PROTECTIVE SYSTEM:
 A) TYPE WEARING SURFACE: CODE..... **6**
 B) TYPE MEMBRANE: CODE..... **0**
 C) TYPE DECK PROTECTION: CODE..... **0**

AGE AND SERVICE

(27) YEAR BUILT:..... **1958**
 (106) YEAR RECONSTRUCTED..... **1981**
 (42) TYPE OF SERVICE: ON:
 UNDER..... CODE..... **5 5**
 (28) LANES: ON STRUCT **02** UNDER STRUCT: **00**
 (29) AVERAGE DAILY TRAFFIC:..... **000250**
 (30) YEAR OF ADT:..... **2019** (109) TRUCK ADT:..... **05**
 (19) BYPASS, DETOUR LENGTH:..... **01**

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN:..... **0020**
 (49) STRUCTURE LENGTH:..... **0000240**
 (50) CURB/SIDEWALK: LFT **043** FT RGT: **043** FT
 (51) BRDG RDWY WIDTH CURB TO CURB..... **0267** . FT
 (52) DECK WIDTH OUT TO OUT..... **0372**.. FT
 (32) APPR RDWY WIDTH: **00 027 00** FT
 (33) BRIDGE MEDIAN:..... **0**
 (34) SKEW: **26** DEG (35) STRUCT FLARE: **N**
 (10) INV RTE MIN VERTICAL CLEAR:..... **9999** FT
 (47) INV RTE TOT HORIZONTAL CLEAR:.. **267** FT
 (53) MIN VERT CLEAR OVER BRDG RDW **9999** FT
 (54) MIN VERT UNDERCLEAR **N A** FT

SUFFICIENCY RATING = **96.0**

STATUS = **0**

CLASSIFICATION

(112) NBIS BRIDGE LENGTH:..... **Y**
 (104) HIGHWAY SYSTEM:..... **N**
 (26) FUNCTIONAL CLASS:..... **19**
 (100) DEFENSE HIGHWAY:..... **0**
 (101) PARALLEL STRUCTURE:..... **N**
 (102) DIRECTION OF TRAFFIC:..... **2**
 (103) TEMPORARY STRUCTURE:.....
 (110) DESIGNATED NATIONAL NETWORK:..... **N**
 (20) TOLL:..... **3**
 (21) MAINTENANCE:..... **04**
 (22) OWNER:..... **04**
 (37) HISTORICAL SIGNIFICANCE:..... **5**

CONDITION

(58) DECK:..... **7**
 (59) SUPERSTRUCTURE:..... **7**
 (60) SUBSTRUCTURE:..... **7**
 (61) CHANNEL AND CHANNEL PROTECTION:..... **6**
 (62) CULVERTS:..... **N**

LOAD RATING AND POSTING

(31) DESIGN LOAD:..... **5**
 (64) OPERATING RATING:..... **755**
 (66) INVENTORY RATING:..... **450**
 (70) BRIDGE POSTING:..... **5**
 (41) STRUCTURE OPEN, POSTED, OR CLOSED:..... **P**

APPRAISAL

(67) STRUCTURAL EVALUATION:..... **7**
 (68) DECK GEOMETRY:..... **5**
 (69) UNDERCLEARANCES, VERT AND HOR:..... **N**
 (71) WATERWAY ADEQUACY:..... **6**
 (72) APPROACH ROADWAY ALIGNMENT:..... **8**
 (36) TRAFFIC SAFETY FEATURES:..... **0 0 0 0**
 (113) SCOUR CRITICAL BRIDGES:..... **8P**

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK:.....
 (76) LENGTH OF IMPROVEMENT:..... **000000**
 (94) BRIDGE IMPROVEMENT COST:..... **0,000**
 (95) ROADWAY IMPROVEMENT COST:..... **0,000**
 (96) TOTAL PROJECT COST:..... **0,000**
 (97) YEAR OF IMPROVEMENT COST EST:.....
 (114) FUTURE ADT:..... **000375**
 (115) YEAR OF FUTURE ADT:..... **39**

Bridge Inspection Report Element Form

Bridge No: P-BL01001

Inspection Date: 03/25/2021

SPRING ROAD OVER STREAM

Milepoint: 000090

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 6

(62) Culvert N

Element

38 - Reinforced Concrete Slab

Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
1 - Ben.	629	sq. ft.	604	25	0	0

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The asphalt wearing surface is in good condition with minor wear throughout.

The soffit is in good condition. There are a few exposed form ties and graffiti throughout the underside of the deck. There are hairline map cracks at the north end and a 2" long x 2" wide x 1/2" deep spall in the underside of the top slab at the north end approximately 5' from the West Abutment. There is a full width longitudinal crack with efflorescence 10'-0" from the south end. There are random hairline cracks throughout with rust stains and small pop-out spalls at the southeast corner.

215 - Reinforced Concrete Abutment

1 - Ben.	82	ft.	82	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Only the top 3'-0" of the rigid frame abutment walls are visible for inspection. There is graffiti throughout both abutments. There are isolated vertical hairline cracks in the East and West Abutments. There is a crack with efflorescence in the West Abutment.

330 - Metal Bridge Railing

1 - Ben.	46	ft.	42	0	4	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is light to moderate surface rust throughout both railings. There are no anchor bolts in the base plates of all the bridge railing posts. There are four cracked/poor welds at the bottom rail to post connections at the North Railing. The South Railing is slightly leaning to the south.

331 - Reinforced Concrete Bridge Railing

1 - Ben.	48	ft.	47	1	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are hairline vertical cracks in the parapets at the base of the railing posts. There is a hairline vertical crack with light efflorescence at the base of Post 2 of the North Railing. Due to insufficient cover, there is a small pop-out spall with exposed corroded reinforcement in the exterior face of the North Parapet approximately 5' from the East Abutment.

8062 - Sidewalk, Reinforced Concrete

1 - Ben.	47	Ft.	38	9	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The sidewalks over the structure have minor pop-out spalls and minor scaling throughout.

8246 - Culvert Headwall, Reinforced Concrete

1 - Ben.	48	Ft.	40	8	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Bridge Inspection Report Element Form

Bridge No: P-BL01001

Inspection Date: 03/25/2021

SPRING ROAD OVER STREAM

Milepoint: 000090

(58) Deck

(59) Superstructure

(60) Substructure

(61) Channel

(62) Culvert

The concrete headwalls are exposed on the interior side for a height of 7". The exposed portions exhibit a few hairline cracks at the base of railing posts. Due to insufficient cover, there is a small popout spall with exposed corroded reinforcement in the North Headwall about 5' from the East Abutment.

8251 - Wingwalls, Reinforced Concrete

1 - Ben.	25	Ft.	19	6	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is vegetation overgrowth at all wingwalls. The joint material is deteriorating and bulging at the joints between the wingwalls and the structure. There is a 6" high x 1" wide x 1" deep edge spall in the Northwest Wingwall along the joint with the structure. There is a hairline diagonal crack and hairline map cracking in the Southeast Wingwall.

8260 - Slope, Protected

1 - Ben.	2	Each	0	2	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The slope protection at the abutments have random up to 1/8" wide cracks.

8322 - Roadway Approach Transition

1 - Ben.	2	Each	2	0	0	0
----------	---	------	---	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Pavement: The approaches are in good condition with minor wear throughout. There is a 3'-0" long x 1/16" wide transverse crack in the East Approach Roadway.

Traffic Barrier: There are no traffic barriers at the structure.

Sidewalks: There are a few minor pop-out spalls and areas of moderate scaling in the sidewalks. The sidewalk joints have minor debris and vegetative growth. Panel 2 from the bridge on the Northeast Sidewalk has a full-length x up to 1/4" wide longitudinal crack. There is differential settlement up to 2 1/2" in the Northeast Sidewalk. The Northeast Sidewalk and Curb have separated up to 2" adjacent to the storm drain inlet. The Southeast Sidewalk has settled up to 3 3/4" adjacent to a storm drain inlet; however, the sidewalk does not extend beyond this location.

Curbs: The curbs are in good condition. There are a few random minor cracks and spalls in the curbs.

Signs: There are no object markers at the structure. Both postings signs are in place at the structure. The advanced posting sign is in place at the nearest intersection on the West Approach. There is not an advance posting sign in place at the nearest intersection on the East Approach.

The bridge is currently posted for 24,000 lbs. for single-unit vehicles and 44,000 lbs. for combination-unit vehicles.

8342 - Fencing

1 - Ben.	25	Ft.	0	25	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is a chain-link fence along the wingwalls and slope protection. There is typical minor rust, vegetation growth, and misalignments throughout the fence. Embankment erosion has exposed the fence post footing at the end of the Northwest Wingwall. The top fence rail is bent and disconnected adjacent to the Southwest Wingwall.

8344 - Drainage Devices

1 - Ben.	1	Entire Bridge	0	1	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Bridge Inspection Report Element Form

Bridge No: P-BL01001

Inspection Date: 03/25/2021

SPRING ROAD OVER STREAM

Milepoint: 000090

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 6

(62) Culvert N

The weep holes in the slope protection are fully clogged.

8345 - Stream Channel

1 - Ben.	1	Entire Bridge	1	0	0	0
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☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

The stream flows from south to north under the structure. The upstream channel curves to the east and the downstream channel is straight. The stream channel and banks are lined with concrete. There is up to 2" deep abrasion along the concrete channel, causing a 2" high gap at the interface with the concrete-lined banks. There is heavy vegetation overgrowing all four slope protections. There is debris accumulation under the bridge at the north end along the East Slope Protection.

Slope Protection: There are random up to 1/8" wide cracks throughout the concrete slopes. There is minor vegetation growth in the slope protection joints at several locations. The weep holes in the downstream slope protection are fully clogged. There are patched areas with up to 1/8" wide cracks at the base of the upstream slope protection. There is a full-height crack with a spall at the base in the Southeast Slope Protection. The Northwest Slope Protection has fractured adjacent to the Northwest Wingwall due to a tree growing through the concrete. There is a 1/4" wide crack with adjacent minor spalling in the Northeast Slope Protection adjacent to a 12" pipe outlet. There is a 6'-0" long x 3" high x full-depth spall along the base of the Northeast Slope Protection. There is a 1/2" wide x full-height crack/fracture in the Northeast Slope Protection approximately 12' from the bridge.

8359 - Soffit (underside) of concrete decks and slabs

1 - Ben.	1	Entire Bridge	1	0	0	0
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☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

The soffit is in good condition. There are a few exposed form ties and graffiti throughout the underside of the deck. There are hairline map cracks at the north end and a 2" long x 2" wide x 1/2" deep spall in the underside of the top slab at the north end approximately 5' from the West Abutment. There is a full width longitudinal crack 10'-0" from the south end. There are random hairline cracks throughout with rust stains and small pop-out spalls at the southeast corner.

2021 BRIDGE INSPECTION REPORT

APPROACH TRAFFIC BARRIER FORM

Corners	Transition										Approach Traffic Barrier			Exist. End Treatment	Proposed End Treatment		
	Bridge Railings Meet MDSHA Standard		Approach Traffic Barrier Present		Attached to Bridge		Thrie Beam Present		Gradually Stiffened		Post Spacing		Rail Type			Post Type	Post Spacing
1	Y	N	Y	N	Y	N	Y	N	Y	N				None	Flared, Turned-Down		
2		X		X										None	Flared, Turned-Down		
3		X		X										None	Flared, Turned-Down		
4		X		X										None	Flared, Turned-Down		

Bridge No.: P-BL01R

County: Prince George's

Road Carried: SPRING ROAD

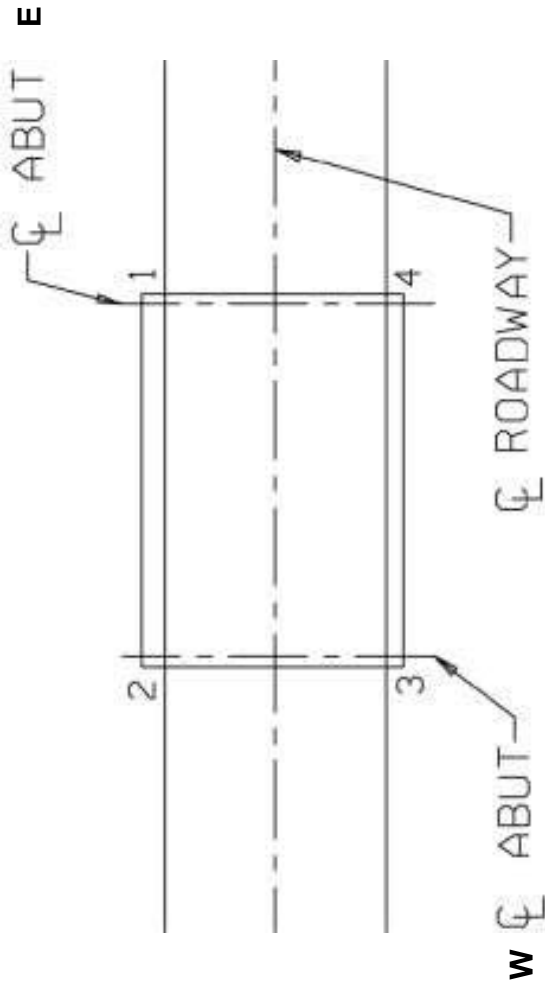
Crossing: STREAM

Date Inspected: 03/25/2021

Inspector: C. Percy, D. Ross

Comments:

There are no traffic barriers at the structure.



Load Ratings

Load Rating Standard Summary Sheet

Bridge No.: PBL01001 on SPRING ROAD over STREAM

Date of Rating: 01/27/2014 LARS Program: Yes ☐ No ☒ Program Used: BOX5

Rating Method: LRFR ☐ LFR ☒ ASR ☐ Engineering Judgment ☐ Load Testing ☐ HMA Wearing Surface (in.) N/A

Rating Type: As-Built ☐ As Inspected ☒ Condition Report Date: 03/05/2013

Comments/Defects/Assumptions: This Load Rating is based on the latest inspection report as noted above, as well as a previous load rating dated 1996. Rating factors for the top slab have been listed.

LRFR Design/Load Rating Vehicle (Limit States are Strength I for all materials, Service II for Steel only, or Service III for prestressed concrete Inventory only)			
Truck/ Axle/ Tons	Rating Details	Inventory	Operating
	Controlling Member	Limit State	Limit State
	Controlling Stress (Moment, Shear, Service)	Rating Factor	Rating Factor
HL-93/3/36 Tons	enter controlling member (i.e. Sp. 1, Ext. Beam)	Limit State	Limit State
	Select the Controlling Stress	X.XX	X.XX

Legal Loads (For LRFR the Limit States are Strength I for all materials or Service II for steel only)			
Truck/ Axle/ Tons	Controlling Member	Inventory or Limit State	Operating
	Controlling Stress	Tons (XX.X)	Tons (XX.X)
H-15 / 2 / 15	Top slab	25.0	42.0
	Moment		
T-3 / 3 / 33	Top slab	33.0	55.0
	Moment		
T-4 / 4 / 35	Top slab	33.0	57.0
	Moment		
HS-20 / 3 / 36	Top slab	45.0	75.5
	Moment		
3S2 / 5 / 40	Top slab	61.0	99.9
	Moment		

Permit Loads - (For LRFR the Limit State is Strength II)			
Truck/ Axle/ Tons	Controlling Member	Inventory	Operating
	Controlling Stress (Moment, Shear, Service)	Tons (XX.X)	Tons (XX.X)
150K / 8 / 75	Top slab	67.0	99.9
	Moment		
90K Comb./ 4 / 45	Top slab	43.0	72.0
	Moment		
90K Crane / 4 / 45	Top slab	41.5	69.5
	Moment		
90K Cargo/ 5 / 45	Top slab	53.0	88.5
	Moment		
80K Cargo/ 5 / 40	Top slab	61.0	99.9
	Moment		
120K Spec./ 5 / 60	Top slab	57.5	96.5
	Moment		
108K Crane/ 4/ 54	Top slab	47.0	78.5
	Moment		
120K Crane/ 5 / 60	Top slab	58.0	97.0
	Moment		

BOX5 data input:

Equivalent fill depth:

East: $0.176 / 0.12 = 1.47'$

West: $0.255 / 0.12 = 2.125'$

Grade: $(2.125' - 1.47') / 22.42' = 3.2\%$

Box5 Truck list:

Legal rating	Permit rating
SP-1 H 15	SP-1 150K
SP-2 T-3	SP-2 90K COMB.
SP-3 T-4	SP-3 90K CRANE
SP-4 HS20	SP-4 90K CARGO
SP-5 3S2	SP-5 80K CARGO
	SP-6 120K
	SP-7 108K
	SP-8 120K CRANE

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PROGRAM P4356010 02/16/2014 21:38
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\Yang\Desktop\box\PBL01001\PBL010~1.DAT

P-BL01 SINGLE CELL FRAME WITHOUT BOTTOM SLAB.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
01	0000	0000	0000	PBL0	1001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	5	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
21.76	2.79	20.00	0.00	10.00	0.00	10.00	0.8
							3.20

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
2		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	6.00	14.0	2	24.00	0.0						

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	26.00	4.0	3	26.00	0.0			

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	10.00	4.0	3	23.00	4.0	4	23.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	14.0	2	32.00	14.0	3	32.00	0.0			

SPECIAL LIVE LOADING 5

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	17.00	4.0	3	17.00	31.0	4	17.00	4.0
5	17.00	0.0									

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT

AT LEFT END OF SPAN						AT MID SPAN						AT RIGHT END OF SPAN					
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC		
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0		

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

DIST	F	DL+EPH LL+I	FACTORED EFFECTS			ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
			MOMENT	THRUST	SHEAR					
0.00	F	DL+EPH LL+I	6.076 5.869	5.945 4.566		10.205	0.70	1.18	4@ 9.0	
						RATING TONS	10.55	17.63		
2.79	F	DL+EPH LL+I	-8.355 -7.688	5.491 4.566		25.581	2.24	3.74	7@ 9.0	
						RATING TONS	33.61	56.13		

WALL 2

DIST	F	DL+EPH LL+I	FACTORED EFFECTS			ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
			MOMENT	THRUST	SHEAR					
0.00	F	DL+EPH LL+I	-6.240 -5.869	6.399 4.566		10.250	0.68	1.14	4@ 9.0	
						RATING TONS	10.25	17.12		

Page 3

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2.79	F	DL+EPH	8.570	5.945	25.591	2.21	3.70	7@ 9.0
		LL+I	7.688	4.566				
					RATING TONS	33.21	55.46	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-10.962	0.847	61.234	4.98	8.32	7@ 9.0
		LL+I -10.090					
				RATING TONS	74.73	124.81	
1.46	V	DL+EPF -3.590	4.637	23.226	2.90	4.84	7@ 9.0 0.000
		LL+I 5.381	6.420				
				RATING TONS	43.44	72.54	
10.88	F	DL+EPH 19.068	0.387	61.165	1.68	2.80	7@ 9.0
		LL+I 25.073					
				RATING TONS	25.18	42.06	
20.30	V	DL+EPF -3.254	-4.896	23.226	2.86	4.77	7@ 9.0 0.000
		LL+I 5.381	-6.420				
				RATING TONS	42.83	71.53	
21.76	F	DL+EPD-11.111	0.847	61.234	4.97	8.30	7@ 9.0
		LL+I -10.090					
				RATING TONS	74.51	124.44	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 10.25 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 17.12 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 6.076	5.945	10.158	0.34	0.56	4@ 9.0
		LL+I 12.158	8.443				
				RATING TONS	11.08	18.51	
2.79	F	DL+EPH -8.355	5.491	25.548	1.08	1.80	7@ 9.0
		LL+I -15.927	8.443				
				RATING TONS	35.62	59.49	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -6.240	6.399	10.205	0.33	0.54	4@ 9.0
		LL+I -12.158	8.443				
				RATING TONS	10.76	17.97	
2.79	F	DL+EPH 8.570	5.945	25.558	1.07	1.78	7@ 9.0

LL+I 15.927 8.443

RATING TONS 35.20 58.78

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-10.962 0.847	61.234	2.42	4.04	7@ 9.0	
		LL+I -20.797					
			RATING TONS	79.77	133.22		
1.46	V	DL+EPF -3.590	4.637 23.226	1.49	2.49	7@ 9.0	0.000
		LL+I 3.842	12.471				
			RATING TONS	49.19	82.15		
10.88	F	DL+EPH 19.068 0.387	61.165	1.00	1.67	7@ 9.0	
		LL+I 42.045					
			RATING TONS	33.04	55.18		
20.30	V	DL+EPF -3.254	-4.896 23.226	1.47	2.45	7@ 9.0	0.000
		LL+I 3.842	-12.471				
			RATING TONS	48.50	81.00		
21.76	F	DL+EPD-11.111 0.847	61.234	2.41	4.02	7@ 9.0	
		LL+I -20.797					
			RATING TONS	79.53	132.82		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 10.76 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 17.97 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 6.076 5.945	10.177	0.33	0.55	4@ 9.0	
		LL+I 12.432 9.057					
			RATING TONS	11.55	19.28		
2.79	F	DL+EPH -8.355 5.491	25.561	1.06	1.76	7@ 9.0	
		LL+I -16.286 9.057					
			RATING TONS	36.98	61.75		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -6.240 6.399	10.223	0.32	0.54	4@ 9.0	
		LL+I -12.432 9.057					
			RATING TONS	11.21	18.73		
2.79	F	DL+EPH 8.570 5.945	25.572	1.04	1.74	7@ 9.0	
		LL+I 16.286 9.057					
			RATING TONS	36.54	61.02		

Page 5

SLAB 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962	0.847	61.234	2.36	3.94	7@ 9.0	
	LL+I	-21.325						
				RATING TONS	82.51	137.79		
1.46	V DL+EPF	-3.590	4.637	23.226	1.54	2.57	7@ 9.0	0.000
	LL+I	2.695	12.060					
				RATING TONS	53.95	90.09		
10.88	F DL+EPH	19.068	0.387	61.165	0.98	1.64	7@ 9.0	
	LL+I	42.918						
				RATING TONS	34.33	57.33		
20.30	V DL+EPF	-3.254	-4.896	23.226	1.52	2.54	7@ 9.0	0.000
	LL+I	2.695	-12.060					
				RATING TONS	53.20	88.84		
21.76	F DL+EPD	-11.111	0.847	61.234	2.35	3.93	7@ 9.0	
	LL+I	-21.325						
				RATING TONS	82.26	137.38		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 11.21 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 18.73 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076	5.945	10.297	0.47	0.79	4@ 9.0	
	LL+I	8.971	8.400					
				RATING TONS	16.94	28.29		
2.79	F DL+EPH	-8.355	5.491	25.646	1.47	2.46	7@ 9.0	
	LL+I	-11.752	8.400					
				RATING TONS	52.96	88.45		

WALL 2

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240	6.399	10.340	0.46	0.76	4@ 9.0	
	LL+I	-8.971	8.400					
				RATING TONS	16.45	27.48		
2.79	F DL+EPH	8.570	5.945	25.655	1.45	2.43	7@ 9.0	
	LL+I	11.752	8.400					
				RATING TONS	52.33	87.40		

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SLAB 1

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-10.962 LL+I -14.554	0.847		61.234	3.45	5.77	7@ 9.0	
					RATING TONS	124.35	207.67		
1.46	V	DL+EPF -3.590 LL+I 3.322		4.637 10.274	23.226	1.81	3.02	7@ 9.0	0.000
					RATING TONS	65.14	108.78		
10.88	F	DL+EPH 19.068 LL+I 33.430	0.387		61.165	1.26	2.10	7@ 9.0	
					RATING TONS	45.33	75.71		
20.30	V	DL+EPF -3.254 LL+I 3.322		-4.896 -10.274	23.226	1.78	2.98	7@ 9.0	0.000
					RATING TONS	64.23	107.26		
21.76	F	DL+EPD-11.111 LL+I -14.554	0.847		61.234	3.44	5.75	7@ 9.0	
					RATING TONS	123.98	207.05		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 16.45 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 27.48 TONS AT DISTANCE 0.00 IN WALL 2.

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*****
* LIVE LOAD RATING - SP-5  LOADING *
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WALL 1

			FACTORED EFFECTS		ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST			MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH	6.076	5.945	10.228	0.52	0.86	4@	9.0
		LL+I	8.025	6.563					
					RATING TONS	20.70	34.56		
2.79	F	DL+EPH	-8.355	5.491	25.597	1.64	2.74	7@	9.0
		LL+I	-10.513	6.563					
					RATING TONS	65.60	109.55		

WALL 2

			FACTORED EFFECTS		ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST			MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH	-6.240	6.399	10.272	0.50	0.84	4@	9.0
		LL+I	-8.025	6.563					
					RATING TONS	20.10	33.57		
2.79	F	DL+EPH	8.570	5.945	25.607	1.62	2.71	7@	9.0
		LL+I	10.513	6.563					
					RATING TONS	64.82	108.25		

SLAB 1

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DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF
0.00	F	DL+EPD-10.962	0.847		61.234	3.70	6.17	7@ 9.0
		LL+I -13.598						
					RATING TONS	147.88	246.96	
1.46	V	DL+EPF -3.590		4.637	23.226	2.24	3.75	7@ 9.0 0.000
		LL+I 2.184		8.287				
					RATING TONS	89.73	149.84	
10.88	F	DL+EPH 19.068	0.387		61.165	1.53	2.56	7@ 9.0
		LL+I 27.491						
					RATING TONS	61.25	102.29	
20.30	V	DL+EPF -3.254		-4.896	23.226	2.21	3.69	7@ 9.0 0.000
		LL+I 2.184		-8.287				
					RATING TONS	88.47	147.75	
21.76	F	DL+EPD-11.111	0.847		61.234	3.69	6.16	7@ 9.0
		LL+I -13.598						
					RATING TONS	147.44	246.23	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 20.10 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 33.57 TONS AT DISTANCE 0.00 IN WALL 2.

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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/16/2014 21:43
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\Yang\Desktop\box\PBL01001\PBL010~2.DAT

P-BL01 SINGLE CELL FRAME WITHOUT BOTTOM SLAB.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
01	0000	0000	0000	PBL0	1001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	8	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
21.76	2.79	20.00	0.00	10.00	0.00	10.00	0.8
							3.20

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
8		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	11.0	2	26.00	4.0	3	26.00	30.0	4	18.00	4.0
5	18.00	4.0	6	18.00	4.0	7	18.00	4.0	8	18.00	0.0

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	24.00	35.0	3	27.00	4.0	4	27.00	0.0

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	18.00	5.4	2	18.00	6.9	3	27.00	5.4	4	27.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE

5	6.00	4.00										
AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	28.0	4	22.00	4.0	
5	22.00	0.0										

SPECIAL LIVE LOADING 5

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	14.0	4	17.00	4.0	
5	17.00	0.0										

SPECIAL LIVE LOADING 6

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	27.00	4.0	3	27.00	31.0	4	27.00	4.0	
5	27.00	0.0										

SPECIAL LIVE LOADING 7

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
4		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	27.00	5.4	2	27.00	6.8	3	27.00	5.4	4	27.00	0.0	

SPECIAL LIVE LOADING 8

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	24.00	8.3	2	24.00	5.4	3	24.00	6.6	4	24.00	5.4	
5	24.00	0.0										

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT																
AT LEFT END OF SPAN							AT MID SPAN				AT RIGHT END OF SPAN					
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC	
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0	

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5 SP-6 SP-7 SP-8

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.076	5.945	10.213	0.27	0.45	4@ 9.0	
	LL+I	15.369	12.166					
				RATING TONS	20.19	33.72		
2.79 F	DL+EPH	-8.355	5.491	25.587	0.86	1.43	7@ 9.0	
	LL+I	-20.134	12.166					
				RATING TONS	64.19	107.19		

WALL 2

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.240	6.399	10.258	0.26	0.44	4@ 9.0	
	LL+I	-15.369	12.166					
				RATING TONS	19.61	32.74		
2.79 F	DL+EPH	8.570	5.945	25.597	0.85	1.41	7@ 9.0	
	LL+I	20.134	12.166					
				RATING TONS	63.42	105.92		

SLAB 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-10.962	0.847	61.234	1.96	3.27	7@ 9.0	
	LL+I	-25.669						
				RATING TONS	146.89	245.30		
1.46 V	DL+EPF	-3.590		4.637	23.226	1.37	2.30	7@ 9.0 0.000
	LL+I	-5.207		13.525				
				RATING TONS	103.08	172.15		
10.88 F	DL+EPH	19.068	0.387	61.165	0.89	1.49	7@ 9.0	
	LL+I	47.117						
				RATING TONS	67.01	111.91		
20.30 V	DL+EPF	-3.254		-4.896	23.226	1.36	2.26	7@ 9.0 0.000

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 LL+I -5.207 -13.525
 RATING TONS 101.64 169.75

21.76 F DL+EPD-11.111 0.847 61.234 1.95 3.26 7@ 9.0
 LL+I -25.669
 RATING TONS 146.45 244.57

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 19.61 TONS AT DISTANCE 0.00 IN WALL 2.
 THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 32.74 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.076 5.945	10.158	0.32	0.54	4@ 9.0	
	LL+I	12.625 8.768					
			RATING TONS	14.55	24.30		
2.79 F	DL+EPH	-8.355 5.491	25.548	1.04	1.74	7@ 9.0	
	LL+I	-16.539 8.768					
			RATING TONS	46.78	78.12		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.240 6.399	10.205	0.31	0.52	4@ 9.0	
	LL+I	-12.625 8.768					
			RATING TONS	14.13	23.60		
2.79 F	DL+EPH	8.570 5.945	25.558	1.03	1.72	7@ 9.0	
	LL+I	16.539 8.768					
			RATING TONS	46.22	77.19		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-10.962 0.847	61.234	2.33	3.89	7@ 9.0	
	LL+I	-21.597					
			RATING TONS	104.75	174.93		
1.46 V	DL+EPF	-3.590	4.637 23.226	1.51	2.53	7@ 9.0	0.000
	LL+I	5.668	12.271				
			RATING TONS	68.17	113.85		
10.88 F	DL+EPH	19.068 0.387	61.165	0.96	1.61	7@ 9.0	
	LL+I	43.663					
			RATING TONS	43.39	72.46		
20.30 V	DL+EPF	-3.254	-4.896 23.226	1.49	2.49	7@ 9.0	0.000
	LL+I	5.668	-12.271				
			RATING TONS	67.22	112.26		

21.76 F DL+EPD-11.111 0.847 61.234 2.32 3.88 7@ 9.0
 LL+I -21.597
 RATING TONS 104.44 174.41

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 14.13 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 23.60 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.076 5.945	10.247	0.29	0.49	4@ 9.0	
	LL+I	14.156 12.045					
			RATING TONS	13.26	22.15		
2.79 F	DL+EPH	-8.355 5.491	25.611	0.93	1.55	7@ 9.0	
	LL+I	-18.544 12.045					
			RATING TONS	41.87	69.93		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.240 6.399	10.291	0.29	0.48	4@ 9.0	
	LL+I	-14.156 12.045					
			RATING TONS	12.88	21.51		
2.79 F	DL+EPH	8.570 5.945	25.621	0.92	1.54	7@ 9.0	
	LL+I	18.544 12.045					
			RATING TONS	41.37	69.10		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-10.962 0.847	61.234	2.14	3.57	7@ 9.0	
	LL+I	-23.497					
			RATING TONS	96.28	160.78		
1.46 V	DL+EPF	-3.590	4.637 23.226	1.33	2.22	7@ 9.0	0.000
	LL+I	-0.902	13.988				
			RATING TONS	59.81	99.87		
10.88 F	DL+EPH	19.068 0.387	61.165	0.93	1.55	7@ 9.0	
	LL+I	45.366					
			RATING TONS	41.76	69.74		
20.30 V	DL+EPF	-3.254	-4.896 23.226	1.31	2.19	7@ 9.0	0.000
	LL+I	-0.902	-13.988				
			RATING TONS	58.97	98.48		
21.76 F	DL+EPD	-11.111 0.847	61.234	2.13	3.56	7@ 9.0	

LL+I -23.497

RATING TONS 95.99 160.31

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 12.88 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 21.51 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.158	0.40	0.66	4@ 9.0	
	LL+I	10.287 7.144					
			RATING TONS	17.86	29.82		
2.79	F DL+EPH	-8.355 5.491	25.548	1.28	2.13	7@ 9.0	
	LL+I	-13.477 7.144					
			RATING TONS	57.41	95.87		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.205	0.39	0.64	4@ 9.0	
	LL+I	-10.287 7.144					
			RATING TONS	17.34	28.96		
2.79	F DL+EPH	8.570 5.945	25.558	1.26	2.11	7@ 9.0	
	LL+I	13.477 7.144					
			RATING TONS	56.73	94.73		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	2.86	4.77	7@ 9.0	
	LL+I	-17.598					
			RATING TONS	128.55	214.69		
1.46	V DL+EPF	-3.590	4.637 23.226	1.86	3.10	7@ 9.0	0.000
	LL+I	4.619	9.998				
			RATING TONS	83.67	139.72		
10.88	F DL+EPH	19.068 0.387	61.165	1.18	1.98	7@ 9.0	
	LL+I	35.577					
			RATING TONS	53.25	88.92		
20.30	V DL+EPF	-3.254	-4.896 23.226	1.83	3.06	7@ 9.0	0.000
	LL+I	4.619	-9.998				
			RATING TONS	82.50	137.78		
21.76	F DL+EPD	-11.111 0.847	61.234	2.85	4.76	7@ 9.0	
	LL+I	-17.598					
			RATING TONS	128.17	214.05		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 17.34 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 28.96 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	6.076	5.945		10.228	0.52	0.86	4@ 9.0	
		LL+I	8.025	6.563						
						RATING TONS	20.70	34.56		
2.79	F	DL+EPH	-8.355	5.491		25.597	1.64	2.74	7@ 9.0	
		LL+I	-10.513	6.563						
						RATING TONS	65.60	109.55		

WALL 2

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	-6.240	6.399		10.272	0.50	0.84	4@ 9.0	
		LL+I	-8.025	6.563						
						RATING TONS	20.10	33.57		
2.79	F	DL+EPH	8.570	5.945		25.607	1.62	2.71	7@ 9.0	
		LL+I	10.513	6.563						
						RATING TONS	64.82	108.25		

SLAB 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPD	-10.962	0.847		61.234	3.70	6.17	7@ 9.0	
		LL+I	-13.598							
						RATING TONS	147.88	246.96		
1.46	V	DL+EPF	-3.590		4.637	23.226	2.24	3.75	7@ 9.0	0.000
		LL+I	2.184		8.287					
						RATING TONS	89.73	149.84		
10.88	F	DL+EPH	19.068	0.387		61.165	1.53	2.56	7@ 9.0	
		LL+I	27.491							
						RATING TONS	61.25	102.29		
20.30	V	DL+EPF	-3.254		-4.896	23.226	2.21	3.69	7@ 9.0	0.000
		LL+I	2.184		-8.287					
						RATING TONS	88.47	147.75		
21.76	F	DL+EPD	-11.111	0.847		61.234	3.69	6.16	7@ 9.0	
		LL+I	-13.598							
						RATING TONS	147.44	246.23		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 20.10 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 33.57 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-6 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.158	0.32	0.54	4@ 9.0	
	LL+I	12.625 8.768					
			RATING TONS	19.40	32.40		
2.79	F DL+EPH	-8.355 5.491	25.548	1.04	1.74	7@ 9.0	
	LL+I	-16.539 8.768					
			RATING TONS	62.37	104.16		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.205	0.31	0.52	4@ 9.0	
	LL+I	-12.625 8.768					
			RATING TONS	18.84	31.47		
2.79	F DL+EPH	8.570 5.945	25.558	1.03	1.72	7@ 9.0	
	LL+I	16.539 8.768					
			RATING TONS	61.63	102.92		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	2.33	3.89	7@ 9.0	
	LL+I	-21.597					
			RATING TONS	139.66	233.24		
1.46	V DL+EPF	-3.590	4.637 23.226	1.45	2.42	7@ 9.0	0.000
	LL+I	4.283	12.832				
			RATING TONS	86.92	145.16		
10.88	F DL+EPH	19.068 0.387	61.165	0.96	1.61	7@ 9.0	
	LL+I	43.663					
			RATING TONS	57.85	96.61		
20.30	V DL+EPF	-3.254	-4.896 23.226	1.43	2.39	7@ 9.0	0.000
	LL+I	4.283	-12.832				
			RATING TONS	85.71	143.13		
21.76	F DL+EPD	-11.111 0.847	61.234	2.32	3.88	7@ 9.0	
	LL+I	-21.597					
			RATING TONS	139.25	232.55		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 18.84 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 31.47 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-7 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.244	0.26	0.44	4@ 9.0	
	LL+I	15.865 13.399					
				RATING TONS	14.19	23.69	
2.79	F DL+EPH	-8.355 5.491	25.608	0.83	1.39	7@ 9.0	
	LL+I	-20.783 13.399					
				RATING TONS	44.83	74.86	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.287	0.26	0.43	4@ 9.0	
	LL+I	-15.865 13.399					
				RATING TONS	13.78	23.01	
2.79	F DL+EPH	8.570 5.945	25.618	0.82	1.37	7@ 9.0	
	LL+I	20.783 13.399					
				RATING TONS	44.29	73.97	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	1.92	3.20	7@ 9.0	
	LL+I	-26.210					
				RATING TONS	103.58	172.97	
1.46	V DL+EPF	-3.590	4.637 23.226	1.23	2.05	7@ 9.0	0.000
	LL+I	-3.355	15.149				
				RATING TONS	66.26	110.66	
10.88	F DL+EPH	19.068 0.387	61.165	0.87	1.46	7@ 9.0	
	LL+I	48.280					
				RATING TONS	47.09	78.63	
20.30	V DL+EPF	-3.254	-4.896 23.226	1.21	2.02	7@ 9.0	0.000
	LL+I	-3.355	-15.149				
				RATING TONS	65.34	109.11	
21.76	F DL+EPD	-11.111 0.847	61.234	1.91	3.19	7@ 9.0	
	LL+I	-26.210					
				RATING TONS	103.27	172.46	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 13.78 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
Page 10

THE MINIMUM OPERATING RATING IS 23.01 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-8 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.239	0.29	0.49	4@ 9.0	
	LL+I	14.287 11.942					
			RATING TONS	17.48	29.19		
2.79	F DL+EPH	-8.355 5.491	25.605	0.92	1.54	7@ 9.0	
	LL+I	-18.716 11.942					
			RATING TONS	55.30	92.35		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.283	0.28	0.47	4@ 9.0	
	LL+I	-14.287 11.942					
			RATING TONS	16.98	28.35		
2.79	F DL+EPH	8.570 5.945	25.615	0.91	1.52	7@ 9.0	
	LL+I	18.716 11.942					
			RATING TONS	54.64	91.25		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	2.12	3.55	7@ 9.0	
	LL+I	-23.668					
			RATING TONS	127.44	212.83		
1.46	V DL+EPF	-3.590	4.637 23.226	1.37	2.29	7@ 9.0	0.000
	LL+I	-3.178	13.583				
			RATING TONS	82.12	137.14		
10.88	F DL+EPH	19.068 0.387	61.165	0.97	1.62	7@ 9.0	
	LL+I	43.291					
			RATING TONS	58.35	97.44		
20.30	V DL+EPF	-3.254	-4.896 23.226	1.35	2.25	7@ 9.0	0.000
	LL+I	-3.178	-13.583				
			RATING TONS	80.97	135.22		
21.76	F DL+EPD	-11.111 0.847	61.234	2.12	3.54	7@ 9.0	
	LL+I	-23.668					
			RATING TONS	127.07	212.20		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 16.98 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 28.35 TONS AT DISTANCE 0.00 IN WALL 2.

PBL01001_LFR_121013_permit.OUT

Prince George's County



2021 BRIDGE INSPECTION REPORT March 25, 2021



BRIDGE NO. P-BL02001

54TH PLACE

OVER

STREAM

Prepared by



Prince George's County

2021 BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02001


54TH PLACE

OVER

STREAM

Prepared by




Inspection Team Leader: Caleb Percy, P.E.

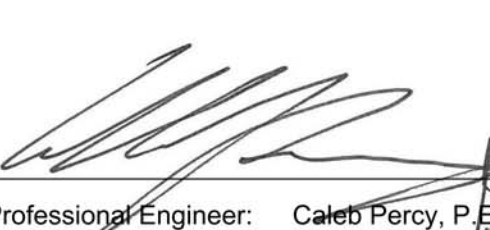
5/4/2021

Date


Inspector: Daria Ross

5/4/2021

Date


Professional Engineer: Caleb Percy, P.E.



5/4/2021

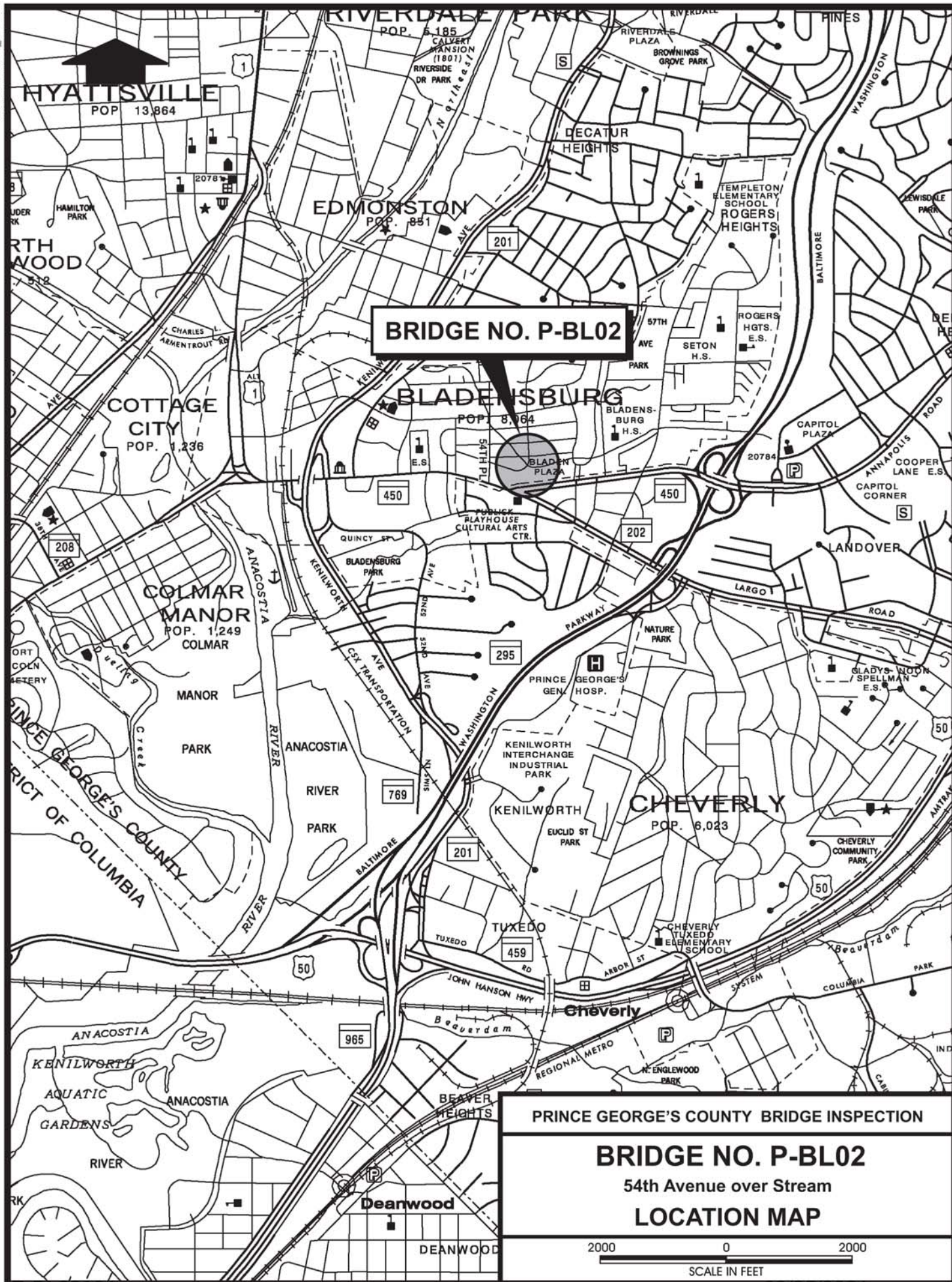
Date

Professional Certification: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 39263, Expiration Date: June 27, 2022.

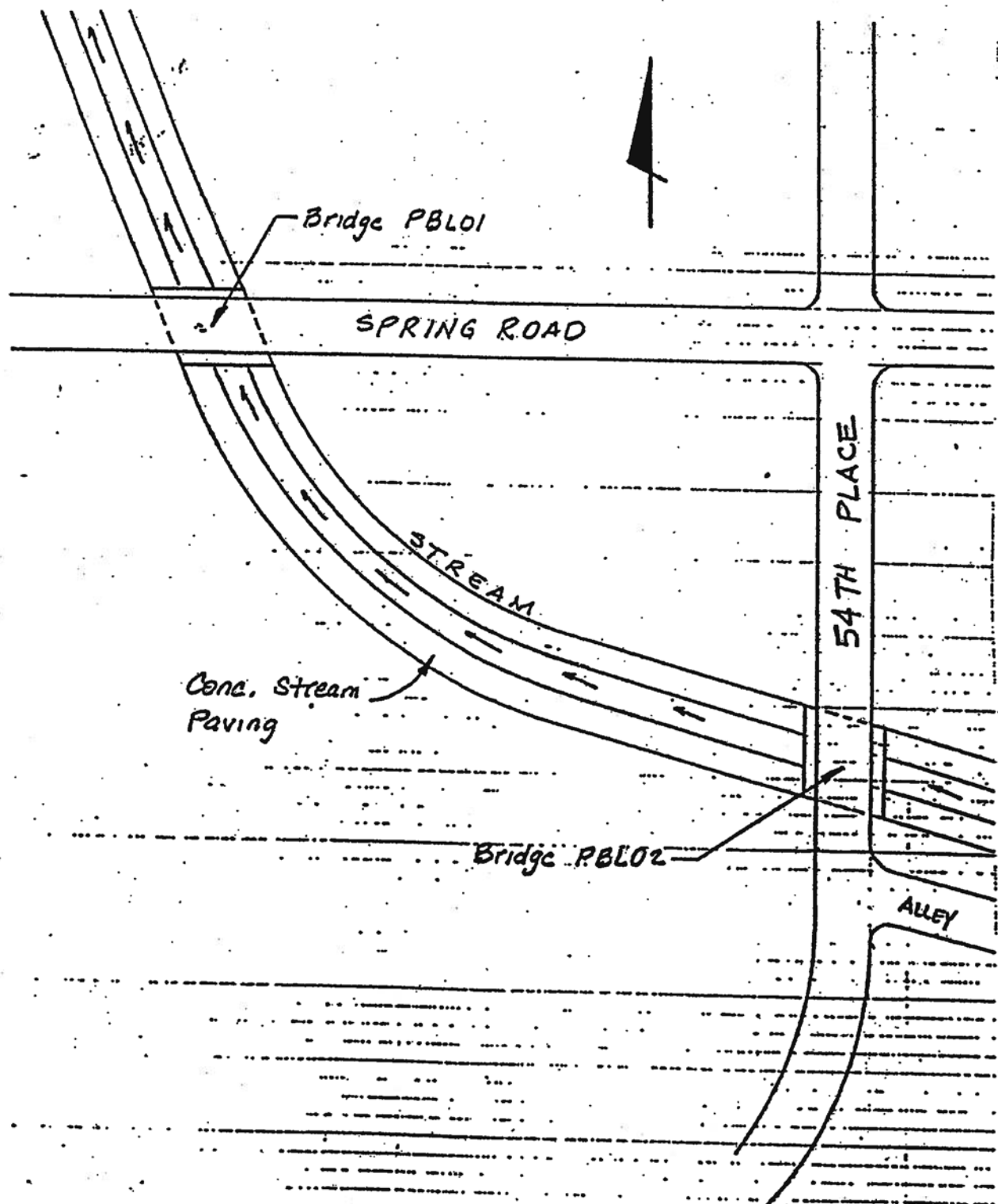
The condition report and recommendations presented herein are based on a visual inspection of accessible portions of the existing structure. No responsibility is assumed by Century Engineering, Inc. for the presence of any latent structural defects that cannot be detected by such visual inspection.

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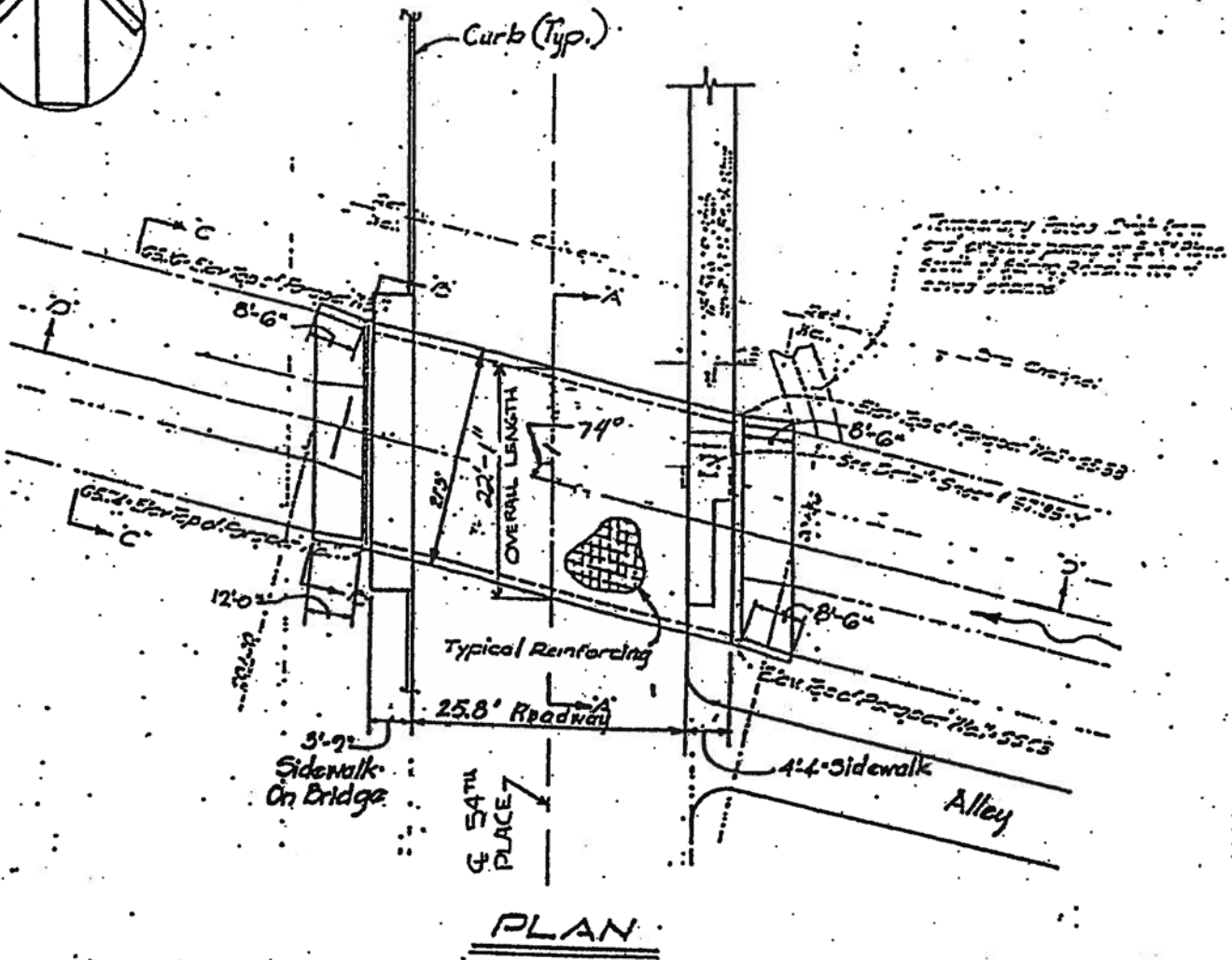
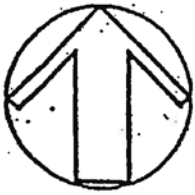


BRIDGE NO. PBL02 - 54TH PLACE OVER STREAM



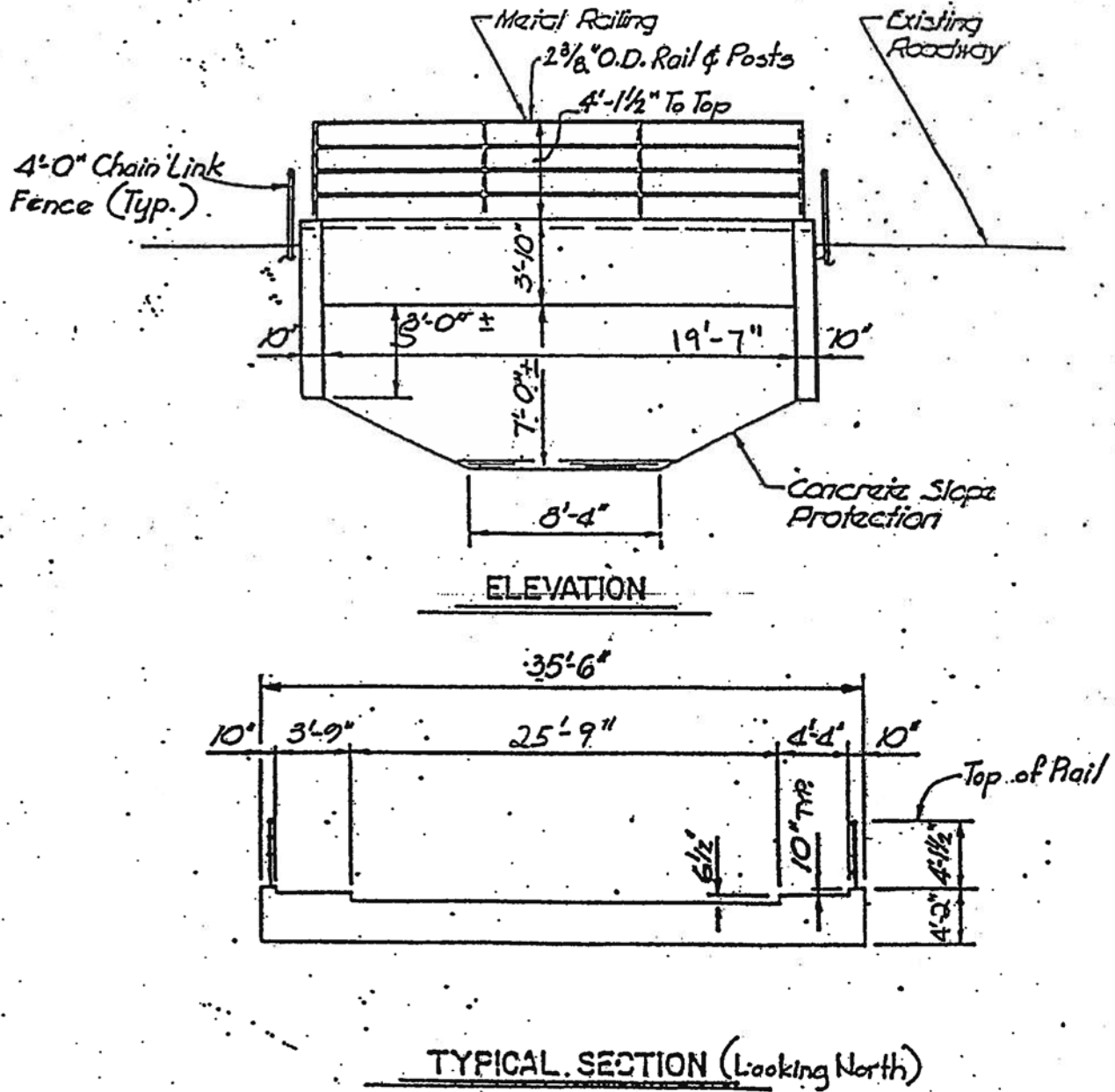
PBL02

BRIDGE NO. PBL02 - 54TH PLACE OVER STREAM



PBL02

BRIDGE NO. PBL02 - 54TH PLACE OVER STREAM



PBL02

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL02R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name 54TH PLACE Crossing STREAM Photos 24
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

DESCRIPTION:

Single-span concrete rigid-frame bridge with an asphalt wearing surface. Substructure consists of concrete rigid-frame wall abutments with concrete slope and channel protection. The concrete slab and walls were reconstructed at a later date. The bridge carries a two-lane roadway and two sidewalks. The stream flows from east to west under the structure. The numbering convention for the bridge is from the north and the west.

OVERALL LENGTH:	<u>22'-1"</u>	CLEAR ROADWAY:	<u>25'-9"</u>
YEAR BUILT:	<u>1958</u>	POSTED LOAD:	
YEAR REHABILITATED:	<u>-</u>	SINGLE, LBS	<u>28,000 G.V.W.</u>
POSTED SPEED LIMIT:	<u>25 MPH</u>	COMBINATION, LBS	<u>-</u>
		BEAM SPACING:	<u>-</u>
MAP COORDINATES:	<u>12F7</u>	NUMBER OF BEAMS:	<u>-</u>
	<u>5410C10</u>	SIZE OF BEAMS:	<u>-</u>

ROADWAY APPROACHES:

Section	25'-9" wide asphalt roadway with one lane in each direction.
Alignment	There is a two way stop at the north approach and a sharp horizontal curve at the south approach.
Profile	Slight uphill grade towards the south.
Traffic Barrier	There are no approach traffic barriers.

REVIEW OF ITEM 113 - SCOUR POTENTIAL RATING: 8P

Item 113 was previously rated an 8P, which implies that the bridge is a culvert type structure with a paved bottom. Based on the observed conditions, this rating is still valid and does not require reevaluation.

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL02R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name 54TH PLACE Crossing STREAM Photos 24
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

REVIEW OF PREVIOUS REPORT:

A 2019 Bridge Inspection Report prepared by Sabra & Associates was available and used for comparison purposes. The overall condition of the culvert appeared to be essentially the same as noted in the previous report with the following exceptions:

1. There is cracking with efflorescence along the exterior face of the East Parapet.
2. There is scaling along the bottom edges of the slope protection panels.

LIVE LOAD RATINGS:

The load ratings were re-calculated by Wallace, Montgomery & Associates, LLP during the 2013-2014 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The load ratings for the Maryland Legal Load vehicles are as follows:

<u>Truck</u>	<u>Gross Vehicle Weight</u>	<u>Inventory</u>	<u>Operating</u>
H-15	15 tons	28 tons	47 tons
HS-20	36 tons	50 tons	85 tons
Type 3	33 tons	37 tons	63 tons
Type 3S2	40 tons	70 tons	99 tons

The bridge is currently posted at 28,000 lbs. for single-unit vehicles only. Based on the above previously computed load ratings, we recommend removing the current posting sign.

The recommendation for not posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

SI&A CONDITION RATING SUMMARY:

<u>Item</u>	<u>Current</u>	<u>2019</u>	<u>2017</u>	<u>2015</u>
Deck (Item 58) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
P-BL02001				03/25/2021

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No.	<u>P-BL02R</u>	Bridge Type	<u>SINGLE-SPAN CONCRETE RIGID-FRAME</u>	Year Built	<u>1958</u>
Name	<u>54TH PLACE</u>	Crossing	<u>STREAM</u>	Photos	<u>24</u>
Inspection Date	<u>03/25/2021</u>	Inspection Crew	<u>C. Percy, D. Ross</u>		
Superstructure (Item 59) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	
Substructure (Item 60) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	
Channel and Channel Protection (Item 61) -	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	
Culvert (Item 62) -	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>	
Waterway Adequacy (Item 71) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>	
Approach Roadway Alignment (Item 72) -	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	
Bridge Sufficiency Rating (BSR) -	<u>91.5</u>	<u>91.5</u>	<u>91.5</u>	<u>91.5</u>	
Routine Inspection Frequency -	<u>24 months</u>	<u>24 months</u>	<u>24</u>	<u>24</u>	
Date of Inspection -	<u>03/25/2021</u>	<u>03/05/2019</u>	<u>03/20/2017</u>	<u>03/09/2015</u>	
Partial Interim Inspection Frequency -	<u>N/A</u>				

Load Rating Summary:

The load ratings were re-calculated by Wallace, Montgomery & Associates, LLP during the 2013-2014 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The load ratings for the Maryland Legal Load vehicles and Permit Vehicles are as follows:

<u>Vehicle</u>	<u>Gross Vehicle Weight</u>	<u>Inventory Rating (Tons)</u>	<u>Operating Rating (Tons)</u>
HL-93	36 tons		
H-15	15 tons	28.0	47.0
T-3	33 tons	37.5	63.0
T-4	35 tons	39.5	66.0
HS-20	36 tons	50.5	85.0
T-3S2	40 tons	70.0	99.9
150K	75 tons	80.0	99.9
90K Permit	45 tons	79.5	83.0
90K Mobile Crane	45 tons	78.5	81.5
90K Cargo	45 tons	61.0	99.9
80K Cargo	40 tons	70.0	99.9
120K Vehicle	60 tons	66.0	99.9
108K Mobile Crane	54 tons	55.0	92.5
120K Mobile Crane	60 tons	68.5	99.9

The bridge is currently posted at 28,000 lbs. for single-unit vehicles only. Based on the above previously computed load ratings, we recommend removing the current posting.

The recommendation for not posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

2021 BRIDGE INSPECTION REPORT

Bridge No. P-BL02R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name 54TH PLACE Crossing STREAM Photos 24
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

BRIDGE INSPECTOR'S RECOMMENDATIONS FOR MAINTENANCE REPAIRS

DESCRIPTION	COUNTY ITEM NUMBER	QUANTITY	UNIT COST	TOTAL COST
<u>Immediate:</u>				
1 Install object markers at all four corners of the structure.	81	4 EA	\$200/EA	\$800
2 Install bridge rail that meets current MDSHA standards.	22	40 LF	\$100/LF	\$4,000
3 Install flared and turned down end treatments at the Northwest, Northeast and Southwest Embankments.	21	3 EA	\$1150/EA	\$3,450
4 Install MDSHA Type K end treatment at the Southeast Embankment.	21	1 EA	\$1150/EA	\$1,150
Subtotal (Immediate Items)				\$9,400
<u>Routine:</u>				
1 Repair the undermining of the Northeast Sidewalk.	99	2 CF	\$60/CF	\$120
Subtotal (Routine Items)				\$120
<u>Preventative:</u>				
1 Repair delaminated concrete along the outside face of both parapets.	2	7 CF	\$350/CF	\$2,450
2 Patch spalls on concrete channel protection.	6	4 CF	\$50/CF	\$200
3 Remove existing load posting sign.	83	1 EA	\$250/EA	\$250
4 Repair disconnected top rail of the Northeast Fence and damaged section of the Southeast Fence	101	15 LF	\$50/LF	\$750
5 Seal the cracks in the roadway over the bridge and at the approaches.	23	300 LF	\$10/LF	\$3,000
6 Replace the missing section of the Northwest Fence	101	10 LF	\$50/LF	\$500
7 Replace deteriorated joint material between abutment and wing walls	11	20 LF	25/LF	\$500
Subtotal (Preventative Items)				\$7,650
Total:				\$17,170

Immediate Repairs - Severe Defects that may affect the serviceability of the structure or are missing safety features that present a hazard to the public. Immediate repairs should be scheduled within 12 months of notification.

Routine Repairs - Moderate defects that do not presently affect the serviceability of the structure. Routine repairs should be scheduled, and given priority, within the current maintenance schedule.

Preventative Repairs - Minor defects that do not presently affect the serviceability of the structure. Preventative repairs should be scheduled within the current maintenance schedule.

2021 BRIDGE INSPECTION REPORT

GEOMETRY

Bridge No. P-BL02R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958

Name 54TH PLACE Crossing STREAM Photos 24

Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

MAP COORDINATE	5410C10	12F7	NEW ADC	OLD ADC
SKEW WITH HORIZONTAL (DEGREES)	16			
STRUCTURE TYPE	Rigid Frame			
OVERALL LENGTH	22'-1"			
NO. OF SPAN	0001	NO. OF CELLS		
SPAN LENGTH	S020S			
VERTICAL CLEARANCE	A - < 10'			
OUT-TO-OUT (FEET)	0355			
ROADWAY WIDTH (FEET)	25'-9"			
APPROACH ROADWAY WIDTH	00	026		00
SHOULDER WIDTH	N	N		N
CURB/SIDEWALK WIDTH	038	042		
NO OF BEAMS	-			
SIZE OF BEAMS	-			
BEAM SPACINGS	-			
ABUTMENT TYPE	MATERIAL 1 - Concrete	TYPE 7 - Non-definable	CODE 1 - Predominant Feature	
ABUTMENT FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None	CODE 0 - Entire Structure	
PIER TYPE	MATERIAL N - Not Applicable	TYPE	CODE	
PIER FOOTING	MATERIAL N - Not Applicable	TYPE OF PILE	CODE	
WINGWALL TYPE	MATERIAL 1 - Concrete	TYPE	CODE	
WINGWALL FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE	CODE	
BEARING TYPE	1ST BEARING N - None or N/A	2ND BEARING N - None or N/A	3RD BEARING N - None or N/A	
SPAN OF CULVERT	N			
RISE OF CULVERT	N			
CULVERT WALL THICKNESS (IN)				

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

58 DECK

CONDITION RATING

1. Wearing Surface	7	Type - Asphalt
2. Deck - Topside	-	
3. Deck - Underside	7	Type - Concrete
4. Curbs	7	Type - Concrete
5. Median	-	
6. Sidewalks	6	
7. Parapets	6	Type - Concrete
8. Railing	5	Type - Four-strand steel pipe railing
9. Roadway Joints	-	
10. Drainage System	-	
11. Lighting Standards	-	
12. Utilities	-	Type - Overhead lines over north approach
13. Other		

Inspector's Condition Rating (58) 7

58.1 – There are a few isolated longitudinal cracks up to 1/8" wide in the wearing surface over the structure.

58.3 – The soffit is in good condition. There is a longitudinal hairline crack with light efflorescence in the underside of the top slab along the centerline of the roadway and one hairline diagonal crack at the northwest corner of the top slab (see Photo 7).

58.4 – There are minor edge spalls along the curbs.

58.6 – There are shallow spalls and minor scaling throughout both sidewalks. There is up to 1/2" differential settlement between sidewalk panels near the Northeast and Northwest Transition. There is vegetation and debris between sidewalk panels and the curb. There are minor pop out spalls in some of the Northeast Sidewalk panels (see Photo 8).

58.7 – There are hairline cracks in the parapets at the base of the railing posts. The gunite coating on the exterior face of the parapets has delaminated with uneven areas throughout. The hairline vertical cracks at the base of the railing posts are typical along the West Parapet. The hairline vertical crack on the West Parapet at the base of Post 2 has efflorescence on both faces (see Photo 9). There are hairline map cracks throughout the gunite along the outside face of the West Parapet. There is a 2'-3" long x 6" high area where the gunite coating has failed at the north end of the West Parapet (see Photo 10). There is cracking with efflorescence in the exterior face of the East Parapet (see Photo 11). There are three cracks between 0.012" and 0.05" wide in the East Parapet at the base of the railing posts.

58.8 – There is light surface rust throughout both railings at the welds. There are no anchor bolts at all

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

the base plates (see Photo 12). There is a dent in the bottom rail of the West Railing between Posts 2 and 3. There are two cracked welds in the West Railing, one at Post 2 and the bottom rail (see Photo 13) and the other at Post 3 and the bottom rail. The East Railing is loose and slightly leaning to the east. There is up to 100% section loss at the base of Post 4 of the East Railing (refer to Photo 12). There is a dent on the post at the south end of the East Railing (see Photo 14). There are nine cracked welds at the railing to posts connections in the East Railing.

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

59 SUPERSTRUCTURE

Number of Spans 1
 Type of Construction Concrete Rigid-Frame

	CONDITION RATING	
1. Bearing Devices	-	
2. Girders or Beams	-	
3. Stringers	-	
4. Floor Beams	-	
5. Diaphragms/Crossframes	-	
6. Paint	-	
7. Other Rigid Frame Top Slab	7	Type - Rigid-frame top slab
8. Rivets or Bolts	-	
9. Welds - Cracks	-	
10. Rust	-	
11. Timber Decay	-	
12. Concrete Cracking	7	
13. Collision Damage	-	
14. Deflection Under Load	8	
15. Alignment of Members	8	
16. Vibrations Under Load	8	
17. Fracture Critical Members	-	

Inspector's Condition Rating (59) 7

59.7 - See comments for Item 58.3.

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

60 SUBSTRUCTURE

CONDITION RATING

1. Abutments	-Wingwalls	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
	-Backwalls	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Stems	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
	-Footings	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Scour/Erosion	<div style="border: 1px solid black; padding: 2px 10px;">8</div>	
	-Settlement	<div style="border: 1px solid black; padding: 2px 10px;">8</div>	
	Overall Abutment Rating	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	Abutment Type Concrete rigid-frame
2. Piers or Bents	-Caps	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Columns/Shaft	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Footings	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Scour/Erosion	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Settlement	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	Overall Pier Rating	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	Pier Type
3. Pile Bents	-Caps	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
4. Concrete Cracking or Spalling		<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
5. Steel Corrosion		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
6. Timber Decay		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
7. Other _____		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
8. Debris on Seats		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
9. Paint		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
10. Collision Damage		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
11. Overall Undermining/Scour		<div style="border: 1px solid black; padding: 2px 10px;">8</div>	

Inspector's Condition Rating (60)

7

60.1 – There are several isolated vertical hairline cracks throughout the abutments.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

There are several minor spalls in the wingwalls along the joints with the abutments. There is minor water stains at the bottom of these joints. The expansion joints between the parapets and wingwalls are open and joint material is exposed at all four corners. The joint material between the wingwall and the abutment is deteriorating (see Photo 15). There is vegetation overgrowth at the Southwest Wingwall.

Fence: There is a chain-link fence adjacent to the wingwalls that continues to the slope protection. There is minor to moderate rust throughout the fence. There is vegetation growth throughout the fence along the Southeast, Northeast and Southwest Wingwalls. The top rail of the fence along the Northwest Wingwall is disconnected from the post at the end of the wingwall (see Photo 16). There is a missing fence post cap at the fence along the Southwest Wingwall. There are tree trunks growing through the fence over the Southeast Wingwall causing the mesh to pull away from Post 3 up to 9".

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

61 CHANNEL AND CHANNEL PROTECTION

	CONDITION RATING	
1. Channel Scour	<div>6</div>	
2. Embankment Erosion	<div>7</div>	
3. Drift/Debris	<div>8</div>	
4. Vegetation	<div>7</div>	
5. Channel Alignment	<div>8</div>	
6. Fender System	<div>-</div>	
7. Spur Dikes and Jetties	<div>-</div>	
8. Riprap/Slope Protection	<div>6</div>	Type - Concrete

Inspector's Condition Rating (61)

6

61.1 - There is up to 2" deep abrasion throughout the invert of the concrete lined channel.

61.4 - There is heavy vegetation growth on the Southwest, Northeast and Southeast Slope Protection.

61.5 - The stream flows from east to west under the structure. The upstream and downstream channels curve to the north.

61.8 - There are hairline to 1/16" wide cracks with efflorescence throughout the concrete slope protection. There are small spalls along the base of the concrete slope protection. There is an 1/8" wide crack underneath the storm drain outfall in the Northwest Wingwall. On the North Slope Protection under the bridge, there is an area of hairline map cracking at the west end and a full-height hairline vertical crack with light efflorescence at the east end (see Photo 17) as well as two spalls 8" high x 3" wide x 2" deep and 8" high x 4 1/2" wide x 2" deep with exposed reinforcement along the joint (see Photo 18). There is scaling along the bottom edges which is typical for all slope protection panels (see Photo 19).

Fence: There is minor to moderate rust and minor misalignments throughout the fence. There is vegetation growth throughout the Northeast, Southeast and Southwest Fence. There are tree stumps throughout the Northwest Fence causing the mesh to pull away from the posts up to 1'-6". There is a missing section of the Northwest fence (see Photo 20). There is vegetation overgrowth along the Southwest Fence (see Photo 21). The top rail of the Northeast Fence is disconnected from the post. The top rail of the Southeast Fence is laying in the stream channel and the mesh is bent and pushed out to the north (see Photo 22).

**2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS**

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

71 WATERWAY ADEQUACY

Opening	<input type="text" value="Good"/>	Fair	Poor
Alignment	Good	<input type="text" value="Fair"/>	Poor
Frequency of Overtopping	Remote	<input type="text" value="Slight"/>	Occasional Frequent

Inspector's Condition Rating (71)

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

72 APPROACH ROADWAY ALIGNMENT APPRAISAL RATING

- | | | | | | |
|--------------------------|----------|-------|--------------|------|--|
| 1. Vertical Alignment | N | Good | Fair | Poor | - Slight uphill grade towards south |
| | S | Good | Fair | Poor | |
| 2. Horizontal Alignment | N | Good | Fair | Poor | - Two-way stop at north approach |
| | S | Good | Fair | Poor | - Sharp horizontal curve at south approach |
| 3. Speed Limit Reduction | None | Minor | Substantial | | |
| 4. Sight Distance | Adequate | | Not Adequate | | |

Inspector's Condition Rating (72) 6

APPROACH ROADWAY

- | | | |
|---|---|--|
| | CONDITION
RATING | |
| 5. Approach Traffic Barrier | - | |
| 6. Approach Pavement | 6 | Type - Asphalt |
| 7. Approach Embankments | 6 | |
| 8. Approach Slabs | - | |
| 9. Relief Joints | - | |
| 10. Signing - Legibility and Visibility | Good Fair Poor | Type - Load posting and "NO THRU TRUCK" sign at south approach only. |
| 11a. Roadway Speed Limit | 25 MPH | 11b. Posted Bridge Speed Limit n/a |
| 12. Posted Load Limits | 28,000 G.V.W. - | |
| 13. Traffic Safety Features | | |
| a. Bridge Railing | 0 | 1 N Type - Steel Pipe Railing |
| b. Transitions | 0 | 1 N Type - No Approach Transitions |
| c. Approach Traffic Barrier | 0 | 1 N Type - No Approach Traffic Barrier |
| d. Approach Traffic Barrier Ends | 0 | 1 N Type - No Approach Traffic Barrier Ends |

72.5 - There are no approach traffic barriers.

72.6 - There are up to 1" wide transverse, longitudinal and map cracks in the North Approach roadway (see Photo 23). There are up to 1/8" wide longitudinal and transverse cracks throughout the South Approach roadway (see Photo 24).

72.7 - The Northeast Sidewalk is undermined 2'-6" long x 3 1/2" high x 1'-6" deep. The approach curb adjacent to this area is settled up to 1/2". The Southeast Sidewalk has a 3 1/2" high drop-off along the

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL02R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name 54TH PLACE **Crossing** STREAM **Photos** 24
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

edge for a 10'-0" length.

72.10 - There are no object markers at the structure. The load posting sign on the west side of the South Approach is posted on the wrong side of the street and does not meet current standards. There is no load posting sign in place at the North Approach. There is no advance load posting signs in place at the nearest intersections of the approaches. The bridge is currently posted at 28,000 lbs for single-unit vehicles.

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



1. North Approach Looking South



2. South Approach Looking North

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



3. West (Downstream) Elevation



4. East (Upstream) Elevation

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



5. Looking West (Downstream)



6. Looking East (Upstream)



7. Soffit - Full-width Longitudinal Crack with Efflorescence



8. Sidewalk - Spall and Settlement in Panel of Northeast Sidewalk



9. Railing - Vertical Crack with Efflorescence in Interior Face of West Parapet



10. Parapet - Area of Failure in Coating at north End of West Parapet



11. Parapet - Cracks with Efflorescence along Exterior Face of East Parapet



12. Railing - Typical Missing Anchor Bolts at Base of Railing Posts and Section Loss at Base of Post 4 of East Railing

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



13. Railing - Typical Cracked Welds in East and West Railing



14. Railing - Dent in Post at South End of East Railing



15. Wingwall - Deteriorating Joint Material between Northwest Wingwall and North Abutment



16. Wingwall - Disconnected Top Rail of Fence along the Northwest Wingwall



17. Slope Protection - Vertical Crack with Efflorescence at East End of North Slope Protection



18. Slope Protection - Spall with Exposed reinforcement in North Slope Protection at East End

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



19. Slope Protection - Typical Scaling along Bottom of Slope Protection



20. Fence - Missing Section of Northwest Fence

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



21. Fence - Vegetation Growth over Southwest Fence



22. Fence - Damaged Section of Southeast Fence

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL02R - 54TH PLACE OVER STREAM



23. Approach - Map Cracking Throughout North Approach Pavement



24. Approach - Longitudinal and Transverse Cracks in South Approach Pavement

STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER: P-BL02001

IDENTIFICATION

FORM 1 OF 13

(8) STRUCTURE NUMBER:	2	00000	Major Structure	P-	BL02	01	Major Structure > 20' 0"	0	Single Structure
(8) FHWA NUMBER:									
(7) FACILITY CARRIED:	54TH PLACE								
(6) FEATURE INTERSECTED:	STREAM								
(255) FEDERAL SUBMITTAL INDICATOR:	Y	Yes							
(262) NAME OF STRUCTURE:									
(27) YEAR BUILT:	1958	(106) YEAR RECONSTRUCTED:	1981						
(263) ADDITIONAL RECONSTRUCTION YEARS:	N	N							
(1) STATE CODE:	243	Maryland	(2) DISTRICT CODE:	03	03				
(3) COUNTY CODE:	033	GEORGE'S	(4) PLACE CODE:	07850					
(5) INVENTORY ROUTE:	1	Route carried "on" the structure	5	City Street	1	Mainline	00540	0	Always
		(Route Prefix)		(Level of Service)		(Number)		(Direction)	
(9) LOCATION:	50 FT S. OF SPRING ST.								
(11) MILEPOINT:	0000020								
(12) BASE HIGHWAY NETWORK:	0	Inv. Route is NOT on the Base Network							
(266) GIS ROUTE ID:									
(267) GIS MILEPOINT:									
(268) SCENIC ROUTE:	N								
(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:	605400110000								
(16) LATITUDE:	(A)	38562314	(B)	38562290	(C)	38562283	(D)	38562306	
(17) LONGITUDE:	(A)	076552920	(B)	076552920	(C)	076552883	(D)	07655288	
(28) LANES ON:	02	LANES UNDER:	00						
(42) TYPE OF SERVICE ON:	5	Highway-Pedestrian							
TYPE OF SERVICE UNDER:	5	Waterway							
(98) BORDER STATE:		BORDER STATE'S SHARE %:							
(99) BORDER STATE'S NUMBER:									

CLASSIFICATION

FORM 2 OF 13

(104) HWY SYSTEM:	N	No, Inventory Route is not on the NHS	(103) TEMPORARY STRUCTURE:		
(105) FEDERAL LANDS HWYS:	0	Not applicable	(110) NATIONAL NETWORK:	N	No, the inventory route is not part of the national network for trucks.
(26) FUNCTIONAL CLASS:	19	Urban Local	(20) TOLL:	3	On free road
(100) DEFENSE HWY:	0	The inventory route is not a STRAHNET route	(21) MAINTENANCE:	04	City or Municipal Highway Agency
(101) PARALLEL STRUCTURE:	N	No parallel structure	(22) OWNER:	04	City or Municipal Highway Agency
(102) DIRECTION:	2	2-way traffic	(37) HISTORICAL SIGNIFICANCE:	5	Not eligible

TRAFFIC

FORM 3 OF 13

(19) DETOUR:

(29) ADT:

(114) FUTURE ADT:

(109) TRUCK ADT %:

(30) ADT YEAR:

(115) FUTURE ADT YEAR:

STRUCTURE TYPE AND MATERIAL

FORM 4 OF 13

(43) STRUCT TYPE: Concrete Rigid Frame

(44) STRUCT TYPE - APPR: Not Applicable Other

(232) BOX CULVERT ON PILES: None Entire Structure

(208) STRUCT TYPE - WIDENED/EXTENDED:

(219) SLOPE PROTECTION: Concrete

(228) FOOTING - ABUTMENT: Concrete None Entire Structure

(229) SUBSTRUCT ABUTMENT: Concrete Non-definable Predominant Feature

(230) FOOTING - PIER: Not Applicable

(231) PIER TYPE: Not Applicable

(242) BEARING TYPE: None or N/A None or N/A

(108) WEARING SURFACE: Bituminous None None

(243) JOINT TYPE: None None None

(206) STRUCT SUBTYPE - MAIN: Not Applicable

(257) SCOUR PROTECTION:

(221) STRUCTURAL STEEL: Not Applicable

(107) DECK STRUCTURE TYPE: Concrete Cast-in-Place

(207) STRUCT SUBTYPE - APPR: Not Applicable

(270) CONC. DECK SPECIAL TYPE: Not Applicable

(233) DECK - COMP/NON-COMP: Non-Composite

(259) STAY-IN-PLACE FORMS:

(235) PARAPET: Concrete-Rectangular

(236) RAILING: Steel - Other None - None

(237) FENCING: None - None

(278) PAINT SYSTEM: Not Applicable

(344) PAINT COLOR/NUMBER: Not Applicable

(345) YEARS PAINTED:

GEOMETRICS

(112) NBIS BRIDGE LENGTH:	<input type="text" value="Y"/>	(49) STRUCTURE LENGTH:	<input type="text" value="0000220"/>		
(210) NUMBER OF SPANS:	<input type="text" value="0001"/>	(45) # SPANS IN MAIN UNIT:	<input type="text" value="001"/>		
(46) # APPROACH SPANS:	<input type="text" value="0000"/>	(209) CONTINUOUS SPANS:	<input type="text" value="N"/>		
(48) LENGTH MAX SPAN:	<input type="text" value="0020"/>	(238) # STRINGERS - ORIGINAL:	<input type="text" value="00"/>		
(240) SPACING - ORIGINAL:	<input type="text" value="N"/>	(239) # STRINGERS - WIDENED:	<input type="text" value="00"/>		
(241) SPACING - WIDENED:	<input type="text" value="N"/>	(33) BRIDGE MEDIAN:	<input type="text" value="0"/>		
(50) CURB/SIDEWALK WIDTHS:	<input type="text" value="038"/>	(205) MEDIAN WIDTH:	<input type="text" value="000"/>		
	<input type="text" value="042"/>	(32) APPROACH ROAD WIDTH:	<input type="text" value="00"/>	<input type="text" value="026"/>	<input type="text" value="00"/>
(51) DECK CURB-CURB WIDTH:	<input type="text" value="0258"/>	(10) INVENT ROUTE, MIN VERT CLEAR:	<input type="text" value="9999"/>		
(52) DECK OUT-OUT WIDTH:	<input type="text" value="0355"/>	(47) INVENT ROUTE, TOTAL HORIZ CLEAR:	<input type="text" value="258"/>		
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	<input type="text" value="9999"/>				
(54) MIN. VERT. UNDERCLEARANCE:	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="A"/>	< 10'	
(55) MIN. LAT. CLEARANCE (RIGHT):	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="999"/>		
(56) MIN. LAT. CLEARANCE (LEFT):	<input type="text" value="000"/>		(342) HORIZ CLEARANCE (ON):	<input type="text" value="02510"/>	<input type="text"/>
(34) SKEW, IN DEGREES:	<input type="text" value="16"/>	(280) HORIZ CLEARANCE (UNDER):	<input type="text" value="N"/>	<input type="text"/>	
(35) STRUCTURE FLARED:	<input type="text" value="N"/>	(253) NUMBER OF CELLS:	<input type="text" value="N"/>		
(256) SPAN OF CELLS:	<input type="text" value="N"/>	(254) RISE:	<input type="text" value="N"/>		
		(258) EARTH FILL:	<input type="text" value="N"/>		
		(343) CENTERLINE LENGTH (Culverts/Pipes):	<input type="text" value="N"/>		

(223) SHOULDER WIDTHS:	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>
------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------

(264) TYPE AND SPAN:	<div>RF 20'</div>
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BRIDGE NUMBER: P-BL02001

LOAD RATINGS AND POSTINGS

(41) STATUS: Posted for load

(31) DESIGN LOAD: HS 20

(398) PEDESTRIAN LOADING:

(399) RAILROAD LOADING:

(70) POSTING: Equal to or above legal loads

(65) METHOD USED TO DETERMINE INVENTORY RATING: 1 Load Factor (LF)

(63) METHOD USED TO DETERMINE OPERATING RATING: 1 Load Factor (LF)

(224) WEIGHT POSTED:

(New Split)

(66) INVENTORY RATING:

(64) OPERATING RATING:

(400) DATE OF RATING:

	INVENTORY RATING	OPERATING RATING
HL-93 Vehicle	(402)	(401)
H-15 Vehicle	(404) 280	(403) 470
T3 (Dump Truck) Vehicle	(406) 375	(405) 630
T4 Reduced Lift Axle Vehicle	(408) 395	(407) 660
HS Vehicle	(410) 505	(409) 850
3S2 Vehicle	(412) 700	(411) 999
150K Vehicle	(414) 800	(413) 999
90K Permit Combination Vehicle	(416) 795	(415) 830
90K Mobile Crane Vehicle	(418) 785	(417) 815
90K Cargo Vehicle	(420) 610	(419) 999
80K Cargo Vehicle	(422) 700	(421) 999
120K Vehicle	(424) 660	(423) 999
108K Mobile Crane Vehicle	(426) 550	(425) 925
120K Mobile Crane Vehicle	(428) 685	(427) 999

(225) SPEED LIMIT ON STRUCTURE:

(226) MIN VERT CLEARANCE OVER ROADWAY POSTED: ☒ Posting signs not required

(227) MIN VERT UNDERCLEARANCE POSTED: ☒ Posting signs not required

FORM 6 OF 13

CONDITION INSPECTION

FORM 7 OF 13

	Inspection Month	(91) Frequency	Due Date	(90) Inspection Date	(290) Inspection Report Completion Date
Routine Inspection	03	24	03/25/2023	03/25/2021	06/25/2019

Critical Feature Inspections	(291) Inspection Month	(92) Frequency	Due Date	(93) Critical Feature Inspection Date
(A) Fracture Critical Members		N		
(B) Underwater Inspection		N		
(C) Special Inspection		N		
(D) Hands-on Railroad		N		
(E) Confined Space		N		
(F) Ultrasonic Testing (UT) Pin		N		
(G) Ultrasonic Testing (UT) Anchor		N		
(H) Post Tensioning Bar		N		
(I) Cathodic Protection		N		
(J) Consultant		N		
(K) Movable Bridge		N		
(L) Suspension Bridge		N		
(M) Cable		N		
(N) Monitor		N		
(P) Flood				
(Q) Damages				
(R) Inquires				

(58) DECK:	<input type="text" value="7"/>	Good Condition	(59) SUPERSTRUCTURE:	<input type="text" value="7"/>	Good Condition
(60) SUBSTRUCTURE:	<input type="text" value="7"/>	Good Condition	(61) CHANNEL/PROTECTION:	<input type="text" value="6"/>	Bank slump. widespread minor damage
(62) CULVERTS:	<input type="text" value="N"/>	Not Applicable			
(310) INSPECTION DATA UPDATE DATE:	<input type="text" value="02/18/2015"/>		(312) LEAD INSPECTOR:	<input type="text" value="Caleb Percy, P.E."/>	
(311) INSPECTION TEAM:	<input type="text" value="YCE"/>		(313) BRIDGE INSPECTOR:	<input type="text" value="Daria Ross"/>	
(314) HOURS TO INSPECT:	<input type="text" value="003"/>	(316) DECK PLANKING %:	<input type="text" value="N"/>	(315) DECK PUNCTURES %:	<input type="text" value="00"/>
(317) DECK PATCHING %:	<input type="text" value="00"/>	(318) BLOCKING:	<input type="text" value="00"/>	(319) POWER WASHING:	<input type="text" value="N"/>
(320) IDENTIFICATION NO.:	<input type="text" value="N"/>	(321) INVENTORY DIRECTION:	<input type="text" value="SOUT H"/>	(323) PERMIT:	<input type="text" value="N"/>
(324) NIGHT WORK:	<input type="text" value="N"/>	(325) WEEKEND WORK:	<input type="text" value="N"/>		
(322) LOOKING TOWARD:	<input type="text" value="MARYLAND ROUTE 450"/>				
(326) MAINTENANCE OF TRAFFIC STANDARDS:	<input type="text" value="N"/>				
(327) MOT COMMENTS:	<input type="text"/>				
(328) LOCATION OF MIN. VERT. UNDERCLEARANCE:	<input type="text"/>				

BRIDGE NUMBER: P-BL02001

(329A) CRITICAL FINDINGS: (329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: ☒ Posting signs not required

(340) INSPECTION EQUIPMENT:

<input type="text" value="W"/>	Waders	<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	

(333) MHOI: (334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION:

(336) ADVANCED NOTIFICATION COMMENTS:

BRIDGE NUMBER: P-BL02001

APPRAISAL

FORM 8 OF 13

(67) STRUCTURAL EVALUATION:	<input type="text" value="7"/>	<div>BSR 91.5</div>	(68) DECK GEOMETRY:	<input type="text" value="5"/>
(69) UNDERCLEARANCE:	<input type="text" value="N"/>		(72) APPROACH ALIGNMENT:	<input type="text" value="6"/>
(71) WATERWAY ADEQUACY:	<input type="text" value="7"/>			
(36) TRAFFIC SAFETY FEATURES	RAILINGS:	<input type="text" value="0"/>	Does NOT meet Standards	
	TRANSITIONS:	<input type="text" value="0"/>	Does NOT meet Standards	
	APPROACH BARRIER:	<input type="text" value="0"/>	Does NOT meet Standards	
	APPROACH BARRIER ENDS:	<input type="text" value="0"/>	Does NOT meet Standards	
(113) SCOUR EVALUATION:	<input type="text" value="8P"/>	Bridge is a culvert-type structure with paved bottom.		
(DT) DEDUCT CODE:	<input type="text" value="Z"/>	<input type="text"/>		
(STAT) STATUS:	<input type="text" value="0"/>	Not Deficient		

NAVIGATION

FORM 9 OF 13

(38) NAVIGATION CONTROL:	<input type="text" value="0"/>	(39) NAV VERT CLEARANCE:	<input type="text" value="000"/>
(40) NAV HORIZONTAL CLEARANCE:	<input type="text" value="0000"/>		
(111) PIER/ABUTMENT PROTECTION:	<input type="text"/>		
(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:	<input type="text"/>		
(247) DESIGN YEAR STORM:	<input type="text" value="000"/>	(248) RUN-OFF Q:	<input type="text" value="000000"/>
(249) DRAINAGE AREA:	<input type="text" value="000000"/>	(250) STRUCTURE IN TIDAL AREA:	<input type="text" value="N"/> No
(251) HIGH WATER ELEVATION:	<input type="text" value="000"/>		
(252) YEAR HIGH WATER ELEVATION - LATEST:	<input type="text" value="0000"/>		

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 13

(201) CONTRACT NUMBERS:	<input type="text"/>			<input type="text"/>		
	<input type="text"/>			<input type="text"/>		
(203) SHA SPEC- YEAR:	<input type="text" value="0000"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>		
(204) AASHTO SPEC-YEAR:	<input type="text" value="0000"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>		
(75) TYPE OF PROPOSED WORK:	<input type="text"/>	<input type="text"/>	(76) LENGTH OF IMPROVEMENT:	<input type="text" value="000000"/>		
(94) BRIDGE IMPROVE COST:	<input type="text" value="000000"/>			(95) ROADWAY IMPROVE COST:	<input type="text" value="000000"/>	
(96) TOTAL PROJECT COST:	<input type="text" value="000000"/>			(97) YEAR OF IMPROVEMENT:	<input type="text"/>	

BRIDGE NUMBER: P-BL02001

MISCELLANEOUS

FORM 11 OF 13

(244) SIGNS ON STRUCTURE: ☐ No

(245) BRIDGE ROADWAY LIGHTING: ☐ No

(246) PROVISION FOR ROADWAY LIGHTING: ☐ No

(260) UTILITIES - ON:

☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

(261) UTILITIES - UNDER:

☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

REMARKS:

NOISE BARRIER

FORM 12 OF 13

(501) TYPE: ☐ ☐ ☐ ☐

(502) ALIGNMENT: ☐ ☐ ☐ ☐

(503) LENGTH: (504) MAXIMUM HEIGHT:

(505) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(506) FOUNDATION LENGTH:

(507) PANEL WIDTH:

(508) NUMBER OF SPECIAL PANEL(S):

(509) PANEL MATERIAL:

(510) FACING (Acoustic Treatment):

(511) PANEL FINISH:

(512) PANEL COLOR:

(513) FEDERAL COLOR:

(514) STACKED PANELS:

(515) NOISE BARRIER POST MATERIAL:

(516) ACCESS DOORS:

(517) FIRE HYDRANTS:

(518) RETROFITS:

RETAINING WALL

FORM 13 OF 13

(550) TYPE: ☐ ☐ ☐ ☐

(551) ALIGNMENT: ☐ ☐ ☐ ☐

(552) SEGMENT LENGTH(S):

(553) MAX. EXPOSED HEIGHT:

(554) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(555) TIEBACK:

(556) FACING:

(557) WITH FENCE OR RAIL:

(558) WITH NOISE BARRIER:

(559) PURPOSE:

Structure Inventory and Appraisal Sheet

NATIONAL BRIDGE INVENTORY

STRUCTURE INVENTORY AND APPRAISAL

IDENTIFICATION

(1) STATE NAME:..... **Maryland** CODE..... **243**
 (8) STRUCTURE NO:..... **2-00000-P--BL02-01-0**
 (5) INV RTE (ON/UNDER):..... **1-5-1-00540-0**
 (2) STATE HIGHWAY DEPARTMENT DISTRICT:..... **03**
 (3) COUNTY CODE:..... **033** (4) STATE CODE:..... **07850**
 (6) FTR INTRS:..... **STREAM**
 (7) FACILITY CARRIED:..... **54TH PLACE**
 (9) LOCATION:..... **50 FT S. OF SPRING ST.**
 (11) MILEPOINT:..... **0000020**
 (12) BASE HIGHWAY NETWORK:..... **0**
 (16) LATITUD **38562314**. (17) LONGITUDE:..... **076552920**
 (98) BORDER BRIDGE STATE % Share.....
 (99) BORDER BRIDGE STRUCT NO.....

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL
 TYPE..... CODE..... **A 07**
 (44) STRUCTURE TYPE APPR: MATERIAL
 TYPE..... CODE..... **0 00**
 (45) NUMBER OF SPANS IN MAIN UNIT:..... **001**
 (46) NUMBER OF APPROACH SPANS:..... **0000**
 (107) DECK STRUCTURE TYPE..... **1**
 (108) WEARING SURFACE/PROTECTIVE SYSTEM:
 A) TYPE WEARING SURFACE: CODE..... **6**
 B) TYPE MEMBRANE: CODE..... **0**
 C) TYPE DECK PROTECTION: CODE..... **0**

AGE AND SERVICE

(27) YEAR BUILT:..... **1958**
 (106) YEAR RECONSTRUCTED..... **1981**
 (42) TYPE OF SERVICE: ON:
 UNDER..... CODE..... **5 5**
 (28) LANES: ON STRUCT **02** UNDER STRUCT: **00**
 (29) AVERAGE DAILY TRAFFIC:..... **000310**
 (30) YEAR OF ADT:..... **2019** (109) TRUCK ADT:..... **05**
 (19) BYPASS, DETOUR LENGTH:..... **01**

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN:..... **0020**
 (49) STRUCTURE LENGTH:..... **0000220**
 (50) CURB/SIDEWALK: LFT **038** FT RGT: **042** FT
 (51) BRDG RDWY WIDTH CURB TO CURB..... **0258** . FT
 (52) DECK WIDTH OUT TO OUT..... **0355** . FT
 (32) APPR RDWY WIDTH: **00 026 00** FT
 (33) BRIDGE MEDIAN:..... **0**
 (34) SKEW: **16** DEG (35) STRUCT FLARE: **N**
 (10) INV RTE MIN VERTICAL CLEAR:..... **9999** FT
 (47) INV RTE TOT HORIZONTAL CLEAR:.. **258** FT
 (53) MIN VERT CLEAR OVER BRDG RDW **9999** FT
 (54) MIN VERT UNDERCLEAR **N A** FT

SUFFICIENCY RATING = **91.5**

STATUS = **0**

CLASSIFICATION

(112) NBIS BRIDGE LENGTH:..... **Y**
 (104) HIGHWAY SYSTEM:..... **N**
 (26) FUNCTIONAL CLASS:..... **19**
 (100) DEFENSE HIGHWAY:..... **0**
 (101) PARALLEL STRUCTURE:..... **N**
 (102) DIRECTION OF TRAFFIC:..... **2**
 (103) TEMPORARY STRUCTURE:.....
 (110) DESIGNATED NATIONAL NETWORK:..... **N**
 (20) TOLL:..... **3**
 (21) MAINTENANCE:..... **04**
 (22) OWNER:..... **04**
 (37) HISTORICAL SIGNIFICANCE:..... **5**

CONDITION

(58) DECK:..... **7**
 (59) SUPERSTRUCTURE:..... **7**
 (60) SUBSTRUCTURE:..... **7**
 (61) CHANNEL AND CHANNEL PROTECTION:..... **6**
 (62) CULVERTS:..... **N**

LOAD RATING AND POSTING

(31) DESIGN LOAD:..... **5**
 (64) OPERATING RATING:..... **850**
 (66) INVENTORY RATING:..... **505**
 (70) BRIDGE POSTING:..... **5**
 (41) STRUCTURE OPEN, POSTED, OR CLOSED:..... **P**

APPRAISAL

(67) STRUCTURAL EVALUATION:..... **7**
 (68) DECK GEOMETRY:..... **5**
 (69) UNDERCLEARANCES, VERT AND HOR:..... **N**
 (71) WATERWAY ADEQUACY:..... **7**
 (72) APPROACH ROADWAY ALIGNMENT:..... **6**
 (36) TRAFFIC SAFETY FEATURES:..... **0 0 0 0**
 (113) SCOUR CRITICAL BRIDGES:..... **8P**

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK:.....
 (76) LENGTH OF IMPROVEMENT:..... **000000**
 (94) BRIDGE IMPROVEMENT COST:..... **0,000**
 (95) ROADWAY IMPROVEMENT COST:..... **0,000**
 (96) TOTAL PROJECT COST:..... **0,000**
 (97) YEAR OF IMPROVEMENT COST EST:.....
 (114) FUTURE ADT:..... **000440**
 (115) YEAR OF FUTURE ADT:..... **39**

Bridge Inspection Report Element Form

Bridge No: P-BL02001

Inspection Date: 03/25/2021

54TH PLACE OVER STREAM

Milepoint: 0000020

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 6

(62) Culvert N

Element

38 - Reinforced Concrete Slab

Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
1 - Ben.	784	sq. ft.	769	15	0	0

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are a few isolated longitudinal cracks up to 1/8" wide in the wearing surface over the structure.

The soffit is in good condition. There is a longitudinal hairline crack with light efflorescence in the underside of the top slab along the centerline of the roadway and one hairline diagonal crack at the northwest corner of the top slab.

215 - Reinforced Concrete Abutment

1 - Ben.	74	ft.	64	10	0	0
----------	----	-----	----	----	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are several isolated vertical hairline cracks throughout the abutments.

330 - Metal Bridge Railing

1 - Ben.	43	ft.	37	0	6	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is light surface rust throughout both railings at the welds. There are no anchor bolts at all the base plates. There is a dent in the bottom rail of the West Railing between Posts 2 and 3. There are two cracked welds in the West Railing, one at Post 2 and the bottom rail and the other at Post 3 and the bottom rail. The East Railing is loose and slightly leaning to the east. There is up to 100% section loss at the base of Post 4 of the East Railing. There is a dent on the post at the south end of the East Railing. There are nine cracked welds at the railing to posts connections in the East Railing.

331 - Reinforced Concrete Bridge Railing

1 - Ben.	44	ft.	36	8	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are hairline cracks in the parapets at the base of the railing posts. The gunite coating on the exterior face of the parapets has delaminated with uneven areas throughout. The hairline vertical cracks at the base of the railing posts are typical along the West Parapet. The hairline vertical crack on the West Parapet at the base of Post 2 has efflorescence on both faces. There are hairline map cracks throughout the gunite along the outside face of the West Parapet. There is a 2'-3" long x 6" high area where the gunite coating has failed at the north end of the West Parapet. There are minor pop out spalls in some of the Northeast Sidewalk panels. There are three cracks between 0.012" and 0.05" wide in the East Parapet at the base of the railing posts.

8062 - Sidewalk, Reinforced Concrete

1 - Ben.	43	Ft.	28	15	0	0
----------	----	-----	----	----	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are shallow spalls and minor scaling throughout both sidewalks. There is up to 1/2" differential settlement between sidewalk panels near the Northeast and Northwest Transition. There is vegetation and debris between sidewalk panels and the curb.

8251 - Wingwalls, Reinforced Concrete

1 - Ben.	39	Ft.	37	2	0	0
----------	----	-----	----	---	---	---

P-BL02001

03/25/2021

Bridge Inspection Report Element Form

Bridge No: P-BL02001

Inspection Date: 03/25/2021

54TH PLACE OVER STREAM

Milepoint: 0000020

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 6

(62) Culvert N

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are several minor spalls in the wingwalls along the joints with the abutments. There is minor water stains at the bottom of these joints. The expansion joints between the parapets and wingwalls are open and joint material is exposed at all four corners. The joint material between the wingwall and the abutment is deteriorating. There is vegetation overgrowth at the Southwest Wingwall.

8260 - Slope, Protected

1 - Ben.	2	Each	2	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

On the North Slope Protection under the bridge, there is an area of hairline map cracking at the west end and a full-height hairline vertical crack with light efflorescence at the east end, as well as two spalls 8" high x 3" wide x 2" deep and 8" high x 4 1/2" wide x 2" deep with exposed reinforcement along the joint. There is scaling along the bottom edges which is typical for all slope protection panels.

8322 - Roadway Approach Transition

1 - Ben.	2	Each	2	0	0	0
----------	---	------	---	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Pavement: There are up to 1" wide transverse, longitudinal and map cracks in the North Approach roadway. There are up to 1/8" wide longitudinal and transverse cracks throughout the South Approach roadway.

Traffic Barrier: There are no traffic barriers.

Curbs: There are minor edge spalls along the curbs.

Sidewalk: The Northeast Sidewalk is undermined 2'-6" long x 3 1/2" high x 1'-6" deep. The approach curb adjacent to this area is settled up to 1/2". The Southeast Sidewalk has a 3 1/2" high drop-off along the edge for a 10'-0" length.

Signs: There are no object markers at the structure. The load posting sign on the west side of the South Approach is posted on the wrong side of the street and does not meet current standards. There is no load posting sign in place at the North Approach. There is no advance load posting signs in place at the nearest intersections of the approaches. The bridge is currently posted at 28,000 lbs for single-unit vehicles.

8342 - Fencing

1 - Ben.	39	Ft.	24	7	8	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is a chain-link fence adjacent to the wingwalls that continues to the slope protection. There is minor to moderate rust throughout the fence. There is vegetation growth throughout the fence along the Southeast, Northeast and Southwest Wingwalls. The top rail of the fence along the Northwest Wingwall is disconnected from the post at the end of the wingwall. There is a missing fence post cap at the fence along the Southwest Wingwall. There are tree trunks growing through the fence over the Southeast Wingwall causing the mesh to pull away from Post 3 up to 9".

8345 - Stream Channel

1 - Ben.	1	Entire Bridge	1	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The stream flows from east to west under the structure. The upstream and downstream channels curve to the north.

Bridge Inspection Report Element Form

Bridge No: P-BL02001

Inspection Date: 03/25/2021

54TH PLACE OVER STREAM

Milepoint: 0000020

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 6

(62) Culvert N

There is up to 2" deep abrasion throughout the invert of the concrete lined channel. There is heavy vegetation growth on the Southwest, Northeast and Southeast Slope Protection. There are hairline to 1/16" wide cracks with efflorescence throughout the concrete slope protection. There are small spalls along the base of the concrete slope protection. There is a 1/8" wide crack underneath the storm drain outfall in the Northwest Wingwall.

Fence: There is minor to moderate rust and minor misalignments throughout the fence. There is vegetation growth throughout the Northeast, Southeast and Southwest Fence. There are tree stumps throughout the Northwest Fence causing the mesh to pull away from the posts up to 1'-6". There is a missing section of the Northwest fence. The top rail of the Northeast Fence is disconnected from the post. The top rail of the Southeast Fence is laying in the stream channel and the mesh is bent and pushed out to the north.

8359 - Soffit (underside) of concrete decks and slabs

1 - Ben.	1	Entire Bridge	1	0	0	0
----------	---	---------------	---	---	---	---

☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

The soffit is in good condition. There is a longitudinal hairline crack with light efflorescence in the underside of the top slab along the centerline of the roadway and one hairline diagonal crack at the northwest corner of the top slab.

2021 BRIDGE INSPECTION REPORT APPROACH TRAFFIC BARRIER FORM

Corners	Bridge Railings Meet MDSHA Standard		Approach Traffic Barrier Present		Transition						Approach Traffic Barrier			Exist. End Treatment	Proposed End Treatment	Type			
					Attached to Bridge			Thrie Beam Present			Gradually Stiffened		Post Spacing				Rail Type	Post Type	Post Spacing
					Y	N	Y	N	Y	N	Y	N							
1		X		Y	N														
2		X			X												None		
3		X			X												None		
4		X			X												None		

Cable Anchorage w/ End Section (e.g. MDSHA Type K)

Flared, Turned-Down

Flared, Turned-Down

Flared, Turned-Down

Bridge No.: P-BL02R

County: Prince George's

Road Carried: 54TH PLACE

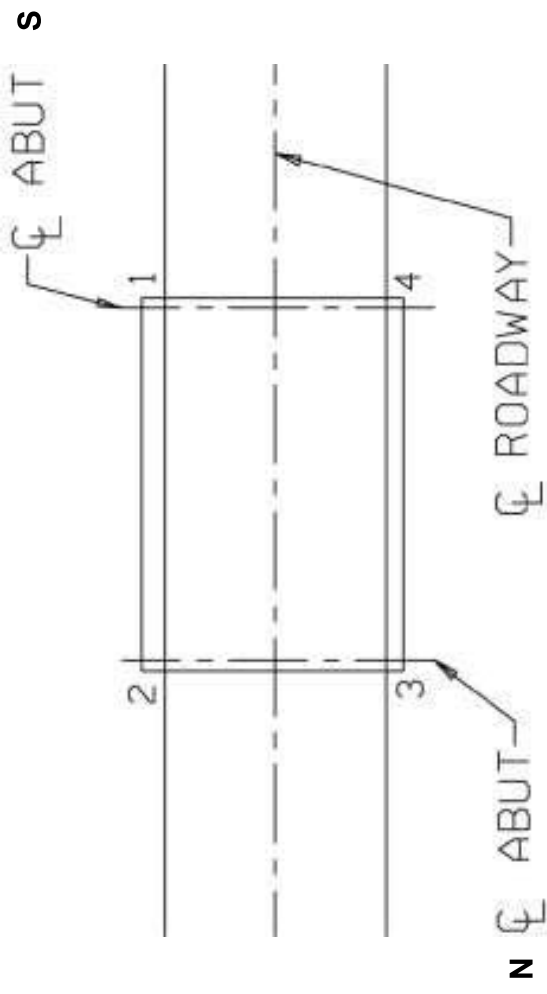
Crossing: STREAM

Date Inspected: 03/25/2021

Inspector: C. Percy, D. Ross

Comments:

There are no approach traffic barriers.



Load Ratings

Load Rating Standard Summary Sheet

Bridge No.: PBL02001 on 54TH PLACE over STREAM

Date of Rating: 12/13/2013 LARS Program: Yes ☐ No ☒ Program Used: BOX5

Rating Method: LRFR ☐ LFR ☒ ASR ☐ Engineering Judgment ☐ Load Testing ☐ HMA Wearing Surface (in.) N/A

Rating Type: As-Built ☐ As Inspected ☒ Condition Report Date: 03/05/2013

Comments/Defects/Assumptions: This Load Rating is based on the latest inspection report as noted above, as well as a previous load rating dated 1996. Ratings for the top slab have been listed.

LRFR Design/Load Rating Vehicle (Limit States are Strength I for all materials, Service II for Steel only, or Service III for prestressed concrete Inventory only)			
Truck/ Axle/ Tons	Rating Details	Inventory	Operating
	Controlling Member	Limit State	Limit State
	Controlling Stress (Moment, Shear, Service)	Rating Factor	Rating Factor
HL-93/3/36 Tons	enter controlling member (i.e. Sp. 1, Ext. Beam)	Limit State	Limit State
	Select the Controlling Stress	X.XX	X.XX

Legal Loads (For LRFR the Limit States are Strength I for all materials or Service II for steel only)			
Truck/ Axle/ Tons	Controlling Member	Inventory or Limit State	Operating
	Controlling Stress	Tons (XX.X)	Tons (XX.X)
H-15 / 2 / 15	Top slab	28.0	47.0
	Moment		
T-3 / 3 / 33	Top slab	37.5	63.0
	Moment		
T-4 / 4 / 35	Top slab	39.5	66.0
	Moment		
HS-20 / 3 / 36	Top slab	50.5	85.0
	Moment		
3S2 / 5 / 40	Top slab	70.0	99.9
	Moment		

Permit Loads - (For LRFR the Limit State is Strength II)			
Truck/ Axle/ Tons	Controlling Member	Inventory	Operating
	Controlling Stress (Moment, Shear, Service)	Tons (XX.X)	Tons (XX.X)
150K / 8 / 75	Top slab	80.0	99.9
	Moment		
90K Comb./ 4 / 45	Top slab	49.5	83.0
	Moment		
90K Crane / 4 / 45	Top slab	48.5	81.5
	Moment		
90K Cargo/ 5 / 45	Top slab	61.0	99.9
	Moment		
80K Cargo/ 5 / 40	Top slab	70.0	99.9
	Moment		
120K Spec./ 5 / 60	Top slab	66.0	99.9
	Moment		
108K Crane/ 4/ 54	Top slab	55.0	92.5
	Moment		
120K Crane/ 5 / 60	Top slab	68.5	99.9
	Moment		

```

*****
*
*          BOX CULVERT DESIGN AND RATING                      335529 *
*
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*          DEPARTMENT OF TRANSPORTATION                       *
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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/19/2014 16:21
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\jyang\Desktop\NEWFOL~1\PBL020~2.DAT

PBL02001 SINGLE SPAN RIGID FRAME WITHOUT BOTTOM SLAB.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
00	0000	0000	0000	PBL0	2001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT EQUIV		f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	5	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
20.06	2.61	20.00	0.00	10.00	0.00	10.00	1.5
							3.20

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
2		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	6.00	14.0	2	24.00	0.0						

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	26.00	4.0	3	26.00	0.0			

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	10.00	4.0	3	23.00	4.0	4	23.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

[illegible]

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB		AT LEFT END OF SPAN						AT MID SPAN						AT RIGHT END OF SPAN					
NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC				
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0				

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

```
*****
* LIVE LOAD RATING - SP-1 LOADING *
*****
```

			FACTORED EFFECTS		ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST			MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH LL+I	6.254 5.041	6.615 3.674	10.251	0.79	1.32	4@ 9.0	
					RATING TONS	11.89	19.86		
2.61	F	DL+EPH LL+I	-8.322 -6.422	6.191 3.674	25.592	2.69	4.49	7@ 9.0	
					RATING TONS	40.34	67.36		

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.381	7.002		10.292	0.78	1.30	4@	9.0
	LL+I	-5.041	3.674						
				RATING	TONS	11.64	19.43		
					Page 3				

PBL02001_LFR_121313_legal.OUT

2.61	F	DL+EPH	8.485	6.578	25.601	2.67	4.45	7@ 9.0
		LL+I	6.422	3.674				
					RATING TONS	39.98	66.76	

SLAB 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPD	-11.004	0.910		61.244	5.87	9.81	7@ 9.0	
		LL+I	-8.552							
						RATING TONS	88.12	147.17		
1.46	V	DL+EPF	-2.787		5.131	23.226	3.06	5.11	7@ 9.0	0.000
		LL+I	5.390		5.917					
						RATING TONS	45.88	76.61		
10.03	F	DL+EPH	19.839	0.394		61.166	1.89	3.15	7@ 9.0	
		LL+I	21.924							
						RATING TONS	28.28	47.22		
18.60	V	DL+EPF	-2.486		-5.340	23.226	3.02	5.05	7@ 9.0	0.000
		LL+I	5.390		-5.917					
						RATING TONS	45.35	75.73		
20.06	F	DL+EPD	-11.106	0.910		61.244	5.86	9.79	7@ 9.0	
		LL+I	-8.552							
						RATING TONS	87.94	146.87		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 11.64 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 19.43 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	6.254	6.615		10.269	0.39	0.64	4@ 9.0	
		LL+I	10.425	7.937						
						RATING TONS	12.71	21.23		
2.61	F	DL+EPH	-8.322	6.191		25.605	1.30	2.17	7@ 9.0	
		LL+I	-13.281	7.937						
						RATING TONS	42.94	71.72		

WALL 2

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	-6.381	7.002		10.309	0.38	0.63	4@ 9.0	
		LL+I	-10.425	7.937						
						RATING TONS	12.43	20.77		
2.61	F	DL+EPH	8.485	6.578		25.614	1.29	2.15	7@ 9.0	

LL+I 13.281 7.937

RATING TONS 42.56 71.08

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	SHEAR CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-11.004 LL+I -17.543	0.910	61.244	2.86	4.78	7@ 9.0
				RATING TONS	94.51	157.83	
1.46	V	DL+EPF -2.787 LL+I 4.613	5.131 11.341	23.226	1.60	2.66	7@ 9.0 0.000
				RATING TONS	52.66	87.94	
10.03	F	DL+EPH 19.839 LL+I 35.990	0.394	61.166	1.15	1.92	7@ 9.0
				RATING TONS	37.89	63.28	
18.60	V	DL+EPF -2.486 LL+I 4.613	-5.340 -11.341	23.226	1.58	2.63	7@ 9.0 0.000
				RATING TONS	52.05	86.92	
20.06	F	DL+EPD-11.106 LL+I -17.543	0.910	61.244	2.86	4.77	7@ 9.0
				RATING TONS	94.31	157.50	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 12.43 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 20.77 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	SHEAR CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 6.254 LL+I 10.546	6.615	10.261	0.38	0.63	4@ 9.0
				RATING TONS	13.30	22.21	
2.61	F	DL+EPH -8.322 LL+I -13.435	6.191	25.599	1.29	2.15	7@ 9.0
				RATING TONS	45.01	75.16	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	SHEAR CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -6.381 LL+I -10.546	7.002	10.301	0.37	0.62	4@ 9.0
				RATING TONS	13.01	21.73	
2.61	F	DL+EPH 8.485 LL+I 13.435	6.578	25.608	1.27	2.13	7@ 9.0
				RATING TONS	44.61	74.50	

SLAB 1

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-11.004	0.910		61.244	2.81	4.69	7@ 9.0	
		LL+I -17.872							
					RATING TONS	98.39	164.31		
1.46	V	DL+EPF -2.787		5.131	23.226	1.64	2.75	7@ 9.0	0.000
		LL+I 3.351		11.003					
					RATING TONS	57.56	96.13		
10.03	F	DL+EPH 19.839	0.394		61.166	1.13	1.89	7@ 9.0	
		LL+I 36.545							
					RATING TONS	39.58	66.10		
18.60	V	DL+EPF -2.486		-5.340	23.226	1.63	2.71	7@ 9.0	0.000
		LL+I 3.351		-11.003					
					RATING TONS	56.90	95.02		
20.06	F	DL+EPD-11.106	0.910		61.244	2.81	4.68	7@ 9.0	
		LL+I -17.872							
					RATING TONS	98.19	163.97		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 13.01 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 21.73 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.254	6.615		10.415	0.59	0.99	4@ 9.0	
	LL+I	7.030	7.139						
				RATING	TONS	21.31	35.58		
2.61	F DL+EPH	-8.322	6.191		25.712	1.94	3.24	7@ 9.0	
	LL+I	-8.957	7.139						
				RATING	TONS	69.90	116.73		

WALL 2

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.381	7.002		10.452	0.58	0.97	4@ 9.0	
	LL+I	-7.030	7.139						
				RATING	TONS	20.84	34.81		
2.61	F DL+EPH	8.485	6.578		25.720	1.92	3.21	7@ 9.0	
	LL+I	8.957	7.139						
				RATING	TONS	69.28	115.69		

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SLAB 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F	DL+EPD-11.004	0.910	61.244	4.41	7.36	7@ 9.0	
		LL+I -11.402						
				RATING TONS	158.62	264.90		
1.46	V	DL+EPF -2.787		5.131 23.226	1.98	3.30	7@ 9.0	0.000
		LL+I 4.661		9.145				
				RATING TONS	71.24	118.97		
10.03	F	DL+EPH 19.839	0.394	61.166	1.41	2.36	7@ 9.0	
		LL+I 29.233						
				RATING TONS	50.90	85.00		
18.60	V	DL+EPF -2.486		-5.340 23.226	1.96	3.27	7@ 9.0	0.000
		LL+I 4.661		-9.145				
				RATING TONS	70.41	117.59		
20.06	F	DL+EPD-11.106	0.910	61.244	4.40	7.34	7@ 9.0	
		LL+I -11.402						
				RATING TONS	158.30	264.36		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 20.84 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 34.81 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F	DL+EPH 6.254	6.615	10.269	0.59	0.98	4@ 9.0	
		LL+I 6.816	5.190					
				RATING TONS	23.56	39.35		
2.61	F	DL+EPH -8.322	6.191	25.605	1.99	3.32	7@ 9.0	
		LL+I -8.684	5.190					
				RATING TONS	79.61	132.95		

WALL 2

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F	DL+EPH -6.381	7.002	10.309	0.58	0.96	4@ 9.0	
		LL+I -6.816	5.190					
				RATING TONS	23.05	38.50		
2.61	F	DL+EPH 8.485	6.578	25.614	1.97	3.29	7@ 9.0	
		LL+I 8.684	5.190					
				RATING TONS	78.90	131.77		

SLAB 1

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-11.004 LL+I -11.470	0.910		61.244	4.38	7.31	7@ 9.0	
					RATING TONS	175.20	292.58		
1.46	V	DL+EPF -2.787 LL+I 2.836		5.131 7.498	23.226	2.41	4.03	7@ 9.0	0.000
					RATING TONS	96.54	161.22		
10.03	F	DL+EPH 19.839 LL+I 23.532	0.394		61.166	1.76	2.93	7@ 9.0	
					RATING TONS	70.25	117.32		
18.60	V	DL+EPF -2.486 LL+I 2.836		-5.340 -7.498	23.226	2.39	3.98	7@ 9.0	0.000
					RATING TONS	95.42	159.36		
20.06	F	DL+EPD-11.106 LL+I -11.470	0.910		61.244	4.37	7.30	7@ 9.0	
					RATING TONS	174.84	291.99		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 23.05 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 38.50 TONS AT DISTANCE 0.00 IN WALL 2.

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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010
VERSION 5.8

LAST UPDATED 07/18/2002

02/19/2014 16:22
DOCUMENTATION 05/1998

INPUT: C:\Users\jyang\Desktop\NEWFOL~1\PBL020~1.DAT

PBL02001 SINGLE SPAN RIGID FRAME WITHOUT BOTTOM SLAB.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
00	0000	0000	0000	PBL0	2001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	8	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
20.06	2.61	20.00	0.00	10.00	0.00	10.00	1.5
							3.20

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
8		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	11.0	2	26.00	4.0	3	26.00	30.0	4	18.00	4.0
5	18.00	4.0	6	18.00	4.0	7	18.00	4.0	8	18.00	0.0

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	24.00	35.0	3	27.00	4.0	4	27.00	0.0

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	18.00	5.4	2	18.00	6.9	3	27.00	5.4	4	27.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE

5	6.00	4.00										
AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	28.0	4	22.00	4.0	
5	22.00	0.0										

SPECIAL LIVE LOADING 5

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	14.0	4	17.00	4.0	
5	17.00	0.0										

SPECIAL LIVE LOADING 6

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	27.00	4.0	3	27.00	31.0	4	27.00	4.0	
5	27.00	0.0										

SPECIAL LIVE LOADING 7

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
4		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	27.00	5.4	2	27.00	6.8	3	27.00	5.4	4	27.00	0.0	

SPECIAL LIVE LOADING 8

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	24.00	8.3	2	24.00	5.4	3	24.00	6.6	4	24.00	5.4	
5	24.00	0.0										

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT																
AT LEFT END OF SPAN							AT MID SPAN				AT RIGHT END OF SPAN					
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC	
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0	

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5 SP-6 SP-7 SP-8

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.254	6.615	10.347	0.33	0.55	4@ 9.0	
	LL+I	12.529	11.272					
					RATING TONS	24.50	40.92	
2.61 F	DL+EPH	-8.322	6.191	25.663	1.09	1.81	7@ 9.0	
	LL+I	-15.961	11.272					
					RATING TONS	81.48	136.08	

WALL 2

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.381	7.002	10.386	0.32	0.53	4@ 9.0	
	LL+I	-12.529	11.272					
					RATING TONS	23.97	40.03	
2.61 F	DL+EPH	8.485	6.578	25.672	1.08	1.80	7@ 9.0	
	LL+I	15.961	11.272					
					RATING TONS	80.76	134.87	

SLAB 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-11.004	0.910	61.244	2.47	4.12	7@ 9.0	
	LL+I	-20.361						
					RATING TONS	185.06	309.05	
1.46 V	DL+EPF	-2.787		5.131	23.226	1.52	2.54	7@ 9.0 0.000
	LL+I	-2.555		11.892				
					RATING TONS	114.13	190.60	
10.03 F	DL+EPH	19.839	0.394	61.166	1.07	1.79	7@ 9.0	
	LL+I	38.554						
					RATING TONS	80.40	134.26	
18.60 V	DL+EPF	-2.486		-5.340	23.226	1.50	2.51	7@ 9.0 0.000

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 LL+I -2.555 -11.892
 RATING TONS 112.81 188.39

20.06 F DL+EPD-11.106 0.910 61.244 2.46 4.11 7@ 9.0
 LL+I -20.361
 RATING TONS 184.68 308.42

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 23.97 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 40.03 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.254 6.615	10.269	0.37	0.62	4@ 9.0	
	LL+I	10.826 8.243					
			RATING TONS	16.69	27.87		
2.61 F	DL+EPH	-8.322 6.191	25.605	1.25	2.09	7@ 9.0	
	LL+I	-13.792 8.243					
			RATING TONS	56.39	94.17		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.381 7.002	10.309	0.36	0.61	4@ 9.0	
	LL+I	-10.826 8.243					
			RATING TONS	16.33	27.27		
2.61 F	DL+EPH	8.485 6.578	25.614	1.24	2.07	7@ 9.0	
	LL+I	13.792 8.243					
			RATING TONS	55.89	93.34		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-11.004 0.910	61.244	2.76	4.61	7@ 9.0	
	LL+I	-18.218					
			RATING TONS	124.10	207.24		
1.46 V	DL+EPF	-2.787 5.131	23.226	1.59	2.66	7@ 9.0	0.000
	LL+I	5.709 11.354					
			RATING TONS	71.72	119.77		
10.03 F	DL+EPH	19.839 0.394	61.166	1.11	1.85	7@ 9.0	
	LL+I	37.374					
			RATING TONS	49.76	83.10		
18.60 V	DL+EPF	-2.486 -5.340	23.226	1.58	2.63	7@ 9.0	0.000
	LL+I	5.709 -11.354					
			RATING TONS	70.89	118.38		

20.06 F DL+EPD-11.106 0.910 61.244 2.75 4.60 7@ 9.0
LL+I -18.218

RATING TONS 123.85 206.82

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 16.33 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 27.27 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.254 6.615	10.331	0.35	0.59	4@ 9.0	
	LL+I	11.582 10.097					
			RATING TONS	15.84	26.46		
2.61 F	DL+EPH	-8.322 6.191	25.652	1.17	1.96	7@ 9.0	
	LL+I	-14.755 10.097					
			RATING TONS	52.85	88.26		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.381 7.002	10.370	0.34	0.58	4@ 9.0	
	LL+I	-11.582 10.097					
			RATING TONS	15.50	25.88		
2.61 F	DL+EPH	8.485 6.578	25.660	1.16	1.94	7@ 9.0	
	LL+I	14.755 10.097					
			RATING TONS	52.38	87.48		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-11.004 0.910	61.244	2.62	4.38	7@ 9.0	
	LL+I	-19.149					
			RATING TONS	118.06	197.16		
1.46 V	DL+EPF	-2.787	5.131 23.226	1.46	2.44	7@ 9.0	0.000
	LL+I	1.274	12.400				
			RATING TONS	65.67	109.67		
10.03 F	DL+EPH	19.839 0.394	61.166	1.09	1.81	7@ 9.0	
	LL+I	38.064					
			RATING TONS	48.86	81.59		
18.60 V	DL+EPF	-2.486	-5.340 23.226	1.44	2.41	7@ 9.0	0.000
	LL+I	1.274	-12.400				
			RATING TONS	64.91	108.40		
20.06 F	DL+EPD	-11.106 0.910	61.244	2.62	4.37	7@ 9.0	

LL+I -19.149

RATING TONS 117.82 196.76

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 15.50 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 25.88 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.254 6.615	10.269	0.46	0.76	4@ 9.0	
	LL+I	8.821 6.716					
			RATING TONS	20.48	34.21		
2.61	F DL+EPH	-8.322 6.191	25.605	1.54	2.57	7@ 9.0	
	LL+I	-11.238 6.716					
			RATING TONS	69.21	115.58		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.381 7.002	10.309	0.45	0.74	4@ 9.0	
	LL+I	-8.821 6.716					
			RATING TONS	20.04	33.46		
2.61	F DL+EPH	8.485 6.578	25.614	1.52	2.55	7@ 9.0	
	LL+I	11.238 6.716					
			RATING TONS	68.59	114.55		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-11.004 0.910	61.244	3.38	5.65	7@ 9.0	
	LL+I	-14.844					
			RATING TONS	152.30	254.35		
1.46	V DL+EPF	-2.787	5.131 23.226	1.96	3.27	7@ 9.0	0.000
	LL+I	4.652	9.252				
			RATING TONS	88.02	146.99		
10.03	F DL+EPH	19.839 0.394	61.166	1.36	2.27	7@ 9.0	
	LL+I	30.453					
			RATING TONS	61.07	101.99		
18.60	V DL+EPF	-2.486	-5.340 23.226	1.93	3.23	7@ 9.0	0.000
	LL+I	4.652	-9.252				
			RATING TONS	87.00	145.29		
20.06	F DL+EPD	-11.106 0.910	61.244	3.38	5.64	7@ 9.0	
	LL+I	-14.844					
			RATING TONS	151.99	253.83		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 20.04 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 33.46 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	6.254	6.615		10.269	0.59	0.98	4@ 9.0	
		LL+I	6.816	5.190						
							RATING TONS	23.56	39.35	
2.61	F	DL+EPH	-8.322	6.191		25.605	1.99	3.32	7@ 9.0	
		LL+I	-8.684	5.190						
							RATING TONS	79.61	132.95	

WALL 2

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	-6.381	7.002		10.309	0.58	0.96	4@ 9.0	
		LL+I	-6.816	5.190						
							RATING TONS	23.05	38.50	
2.61	F	DL+EPH	8.485	6.578		25.614	1.97	3.29	7@ 9.0	
		LL+I	8.684	5.190						
							RATING TONS	78.90	131.77	

SLAB 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPD	-11.004	0.910		61.244	4.38	7.31	7@ 9.0	
		LL+I	-11.470							
							RATING TONS	175.20	292.58	
1.46	V	DL+EPF	-2.787		5.131	23.226	2.41	4.03	7@ 9.0	0.000
		LL+I	2.836		7.498					
							RATING TONS	96.54	161.22	
10.03	F	DL+EPH	19.839	0.394		61.166	1.76	2.93	7@ 9.0	
		LL+I	23.532							
							RATING TONS	70.25	117.32	
18.60	V	DL+EPF	-2.486		-5.340	23.226	2.39	3.98	7@ 9.0	0.000
		LL+I	2.836		-7.498					
							RATING TONS	95.42	159.36	
20.06	F	DL+EPD	-11.106	0.910		61.244	4.37	7.30	7@ 9.0	
		LL+I	-11.470							
							RATING TONS	174.84	291.99	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 23.05 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 38.50 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-6 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.254 6.615	10.269	0.37	0.62	4@ 9.0	
	LL+I	10.826 8.243					
			RATING TONS	22.25	37.17		
2.61	F DL+EPH	-8.322 6.191	25.605	1.25	2.09	7@ 9.0	
	LL+I	-13.792 8.243					
			RATING TONS	75.19	125.56		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.381 7.002	10.309	0.36	0.61	4@ 9.0	
	LL+I	-10.826 8.243					
			RATING TONS	21.77	36.36		
2.61	F DL+EPH	8.485 6.578	25.614	1.24	2.07	7@ 9.0	
	LL+I	13.792 8.243					
			RATING TONS	74.52	124.45		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-11.004 0.910	61.244	2.76	4.61	7@ 9.0	
	LL+I	-18.218					
			RATING TONS	165.47	276.33		
1.46	V DL+EPF	-2.787	5.131 23.226	1.55	2.58	7@ 9.0	0.000
	LL+I	4.951	11.703				
			RATING TONS	92.77	154.93		
10.03	F DL+EPH	19.839 0.394	61.166	1.11	1.85	7@ 9.0	
	LL+I	37.374					
			RATING TONS	66.35	110.80		
18.60	V DL+EPF	-2.486	-5.340 23.226	1.53	2.55	7@ 9.0	0.000
	LL+I	4.951	-11.703				
			RATING TONS	91.70	153.14		
20.06	F DL+EPD	-11.106 0.910	61.244	2.75	4.60	7@ 9.0	
	LL+I	-18.218					
			RATING TONS	165.13	275.76		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 21.77 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 36.36 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-7 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.254 6.615	10.395	0.33	0.55	4@ 9.0	
	LL+I	12.599 12.367					
				RATING TONS	17.75	29.64	
2.61	F DL+EPH	-8.322 6.191	25.698	1.08	1.81	7@ 9.0	
	LL+I	-16.051 12.367					
				RATING TONS	58.46	97.62	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.381 7.002	10.432	0.32	0.54	4@ 9.0	
	LL+I	-12.599 12.367					
				RATING TONS	17.36	29.00	
2.61	F DL+EPH	8.485 6.578	25.706	1.07	1.79	7@ 9.0	
	LL+I	16.051 12.367					
				RATING TONS	57.94	96.76	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-11.004 0.910	61.244	2.44	4.08	7@ 9.0	
	LL+I	-20.574					
				RATING TONS	131.86	220.21	
1.46	V DL+EPF	-2.787	5.131 23.226	1.37	2.28	7@ 9.0	0.000
	LL+I	-0.271	13.232				
				RATING TONS	73.85	123.33	
10.03	F DL+EPH	19.839 0.394	61.166	1.03	1.71	7@ 9.0	
	LL+I	40.293					
				RATING TONS	55.39	92.50	
18.60	V DL+EPF	-2.486	-5.340 23.226	1.35	2.26	7@ 9.0	0.000
	LL+I	-0.271	-13.232				
				RATING TONS	73.00	121.90	
20.06	F DL+EPD	-11.106 0.910	61.244	2.44	4.07	7@ 9.0	
	LL+I	-20.574					
				RATING TONS	131.59	219.76	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 17.36 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 Page 10

THE MINIMUM OPERATING RATING IS 29.00 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-8 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.254 6.615	10.387	0.36	0.61	4@ 9.0	
	LL+I	11.380 11.023					
			RATING TONS	21.79	36.40		
2.61	F DL+EPH	-8.322 6.191	25.692	1.20	2.00	7@ 9.0	
	LL+I	-14.497 11.023					
			RATING TONS	71.89	120.06		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.381 7.002	10.425	0.36	0.59	4@ 9.0	
	LL+I	-11.380 11.023					
			RATING TONS	21.32	35.60		
2.61	F DL+EPH	8.485 6.578	25.700	1.19	1.98	7@ 9.0	
	LL+I	14.497 11.023					
			RATING TONS	71.25	118.99		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-11.004 0.910	61.244	2.72	4.54	7@ 9.0	
	LL+I	-18.472					
			RATING TONS	163.19	272.52		
1.46	V DL+EPF	-2.787	5.131 23.226	1.52	2.55	7@ 9.0	0.000
	LL+I	-0.399	11.870				
			RATING TONS	91.47	152.75		
10.03	F DL+EPH	19.839 0.394	61.166	1.14	1.91	7@ 9.0	
	LL+I	36.174					
			RATING TONS	68.55	114.48		
18.60	V DL+EPF	-2.486	-5.340 23.226	1.51	2.52	7@ 9.0	0.000
	LL+I	-0.399	-11.870				
			RATING TONS	90.41	150.98		
20.06	F DL+EPD	-11.106 0.910	61.244	2.71	4.53	7@ 9.0	
	LL+I	-18.472					
			RATING TONS	162.86	271.97		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 21.32 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 35.60 TONS AT DISTANCE 0.00 IN WALL 2.

BOX5 data input:

Equivalent fill depth:

East: $0.176 / 0.12 = 1.47'$

West: $0.255 / 0.12 = 2.125'$

Grade: $(2.125' - 1.47') / 22.42' = 3.2\%$

Box5 Truck list:

Legal rating	Permit rating
SP-1 H 15	SP-1 150K
SP-2 T-3	SP-2 90K COMB.
SP-3 T-4	SP-3 90K CRANE
SP-4 HS20	SP-4 90K CARGO
SP-5 3S2	SP-5 80K CARGO
	SP-6 120K
	SP-7 108K
	SP-8 120K CRANE

Prince George's County



2021 BRIDGE INSPECTION REPORT March 25, 2021



BRIDGE NO. P-BL03001

TAYLOR STREET

OVER

STREAM

Prepared by



Prince George's County

2021 BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL03001

TAYLOR STREET

OVER

STREAM

Prepared by




Inspection Team Leader: Caleb Percy, P.E.

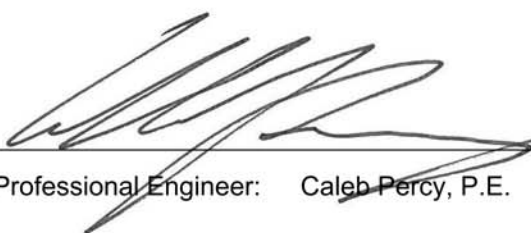
5/4/2021

Date


Inspector: Daria Ross

5/4/2021

Date


Professional Engineer: Caleb Percy, P.E.



5/4/2021

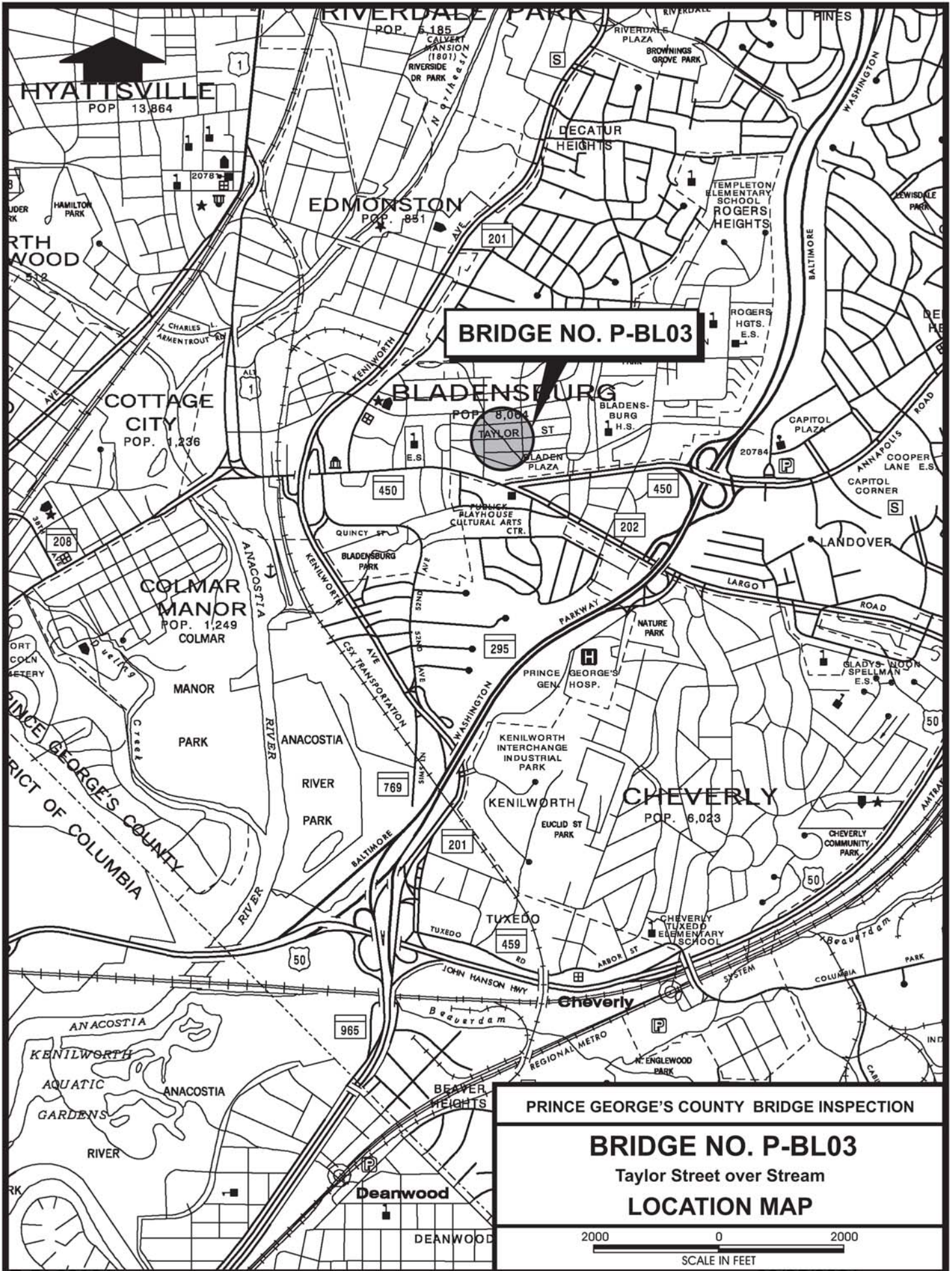
Date

Professional Certification: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 69263, Expiration Date: June 27, 2022.

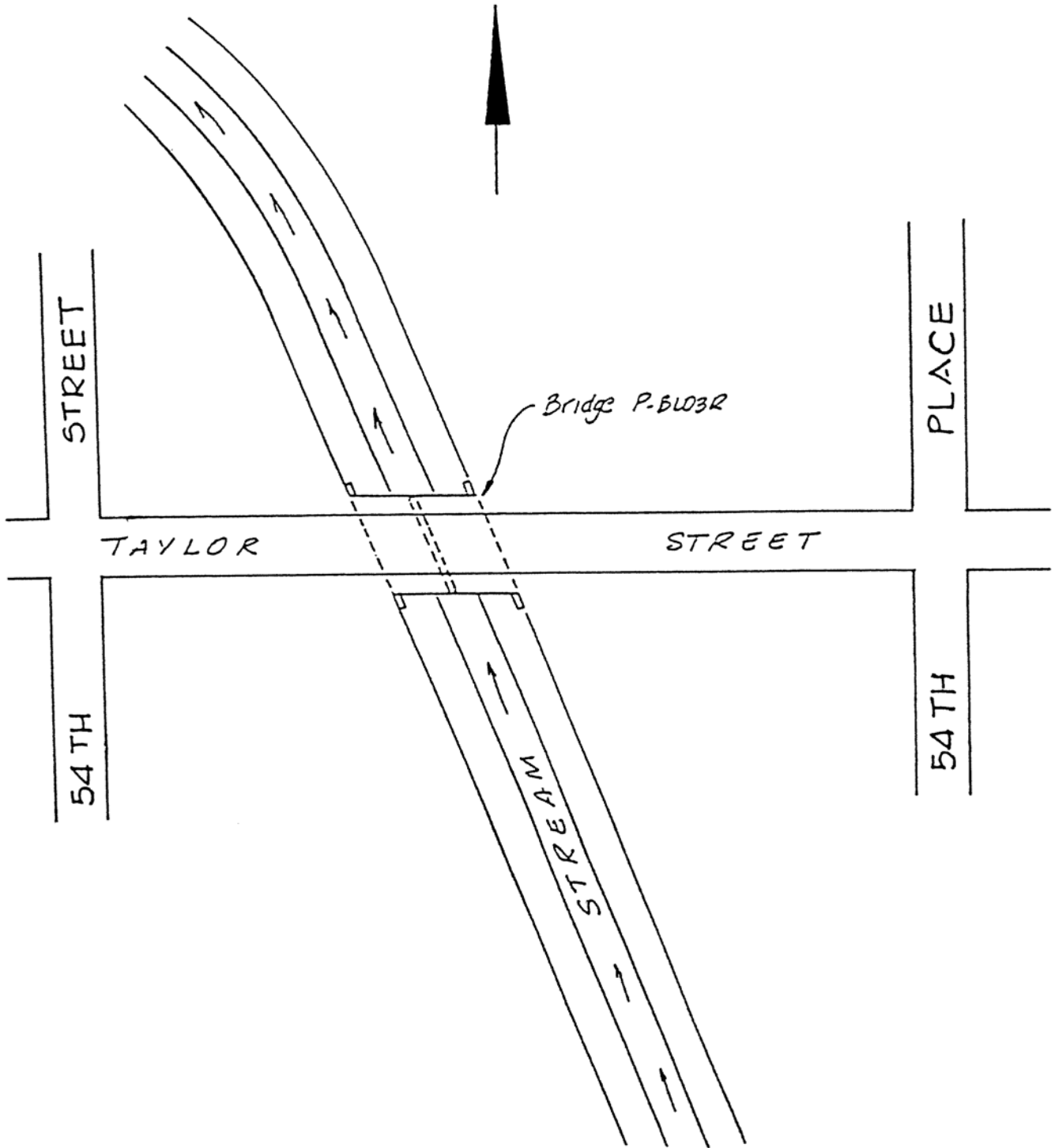
The condition report and recommendations presented herein are based on a visual inspection of accessible portions of the existing structure. No responsibility is assumed by Century Engineering, Inc. for the presence of any latent structural defects that cannot be detected by such visual inspection.

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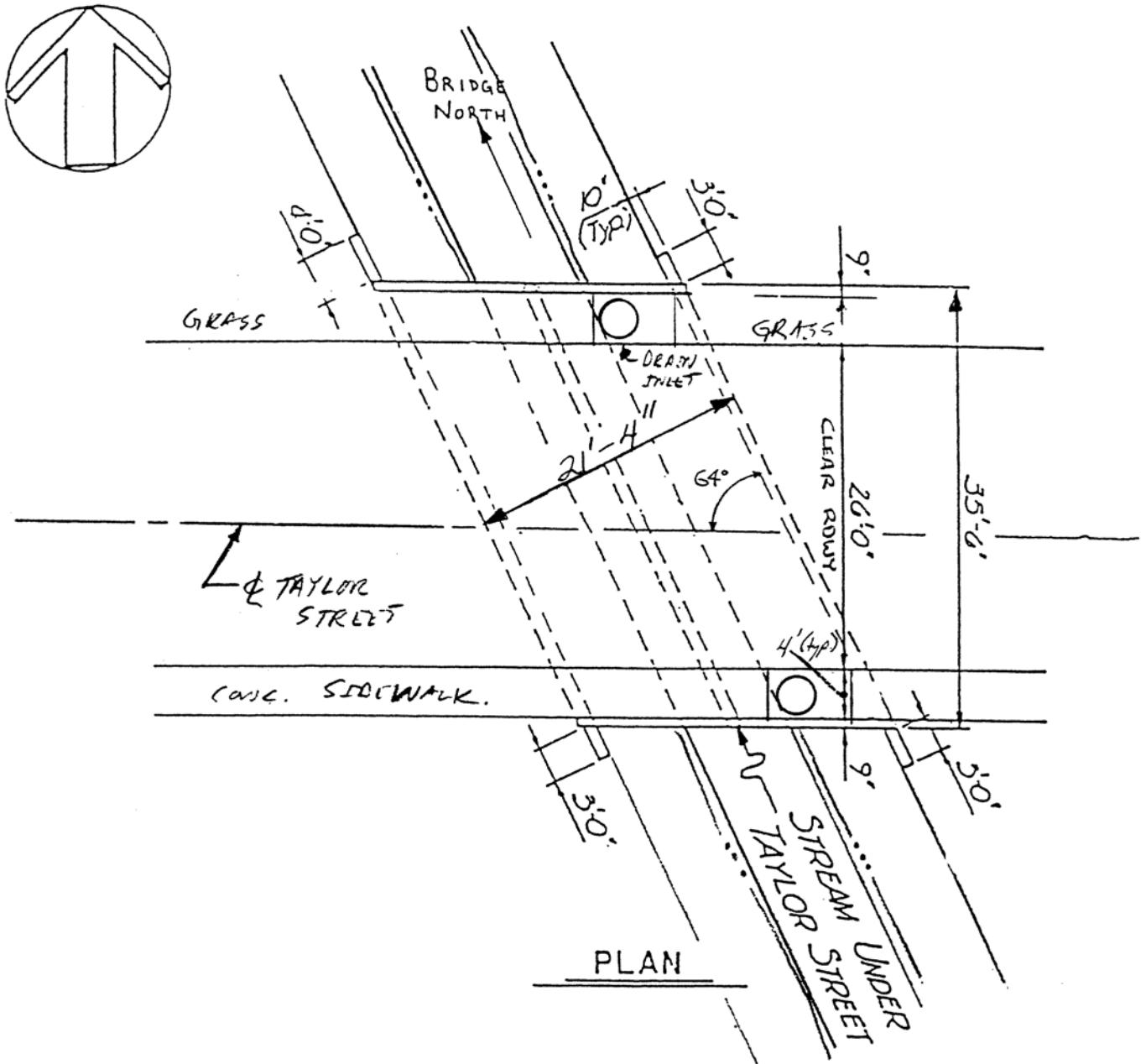
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BRIDGE NO. PBL03R - TAYLOR STREET OVER STREAM



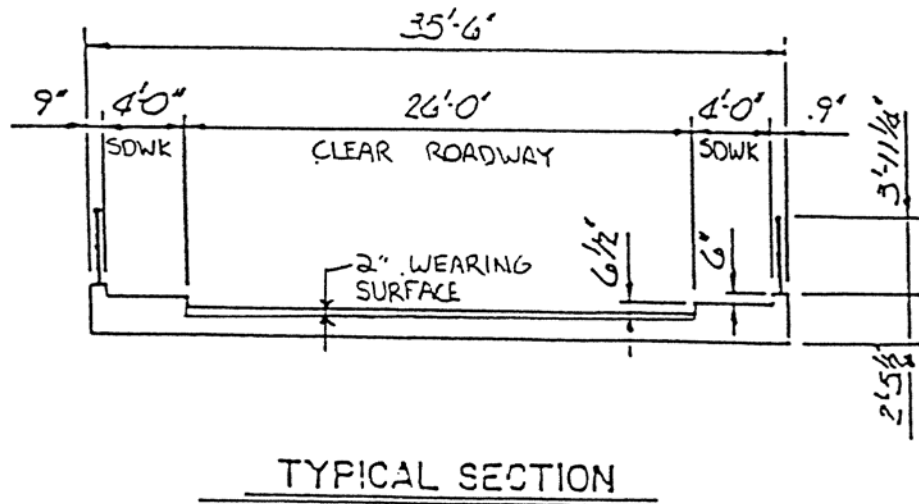
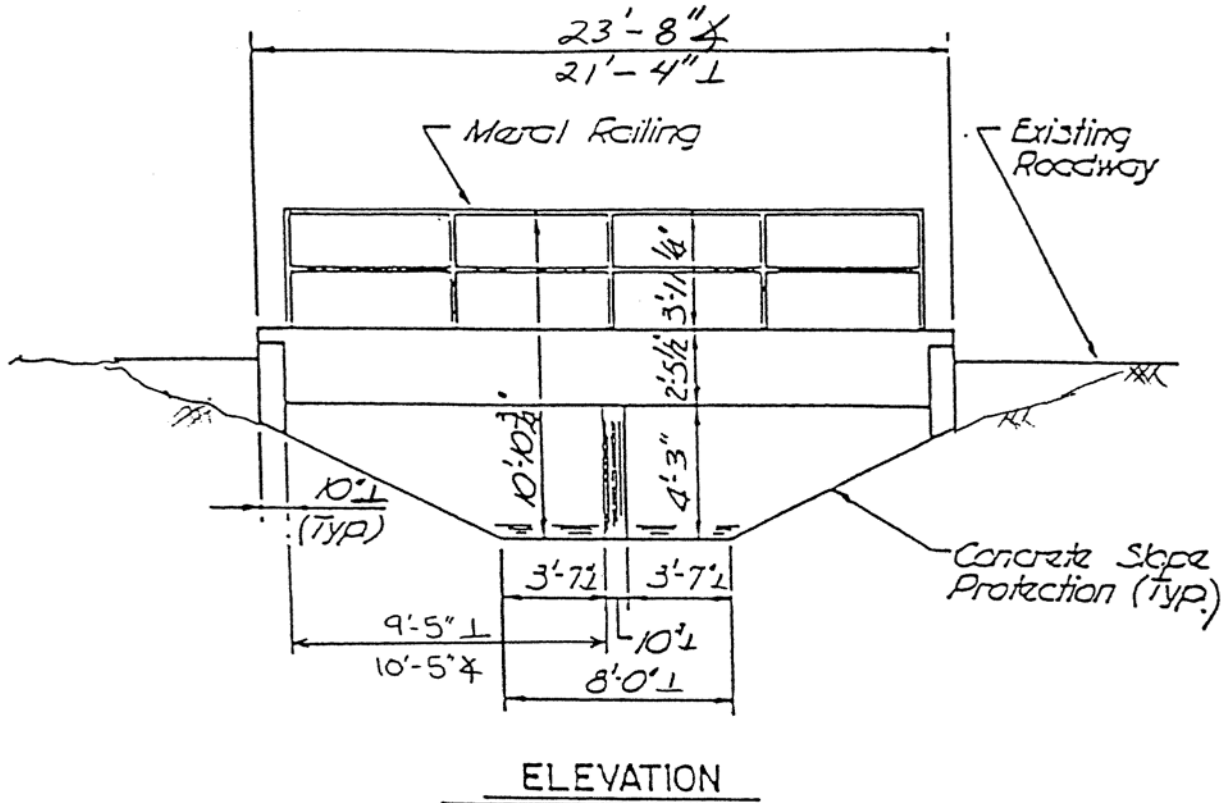
BRIDGE NO. PBL03R - TAYLOR STREET OVER STREAM



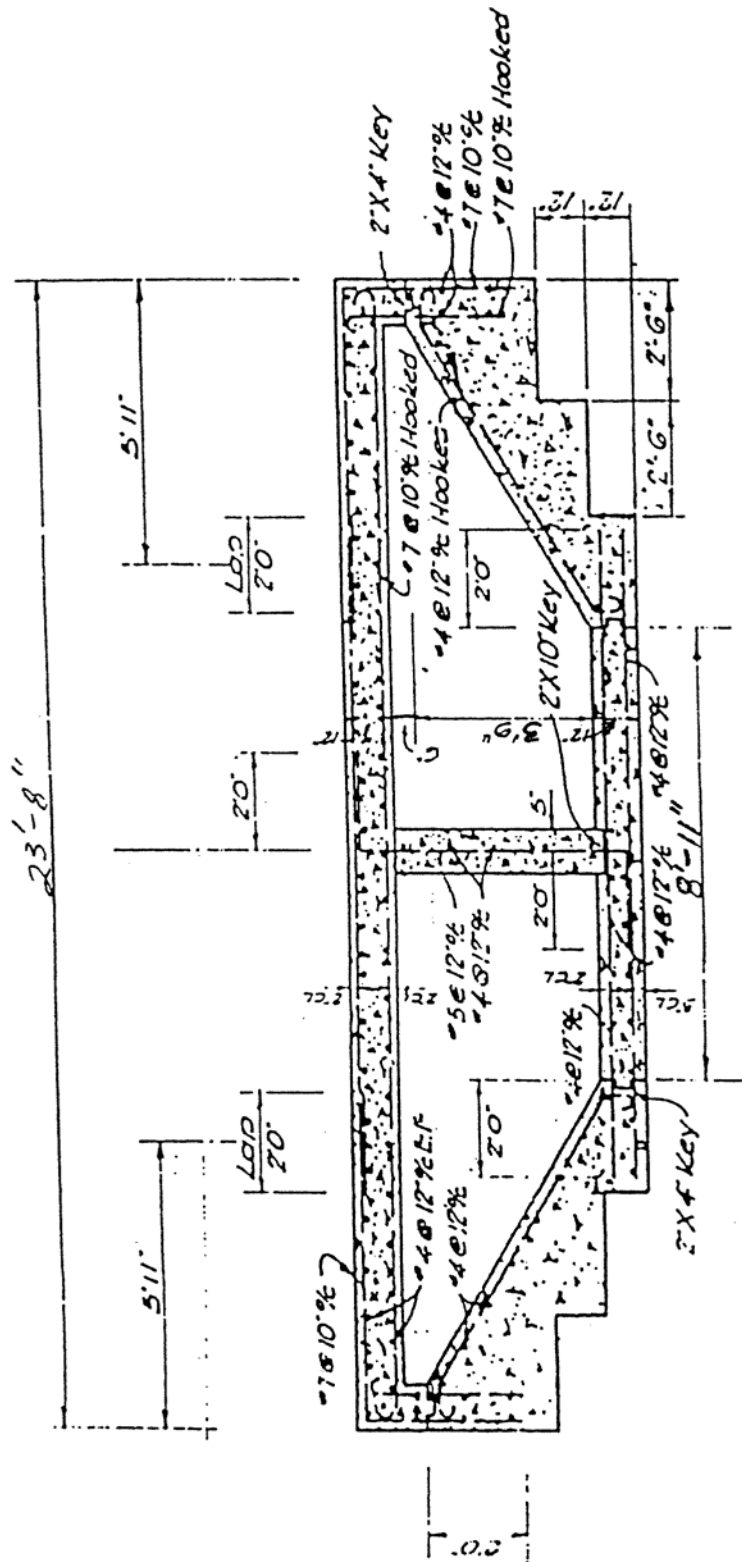
PBL03R

P-BL03001

BRIDGE NO. PBL03R - TAYLOR STREET OVER STREAM



BRIDGE NO. PBL03R - TAYLOR STREET OVER STREAM



SECTION A-A
PARALLEL TO REINFORCING
(ALONG & ROADWAY)

(allows Φ roundness)

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL03R Bridge Type TWO-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name TAYLOR STREET Crossing STREAM Photos 27
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

DESCRIPTION:

Two-span concrete rigid-frame bridge with an asphalt wearing surface. The substructure consists of concrete rigid-frame wall abutments with concrete slope and channel protection and a solid shaft concrete pier. The bridge carries a two-lane roadway and two sidewalks. The stream flows from south to north under the bridge. The numbering convention for the bridge is from the north and the west.

OVERALL LENGTH:	<u>23'-8"</u>	CLEAR ROADWAY:	<u>26'-0"</u>
YEAR BUILT:	<u>1958</u>	POSTED LOAD:	
YEAR REHABILITATED:	<u>-</u>	SINGLE, LBS	<u>52,000 lbs. G.V.W.</u>
POSTED SPEED LIMIT:	<u>25 MPH</u>	COMBINATION, LBS	<u>80,000 lbs G.C.W.</u>
		BEAM SPACING:	<u>-</u>
MAP COORDINATES:	<u>12F6</u>	NUMBER OF BEAMS:	<u>-</u>
	<u>5410B10</u>	SIZE OF BEAMS:	<u>-</u>

ROADWAY APPROACHES:

Section 26' wide asphalt roadway with two lanes.

Alignment Both approaches are straight.

Profile The bridge is located at the sump of a vertical curve.

Traffic Barrier No approach traffic barriers.

REVIEW OF ITEM 113 - SCOUR POTENTIAL RATING: 8P

Item 113 was previously rated an 8P, which implies that the bridge is a culvert type structure with a paved bottom. Based on the observed conditions, this rating is still valid and does not require reevaluation.

REVIEW OF PREVIOUS REPORT:

A 2019 bridge inspection report prepared by Sabra Associates, Inc. was available and used for comparison purposes. The overall condition of the structure appeared to be essentially the same as noted in the previous report with the following exceptions:

1. There are full-width holes along the bottom of the South Rail.
2. The South Sidewalk has settled up to 1 1/2".

LIVE LOAD RATINGS:

2021 BRIDGE INSPECTION REPORT
INSPECTION AND RATING SUMMARY

Bridge No. P-BL03R **Bridge Type** TWO-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name TAYLOR STREET **Crossing** STREAM **Photos** 27
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

The load ratings were re-calculated by Wallace, Montgomery & Associates during the 2013-2014 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The condition of the structure has not changed significantly due to deterioration, damage or rehabilitation since the 2013 inspection. The load ratings for the Maryland Legal Load Vehicles are as follows:

<u>Truck</u>	<u>Gross Vehicle Weight</u>	<u>Inventory</u>	<u>Operating</u>
H-15	15 tons	16 tons	28 tons
HS-20	36 tons	30 tons	50 tons
Type 3	33 tons	28 tons	47 tons
Type 3S2	40 tons	52 tons	88 tons

The bridge is currently posted for 65,000 lbs. for single unit vehicles and 60,000 lbs. for combination unit vehicles.

The recommendation for posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

SI&A CONDITION RATING SUMMARY:

<u>Item</u>	<u>Current</u>	<u>2019</u>	<u>2017</u>	<u>2015</u>
Deck (Item 58) -	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>
Superstructure (Item 59) -	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>
Substructure (Item 60) -	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>
Channel and Channel Protection (Item 61) -	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
Culvert (Item 62) -	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Waterway Adequacy (Item 71) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Approach Roadway Alignment (Item 72) -	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>
Bridge Sufficiency Rating (BSR) -	<u>87.6</u>	<u>87.6</u>	<u>87.6</u>	<u>87.6</u>
Routine Inspection Frequency -	<u>24 months</u>	<u>24 months</u>	<u>24</u>	<u>24</u>

2021 BRIDGE INSPECTION REPORT
INSPECTION AND RATING SUMMARY

Bridge No. P-BL03R **Bridge Type** TWO-SPAN CONCRETE RIGID-FRAME **Year Built** 1958

Name TAYLOR STREET **Crossing** STREAM **Photos** 27

Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

Date of Inspection - 03/25/2021 03/05/2019 03/20/2017 03/09/2015

Partial Interim Inspection Frequency - N/A

Load Rating Summary:

The load ratings were re-calculated by Mercado Consultants, Inc. during the 2013-2014 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The condition of the structure has not changed significantly due to deterioration, damage or rehabilitation since the 2013 inspection. The load ratings for the Maryland Legal Load Vehicles and Permit Vehicles are as follows:

<u>Vehicle</u>	<u>Gross Vehicle Weight</u>	<u>Inventory Rating (Tons)</u>	<u>Operating Rating (Tons)</u>
HL-93	36 tons		
H-15	15 tons	16.5	28.0
T-3	33 tons	28.5	47.5
T-4	35 tons	32.5	54.5
HS-20	36 tons	30.0	50.0
T-3S2	40 tons	52.5	88.0
150K	75 tons	18.0	30.0
90K Permit	45 tons	37.5	62.5
90K Mobile Crane	45 tons	40.5	67.5
90K Cargo	45 tons	46.0	76.5
80K Cargo	40 tons	52.5	88.0
120K Vehicle	60 tons	49.5	83.0
108K Mobile Crane	54 tons	47.5	79.5
120K Mobile Crane	60 tons	59.5	99.5

The bridge is currently posted for 52,000 lbs. for single-unit vehicles and 80,000 lbs. for combination-unit vehicles. Based on the above previously computed load ratings, we recommend adjusting this posting to 65,000 lbs. for single unit vehicles and 60,000 lbs. for combination unit vehicles.

The recommendation for posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

2021 BRIDGE INSPECTION REPORT

Bridge No. P-BL03R Bridge Type TWO-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name TAYLOR STREET Crossing STREAM Photos 27
Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

BRIDGE INSPECTOR'S RECOMMENDATIONS FOR MAINTENANCE REPAIRS

DESCRIPTION	COUNTY ITEM NUMBER	QUANTITY	UNIT COST	TOTAL COST
<u>Immediate:</u>				
1 Install object markers at the corners of the bridge.	81	4 EA	\$200/EA	\$800
2 Install a load posting sign on the East Approach at the bridge.	82	1 EA	\$500/EA	\$500
3 Install bridge rail that meets current MDSHA standards.	22	48 LF	\$100/LF	\$4,800
4 Install flared and turned down end treatments at the corners of the structure.	20	4 EA	\$1150/EA	\$4,600
Subtotal (Immediate Items)				\$10,700
<u>Routine:</u>				
1 Patch the spalls in the underside of the deck and curbs.	1	15 CF	\$225/CF	\$3,375
2 Remove the debris at the upstream end of the pier.	97	1 LS	1000/LS	\$1,000
Subtotal (Routine Items)				\$4,375
<u>Preventative:</u>				
1 Connect top fence railing to post at northwest, northeast and southeast corners of the bridge.	101	2 EA	\$50/EA	\$100
2 Seal cracks in the deck wearing surface and approach roadway.	13	75 LF	\$140/LF	\$10,500
3 Patch the spalls along the base of the concrete slope protection.	6	30 LF	\$40/LF	\$1,200
Subtotal (Preventative Items)				\$11,800
Total:				\$26,875

Immediate Repairs - Severe Defects that may affect the serviceability of the structure or are missing safety features that present a hazard to the public. Immediate repairs should be scheduled within 12 months of notification.

Routine Repairs - Moderate defects that do not presently affect the serviceability of the structure. Routine repairs should be scheduled, and given priority, within the current maintenance schedule.

Preventative Repairs - Minor defects that do not presently affect the serviceability of the structure. Preventative repairs should be scheduled within the current maintenance schedule.

2021 BRIDGE INSPECTION REPORT

GEOMETRY

Bridge No. P-BL03R Bridge Type TWO-SPAN CONCRETE RIGID-FRAME Year Built 1958

Name TAYLOR STREET Crossing STREAM Photos 27

Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

MAP COORDINATE	5410B10	12F6	NEW ADC	OLD ADC
SKEW WITH HORIZONTAL (DEGREES)	26			
STRUCTURE TYPE	-			
OVERALL LENGTH	23'-8"			
NO. OF SPAN	0002		NO. OF CELLS	
SPAN LENGTH	S012C	C012S		
VERTICAL CLEARANCE	A - < 10'			
OUT-TO-OUT (FEET)	0355			
ROADWAY WIDTH (FEET)	26'-0"			
APPROACH ROADWAY WIDTH	00	026		00
SHOULDER WIDTH	N	N		N
CURB/SIDEWALK WIDTH	040	000		
NO OF BEAMS	-			
SIZE OF BEAMS	-			
BEAM SPACINGS	-			
ABUTMENT TYPE	MATERIAL 1 - Concrete	TYPE 8 - Gravity		CODE 0 - Entire Structure
ABUTMENT FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None		CODE 0 - Entire Structure
PIER TYPE	MATERIAL 1 - Concrete	TYPE 1 - Solid Shaft		CODE 0 - Entire Structure
PIER FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None		CODE 0 - Entire Structure
WINGWALL TYPE	MATERIAL 1 - Concrete	TYPE		CODE
WINGWALL FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE		CODE
BEARING TYPE	1ST BEARING N - None or N/A	2ND BEARING N - None or N/A	3RD BEARING N - None or N/A	
SPAN OF CULVERT	N			
RISE OF CULVERT	N			
CULVERT WALL THICKNESS (IN)				

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL03R **Bridge Type** TWO-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name TAYLOR STREET **Crossing** STREAM **Photos** 27
Inspection Date 03/25/2021 **Inspection Crew** C. Percy, D. Ross

58 DECK	CONDITION RATING	
1. Wearing Surface	6	Type - Asphalt
2. Deck - Topside	-	
3. Deck - Underside	6	Type - Top slab of rigid-frame
4. Curbs	6	Type - Concrete
5. Median	-	
6. Sidewalks	6	Type - 4' wide concrete
7. Parapets	7	Type - Concrete
8. Railing	5	Type - Two-strand steel pipe
9. Roadway Joints	-	
10. Drainage System	7	Type - Brick inlet structures
11. Lighting Standards	-	
12. Utilities	-	Type - Overhead lines along the north side of the roadway
13. Other	-	
Inspector's Condition Rating (58)		6

58.1 - There are up to 1/2" wide longitudinal, transverse and map cracks throughout the asphalt wearing surface.

58.3 - There are random areas of delaminating concrete throughout the top slab exposing the reinforcement chairs. There are random hairline cracks throughout the top slab in both spans.

Span 1: There is a 7" diameter x 1/2" deep spall with exposed reinforcement at the northwest corner. There are areas of moderate honeycombing at the north end. There are several areas of delamination up to 2'-0" long x 1'-3" wide at the north end of the top slab. There is a 6" diameter x 1/2" deep spall with exposed reinforcement adjacent to the West Abutment near mid-length. There is a small surface spall with exposed reinforcement south of mid-length. There are ten spalls up to 7" long x 1'-1" wide x 3/4" deep with exposed reinforcement and associated delamination between the spalls adjacent to the pier at the south end of Span 1 (see Photos 7 and 8). There is water staining around the drain through the south end of the top slab.

Span 2: There is minor to moderate abrasion at the storm drains in the top slab. There is a 4'-0" wide x 2'-0" long x up to 3/4" deep spalled and delaminated area with exposed reinforcement at the north end of Span 2 adjacent to the storm drain outlet (see Photo 9). There are six small surface spalls with exposed reinforcement in the top slab at the north end of Span 2 adjacent to the East Abutment (see Photo 10). There is a 7" long x 1'-1" wide x 3/4" deep spall with exposed reinforcement approximately 10' from the north end of Span 2 (see Photo 11). There is a 1'-0" diameter area of delamination in the top slab of Span 2 at the East Abutment approximately 15' from the north end. There is a 1'-0" long x 6" wide area of delamination in the top slab at the pier just south of mid-width of the bridge. There are

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

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several areas of moderate honeycombing and spalls up to 1'-8" long x 8" wide x 1" deep with exposed and corroded reinforcement within 10' of the south end in Span 2 (see Photo 12). The reinforcing bars exhibit minor section loss.

58.4 - There is a 1'-2" long x 8" wide x 3" deep spall along the top edge of the South Curb (see Photo 13). There is minor scaling throughout both curbs. There are isolated hairline to 1/16" wide vertical cracks throughout the concrete curbs.

58.6 - The North Sidewalk has moderate scaling throughout (see Photo 14). The South Sidewalk is 3/4" lower than the storm drain inlet (see Photo 15). There is a full-width x 1/8" wide crack with an adjacent 6" long x 1 1/2" wide x 1" deep spall at the east end of the South Sidewalk (see Photo 16).

58.7 – There are small areas of isolated efflorescence in the exterior face of the parapets. There are hairline cracks around the base of the railing posts. There is a 1/16" wide vertical crack with light efflorescence in the North Parapet above the pier (see Photo 17). There is a hairline vertical crack with light efflorescence in the South Parapet.

58.8 - There is minor surface corrosion throughout the steel pipe bridge railings with random corrosion holes measuring up to 1" diameter. There are two 4" wide x full depth holes along the bottom of the South Rail (see Photo 18). There are cracks in the repair patch at the base of the South Rail post (see Photo 19).

58.10 - The drainage inlets at the northeast and southeast corners of the bridge are in good condition. The inlets discharge through the top slab. There are a few 1/16" wide cracks and some missing mortar along the brick mortar joints that make up the inlet walls.

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CONDITION RATING FORMS

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59 SUPERSTRUCTURE

Number of Spans 2
Type of Construction Concrete Rigid-Frame

	CONDITION RATING	
1. Bearing Devices	<input type="text" value="-"/>	
2. Girders or Beams	<input type="text" value="-"/>	
3. Stringers	<input type="text" value="-"/>	
4. Floor Beams	<input type="text" value="-"/>	
5. Diaphragms/Crossframes	<input type="text" value="-"/>	
6. Paint	<input type="text" value="-"/>	
7. Other	<input type="text" value="6"/>	Type - Rigid-frame top slab
8. Rivets or Bolts	<input type="text" value="-"/>	
9. Welds - Cracks	<input type="text" value="-"/>	
10. Rust	<input type="text" value="-"/>	
11. Timber Decay	<input type="text" value="-"/>	
12. Concrete Cracking	<input type="text" value="6"/>	
13. Collision Damage	<input type="text" value="-"/>	
14. Deflection Under Load	<input type="text" value="8"/>	
15. Alignment of Members	<input type="text" value="8"/>	
16. Vibrations Under Load	<input type="text" value="8"/>	
17. Fracture Critical Members	<input type="text" value="-"/>	

Inspector's Condition Rating (59)

59.7 - See comments for Item 58.3.

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

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60 SUBSTRUCTURE

CONDITION RATING

1. Abutments	-Wingwalls	7	
	-Backwalls	-	
	-Stems	7	
	-Footings	-	
	-Piles	-	
	-Scour/Erosion	8	
	-Settlement	8	
Overall Abutment Rating		7	Abutment Type - Concrete rigid-frame wall
2. Piers or Bents	-Caps	-	
	-Columns/Shaft	6	
	-Footings	-	
	-Piles	-	
	-Scour/Erosion	6	
	-Settlement	8	
Overall Pier Rating		6	Pier Type - Concrete rigid-frame wall
3. Pile Bents	-Caps	-	
	-Piles	-	
4. Concrete Cracking or Spalling		6	
5. Steel Corrosion		-	
6. Timber Decay		-	
7. Other	<u> </u> Invert	6	
8. Debris on Seats		-	
9. Paint		-	
10. Collision Damage		-	
11. Overall Undermining/Scour		-	

Inspector's Condition Rating (60) 6

60.1 – Both abutments have a few isolated hairline vertical cracks. There is a small edge spall at the north end of the East Abutment.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

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Wingwalls: There is vegetation growth, minor pop-out spalls and hairline cracks at all four wingwalls. The Northeast and Southwest Wingwall joints at the abutments are open up to 2" at the top. The Northwest and Southeast Wingwall joints are open up to 1". The joint filler material is falling out at the Northeast and Southwest Wingwalls (see Photo 20).

60.2 - There are isolated hairline vertical cracks throughout both faces of the pier walls. There is hairline map cracking with efflorescence in the north end of the pier (refer to Photo 17). There is moderate abrasion and patched areas along the base of the pier. There are eight vertical cracks between 0.012" and 0.05" wide in both faces of the pier. There are vertical cracks with built up efflorescence in both faces of the pier at the north end (see Photo 21).

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CONDITION RATING FORMS

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Inspection Date 03/25/2021 Inspection Crew C. Percy, D. Ross

61 CHANNEL AND CHANNEL PROTECTION

	CONDITION RATING	
1. Channel Scour	<input type="text" value="7"/>	
2. Embankment Erosion	<input type="text" value="7"/>	
3. Drift/Debris	<input type="text" value="5"/>	
4. Vegetation	<input type="text" value="7"/>	
5. Channel Alignment	<input type="text" value="8"/>	
6. Fender System	<input type="text" value="-"/>	
7. Spur Dikes and Jetties	<input type="text" value="-"/>	
8. Riprap/Slope Protection	<input type="text" value="5"/>	Type - Concrete

Inspector's Condition Rating (61)

61.1 - There is moderate to heavy abrasion up to 2" deep along the concrete inverts.

61.3 - There is heavy debris accumulation at the upstream end of the pier.

61.5 - The stream flows from south to north under the structure. The upstream channel is on a tangent alignment and the downstream channel curves to the west.

61.8 – There are 1/16" wide cracks and up to 8" high x 8" deep spalls along the base of the concrete slope protection (see Photo 22). This condition is worse at the construction joints and along the base of the slope protection where there is moderate vegetation growing in the joints. A few of the drains in the slope protection are clogged with debris. There are horizontal hairline cracks in the repair patch on the Northwest Slope Protection adjacent to the bridge. There is a full-height x up to 1" wide vertical fracture in the Southwest Slope Protection approximately 10' from the bridge (see Photo 23).

There are hairline vertical and diagonal cracks in the slope protection under the bridge. There is a vertical hairline crack with built-up efflorescence at the south end of the East Slope Protection. The bottom edge of the slope protection under the bridge has heavy abrasion in both spans. There is a 1'-8" long x 8" high x 2 1/2" deep spall in the East Slope Protection near the north end of the bridge.

Fence: There is heavy vegetation, moderate corrosion and misalignments throughout the fence along the concrete slope protection. The top rail of the fence is not connected to the post at the northwest, northeast and southeast corners of the structure (see Photo 24). The top rail of the Southwest Fence is disconnected at Post 2.

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CONDITION RATING FORMS**

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71 WATERWAY ADEQUACY

Opening	Good	<input type="text" value="Fair"/>	Poor
Alignment	<input type="text" value="Good"/>	Fair	Poor
Frequency of Overtopping	Remote	<input type="text" value="Slight"/>	Occasional Frequent

Inspector's Condition Rating (71)

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

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72 APPROACH ROADWAY ALIGNMENT APPRAISAL RATING

- | | | | | | |
|--------------------------|---|----------|--------------|-------------|--|
| 1. Vertical Alignment | W | Good | Fair | Poor | - Bridge is at the sump of a vertical curve. |
| | E | Good | Fair | Poor | |
| 2. Horizontal Alignment | W | Good | Fair | Poor | - Both approaches straight |
| | E | Good | Fair | Poor | |
| 3. Speed Limit Reduction | | None | Minor | Substantial | |
| 4. Sight Distance | | Adequate | Not Adequate | | |

Inspector's Condition Rating (72) 8

APPROACH ROADWAY

CONDITION RATING

- | | | |
|---|---|---|
| 5. Approach Traffic Barrier | - | |
| 6. Approach Pavement | 7 | Type - Asphalt |
| 7. Approach Embankments | 7 | |
| 8. Approach Slabs | - | |
| 9. Relief Joints | - | |
| 10. Signing - Legibility and Visibility | Good | Fair Poor Type - Posting Signs |
| 11a. Roadway Speed Limit | 25 MPH | 11b. Posted Bridge Speed Limit |
| 12. Posted Load Limits | 52,000 lbs. G.V.W. 80,000 lbs G.C.W. | |
| 13. Traffic Safety Features | | |
| a. Bridge Railing | 0 | 1 N Type - Two-Strand Steel Railing |
| b. Transitions | 0 | 1 N Type - No approach traffic barrier |
| c. Approach Traffic Barrier | 0 | 1 N Type - No approach traffic barrier |
| d. Approach Traffic Barrier Ends | 0 | 1 N Type - No approach traffic barrier |

72.5 - There are no approach traffic barriers.

72.6 - There are up to 1/2" wide map cracks throughout the asphalt wearing surface on both approaches (see Photos 25 and 26).

There are minor isolated cracks in the approach curbs. There is a 5" long x 2 1/2" high x 1" deep spall in the Northeast Curb near the transition to the bridge. At the Northeast and Southwest Curbs, there is a 1/2" wide crack with up to 1/2" of settlement.

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CONDITION RATING FORMS

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72.10 - There are no object markers at the bridge. The previously noted posting sign at the East Approach has been removed since the 2017 inspection. There is no load posting sign at the West and East Approach. There are advance load posting signs at the following locations: Eastbound Taylor Street at 54th Street, Westbound Taylor Street at 54th Place (see Photo 27). The posting signs have been changed since the 2017 inspection. The signs are posted at 65,000 lbs for single-unit vehicles and 60,000 lbs for combination-unit vehicles, as per the load rating analysis completed by Wallace, Montgomery & Associates, LLP on February 4, 2014.

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



1. West Approach Looking East



2. East Approach Looking West

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



3. North (Downstream) Elevation



4. South (Upstream) Elevation

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



5. Looking North (Downstream)



6. Looking South (Upstream)

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



7. Deck - Adjacent Spalls with Exposed Reinforcement in Top Slab of Span 1



8. Deck - Adjacent Spalls with Exposed Reinforcement in Top Slab of Span 1 at the South End

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



9. Deck - Adjacent Spalls with Exposed Reinforcement in the Top Slab of Span 2 at the North End



10. Deck - Spalls with Exposed Reinforcement in Top Slab of Span 2 at South End

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



11. Deck - Spall with Exposed Reinforcement in Top Slab of Span 2 10' from North End



12. Deck - Typical Surface Spalls Throughout Top Slab of Span 2



13. Curb - Spall in South Curb



14. Sidewalk - Typical Scaling Throughout North Sidewalk



15. Sidewalk - Settlement at the South Sidewalk at Storm Drain Inlet



16. Sidewalk - Transverse Crack with Spall in South Sidewalk



17. Parapet - Vertical Crack with Efflorescence in Exterior Face of North Parapet Extending into Pier



18. Railing - Corrosion Holes in North Railing Posts



19. Railing - Cracks at Base of Railing concrete Repair



20. Wingwall - Bulging Joint Material at Southeast Wingwall

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



21. Pier - Vertical Cracks with Efflorescence in Pier



22. Slope Protection - Abrasion and Spalling along the Base of Northeast Slope Protection

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



23. Slope Protection - Vertical Failure in Southwest Slope Protection



24. Fence - Disconnected Top Rail of Southeast Fence

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



25. Approach - Map Cracking in West Approach



26. Approach - Map Cracking in East Approach

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL03R - TAYLOR STREET OVER STREAM



27. Signage - Load Posting Sign at West Approach

STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER: P-BL03001

IDENTIFICATION

FORM 1 OF 13

(8) STRUCTURE NUMBER: Major Structure Rigid Frame > 20' 0" Single Structure

(8) FHWA NUMBER:

(7) FACILITY CARRIED:

(6) FEATURE INTERSECTED:

(255) FEDERAL SUBMITTAL INDICATOR: Yes

(262) NAME OF STRUCTURE:

(27) YEAR BUILT: (106) YEAR RECONSTRUCTED:

(263) ADDITIONAL RECONSTRUCTION YEARS:

(1) STATE CODE: Maryland (2) DISTRICT CODE: 03

(3) COUNTY CODE: GEORGE'S (4) PLACE CODE:

(5) INVENTORY ROUTE: Route carried "on" the structure City Street Mainline Always
(Route Prefix) (Level of Service) (Number) (Direction)

(9) LOCATION:

(11) MILEPOINT:

(12) BASE HIGHWAY NETWORK: Inv. Route is NOT on the Base Network

(266) GIS ROUTE ID:

(267) GIS MILEPOINT:

(268) SCENIC ROUTE:

(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:

(16) LATITUDE: (A) (B) (C) (D)

(17) LONGITUDE: (A) (B) (C) (D)

(28) LANES ON: LANES UNDER:

(42) TYPE OF SERVICE ON: Highway-Pedestrian

TYPE OF SERVICE UNDER: Waterway

(98) BORDER STATE: BORDER STATE'S SHARE %:

(99) BORDER STATE'S NUMBER:

CLASSIFICATION

FORM 2 OF 13

(104) HWY SYSTEM: No, Inventory Route is not on the NHS (103) TEMPORARY STRUCTURE:

(105) FEDERAL LANDS HWYS: Not applicable (110) NATIONAL NETWORK: No, the inventory route is not part of the national network for trucks.

(26) FUNCTIONAL CLASS: Urban Local (20) TOLL: On free road

(100) DEFENSE HWY: The inventory route is not a STRAHNET route (21) MAINTENANCE: City or Municipal Highway Agency

(101) PARALLEL STRUCTURE: No parallel structure (22) OWNER: City or Municipal Highway Agency

(102) DIRECTION: 2-way traffic (37) HISTORICAL SIGNIFICANCE: Not eligible

BRIDGE NUMBER: P-BL03001

TRAFFIC

FORM 3 OF 13

(19) DETOUR:	<input type="text" value="01"/>	(109) TRUCK ADT %:	<input type="text" value="01"/>
(29) ADT:	<input type="text" value="000630"/>	(30) ADT YEAR:	<input type="text" value="2019"/>
(114) FUTURE ADT:	<input type="text" value="000960"/>	(115) FUTURE ADT YEAR:	<input type="text" value="2039"/>

STRUCTURE TYPE AND MATERIAL

FORM 4 OF 13

(43) STRUCT TYPE:	<input type="text" value="B"/> Concrete Continuous	<input type="text" value="07"/> Rigid Frame
(44) STRUCT TYPE - APPR:	<input type="text" value="0"/> Not Applicable	<input type="text" value="00"/> Other
(232) BOX CULVERT ON PILES:	<input type="text" value="0"/> None	<input type="text" value="0"/> Entire Structure
(208) STRUCT TYPE - WIDENED/EXTENDED:	<input type="text" value="N"/>	<input type="text" value="N"/>
(219) SLOPE PROTECTION:	<input type="text" value="1"/> Concrete	
(228) FOOTING - ABUTMENT:	<input type="text" value="1"/> Concrete	<input type="text" value="0"/> None
(229) SUBSTRUCT ABUTMENT:	<input type="text" value="1"/> Concrete	<input type="text" value="8"/> Gravity
(230) FOOTING - PIER:	<input type="text" value="1"/> Concrete	<input type="text" value="0"/> None
(231) PIER TYPE:	<input type="text" value="1"/> Concrete	<input type="text" value="1"/> Solid Shaft
(242) BEARING TYPE:	<input type="text" value="N"/> None or N/A	<input type="text" value="N"/> None or N/A
(108) WEARING SURFACE:	<input type="text" value="6"/> Bituminous	<input type="text" value="0"/> None
(243) JOINT TYPE:	<input type="text" value="N"/> None	<input type="text" value="N"/> None
(206) STRUCT SUBTYPE - MAIN:	<input type="text" value="N"/> Not Applicable	(207) STRUCT SUBTYPE - APPR: <input type="text" value="N"/> Not Applicable
(257) SCOUR PROTECTION:	<input type="text"/>	(270) CONC. DECK SPECIAL TYPE: <input type="text" value="N"/> Not Applicable
(221) STRUCTURAL STEEL:	<input type="text" value="N"/> Not Applicable	(233) DECK - COMP/NON-COMP: <input type="text" value="0"/> Non-Composite
(107) DECK STRUCTURE TYPE:	<input type="text" value="1"/> Concrete Cast-in-Place	(259) STAY-IN-PLACE FORMS: <input type="text" value="N"/>
(235) PARAPET:	<input type="text" value="02"/> Concrete-Rectangular	
(236) RAILING:	<input type="text" value="3"/> Steel	<input type="text" value="4"/> - Two Strand (non-structural)
(237) FENCING:	<input type="text" value="0"/> None	<input type="text" value="0"/> - None
(278) PAINT SYSTEM:	<input type="text" value="N"/> Not Applicable	
(344) PAINT COLOR/NUMBER:	<input type="text" value="N"/> Not Applicable	
(345) YEARS PAINTED:	<input type="text" value="N"/>	<input type="text" value="N"/>

BRIDGE NUMBER: P-BL03001

GEOMETRICS

FORM 5 OF 13

(112) NBIS BRIDGE LENGTH:	<input type="text" value="Y"/>	(49) STRUCTURE LENGTH:	<input type="text" value="0000240"/>		
(210) NUMBER OF SPANS:	<input type="text" value="0002"/>	(45) # SPANS IN MAIN UNIT:	<input type="text" value="002"/>		
(46) # APPROACH SPANS:	<input type="text" value="0000"/>	(209) CONTINUOUS SPANS:	<input type="text" value="Y"/>		
(48) LENGTH MAX SPAN:	<input type="text" value="0012"/>	(238) # STRINGERS - ORIGINAL:	<input type="text" value="00"/>		
(240) SPACING - ORIGINAL:	<input type="text" value="N"/>	(239) # STRINGERS - WIDENED:	<input type="text" value="00"/>		
(241) SPACING - WIDENED:	<input type="text" value="N"/>	(33) BRIDGE MEDIAN:	<input type="text" value="0"/>		
(50) CURB/SIDEWALK WIDTHS:	<input type="text" value="040"/>	(205) MEDIAN WIDTH:	<input type="text" value="000"/>		
(51) DECK CURB-CURB WIDTH:	<input type="text" value="0260"/>	(32) APPROACH ROAD WIDTH:	<input type="text" value="00"/>	<input type="text" value="026"/>	<input type="text" value="00"/>
(52) DECK OUT-OUT WIDTH:	<input type="text" value="0355"/>	(10) INVENT ROUTE, MIN VERT CLEAR:	<input type="text" value="9999"/>		
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	<input type="text" value="9999"/>		(47) INVENT ROUTE, TOTAL HORIZ CLEAR:	<input type="text" value="260"/>	
(54) MIN. VERT. UNDERCLEARANCE:	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="A"/>	< 10'	
(55) MIN. LAT. CLEARANCE (RIGHT):	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="999"/>		
(56) MIN. LAT. CLEARANCE (LEFT):	<input type="text" value="000"/>		(342) HORIZ CLEARANCE (ON):	<input type="text" value="02600"/>	<input type="text" value=""/>
(34) SKEW, IN DEGREES:	<input type="text" value="26"/>	(280) HORIZ CLEARANCE (UNDER):	<input type="text" value="N"/>	<input type="text" value=""/>	
(35) STRUCTURE FLARED:	<input type="text" value="N"/>	(253) NUMBER OF CELLS:	<input type="text" value="N"/>		
(256) SPAN OF CELLS:	<input type="text" value="N"/>	(254) RISE:	<input type="text" value="N"/>		
		(258) EARTH FILL:	<input type="text" value="N"/>		
		(343) CENTERLINE LENGTH (Culverts/Pipes):	<input type="text" value="N"/>		
(223) SHOULDER WIDTHS:	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	
(264) TYPE AND SPAN:	<div>CRF 11'-10", 11'-10"</div>				

BRIDGE NUMBER: P-BL03001

LOAD RATINGS AND POSTINGS

(41) STATUS: Posted for load
(31) DESIGN LOAD: HS 20
(398) PEDESTRIAN LOADING:
(399) RAILROAD LOADING:
(70) POSTING: Equal to or above legal loads

(224) WEIGHT POSTED:

(New Split)

(66) INVENTORY RATING:

(64) OPERATING RATING:

(400) DATE OF RATING:

(65) METHOD USED TO DETERMINE INVENTORY RATING: 1 Load Factor (LF)

(63) METHOD USED TO DETERMINE OPERATING RATING: 1 Load Factor (LF)

	INVENTORY RATING	OPERATING RATING
HL-93 Vehicle	(402)	(401)
H-15 Vehicle	(404) 165	(403) 280
T3 (Dump Truck) Vehicle	(406) 285	(405) 475
T4 Reduced Lift Axle Vehicle	(408) 325	(407) 545
HS Vehicle	(410) 300	(409) 500
3S2 Vehicle	(412) 525	(411) 880
150K Vehicle	(414) 180	(413) 300
90K Permit Combination Vehicle	(416) 375	(415) 625
90K Mobile Crane Vehicle	(418) 405	(417) 675
90K Cargo Vehicle	(420) 460	(419) 765
80K Cargo Vehicle	(422) 525	(421) 880
120K Vehicle	(424) 495	(423) 830
108K Mobile Crane Vehicle	(426) 475	(425) 795
120K Mobile Crane Vehicle	(428) 595	(427) 995

(225) SPEED LIMIT ON STRUCTURE:

(226) MIN VERT CLEARANCE OVER ROADWAY POSTED: ☒ Posting signs not required

(227) MIN VERT UNDERCLEARANCE POSTED: ☒ Posting signs not required

FORM 6 OF 13

CONDITION INSPECTION

FORM 7 OF 13

	Inspection Month	(91) Frequency	Due Date	(90) Inspection Date	(290) Inspection Report Completion Date
Routine Inspection	03	24	03/25/2023	03/25/2021	06/25/2019

Critical Feature Inspections	(291) Inspection Month	(92) Frequency	Due Date	(93) Critical Feature Inspection Date
(A) Fracture Critical Members		N		
(B) Underwater Inspection		N		
(C) Special Inspection		N		
(D) Hands-on Railroad		N		
(E) Confined Space		N		
(F) Ultrasonic Testing (UT) Pin		N		
(G) Ultrasonic Testing (UT) Anchor		N		
(H) Post Tensioning Bar		N		
(I) Cathodic Protection		N		
(J) Consultant		N		
(K) Movable Bridge		N		
(L) Suspension Bridge		N		
(M) Cable		N		
(N) Monitor		N		
(P) Flood				
(Q) Damages				
(R) Inquires				

(58) DECK:	<input type="text" value="6"/>	Satisfactory Condition	(59) SUPERSTRUCTURE:	<input type="text" value="6"/>	Satisfactory Condition
(60) SUBSTRUCTURE:	<input type="text" value="6"/>	Satisfactory Condition	(61) CHANNEL/PROTECTION:	<input type="text" value="5"/>	Bank eroded.. major damage
(62) CULVERTS:	<input type="text" value="N"/>	Not Applicable			
(310) INSPECTION DATA UPDATE DATE:	<input type="text" value="02/18/2015"/>		(312) LEAD INSPECTOR:	<input type="text" value="Caleb Percy, P.E."/>	
(311) INSPECTION TEAM:	<input type="text" value="YCE"/>		(313) BRIDGE INSPECTOR:	<input type="text" value="Daria Ross"/>	
(314) HOURS TO INSPECT:	<input type="text" value="003"/>	(316) DECK PLANKING %:	<input type="text" value="00"/>	(315) DECK PUNCTURES %:	<input type="text" value="00"/>
(317) DECK PATCHING %:	<input type="text" value="00"/>	(318) BLOCKING:	<input type="text" value="00"/>	(319) POWER WASHING:	<input type="text" value="N"/>
(320) IDENTIFICATION NO.:	<input type="text" value="N"/>	(321) INVENTORY DIRECTION:	<input type="text" value="SOUT H"/>	(323) PERMIT:	<input type="text" value="N"/>
(324) NIGHT WORK:	<input type="text" value="N"/>	(325) WEEKEND WORK:	<input type="text" value="N"/>		
(322) LOOKING TOWARD:	<input type="text" value="MARYLAND ROUTE 450"/>				
(326) MAINTENANCE OF TRAFFIC STANDARDS:	<input type="text"/>				
(327) MOT COMMENTS:	<input type="text"/>				
(328) LOCATION OF MIN. VERT. UNDERCLEARANCE:	<input type="text"/>				

BRIDGE NUMBER: P-BL03001

(329A) CRITICAL FINDINGS: (329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: No, signs or some signs missing

(340) INSPECTION EQUIPMENT:

<input type="text" value="W"/>	Waders	<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	

(333) MHOI: (334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION:

(336) ADVANCED NOTIFICATION COMMENTS:

BRIDGE NUMBER: P-BL03001

APPRAISAL

FORM 8 OF 13

(67) STRUCTURAL EVALUATION: BSR (68) DECK GEOMETRY:
(69) UNDERCLEARANCE: 87.6 (72) APPROACH ALIGNMENT:
(71) WATERWAY ADEQUACY:
(36) TRAFFIC SAFETY FEATURES RAILINGS: Does NOT meet Standards
TRANSITIONS: Does NOT meet Standards
APPROACH BARRIER: Does NOT meet Standards
APPROACH BARRIER ENDS: Does NOT meet Standards
(113) SCOUR EVALUATION: Bridge is a culvert-type structure with paved bottom.
(DT) DEDUCT CODE:
(STAT) STATUS: Not Deficient

NAVIGATION

FORM 9 OF 13

(38) NAVIGATION CONTROL: (39) NAV VERT CLEARANCE:
(40) NAV HORIZONTAL CLEARANCE:
(111) PIER/ABUTMENT PROTECTION:
(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:
(247) DESIGN YEAR STORM: (248) RUN-OFF Q:
(249) DRAINAGE AREA: (250) STRUCTURE IN TIDAL AREA: No
(251) HIGH WATER ELEVATION:
(252) YEAR HIGH WATER ELEVATION - LATEST:

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 13

(201) CONTRACT NUMBERS:
(203) SHA SPEC- YEAR:
(204) AASHTO SPEC-YEAR:
(75) TYPE OF PROPOSED WORK: (76) LENGTH OF IMPROVEMENT:
(94) BRIDGE IMPROVE COST: (95) ROADWAY IMPROVE COST:
(96) TOTAL PROJECT COST: (97) YEAR OF IMPROVEMENT:

BRIDGE NUMBER: P-BL03001

MISCELLANEOUS

FORM 11 OF 13

(244) SIGNS ON STRUCTURE: ☐ No

(245) BRIDGE ROADWAY LIGHTING: ☐ No

(246) PROVISION FOR ROADWAY LIGHTING: ☐ No

(260) UTILITIES - ON:

- ☐ Not Applicable
☐ Not Applicable
☐ Telephone
☐ Not Applicable
☐ Gas

(261) UTILITIES - UNDER:

- ☐ Gas
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

REMARKS:

NOISE BARRIER

FORM 12 OF 13

(501) TYPE: ☐ ☐ ☐ ☐

(502) ALIGNMENT: ☐ ☐ ☐ ☐

(503) LENGTH: (504) MAXIMUM HEIGHT:

(505) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(506) FOUNDATION LENGTH:

(507) PANEL WIDTH:

(508) NUMBER OF SPECIAL PANEL(S):

(509) PANEL MATERIAL:

(510) FACING (Acoustic Treatment):

(511) PANEL FINISH:

(512) PANEL COLOR:

(513) FEDERAL COLOR:

(514) STACKED PANELS:

(515) NOISE BARRIER POST MATERIAL:

(516) ACCESS DOORS:

(517) FIRE HYDRANTS:

(518) RETROFITS:

RETAINING WALL

FORM 13 OF 13

(550) TYPE: ☐ ☐ ☐ ☐

(551) ALIGNMENT: ☐ ☐ ☐ ☐

(552) SEGMENT LENGTH(S):

(553) MAX. EXPOSED HEIGHT:

(554) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(555) TIEBACK:

(556) FACING:

(557) WITH FENCE OR RAIL:

(558) WITH NOISE BARRIER:

(559) PURPOSE:

Structure Inventory and Appraisal Sheet

NATIONAL BRIDGE INVENTORY

STRUCTURE INVENTORY AND APPRAISAL

IDENTIFICATION

(1) STATE NAME:..... **Maryland** CODE..... **243**
 (8) STRUCTURE NO:..... **2-00000-P--BL03-04-0**
 (5) INV RTE (ON/UNDER):..... **1-5-1-00120-0**
 (2) STATE HIGHWAY DEPARTMENT DISTRICT:..... **03**
 (3) COUNTY CODE:..... **033** (4) STATE CODE:.. **07850**
 (6) FTR INTRS:..... **STREAM**
 (7) FACILITY CARRIED:..... **TAYLOR STREET**
 (9) LOCATION:..... **0.06 MI W OF 54TH PLACE**
 (11) MILEPOINT:..... **0000200**
 (12) BASE HIGHWAY NETWORK:..... **0**
 (16) LATITUD **38562649** (17) LONGITUDE:.. **076533299**
 (98) BORDER BRIDGE STATE % Share.....
 (99) BORDER BRIDGE STRUCT NO.....

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL
 TYPE..... CODE..... **B 07**
 (44) STRUCTURE TYPE APPR: MATERIAL
 TYPE..... CODE..... **0 00**
 (45) NUMBER OF SPANS IN MAIN UNIT:..... **002**
 (46) NUMBER OF APPROACH SPANS:..... **0000**
 (107) DECK STRUCTURE TYPE..... **1**
 (108) WEARING SURFACE/PROTECTIVE SYSTEM:
 A) TYPE WEARING SURFACE: CODE..... **6**
 B) TYPE MEMBRANE: CODE..... **0**
 C) TYPE DECK PROTECTION: CODE..... **0**

AGE AND SERVICE

(27) YEAR BUILT:..... **1958**
 (106) YEAR RECONSTRUCTED..... **0000**
 (42) TYPE OF SERVICE: ON:
 UNDER..... CODE..... **5 5**
 (28) LANES: ON STRUCT **02** UNDER STRUCT: **00**
 (29) AVERAGE DAILY TRAFFIC:..... **000630**
 (30) YEAR OF ADT:..... **2019** (109) TRUCK ADT:..... **01**
 (19) BYPASS, DETOUR LENGTH:..... **01**

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN:..... **0012**
 (49) STRUCTURE LENGTH:..... **0000240**
 (50) CURB/SIDEWALK: LFT **040** FT RGT: **000** FT
 (51) BRDG RDWY WIDTH CURB TO CURB..... **0260** . FT
 (52) DECK WIDTH OUT TO OUT..... **0355**.. FT
 (32) APPR RDWY WIDTH: **00 026 00** FT
 (33) BRIDGE MEDIAN:..... **0**
 (34) SKEW: **26** DEG (35) STRUCT FLARE: **N**
 (10) INV RTE MIN VERTICAL CLEAR:..... **9999** FT
 (47) INV RTE TOT HORIZONTAL CLEAR:.. **260** FT
 (53) MIN VERT CLEAR OVER BRDG RDW **9999** FT
 (54) MIN VERT UNDERCLEAR **N A** FT

SUFFICIENCY RATING = **87.6**

STATUS = **0**

CLASSIFICATION

(112) NBIS BRIDGE LENGTH:..... **Y**
 (104) HIGHWAY SYSTEM:..... **N**
 (26) FUNCTIONAL CLASS:..... **19**
 (100) DEFENSE HIGHWAY:..... **0**
 (101) PARALLEL STRUCTURE:..... **N**
 (102) DIRECTION OF TRAFFIC:..... **2**
 (103) TEMPORARY STRUCTURE:.....
 (110) DESIGNATED NATIONAL NETWORK:..... **N**
 (20) TOLL:..... **3**
 (21) MAINTENANCE:..... **04**
 (22) OWNER:..... **04**
 (37) HISTORICAL SIGNIFICANCE:..... **5**

CONDITION

(58) DECK:..... **6**
 (59) SUPERSTRUCTURE:..... **6**
 (60) SUBSTRUCTURE:..... **6**
 (61) CHANNEL AND CHANNEL PROTECTION:..... **5**
 (62) CULVERTS:..... **N**

LOAD RATING AND POSTING

(31) DESIGN LOAD:..... **5**
 (64) OPERATING RATING:..... **500**
 (66) INVENTORY RATING:..... **300**
 (70) BRIDGE POSTING:..... **5**
 (41) STRUCTURE OPEN, POSTED, OR CLOSED:..... **P**

APPRAISAL

(67) STRUCTURAL EVALUATION:..... **6**
 (68) DECK GEOMETRY:..... **5**
 (69) UNDERCLEARANCES, VERT AND HOR:..... **N**
 (71) WATERWAY ADEQUACY:..... **7**
 (72) APPROACH ROADWAY ALIGNMENT:..... **8**
 (36) TRAFFIC SAFETY FEATURES:..... **0 0 0 0**
 (113) SCOUR CRITICAL BRIDGES:..... **8P**

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK:..... **35 1**
 (76) LENGTH OF IMPROVEMENT:..... **000024**
 (94) BRIDGE IMPROVEMENT COST:..... **204 ,000**
 (95) ROADWAY IMPROVEMENT COST:..... **21 ,000**
 (96) TOTAL PROJECT COST:..... **225 ,000**
 (97) YEAR OF IMPROVEMENT COST EST:..... **05**
 (114) FUTURE ADT:..... **000960**
 (115) YEAR OF FUTURE ADT:..... **39**

Bridge Inspection Report Element Form

Bridge No: P-BL03001

Inspection Date: 03/25/2021

TAYLOR STREET OVER STREAM

Milepoint: 0000200

(58) Deck 6

(59) Superstructure 6

(60) Substructure 6

(61) Channel 5

(62) Culvert N

Element

38 - Reinforced Concrete Slab

Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
1 - Ben.	698	sq. ft.	673	25	0	0

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are up to 1/2" wide longitudinal, transverse and map cracks throughout the asphalt wearing surface.

There are random areas of delaminating concrete throughout the top slab exposing the reinforcement chairs. There are random hairline cracks throughout the top slab in both spans.

Span 1: There is a 7" diameter x 1/2" deep spall with exposed reinforcement at the northwest corner. There are areas of moderate honeycombing at the north end. There are several areas of delamination up to 2'-0" long x 1'-3" wide at the north end of the top slab. There is a 6" diameter x 1/2" deep spall with exposed reinforcement adjacent to the West Abutment near mid-length. There is a small surface spall with exposed reinforcement south of mid-length. There are ten spalls up to 7" long x 1'-1" wide x 3/4" deep with exposed reinforcement and associated delamination between the spalls adjacent to the pier at the south end of Span 1. There is water staining around the drain through the south end of the top slab.

Span 2: There is minor to moderate abrasion at the storm drains in the top slab. There is a 4'-0" wide x 2'-0" long x up to 3/4" deep spalled and delaminated area with exposed reinforcement at the north end of Span 2 adjacent to the storm drain outlet. There are six small surface spalls with exposed reinforcement in the top slab at the north end of Span 2 adjacent to the East Abutment. There is a 7" long x 1'-1" wide x 3/4" deep spall with exposed reinforcement approximately 10' from the north end of Span 2. There is a 1'-0" diameter area of delamination in the top slab of Span 2 at the East Abutment approximately 15' from the north end. There is a 1'-0" long x 6" wide area of delamination in the top slab at the pier just south of mid-width of the bridge. There are several areas of moderate honeycombing and spalls up to 1'-8" long x 8" wide x 1" deep with exposed and corroded reinforcement within 10' of the south end in Span 2. The reinforcing bars exhibit minor section loss.

210 - Reinforced Concrete Pier Wall

1 - Ben.	39	ft.	31	8	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are isolated hairline vertical cracks throughout both faces of the pier walls. There is hairline map cracking with efflorescence in the north end of the pier. There is moderate abrasion and patched areas along the base of the pier. There are eight vertical cracks between 0.012" and 0.05" wide in both faces of the pier. There are vertical cracks with built up efflorescence in both faces of the pier at the north end.

215 - Reinforced Concrete Abutment

1 - Ben.	78	ft.	70	8	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Both abutments have a few isolated hairline vertical cracks. There is a small edge spall at the north end of the East Abutment.

330 - Metal Bridge Railing

1 - Ben.	44	ft.	41	0	3	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Bridge Inspection Report Element Form

Bridge No: **P-BL03001**

Inspection Date: 03/25/2021

TAYLOR STREET OVER STREAM

Milepoint: 0000200

(58) Deck

(59) Superstructure

(60) Substructure

(61) Channel

(62) Culvert

There is minor surface corrosion throughout the steel pipe bridge railings with random corrosion holes measuring up to 1" diameter. There are two 4" wide x full depth holes along the bottom of the South Rail. There are cracks in the repair patch at the base of the South Rail post.

331 - Reinforced Concrete Bridge Railing

1 - Ben.	46	ft.	43	3	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are small areas of isolated efflorescence in the exterior face of the parapets. There are hairline cracks around the base of the railing posts. There is a 1/16" wide vertical crack with light efflorescence in the North Parapet above the pier. There is a hairline vertical crack with light efflorescence in the South Parapet.

8062 - Sidewalk, Reinforced Concrete

1 - Ben.	29	Ft.	12	14	3	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The North Sidewalk has moderate scaling throughout. The South Sidewalk is 3/4" lower than the storm drain inlet. There is a full-width x 1/8" wide crack with an adjacent 6" long x 1 1/2" wide x 1" deep spall at the east end of the South Sidewalk.

Curb: There is a 1'-2" long x 8" wide x 3" deep spall along the top edge of the South Curb. There is minor scaling throughout both curbs. There are isolated hairline to 1/16" wide vertical cracks throughout the concrete curbs.

8251 - Wingwalls, Reinforced Concrete

1 - Ben.	13	Ft.	11	2	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is vegetation growth, minor pop-out spalls and hairline cracks at all four wingwalls. The Northeast and Southwest Wingwall joints at the abutments are open up to 2" at the top. The Northwest and Southeast Wingwall joints are open up to 1". The joint filler material is falling out at the Northeast and Southwest Wingwalls.

8260 - Slope, Protected

1 - Ben.	2	Each	2	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are hairline vertical and diagonal cracks in the slope protection under the bridge. There is a vertical hairline crack with built-up efflorescence at the south end of the East Slope Protection. The bottom edge of the slope protection under the bridge has heavy abrasion in both spans. There is a 1'-8" long x 8" high x 2 1/2" deep spall in the East Slope Protection near the north end of the bridge.

8322 - Roadway Approach Transition

1 - Ben.	2	Each	2	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Pavement: There are up to 1/2" wide map cracks throughout the asphalt wearing surface on both approaches.

Curbs: There are minor isolated cracks in the approach curbs. There is a 5" long x 2 1/2" high x 1" deep spall in the Northeast Curb near the transition to the bridge. At the Northeast and Southwest Curbs, there is a 1/2" wide crack with up to 1/2" of settlement.

Traffic Barrier: There are no approach traffic barriers.

Signs: There are no object markers at the bridge. The previously noted posting sign at the East Approach has been

Bridge Inspection Report Element Form

Bridge No: P-BL03001

Inspection Date: 03/25/2021

TAYLOR STREET OVER STREAM

Milepoint: 0000200

(58) Deck 6

(59) Superstructure 6

(60) Substructure 6

(61) Channel 5

(62) Culvert N

removed since the 2017 inspection. There is no load posting sign at the West and East Approach. There are advance load posting signs at the following locations: Eastbound Taylor Street at 54th Street, Westbound Taylor Street at 54th Place. The posting signs have been changed since the 2017 inspection. The signs are posted at 65,000 lbs for single-unit vehicles and 60,000 lbs for combination-unit vehicles, as per the load rating analysis completed by Wallace, Montgomery & Associates, LLP on February 4, 2014.

8342 - Fencing

1 - Ben.	78	Ft.	58	20	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The top fence rail is not connected to the post at the northwest, northeast and southeast corners on top of the slope protection.

8344 - Drainage Devices

1 - Ben.	1	Entire Bridge	1	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The drainage inlets at the northeast and southeast corners of the bridge are in good condition. The inlets discharge through the top slab. There are a few 1/16" wide cracks and some missing mortar along the brick mortar joints that make up the inlet walls.

8345 - Stream Channel

1 - Ben.	1	Entire Bridge	1	0	0	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The stream flows from south to north under the structure. The upstream channel is on a tangent alignment and the downstream channel curves to the west. There is moderate to heavy abrasion up to 2" deep along the concrete inverts. There is heavy debris accumulation at the upstream end of the pier.

Slope Protection: There are 1/16" wide cracks and up to 8" high x 8" deep spalls along the base of the concrete slope protection. This condition is worse at the construction joints and along the base of the slope protection where there is moderate vegetation growing in the joints. A few of the drains in the slope protection are clogged with debris. There are horizontal hairline cracks in the repair patch on the Northwest Slope Protection adjacent to the bridge. There is a full-height x up to 1" wide vertical fracture in the Southwest Slope Protection approximately 10' from the bridge.

Fence: There is heavy vegetation, moderate corrosion and misalignments throughout the fence along the concrete slope protection. The top rail of the fence is not connected to the post at the northwest, northeast and southeast corners of the structure. The top rail of the Southwest Fence is disconnected at Post 2.

8359 - Soffit (underside) of concrete decks and slabs

1 - Ben.	1	Entire Bridge	0	0	1	0
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☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are random areas of delaminating concrete throughout the top slab exposing the reinforcement chairs. There are random hairline cracks throughout the top slab in both spans.

Span 1: There is a 7" diameter x 1/2" deep spall with exposed reinforcement at the northwest corner. There are areas of moderate honeycombing at the north end. There are several areas of delamination up to 2'-0" long x 1'-3" wide at the north end of the top slab. There is a 6" diameter x 1/2" deep spall with exposed reinforcement adjacent to the West Abutment near mid-length. There is a small surface spall with exposed reinforcement south of mid-length. There are ten spalls up to 7" long x 1'-1" wide x 3/4" deep with exposed reinforcement and associated delamination between the

Bridge Inspection Report Element Form

Bridge No: P-BL03001

Inspection Date: 03/25/2021

TAYLOR STREET OVER STREAM

Milepoint: 0000200

(58) Deck

(59) Superstructure

(60) Substructure

(61) Channel

(62) Culvert

spalls adjacent to the pier at the south end of Span 1. There is water staining around the drain through the south end of the top slab.

Span 2: There is minor to moderate abrasion at the storm drains in the top slab. There is a 4'-0" wide x 2'-0" long x up to 3/4" deep spalled and delaminated area with exposed reinforcement at the north end of Span 2 adjacent to the storm drain outlet. There are six small surface spalls with exposed reinforcement in the top slab at the north end of Span 2 adjacent to the East Abutment. There is a 7" long x 1'-1" wide x 3/4" deep spall with exposed reinforcement approximately 10' from the north end of Span 2. There is a 1'-0" diameter area of delamination in the top slab of Span 2 at the East Abutment approximately 15' from the north end. There is a 1'-0" long x 6" wide area of delamination in the top slab at the pier just south of mid-width of the bridge. There are several areas of moderate honeycombing and spalls up to 1'-8" long x 8" wide x 1" deep with exposed and corroded reinforcement within 10' of the south end in Span 2. The reinforcing bars exhibit minor section loss.

2021 BRIDGE INSPECTION REPORT

APPROACH TRAFFIC BARRIER FORM

Corners	Transition				Approach Traffic Barrier			Exist. End Treatment	Proposed End Treatment	
	Bridge Railings Meet MDSHA Standard	Approach Traffic Barrier Present		Attached to Bridge	Thrie Beam Present		Gradually Stiffened			Post Spacing
		Y	N		Y	N				
1		X		X					None	Flared, Turned-Down
2		X		X					None	Flared, Turned-Down
3		X		X					None	Flared, Turned-Down
4		X		X					None	Flared, Turned-Down

Bridge No.: P-BL03R

County: Prince George's

Road Carried: TAYLOR STREET

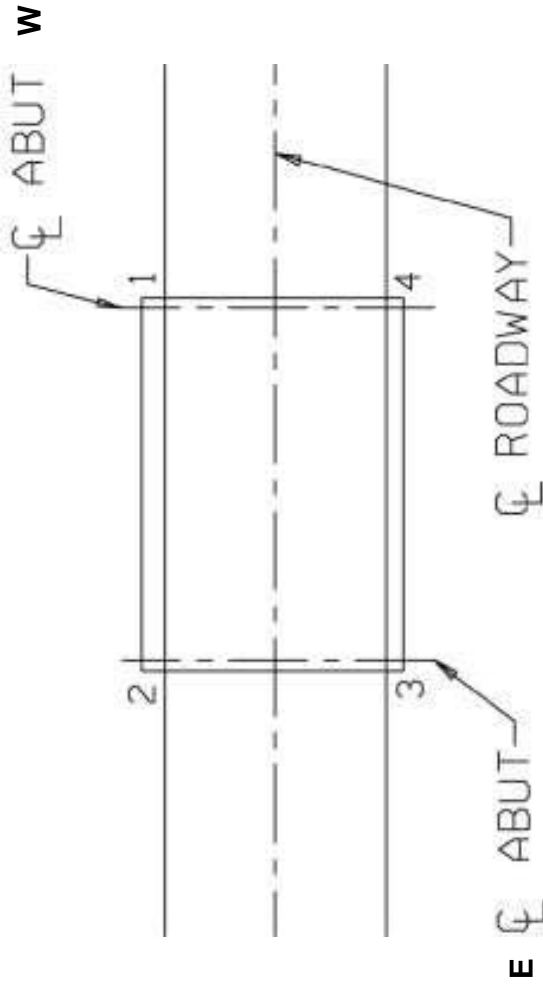
Crossing: STREAM

Date Inspected: 03/25/2021

Inspector: C. Percy, D. Ross

Comments:

No approach traffic barriers are present.



Load Rating Standard Summary Sheet

Bridge No.: PBL03001 on TAYLOR STREET over STREAM

Date of Rating: 12/30/2013 LARS Program: Yes ☐ No ☒ Program Used: BOX5

Rating Method: LRFR ☐ LFR ☒ ASR ☐ Engineering Judgment ☐ Load Testing ☐ HMA Wearing Surface (in.) N/A

Rating Type: As-Built ☐ As Inspected ☒ Condition Report Date: 03/05/2013

Comments/Defects/Assumptions: This Load Rating is based on the latest inspection report as noted above, as well as a previous load rating dated 1996. Defects of exposed reinforcement at top slab leads to lower rating factors than previous load rating.

LRFR Design/Load Rating Vehicle (Limit States are Strength I for all materials, Service II for Steel only, or Service III for prestressed concrete Inventory only)			
Truck/ Axle/ Tons	Rating Details	Inventory	Operating
	Controlling Member	Limit State	Limit State
	Controlling Stress (Moment, Shear, Service)	Rating Factor	Rating Factor
HL-93/3/36 Tons	enter controlling member (i.e. Sp. 1, Ext. Beam)	Limit State	Limit State
	Select the Controlling Stress	X.XX	X.XX

Legal Loads (For LRFR the Limit States are Strength I for all materials or Service II for steel only)			
Truck/ Axle/ Tons	Controlling Member	Inventory or Limit State	Operating
	Controlling Stress	Tons (XX.X)	Tons (XX.X)
H-15 / 2 / 15	Top slab	16.5	28.0
	Moment		
T-3 / 3 / 33	Top slab	28.5	47.5
	Shear		
T-4 / 4 / 35	Top slab	32.5	54.5
	Shear		
HS-20 / 3 / 36	Top slab	30.0	50.0
	Moment		
3S2 / 5 / 40	Top slab	52.5	88.0
	Shear		

Permit Loads - (For LRFR the Limit State is Strength II)			
Truck/ Axle/ Tons	Controlling Member	Inventory	Operating
	Controlling Stress (Moment, Shear, Service)	Tons (XX.X)	Tons (XX.X)
150K / 8 / 75	Top slab	18.0	30.0
	Moment		
90K Comb./ 4 / 45	Top slab	37.5	62.5
	Shear		
90K Crane / 4 / 45	Top slab	40.5	67.5
	Shear		
90K Cargo/ 5 / 45	Top slab	46.0	76.5
	Shear		
80K Cargo/ 5 / 40	Top slab	52.5	88.0
	Shear		
120K Spec./ 5 / 60	Top slab	49.5	83.0
	Shear		
108K Crane/ 4 / 54	Top slab	47.5	79.5
	Shear		
120K Crane/ 5 / 60	Top slab	59.5	99.5
	Shear		

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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/16/2014 21:38
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\Yang\Desktop\box\PBL01001\PBL010~1.DAT

P-BL01 SINGLE CELL FRAME WITHOUT BOTTOM SLAB.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
01	0000	0000	0000	PBL0	1001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	5	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
21.76	2.79	20.00	0.00	10.00	0.00	10.00	0.8
							3.20

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
2		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	6.00	14.0	2	24.00	0.0						

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	26.00	4.0	3	26.00	0.0			

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	10.00	4.0	3	23.00	4.0	4	23.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	14.0	2	32.00	14.0	3	32.00	0.0			

SPECIAL LIVE LOADING 5

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	17.00	4.0	3	17.00	31.0	4	17.00	4.0
5	17.00	0.0									

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT

AT LEFT END OF SPAN						AT MID SPAN						AT RIGHT END OF SPAN					
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC		
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0		

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH LL+I	6.076 5.869	5.945 4.566	10.205	0.70	1.18	4@ 9.0	
				RATING TONS	10.55	17.63		
2.79	F DL+EPH LL+I	-8.355 -7.688	5.491 4.566	25.581	2.24	3.74	7@ 9.0	
				RATING TONS	33.61	56.13		

WALL 2

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH LL+I	-6.240 -5.869	6.399 4.566	10.250	0.68	1.14	4@ 9.0	
				RATING TONS	10.25	17.12		

Page 3

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2.79	F	DL+EPH	8.570	5.945	25.591	2.21	3.70	7@ 9.0
		LL+I	7.688	4.566				
					RATING TONS	33.21	55.46	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-10.962	0.847	61.234	4.98	8.32	7@ 9.0
		LL+I -10.090					
				RATING TONS	74.73	124.81	
1.46	V	DL+EPF -3.590	4.637	23.226	2.90	4.84	7@ 9.0 0.000
		LL+I 5.381	6.420				
				RATING TONS	43.44	72.54	
10.88	F	DL+EPH 19.068	0.387	61.165	1.68	2.80	7@ 9.0
		LL+I 25.073					
				RATING TONS	25.18	42.06	
20.30	V	DL+EPF -3.254	-4.896	23.226	2.86	4.77	7@ 9.0 0.000
		LL+I 5.381	-6.420				
				RATING TONS	42.83	71.53	
21.76	F	DL+EPD-11.111	0.847	61.234	4.97	8.30	7@ 9.0
		LL+I -10.090					
				RATING TONS	74.51	124.44	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 10.25 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 17.12 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 6.076	5.945	10.158	0.34	0.56	4@ 9.0
		LL+I 12.158	8.443				
				RATING TONS	11.08	18.51	
2.79	F	DL+EPH -8.355	5.491	25.548	1.08	1.80	7@ 9.0
		LL+I -15.927	8.443				
				RATING TONS	35.62	59.49	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -6.240	6.399	10.205	0.33	0.54	4@ 9.0
		LL+I -12.158	8.443				
				RATING TONS	10.76	17.97	
2.79	F	DL+EPH 8.570	5.945	25.558	1.07	1.78	7@ 9.0

LL+I 15.927 8.443

RATING TONS 35.20 58.78

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-10.962 0.847	61.234	2.42	4.04	7@ 9.0	
		LL+I -20.797					
			RATING TONS	79.77	133.22		
1.46	V	DL+EPF -3.590	4.637 23.226	1.49	2.49	7@ 9.0	0.000
		LL+I 3.842	12.471				
			RATING TONS	49.19	82.15		
10.88	F	DL+EPH 19.068 0.387	61.165	1.00	1.67	7@ 9.0	
		LL+I 42.045					
			RATING TONS	33.04	55.18		
20.30	V	DL+EPF -3.254	-4.896 23.226	1.47	2.45	7@ 9.0	0.000
		LL+I 3.842	-12.471				
			RATING TONS	48.50	81.00		
21.76	F	DL+EPD-11.111 0.847	61.234	2.41	4.02	7@ 9.0	
		LL+I -20.797					
			RATING TONS	79.53	132.82		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 10.76 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 17.97 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 6.076 5.945	10.177	0.33	0.55	4@ 9.0	
		LL+I 12.432 9.057					
			RATING TONS	11.55	19.28		
2.79	F	DL+EPH -8.355 5.491	25.561	1.06	1.76	7@ 9.0	
		LL+I -16.286 9.057					
			RATING TONS	36.98	61.75		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -6.240 6.399	10.223	0.32	0.54	4@ 9.0	
		LL+I -12.432 9.057					
			RATING TONS	11.21	18.73		
2.79	F	DL+EPH 8.570 5.945	25.572	1.04	1.74	7@ 9.0	
		LL+I 16.286 9.057					
			RATING TONS	36.54	61.02		

SLAB 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962	0.847	61.234	2.36	3.94	7@ 9.0	
	LL+I	-21.325						
				RATING TONS	82.51	137.79		
1.46	V DL+EPF	-3.590	4.637	23.226	1.54	2.57	7@ 9.0	0.000
	LL+I	2.695	12.060					
				RATING TONS	53.95	90.09		
10.88	F DL+EPH	19.068	0.387	61.165	0.98	1.64	7@ 9.0	
	LL+I	42.918						
				RATING TONS	34.33	57.33		
20.30	V DL+EPF	-3.254	-4.896	23.226	1.52	2.54	7@ 9.0	0.000
	LL+I	2.695	-12.060					
				RATING TONS	53.20	88.84		
21.76	F DL+EPD	-11.111	0.847	61.234	2.35	3.93	7@ 9.0	
	LL+I	-21.325						
				RATING TONS	82.26	137.38		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 11.21 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 18.73 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076	5.945	10.297	0.47	0.79	4@ 9.0	
	LL+I	8.971	8.400					
				RATING TONS	16.94	28.29		
2.79	F DL+EPH	-8.355	5.491	25.646	1.47	2.46	7@ 9.0	
	LL+I	-11.752	8.400					
				RATING TONS	52.96	88.45		

WALL 2

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240	6.399	10.340	0.46	0.76	4@ 9.0	
	LL+I	-8.971	8.400					
				RATING TONS	16.45	27.48		
2.79	F DL+EPH	8.570	5.945	25.655	1.45	2.43	7@ 9.0	
	LL+I	11.752	8.400					
				RATING TONS	52.33	87.40		

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SLAB 1

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-10.962 LL+I -14.554	0.847		61.234	3.45	5.77	7@ 9.0	
					RATING TONS	124.35	207.67		
1.46	V	DL+EPF -3.590 LL+I 3.322		4.637 10.274	23.226	1.81	3.02	7@ 9.0	0.000
					RATING TONS	65.14	108.78		
10.88	F	DL+EPH 19.068 LL+I 33.430	0.387		61.165	1.26	2.10	7@ 9.0	
					RATING TONS	45.33	75.71		
20.30	V	DL+EPF -3.254 LL+I 3.322		-4.896 -10.274	23.226	1.78	2.98	7@ 9.0	0.000
					RATING TONS	64.23	107.26		
21.76	F	DL+EPD-11.111 LL+I -14.554	0.847		61.234	3.44	5.75	7@ 9.0	
					RATING TONS	123.98	207.05		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 16.45 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 27.48 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-5 LOADING *

WALL 1

		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH LL+I	6.076 8.025	5.945 6.563		10.228	0.52	0.86	4@ 9.0	
					RATING TONS	20.70	34.56		
2.79	F DL+EPH LL+I	-8.355 -10.513	5.491 6.563		25.597	1.64	2.74	7@ 9.0	
					RATING TONS	65.60	109.55		

WALL 2

		FACTORED EFFECTS		ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF
0.00	F DL+EPH	-6.240	6.399		10.272	0.50	0.84	4@ 9.0
	LL+I	-8.025	6.563					
					RATING TONS	20.10	33.57	
2.79	F DL+EPH	8.570	5.945		25.607	1.62	2.71	7@ 9.0
	LL+I	10.513	6.563					
					RATING TONS	64.82	108.25	

SLAB 1

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DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF
0.00	F	DL+EPD-10.962	0.847		61.234	3.70	6.17	7@ 9.0
		LL+I -13.598						
					RATING TONS	147.88	246.96	
1.46	V	DL+EPF -3.590		4.637	23.226	2.24	3.75	7@ 9.0 0.000
		LL+I 2.184		8.287				
					RATING TONS	89.73	149.84	
10.88	F	DL+EPH 19.068	0.387		61.165	1.53	2.56	7@ 9.0
		LL+I 27.491						
					RATING TONS	61.25	102.29	
20.30	V	DL+EPF -3.254		-4.896	23.226	2.21	3.69	7@ 9.0 0.000
		LL+I 2.184		-8.287				
					RATING TONS	88.47	147.75	
21.76	F	DL+EPD-11.111	0.847		61.234	3.69	6.16	7@ 9.0
		LL+I -13.598						
					RATING TONS	147.44	246.23	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 20.10 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 33.57 TONS AT DISTANCE 0.00 IN WALL 2.

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*
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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/16/2014 21:43
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\Yang\Desktop\box\PBL01001\PBL010~2.DAT

P-BL01 SINGLE CELL FRAME WITHOUT BOTTOM SLAB.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
01	0000	0000	0000	PBL0	1001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	8	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
21.76	2.79	20.00	0.00	10.00	0.00	10.00	0.8
							3.20

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
8		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	11.0	2	26.00	4.0	3	26.00	30.0	4	18.00	4.0
5	18.00	4.0	6	18.00	4.0	7	18.00	4.0	8	18.00	0.0

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	24.00	35.0	3	27.00	4.0	4	27.00	0.0

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	18.00	5.4	2	18.00	6.9	3	27.00	5.4	4	27.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE

5	6.00	4.00										
AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	28.0	4	22.00	4.0	
5	22.00	0.0										

SPECIAL LIVE LOADING 5

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	14.0	4	17.00	4.0	
5	17.00	0.0										

SPECIAL LIVE LOADING 6

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	27.00	4.0	3	27.00	31.0	4	27.00	4.0	
5	27.00	0.0										

SPECIAL LIVE LOADING 7

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
4		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	27.00	5.4	2	27.00	6.8	3	27.00	5.4	4	27.00	0.0	

SPECIAL LIVE LOADING 8

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	24.00	8.3	2	24.00	5.4	3	24.00	6.6	4	24.00	5.4	
5	24.00	0.0										

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT																
AT LEFT END OF SPAN							AT MID SPAN				AT RIGHT END OF SPAN					
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC	
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0	

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5 SP-6 SP-7 SP-8

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.076	5.945	10.213	0.27	0.45	4@ 9.0	
	LL+I	15.369	12.166					
				RATING TONS	20.19	33.72		
2.79 F	DL+EPH	-8.355	5.491	25.587	0.86	1.43	7@ 9.0	
	LL+I	-20.134	12.166					
				RATING TONS	64.19	107.19		

WALL 2

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.240	6.399	10.258	0.26	0.44	4@ 9.0	
	LL+I	-15.369	12.166					
				RATING TONS	19.61	32.74		
2.79 F	DL+EPH	8.570	5.945	25.597	0.85	1.41	7@ 9.0	
	LL+I	20.134	12.166					
				RATING TONS	63.42	105.92		

SLAB 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-10.962	0.847	61.234	1.96	3.27	7@ 9.0	
	LL+I	-25.669						
				RATING TONS	146.89	245.30		
1.46 V	DL+EPF	-3.590		4.637	23.226	1.37	2.30	7@ 9.0 0.000
	LL+I	-5.207		13.525				
				RATING TONS	103.08	172.15		
10.88 F	DL+EPH	19.068	0.387	61.165	0.89	1.49	7@ 9.0	
	LL+I	47.117						
				RATING TONS	67.01	111.91		
20.30 V	DL+EPF	-3.254		-4.896	23.226	1.36	2.26	7@ 9.0 0.000

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 LL+I -5.207 -13.525
 RATING TONS 101.64 169.75

21.76 F DL+EPD-11.111 0.847 61.234 1.95 3.26 7@ 9.0
 LL+I -25.669
 RATING TONS 146.45 244.57

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 19.61 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 32.74 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.076 5.945	10.158	0.32	0.54	4@ 9.0	
	LL+I	12.625 8.768					
			RATING TONS	14.55	24.30		
2.79 F	DL+EPH	-8.355 5.491	25.548	1.04	1.74	7@ 9.0	
	LL+I	-16.539 8.768					
			RATING TONS	46.78	78.12		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.240 6.399	10.205	0.31	0.52	4@ 9.0	
	LL+I	-12.625 8.768					
			RATING TONS	14.13	23.60		
2.79 F	DL+EPH	8.570 5.945	25.558	1.03	1.72	7@ 9.0	
	LL+I	16.539 8.768					
			RATING TONS	46.22	77.19		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-10.962 0.847	61.234	2.33	3.89	7@ 9.0	
	LL+I	-21.597					
			RATING TONS	104.75	174.93		
1.46 V	DL+EPF	-3.590	4.637 23.226	1.51	2.53	7@ 9.0	0.000
	LL+I	5.668	12.271				
			RATING TONS	68.17	113.85		
10.88 F	DL+EPH	19.068 0.387	61.165	0.96	1.61	7@ 9.0	
	LL+I	43.663					
			RATING TONS	43.39	72.46		
20.30 V	DL+EPF	-3.254	-4.896 23.226	1.49	2.49	7@ 9.0	0.000
	LL+I	5.668	-12.271				
			RATING TONS	67.22	112.26		

21.76 F DL+EPD-11.111 0.847 61.234 2.32 3.88 7@ 9.0
 LL+I -21.597
 RATING TONS 104.44 174.41

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 14.13 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 23.60 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	6.076 5.945	10.247	0.29	0.49	4@ 9.0	
	LL+I	14.156 12.045					
			RATING TONS	13.26	22.15		
2.79 F	DL+EPH	-8.355 5.491	25.611	0.93	1.55	7@ 9.0	
	LL+I	-18.544 12.045					
			RATING TONS	41.87	69.93		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-6.240 6.399	10.291	0.29	0.48	4@ 9.0	
	LL+I	-14.156 12.045					
			RATING TONS	12.88	21.51		
2.79 F	DL+EPH	8.570 5.945	25.621	0.92	1.54	7@ 9.0	
	LL+I	18.544 12.045					
			RATING TONS	41.37	69.10		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-10.962 0.847	61.234	2.14	3.57	7@ 9.0	
	LL+I	-23.497					
			RATING TONS	96.28	160.78		
1.46 V	DL+EPF	-3.590	4.637 23.226	1.33	2.22	7@ 9.0	0.000
	LL+I	-0.902	13.988				
			RATING TONS	59.81	99.87		
10.88 F	DL+EPH	19.068 0.387	61.165	0.93	1.55	7@ 9.0	
	LL+I	45.366					
			RATING TONS	41.76	69.74		
20.30 V	DL+EPF	-3.254	-4.896 23.226	1.31	2.19	7@ 9.0	0.000
	LL+I	-0.902	-13.988				
			RATING TONS	58.97	98.48		
21.76 F	DL+EPD	-11.111 0.847	61.234	2.13	3.56	7@ 9.0	

LL+I -23.497

RATING TONS 95.99 160.31

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 12.88 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 21.51 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.158	0.40	0.66	4@ 9.0	
	LL+I	10.287 7.144					
			RATING TONS	17.86	29.82		
2.79	F DL+EPH	-8.355 5.491	25.548	1.28	2.13	7@ 9.0	
	LL+I	-13.477 7.144					
			RATING TONS	57.41	95.87		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.205	0.39	0.64	4@ 9.0	
	LL+I	-10.287 7.144					
			RATING TONS	17.34	28.96		
2.79	F DL+EPH	8.570 5.945	25.558	1.26	2.11	7@ 9.0	
	LL+I	13.477 7.144					
			RATING TONS	56.73	94.73		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	2.86	4.77	7@ 9.0	
	LL+I	-17.598					
			RATING TONS	128.55	214.69		
1.46	V DL+EPF	-3.590	4.637 23.226	1.86	3.10	7@ 9.0	0.000
	LL+I	4.619	9.998				
			RATING TONS	83.67	139.72		
10.88	F DL+EPH	19.068 0.387	61.165	1.18	1.98	7@ 9.0	
	LL+I	35.577					
			RATING TONS	53.25	88.92		
20.30	V DL+EPF	-3.254	-4.896 23.226	1.83	3.06	7@ 9.0	0.000
	LL+I	4.619	-9.998				
			RATING TONS	82.50	137.78		
21.76	F DL+EPD	-11.111 0.847	61.234	2.85	4.76	7@ 9.0	
	LL+I	-17.598					
			RATING TONS	128.17	214.05		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 17.34 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 28.96 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	6.076	5.945		10.228	0.52	0.86	4@ 9.0	
		LL+I	8.025	6.563						
						RATING TONS	20.70	34.56		
2.79	F	DL+EPH	-8.355	5.491		25.597	1.64	2.74	7@ 9.0	
		LL+I	-10.513	6.563						
						RATING TONS	65.60	109.55		

WALL 2

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	-6.240	6.399		10.272	0.50	0.84	4@ 9.0	
		LL+I	-8.025	6.563						
						RATING TONS	20.10	33.57		
2.79	F	DL+EPH	8.570	5.945		25.607	1.62	2.71	7@ 9.0	
		LL+I	10.513	6.563						
						RATING TONS	64.82	108.25		

SLAB 1

DIST			FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPD	-10.962	0.847		61.234	3.70	6.17	7@ 9.0	
		LL+I	-13.598							
						RATING TONS	147.88	246.96		
1.46	V	DL+EPF	-3.590		4.637	23.226	2.24	3.75	7@ 9.0	0.000
		LL+I	2.184		8.287					
						RATING TONS	89.73	149.84		
10.88	F	DL+EPH	19.068	0.387		61.165	1.53	2.56	7@ 9.0	
		LL+I	27.491							
						RATING TONS	61.25	102.29		
20.30	V	DL+EPF	-3.254		-4.896	23.226	2.21	3.69	7@ 9.0	0.000
		LL+I	2.184		-8.287					
						RATING TONS	88.47	147.75		
21.76	F	DL+EPD	-11.111	0.847		61.234	3.69	6.16	7@ 9.0	
		LL+I	-13.598							
						RATING TONS	147.44	246.23		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 20.10 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 33.57 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-6 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.158	0.32	0.54	4@ 9.0	
	LL+I	12.625 8.768					
			RATING TONS	19.40	32.40		
2.79	F DL+EPH	-8.355 5.491	25.548	1.04	1.74	7@ 9.0	
	LL+I	-16.539 8.768					
			RATING TONS	62.37	104.16		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.205	0.31	0.52	4@ 9.0	
	LL+I	-12.625 8.768					
			RATING TONS	18.84	31.47		
2.79	F DL+EPH	8.570 5.945	25.558	1.03	1.72	7@ 9.0	
	LL+I	16.539 8.768					
			RATING TONS	61.63	102.92		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	2.33	3.89	7@ 9.0	
	LL+I	-21.597					
			RATING TONS	139.66	233.24		
1.46	V DL+EPF	-3.590	4.637 23.226	1.45	2.42	7@ 9.0	0.000
	LL+I	4.283	12.832				
			RATING TONS	86.92	145.16		
10.88	F DL+EPH	19.068 0.387	61.165	0.96	1.61	7@ 9.0	
	LL+I	43.663					
			RATING TONS	57.85	96.61		
20.30	V DL+EPF	-3.254	-4.896 23.226	1.43	2.39	7@ 9.0	0.000
	LL+I	4.283	-12.832				
			RATING TONS	85.71	143.13		
21.76	F DL+EPD	-11.111 0.847	61.234	2.32	3.88	7@ 9.0	
	LL+I	-21.597					
			RATING TONS	139.25	232.55		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 18.84 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 31.47 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-7 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.244	0.26	0.44	4@ 9.0	
	LL+I	15.865 13.399					
				RATING TONS	14.19	23.69	
2.79	F DL+EPH	-8.355 5.491	25.608	0.83	1.39	7@ 9.0	
	LL+I	-20.783 13.399					
				RATING TONS	44.83	74.86	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.287	0.26	0.43	4@ 9.0	
	LL+I	-15.865 13.399					
				RATING TONS	13.78	23.01	
2.79	F DL+EPH	8.570 5.945	25.618	0.82	1.37	7@ 9.0	
	LL+I	20.783 13.399					
				RATING TONS	44.29	73.97	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	1.92	3.20	7@ 9.0	
	LL+I	-26.210					
				RATING TONS	103.58	172.97	
1.46	V DL+EPF	-3.590	4.637 23.226	1.23	2.05	7@ 9.0	0.000
	LL+I	-3.355	15.149				
				RATING TONS	66.26	110.66	
10.88	F DL+EPH	19.068 0.387	61.165	0.87	1.46	7@ 9.0	
	LL+I	48.280					
				RATING TONS	47.09	78.63	
20.30	V DL+EPF	-3.254	-4.896 23.226	1.21	2.02	7@ 9.0	0.000
	LL+I	-3.355	-15.149				
				RATING TONS	65.34	109.11	
21.76	F DL+EPD	-11.111 0.847	61.234	1.91	3.19	7@ 9.0	
	LL+I	-26.210					
				RATING TONS	103.27	172.46	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 13.78 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
Page 10

THE MINIMUM OPERATING RATING IS 23.01 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-8 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	6.076 5.945	10.239	0.29	0.49	4@ 9.0	
	LL+I	14.287 11.942					
			RATING TONS	17.48	29.19		
2.79	F DL+EPH	-8.355 5.491	25.605	0.92	1.54	7@ 9.0	
	LL+I	-18.716 11.942					
			RATING TONS	55.30	92.35		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-6.240 6.399	10.283	0.28	0.47	4@ 9.0	
	LL+I	-14.287 11.942					
			RATING TONS	16.98	28.35		
2.79	F DL+EPH	8.570 5.945	25.615	0.91	1.52	7@ 9.0	
	LL+I	18.716 11.942					
			RATING TONS	54.64	91.25		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-10.962 0.847	61.234	2.12	3.55	7@ 9.0	
	LL+I	-23.668					
			RATING TONS	127.44	212.83		
1.46	V DL+EPF	-3.590	4.637 23.226	1.37	2.29	7@ 9.0	0.000
	LL+I	-3.178	13.583				
			RATING TONS	82.12	137.14		
10.88	F DL+EPH	19.068 0.387	61.165	0.97	1.62	7@ 9.0	
	LL+I	43.291					
			RATING TONS	58.35	97.44		
20.30	V DL+EPF	-3.254	-4.896 23.226	1.35	2.25	7@ 9.0	0.000
	LL+I	-3.178	-13.583				
			RATING TONS	80.97	135.22		
21.76	F DL+EPD	-11.111 0.847	61.234	2.12	3.54	7@ 9.0	
	LL+I	-23.668					
			RATING TONS	127.07	212.20		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 16.98 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 28.35 TONS AT DISTANCE 0.00 IN WALL 2.

PBL01001_LFR_121013_permit.OUT

BOX5 data input:

Equivalent fill depth:

East: $0.099 / 0.12 = 0.825'$

West: $0.185 / 0.12 = 1.55'$

Grade: $(1.55' - 0.825') / 22.67 = 3.2\%$

Box5 Truck list:

Legal rating	Permit rating
SP-1 H 15	SP-1 150K
SP-2 T-3	SP-2 90K COMB.
SP-3 T-4	SP-3 90K CRANE
SP-4 HS20	SP-4 90K CARGO
SP-5 3S2	SP-5 80K CARGO
	SP-6 120K
	SP-7 108K
	SP-8 120K CRANE

Prince George's County



2021 BRIDGE INSPECTION REPORT March 25, 2021



BRIDGE NO. P-BL04001

UPSHUR STREET

OVER

STREAM

Prepared by



Prince George's County

2021 BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04001

UPSHUR STREET

OVER

STREAM

Prepared by




Inspection Team Leader: Caleb Percy, P.E.

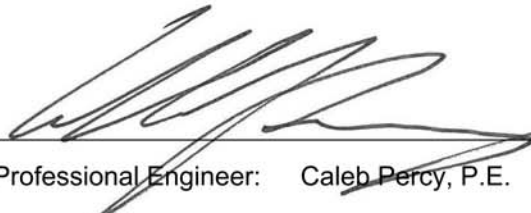
5/4/2021

Date


Inspector: Daria Ross

5/4/2021

Date


Professional Engineer: Caleb Percy, P.E.



5/4/2021

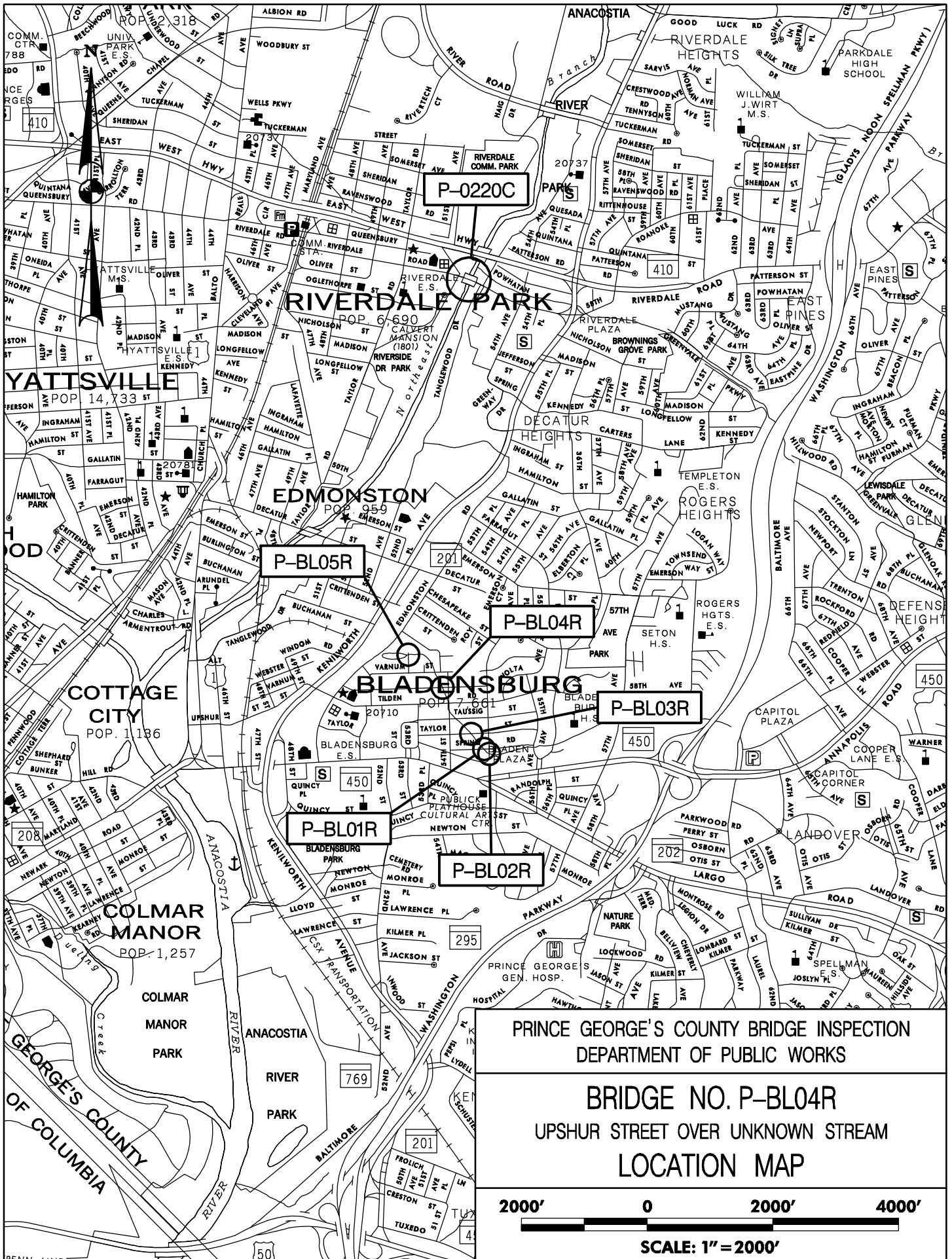
Date

Professional Certification: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 39263, Expiration Date: June 27, 2022.

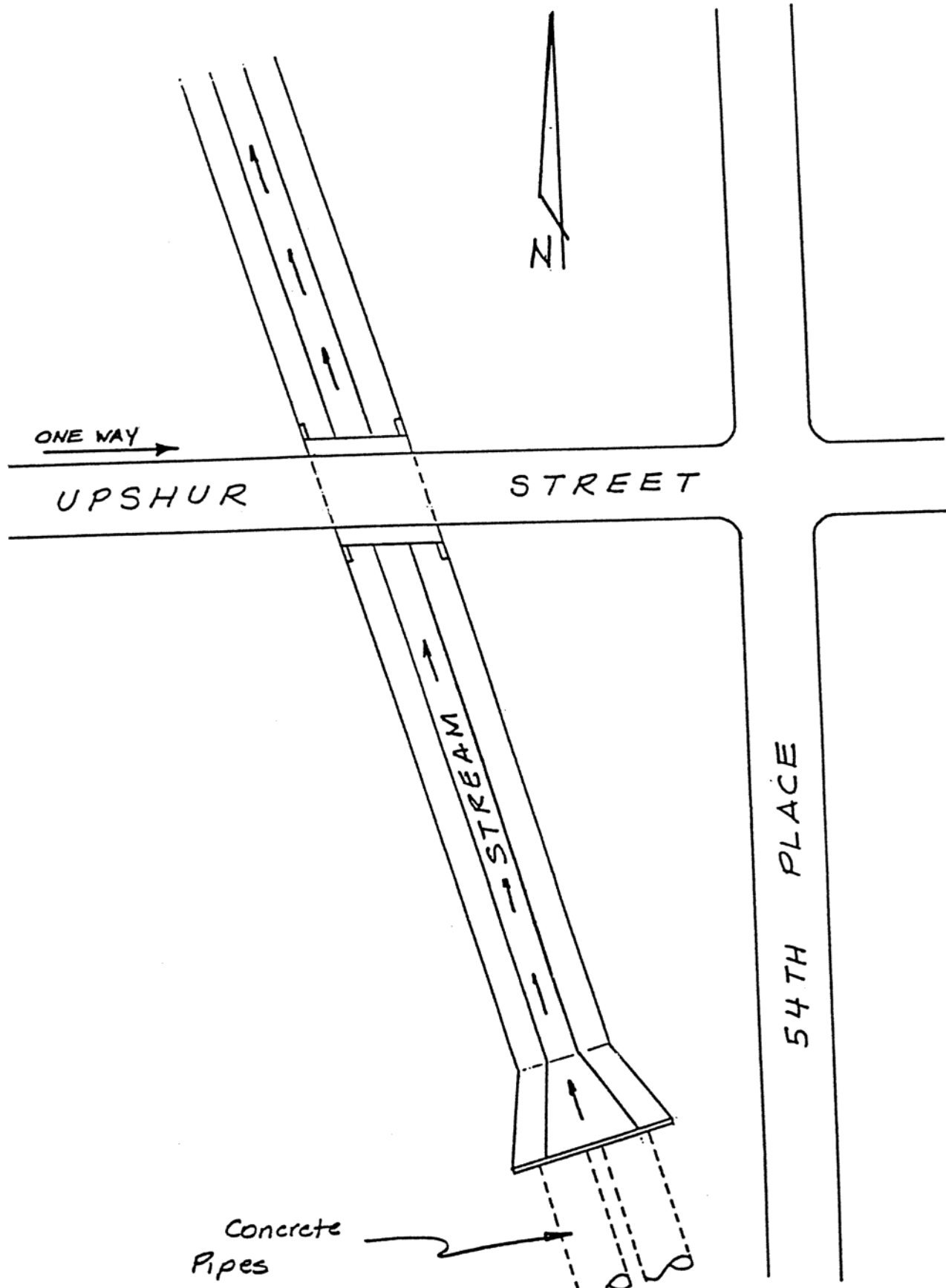
The condition report, load ratings and recommendations presented herein are based on a visual inspection of accessible portions of the existing structure. No responsibility is assumed by Century Engineering, Inc. for the presence of any latent structural defects that cannot be detected by such visual inspection.

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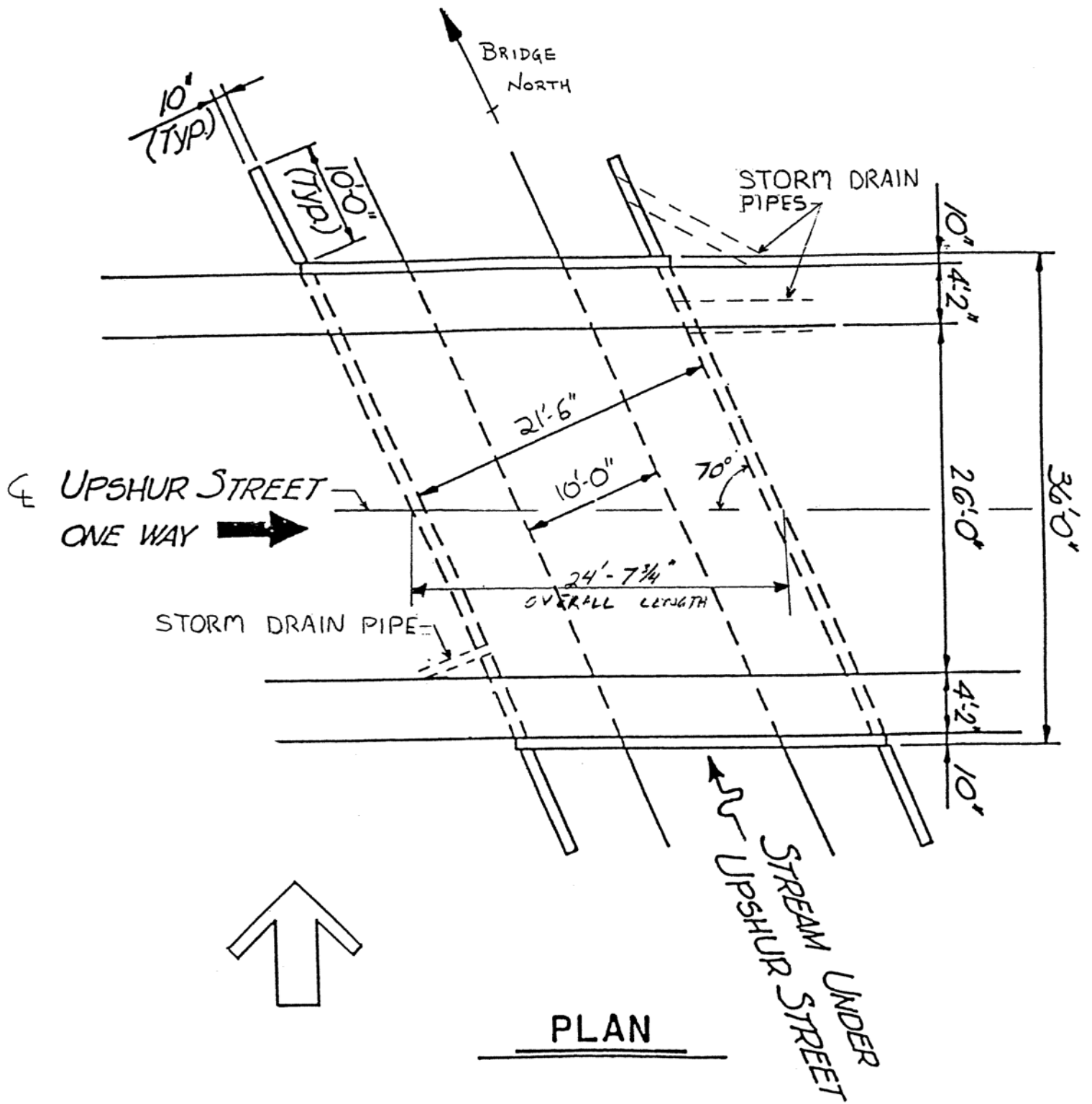
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BRIDGE INSPECTOR'S RECOMMENDATION FOR MAINTENANCE REPAIRS	11
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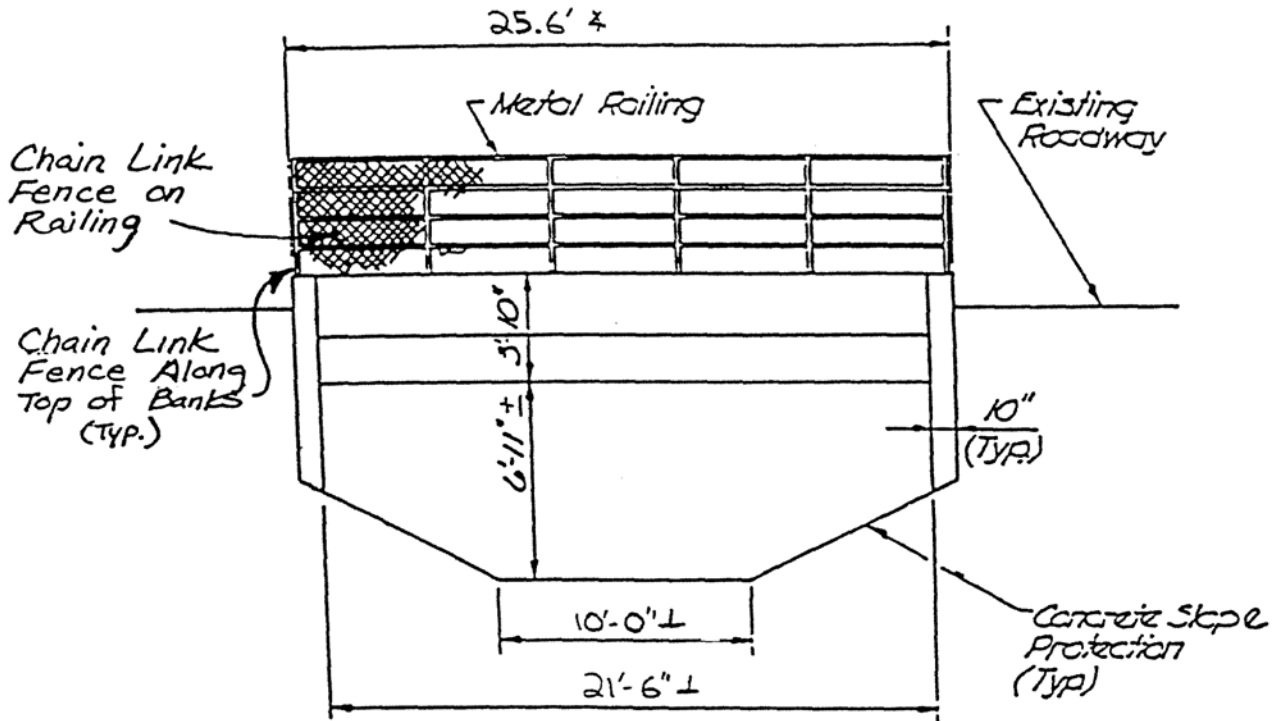
BRIDGE NO. PBL04 - UPSHUR STREET OVER STREAM



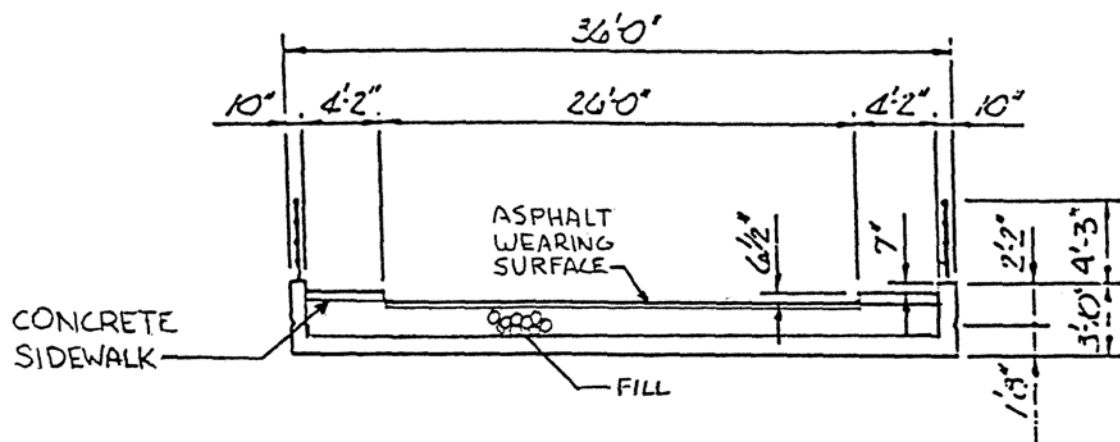
BRIDGE NO. PBL04 - UPSHUR STREET OVER STREAM



BRIDGE NO. PBL04 - UPSHUR STREET OVER STREAM



ELEVATION



TYPICAL SECTION

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL04R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name UPSHUR STREET Crossing STREAM Photos 21
Inspection Date 03/25/2021 Inspection Crew C.Percy, D. Ross

DESCRIPTION: Single-span concrete rigid-frame bridge with an asphalt wearing surface. Substructure consists of concrete rigid-frame wall abutments with concrete slope and channel protection. The bridge supports a two-lane roadway and two sidewalks. Stream flows from south to north under the bridge. The numbering convention for the bridge is from the north and the west.

OVERALL LENGTH:	<u>24'-7 1/2"</u>	CLEAR ROADWAY:	<u>26'-0"</u>
YEAR BUILT:	<u>1958</u>	POSTED LOAD:	
YEAR REHABILITATED:	<u>1982</u>	SINGLE, LBS	<u>10,000 lbs. G.V.W.</u>
POSTED SPEED LIMIT:	<u>25 MPH</u>	COMBINATION, LBS	<u>18,000 lbs. G.C.W.</u>
		BEAM SPACING:	<u>-</u>
MAP COORDINATES:	<u>12F6</u>	NUMBER OF BEAMS:	<u>-</u>
	<u>5410B10</u>	SIZE OF BEAMS:	<u>-</u>

ROADWAY APPROACHES:

Section 26'-0" wide asphalt roadway with two lanes.

Alignment Both approaches are straight.

Profile Downhill grade from west to east. Intersection at East Approach (4-way stop 50' from structure).

Traffic Barrier No approach traffic barrier.

REVIEW OF ITEM 113 - SCOUR POTENTIAL RATING: 8P

Item 113 was previously rated an 8P, which implies that the bridge is a culvert type structure with a paved bottom. Based on the observed conditions, this rating is still valid and does not require reevaluation.

REVIEW OF PREVIOUS REPORT:

A 2019 bridge inspection report prepared by Sabra & Associates was available and used for comparison purposes. The overall condition of the bridge appeared to be essentially the same as noted in the previous report with the following exceptions:

1. The West and East Approaches have both been repaved since the previous inspection.
2. A slope protection panel along the Southeast Slope Protection has washed out into the channel due to a recent flood.

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

LIVE LOAD RATINGS:

The load ratings were re-calculated by Wallace, Montgomery & Associates, LLP during the 2013-2014 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The load ratings for the Maryland Legal Load vehicles and Permit Vehicles are as follows:

<u>Truck</u>	<u>Gross Vehicle Weight</u>	<u>Inventory</u>	<u>Operating</u>
H-15	15 tons	21 tons	36 tons
HS-20	36 tons	39 tons	65 tons
Type 3	33 tons	28 tons	46 tons
Type 3S2	40 tons	51 tons	86 tons

The bridge is currently posted for 10,000 lbs. for single-unit vehicles and 18,000 lbs. for combination-unit vehicles. Based on the above previously computed load ratings the postings could be adjusting to 58,000 lbs. for single-unit vehicles and 80,000 lbs. for combination vehicles. However, The Town of Bladensburg has requested to leave the current load posting signs in place.

The recommendation for posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

SI&A CONDITION RATING SUMMARY:

<u>Item</u>	<u>Current</u>	<u>2019</u>	<u>2017</u>	<u>2015</u>
Deck (Item 58) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Superstructure (Item 59) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Substructure (Item 60) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Channel and Channel Protection (Item 61) -	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
Culvert (Item 62) -	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Waterway Adequacy (Item 71) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Approach Roadway Alignment (Item 72) -	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>
Bridge Sufficiency Rating (BSR) -	<u>77.9</u>	<u>77.9</u>	<u>77.9</u>	<u>77.9</u>
Routine Inspection Frequency -	<u>24 months</u>	<u>24 months</u>	<u>24</u>	<u>24</u>
Date of Inspection -	<u>03/25/2021</u>	<u>03/05/2019</u>	<u>03/20/2017</u>	<u>03/09/2015</u>
Partial Interim Inspection Frequency -	<u>N/A</u>			

Load Rating Summary:

The load ratings were re-calculated by Wallace, Montgomery & Associates, LLP during the 2013-2014 Inspection Cycle for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The load ratings for the Maryland Legal Load vehicles and Permit Vehicles are as follows:

<u>Vehicle</u>	<u>Gross Vehicle Weight</u>	<u>Inventory Rating (Tons)</u>	<u>Operating Rating (Tons)</u>
HL-93	36 tons		
H-15	15 tons	21.5	36.5
T-3	33 tons	28.0	46.5
T-4	35 tons	29.0	48.5
HS-20	36 tons	39.5	65.5
T-3S2	40 tons	51.5	86.5
150K	75 tons	54.5	91.0
90K Permit	45 tons	36.5	61.5
90K Mobile Crane	45 tons	34.5	58.0
90K Cargo	45 tons	45.0	75.5
80K Cargo	40 tons	51.5	86.5
120K Vehicle	60 tons	49.0	82.0
108K Mobile Crane	54 tons	39.0	65.0
120K Mobile Crane	60 tons	48.0	80.0

The bridge is currently posted for 10,000 lbs. for single-unit vehicles and 18,000 lbs. for combination-unit vehicles. Based on the above previously computed load ratings the postings could be adjusting to 58,000 lbs. for single-unit vehicles and 80,000 lbs. for combination vehicles. However, The Town of Bladensburg has requested to leave the current load posting signs in place.

The recommendation for posting is based on inventory values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. Century Engineering, Inc. assumes no responsibility for correctness of these previous load rating calculations.

2021 BRIDGE INSPECTION REPORT

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

BRIDGE INSPECTOR'S RECOMMENDATIONS FOR MAINTENANCE REPAIRS

DESCRIPTION	COUNTY ITEM NUMBER	QUANTITY	UNIT COST	TOTAL COST
<u>Immediate:</u>				
1 Install object markers at the corners of the bridge.	81	2 EA	\$200/EA	\$400
2 Install approach traffic barriers that meet current standards at all four corners of the bridge.	21	120 LF	\$100/LF	\$12,000
3 Install bridge rail that meets current standards.	22	52 LF	\$60/LF	\$3,120
4 Install approach traffic barrier end treatments that meet current standards at all four corners of the bridge.	20	4 EA	\$2525/EA	\$10,100
Subtotal (Immediate Items)				\$25,620
<u>Routine:</u>				
1 Seal the cracks in the concrete channel slope protection.	6	70 LF	\$40/LF	\$2,800
2 Repair the settled sidewalk at the Southeast Approach and the undermined sidewalk at the Northeast Approach.	99	10 LF	\$30/LF	\$300
3 Repair the chain link fence and posts at all four corners of the bridge and channel.	101	40 LF	\$50/LF	\$2,000
4 Replace spalls in the concrete slope protection.	2	25 CF	\$50/CF	\$1,250
5 Replace the washed out Southeast Slope Protection Panel	6	30 CF	60/CF	\$1,800
Subtotal (Routine Items)				\$8,150
<u>Preventative:</u>				
1 Repair the undermining of the Northeast Sidewalk.	99	1 CF	\$60/CF	\$60
Subtotal (Preventative Items)				\$60
Total:				\$33,830

Immediate Repairs - Severe Defects that may affect the serviceability of the structure or are missing safety features that present a hazard to the public. Immediate repairs should be scheduled within 12 months of notification.

Routine Repairs - Moderate defects that do not presently affect the serviceability of the structure. Routine repairs should be scheduled, and given priority, within the current maintenance schedule.

Preventative Repairs - Minor defects that do not presently affect the serviceability of the structure. Preventative repairs should be scheduled within the current maintenance schedule.

2021 BRIDGE INSPECTION REPORT

GEOMETRY

Bridge No.

P-BL04R

Bridge Type

SINGLE-SPAN CONCRETE RIGID-FRAME

Year Built

1958

Name

UPSHUR STREET

Crossing

STREAM

Photos

21

Inspection Date

03/25/2021

Inspection Crew

C.Percy, D. Ross

MAP COORDINATE	5410B10	12F6	NEW ADC	OLD ADC
SKEW WITH HORIZONTAL (DEGREES)	20			
STRUCTURE TYPE	-			
OVERALL LENGTH	24'-7 1/2"			
NO. OF SPAN	0001	NO. OF CELLS		
SPAN LENGTH	S024S			
VERTICAL CLEARANCE	A - < 10'			
OUT-TO-OUT (FEET)	0360			
ROADWAY WIDTH (FEET)	26'-0"			
APPROACH ROADWAY WIDTH	00	036	00	
SHOULDER WIDTH	N	N	N	N
CURB/SIDEWALK WIDTH	042	042		
NO OF BEAMS	-			
SIZE OF BEAMS	-			
BEAM SPACINGS	-			
ABUTMENT TYPE	MATERIAL 1 - Concrete	TYPE 7 - Non-definable	CODE 1 - Predominant Feature	
ABUTMENT FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None	CODE 0 - Entire Structure	
PIER TYPE	MATERIAL N - Not Applicable	TYPE	CODE	
PIER FOOTING	MATERIAL N - Not Applicable	TYPE OF PILE	CODE	
WINGWALL TYPE	MATERIAL 1 - Concrete	TYPE	CODE	
WINGWALL FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE	CODE	
BEARING TYPE	1ST BEARING N - None or N/A	2ND BEARING N - None or N/A	3RD BEARING N - None or N/A	
SPAN OF CULVERT	N			
RISE OF CULVERT	N			
CULVERT WALL THICKNESS (IN)				

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

58 DECK	CONDITION RATING	
1. Wearing Surface	7	Type - Asphalt
2. Deck - Topside	-	
3. Deck - Underside	7	Type - Soffit/Top slab of rigid frame
4. Curbs	7	Type - Concrete
5. Median	-	
6. Sidewalks	7	Type - 4'-2" wide concrete
7. Parapets	7	Type - Concrete
8. Railing	7	Type - Four-strand steel pipe
9. Roadway Joints	-	
10. Drainage System	-	
11. Lighting Standards	-	
12. Utilities	-	Type - Overhead lines along the south side of the roadway
13. Other	-	
Inspector's Condition Rating (58)		7

58.1 - The asphalt pavement over the bridge has been repaved since the previous inspection cycle (refer to Photos 1 and 2).

58.3 - There are a few isolated hairline diagonal cracks in the top slab.

58.4 - There are minor spalls in the curbs (see Photo 7).

58.6 - The sidewalks are in good condition. The South Sidewalk is settled up to 1/2" relative to the curb throughout.

58.7 - There are a few hairline vertical cracks in the parapets. Two of the cracks in the North Parapet and one crack in the South Parapet have efflorescence.

58.8 - The steel pipe railing is in good condition with areas of minor corrosion. There is a wire mesh that is connected to the pipe railing. There are a few small areas of minor rust on the wire mesh. The wire mesh is connected to the chain link fence along the wingwalls. The South Railing has vegetation growth throughout.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

59 SUPERSTRUCTURE

Number of Spans 1
Type of Construction Concrete Rigid-Frame

	CONDITION RATING	
1. Bearing Devices	<input type="text" value="-"/>	
2. Girders or Beams	<input type="text" value="-"/>	
3. Stringers	<input type="text" value="-"/>	
4. Floor Beams	<input type="text" value="-"/>	
5. Diaphragms/Crossframes	<input type="text" value="-"/>	
6. Paint	<input type="text" value="-"/>	
7. Other	<input type="text" value="7"/>	Type - Rigid frame top slab/Soffit
8. Rivets or Bolts	<input type="text" value="-"/>	
9. Welds - Cracks	<input type="text" value="-"/>	
10. Rust	<input type="text" value="-"/>	
11. Timber Decay	<input type="text" value="-"/>	
12. Concrete Cracking	<input type="text" value="7"/>	
13. Collision Damage	<input type="text" value="-"/>	
14. Deflection Under Load	<input type="text" value="8"/>	
15. Alignment of Members	<input type="text" value="8"/>	
16. Vibrations Under Load	<input type="text" value="8"/>	
17. Fracture Critical Members	<input type="text" value="-"/>	

Inspector's Condition Rating (59)

59.7 - See comments for Item 58.3.

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

60 SUBSTRUCTURE

CONDITION RATING

1. Abutments	-Wingwalls	<div style="border: 1px solid black; padding: 2px 10px;">6</div>	
	-Backwalls	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Stems	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
	-Footings	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Scour/Erosion	<div style="border: 1px solid black; padding: 2px 10px;">8</div>	
	-Settlement	<div style="border: 1px solid black; padding: 2px 10px;">8</div>	
	Overall Abutment Rating	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	Abutment Type - Concrete rigid-frame wall
2. Piers or Bents	-Caps	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Columns/Shaft	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Footings	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Scour/Erosion	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Settlement	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	Overall Pier Rating	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	Pier Type
3. Pile Bents	-Caps	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
4. Concrete Cracking or Spalling		<div style="border: 1px solid black; padding: 2px 10px;">6</div>	
5. Steel Corrosion		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
6. Timber Decay		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
7. Other	<u> </u> Invert	<div style="border: 1px solid black; padding: 2px 10px;">6</div>	Concrete Invert
8. Debris on Seats		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
9. Paint		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
10. Collision Damage		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
11. Overall Undermining/Scour		<div style="border: 1px solid black; padding: 2px 10px;">8</div>	

Inspector's Condition Rating (60)

7

60.1 - There are minor spalls in the wingwalls at the joint between the wingwall and the structure. The joint material between the wingwalls and the abutments is deteriorated or missing (see Photo 8). The Northwest, Southwest and Southeast Wingwalls have vegetation overgrowth. There is a 1"

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

gap at the top and a 2 1/2" gap at the bottom of the joint between the Northwest Wingwall and the abutment. There is a 1" gap at the top and an up to 1 1/2" gap at the bottom of the joint between the Northeast Wingwall and the abutment. There is a 1'-0" diameter drain pipe at the base of the Northeast Wingwall. The Southeast Wingwall has an up to 2" gap between the abutment and the wingwall. The previously reported 2" long x 6" wide x 1/2" deep spall with exposed reinforcing on top of the Southeast Wingwall could not be confirmed due to heavy vegetation growth.

Fence: The top rails are typically loose and disconnected from the posts (see Photo 9). There is vegetation growth on the Northwest, Southwest and Southeast Fence. Post 1 of the Southwest Fence is loose due to 100% section loss at the bottom of the post. The fence on the Northeast Wingwall is leaning due to a broken post at the end of the wingwall. There are missing fence post caps at the Northwest and Southwest Fence.

The abutment stems are in good condition. Both abutments have two full height hairline vertical cracks with light efflorescence.

60.7 - There is a 1'-9" long x 11" wide x up to 2" deep spall in the invert and minor edge spalling along the joint at the north end.

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL04R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name UPSHUR STREET Crossing STREAM Photos 21
Inspection Date 03/25/2021 Inspection Crew C.Percy, D. Ross

61 CHANNEL AND CHANNEL PROTECTION

	CONDITION RATING
1. Channel Scour	6
2. Embankment Erosion	6
3. Drift/Debris	7
4. Vegetation	7
5. Channel Alignment	8
6. Fender System	-
7. Spur Dikes and Jetties	-
8. Riprap/Slope Protection	5

Inspector's Condition Rating (61) **5**

61.1 - The concrete channel invert has heavy abrasion throughout and areas of exposed welded wire fabric approximately 25' north of the bridge.

61.5 - The stream flows from south to north under the structure. The stream is on a tangent alignment in the vicinity of the bridge.

61.8 - There are vertical, horizontal and diagonal cracks up to 1" wide throughout the concrete slope protection (see Photo 10). There is heavy abrasion and minor spalls along the base of the concrete slope protection. There are areas of differential settlement between the panels of the concrete slope protection (see Photo 11). There is vegetation growth throughout the Southeast, Southwest and Northeast Slope Protections (see Photo 12). There is an up to 1" wide fracture emanating from the joint between the Northeast Wingwall and concrete slope protection (see Photo 13) and 1/4" wide cracks emanating from the joint between the Northwest, Southeast, and Southwest Wingwalls and the concrete slope protection. The Northwest Slope Protection is cracked, spalled, and undermined up to 8" deep for a 30'-0" length (see Photo 14). There is a 1'-6" long x 5" wide x 2" deep spall in the Northeast Slope Protection below the storm drain outfall in the Northeast Wingwall (refer to Photo 13). The third panel along the Southeast Slope Protection has washed out into the channel (see Photos 15 and 16).

Abutment Slope Protection: There is moderate to severe abrasion with exposed reinforcement at the bottom of the slope protection along both abutments. There are two cracks with efflorescence in the East and West Slope Protection under the bridge (see Photo 17). There is an 18" diameter drain pipe in the north end of the East Slope Protection under the bridge.

Fence: The fence along the channel slope protection has minor to moderate rust throughout. There is a missing section of the top rail in the fence along the Northwest Slope Protection at the end of the Northwest Wingwall. The fence along the Northeast Slope Protection is damaged, disconnected, and has a missing section of top rail. Post 3 foundation of the Northwest Fence is exposed due to settlement of the slope protection panel (see Photo 18). There are misalignments and heavy vegetation

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
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Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

throughout the fence along the Southwest and Southeast Slope Protection. The top rail of the fence along the Southeast Slope Protection is disconnected at Posts 3 and 5. The top rail of the fence along the Southwest Slope Protection is disconnected at Post 2.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

71 WATERWAY ADEQUACY

Opening	<input type="text" value="Good"/>	Fair	Poor
Alignment	<input type="text" value="Good"/>	Fair	Poor
Frequency of Overtopping	<input type="text" value="Remote"/>	Slight	Occasional Frequent

Inspector's Condition Rating (71)

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name UPSHUR STREET **Crossing** STREAM **Photos** 21
Inspection Date 03/25/2021 **Inspection Crew** C.Percy, D. Ross

72 APPROACH ROADWAY ALIGNMENT APPRAISAL RATING

- | | | | | | |
|--------------------------|---|---------------------------------------|-----------------------------------|-------------|---------------------------------------|
| 1. Vertical Alignment | W | <input type="text" value="Good"/> | Fair | Poor | - Downgrade from west to east |
| | E | <input type="text" value="Good"/> | Fair | Poor | |
| 2. Horizontal Alignment | W | <input type="text" value="Good"/> | Fair | Poor | - Intersection 50' East of the bridge |
| | E | Good | <input type="text" value="Fair"/> | Poor | |
| 3. Speed Limit Reduction | | <input type="text" value="None"/> | Minor | Substantial | |
| 4. Sight Distance | | <input type="text" value="Adequate"/> | Not Adequate | | |

Inspector's Condition Rating (72) 8

APPROACH ROADWAY

CONDITION RATING

- | | | |
|---|-------------------------------------|--|
| 5. Approach Traffic Barrier | <input type="text" value="-"/> | |
| 6. Approach Pavement | <input type="text" value="6"/> | Type - Asphalt |
| 7. Approach Embankments | <input type="text" value="6"/> | |
| 8. Approach Slabs | <input type="text" value="-"/> | |
| 9. Relief Joints | <input type="text" value="-"/> | |
| 10. Signing - Legibility and Visibility | <input type="text" value="Good"/> | Fair Poor Type - Posting Signs |
| 11a. Roadway Speed Limit | <input type="text" value="25 MPH"/> | 11b. Posted Bridge Speed Limit <input style="width: 80px;" type="text"/> |
| 12. Posted Load Limits | 10,000 lbs. G.V.W. | 18,000 lbs. G.C.W. |
| 13. Traffic Safety Features | | |
| a. Bridge Railing | <input type="text" value="0"/> | 1 N Type - Four-strand steel pipe |
| b. Transitions | <input type="text" value="0"/> | 1 N Type - No approach traffic barrier |
| c. Approach Traffic Barrier | <input type="text" value="0"/> | 1 N Type - No approach traffic barrier |
| d. Approach Traffic Barrier Ends | <input type="text" value="0"/> | 1 N Type - No approach traffic barrier |

72.5 - There are no approach traffic barriers in place.

72.6 - The approach pavement has been repaved since the previous inspection cycle (refer to Photos 1 and 2). There is an up to 1/2" wide x full-width transverse crack adjacent to a manhole in the West Approach roadway.

Sidewalks: The Southeast Sidewalk has settled approximately 2 1/2" and is sloping adjacent to the Southeast Storm Drain (see Photo 19). There is a 2 1/2" gap adjacent to the sloping slab and the adjacent storm drain. The Southeast Sidewalk does not continue past the storm drain inlet. The Northeast Approach Sidewalk is undermined 4'-0" long x 2" high with up to 8" penetration (see Photo

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL04R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
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20).

72.10 - The posting and advanced posting signs are in place on the West Approach (see Photo 21). Upshur Street is a one-way street from west to east. There are no object markers in place. The bridge is currently posted at 10,000 lbs for single-unit vehicle and 18,000 lbs for combination-unit vehicles.

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



1. West Approach (Looking East)



2. East Approach (Looking West)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



3. North (Downstream) Elevation



4. South (Upstream) Elevation

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



5. Looking North (Downstream)



6. Looking South (Upstream)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



7. Curb - Spall at South Curb



8. Wingwall - Bulging Joint Material at Northeast Wingwall

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



9. Fence - Missing Top Rail at Northwest Fence



10. Slope Protection - Full-width Transverse Crack in Slope Protection Panels

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



11. Slope Protection - Differential Settlement Between Northwest Slope Protection Panels



12. Slope Protection - Vegetation Growth along Southeast Slope Protection

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



13. Slope Protection - Vertical Crack and Spall at Storm Drain Inlet in Northeast Slope Protection



14. Slope Protection - Abrasion along Bottom of Northwest Slope Protection

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



15. Slope Protection - Washed Out Southwest Slope Protection Panel



16. Slope Protection - Exposed Groundline Due to Washed Out Slope Protection Panel

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



17. Slope Protection - Vertical Crack with Efflorescence in East Slope Protection



18. Fence - Exposed Fence Post Foundation at Northwest Fence

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



19. Sidewalk - Settled Sidewalk Panel adjacent to Southeast Storm Drain Inlet



20. Sidewalk - Undermining of Northeast Sidewalk

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL04R - UPSHUR STREET OVER STREAM



21. Signage - Load Posting Sign at West Approach

STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER: P-BL04001

IDENTIFICATION

FORM 1 OF 13

(8) STRUCTURE NUMBER:	2	00000	Major Structure	P-	BL04	01	Major Structure > 20' 0"	0	Single Structure
(8) FHWA NUMBER:									
(7) FACILITY CARRIED:	UPSHUR STREET								
(6) FEATURE INTERSECTED:	STREAM								
(255) FEDERAL SUBMITTAL INDICATOR:	Y	Yes							
(262) NAME OF STRUCTURE:	UPSHUR ROAD								
(27) YEAR BUILT:	1958	(106) YEAR RECONSTRUCTED:			1982				
(263) ADDITIONAL RECONSTRUCTION YEARS:	N			N					
(1) STATE CODE:	243	Maryland	(2) DISTRICT CODE:		03	03			
(3) COUNTY CODE:	033	GEORGE'S	(4) PLACE CODE:		07850				
(5) INVENTORY ROUTE:	1	Route carried "on" the structure	5	City Street	1	Mainline	00152	0	Always
		(Route Prefix)		(Level of Service)		(Number)		(Direction)	
(9) LOCATION:	AT 53RD PLACE								
(11) MILEPOINT:	0000300								
(12) BASE HIGHWAY NETWORK:	0	Inv. Route is NOT on the Base Network							
(266) GIS ROUTE ID:									
(267) GIS MILEPOINT:									
(268) SCENIC ROUTE:	N								
(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:	601520110000								
(16) LATITUDE:	(A)	38563376	(B)	38563345	(C)	38563347	(D)	38563377	
(17) LONGITUDE:	(A)	076553861	(B)	076553842	(C)	076553816	(D)	076553830	
(28) LANES ON:	02	LANES UNDER:		00					
(42) TYPE OF SERVICE ON:	5	Highway-Pedestrian							
TYPE OF SERVICE UNDER:	5	Waterway							
(98) BORDER STATE:		BORDER STATE'S SHARE %:							
(99) BORDER STATE'S NUMBER:									

CLASSIFICATION

FORM 2 OF 13

(104) HWY SYSTEM:	N	No, Inventory Route is not on the NHS	(103) TEMPORARY STRUCTURE:		
(105) FEDERAL LANDS HWYS:	0	Not applicable	(110) NATIONAL NETWORK:	N	No, the inventory route is not part of the national network for trucks.
(26) FUNCTIONAL CLASS:	19	Urban Local	(20) TOLL:	3	On free road
(100) DEFENSE HWY:	0	The inventory route is not a STRAHNET route	(21) MAINTENANCE:	04	City or Municipal Highway Agency
(101) PARALLEL STRUCTURE:	N	No parallel structure	(22) OWNER:	04	City or Municipal Highway Agency
(102) DIRECTION:	1	1-way traffic	(37) HISTORICAL SIGNIFICANCE:	5	Not eligible

TRAFFIC

FORM 3 OF 13

(19) DETOUR:

(29) ADT:

(114) FUTURE ADT:

(109) TRUCK ADT %:

(30) ADT YEAR:

(115) FUTURE ADT YEAR:

STRUCTURE TYPE AND MATERIAL

FORM 4 OF 13

(43) STRUCT TYPE: Concrete Rigid Frame

(44) STRUCT TYPE - APPR: Not Applicable Other

(232) BOX CULVERT ON PILES: None Entire Structure

(208) STRUCT TYPE - WIDENED/EXTENDED:

(219) SLOPE PROTECTION: Concrete

(228) FOOTING - ABUTMENT: Concrete None Entire Structure

(229) SUBSTRUCT ABUTMENT: Concrete Non-definable Predominant Feature

(230) FOOTING - PIER: Not Applicable

(231) PIER TYPE: Not Applicable

(242) BEARING TYPE: None or N/A None or N/A

(108) WEARING SURFACE: Bituminous None None

(243) JOINT TYPE: None None None

(206) STRUCT SUBTYPE - MAIN: Not Applicable

(257) SCOUR PROTECTION:

(221) STRUCTURAL STEEL: Not Applicable

(107) DECK STRUCTURE TYPE: Concrete Cast-in-Place

(207) STRUCT SUBTYPE - APPR: Not Applicable

(270) CONC. DECK SPECIAL TYPE: Not Applicable

(233) DECK - COMP/NON-COMP: Non-Composite

(259) STAY-IN-PLACE FORMS:

(235) PARAPET: Concrete-Rectangular

(236) RAILING: Steel - Other None - None

(237) FENCING: Steel - Straight Fence

(278) PAINT SYSTEM: Not Applicable

(344) PAINT COLOR/NUMBER: Not Applicable

(345) YEARS PAINTED:

BRIDGE NUMBER: P-BL04001

GEOMETRICS

FORM 5 OF 13

(112) NBIS BRIDGE LENGTH:	<input type="text" value="Y"/>	(49) STRUCTURE LENGTH:	<input type="text" value="0000250"/>		
(210) NUMBER OF SPANS:	<input type="text" value="0001"/>	(45) # SPANS IN MAIN UNIT:	<input type="text" value="001"/>		
(46) # APPROACH SPANS:	<input type="text" value="0000"/>	(209) CONTINUOUS SPANS:	<input type="text" value="N"/>		
(48) LENGTH MAX SPAN:	<input type="text" value="0024"/>	(238) # STRINGERS - ORIGINAL:	<input type="text" value="00"/>		
(240) SPACING - ORIGINAL:	<input type="text" value="N"/>	(239) # STRINGERS - WIDENED:	<input type="text" value="00"/>		
(241) SPACING - WIDENED:	<input type="text" value="N"/>	(33) BRIDGE MEDIAN:	<input type="text" value="0"/>		
(50) CURB/SIDEWALK WIDTHS:	<input type="text" value="042"/>	<input type="text" value="042"/>	(205) MEDIAN WIDTH:	<input type="text" value="000"/>	
(51) DECK CURB-CURB WIDTH:	<input type="text" value="0260"/>	(32) APPROACH ROAD WIDTH:	<input type="text" value="00"/>	<input type="text" value="036"/>	<input type="text" value="00"/>
(52) DECK OUT-OUT WIDTH:	<input type="text" value="0360"/>	(10) INVENT ROUTE, MIN VERT CLEAR:	<input type="text" value="9999"/>		
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	<input type="text" value="9999"/>	(47) INVENT ROUTE, TOTAL HORIZ CLEAR:	<input type="text" value="260"/>		
(54) MIN. VERT. UNDERCLEARANCE:	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="A"/>	<input type="text" value=" < 10'"/>	
(55) MIN. LAT. CLEARANCE (RIGHT):	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="999"/>		
(56) MIN. LAT. CLEARANCE (LEFT):	<input type="text" value="000"/>	(342) HORIZ CLEARANCE (ON):	<input type="text" value="02600"/>	<input type="text"/>	
(34) SKEW, IN DEGREES:	<input type="text" value="20"/>	(280) HORIZ CLEARANCE (UNDER):	<input type="text" value="N"/>	<input type="text"/>	
(35) STRUCTURE FLARED:	<input type="text" value="N"/>	(253) NUMBER OF CELLS:	<input type="text" value="N"/>		
(256) SPAN OF CELLS:	<input type="text" value="N"/>	(254) RISE:	<input type="text" value="N"/>		
		(258) EARTH FILL:	<input type="text" value="N"/>		
		(343) CENTERLINE LENGTH (Culverts/Pipes):	<input type="text" value="N"/>		
(223) SHOULDER WIDTHS:	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	
(264) TYPE AND SPAN:	<div>CRF 21'-6" x 7'-0"</div>				

BRIDGE NUMBER: P-BL04001

LOAD RATINGS AND POSTINGS

(41) STATUS:

P

Posted for load

(31) DESIGN LOAD:

5

HS 20

(398) PEDESTRIAN LOADING:

N

(399) RAILROAD LOADING:

N

(70) POSTING:

5

Equal to or above legal loads

(65) METHOD USED TO DETERMINE INVENTORY RATING:

1

1 Load Factor (LF)

(63) METHOD USED TO DETERMINE OPERATING RATING:

1

1 Load Factor (LF)

(224) WEIGHT POSTED:

10

18

(New Split)

(66) INVENTORY RATING:

395

(64) OPERATING RATING:

655

(400) DATE OF RATING:

02

2014

FORM 6 OF 13

	INVENTORY RATING	OPERATING RATING
HL-93 Vehicle	(402)	(401)
H-15 Vehicle	(404) 215	(403) 365
T3 (Dump Truck) Vehicle	(406) 280	(405) 465
T4 Reduced Lift Axle Vehicle	(408) 290	(407) 485
HS Vehicle	(410) 395	(409) 655
3S2 Vehicle	(412) 515	(411) 865
150K Vehicle	(414) 545	(413) 910
90K Permit Combination Vehicle	(416) 365	(415) 615
90K Mobile Crane Vehicle	(418) 345	(417) 580
90K Cargo Vehicle	(420) 450	(419) 755
80K Cargo Vehicle	(422) 515	(421) 865
120K Vehicle	(424) 490	(423) 820
108K Mobile Crane Vehicle	(426) 390	(425) 650
120K Mobile Crane Vehicle	(428) 480	(427) 800

(225) SPEED LIMIT ON STRUCTURE:

N

(226) MIN VERT CLEARANCE OVER ROADWAY POSTED:

X

Posting signs not required

(227) MIN VERT UNDERCLEARANCE POSTED:

X

Posting signs not required

CONDITION INSPECTION

FORM 7 OF 13

	Inspection Month	(91) Frequency	Due Date	(90) Inspection Date	(290) Inspection Report Completion Date
Routine Inspection	03	24	03/25/2023	03/25/2021	07/30/2019

Critical Feature Inspections	(291) Inspection Month	(92) Frequency	Due Date	(93) Critical Feature Inspection Date
(A) Fracture Critical Members		N		
(B) Underwater Inspection		N		
(C) Special Inspection		N		
(D) Hands-on Railroad		N		
(E) Confined Space		N		
(F) Ultrasonic Testing (UT) Pin		N		
(G) Ultrasonic Testing (UT) Anchor		N		
(H) Post Tensioning Bar		N		
(I) Cathodic Protection		N		
(J) Consultant		N		
(K) Movable Bridge		N		
(L) Suspension Bridge		N		
(M) Cable		N		
(N) Monitor		N		
(P) Flood				
(Q) Damages				
(R) Inquires				

(58) DECK:	<input type="text" value="7"/>	Good Condition	(59) SUPERSTRUCTURE:	<input type="text" value="7"/>	Good Condition
(60) SUBSTRUCTURE:	<input type="text" value="7"/>	Good Condition	(61) CHANNEL/PROTECTION:	<input type="text" value="5"/>	Bank eroded.. major damage
(62) CULVERTS:	<input type="text" value="N"/>	Not Applicable			
(310) INSPECTION DATA UPDATE DATE:	<input type="text" value="02/18/2015"/>		(312) LEAD INSPECTOR:	<input type="text" value="Caleb Percy, P.E."/>	
(311) INSPECTION TEAM:	<input type="text" value="YCE"/>		(313) BRIDGE INSPECTOR:	<input type="text" value="Daria Ross"/>	
(314) HOURS TO INSPECT:	<input type="text" value="002"/>	(316) DECK PLANKING %:	<input type="text" value="00"/>	(315) DECK PUNCTURES %:	<input type="text" value="00"/>
(317) DECK PATCHING %:	<input type="text" value="00"/>	(318) BLOCKING:	<input type="text" value="00"/>	(319) POWER WASHING:	<input type="text" value="N"/>
(320) IDENTIFICATION NO.:	<input type="text" value="N"/>	(321) INVENTORY DIRECTION:	<input type="text" value="SOUT H"/>	(323) PERMIT:	<input type="text" value="N"/>
(324) NIGHT WORK:	<input type="text" value="N"/>	(325) WEEKEND WORK:	<input type="text" value="N"/>		
(322) LOOKING TOWARD:	<input type="text" value="US ROUTE 50"/>				
(326) MAINTENANCE OF TRAFFIC STANDARDS:	<input type="text"/>				
(327) MOT COMMENTS:	<input type="text"/>				
(328) LOCATION OF MIN. VERT. UNDERCLEARANCE:	<input type="text"/>				

BRIDGE NUMBER: P-BL04001

(329A) CRITICAL FINDINGS: (329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: ☒ Posting signs not required

(340) INSPECTION EQUIPMENT:

<input type="text" value="W"/>	Waders	<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	

(333) MHOI: (334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION:

(336) ADVANCED NOTIFICATION COMMENTS:

BRIDGE NUMBER: P-BL04001

APPRAISAL

FORM 8 OF 13

(67) STRUCTURAL EVALUATION:

7
N
7

 BSR 77.9

(69) UNDERCLEARANCE:

(71) WATERWAY ADEQUACY:

(36) TRAFFIC SAFETY FEATURES

RAILINGS:

0

 Does NOT meet Standards

TRANSITIONS:

0

 Does NOT meet Standards

APPROACH BARRIER:

0

 Does NOT meet Standards

APPROACH BARRIER ENDS:

0

 Does NOT meet Standards

(113) SCOUR EVALUATION:

8P

 Bridge is a culvert-type structure with paved bottom.

(DT) DEDUCT CODE:

A

(STAT) STATUS:

2

 Functionally Obsolete

2
8

NAVIGATION

FORM 9 OF 13

(38) NAVIGATION CONTROL:

0

(40) NAV HORIZONTAL CLEARANCE:

0000

(111) PIER/ABUTMENT PROTECTION:

--

(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:

--

(247) DESIGN YEAR STORM:

000

(249) DRAINAGE AREA:

000000

(251) HIGH WATER ELEVATION:

0000

(252) YEAR HIGH WATER ELEVATION - LATEST:

0000

(39) NAV VERT CLEARANCE:

000

(248) RUN-OFF Q:

000000

(250) STRUCTURE IN TIDAL AREA:

N

 No

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 13

(201) CONTRACT NUMBERS:

(203) SHA SPEC- YEAR:

0000

N

N

N

(204) AASHTO SPEC-YEAR:

0000

N

N

N

(75) TYPE OF PROPOSED WORK:

35

1

(76) LENGTH OF IMPROVEMENT:

000025

(94) BRIDGE IMPROVE COST:

000153

(95) ROADWAY IMPROVE COST:

000021

(96) TOTAL PROJECT COST:

000174

(97) YEAR OF IMPROVEMENT:

2007

BRIDGE NUMBER: P-BL04001

MISCELLANEOUS

FORM 11 OF 13

(244) SIGNS ON STRUCTURE: ☐ No

(245) BRIDGE ROADWAY LIGHTING: ☐ No

(246) PROVISION FOR ROADWAY LIGHTING: ☐ No

(260) UTILITIES - ON:

☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

(261) UTILITIES - UNDER:

☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

REMARKS:

NOISE BARRIER

FORM 12 OF 13

(501) TYPE: ☐ ☐ ☐ ☐

(502) ALIGNMENT: ☐ ☐ ☐ ☐

(503) LENGTH: (504) MAXIMUM HEIGHT:

(505) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(506) FOUNDATION LENGTH:

(507) PANEL WIDTH:

(508) NUMBER OF SPECIAL PANEL(S):

(509) PANEL MATERIAL:

(510) FACING (Acoustic Treatment):

(511) PANEL FINISH:

(512) PANEL COLOR:

(513) FEDERAL COLOR:

(514) STACKED PANELS:

(515) NOISE BARRIER POST MATERIAL:

(516) ACCESS DOORS:

(517) FIRE HYDRANTS:

(518) RETROFITS:

RETAINING WALL

FORM 13 OF 13

(550) TYPE: ☐ ☐ ☐ ☐

(551) ALIGNMENT: ☐ ☐ ☐ ☐

(552) SEGMENT LENGTH(S):

(553) MAX. EXPOSED HEIGHT:

(554) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(555) TIEBACK:

(556) FACING:

(557) WITH FENCE OR RAIL:

(558) WITH NOISE BARRIER:

(559) PURPOSE:

Structure Inventory and Appraisal Sheet

NATIONAL BRIDGE INVENTORY

STRUCTURE INVENTORY AND APPRAISAL

IDENTIFICATION

(1) STATE NAME:..... **Maryland** CODE..... **243**
 (8) STRUCTURE NO:..... **2-00000-P--BL04-01-0**
 (5) INV RTE (ON/UNDER):..... **1-5-1-00152-0**
 (2) STATE HIGHWAY DEPARTMENT DISTRICT:..... **03**
 (3) COUNTY CODE:..... **033** (4) STATE CODE:.. **07850**
 (6) FTR INTRS:..... **STREAM**
 (7) FACILITY CARRIED:..... **UPSHUR STREET**
 (9) LOCATION:..... **AT 53RD PLACE**
 (11) MILEPOINT:..... **0000300**
 (12) BASE HIGHWAY NETWORK:..... **0**
 (16) LATITUD **38563376** (17) LONGITUDE:.. **076553861**
 (98) BORDER BRIDGE STATE % Share.....
 (99) BORDER BRIDGE STRUCT NO.....

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL
 TYPE..... CODE..... **A 07**
 (44) STRUCTURE TYPE APPR: MATERIAL
 TYPE..... CODE..... **0 00**
 (45) NUMBER OF SPANS IN MAIN UNIT:..... **001**
 (46) NUMBER OF APPROACH SPANS:..... **0000**
 (107) DECK STRUCTURE TYPE..... **1**
 (108) WEARING SURFACE/PROTECTIVE SYSTEM:
 A) TYPE WEARING SURFACE: CODE..... **6**
 B) TYPE MEMBRANE: CODE..... **0**
 C) TYPE DECK PROTECTION: CODE..... **0**

AGE AND SERVICE

(27) YEAR BUILT:..... **1958**
 (106) YEAR RECONSTRUCTED..... **1982**
 (42) TYPE OF SERVICE: ON:
 UNDER..... CODE..... **5 5**
 (28) LANES: ON STRUCT **02** UNDER STRUCT: **00**
 (29) AVERAGE DAILY TRAFFIC:..... **001192**
 (30) YEAR OF ADT:..... **2019** (109) TRUCK ADT:..... **01**
 (19) BYPASS, DETOUR LENGTH:..... **01**

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN:..... **0024**
 (49) STRUCTURE LENGTH:..... **0000250**
 (50) CURB/SIDEWALK: LFT **042** FT RGT: **042** FT
 (51) BRDG RDWY WIDTH CURB TO CURB..... **0260** . FT
 (52) DECK WIDTH OUT TO OUT..... **0360** . FT
 (32) APPR RDWY WIDTH: **00 036 00** FT
 (33) BRIDGE MEDIAN:..... **0**
 (34) SKEW: **20** DEG (35) STRUCT FLARE: **N**
 (10) INV RTE MIN VERTICAL CLEAR:..... **9999** FT
 (47) INV RTE TOT HORIZONTAL CLEAR:.. **260** FT
 (53) MIN VERT CLEAR OVER BRDG RDW **9999** FT
 (54) MIN VERT UNDERCLEAR **N A** FT

SUFFICIENCY RATING = **77.9**

STATUS = **2**

CLASSIFICATION

(112) NBIS BRIDGE LENGTH:..... **Y**
 (104) HIGHWAY SYSTEM:..... **N**
 (26) FUNCTIONAL CLASS:..... **19**
 (100) DEFENSE HIGHWAY:..... **0**
 (101) PARALLEL STRUCTURE:..... **N**
 (102) DIRECTION OF TRAFFIC:..... **1**
 (103) TEMPORARY STRUCTURE:.....
 (110) DESIGNATED NATIONAL NETWORK:..... **N**
 (20) TOLL:..... **3**
 (21) MAINTENANCE:..... **04**
 (22) OWNER:..... **04**
 (37) HISTORICAL SIGNIFICANCE:..... **5**

CONDITION

(58) DECK:..... **7**
 (59) SUPERSTRUCTURE:..... **7**
 (60) SUBSTRUCTURE:..... **7**
 (61) CHANNEL AND CHANNEL PROTECTION:..... **5**
 (62) CULVERTS:..... **N**

LOAD RATING AND POSTING

(31) DESIGN LOAD:..... **5**
 (64) OPERATING RATING:..... **655**
 (66) INVENTORY RATING:..... **395**
 (70) BRIDGE POSTING:..... **5**
 (41) STRUCTURE OPEN, POSTED, OR CLOSED:..... **P**

APPRAISAL

(67) STRUCTURAL EVALUATION:..... **7**
 (68) DECK GEOMETRY:..... **2**
 (69) UNDERCLEARANCES, VERT AND HOR:..... **N**
 (71) WATERWAY ADEQUACY:..... **7**
 (72) APPROACH ROADWAY ALIGNMENT:..... **8**
 (36) TRAFFIC SAFETY FEATURES:..... **0 0 0 0**
 (113) SCOUR CRITICAL BRIDGES:..... **8P**

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK:..... **35 1**
 (76) LENGTH OF IMPROVEMENT:..... **000025**
 (94) BRIDGE IMPROVEMENT COST:..... **153,000**
 (95) ROADWAY IMPROVEMENT COST:..... **21,000**
 (96) TOTAL PROJECT COST:..... **174,000**
 (97) YEAR OF IMPROVEMENT COST EST:..... **07**
 (114) FUTURE ADT:..... **001777**
 (115) YEAR OF FUTURE ADT:..... **39**

Bridge Inspection Report Element Form

Bridge No: P-BL04001

Inspection Date: 03/25/2021

UPSHUR STREET OVER STREAM

Milepoint: 0000300

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

Element

38 - Reinforced Concrete Slab

Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
1 - Ben.	827	sq. ft.	827	0	0	0

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The asphalt pavement over the bridge has been repaved since the previous inspection cycle

215 - Reinforced Concrete Abutment

1 - Ben.	72	ft.	68	4	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The abutment stems are in good condition. Both abutments have two full height hairline vertical cracks with light efflorescence.

330 - Metal Bridge Railing

1 - Ben.	65	ft.	50	15	0	0
----------	----	-----	----	----	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The steel pipe railing is in good condition with areas of minor corrosion. There is a wire mesh that is connected to the pipe railing. There are a few small areas of minor rust on the wire mesh. The wire mesh is connected to the chain link fence along the wingwalls. The South Railing has vegetation growth throughout.

331 - Reinforced Concrete Bridge Railing

1 - Ben.	50	ft.	48	2	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are a few hairline vertical cracks in the parapets. Two of the cracks in the North Parapet and one crack in the South Parapet have efflorescence.

8062 - Sidewalk, Reinforced Concrete

1 - Ben.	50	Ft.	50	0	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The sidewalks are in good condition. The South Sidewalk is settled up to 1/2" relative to the curb throughout on the south side.

8251 - Wingwalls, Reinforced Concrete

1 - Ben.	28	Ft.	20	8	0	0
----------	----	-----	----	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There are minor spalls in the wingwalls at the joint between the wingwall and the structure. The joint material between the wingwalls and the abutments is deteriorated or missing. The Northwest, Southwest and Southeast Wingwalls have vegetation overgrowth. There is a 1" gap at the top and a 2 1/2" gap at the bottom of the joint between the Northwest Wingwall and the abutment. There is a 1" gap at the top and an up to 1 1/2" gap at the bottom of the joint between the Northeast Wingwall and the abutment. There is a 1'-0" diameter drain pipe at the base of the Northeast Wingwall. The Southeast Wingwall has an up to 2" gap between the abutment and the wingwall. The previously reported 2" long x 6" wide x 1/2" deep spall with exposed reinforcing on top of the Southeast Wingwall could not be confirmed due to heavy

Bridge Inspection Report Element Form

Bridge No: P-BL04001

Inspection Date: 03/25/2021

UPSHUR STREET OVER STREAM

Milepoint: 0000300

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

vegetation growth.

8260 - Slope, Protected

1 - Ben.	2	Each	0	2	0	0
----------	---	------	---	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

There is moderate to severe abrasion with exposed reinforcement at the bottom of the slope protection along both abutments. There are two cracks with efflorescence in the East and West Slope Protection under the bridge. There is an 18" diameter drain pipe in the north end of the East Slope Protection under the bridge.

8322 - Roadway Approach Transition

1 - Ben.	2	Each	2	0	0	0
----------	---	------	---	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

Pavement: The approach pavement has been repaved since the previous inspection cycle. There is an up to 1/2" wide x full-width transverse crack adjacent to a manhole in the West Approach roadway.

Traffic Barrier: There are no approach traffic barriers in place.

Sidewalks: The Southeast Sidewalk has settled approximately 2 1/2" and is sloping adjacent to the Southeast Storm Drain. There is a 2 1/2" gap adjacent to the sloping slab and the adjacent Storm Drain. The Southeast Sidewalk does not continue past the storm drain inlet. The Northeast Approach Sidewalk is undermined 4'-0" long x 2" high with up to 8" penetration.

Signs: The posting and advanced posting signs are in place on the West Approach. Upshur Street is a one-way street from west to east. There are no object markers in place. The bridge is currently posted at 10,000 lbs for single-unit vehicle and 18,000 lbs for combination-unit vehicles.

8342 - Fencing

1 - Ben.	78	Ft.	0	39	39	0
----------	----	-----	---	----	----	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The top rails are typically loose and disconnected from the posts. There is vegetation growth on the Northwest, Southwest and Southeast Fence. Post 3 of the Northwest is exposed due to settlement of the slope protection panel. Post 1 of the Southwest Fence is loose due to 100% section loss at the bottom of the post. The fence on the Northeast Wingwall is leaning due to a broken post at the end of the wingwall. There are missing fence post caps at the Northwest and Southwest Fence.

8345 - Stream Channel

1 - Ben.	1	Entire Bridge	0	1	0	0
----------	---	---------------	---	---	---	---

☐ Eng Req ☐ FYI ☐ District ☐ Inaccessible? ☐ Eng Comments

The stream flows from south to north under the structure. The stream is on a tangent alignment in the vicinity of the bridge. The concrete channel invert has heavy abrasion throughout and areas of exposed welded wire fabric approximately 25' north of the bridge. There is a 1'-9" long x 11" wide x up to 2" deep spall in the invert and minor edge spalling along the joint at the north end.

Slope Protection: There are vertical, horizontal and diagonal cracks up to 1" wide throughout the concrete slope protection. There is heavy abrasion and minor spalls along the base of the concrete slope protection. There are areas of differential settlement between the panels of the concrete slope protection. There is vegetation growth throughout the Southeast, Southwest and Northeast Slope Protections. There is an up to 1" wide fracture emanating from the joint between the Northeast Wingwall and concrete slope protection and 1/4" wide cracks emanating from the joint

Bridge Inspection Report Element Form

Bridge No: P-BL04001

Inspection Date: 03/25/2021

UPSHUR STREET OVER STREAM

Milepoint: 0000300

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

between the Northwest, Southeast, and Southwest Wingwalls and the concrete slope protection. The Northwest Slope Protection is cracked, spalled, and undermined up to 8" deep for a 30'-0" length. There is a 1'-6" long x 5" wide x 2" deep spall in the Northeast Slope Protection below the storm drain outfall in the Northeast Wingwall. The third panel along the Southeast Slope Protection has washed out into the channel.

Fence: The fence along the channel slope protection has minor to moderate rust throughout. There is a missing section of the top rail in the fence along the Northwest Slope Protection at the end of the Northwest Wingwall. The fence along the Northeast Slope Protection is damaged, disconnected, and has a missing section of top rail. There are misalignments and heavy vegetation throughout the fence along the Southwest and Southeast Slope Protection. The top rail of the fence along the Southeast Slope Protection is disconnected at Posts 3 and 5. The top rail of the fence along the Southwest Slope Protection is disconnected at Post 2. The Post 3 foundation of the Northwest Fence is exposed due to settlement of the slope protection panel.

8359 - Soffit (underside) of concrete decks and slabs

1 - Ben.	1	Entire Bridge	1	0	0	0
----------	---	---------------	---	---	---	---

☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

There are a few isolated hairline diagonal cracks in the top slab.

2021 BRIDGE INSPECTION REPORT

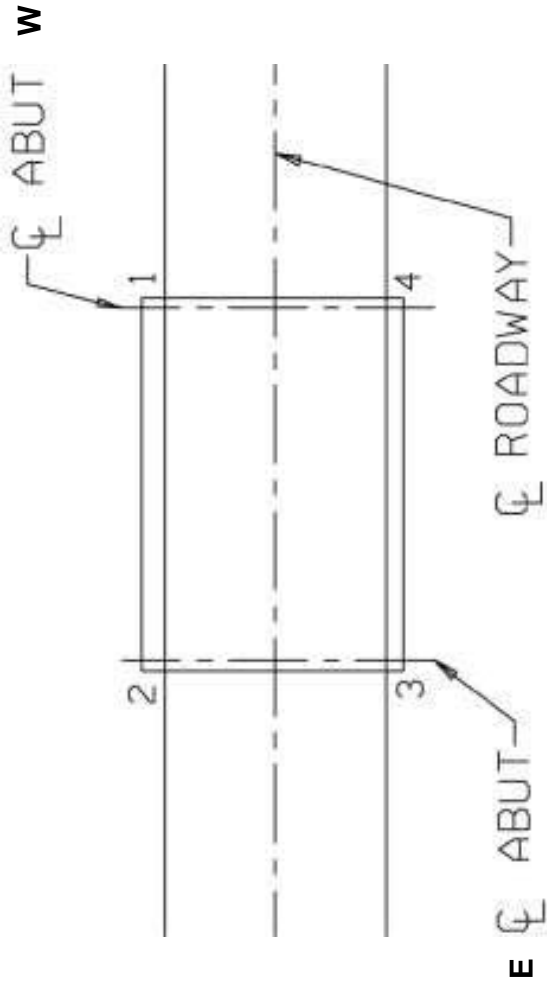
APPROACH TRAFFIC BARRIER FORM

Corners	Bridge Railings Meet MDSHA Standard		Approach Traffic Barrier Present		Transition				Approach Traffic Barrier			Exist. End Treatment	Proposed End Treatment	Type		
	Y	N	Y	N	Attached to Bridge		Thrie Beam Present		Gradually Stiffened	Post Spacing	Rail Type				Post Type	Post Spacing
					Y	N	Y	N								
1		X		X										Flared, Turned-Down (e.g. MDSHA Type G)		
2		X		X										Flared, Turned-Down (e.g. MDSHA Type G)		
3		X		X										Flared, Turned-Down (e.g. MDSHA Type G)		
4		X		X										Flared, Turned-Down (e.g. MDSHA Type G)		

Bridge No.: P-BL04R
 County: Prince George's
 Road Carried: UPSHUR STREET
 Crossing: STREAM
 Date Inspected: 03/25/2021
 Inspector: C.Percy, D. Ross

Comments:

No approach traffic barriers are present.



Load Ratings

Load Rating Standard Summary Sheet

Bridge No.: PBL04001 on UPSHUR STREET over STREAM

Date of Rating: 12/16/2013 LARS Program: Yes ☐ No ☒ Program Used: BOX5

Rating Method: LRFR ☐ LFR ☒ ASR ☐ Engineering Judgment ☐ Load Testing ☐ HMA Wearing Surface (in.) N/A

Rating Type: As-Built ☐ As Inspected ☒ Condition Report Date: 03/05/2013

Comments/Defects/Assumptions: This Load Rating is based on the latest inspection report as noted above, as well as a previous load rating dated 1996. Rating factors for the top slab have been listed.

LRFR Design/Load Rating Vehicle (Limit States are Strength I for all materials, Service II for Steel only, or Service III for prestressed concrete Inventory only)			
Truck/ Axle/ Tons	Rating Details	Inventory	Operating
	Controlling Member	Limit State	Limit State
	Controlling Stress (Moment, Shear, Service)	Rating Factor	Rating Factor
HL-93/3/36 Tons	enter controlling member (i.e. Sp. 1, Ext. Beam)	Limit State	Limit State
	Select the Controlling Stress	X.XX	X.XX

Legal Loads (For LRFR the Limit States are Strength I for all materials or Service II for steel only)			
Truck/ Axle/ Tons	Controlling Member	Inventory or Limit State	Operating
	Controlling Stress	Tons (XX.X)	Tons (XX.X)
H-15 / 2 / 15	Top slab	21.5	36.5
	Moment		
T-3 / 3 / 33	Top slab	28.0	46.5
	Moment		
T-4 / 4 / 35	Top slab	29.0	48.5
	Moment		
HS-20 / 3 / 36	Top slab	39.5	65.5
	Moment		
3S2 / 5 / 40	Top slab	51.5	86.5
	Moment		

Permit Loads - (For LRFR the Limit State is Strength II)			
Truck/ Axle/ Tons	Controlling Member	Inventory	Operating
	Controlling Stress (Moment, Shear, Service)	Tons (XX.X)	Tons (XX.X)
150K / 8 / 75	Top slab	54.5	91.0
	Moment		
90K Comb./ 4 / 45	Top slab	36.5	61.5
	Moment		
90K Crane / 4 / 45	Top slab	34.5	58.0
	Moment		
90K Cargo/ 5 / 45	Top slab	45.0	75.5
	Moment		
80K Cargo/ 5 / 40	Top slab	51.5	86.5
	Moment		
120K Spec./ 5 / 60	Top slab	49.0	82.0
	Moment		
108K Crane/ 4 / 54	Top slab	39.0	65.0
	Moment		
120K Crane/ 5 / 60	Top slab	48.0	80.0
	Moment		

```

*****
*
*          BOX CULVERT DESIGN AND RATING                      335529 *
*
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*
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*          DEPARTMENT OF TRANSPORTATION                       *
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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 09/04/2014 14:38
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\jyang\Desktop\NEWFOL~1\PBL040~1.DAT

PBL04001 SINGLE SPAN RIGID FRAME WITHOUT BOTTOM SLAB.
 THE LOAD RATING IS BASED ON PREVIOUS LOAD RATING DATED 1996.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
00	0000	0000	0000	PBL0	4001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	20.00	Y	1.0000	5	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
23.60	3.40	20.00	0.00	10.00	0.00	1.5	1.06

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
2		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	6.00	14.0	2	24.00	0.0						

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	26.00	4.0	3	26.00	0.0			

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	10.00	4.0	3	23.00	4.0	4	23.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	14.0	2	32.00	14.0	3	32.00	0.0			

SPECIAL LIVE LOADING 5

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	17.00	4.0	3	17.00	31.0	4	17.00	4.0
5	17.00	0.0									

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT

AT LEFT END OF SPAN						AT MID SPAN						AT RIGHT END OF SPAN					
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC		
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0		

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255	7.541	10.474	0.92	1.54	4@ 9.0	
	LL+I	5.664	4.096					
				RATING TONS	13.82	23.08		
3.40	F DL+EPH	-11.058	6.988	25.542	1.81	3.03	7@ 9.0	
	LL+I	-7.984	4.096					
				RATING TONS	27.21	45.44		

WALL 2

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320	7.716	10.492	0.91	1.52	4@ 9.0	
	LL+I	-5.664	4.096					
				RATING TONS	13.70	22.87		

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3.40 F DL+EPH 11.150 7.164 25.546 1.80 3.01 7@ 9.0
 LL+I 7.984 4.096
 RATING TONS 27.05 45.17

SLAB 1

DIST		FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F DL+EPD	-15.330	3.550		61.639	4.76	7.95	7@ 9.0	
	LL+I	-9.724							
						RATING TONS	71.44	119.30	
1.46	V DL+EPF	-5.889		5.934	23.226	2.92	4.88	7@ 9.0	0.000
	LL+I	4.820		5.915					
						RATING TONS	43.85	73.23	
11.80	F DL+EPH	25.196	2.944		61.549	1.46	2.44	7@ 9.0	
	LL+I	24.846							
						RATING TONS	21.95	36.65	
22.14	V DL+EPF	-5.758		-6.039	23.226	2.91	4.85	7@ 9.0	0.000
	LL+I	4.820		-5.915					
						RATING TONS	43.59	72.79	
23.60	F DL+EPD	-15.391	3.550		61.639	4.76	7.94	7@ 9.0	
	LL+I	-9.724							
						RATING TONS	71.34	119.14	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 13.70 TONS AT DISTANCE 0.00 IN WALL 2.
 THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 22.87 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F DL+EPH	5.255	7.541		10.502	0.44	0.74	4@ 9.0	
	LL+I	11.864	9.040						
						RATING TONS	14.60	24.37	
3.40	F DL+EPH	-11.058	6.988		25.554	0.87	1.45	7@ 9.0	
	LL+I	-16.721	9.040						
						RATING TONS	28.61	47.78	

WALL 2

DIST		FACTORED MOMENT	EFFECTS THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F DL+EPH	-5.320	7.716		10.519	0.44	0.73	4@ 9.0	
	LL+I	-11.864	9.040						
						RATING TONS	14.46	24.15	
3.40	F DL+EPH	11.150	7.164		25.558	0.86	1.44	7@ 9.0	

LL+I 16.721 9.040

RATING TONS 28.43 47.49

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-15.330 3.550	61.639	2.28	3.81	7@ 9.0	
		LL+I -20.275					
				RATING TONS	75.37	125.87	
1.46	V	DL+EPF -5.889	5.934 23.226	1.49	2.48	7@ 9.0	0.000
		LL+I 3.208	11.636				
				RATING TONS	49.04	81.90	
11.80	F	DL+EPH 25.196 2.944	61.549	0.85	1.42	7@ 9.0	
		LL+I 42.778					
				RATING TONS	28.04	46.83	
22.14	V	DL+EPF -5.758	-6.039 23.226	1.48	2.47	7@ 9.0	0.000
		LL+I 3.208	-11.636				
				RATING TONS	48.74	81.40	
23.60	F	DL+EPD-15.391 3.550	61.639	2.28	3.81	7@ 9.0	
		LL+I -20.275					
				RATING TONS	75.27	125.71	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 14.46 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 24.15 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 5.255 7.541	10.444	0.43	0.73	4@ 9.0	
		LL+I 11.930 8.123					
				RATING TONS	15.22	25.42	
3.40	F	DL+EPH-11.058 6.988	25.529	0.86	1.44	7@ 9.0	
		LL+I -16.815 8.123					
				RATING TONS	30.12	50.30	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -5.320 7.716	10.462	0.43	0.72	4@ 9.0	
		LL+I -11.930 8.123					
				RATING TONS	15.08	25.19	
3.40	F	DL+EPH 11.150 7.164	25.533	0.86	1.43	7@ 9.0	
		LL+I 16.815 8.123					
				RATING TONS	29.94	49.99	

SLAB 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.330	3.550	61.639	2.24	3.75	7@ 9.0	
	LL+I	-20.632						
				RATING TONS	78.56	131.19		
1.46	V DL+EPF	-5.889		5.934 23.226	1.53	2.55	7@ 9.0	0.000
	LL+I	1.996		11.319				
				RATING TONS	53.47	89.29		
11.80	F DL+EPH	25.196	2.944	61.549	0.83	1.39	7@ 9.0	
	LL+I	43.748						
				RATING TONS	29.08	48.57		
22.14	V DL+EPF	-5.758		-6.039 23.226	1.52	2.54	7@ 9.0	0.000
	LL+I	1.996		-11.319				
				RATING TONS	53.14	88.75		
23.60	F DL+EPD	-15.391	3.550	61.639	2.24	3.74	7@ 9.0	
	LL+I	-20.632						
				RATING TONS	78.46	131.02		

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 15.08 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 25.19 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255	7.541	10.550	0.57	0.95	4@ 9.0	
	LL+I	9.313	7.714					
				RATING TONS	20.47	34.18		
3.40	F DL+EPH	-11.058	6.988	25.575	1.11	1.85	7@ 9.0	
	LL+I	-13.127	7.714					
				RATING TONS	39.81	66.49		

WALL 2

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320	7.716	10.567	0.56	0.94	4@ 9.0	
	LL+I	-9.313	7.714					
				RATING TONS	20.28	33.87		
3.40	F DL+EPH	11.150	7.164	25.579	1.10	1.84	7@ 9.0	
	LL+I	13.127	7.714					
				RATING TONS	39.57	66.08		

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SLAB 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F	DL+EPD-15.330	3.550	61.639	3.00	5.02	7@ 9.0	
		LL+I -15.413						
					RATING TONS	108.17	180.64	
1.46	V	DL+EPF -5.889		5.934	23.226	1.77	2.95	7@ 9.0 0.000
		LL+I 2.128		9.783				
					RATING TONS	63.63	106.27	
11.80	F	DL+EPH 25.196	2.944	61.549	1.10	1.83	7@ 9.0	
		LL+I 33.128						
					RATING TONS	39.50	65.97	
22.14	V	DL+EPF -5.758		-6.039	23.226	1.76	2.93	7@ 9.0 0.000
		LL+I 2.129		-9.783				
					RATING TONS	63.25	105.62	
23.60	F	DL+EPD-15.391	3.550	61.639	3.00	5.01	7@ 9.0	
		LL+I -15.413						
					RATING TONS	108.02	180.40	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 20.28 TONS AT DISTANCE 0.00 IN WALL 2.
THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 33.87 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F	DL+EPH 5.255	7.541	10.498	0.66	1.11	4@ 9.0	
		LL+I 7.889	5.967					
					RATING TONS	26.58	44.40	
3.40	F	DL+EPH-11.058	6.988	25.553	1.30	2.18	7@ 9.0	
		LL+I -11.119	5.967					
					RATING TONS	52.14	87.07	

WALL 2

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	IR	OR	REINF	REINF
0.00	F	DL+EPH -5.320	7.716	10.515	0.66	1.10	4@ 9.0	
		LL+I -7.889	5.967					
					RATING TONS	26.34	43.99	
3.40	F	DL+EPH 11.150	7.164	25.556	1.30	2.16	7@ 9.0	
		LL+I 11.119	5.967					
					RATING TONS	51.82	86.54	

SLAB 1

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DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF
0.00	F	DL+EPD-15.330	3.550	61.639	3.47	5.80	7@ 9.0	
		LL+I -13.344						
					RATING TONS	138.81	231.82	
1.46	V	DL+EPF -5.889		5.934	23.226	2.22	3.72	7@ 9.0 0.000
		LL+I 1.686		7.772				
					RATING TONS	88.99	148.62	
11.80	F	DL+EPH 25.196	2.944	61.549	1.30	2.17	7@ 9.0	
		LL+I 28.001						
					RATING TONS	51.93	86.72	
22.14	V	DL+EPF -5.758		-6.039	23.226	2.21	3.69	7@ 9.0 0.000
		LL+I 1.686		-7.772				
					RATING TONS	88.45	147.72	
23.60	F	DL+EPD-15.391	3.550	61.639	3.47	5.79	7@ 9.0	
		LL+I -13.344						
					RATING TONS	138.63	231.51	

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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/16/2014 23:21
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\Yang\Desktop\box\PBL04001\PBL040~2.DAT

PBL04001 SINGLE SPAN RIGID FRAME WITHOUT BOTTOM SLAB.
 THE LOAD RATING IS BASED ON PREVIOUS LOAD RATING DATED 1996.

STRUCTURE IDENTIFICATION				SPAN		STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID					
00	0000	0000	0000	PBL0	4001				
METHOD	RUN TYPE	BOTTOM SLAB	HAUNCH	FISH CHANNEL	LIVE LOAD	NO OF CELLS	TOP SLAB	NO OF LANES	
LFD	R	N	N		9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	20.00	Y	1.0000	8	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
23.60	3.40	20.00	0.00	10.00	0.00	1.5	1.06

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
8		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	11.0	2	26.00	4.0	3	26.00	30.0	4	18.00	4.0
5	18.00	4.0	6	18.00	4.0	7	18.00	4.0	8	18.00	0.0

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	24.00	35.0	3	27.00	4.0	4	27.00	0.0

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	18.00	5.4	2	18.00	6.9	3	27.00	5.4	4	27.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE

5 6.00 4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	17.00	4.0	3	17.00	28.0	4	22.00	4.0
5	22.00	0.0									

SPECIAL LIVE LOADING 5

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	17.00	4.0	3	17.00	14.0	4	17.00	4.0
5	17.00	0.0									

SPECIAL LIVE LOADING 6

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	27.00	4.0	3	27.00	31.0	4	27.00	4.0
5	27.00	0.0									

SPECIAL LIVE LOADING 7

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	27.00	5.4	2	27.00	6.8	3	27.00	5.4	4	27.00	0.0

SPECIAL LIVE LOADING 8

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	24.00	8.3	2	24.00	5.4	3	24.00	6.6	4	24.00	5.4
5	24.00	0.0									

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB REINFORCEMENT															
AT LEFT END OF SPAN				AT MID SPAN				AT RIGHT END OF SPAN							
SLAB NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0

LIVE LOADINGS USED FOR RATING ARE : SP-1 SP-2 SP-3 SP-4
SP-5 SP-6 SP-7 SP-8

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

* LIVE LOAD RATING - SP-1 LOADING *

WALL 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	5.255	7.541	10.517	0.34	0.57	4@ 9.0	
	LL+I	15.391	12.039					
				RATING TONS	25.64	42.82		
3.40 F	DL+EPH	-11.058	6.988	25.561	0.67	1.12	7@ 9.0	
	LL+I	-21.692	12.039					
				RATING TONS	50.14	83.73		

WALL 2

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-5.320	7.716	10.534	0.34	0.57	4@ 9.0	
	LL+I	-15.391	12.039					
				RATING TONS	25.41	42.43		
3.40 F	DL+EPH	11.150	7.164	25.565	0.66	1.11	7@ 9.0	
	LL+I	21.692	12.039					
				RATING TONS	49.84	83.23		

SLAB 1

FACTORED EFFECTS				ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-15.330	3.550	61.639	1.78	2.98	7@ 9.0	
	LL+I	-25.947						
				RATING TONS	133.86	223.55		
1.46 V	DL+EPF	-5.889		5.934	23.226	1.33	2.22	7@ 9.0 0.000
	LL+I	-5.934		13.002				
				RATING TONS	99.75	166.58		
11.80 F	DL+EPH	25.196	2.944	61.549	0.73	1.22	7@ 9.0	
	LL+I	49.856						
				RATING TONS	54.69	91.33		
22.14 V	DL+EPF	-5.758		-6.039	23.226	1.32	2.21	7@ 9.0 0.000

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 LL+I -5.934 -13.002
 RATING TONS 99.14 165.57

23.60 F DL+EPD-15.391 3.550 61.639 1.78 2.98 7@ 9.0
 LL+I -25.947
 RATING TONS 133.68 223.25

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 25.41 TONS AT DISTANCE 0.00 IN WALL 2.
 THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 42.43 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	5.255 7.541	10.430	0.43	0.72	4@ 9.0	
	LL+I	11.987 7.925					
			RATING TONS	19.43	32.45		
3.40 F	DL+EPH	11.058 6.988	25.523	0.86	1.43	7@ 9.0	
	LL+I	-16.894 7.925					
			RATING TONS	38.53	64.34		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-5.320 7.716	10.448	0.43	0.71	4@ 9.0	
	LL+I	-11.987 7.925					
			RATING TONS	19.25	32.15		
3.40 F	DL+EPH	11.150 7.164	25.527	0.85	1.42	7@ 9.0	
	LL+I	16.894 7.925					
			RATING TONS	38.29	63.95		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-15.330 3.550	61.639	2.24	3.74	7@ 9.0	
	LL+I	-20.671					
			RATING TONS	100.81	168.36		
1.46 V	DL+EPF	-5.889	5.934 23.226	1.54	2.57	7@ 9.0	0.000
	LL+I	5.433	11.245				
			RATING TONS	69.20	115.56		
11.80 F	DL+EPH	25.196 2.944	61.549	0.82	1.37	7@ 9.0	
	LL+I	44.264					
			RATING TONS	36.96	61.72		
22.14 V	DL+EPF	-5.758	-6.039 23.226	1.53	2.55	7@ 9.0	0.000
	LL+I	5.433	-11.245				
			RATING TONS	68.78	114.86		

23.60 F DL+EPD-15.391 3.550 61.639 2.24 3.74 7@ 9.0
 LL+I -20.671
 RATING TONS 100.68 168.14

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 19.25 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 32.15 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	5.255 7.541	10.510	0.37	0.62	4@ 9.0	
	LL+I	14.262 11.030					
			RATING TONS	16.58	27.69		
3.40 F	DL+EPH	11.058 6.988	25.558	0.72	1.20	7@ 9.0	
	LL+I	-20.102 11.030					
			RATING TONS	32.46	54.21		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-5.320 7.716	10.527	0.37	0.61	4@ 9.0	
	LL+I	-14.262 11.030					
			RATING TONS	16.43	27.44		
3.40 F	DL+EPH	11.150 7.164	25.562	0.72	1.20	7@ 9.0	
	LL+I	20.102 11.030					
			RATING TONS	32.26	53.88		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-15.330 3.550	61.639	1.93	3.22	7@ 9.0	
	LL+I	-23.985					
			RATING TONS	86.88	145.10		
1.46 V	DL+EPF	-5.889	5.934 23.226	1.30	2.16	7@ 9.0	0.000
	LL+I	-1.929	13.346				
			RATING TONS	58.31	97.37		
11.80 F	DL+EPH	25.196 2.944	61.549	0.77	1.29	7@ 9.0	
	LL+I	46.959					
			RATING TONS	34.84	58.18		
22.14 V	DL+EPF	-5.758	-6.039 23.226	1.29	2.15	7@ 9.0	0.000
	LL+I	-1.929	-13.346				
			RATING TONS	57.95	96.78		
23.60 F	DL+EPD	-15.391 3.550	61.639	1.93	3.22	7@ 9.0	

LL+I -23.985

RATING TONS 86.77 144.91

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 16.43 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 27.44 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255 7.541	10.430	0.53	0.88	4@ 9.0	
	LL+I	9.767 6.457					
			RATING TONS	23.85	39.82		
3.40	F DL+EPH	11.058 6.988	25.523	1.05	1.75	7@ 9.0	
	LL+I	-13.766 6.457					
			RATING TONS	47.28	78.96		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320 7.716	10.448	0.53	0.88	4@ 9.0	
	LL+I	-9.767 6.457					
			RATING TONS	23.63	39.46		
3.40	F DL+EPH	11.150 7.164	25.527	1.04	1.74	7@ 9.0	
	LL+I	13.766 6.457					
			RATING TONS	47.00	78.48		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.330 3.550	61.639	2.75	4.59	7@ 9.0	
	LL+I	-16.843					
			RATING TONS	123.73	206.62		
1.46	V DL+EPF	-5.889	5.934 23.226	1.89	3.15	7@ 9.0	0.000
	LL+I	4.427	9.163				
			RATING TONS	84.92	141.82		
11.80	F DL+EPH	25.196 2.944	61.549	1.01	1.68	7@ 9.0	
	LL+I	36.067					
			RATING TONS	45.36	75.74		
22.14	V DL+EPF	-5.758	-6.039 23.226	1.88	3.13	7@ 9.0	0.000
	LL+I	4.427	-9.163				
			RATING TONS	84.41	140.96		
23.60	F DL+EPD	-15.391 3.550	61.639	2.75	4.59	7@ 9.0	
	LL+I	-16.843					
			RATING TONS	123.56	206.35		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 23.63 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 39.46 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255 7.541	10.498	0.66	1.11	4@ 9.0	
	LL+I	7.889 5.967					
				RATING TONS	26.58	44.40	
3.40	F DL+EPH	-11.058 6.988	25.553	1.30	2.18	7@ 9.0	
	LL+I	-11.119 5.967					
				RATING TONS	52.14	87.07	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320 7.716	10.515	0.66	1.10	4@ 9.0	
	LL+I	-7.889 5.967					
				RATING TONS	26.34	43.99	
3.40	F DL+EPH	11.150 7.164	25.556	1.30	2.16	7@ 9.0	
	LL+I	11.119 5.967					
				RATING TONS	51.82	86.54	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.330 3.550	61.639	3.47	5.80	7@ 9.0	
	LL+I	-13.344					
				RATING TONS	138.81	231.82	
1.46	V DL+EPF	-5.889	5.934	2.22	3.71	7@ 9.0	0.000
	LL+I	1.498	7.786				
				RATING TONS	88.83	148.35	
11.80	F DL+EPH	25.196 2.944	61.549	1.30	2.17	7@ 9.0	
	LL+I	28.001					
				RATING TONS	51.93	86.72	
22.14	V DL+EPF	-5.758	-6.039	2.21	3.69	7@ 9.0	0.000
	LL+I	1.498	-7.786				
				RATING TONS	88.29	147.45	
23.60	F DL+EPD	-15.391 3.550	61.639	3.47	5.79	7@ 9.0	
	LL+I	-13.344					
				RATING TONS	138.63	231.51	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 26.34 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 43.99 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-6 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255 7.541	10.504	0.43	0.72	4@ 9.0	
	LL+I	12.202 9.338					
				RATING TONS	25.81	43.11	
3.40	F DL+EPH	-11.058 6.988	25.555	0.84	1.41	7@ 9.0	
	LL+I	-17.198 9.338					
				RATING TONS	50.58	84.46	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320 7.716	10.522	0.43	0.71	4@ 9.0	
	LL+I	-12.202 9.338					
				RATING TONS	25.58	42.71	
3.40	F DL+EPH	11.150 7.164	25.559	0.84	1.40	7@ 9.0	
	LL+I	17.198 9.338					
				RATING TONS	50.27	83.95	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.330 3.550	61.639	2.21	3.69	7@ 9.0	
	LL+I	-20.977					
				RATING TONS	132.46	221.20	
1.46	V DL+EPF	-5.889	5.934 23.226	1.45	2.42	7@ 9.0	0.000
	LL+I	3.698	11.937				
				RATING TONS	86.92	145.15	
11.80	F DL+EPH	25.196 2.944	61.549	0.82	1.37	7@ 9.0	
	LL+I	44.395					
				RATING TONS	49.13	82.05	
22.14	V DL+EPF	-5.758	-6.039 23.226	1.44	2.40	7@ 9.0	0.000
	LL+I	3.698	-11.937				
				RATING TONS	86.39	144.27	
23.60	F DL+EPD	-15.391 3.550	61.639	2.20	3.68	7@ 9.0	
	LL+I	-20.977					
				RATING TONS	132.28	220.91	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 25.58 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 42.71 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-7 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255 7.541	10.592	0.33	0.55	4@ 9.0	
	LL+I	16.275 14.398					
				RATING TONS	17.71	29.57	
3.40	F DL+EPH	-11.058 6.988	25.593	0.63	1.06	7@ 9.0	
	LL+I	-22.939 14.398					
				RATING TONS	34.22	57.14	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320 7.716	10.608	0.32	0.54	4@ 9.0	
	LL+I	-16.275 14.398					
				RATING TONS	17.55	29.30	
3.40	F DL+EPH	11.150 7.164	25.597	0.63	1.05	7@ 9.0	
	LL+I	22.939 14.398					
				RATING TONS	34.01	56.79	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.330 3.550	61.639	1.70	2.84	7@ 9.0	
	LL+I	-27.185					
				RATING TONS	91.99	153.62	
1.46	V DL+EPF	-5.889	5.934 23.226	1.18	1.97	7@ 9.0	0.000
	LL+I	-4.777	14.646				
				RATING TONS	63.75	106.47	
11.80	F DL+EPH	25.196 2.944	61.549	0.72	1.21	7@ 9.0	
	LL+I	50.319					
				RATING TONS	39.01	65.15	
22.14	V DL+EPF	-5.758	-6.039 23.226	1.17	1.96	7@ 9.0	0.000
	LL+I	-4.777	-14.646				
				RATING TONS	63.37	105.82	
23.60	F DL+EPD	-15.391 3.550	61.639	1.70	2.84	7@ 9.0	
	LL+I	-27.185					
				RATING TONS	91.87	153.42	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 17.55 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 Page 10

THE MINIMUM OPERATING RATING IS 29.30 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-8 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	5.255 7.541	10.584	0.36	0.61	4@ 9.0	
	LL+I	14.645 12.801					
			RATING TONS	21.83	36.46		
3.40	F DL+EPH	-11.058 6.988	25.590	0.70	1.18	7@ 9.0	
	LL+I	-20.642 12.801					
			RATING TONS	42.24	70.54		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-5.320 7.716	10.601	0.36	0.60	4@ 9.0	
	LL+I	-14.645 12.801					
			RATING TONS	21.63	36.13		
3.40	F DL+EPH	11.150 7.164	25.593	0.70	1.17	7@ 9.0	
	LL+I	20.642 12.801					
			RATING TONS	41.98	70.11		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.330 3.550	61.639	1.89	3.16	7@ 9.0	
	LL+I	-24.479					
			RATING TONS	113.51	189.56		
1.46	V DL+EPF	-5.889	5.934 23.226	1.32	2.20	7@ 9.0	0.000
	LL+I	-4.377	13.118				
			RATING TONS	79.09	132.08		
11.80	F DL+EPH	25.196 2.944	61.549	0.80	1.34	7@ 9.0	
	LL+I	45.383					
			RATING TONS	48.06	80.26		
22.14	V DL+EPF	-5.758	-6.039 23.226	1.31	2.19	7@ 9.0	0.000
	LL+I	-4.377	-13.118				
			RATING TONS	78.61	131.28		
23.60	F DL+EPD	-15.391 3.550	61.639	1.89	3.16	7@ 9.0	
	LL+I	-24.479					
			RATING TONS	113.36	189.31		

Dead load

asphalt wearing surface, parapets, curbs = $(4 \times 6.5 / 12 \times 2 + 0.75 \times 12.5 / 12 \times 2 + 2 / 12 \times 26 \times) 0.15 = 1.53 \text{ k/ft}$

Equivalent overlay thickness:

$$1.53 / 35.5 / 0.15 = 0.29' = 3.48''$$

Box5 Truck list:

Legal rating	Permit rating
SP-1 H 15	SP-1 150K
SP-2 T-3	SP-2 90K COMB.
SP-3 T-4	SP-3 90K CRANE
SP-4 HS20	SP-4 90K CARGO
SP-5 3S2	SP-5 80K CARGO
	SP-6 120K
	SP-7 108K
	SP-8 120K CRANE

Prince George's County



2021 ANNUAL BRIDGE INSPECTION REPORT March 25, 2021



BRIDGE NO. P-BL05001

VARNUM STREET

OVER

STREAM

Prepared by



Prince George's County

2021 ANNUAL BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL05001

VARNUM STREET

OVER

STREAM

Prepared by



Inspection Team Leader: Dominick DeJohn, P.E.

04/22/2021

Date

Inspector: Jean C. Kubwayo, E.I.T.

04/22/2021

Date



Professional Engineer: Robert A. Weaver, P.E.

04/22/2021

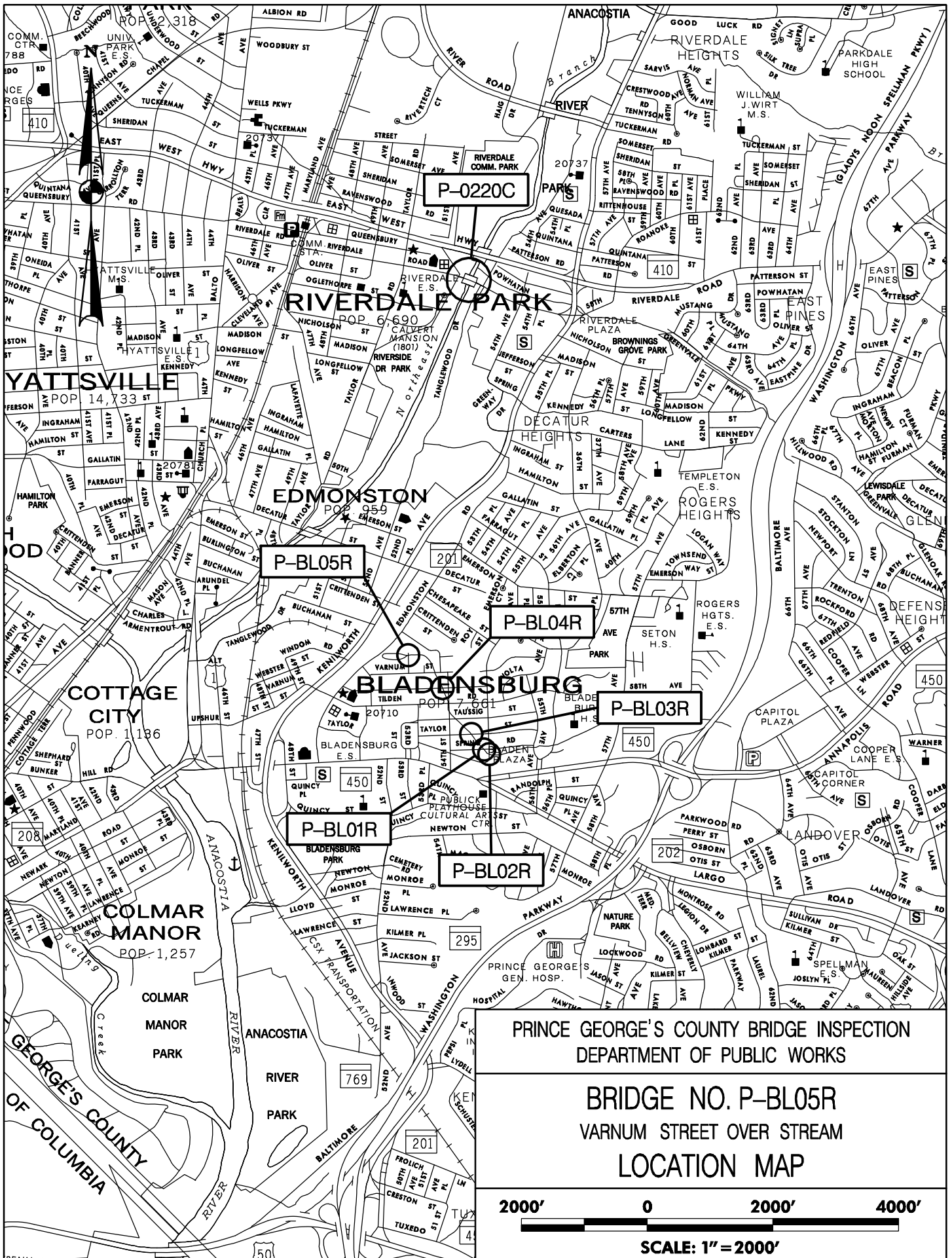
Date

Professional Certification: I hereby certify that this document was prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 32608, Expiration Date: January 15, 2022.

The condition report, load ratings and recommendations presented herein are based upon a visual inspection of accessible portions of the existing structure. No responsibility is assumed by KCI Technologies, Inc. for the presence of any latent structural defects that cannot be detected by such visual inspection.

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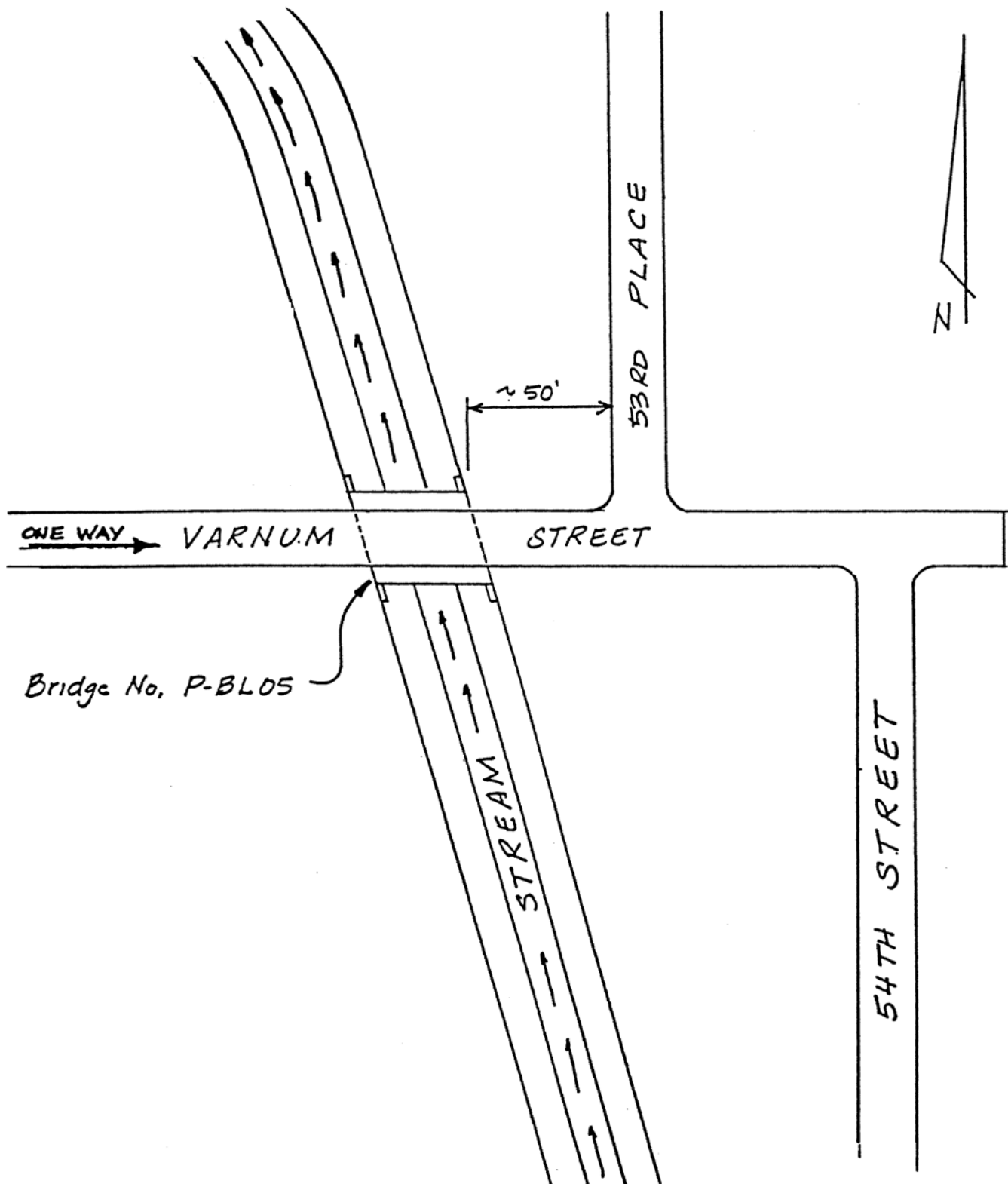
PRINCE GEORGE'S COUNTY BRIDGE INSPECTION
DEPARTMENT OF PUBLIC WORKS

BRIDGE NO. P-BL05R
VARNUM STREET OVER STREAM
LOCATION MAP

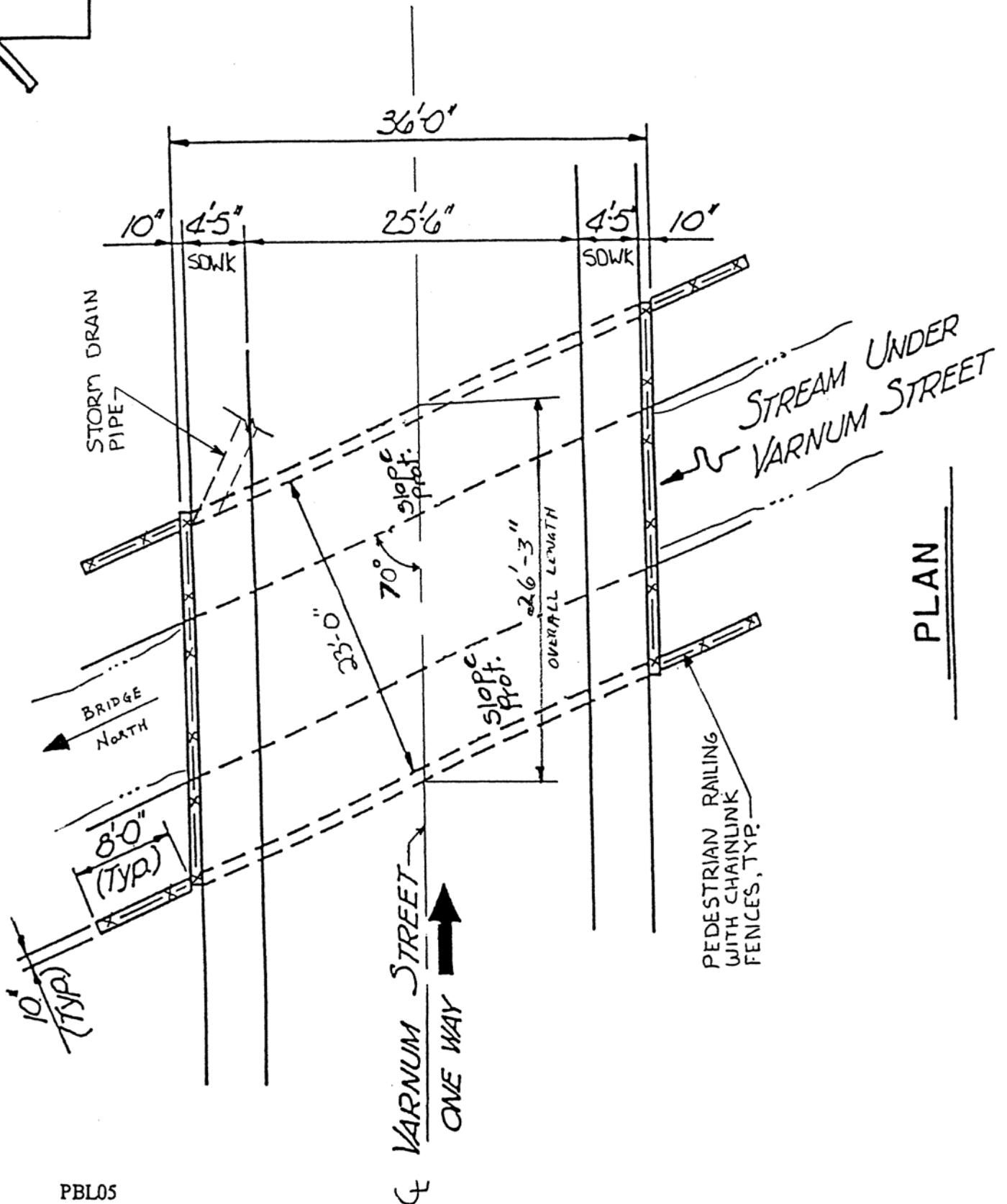
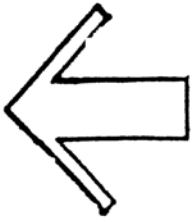
2000' 0 2000' 4000'

SCALE: 1" = 2000'

BRIDGE NO. PBL05 - VARNUM STREET OVER STREAM

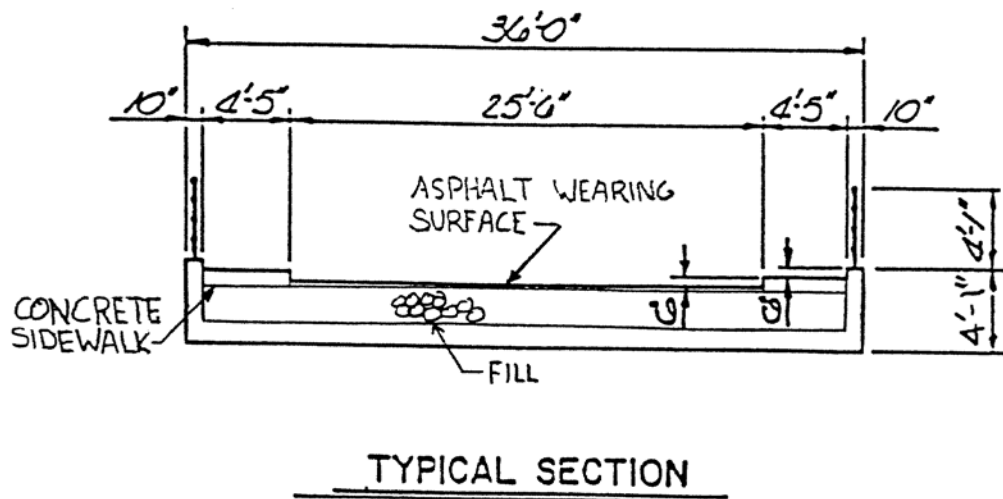
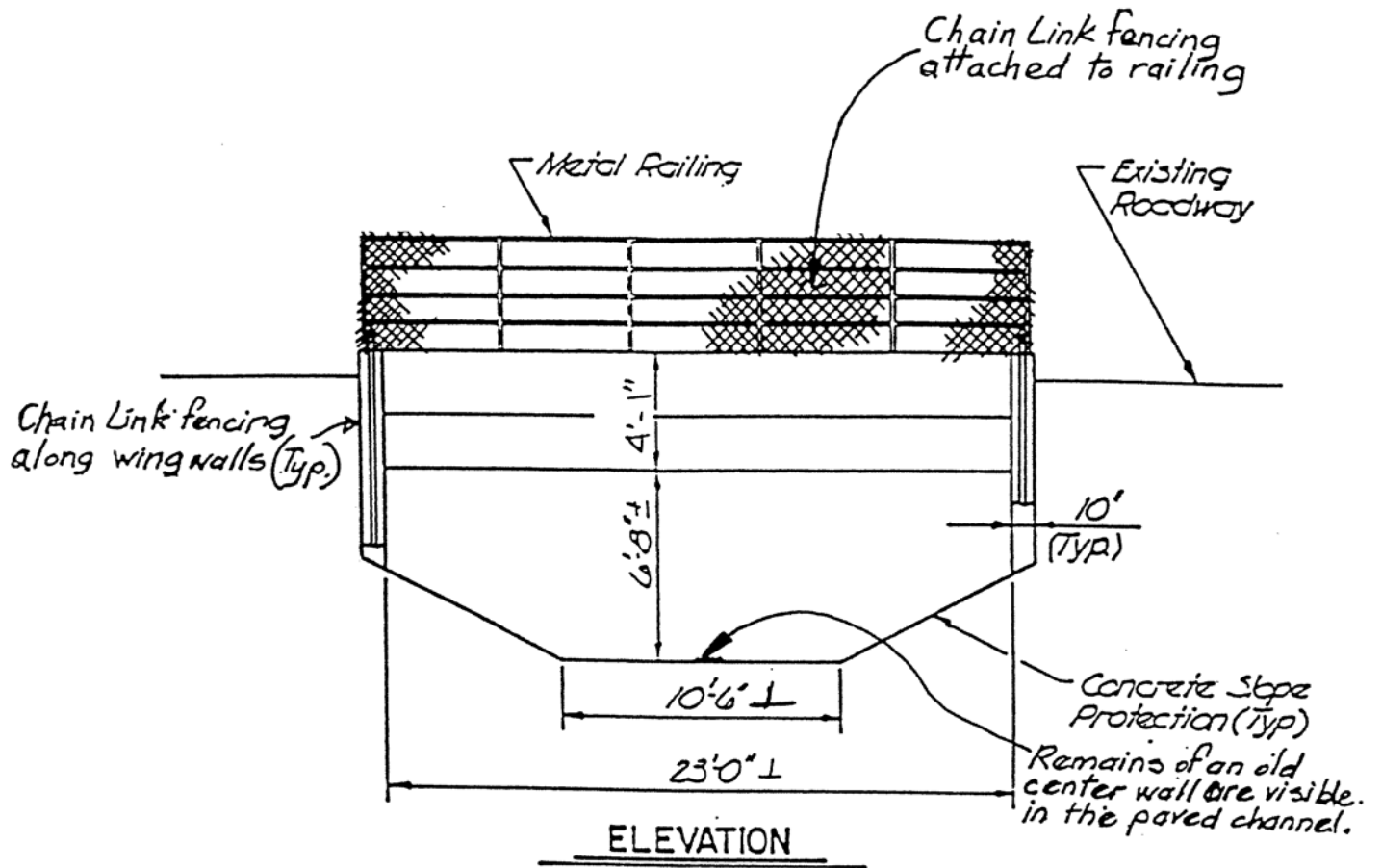


BRIDGE NO. PBL05 - VARNUM STREET OVER STREAM



PLAN

BRIDGE NO. PBL05 - VARNUM STREET OVER STREAM



2021 BRIDGE INSPECTION REPORT
INSPECTION AND RATING SUMMARY

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

DESCRIPTION: Single-span concrete rigid-frame bridge with an asphalt wearing surface. The substructure consists of concrete rigid frame wall abutments with concrete slope and channel protection. The bridge carries a two-lane roadway and two sidewalks. Stream flows from south to north under the bridge. The numbering convention for the bridge is from the north and the west.

OVERALL LENGTH:	<u>26'-3"</u>	CLEAR ROADWAY:	<u>25'-6"</u>
YEAR BUILT:	<u>1958</u>	POSTED LOAD:	
YEAR REHABILITATED:	<u>-</u>	SINGLE, LBS	<u>6,000 lbs. G.V.W. and 6,000 lbs. G.C.W.</u>
POSTED SPEED LIMIT:	<u>25 MPH</u>	COMBINATION, LBS	<u>-</u>
MAP COORDINATES:	<u>12F6</u>	BEAM SPACING:	<u>-</u>
	<u>5410B9</u>	NUMBER OF BEAMS:	<u>-</u>
		SIZE OF BEAMS:	<u>-</u>

ROADWAY APPROACHES:

Section 25'-6" wide asphalt roadway with two lanes.

Alignment Both approaches are straight with a "T" intersection located 50' east of the bridge.

Profile Down grade from west to east across the structure.

Traffic Barrier There are no approach traffic barriers.

REVIEW OF ITEM 113 - SCOUR POTENTIAL RATING: 8P

Item 113 was originally rated an 8P, which indicates that the structure is a culvert type structure with a paved bottom. Based on the observed conditions, this rating is still valid and does not require reevaluation.

2021 BRIDGE INSPECTION REPORT INSPECTION AND RATING SUMMARY

Bridge No. P-BL05R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name VARNUM STREET Crossing STREAM Photos 12
Inspection Date 03/12/2020 Inspection Crew D.DeJohn/J.Kubwayo

REVIEW OF PREVIOUS REPORT:

A 2020 bridge inspection report prepared by KCI Technologies, Inc. was available and used for comparison purposes. The overall condition of the bridge appeared to be essentially the same as noted in the previous report (see "County Project Manager Notes").

PG COUNTY PROJECT MANAGER NOTES:

2020 Inspectors Note: The bridge posting of 6,000 lbs should be enforced. Several over-weight vehicles were observed parked on the one-way street, with no way out except to cross over the bridge.

2021: The bridge is to stay on a 12 Month Inspection Cycle; however, every other year (beginning in the current year) only the superstructure is to be inspected (per MDSHA) (i.e. In odd number years, only the superstructure is to be inspected vs. in even number years the inspection is to be of the full structure). Per this directive, only the superstructure was inspected during the 2021 Inspection.

LIVE LOAD RATINGS:

The load ratings were calculated in 2014 for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The load ratings for the Maryland Legal Load Vehicles are as follows:

<u>Truck</u>	<u>Gross Vehicle Weight</u>	<u>Inventory</u>	<u>Operating</u>
H-15	15 tons	03 tons	05 tons
HS-20	36 tons	04 tons	07 tons
Type 3	33 tons	03 tons	05 tons
Type 3S2	40 tons	06 tons	10 tons

The structure is currently posted for 6,000 lbs. for single-unit vehicles and 6,000 lbs. for combination-unit vehicles. Based on an SHA email dated 6/8/2015 the structure could be posted for 10,000 lbs. for single-unit vehicles and 15,000 lbs. for combination-unit vehicles; however, the Town of Bladensburg desires to retain the current posting. The inspection frequency shall remain on a 12-month cycle.

The recommendation for posting is based on operating values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. KCI Technologies, Inc. assumes no responsibility for correctness of these previous load rating calculations.

SI&A CONDITION RATING SUMMARY:

<u>Item</u>	<u>Current</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>
Deck (Item 58) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>

2021 BRIDGE INSPECTION REPORT

INSPECTION AND RATING SUMMARY

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958

Name VARNUM STREET **Crossing** STREAM **Photos** 12

Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

Superstructure (Item 59) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Substructure (Item 60) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Channel and Channel Protection (Item 61) -	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>
Culvert (Item 62) -	<u>N</u>	<u>N</u>	<u>N</u>	<u>N</u>
Waterway Adequacy (Item 71) -	<u>7</u>	<u>7</u>	<u>7</u>	<u>7</u>
Approach Roadway Alignment (Item 72) -	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>
Bridge Sufficiency Rating (BSR) -	<u>41.4</u>	<u>41.4</u>	<u>41.4</u>	<u>41.4</u>
Routine Inspection Frequency -	<u>12 months</u>	<u>24 months</u>	<u>12</u>	<u>12</u>
Date of Inspection -	<u>03/25/2021</u>	<u>03/12/2020</u>	<u>03/19/2019</u>	<u>03/12/2018</u>
Partial Interim Inspection Frequency -	<u> </u>			

Load Rating Summary:

The load ratings were calculated in 2014 for the Maryland Legal Load and Permit Vehicles. The computations are included in this report. The load ratings for the Maryland Legal Load Vehicles and Permit Vehicles are as follows:

<u>Vehicle</u>	<u>Gross Vehicle Weight</u>	<u>Inventory Rating (Tons)</u>	<u>Operating Rating (Tons)</u>
HL-93	36 tons		
H-15	15 tons	03.0	05.0
T-3	33 tons	03.0	05.5
T-4	35 tons	03.5	05.5
HS-20	36 tons	04.5	07.5
T-3S2	40 tons	06.0	10.0
150K	75 tons	05.5	09.5
90K Permit	45 tons	04.0	07.0
90K Mobile Crane	45 tons	03.5	06.0
90K Cargo	45 tons	05.0	09.0
80K Cargo	40 tons	06.0	10.0
120K Vehicle	60 tons	05.5	09.5
108K Mobile Crane	54 tons	04.0	06.5
120K Mobile Crane	60 tons	05.0	08.0

The culvert is currently posted for 6,000 lbs. for single-unit vehicles and 6,000 lbs. for combination-unit vehicles. Based on an SHA email dated 6/8/2015 the culvert could be posted for 10,000 lbs. for single-unit vehicles and 15,000 lbs. for combination-unit vehicles; however, the Town of Bladensburg desires to retain the current posting. The inspection frequency shall remain on a 12-month cycle.

The recommendation for posting is based on operating values from previously computed load ratings. After reviewing the existing bridge condition, we have determined that no significant changes have occurred since the last rating was performed. Our review of current ratings is not a check of the methods used but is a comparison of present-day to previous bridge condition. KCI Technologies, Inc. assumes no responsibility for correctness of these previous load rating calculations.

2021 BRIDGE INSPECTION REPORT

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

BRIDGE INSPECTOR'S RECOMMENDATIONS FOR MAINTENANCE REPAIRS

DESCRIPTION	COUNTY ITEM NUMBER	QUANTITY	UNIT COST	TOTAL COST
<u>Immediate:</u>				
1 Install object markers at the northwest and southwest corners of the bridge.	81	2 EA	\$200/EA	\$400
2 Install bridge railings that meet current standards.	22	54 LF	\$100/LF	\$5,400
3 Install approach traffic barrier that meet current standards at all four corners of the bridge.	21	120 LF	\$100/LF	\$12,000
4 Install MDSHA Type-G end treatments.	20	4 EA	\$1150/EA	\$4,600
Subtotal (Immediate Items)				\$22,400
<u>Routine:</u>				
1 Repair the spall in the Northwest Wingwall.	3	1 CF	\$350/CF	\$350
2 Seal the cracks in the concrete slope protection.	6	16 LF	\$40/LF	\$640
3 Repair the undermined and settled areas of the Northwest and Northeast Sidewalks.	99	12 CF	\$60/CF	\$720
4 Repair the chain link fence and posts at the northwest, southwest, and northeast corners of the bridge.	101	15 LF	\$50/LF	\$750
5 Repair the differential settlement between panels of the sidewalk.	7	8 LF	\$30/LF	\$240
6 Seal the cracks in the asphalt wearing surface.	13	3 LF	\$25/LF	\$75
7 Repair the spalls and undermined areas in the concrete slope protection and wingwalls.	6	12 SF	\$35/SF	\$420
Subtotal (Routine Items)				\$3,195
<u>Preventative:</u>				
1 Enforce the bridge posting limit.		0	/	\$0
Subtotal (Preventative Items)				\$0
Total:				\$25,595

Immediate Repairs - Severe Defects that may affect the serviceability of the structure or are missing safety features that present a hazard to the public. Immediate repairs should be scheduled within 12 months of notification.

Routine Repairs - Moderate defects that do not presently affect the serviceability of the structure. Routine repairs should be scheduled, and given priority, within the current maintenance schedule.

Preventative Repairs - Minor defects that do not presently affect the serviceability of the structure. Preventative repairs should be scheduled within the current maintenance schedule.

2021 BRIDGE INSPECTION REPORT

GEOMETRY

Bridge No. P-BL05R

Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME

Year Built 1958

Name VARNUM STREET

Crossing STREAM

Photos 12

Inspection Date 03/12/2020

Inspection Crew D.DeJohn/J.Kubwayo

MAP COORDINATE	5410B9	12F6	NEW ADC	OLD ADC
SKEW WITH HORIZONTAL (DEGREES)	20			
STRUCTURE TYPE	-			
OVERALL LENGTH	26'-3"			
NO. OF SPAN	0001	NO. OF CELLS		
SPAN LENGTH	S024S			
VERTICAL CLEARANCE	A - < 10'			
OUT-TO-OUT (FEET)	0360			
ROADWAY WIDTH (FEET)	25'-6"			
APPROACH ROADWAY WIDTH	00	025		00
SHOULDER WIDTH	N	N		N
CURB/SIDEWALK WIDTH	044	044		
NO OF BEAMS	-			
SIZE OF BEAMS	-			
BEAM SPACINGS	-			
ABUTMENT TYPE	MATERIAL 1 - Concrete	TYPE 7 - Non-definable		CODE 1 - Predominant Feature
ABUTMENT FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None		CODE 0 - Entire Structure
PIER TYPE	MATERIAL N - Not Applicable	TYPE		CODE
PIER FOOTING	MATERIAL N - Not Applicable	TYPE OF PILE		CODE
WINGWALL TYPE	MATERIAL 1 - Concrete	TYPE 3 - Cantilever		CODE 0 - Entire Structure
WINGWALL FOOTING	MATERIAL 1 - Concrete	TYPE OF PILE 0 - None		CODE 0 - Entire Structure
BEARING TYPE	1ST BEARING N - None or N/A	2ND BEARING N - None or N/A	3RD BEARING	N - None or N/A
SPAN OF CULVERT	N			
RISE OF CULVERT	N			
CULVERT WALL THICKNESS (IN)				

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

58 DECK	CONDITION RATING	
1. Wearing Surface	5	Type - Asphalt
2. Deck - Topside	-	
3. Deck - Underside	7	Type - Soffit/Top slab of rigid frame
4. Curbs	7	Type - Concrete
5. Median	-	
6. Sidewalks	6	Type - 4'-5" wide concrete
7. Parapets	7	Type - Concrete
8. Railing	7	Type - Four-strand Steel Pipe
9. Roadway Joints	-	
10. Drainage System	-	
11. Lighting Standards	-	
12. Utilities	-	Type - Overhead lines along the north side of the roadway
13. Other		
Inspector's Condition Rating (58)		7

Elements in Item 58 were not inspected during the 2021 Inspection per MDSHA with the exception of Item 58.3.

58.1 – There are sealed cracks that have failed and are open up to 1/2" wide. There are longitudinal, transverse and map cracks up to 1/4" wide in the asphalt wearing surface over the structure.

58.3 – There are isolated hairline diagonal cracks throughout the underside of the slab. There are two hairline cracks that extend into the North Fascia of the slab and seven hairline cracks that extend into the South Fascia (see Photo 8). There is a 1'-0" high x 2'-0" wide area of water staining on the North Fascia (see Photo 9) and a 2'-0" wide x 2'-0" long area of water staining on the underside of the slab near mid-span. There are small areas of rust staining, scaling, and hairline map cracking with efflorescence at the north end of the slab (see Photo 10). There is a sealed full-width longitudinal crack on the underside of the slab near mid-span. There are four, approximately 2' long, hairline cracks with rust staining at the northeast corner of the slab. There is a 2 1/2" wide x 1" long x 1/4" deep spall with exposed reinforcement at the northeast corner and hairline map cracks at the northwest corner of the underside of the slab. There are two 3'-0" long diagonal hairline cracks with light efflorescence at the northwest corner of the slab. There are two approximately 7' long diagonal hairline cracks. One is located at the northwest corner and the other at the southeast corner of the slab. There are minor pop-out spalls in the south end of the slab.

58.4 – There is a 1/8" wide vertical crack in the South Curb near the west end.

58.6 – There is minor wear throughout the sidewalks. There is a full-width x 1/16" wide transverse

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

crack at the west end of the South Sidewalk. The South Sidewalk has settled up to 1" relative to the curb and there is 1" differential settlement between panels at the west end of the North Sidewalk.

58.7 – There are vertical hairline cracks and water staining on the exterior faces of both parapets.

58.8 – The steel pipe railing has minor corrosion throughout. There is a chain link fence attached to both railings, there is minor corrosion throughout the chain link fence. There is vegetation growth at both ends of the North and South Fence.

58.12 – There are telephone poles in the Northwest and Northeast Sidewalks.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name VARNUM STREET Crossing STREAM Photos 12
Inspection Date 03/12/2020 Inspection Crew D.DeJohn/J.Kubwayo

59 SUPERSTRUCTURE

Number of Spans 1
Type of Construction Concrete Rigid-Frame

	CONDITION RATING	
1. Bearing Devices	<input type="text" value="-"/>	
2. Girders or Beams	<input type="text" value="-"/>	
3. Stringers	<input type="text" value="-"/>	
4. Floor Beams	<input type="text" value="-"/>	
5. Diaphragms/Crossframes	<input type="text" value="-"/>	
6. Paint	<input type="text" value="-"/>	
7. Other	<input type="text" value="7"/>	Type - Rigid frame top slab/Soffit
8. Rivets or Bolts	<input type="text" value="-"/>	
9. Welds - Cracks	<input type="text" value="-"/>	
10. Rust	<input type="text" value="-"/>	
11. Timber Decay	<input type="text" value="-"/>	
12. Concrete Cracking	<input type="text" value="7"/>	
13. Collision Damage	<input type="text" value="-"/>	
14. Deflection Under Load	<input type="text" value="8"/>	
15. Alignment of Members	<input type="text" value="8"/>	
16. Vibrations Under Load	<input type="text" value="8"/>	
17. Fracture Critical Members	<input type="text" value="-"/>	

Inspector's Condition Rating (59)

59.7 - See comments for Item 58.3.

2021 BRIDGE INSPECTION REPORT

CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

60 SUBSTRUCTURE

CONDITION RATING

1. Abutments	-Wingwalls	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
	-Backwalls	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Stems	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
	-Footings	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Scour/Erosion	<div style="border: 1px solid black; padding: 2px 10px;">8</div>	
	-Settlement	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
	Overall Abutment Rating	<div style="border: 1px solid black; padding: 2px 10px;">7</div>	Abutment Type - Concrete rigid-frame wall
2. Piers or Bents	-Caps	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Columns/Shaft	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Footings	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Scour/Erosion	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Settlement	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	Overall Pier Rating	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	Pier Type
3. Pile Bents	-Caps	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
	-Piles	<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
4. Concrete Cracking or Spalling		<div style="border: 1px solid black; padding: 2px 10px;">7</div>	
5. Steel Corrosion		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
6. Timber Decay		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
7. Other _____		<div style="border: 1px solid black; padding: 2px 10px;">5</div>	Concrete Invert
8. Debris on Seats		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
9. Paint		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
10. Collision Damage		<div style="border: 1px solid black; padding: 2px 10px;">-</div>	
11. Overall Undermining/Scour		<div style="border: 1px solid black; padding: 2px 10px;">8</div>	

Inspector's Condition Rating (60)

7

Elements in Item 60 were not inspected during the 2021 Inspection per MDSHA.

60.1 – Wingwalls: There is vegetation overgrowth at all four wingwalls. There is an 8 1/2" wide x 7"

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

high x 4" deep spall at the top of the Northwest Wingwall exposing the fence post anchorage. The Northwest Wingwall is undermined 10" long x 2" high x 3 1/2" deep adjacent to the abutment. The Southwest Wingwall joint at the West Abutment is open up to 2" wide and is slightly rotated.

Wingwall Fence: There are broken fence posts on top of all four wingwalls. The broken fence post on top of the Northeast Wingwall is not supporting the main fence. The top rail is disconnected at the Northwest, Southwest, and Southeast Wingwalls. The fence on the Southwest Wingwall has failed.

Abutments: There are minor spalls along the wingwall joints. Only the top 3'-0" of the abutment walls are exposed due to the concrete slope protection. There are isolated hairline vertical cracks in the abutments. There is graffiti throughout both abutments. There is light efflorescence at the weep hole in the West Abutment.

60.7 - The channel is lined with concrete in the vicinity of the bridge. The eastern half of the invert is heavily scaled with uneven concrete up to 4" high.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R Bridge Type SINGLE-SPAN CONCRETE RIGID-FRAME Year Built 1958
Name VARNUM STREET Crossing STREAM Photos 12
Inspection Date 03/12/2020 Inspection Crew D.DeJohn/J.Kubwayo

61 CHANNEL AND CHANNEL PROTECTION

	CONDITION RATING
1. Channel Scour	<div>7</div>
2. Embankment Erosion	<div>7</div>
3. Drift/Debris	<div>6</div>
4. Vegetation	<div>6</div>
5. Channel Alignment	<div>8</div>
6. Fender System	<div>-</div>
7. Spur Dikes and Jetties	<div>-</div>
8. Riprap/Slope Protection	<div>5</div>

Inspector's Condition Rating (61)

5

Elements in Item 61 were not inspected during the 2021 Inspection per MDSHA.

61.1 - There is a vertical differential up to 4 1/2" between sections of the concrete invert at the upstream end of the bridge.

61.5 - The stream flows from south to north under the bridge. The channel is lined with concrete in the vicinity of the bridge. The eastern half of the invert is heavily scaled with random unsettled concrete portions remaining, causing the stream to flow mainly through the east side of the bridge.

61.8 – Vegetation is growing in the joints, drains, and cracks throughout the channel and slope protection. There are isolated cracks up to 1/8" wide throughout the slope protection. There are spalls and heavy abrasion along the base of the slope protection, which is typically heavier at the joints.

Abutment Slope Protection: There is a vertical crack with efflorescence near mid-length of the West Abutment Slope Protection and minor efflorescence staining below the drainage pipe. There is a vertical crack with efflorescence at the north end of the East Abutment Slope Protection and patched areas at both ends. The patch at the south end of the East Slope Protection has a spall up to 1'-4" long x 8" high x full-depth.

Northwest Slope Protection: The joint at the Northwest Slope Protection has a 1 1/2" wide gap at the top and the adjacent slab is settled 1/2". There is a 10" long x 4" wide x 1" deep spall at the top of the Northwest Slope Protection, which is undermining the Northwest Wingwall 10" wide x 2" high x 3 1/2" deep. The patch at the Northwest Slope Protection has cracks up to 1/8" wide. There is a small tree growing between the Northwest Slope Protection and the Northwest Wingwall.

Northeast Slope Protection: There is a 1/8" wide diagonal crack with water leaking between the bottom of the Northeast Wingwall and the top of the Northeast Slope Protection. There is a 24" diameter drain outfall in the Northeast Slope Protection below the Northeast Wingwall with a 1'-2" wide x 7" high x 4" deep spall below the pipe, and an up to 1/16" wide diagonal crack and pop-out spalls adjacent to the

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

pipe. There is a tree growing between Panels 1 and 2 of the Northeast Slope Protection.

Southwest Slope Protection: There is 2" settlement along the joint between the West Abutment Slope Protection and the Southwest Slope Protection. The top of the Southwest Slope Protection has been patched along the joint with the Southwest Wingwall and has a diagonal crack up to 1/8" wide and minor spalls. The patch is hollow sounding in several areas. There is an intermittent 1/8" wide horizontal crack with minor edge spalling in the mortar between the Southwest Slope Protection and the Southwest Wingwall. The Southwest Slope Protection is covered by heavy vegetation.

Southeast Slope Protection: There is a large tree growing between the Southeast Slope Protection and the Southeast Wingwall. The joint between the East Slope Protection and the Southeast Slope Protection is open up to 1 7/8" wide and settled up to 3". At the top of the slope, there is a 1/2" wide crack with up to 3" wide edge spalling. Approximately 10' from the bridge, there is a full-height x up to 1" wide crack with minor edge spalling in the Southeast Slope Protection and the adjacent concrete is offset up to 1" vertically. At the base of the crack, the slope is spalled and undermined up to 3'-0" wide x 3" high x 1'-10" deep. There is an up to a 1/4" wide horizontal crack in the Southeast Slope Protection.

Fence: There is moderate corrosion throughout the channel fences. There is heavy vegetation growth, and misalignments throughout the Northwest, Northeast and Southwest Fences.

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

71 WATERWAY ADEQUACY

Opening	<input type="text" value="Good"/>	Fair	Poor
Alignment	Good	<input type="text" value="Fair"/>	Poor
Frequency of Overtopping	<input type="text" value="Remote"/>	Slight	Occasional Frequent

Inspector's Condition Rating (71)

Bridge No.	<u>P-BL05R</u>	Bridge Type	<u>SINGLE-SPAN CONCRETE RIGID-FRAME</u>	Year Built	<u>1958</u>
Name	<u>VARNUM STREET</u>	Crossing	<u>STREAM</u>	Photos	<u>12</u>
Inspection Date	<u>03/12/2020</u>	Inspection Crew	<u>D.DeJohn/J.Kubwayo</u>		

1. Vertical Alignment	W	Good	Fair	Poor	-Downgrade from west to east
	E	Good	Fair	Poor	
2. Horizontal Alignment	W	Good	Fair	Poor	-"T" intersection 50' east of the bridge
	E	Good	Fair	Poor	
3. Speed Limit Reduction		None	Minor	Substantial	
4. Sight Distance		Adequate	Not Adequate		

03/25/2021

2021 BRIDGE INSPECTION REPORT
CONDITION RATING FORMS

Bridge No. P-BL05R **Bridge Type** SINGLE-SPAN CONCRETE RIGID-FRAME **Year Built** 1958
Name VARNUM STREET **Crossing** STREAM **Photos** 12
Inspection Date 03/12/2020 **Inspection Crew** D.DeJohn/J.Kubwayo

undermined the Northwest Approach Sidewalk 9'-5" long x up to 5" high x 1'-0" deep. There is 1 1/4" differential settlement between panels at the Northwest Sidewalk at the transition. There is a hairline transverse crack in Panel 3 from the bridge.

Northeast Sidewalk: The Northeast Sidewalk is undermined 2'-6" long x 2" high x up to 1'-6" deep at the transition to the bridge. There is 1 1/4" differential settlement between sidewalk panels at the Northeast Sidewalk Transition.

Southwest Sidewalk: There is a drop-off up to 1'-3" high along the Southwest Sidewalk due to erosion adjacent to the bridge. No undermining is present.

Southeast Sidewalk: The Southeast Sidewalk is in good condition.

72.10 - Varnum Street is a one-way street from west to east. There are no object markers in place at the bridge. There is no load posting on the West Approach. The bridge is currently posted for 6,000 lbs for single-unit vehicles and 6,000 lbs for combination vehicles (see Photo 7).

There are advance load posting signs at the following locations.

Northbound 51st Street at Varnum Street (see Photo 11)

Eastbound Varnum Street at 51st Street (see Photo 12)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL05R - VARNUM STREET OVER STREAM



1. West Approach (Looking East)



2. East Approach (Looking West)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL05R - VARNUM STREET OVER STREAM



3. North Elevation (Looking South)



4. South Elevation (Looking North)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL05R - VARNUM STREET OVER STREAM



5. Upstream (Looking South)



6. Downstream (Looking North)

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL05R - VARNUM STREET OVER STREAM



7. Northeast Load Posting Sign



8. Cracks in South Fascia Near Midspan



9. Water Staining on North Fascia at Midspan



10. Typical Cracking and Efflorescence in Underside of Slab

2021 PRINCE GEORGE'S COUNTY BRIDGE INSPECTION REPORT

BRIDGE NO. P-BL05R - VARNUM STREET OVER STREAM



11. Advance Posting Sign: Northbound 51st Street at Varnum Street



12. Advance Posting Sign: Eastbound Varnum Street at 51st Street

STRUCTURE INVENTORY AND APPRAISAL REPORT

BRIDGE NUMBER: P-BL05001

IDENTIFICATION

FORM 1 OF 13

(8) STRUCTURE NUMBER:	2	00000	Major Structure	P-	BL05	01	Major Structure > 20' 0"	0	Single Structure
(8) FHWA NUMBER:									
(7) FACILITY CARRIED:	VARNUM STREET								
(6) FEATURE INTERSECTED:	STREAM								
(255) FEDERAL SUBMITTAL INDICATOR:	Y	Yes							
(262) NAME OF STRUCTURE:	VARNUM STREET								
(27) YEAR BUILT:	1958	(106) YEAR RECONSTRUCTED:			1982				
(263) ADDITIONAL RECONSTRUCTION YEARS:	N	N							
(1) STATE CODE:	243	Maryland	(2) DISTRICT CODE:	03	03				
(3) COUNTY CODE:	033	GEORGE'S	(4) PLACE CODE:	07850					
(5) INVENTORY ROUTE:	1	Route carried "on" the structure	5	City Street	1	Mainline	00170	0	Always
		(Route Prefix)			(Level of Service)	(Number)	(Direction)		
(9) LOCATION:	0.01 MI W OF 53RD PL								
(11) MILEPOINT:	0000050								
(12) BASE HIGHWAY NETWORK:	0	Inv. Route is NOT on the Base Network							
(266) GIS ROUTE ID:	16011MU0017001WW*****								
(267) GIS MILEPOINT:	0.05								
(268) SCENIC ROUTE:	N								
(13) LRS INVENTORY ROUTE, SUBROUTE NUMBER:	601700110000								
(16) LATITUDE:	(A)	38563619	(B)	38563589	(C)	38563590	(D)	38563619	
(17) LONGITUDE:	(A)	076554012	(B)	076553994	(C)	076553959	(D)	076553979	
(28) LANES ON:	02	LANES UNDER:	00						
(42) TYPE OF SERVICE ON:	5	Highway-Pedestrian							
TYPE OF SERVICE UNDER:	5	Waterway							
(98) BORDER STATE:		BORDER STATE'S SHARE %:							
(99) BORDER STATE'S NUMBER:									

CLASSIFICATION

FORM 2 OF 13

(104) HWY SYSTEM:	N	No, Inventory Route is not on the NHS	(103) TEMPORARY STRUCTURE:		
(105) FEDERAL LANDS HWYS:	0	Not applicable	(110) NATIONAL NETWORK:	N	No, the inventory route is not part of the national network for trucks.
(26) FUNCTIONAL CLASS:	19	Urban Local	(20) TOLL:	3	On free road
(100) DEFENSE HWY:	0	The inventory route is not a STRAHNET route	(21) MAINTENANCE:	04	City or Municipal Highway Agency
(101) PARALLEL STRUCTURE:	N	No parallel structure	(22) OWNER:	04	City or Municipal Highway Agency
(102) DIRECTION:	1	1-way traffic	(37) HISTORICAL SIGNIFICANCE:	5	Not eligible

BRIDGE NUMBER: P-BL05001

TRAFFIC

FORM 3 OF 13

(19) DETOUR:
(29) ADT:
(114) FUTURE ADT:

(109) TRUCK ADT %:
(30) ADT YEAR:
(115) FUTURE ADT YEAR:

STRUCTURE TYPE AND MATERIAL

FORM 4 OF 13

(43) STRUCT TYPE: Concrete Rigid Frame
(44) STRUCT TYPE - APPR: Not Applicable Other
(232) BOX CULVERT ON PILES: None Entire Structure
(208) STRUCT TYPE - WIDENED/EXTENDED:
(219) SLOPE PROTECTION: Concrete
(228) FOOTING - ABUTMENT: Concrete None Entire Structure
(229) SUBSTRUCT ABUTMENT: Concrete Non-definable Predominant Feature
(230) FOOTING - PIER: Not Applicable
(231) PIER TYPE: Not Applicable
(242) BEARING TYPE: None or N/A None or N/A None or N/A
(108) WEARING SURFACE: Bituminous None None
(243) JOINT TYPE: None None None
(206) STRUCT SUBTYPE - MAIN: Not Applicable (207) STRUCT SUBTYPE - APPR: Not Applicable
(257) SCOUR PROTECTION: (270) CONC. DECK SPECIAL TYPE: Not Applicable
(221) STRUCTURAL STEEL: Not Applicable (233) DECK - COMP/NON-COMP: Non-Composite
(107) DECK STRUCTURE TYPE: Concrete Cast-in-Place (259) STAY-IN-PLACE FORMS:
(235) PARAPET: Concrete-Rectangular
(236) RAILING: Steel - Other None - None
(237) FENCING: Steel - Straight Fence
(278) PAINT SYSTEM: Not Applicable
(344) PAINT COLOR/NUMBER: Not Applicable
(345) YEARS PAINTED:

BRIDGE NUMBER: P-BL05001

GEOMETRICS

FORM 5 OF 13

(112) NBIS BRIDGE LENGTH:	<input type="text" value="Y"/>	(49) STRUCTURE LENGTH:	<input type="text" value="0000260"/>		
(210) NUMBER OF SPANS:	<input type="text" value="0001"/>	(45) # SPANS IN MAIN UNIT:	<input type="text" value="001"/>		
(46) # APPROACH SPANS:	<input type="text" value="0000"/>	(209) CONTINUOUS SPANS:	<input type="text" value="N"/>		
(48) LENGTH MAX SPAN:	<input type="text" value="0024"/>	(238) # STRINGERS - ORIGINAL:	<input type="text" value="00"/>		
(240) SPACING - ORIGINAL:	<input type="text" value="N"/>	(239) # STRINGERS - WIDENED:	<input type="text" value="00"/>		
(241) SPACING - WIDENED:	<input type="text" value="N"/>	(33) BRIDGE MEDIAN:	<input type="text" value="0"/>		
(50) CURB/SIDEWALK WIDTHS:	<input type="text" value="044"/>	(205) MEDIAN WIDTH:	<input type="text" value="000"/>		
(51) DECK CURB-CURB WIDTH:	<input type="text" value="0255"/>	(32) APPROACH ROAD WIDTH:	<input type="text" value="00"/>	<input type="text" value="025"/>	<input type="text" value="00"/>
(52) DECK OUT-OUT WIDTH:	<input type="text" value="0360"/>	(10) INVENT ROUTE, MIN VERT CLEAR:	<input type="text" value="9999"/>		
(53) BRIDGE ROADWAY, MIN VERTCLEAR:	<input type="text" value="9999"/>		(47) INVENT ROUTE, TOTAL HORIZ CLEAR:	<input type="text" value="255"/>	
(54) MIN. VERT. UNDERCLEARANCE:	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="A"/>	< 10'	
(55) MIN. LAT. CLEARANCE (RIGHT):	<input type="text" value="N"/>	Feature not a highway or a railroad	<input type="text" value="999"/>		
(56) MIN. LAT. CLEARANCE (LEFT):	<input type="text" value="000"/>		(342) HORIZ CLEARANCE (ON):	<input type="text" value="02506"/>	<input type="text"/>
(34) SKEW, IN DEGREES:	<input type="text" value="20"/>	(280) HORIZ CLEARANCE (UNDER):	<input type="text" value="N"/>	<input type="text"/>	
(35) STRUCTURE FLARED:	<input type="text" value="N"/>	(253) NUMBER OF CELLS:	<input type="text" value="N"/>		
(256) SPAN OF CELLS:	<input type="text" value="N"/>	(254) RISE:	<input type="text" value="N"/>		
		(258) EARTH FILL:	<input type="text" value="N"/>		
		(343) CENTERLINE LENGTH (Culverts/Pipes):	<input type="text" value="N"/>		
(223) SHOULDER WIDTHS:	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	<input type="text" value="N"/>	
(264) TYPE AND SPAN:	<div>CRF 26'-3"</div>				

BRIDGE NUMBER: P-BL05001

LOAD RATINGS AND POSTINGS

(41) STATUS: Posted for load
(31) DESIGN LOAD: HS 20
(398) PEDESTRIAN LOADING:
(399) RAILROAD LOADING:
(70) POSTING: Greater than 39.9% below
(65) METHOD USED TO DETERMINE INVENTORY RATING: 1 Load Factor (LF)
(63) METHOD USED TO DETERMINE OPERATING RATING: 1 Load Factor (LF)

(224) WEIGHT POSTED:

(New Split)

(66) INVENTORY RATING:

(64) OPERATING RATING:

(400) DATE OF RATING:

	INVENTORY RATING	OPERATING RATING
HL-93 Vehicle	(402)	(401)
H-15 Vehicle	(404) 030	(403) 050
T3 (Dump Truck) Vehicle	(406) 030	(405) 055
T4 Reduced Lift Axle Vehicle	(408) 035	(407) 055
HS Vehicle	(410) 045	(409) 075
3S2 Vehicle	(412) 060	(411) 100
150K Vehicle	(414) 055	(413) 095
90K Permit Combination Vehicle	(416) 040	(415) 070
90K Mobile Crane Vehicle	(418) 035	(417) 060
90K Cargo Vehicle	(420) 050	(419) 090
80K Cargo Vehicle	(422) 060	(421) 100
120K Vehicle	(424) 055	(423) 095
108K Mobile Crane Vehicle	(426) 040	(425) 065
120K Mobile Crane Vehicle	(428) 050	(427) 080

(225) SPEED LIMIT ON STRUCTURE:

(226) MIN VERT CLEARANCE OVER ROADWAY POSTED:

Posting signs not required

(227) MIN VERT UNDERCLEARANCE POSTED:

Posting signs not required

FORM 6 OF 13

CONDITION INSPECTION

FORM 7 OF 13

	Inspection Month	(91) Frequency	Due Date	(90) Inspection Date	(290) Inspection Report Completion Date
Routine Inspection	03	12	03/25/2022	03/25/2021	07/30/2019

Critical Feature Inspections	(291) Inspection Month	(92) Frequency	Due Date	(93) Critical Feature Inspection Date
(A) Fracture Critical Members		N		
(B) Underwater Inspection		N		
(C) Special Inspection		N		
(D) Hands-on Railroad		N		
(E) Confined Space		N		
(F) Ultrasonic Testing (UT) Pin		N		
(G) Ultrasonic Testing (UT) Anchor		N		
(H) Post Tensioning Bar		N		
(I) Cathodic Protection		N		
(J) Consultant		N		
(K) Movable Bridge		N		
(L) Suspension Bridge		N		
(M) Cable		N		
(N) Monitor		N		
(P) Flood				
(Q) Damages				
(R) Inquires				

(58) DECK:	<input type="text" value="7"/>	Good Condition	(59) SUPERSTRUCTURE:	<input type="text" value="7"/>	Good Condition
(60) SUBSTRUCTURE:	<input type="text" value="7"/>	Good Condition	(61) CHANNEL/PROTECTION:	<input type="text" value="5"/>	Bank eroded.. major damage
(62) CULVERTS:	<input type="text" value="N"/>	Not Applicable			
(310) INSPECTION DATA UPDATE DATE:	<input type="text" value="02/18/2015"/>		(312) LEAD INSPECTOR:	<input type="text" value="Dominick DeJohn, P.E."/>	
(311) INSPECTION TEAM:	<input type="text" value="YKCI"/>		(313) BRIDGE INSPECTOR:	<input type="text" value="Jean Kubwayo, E.I.T."/>	
(314) HOURS TO INSPECT:	<input type="text" value="003"/>	(316) DECK PLANKING %:	<input type="text" value="00"/>	(315) DECK PUNCTURES %:	<input type="text" value="00"/>
(317) DECK PATCHING %:	<input type="text" value="00"/>	(318) BLOCKING:	<input type="text" value="00"/>	(319) POWER WASHING:	<input type="text" value="N"/>
(320) IDENTIFICATION NO.:	<input type="text" value="N"/>	(321) INVENTORY DIRECTION:	<input type="text" value="EAST"/>	(323) PERMIT:	<input type="text" value="N"/>
(324) NIGHT WORK:	<input type="text" value="N"/>	(325) WEEKEND WORK:	<input type="text" value="N"/>		
(322) LOOKING TOWARD:	<input type="text" value="MD 295"/>				
(326) MAINTENANCE OF TRAFFIC STANDARDS:	<input type="text" value="N"/>				
(327) MOT COMMENTS:	<input type="text"/>				
(328) LOCATION OF MIN. VERT. UNDERCLEARANCE:	<input type="text" value="N"/>				

BRIDGE NUMBER: P-BL05001

(329A) CRITICAL FINDINGS: (329B) CRITICAL FINDINGS DATE:

(330) CRITICAL FINDINGS COMMENTS:

(331) CAUTION COMMENTS:

(332) UNDERCLEARANCE POSTING SIGNS: ☒ Posting signs not required

(340) INSPECTION EQUIPMENT:

<input type="text" value="W"/>	Waders	<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	<input type="text"/>
<input type="text"/>		<input type="text"/>	

(333) MHOI: (334) MHOI LOCATIONS:

(335) ADVANCED NOTIFICATION:

(336) ADVANCED NOTIFICATION COMMENTS:

BRIDGE NUMBER: P-BL05001

APPRAISAL

FORM 8 OF 13

(67) STRUCTURAL EVALUATION: BSR
(69) UNDERCLEARANCE: 41.4
(71) WATERWAY ADEQUACY:
(36) TRAFFIC SAFETY FEATURES
RAILINGS: Does NOT meet Standards
TRANSITIONS: Does NOT meet Standards
APPROACH BARRIER: Does NOT meet Standards
APPROACH BARRIER ENDS: Does NOT meet Standards
(113) SCOUR EVALUATION: Bridge is a culvert-type structure with paved bottom.
(DT) DEDUCT CODE:
(STAT) STATUS: Functionally Obsolete

NAVIGATION

FORM 9 OF 13

(38) NAVIGATION CONTROL:
(40) NAV HORIZONTAL CLEARANCE:
(111) PIER/ABUTMENT PROTECTION:
(116) MIN NAV VERT CLEARANCE, VERT LIFT BRIDGE:
(247) DESIGN YEAR STORM:
(249) DRAINAGE AREA:
(251) HIGH WATER ELEVATION:
(252) YEAR HIGH WATER ELEVATION - LATEST:
(39) NAV VERT CLEARANCE:
(248) RUN-OFF Q:
(250) STRUCTURE IN TIDAL AREA: No

HISTORY AND PROPOSED IMPROVEMENTS

FORM 10 OF 13

(201) CONTRACT NUMBERS:
(203) SHA SPEC- YEAR:
(204) AASHTO SPEC-YEAR:
(75) TYPE OF PROPOSED WORK:
(94) BRIDGE IMPROVE COST:
(96) TOTAL PROJECT COST:
(76) LENGTH OF IMPROVEMENT:
(95) ROADWAY IMPROVE COST:
(97) YEAR OF IMPROVEMENT:

BRIDGE NUMBER: P-BL05001

MISCELLANEOUS

FORM 11 OF 13

(244) SIGNS ON STRUCTURE: ☐ No

(245) BRIDGE ROADWAY LIGHTING: ☐ No

(246) PROVISION FOR ROADWAY LIGHTING: ☐ No

(260) UTILITIES - ON:

☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

(261) UTILITIES - UNDER:

☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable
☐ Not Applicable

REMARKS:

NOISE BARRIER

FORM 12 OF 13

(501) TYPE: ☐ ☐ ☐ ☐

(502) ALIGNMENT: ☐ ☐ ☐ ☐

(503) LENGTH: (504) MAXIMUM HEIGHT:

(505) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(506) FOUNDATION LENGTH:

(507) PANEL WIDTH:

(508) NUMBER OF SPECIAL PANEL(S):

(509) PANEL MATERIAL:

(510) FACING (Acoustic Treatment):

(511) PANEL FINISH:

(512) PANEL COLOR:

(513) FEDERAL COLOR:

(514) STACKED PANELS:

(515) NOISE BARRIER POST MATERIAL:

(516) ACCESS DOORS:

(517) FIRE HYDRANTS:

(518) RETROFITS:

RETAINING WALL

FORM 13 OF 13

(550) TYPE: ☐ ☐ ☐ ☐

(551) ALIGNMENT: ☐ ☐ ☐ ☐

(552) SEGMENT LENGTH(S):

(553) MAX. EXPOSED HEIGHT:

(554) FOUNDATION TYPES: ☐ ☐ ☐ ☐

(555) TIEBACK:

(556) FACING:

(557) WITH FENCE OR RAIL:

(558) WITH NOISE BARRIER:

(559) PURPOSE:

Structure Inventory and Appraisal Sheet

NATIONAL BRIDGE INVENTORY

STRUCTURE INVENTORY AND APPRAISAL

IDENTIFICATION

(1) STATE NAME:..... **Maryland** CODE..... **243**
 (8) STRUCTURE NO:..... **2-00000-P--BL05-01-0**
 (5) INV RTE (ON/UNDER):..... **1-5-1-00170-0**
 (2) STATE HIGHWAY DEPARTMENT DISTRICT:..... **03**
 (3) COUNTY CODE:..... **033** (4) STATE CODE:.. **07850**
 (6) FTR INTR:..... **STREAM**
 (7) FACILITY CARRIED:..... **VARNUM STREET**
 (9) LOCATION:..... **0.01 MI W OF 53RD PL**
 (11) MILEPOINT:..... **0000050**
 (12) BASE HIGHWAY NETWORK:..... **0**
 (16) LATITUD **38563619**. (17) LONGITUDE:.. **076554012**
 (98) BORDER BRIDGE STATE % Share.....
 (99) BORDER BRIDGE STRUCT NO.....

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE MAIN: MATERIAL
 TYPE..... CODE..... **A 07**
 (44) STRUCTURE TYPE APPR: MATERIAL
 TYPE..... CODE..... **0 00**
 (45) NUMBER OF SPANS IN MAIN UNIT:..... **001**
 (46) NUMBER OF APPROACH SPANS:..... **0000**
 (107) DECK STRUCTURE TYPE..... **1**
 (108) WEARING SURFACE/PROTECTIVE SYSTEM:
 A) TYPE WEARING SURFACE: CODE..... **6**
 B) TYPE MEMBRANE: CODE..... **0**
 C) TYPE DECK PROTECTION: CODE..... **0**

AGE AND SERVICE

(27) YEAR BUILT:..... **1958**
 (106) YEAR RECONSTRUCTED..... **1982**
 (42) TYPE OF SERVICE: ON:
 UNDER..... CODE..... **5 5**
 (28) LANES: ON STRUCT **02** UNDER STRUCT: **00**
 (29) AVERAGE DAILY TRAFFIC:..... **000249**
 (30) YEAR OF ADT:..... **2018** (109) TRUCK ADT:..... **01**
 (19) BYPASS, DETOUR LENGTH:..... **01**

GEOMETRIC DATA

(48) LENGTH OF MAXIMUM SPAN:..... **0024**
 (49) STRUCTURE LENGTH:..... **0000260**
 (50) CURB/SIDEWALK: LFT **044** FT RGT: **044** FT
 (51) BRDG RDWY WIDTH CURB TO CURB..... **0255**.. FT
 (52) DECK WIDTH OUT TO OUT..... **0360**.. FT
 (32) APPR RDWY WIDTH: **00 025 00** FT
 (33) BRIDGE MEDIAN:..... **0**
 (34) SKEW: **20** DEG (35) STRUCT FLARE: **N**
 (10) INV RTE MIN VERTICAL CLEAR:..... **9999** FT
 (47) INV RTE TOT HORIZONTAL CLEAR:.. **255** FT
 (53) MIN VERT CLEAR OVER BRDG RDW **9999** FT
 (54) MIN VERT UNDERCLEAR **N A** FT

SUFFICIENCY RATING = **41.4**

STATUS = **2**

CLASSIFICATION

(112) NBIS BRIDGE LENGTH:..... **Y**
 (104) HIGHWAY SYSTEM:..... **N**
 (26) FUNCTIONAL CLASS:..... **19**
 (100) DEFENSE HIGHWAY:..... **0**
 (101) PARALLEL STRUCTURE:..... **N**
 (102) DIRECTION OF TRAFFIC:..... **1**
 (103) TEMPORARY STRUCTURE:.....
 (110) DESIGNATED NATIONAL NETWORK:..... **N**
 (20) TOLL:..... **3**
 (21) MAINTENANCE:..... **04**
 (22) OWNER:..... **04**
 (37) HISTORICAL SIGNIFICANCE:..... **5**

CONDITION

(58) DECK:..... **7**
 (59) SUPERSTRUCTURE:..... **7**
 (60) SUBSTRUCTURE:..... **7**
 (61) CHANNEL AND CHANNEL PROTECTION:..... **5**
 (62) CULVERTS:..... **N**

LOAD RATING AND POSTING

(31) DESIGN LOAD:..... **5**
 (64) OPERATING RATING:..... **075**
 (66) INVENTORY RATING:..... **045**
 (70) BRIDGE POSTING:..... **0**
 (41) STRUCTURE OPEN, POSTED, OR CLOSED:..... **P**

APPRAISAL

(67) STRUCTURAL EVALUATION:..... **2**
 (68) DECK GEOMETRY:..... **2**
 (69) UNDERCLEARANCES, VERT AND HOR:..... **N**
 (71) WATERWAY ADEQUACY:..... **7**
 (72) APPROACH ROADWAY ALIGNMENT:..... **8**
 (36) TRAFFIC SAFETY FEATURES:..... **0 0 0 0**
 (113) SCOUR CRITICAL BRIDGES:..... **8P**

PROPOSED IMPROVEMENTS

(75) TYPE OF WORK:..... **31 1**
 (76) LENGTH OF IMPROVEMENT:..... **000035**
 (94) BRIDGE IMPROVEMENT COST:..... **306,000**
 (95) ROADWAY IMPROVEMENT COST:..... **31,000**
 (96) TOTAL PROJECT COST:..... **337,000**
 (97) YEAR OF IMPROVEMENT COST EST:..... **07**
 (114) FUTURE ADT:..... **000369**
 (115) YEAR OF FUTURE ADT:..... **38**

Bridge Inspection Report Element Form

Bridge No: P-BL05001

Inspection Date: 03/25/2021

VARNUM STREET OVER STREAM

Milepoint: 0000050

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

Element

38 - Reinforced Concrete Slab

Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
1 - Ben.	669	sq. ft.	636	25	8	0

☐ Eng Req
 ☐ FYI
 ☐ District
 ☐ Inaccessible?
 ☐ Eng Comments

There are isolated hairline diagonal cracks throughout the underside of the slab. There are two hairline cracks that extend into the North Fascia of the slab and seven hairline cracks that extend into the South Fascia. There is a 1'-0" high x 2'-0" wide area of water staining on the North Fascia and a 2'-0" wide x 2'-0" long area of water staining on the underside of the slab near mid-span. There are small areas of rust staining, scaling, and hairline map cracking with efflorescence at the north end of the slab. There is a sealed full-width longitudinal crack on the underside of the slab near mid-span. There are four approximately 2' long hairline cracks with rust staining at the northeast corner of the slab. There is a 2 1/2" wide x 1" long x 1/4" deep spall with exposed reinforcement at the northeast corner and hairline map cracks at the northwest corner of the underside of the slab. There are two 3' long diagonal hairline cracks with light efflorescence at the northwest corner of the slab. There are two approximately 7' long diagonal hairline cracks. One is located at the northwest corner and the other at the southeast corner of the slab. There are minor pop-out spalls at the south end of the slab.

510 - Wearing Surfaces

	669	sq. ft.	314	0	355	0
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☐ Eng Req
 ☐ FYI
 ☐ District
 ☐ Inaccessible?
 ☐ Eng Comments

There are sealed cracks that are open up to 1/2" wide. There are up to 1/4" wide longitudinal, transverse and map cracks in the asphalt wearing surface over the structure.

215 - Reinforced Concrete Abutment

1 - Ben.	72	ft.	64	8	0	0
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☐ Eng Req
 ☐ FYI
 ☐ District
 ☐ Inaccessible?
 ☐ Eng Comments

There are minor spalls along the joints with the wingwalls. Only the top 3'-0" of the abutment walls are exposed due to the concrete slope protection. There are isolated hairline vertical cracks in the abutments. There is graffiti throughout both abutments. There is light efflorescence at the weep hole in the West Abutment.

330 - Metal Bridge Railing

1 - Ben.	52	ft.	24	28	0	0
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☐ Eng Req
 ☐ FYI
 ☐ District
 ☐ Inaccessible?
 ☐ Eng Comments

The steel pipe railing has minor corrosion throughout. There is a chain link fence attached to both railings, there is minor corrosion throughout the chain link fence. There is vegetation growth at both ends of the North and South Fence.

515 - Steel Protective Coating

	144	sq. ft.	74	70	0	0
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☐ Eng Req
 ☐ FYI
 ☐ District
 ☐ Inaccessible?
 ☐ Eng Comments

331 - Reinforced Concrete Bridge Railing

1 - Ben.	52	ft.	52	0	0	0
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☐ Eng Req
 ☐ FYI
 ☐ District
 ☐ Inaccessible?
 ☐ Eng Comments

Bridge Inspection Report Element Form

Bridge No: P-BL05001

Inspection Date: 03/25/2021

VARNUM STREET OVER STREAM

Milepoint: 0000050

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

There are vertical hairline cracks and water staining on the exterior faces of both parapets.

8062 - Sidewalk, Reinforced Concrete

1 - Ben.	52	Ft.	47	4	1	0
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☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

There is minor wear throughout the sidewalks. There is a full-width x 1/16" wide transverse crack at the west end of the South Sidewalk. The South Sidewalk has settled up to 1" relative to the curb and there is 1" differential settlement between panels at the west end of the North Sidewalk.

Curbs: There is a 1/8" wide vertical crack in the South Curb near the west end.

8251 - Wingwalls, Reinforced Concrete

1 - Ben.	28	Ft.	26	0	2	0
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☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

There is vegetation overgrowth at all four wingwalls. There is an 8 1/2" wide x 7" high x 4" deep spall at the top of the Northwest Wingwall exposing the fence post anchorage. The Northwest Wingwall is undermined 10" long x 2" high x 3 1/2" deep adjacent to the abutment. The Southwest Wingwall joint at the West Abutment is open up to 2" wide and is slightly rotated.

8260 - Slope, Protected

1 - Ben.	2	Each	0	2	0	0
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☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

Vegetation is growing in the joints, drains, and cracks throughout the channel and slope protection. There are isolated cracks up to 1/8" wide throughout the slope protection. There are spalls and heavy abrasion along the base of the slope protection, which is typically heavier at the joints.

Abutment Slope Protection: There is a vertical crack with built-up efflorescence near mid-length of the West Abutment Slope Protection and minor efflorescence staining below the drainage pipe. There is a vertical crack with built-up efflorescence at the north end of the East Abutment Slope Protection and patched areas at both ends. The patch at the south end of the East Slope Protection has an up to 1'-4" long x 8" high x full-depth spall.

Northwest Slope Protection: The joint at the Northwest Slope Protection has a 1 1/2" wide gap at the top and the adjacent slab is settled 1/2". There is a 10" long x 4" wide x 1" deep spall at the top of the Northwest Slope Protection, which is undermining the Northwest Wingwall 10" wide x 2" high x 3 1/2" deep. The patch at the Northwest Slope Protection has cracks up to 1/8" wide. There is a small tree growing between the Northwest Slope Protection and the Northwest Wingwall.

Northeast Slope Protection: There is a 1/8" wide diagonal crack with water leaking between the bottom of the Northeast Wingwall and the top of the Northeast Slope Protection. There is a 24" diameter drain outfall in the Northeast Slope Protection below the Northeast Wingwall with a 1'-2" wide x 7" high x 4" deep spall below the pipe, and an up to 1/16" wide diagonal crack and pop-out spalls adjacent to the pipe. There is a tree growing between Panels 1 and 2 of the Northeast Slope Protection.

Southwest Slope Protection: There is 2" settlement along the joint between the West Abutment Slope Protection and the Southwest Slope Protection. The top of the Southwest Slope Protection has been patched along the joint with the Southwest Wingwall and has a diagonal crack up to 1/8" wide and minor spalls. The patch is hollow sounding in several areas. There is an intermittent 1/8" wide horizontal crack with minor edge spalling in the mortar between the Southwest Slope Protection and the Southwest Wingwall. The Southwest Slope Protection is covered by heavy vegetation.

Southeast Slope Protection: There is a large tree growing between the Southeast Slope Protection and the Southeast

Bridge Inspection Report Element Form

Bridge No: P-BL05001

Inspection Date: 03/25/2021

VARNUM STREET OVER STREAM

Milepoint: 0000050

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

Wingwall. The joint between the East Slope Protection and the Southeast Slope Protection is open up to 1 7/8" wide and settled up to 3". At the top of the slope, there is a 1/2" wide crack with up to 3" wide edge spalling. Approximately 10' from the bridge, there is a full-height x up to 1" wide crack with minor edge spalling in the Southeast Slope Protection and the adjacent concrete is offset up to 1" vertically. At the base of the crack, the slope is spalled and undermined up to 3'-0" wide x 3" high x 1'-10" deep. There is an up to a 1/4" wide horizontal crack in the Southeast Slope Protection.

Fence: There is moderate corrosion throughout the channel fences. There is heavy vegetation growth, and misalignments throughout the Northwest, Northeast and Southwest Fences.

8322 - Roadway Approach Transition

1 - Ben.	2	Each	2	0	0	0
----------	---	------	---	---	---	---

☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

Traffic barrier: There are no approach traffic barriers at the structure.

Pavement: Both roadway transitions are smooth. The West Approach has a full-width pavement joint open up to 1/4" wide at the transition. There are up to 1/2" wide transverse, longitudinal and map cracks in the East Approach roadway.

Northwest Sidewalk: There is embankment erosion at the northwest corner of the bridge that has undermined the Northwest Approach Sidewalk 9'-5" long x up to 5" high x 1'-0" deep. There is 1 1/4" differential settlement between panels at the Northwest Sidewalk at the transition. There is a hairline transverse crack in Panel 3 from the bridge.

Northeast Sidewalk: The Northeast Sidewalk is undermined 2'-6" long x 2" high x up to 1'-6" deep at the transition to the bridge. There is 1 1/4" differential settlement between sidewalk panels at the Northeast Sidewalk Transition.

Southwest Sidewalk: There is an up to 1'-3" drop-off along the Southwest Sidewalk due to erosion adjacent to the bridge. No undermining is present.

Southeast Sidewalk: The Southeast Sidewalk is in good condition.

Signs: Varnum Street is a one-way street from west to east. There are no object markers in place at the bridge. There is no load posting on the West Approach. The bridge is currently posted for 6,000 lbs for single-unit vehicles and 6,000 lbs for combination vehicles.

There are advance load posting signs at the following locations.

Northbound 51st Street at Varnum Street

Eastbound Varnum Street at 51st Street

8342 - Fencing

1 - Ben.	52	Ft.	0	39	0	13
----------	----	-----	---	----	---	----

☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

There is a chain link fence on the wingwalls. There are broken fence posts on top of all four wingwalls. The broken fence post on top of the Northeast Wingwall is not supporting the main fence. The top rail is disconnected at the Northwest, Southwest, and Southeast Wingwalls. The fence on the Southwest Wingwall has failed.

8345 - Stream Channel

1 - Ben.	0	Entire Bridge	0	0	0	0
----------	---	---------------	---	---	---	---

☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

Bridge Inspection Report Element Form

Bridge No: P-BL05001

Inspection Date: 03/25/2021

VARNUM STREET OVER STREAM

Milepoint: 0000050

(58) Deck 7

(59) Superstructure 7

(60) Substructure 7

(61) Channel 5

(62) Culvert N

The stream flows from south to north under the bridge. The channel is lined with concrete in the vicinity of the bridge. The eastern half of the invert is heavily scaled with random unsettled concrete portions remaining, causing the stream to flow mainly through the east side of the bridge. The channel is lined with concrete in the vicinity of the bridge. The eastern half of the invert is heavily scaled with concrete up to 4" high.

8359 - Soffit (underside) of concrete decks and slabs

1 - Ben.	1	Entire Bridge	0	1	0	0
----------	---	---------------	---	---	---	---

☐ Eng Req

☐ FYI

☐ District

☐ Inaccessible?

☐ Eng Comments

See Element 38 - Reinforced Concrete Slab

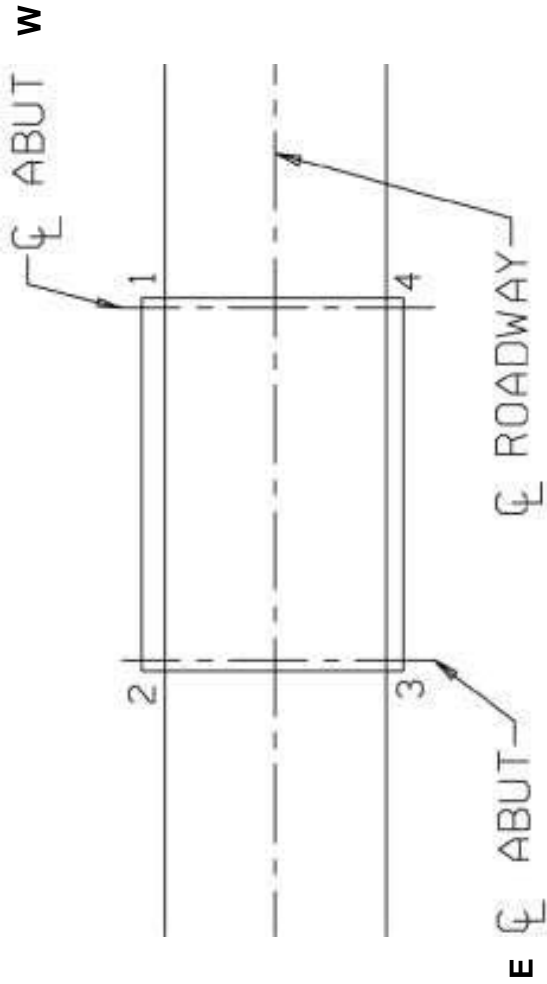
2021 BRIDGE INSPECTION REPORT

APPROACH TRAFFIC BARRIER FORM

Corners	Bridge Railings Meet MDSHA Standard		Approach Traffic Barrier Present		Transition				Approach Traffic Barrier			Exist. End Treatment	Proposed End Treatment	Type	
					Thrie Beam Present		Gradually Stiffened	Post Spacing	Rail Type	Post Type	Post Spacing				
	Y	N	Y	N	Y	N									Y
1		X		X											
2		X		X											
3		X		X											
4		X		X											

Bridge No.: P-BL05R
 County: Prince George's
 Road Carried: VARNUM STREET
 Crossing: STREAM
 Date Inspected: 03/12/2020
 Inspector: D.DeJohn/J.Kubwayo

Comments:
There are no approach traffic barriers at the structure.



Load Rating Standard Summary Sheet

Bridge No.: PBL05001 on VARNUM STREET over STREAM

Date of Rating: 12/13/2013 LARS Program: Yes ☐ No ☒ Program Used: BOX5

Rating Method: LRFR ☐ LFR ☒ ASR ☐ Engineering Judgment ☐ Load Testing ☐ HMA Wearing Surface (in.) N/A

Rating Type: As-Built ☐ As Inspected ☒ Condition Report Date: 03/05/2013

Comments/Defects/Assumptions: This Load Rating is based on the latest inspection report as noted above, as well as a previous load rating dated 1996.

LRFR Design/Load Rating Vehicle (Limit States are Strength I for all materials, Service II for Steel only, or Service III for prestressed concrete Inventory only)			
Truck/ Axle/ Tons	Rating Details	Inventory	Operating
	Controlling Member	Limit State	Limit State
	Controlling Stress (Moment, Shear, Service)	Rating Factor	Rating Factor
HL-93/3/36 Tons	enter controlling member (i.e. Sp. 1, Ext. Beam)	Limit State	Limit State
	Select the Controlling Stress	X.XX	X.XX

Legal Loads (For LRFR the Limit States are Strength I for all materials or Service II for steel only)			
Truck/ Axle/ Tons	Controlling Member	Inventory or Limit State	Operating
	Controlling Stress	Tons (XX.X)	Tons (XX.X)
H-15 / 2 / 15	Wall	3.0	5.0
	Moment		
T-3 / 3 / 33	Wall	3.0	5.5
	Moment		
T-4 / 4 / 35	Wall	3.5	5.5
	Moment		
HS-20 / 3 / 36	Wall	4.5	7.5
	Moment		
3S2 / 5 / 40	Wall	6.0	10.0
	Moment		

Permit Loads - (For LRFR the Limit State is Strength II)			
Truck/ Axle/ Tons	Controlling Member	Inventory	Operating
	Controlling Stress (Moment, Shear, Service)	Tons (XX.X)	Tons (XX.X)
150K / 8 / 75	Wall	5.5	9.5
	Moment		
90K Comb./ 4 / 45	Wall	4.0	7.0
	Moment		
90K Crane / 4 / 45	Wall	3.5	6.0
	Moment		
90K Cargo/ 5 / 45	Wall	5.0	9.0
	Moment		
80K Cargo/ 5 / 40	Wall	6.0	10.0
	Moment		
120K Spec./ 5 / 60	Wall	5.5	9.5
	Moment		
108K Crane/ 4 / 54	Wall	4.0	6.5
	Moment		
120K Crane/ 5 / 60	Wall	5.0	8.0
	Moment		

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*****
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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/26/2014 15:56
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\jyang\Desktop\NEWFOL~1\PBL050~1.DAT

PBL05001 SINGLE SPAN RIGID FRAME WITHOUT BOTTOM SLAB.
 LOAD RATING IS BASED ON PREVIOUS LOAD RATING DATED 1996.

STRUCTURE IDENTIFICATION				SPAN	STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID				
				PBL0 5001				
METHOD	RUN	BOTTOM	FISH	LIVE	NO OF	TOP	NO OF	
LFD	TYPE	SLAB	CHANNEL	LOAD	CELLS	SLAB	LANES	
	R	N	N	9	1	M	2	

PBL05001_LFR_121313_legal.OUT

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	5	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
23.60	3.15	20.00	0.00	10.00	0.00	1.4	4.30

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB TOP BAR	BOT SLAB BOT BAR	TOP SLAB TOP BAR	BOT SLAB BOT BAR	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
2		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	6.00	14.0	2	24.00	0.0						

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	26.00	4.0	3	26.00	0.0			

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	14.00	12.0	2	10.00	4.0	3	23.00	4.0	4	23.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
3		6.00	4.00

AXLE			AXLE			AXLE			AXLE		
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST
1	8.00	14.0	2	32.00	14.0	3	32.00	0.0			

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
5		6.00	4.00

AXLE			AXLE			AXLE			AXLE		
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST
1	12.00	12.0	2	17.00	4.0	3	17.00	31.0	4	17.00	4.0
5	17.00	0.0									

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

SLAB		AT LEFT END OF SPAN						AT MID SPAN						AT RIGHT END OF SPAN					
NO	AS	SIZE	SPAC	AV	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AV	SIZE	SPAC				
1	0.000	7	9.0	0.000	0	0.0	0.000	7	9.0	0.000	7	9.0	0.000	0	0.0				

THE RATING FACTOR 99.99 INDICATES THAT THE SECTION CAPACITY IS VERY HIGH COMPARED TO DEAD LOAD AND LIVE LOAD EFFECTS.

THE RATING FACTOR -99.99 INDICATES THAT THE DEAD LOAD EFFECT EXCEEDS THE SECTION CAPACITY.

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*****
* LIVE LOAD RATING - SP-1 LOADING *
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DIST		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH LL+I	8.736 5.816	7.795 4.107		10.161	0.24	0.41	4@ 9.0	
					RATING TONS	3.67	6.14		
3.15	F DL+EPH- LL+I	12.578 -7.982	7.283 4.107		25.528	1.62	2.71	7@ 9.0	
					RATING TONS	24.33	40.64		

			FACTORED EFFECTS		ULT	RATING	FACTOR	ACTUAL	SHEAR
DIST			MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH	-9.012	8.508	10.232	0.21	0.35	4@	9.0
		LL+I	-5.816	4.107					
					RATING	TONS	3.15	5.25	

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3.15	F	DL+EPH	12.957	7.996	25.544	1.58	2.63	7@ 9.0
		LL+I	7.982	4.107				
					RATING TONS	23.65	39.50	

SLAB 1

DIST			FACTORED EFFECTS MOMENT	THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPD	-15.948	1.138		61.278	4.53	7.56	7@ 9.0	
		LL+I	-10.016							
						RATING TONS	67.89	113.37		
1.46	V	DL+EPF	-6.058		6.250	23.226	2.87	4.79	7@ 9.0	0.000
		LL+I	4.654		5.918					
					RATING TONS	43.03	71.86			
11.80	F	DL+EPH	27.680	0.477		61.179	1.36	2.28	7@ 9.0	
		LL+I	24.588							
					RATING TONS	20.44	34.13			
22.14	V	DL+EPF	-5.545		-6.678	23.226	2.80	4.67	7@ 9.0	0.000
		LL+I	4.654		-5.918					
					RATING TONS	41.94	70.04			
23.60	F	DL+EPD	-16.217	1.138		61.278	4.50	7.51	7@ 9.0	
		LL+I	-10.016							
					RATING TONS	67.48	112.70			

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 3.15 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 5.25 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST			FACTORED EFFECTS MOMENT	THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	8.736	7.795		10.168	0.12	0.20	4@ 9.0	
		LL+I	12.178	9.049						
						RATING TONS	3.88	6.48		
3.15	F	DL+EPH	-12.578	7.283		25.539	0.78	1.29	7@ 9.0	
		LL+I	-16.713	9.049						
					RATING TONS	25.59	42.73			

WALL 2

DIST			FACTORED EFFECTS MOMENT	THRUST	SHEAR	ULT CAPAC	RATING IR	FACTOR OR	ACTUAL REINF	SHEAR REINF
0.00	F	DL+EPH	-9.012	8.508		10.238	0.10	0.17	4@ 9.0	
		LL+I	-12.178	9.049						
						RATING TONS	3.32	5.55		
3.15	F	DL+EPH	12.957	7.996		25.554	0.75	1.26	7@ 9.0	

LL+I 16.713 9.049
RATING TONS 24.87 41.54

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-15.948 LL+I -20.883	1.138	61.278	2.17	3.63	7@ 9.0
				RATING TONS	71.63	119.63	
1.46	V	DL+EPF -6.058 LL+I 2.718	6.250 11.645	23.226	1.46	2.43	7@ 9.0 0.000
				RATING TONS	48.11	80.34	
11.80	F	DL+EPH 27.680 LL+I 42.246	0.477	61.179	0.79	1.32	7@ 9.0
				RATING TONS	26.17	43.70	
22.14	V	DL+EPF -5.545 LL+I 2.718	-6.678 -11.645	23.226	1.42	2.37	7@ 9.0 0.000
				RATING TONS	46.90	78.32	
23.60	F	DL+EPD-16.217 LL+I -20.883	1.138	61.278	2.16	3.60	7@ 9.0
				RATING TONS	71.21	118.92	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 3.32 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 5.55 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 8.736 LL+I 12.242	7.795	10.153	0.12	0.19	4@ 9.0
				RATING TONS	4.05	6.76	
3.15	F	DL+EPH-12.578 LL+I -16.801	7.283 8.143	25.516	0.77	1.29	7@ 9.0
				RATING TONS	26.95	45.01	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -9.012 LL+I -12.242	8.508	10.225	0.10	0.17	4@ 9.0
				RATING TONS	3.47	5.79	
3.15	F	DL+EPH 12.957 LL+I 16.801	7.996 8.143	25.532	0.75	1.25	7@ 9.0
				RATING TONS	26.20	43.75	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD -15.948 LL+I -21.237	1.138	61.278	2.13	3.56	7@ 9.0
				RATING TONS	74.71	124.76	
1.46	V	DL+EPF -6.058 LL+I 1.489	6.250 11.329	23.226	1.50	2.50	7@ 9.0 0.000
				RATING TONS	52.45	87.59	
11.80	F	DL+EPH 27.680 LL+I 43.187	0.477	61.179	0.78	1.30	7@ 9.0
				RATING TONS	27.15	45.34	
22.14	V	DL+EPF -5.545 LL+I 1.489	-6.678 -11.329	23.226	1.46	2.44	7@ 9.0 0.000
				RATING TONS	51.13	85.38	
23.60	F	DL+EPD -16.217 LL+I -21.237	1.138	61.278	2.12	3.54	7@ 9.0
				RATING TONS	74.26	124.02	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 3.47 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 5.79 TONS AT DISTANCE 0.00 IN WALL 2.

* LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH 8.736 LL+I 9.544	7.795	10.181	0.15	0.25	4@ 9.0
				RATING TONS	5.45	9.10	
3.15	F	DL+EPH -12.578 LL+I -13.098	7.283	25.557	0.99	1.65	7@ 9.0
				RATING TONS	35.67	59.57	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPH -9.012 LL+I -9.544	8.508	10.249	0.13	0.22	4@ 9.0
				RATING TONS	4.67	7.79	
3.15	F	DL+EPH 12.957 LL+I 13.098	7.996	25.572	0.96	1.61	7@ 9.0
				RATING TONS	34.67	57.90	

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SLAB 1

DIST		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F	DL+EPD-15.948 LL+I -15.874	1.138		61.278	2.86	4.77	7@ 9.0	
					RATING TONS	102.80	171.68		
1.46	V	DL+EPF -6.058 LL+I 1.727		6.250 9.782	23.226	1.74	2.90	7@ 9.0	0.000
					RATING TONS	62.48	104.33		
11.80	F	DL+EPH 27.680 LL+I 32.784	0.477		61.179	1.02	1.71	7@ 9.0	
					RATING TONS	36.78	61.43		
22.14	V	DL+EPF -5.545 LL+I 1.727		-6.678 -9.782	23.226	1.69	2.83	7@ 9.0	0.000
					RATING TONS	60.90	101.70		
23.60	F	DL+EPD-16.217 LL+I -15.874	1.138		61.278	2.84	4.74	7@ 9.0	
					RATING TONS	102.19	170.66		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 4.67 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 7.79 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST		FACTORED EFFECTS			ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736	7.795		10.167	0.18	0.30	4@	9.0
	LL+I	8.096	5.972						
					RATING TONS	7.07	11.81		
3.15	F DL+EPH	-12.578	7.283		25.537	1.17	1.95	7@	9.0
	LL+I	-11.111	5.972						
					RATING TONS	46.65	77.91		

WALL 2

DIST		FACTORED EFFECTS		ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	SHEAR	CAPAC	IR	OR	REINF
0.00	F DL+EPH	-9.012	8.508		10.237	0.15	0.25	4@ 9.0
	LL+I	-8.096	5.972					
					RATING TONS	6.05	10.11	
3.15	F DL+EPH	12.957	7.996		25.553	1.13	1.89	7@ 9.0
	LL+I	11.111	5.972					
					RATING TONS	45.34	75.72	

SLAB 1

DIST	FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
	MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD -15.948 LL+I -13.746	1.138	61.278	3.30	5.51	7@ 9.0
			RATING TONS	131.91	220.29	
1.46 V	DL+EPF -6.058 LL+I 1.351	6.250 7.777	23.226	2.18	3.65	7@ 9.0 0.000
			RATING TONS	87.31	145.82	
11.80 F	DL+EPH 27.680 LL+I 27.652	0.477	61.179	1.21	2.02	7@ 9.0
			RATING TONS	48.46	80.92	
22.14 V	DL+EPF -5.545 LL+I 1.351	-6.678 -7.777	23.226	2.13	3.55	7@ 9.0 0.000
			RATING TONS	85.11	142.14	
23.60 F	DL+EPD -16.217 LL+I -13.746	1.138	61.278	3.28	5.47	7@ 9.0
			RATING TONS	131.13	218.98	

THE INVENTORY RATING IS GOVERNED BY MOMENT.
THE MINIMUM INVENTORY RATING IS 6.05 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
THE MINIMUM OPERATING RATING IS 10.11 TONS AT DISTANCE 0.00 IN WALL 2.

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+                                     +
+           R A T I N G   S U M M A R Y           +
+                                     +
+++++

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LOAD	MINIMUM INVENTORY RATING				MINIMUM OPERATING RATING			
	FACTOR	TONS	LOCATION	DIST	FACTOR	TONS	LOCATION	DIST
SP-1	0.21 M	3.1	WALL 2	0.00	0.35 M	5.3	WALL 2	0.00
SP-2	0.10 M	3.3	WALL 2	0.00	0.17 M	5.5	WALL 2	0.00
SP-3	0.10 M	3.5	WALL 2	0.00	0.17 M	5.8	WALL 2	0.00
SP-4	0.13 M	4.7	WALL 2	0.00	0.22 M	7.8	WALL 2	0.00
SP-5	0.15 M	6.1	WALL 2	0.00	0.25 M	10.1	WALL 2	0.00

RATING FACTOR CODES

M - MAXIMUM MOMENT STRENGTH GOVERNS

S - MAXIMUM SHEAR STRENGTH GOVERNS

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*
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♀ BOX CULVERT DESIGN AND RATING 335529

PROGRAM P4356010 02/16/2014 23:32
 VERSION 5.8 LAST UPDATED 07/18/2002 DOCUMENTATION 05/1998

INPUT: C:\Users\Yang\Desktop\box\PBL05001\PBL050~2.DAT

PBL05001 SINGLE SPAN RIGID FRAME WITHOUT BOTTOM SLAB.
 LOAD RATING IS BASED ON PREVIOUS LOAD RATING DATED 1996.

STRUCTURE IDENTIFICATION				SPAN	STRUCTURE DESCRIPTION			
CNTY	SR	SEGMENT	OFFSET	ID				
				PBL0 5001				
METHOD	RUN	BOTTOM	FISH	LIVE	NO OF	TOP	NO OF	
LFD	TYPE	SLAB	CHANNEL	LOAD	CELLS	SLAB	LANES	
	R	N	N	9	1	M	2	

LOAD FACTORS					UNIT	EQUIV	f'c TOP		REBAR
GAMMA	BETA D	BETA L	BETA E VERT	BETA E HORZ	WEIGHT E OR O	FLUID PRESS	f'c	SLAB AT GRADE	GRADE
1.30	1.00	1.67	1.00	1.30	120.	35.0	4000.	4000.	60.

REBAR OR WIRE DIA.	P OR C	W OR B	SPECS	ALPHA	LIVE LOAD SURCH.	AXIAL FORCE	FILL HEIGHT ADJ. FACTOR	NO. SPEC. LL	OUTPUT
0.875	C	B	4	45.	2.00	Y	1.0000	8	0

CLEAR SPAN	CLEAR HEIGHT	SLAB THICKNESS TOP	SLAB THICKNESS BOTTOM	WALL THICKNESS LEFT	WALL THICKNESS RIGHT	HEIGHT OF FILL	% GRADE
23.60	3.15	20.00	0.00	10.00	0.00	10.00	1.4
							4.30

BAR COVERS				OVERLAY THICKNESS		PRECAST SEGMENT LENGTH
TOP SLAB	BOT SLAB	TOP SLAB	BOT SLAB	WALLS	THICKNESS	LENGTH
2.000	2.000			2.000	0.00	0.00

SPECIAL LIVE LOADING 1

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
8		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	8.00	11.0	2	26.00	4.0	3	26.00	30.0	4	18.00	4.0
5	18.00	4.0	6	18.00	4.0	7	18.00	4.0	8	18.00	0.0

SPECIAL LIVE LOADING 2

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	12.00	12.0	2	24.00	35.0	3	27.00	4.0	4	27.00	0.0

SPECIAL LIVE LOADING 3

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE
4		6.00	4.00

AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST	AXLE NO.	LOAD	DIST
1	18.00	5.4	2	18.00	6.9	3	27.00	5.4	4	27.00	0.0

SPECIAL LIVE LOADING 4

NUMBER OF AXLES	3% INCR	GAGE DISTANCE	PASSING DISTANCE

5	6.00	4.00										
AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	28.0	4	22.00	4.0	
5	22.00	0.0										

SPECIAL LIVE LOADING 5

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	17.00	4.0	3	17.00	14.0	4	17.00	4.0	
5	17.00	0.0										

SPECIAL LIVE LOADING 6

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	12.00	12.0	2	27.00	4.0	3	27.00	31.0	4	27.00	4.0	
5	27.00	0.0										

SPECIAL LIVE LOADING 7

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
4		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	27.00	5.4	2	27.00	6.8	3	27.00	5.4	4	27.00	0.0	

SPECIAL LIVE LOADING 8

NUMBER	3%	GAGE	PASSING									
OF	INCR	DISTANCE	DISTANCE									
AXLES												
5		6.00	4.00									

AXLE			AXLE			AXLE			AXLE			
NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	NO.	LOAD	DIST	
1	24.00	8.3	2	24.00	5.4	3	24.00	6.6	4	24.00	5.4	
5	24.00	0.0										

WALL REINFORCEMENT

WALL 1						WALL 2					
BOTTOM			TOP			BOTTOM			TOP		
AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC	AS	SIZE	SPAC
0.000	4	9.0	0.000	7	9.0	0.000	4	9.0	0.000	7	9.0

PBL05001_LFR_121313_permit.OUT
 LL+I -6.701 -13.006
 RATING TONS 95.43 159.36

23.60 F DL+EPD-16.217 1.138 61.278 1.69 2.82 7@ 9.0
 LL+I -26.704
 RATING TONS 126.56 211.35

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 5.84 TONS AT DISTANCE 0.00 IN WALL 2.
 THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 9.76 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-2 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	8.736 7.795	10.149	0.11	0.19	4@ 9.0	
	LL+I	12.302 7.932					
			RATING TONS	5.17	8.63		
3.15 F	DL+EPH	12.578 7.283	25.510	0.77	1.28	7@ 9.0	
	LL+I	-16.883 7.932					
			RATING TONS	34.47	57.56		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPH	-9.012 8.508	10.222	0.10	0.16	4@ 9.0	
	LL+I	-12.302 7.932					
			RATING TONS	4.42	7.39		
3.15 F	DL+EPH	12.957 7.996	25.527	0.74	1.24	7@ 9.0	
	LL+I	16.883 7.932					
			RATING TONS	33.50	55.95		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00 F	DL+EPD	-15.948 1.138	61.278	2.13	3.55	7@ 9.0	
	LL+I	-21.298					
			RATING TONS	95.78	159.95		
1.46 V	DL+EPF	-6.058	6.250 23.226	1.51	2.52	7@ 9.0	0.000
	LL+I	5.003	11.259				
			RATING TONS	67.85	113.32		
11.80 F	DL+EPH	27.680 0.477	61.179	0.77	1.28	7@ 9.0	
	LL+I	43.717					
			RATING TONS	34.48	57.58		
22.14 V	DL+EPF	-5.545	-6.678 23.226	1.47	2.45	7@ 9.0	0.000
	LL+I	5.003	-11.259				
			RATING TONS	66.14	110.46		

23.60 F DL+EPD-16.217 1.138 61.278 2.12 3.53 7@ 9.0
 LL+I -21.298
 RATING TONS 95.21 159.00

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 4.42 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 7.39 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-3 LOADING *

WALL 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736	7.795	10.170	0.10	0.16	4@ 9.0	
	LL+I	14.624	11.033					
				RATING TONS	4.41	7.37		
3.15	F DL+EPH	12.578	7.283	25.542	0.65	1.08	7@ 9.0	
	LL+I	-20.069	11.033					
				RATING TONS	29.07	48.54		

WALL 2

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-9.012	8.508	10.240	0.08	0.14	4@ 9.0	
	LL+I	-14.624	11.033					
				RATING TONS	3.78	6.31		
3.15	F DL+EPH	12.957	7.996	25.557	0.63	1.05	7@ 9.0	
	LL+I	20.069	11.033					
				RATING TONS	28.25	47.18		

SLAB 1

DIST		FACTORED	EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT	THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.948	1.138	61.278	1.83	3.06	7@ 9.0	
	LL+I	-24.705						
				RATING TONS	82.57	137.89		
1.46	V DL+EPF	-6.058		6.250	23.226	1.27	2.12	7@ 9.0 0.000
	LL+I	-2.613		13.351				
				RATING TONS	57.22	95.56		
11.80	F DL+EPH	27.680	0.477	61.179	0.72	1.21	7@ 9.0	
	LL+I	46.306						
				RATING TONS	32.55	54.36		
22.14	V DL+EPF	-5.545		-6.678	23.226	1.24	2.07	7@ 9.0 0.000
	LL+I	-2.613		-13.351				
				RATING TONS	55.78	93.15		
23.60	F DL+EPD	-16.217	1.138	61.278	1.82	3.05	7@ 9.0	

LL+I -24.705

RATING TONS 82.08 137.07

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 3.78 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 6.31 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-4 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736 7.795	10.149	0.14	0.24	4@ 9.0	
	LL+I	10.024 6.463					
			RATING TONS	6.34	10.59		
3.15	F DL+EPH	-12.578 7.283	25.510	0.94	1.57	7@ 9.0	
	LL+I	-13.756 6.463					
			RATING TONS	42.30	70.65		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-9.012 8.508	10.222	0.12	0.20	4@ 9.0	
	LL+I	-10.024 6.463					
			RATING TONS	5.43	9.07		
3.15	F DL+EPH	12.957 7.996	25.527	0.91	1.53	7@ 9.0	
	LL+I	13.756 6.463					
			RATING TONS	41.12	68.67		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.948 1.138	61.278	2.61	4.36	7@ 9.0	
	LL+I	-17.354					
			RATING TONS	117.54	196.30		
1.46	V DL+EPF	-6.058	6.250 23.226	1.85	3.09	7@ 9.0	0.000
	LL+I	4.077	9.174				
			RATING TONS	83.28	139.07		
11.80	F DL+EPH	27.680 0.477	61.179	0.94	1.57	7@ 9.0	
	LL+I	35.621					
			RATING TONS	42.32	70.67		
22.14	V DL+EPF	-5.545	-6.678 23.226	1.80	3.01	7@ 9.0	0.000
	LL+I	4.077	-9.174				
			RATING TONS	81.18	135.56		
23.60	F DL+EPD	-16.217 1.138	61.278	2.60	4.34	7@ 9.0	
	LL+I	-17.354					
			RATING TONS	116.85	195.13		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 5.43 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 9.07 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-5 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736 7.795	10.167	0.18	0.30	4@ 9.0	
	LL+I	8.096 5.972					
				RATING TONS	7.07	11.81	
3.15	F DL+EPH	-12.578 7.283	25.537	1.17	1.95	7@ 9.0	
	LL+I	-11.111 5.972					
				RATING TONS	46.65	77.91	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-9.012 8.508	10.237	0.15	0.25	4@ 9.0	
	LL+I	-8.096 5.972					
				RATING TONS	6.05	10.11	
3.15	F DL+EPH	12.957 7.996	25.553	1.13	1.89	7@ 9.0	
	LL+I	11.111 5.972					
				RATING TONS	45.34	75.72	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.948 1.138	61.278	3.30	5.51	7@ 9.0	
	LL+I	-13.749					
				RATING TONS	131.88	220.24	
1.46	V DL+EPF	-6.058	6.250 23.226	2.18	3.64	7@ 9.0	0.000
	LL+I	1.166	7.788				
				RATING TONS	87.19	145.60	
11.80	F DL+EPH	27.680 0.477	61.179	1.21	2.02	7@ 9.0	
	LL+I	27.652					
				RATING TONS	48.46	80.92	
22.14	V DL+EPF	-5.545	-6.678 23.226	2.12	3.55	7@ 9.0	0.000
	LL+I	1.166	-7.788				
				RATING TONS	84.99	141.93	
23.60	F DL+EPD	-16.217 1.138	61.278	3.28	5.47	7@ 9.0	
	LL+I	-13.749					
				RATING TONS	131.10	218.93	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 6.05 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 10.11 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-6 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736 7.795	10.169	0.11	0.19	4@ 9.0	
	LL+I	12.527 9.348					
				RATING TONS	6.86	11.46	
3.15	F DL+EPH	-12.578 7.283	25.539	0.75	1.26	7@ 9.0	
	LL+I	-17.192 9.348					
				RATING TONS	45.23	75.54	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-9.012 8.508	10.238	0.10	0.16	4@ 9.0	
	LL+I	-12.527 9.348					
				RATING TONS	5.87	9.81	
3.15	F DL+EPH	12.957 7.996	25.555	0.73	1.22	7@ 9.0	
	LL+I	17.192 9.348					
				RATING TONS	43.97	73.42	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.948 1.138	61.278	2.10	3.50	7@ 9.0	
	LL+I	-21.604					
				RATING TONS	125.89	210.24	
1.46	V DL+EPF	-6.058	6.250 23.226	1.42	2.37	7@ 9.0	0.000
	LL+I	3.204	11.947				
				RATING TONS	85.26	142.38	
11.80	F DL+EPH	27.680 0.477	61.179	0.76	1.28	7@ 9.0	
	LL+I	43.844					
				RATING TONS	45.84	76.56	
22.14	V DL+EPF	-5.545	-6.678 23.226	1.39	2.31	7@ 9.0	0.000
	LL+I	3.204	-11.947				
				RATING TONS	83.11	138.79	
23.60	F DL+EPD	-16.217 1.138	61.278	2.09	3.48	7@ 9.0	
	LL+I	-21.604					
				RATING TONS	125.15	209.00	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 5.87 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
 THE MINIMUM OPERATING RATING IS 9.81 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-7 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736 7.795	10.192	0.09	0.15	4@ 9.0	
	LL+I	16.675 14.422					
			RATING TONS	4.72	7.88		
3.15	F DL+EPH	-12.578 7.283	25.574	0.57	0.95	7@ 9.0	
	LL+I	-22.885 14.422					
			RATING TONS	30.66	51.21		

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-9.012 8.508	10.259	0.07	0.12	4@ 9.0	
	LL+I	-16.675 14.422					
			RATING TONS	4.04	6.74		
3.15	F DL+EPH	12.957 7.996	25.588	0.55	0.92	7@ 9.0	
	LL+I	22.885 14.422					
			RATING TONS	29.81	49.78		

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.948 1.138	61.278	1.62	2.71	7@ 9.0	
	LL+I	-27.977					
			RATING TONS	87.49	146.12		
1.46	V DL+EPF	-6.058	6.250 23.226	1.16	1.94	7@ 9.0	0.000
	LL+I	-5.581	14.647				
			RATING TONS	62.59	104.52		
11.80	F DL+EPH	27.680 0.477	61.179	0.68	1.13	7@ 9.0	
	LL+I	49.598					
			RATING TONS	36.47	60.91		
22.14	V DL+EPF	-5.545	-6.678 23.226	1.13	1.89	7@ 9.0	0.000
	LL+I	-5.581	-14.647				
			RATING TONS	61.01	101.88		
23.60	F DL+EPD	-16.217 1.138	61.278	1.61	2.69	7@ 9.0	
	LL+I	-27.977					
			RATING TONS	86.98	145.25		

THE INVENTORY RATING IS GOVERNED BY MOMENT.
 THE MINIMUM INVENTORY RATING IS 4.04 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.
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THE MINIMUM OPERATING RATING IS 6.74 TONS AT DISTANCE 0.00 IN WALL 2.

 * LIVE LOAD RATING - SP-8 LOADING *

WALL 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	8.736 7.795	10.190	0.10	0.16	4@ 9.0	
	LL+I	15.006 12.822					
				RATING TONS	5.81	9.71	
3.15	F DL+EPH	-12.578 7.283	25.571	0.63	1.05	7@ 9.0	
	LL+I	-20.595 12.822					
				RATING TONS	37.85	63.21	

WALL 2

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPH	-9.012 8.508	10.257	0.08	0.14	4@ 9.0	
	LL+I	-15.006 12.822					
				RATING TONS	4.98	8.31	
3.15	F DL+EPH	12.957 7.996	25.586	0.61	1.02	7@ 9.0	
	LL+I	20.595 12.822					
				RATING TONS	36.79	61.44	

SLAB 1

DIST		FACTORED EFFECTS	ULT	RATING	FACTOR	ACTUAL	SHEAR
		MOMENT THRUST SHEAR	CAPAC	IR	OR	REINF	REINF
0.00	F DL+EPD	-15.948 1.138	61.278	1.80	3.01	7@ 9.0	
	LL+I	-25.192					
				RATING TONS	107.96	180.30	
1.46	V DL+EPF	-6.058	6.250 23.226	1.29	2.16	7@ 9.0	0.000
	LL+I	-5.100	13.120				
				RATING TONS	77.64	129.66	
11.80	F DL+EPH	27.680 0.477	61.179	0.75	1.25	7@ 9.0	
	LL+I	44.729					
				RATING TONS	44.94	75.04	
22.14	V DL+EPF	-5.545	-6.678 23.226	1.26	2.11	7@ 9.0	0.000
	LL+I	-5.100	-13.120				
				RATING TONS	75.68	126.39	
23.60	F DL+EPD	-16.217 1.138	61.278	1.79	2.99	7@ 9.0	
	LL+I	-25.192					
				RATING TONS	107.32	179.23	

THE INVENTORY RATING IS GOVERNED BY MOMENT.

THE MINIMUM INVENTORY RATING IS 4.98 TONS AT DISTANCE 0.00 IN WALL 2.

THE OPERATING RATING IS GOVERNED BY MOMENT.

THE MINIMUM OPERATING RATING IS 8.31 TONS AT DISTANCE 0.00 IN WALL 2.

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MINIMUM INVENTORY RATING					MINIMUM OPERATING RATING				
LOAD	FACTOR	TONS	LOCATION	DIST	FACTOR	TONS	LOCATION	DIST	
SP-1	0.08 M	5.8	WALL 2	0.00	0.13 M	9.8	WALL 2	0.00	
SP-2	0.10 M	4.4	WALL 2	0.00	0.16 M	7.4	WALL 2	0.00	
SP-3	0.08 M	3.8	WALL 2	0.00	0.14 M	6.3	WALL 2	0.00	
SP-4	0.12 M	5.4	WALL 2	0.00	0.20 M	9.1	WALL 2	0.00	
SP-5	0.15 M	6.1	WALL 2	0.00	0.25 M	10.1	WALL 2	0.00	
SP-6	0.10 M	5.9	WALL 2	0.00	0.16 M	9.8	WALL 2	0.00	
SP-7	0.07 M	4.0	WALL 2	0.00	0.12 M	6.7	WALL 2	0.00	
SP-8	0.08 M	5.0	WALL 2	0.00	0.14 M	8.3	WALL 2	0.00	

RATING FACTOR CODES

M - MAXIMUM MOMENT STRENGTH GOVERNS

S - MAXIMUM SHEAR STRENGTH GOVERNS

BOX5 data input:

Equivalent fill depth:

East: $0.173' / 0.12\text{kcf} = 1.44'$

West: $0.295' / 0.12\text{kcf} = 2.46'$

Grade: $(2.46' - 1.44') / 23.60' = 4.3\%$

Box5 Truck list:

Legal rating	Permit rating
SP-1 H 15	SP-1 150K
SP-2 T-3	SP-2 90K COMB.
SP-3 T-4	SP-3 90K CRANE
SP-4 HS20	SP-4 90K CARGO
SP-5 3S2	SP-5 80K CARGO
	SP-6 120K
	SP-7 108K
	SP-8 120K CRANE