MARYLAND'S PRIMARY BRIDGE PROGRAM

Report Submitted to
STATE ROADS COMMISSION OF MARYLAND

by

J. E. GREINER COMPANY
Consulting Engineers

VOLUME II
PLATES
Gift of
DEAN ROBERT H. ROY
MARYLAND'S PRIMARY BRIDGE PROGRAM
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Report Submitted to
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VOLUME II
PLATES ON CROSSINGS

Susquehanna River Bridge
Patapsco River Crossing
Potomac River Bridge
Chesapeake Bay Bridge

Baltimore, Maryland, October 15, 1938
List of Plates

The Plates listed here are referred to in the text printed in Volume I.

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TYPICAL RIVER PIER SUPPORTED ON ROCK

END ELEVATION

TYPICAL RIVER PIER SUPPORTED ON STEEL H PILES

SIDE ELEVATION
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VIEW FROM GARRETT ISLAND
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**SUBJECTS**

**CONSTRUCTION SCHEDULE—SUBSTRUCTURE AND SUPERSTRUCTURE**

PLATE 16
STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD
VICINITY MAP SHOWING PROPOSED HIGHWAY BRIDGE OVER PATAPSCO RIVER FROM CANTON TO FAIRFIELD IN BALTIMORE. MD

LEGEND
- PROPOSED HIGHWAY
- PROPOSED CONNECTING HIGHWAYS
- EXISTING CONNECTING HIGHWAYS
PATAPSCO RIVER BRIDGE
CHANNEL CANTILEVER SPAN
VIEW FROM PORT M'HENRY
PATAPSCO RIVER BRIDGE
CANTON APPROACH—ELEVATED HIGHWAY
PATAPSCO RIVER BRIDGE

FAIRMONT APPROACH – TOLL PLAZA,
ADMINISTRATION BUILDING, AND TRAFFIC CIRCLE
AT CHESAPEAKE AVENUE
PLATE 27

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.

PATEAPS CO RIVER BRIDGE
CANTON TO FAIRFIELD-BALTIMORE, MD.

GENERAL PLAN AND ELEVATION

SCALE 1" = 20'-0"
PATAPSCO RIVER

PLAN

ELEVATION

STATE OF MARYLAND
STATE ROADS COMMISSION
Baltimore, Md.
PATAPSCO RIVER BRIDGE
CANTON TO FAIRFIELD - BALTIMORE, MD.
GENERAL PLAN AND ELEVATION

Note: Laborer's tracing not shown.
**STATE OF MARYLAND
STATE ROADS COMMISSION**

**PROPOSED HAMPDEN BRIDGE**

**Baltimore, Md.**

**PATAPSCO RIVER**

**CONTRACT NO. 3-015-CAL**

**Scale 1/250**

**PLAN**

**PLATE 38**

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**Sheets of Plan:**

1. Bridge Deck
2. Approach Spans
3. Approach Piers

**Approach Span:**

- Length: 400 ft
- Width: 30 ft
- Bearing: 25 in

---

**Total Length of Bridge:** 630 ft

**Total Length of Project:** 1,080 ft

---

**Design Elevation**

**Patapsco River**

**G. Dorrance**

---

**Approximate Heights of Piers From Design Drawings:**

- Piers: 61 to 63 ft
- Approach Piers: 64 to 66 ft

---

**Cross, Sections, and Notes:**

- Section A-A
- Section B-B
- Section C-C
- Section D-D

---

**For Land Use:**

- Alt. Elevation: 63 ft
- Alt. Elevation: 64 ft

---

**For future use:**

- Additional notes and modifications for construction.

---

**Traced by E.B. In charge of A.E.Read**

---

**STATE OF MARYLAND**

**STATE ROADS COMMISSION**

**PROPOSED HAMPDEN BRIDGE**

**Baltimore, Md.**

**PATAPSCO RIVER**

**CONTRACT NO. 3-015-CAL**

**Scale 1/250**

**PLAN**

**PLATE 38**

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**Sheets of Plan:**

1. Bridge Deck
2. Approach Spans
3. Approach Piers

**Approach Span:**

- Length: 400 ft
- Width: 30 ft
- Bearing: 25 in

---

**Total Length of Bridge:** 630 ft

**Total Length of Project:** 1,080 ft

---

**Design Elevation**

**Patapsco River**

**G. Dorrance**

---

**Approximate Heights of Piers From Design Drawings:**

- Piers: 61 to 63 ft
- Approach Piers: 64 to 66 ft

---

**Cross, Sections, and Notes:**

- Section A-A
- Section B-B
- Section C-C
- Section D-D

---

**For Land Use:**

- Alt. Elevation: 63 ft
- Alt. Elevation: 64 ft

---

**For future use:**

- Additional notes and modifications for construction.

---

**Traced by E.B. In charge of A.E.Read**
GENERAL NOTES FOR TRUSS SPANS

1. All members and joints are to be constructed to the tolerances specified in the Shop Drawings.

2. All joints and panel points are to be placed at exact locations. The 6" main points are to be placed flush with each other and not more than 1/4" away from the center line of the panel points on both sides.

3. All panel points shall be marked with the appropriate panel number.

4. All panel points shall be marked with the appropriate panel number.

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<table>
<thead>
<tr>
<th>Member</th>
<th>Top Flange</th>
<th>Bottom Flange</th>
<th>Web Flange</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP-200</td>
<td>61</td>
<td>66</td>
<td>66</td>
<td>Steel</td>
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<td>PP-220</td>
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<td>PP-240</td>
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<td>PP-260</td>
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<tr>
<td>PP-280</td>
<td>61</td>
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<td>66</td>
<td>Steel</td>
</tr>
<tr>
<td>PP-300</td>
<td>61</td>
<td>66</td>
<td>66</td>
<td>Steel</td>
</tr>
</tbody>
</table>

**Truss Specifications**

- **Material:** Steel
- **Thickness:** 6 in (152 mm)
- **Area:** 3400 sq ft (315.4 m²)
- **Design Load:** 200 kips (890 kN)
- **Construction:** Steel truss bridge

**Project Details**

- **Location:** Patapsco River, Baltimore, MD
- **Owner:** State Roads Commission
- **Architect:** AECOM
- **Engineer:** BGR

**Acknowledgments**

- Design by H.E. B.A.M. Income Banana (Check by E.E.M. & V.B.)

---

**Note:** All dimensions are approximate and subject to change. Final design and specifications will be determined by the Project Engineer and Construction Manager.
### Specifications

- **Main Span:** 410 ft. (125.0 m)
- **Approaches:** 400 ft. (121.9 m)
- **Total Span Length:** 1,250 ft. (381.0 m)
- **Number of Span:** 7
- **Type of Bridge:** Suspension Bridge

#### Material

- **Main Span:** Structural Steel
- **Approaches:** Reinforced Concrete

#### Live Load

- **Total Live Load:** 350 sq. ft. per lane

#### Design Parameters

- **Compressive Stress:** 200 psi
- **Tensile Stress:** 15,000 psi
- **Bending Stress:** 100,000 psi

#### Wind Load

- **Total Wind Load:** 300 lbs. per sq. ft.

#### Water Load

- **Total Water Load:** 350 lbs. per sq. ft.

#### Earth Load

- **Total Earth Load:** 100 lbs. per sq. ft.

#### Other Loads

- **Total Other Loads:** 200 lbs. per sq. ft.

#### Design

- **Bridge Type:** Suspension Bridge
- **Construction:** Steel and Concrete

### Diagram

- **End Frames:** Concrete and Steel
- **Bridge Structure:** Steel and Concrete

---

*Design by M.A. & A.F. Inc.; Drawn by M.A. & A.F. Inc. (Check by E.S.)*

---

*STATE OF MARYLAND*

STATE HIGHWAYS

BALTIMORE, MD

PREDESIGNED VARIOUS SPANS

PATAPSCO RIVER

FROM CALENTON TO EF-FIELD

F. D. TAYLOR, INC.

Design by M.A. & A.F. Inc.; Drawn by M.A. & A.F. Inc. (Check by E.S.)*

---

*Sheet 5 of 5*
FLOOR BEAMS

Panel 1  125
       Panel 2  1,125

1. 1  
2. 25

1. 1
2. 25

NOTICE
For Typical Cross Section see Sheet 36-R.

TRANVERSE RANTING PANEL POINTS 2-3:

Specifications - Apply those listed on this page or as indicated in the Notes. All dimensions indicated on drawings are approximate and should be confirmed prior to construction.

Material - Concrete - 3250 psi, Steel - 34-75 Rebars

Live Load - 20.3 kips per beam

Reinforced Dead Load - 3,900 kips for bending

Design - 3,900 kips per ft of bridge

Notes - 2,800 p.f. 8.5 kips per ft of bridge

Design by R.M. Tract by M.B. Foreman by C.A. Post

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.
PROPOSED PATAPSCO BRIDGE
FROM CANTON TO ABERDEEN
N. BALTIMORE ST.

PLATE 46
### Surveys (Bridge and Approaches)
- Sounding and Borings
- War Department Application Drawings and Hearings
- Right of Way Survey and Options
- Preliminary Estimate and P.W.A. Application
- Design, Plans and Estimate of Cost for Report
- Preparation of Report
- Investigation, Financing, etc.
- Additional Surveys, Test Piles and Borings
- Design, Plans & Specifications (Approach Substructure)
- Design, Plans & Specifications (Main Bridge Substructure)
- Design, Plans & Specifications (Main Bridge Superstructure)
- Design, Plans & Specifications (Approach Superstructure)
- Design, Plans & Specifications (Approach Highways)
- Design, Plans & Specifications (Toll Booths, Administration Building)

### Advertising Bid & Award
- Approach Substructure
- Main Bridge Substructure
- Superstructure
- Approach
- Highways
- Toll Booths & Administration Bldg.

### Construction Pedestals Nos. 1 to 26 incl.
- (Piers Nos. 1 & 14)
- ( 7 & 13)
- ( 8 & 12)
- ( 2 & 11)
- ( 6 & 10)
- ( 5 & 9)
- ( 6 & 8)

### Approval of Shop Drawings
- (Ten Truss Spans, 4230 Ft.)
- (Cantilever Unit, 2500 Ft.)

### Erection and Riveting
- (Ten Truss Spans, 4230 Ft.)
- (Approach Spans, 7489 Ft.)
- (Cantilever Unit, 2500 Ft.)

### Painting
- ( 5 & 11)
- ( 6 & 10)

### Construction of Approach Slab
- (Fairfield Approach 2437 Ft.)
- (Canton Approach 4972 Ft.)

### Highway Fills and Grading
- Highway Paving, Guard Rail, Markers, etc.
- Toll Booths, Administration Building, etc.
- Face Fenders

### Lighting
STATE OF MARYLAND  
STATE ROADS COMMISSION  
BALTIMORE MD  
PATAPSCO RIVER BRIDGE  
CANTON TO FAIRFIELD, BALTIMORE MD  
TUNNEL STUDY NO. 1

PROFILE OF PATAPSCO RIVER  
SHOWING BORINGS TAKEN APPROXIMATELY 800 FEET EAST OF PROPOSED TUNNEL LINE  

Boring data is taken from a profile prepared by the The Glen L. Hart Co. Baltimore, Maryland. These borings were taken by the Pennsylvania R.R., the date when these borings were made is not definitely known.

FAIRFIELD  
CANTON  

PLANE

SCALE 1" = 200'

KEY
- H. - HUD  
- C. - CLAY  
- S. - SAND  
- G. - GRAVEL  
- R. - RED CLAY  
- B. - BROWN CLAY  
- G. - GRAY CLAY  

SCALE 1" = 50'  

DRAWN BY A.A.  

REV.  

MADE BY Ole Singstad, Consulting Engineer  
TRACED BY EDD Morrison Ave.  
CHECKED BY NEW YORK N.Y.  

SEPT. 9, 1936  
SHEET NO. 3 OF 3
STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.

PATAPSCO RIVER BRIDGE
CANTON TO FAIRFIELD, BALTIMORE MD.

TUNNEL STUDY NO. 2.

PROFILE ALONG CENTER LINE OF TUNNEL
SINES 50. 00' 1937. 75' 50.

SCALE 1/50 SHOWN

CONTRACT

MADE BY OIE SINCAV. Consulting Engineer
TRACED BY 200 Madison Ave.
CHECKED BY NEW YORK, N. Y.

Sheet 6, 1938
Sheet NO: 3 OF 3
POTOMAC RIVER BRIDGE
CHANNEL SPAN
VIEW FROM MARYLAND SHORE
PLATE 57

PLAN

ELEVATION

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.
POTOMAC RIVER BRIDGE
FROM A POINT NEAR DOVER, GREEN, VA.
GENERAL PLAN & ELEVATION

Scale 1" = 50' CHECKED BY: J. C. G. PROOFREAD BY: J. C. G. final

STATE ROADS COMMISSION
BALTIMORE, MD.
STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.

POTOMAC RIVER BRIDGE
FROM A POINT NEAR DAHLGERN, VA.
TO LUDLOW FERRY, MD.

GENERAL PLAN & ELEVATION

NOTE: Ground Elevation shown on E. bridge.
POTOMAC RIVER BRIDGE
FROM A POINT NEAR DAHLGREN, VA.
TO LUDLOW FERRY, MD.
GENERAL PLAN & ELEVATION

NOTE: Ground elevations shown on Elevation.

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.

SCALE 1" = 100' CONTRACT

MADE BY J.C. OHARE 85,N.R.
TRACED BY J.C. OHARE 85,N.R.
CHECKED BY J.C. OHARE 85,N.R.
APPROVED 7/18/51
PUBLISHED 12/18/51

Sheet No. 6 of 61
1938

Survey—Bridge and Approaches
Borings—Previously Completed
Preliminary Designs & Estimates
War Dept. Application Drawgs. & Hearings
Preliminary Estimate & PWA Application
Designs, Plans & Estimates for Report
Preparation of Report
Investigation, Financing, etc.
Additional Surveys, Test Piles, Borings
Design, Plans, Specifications Approach Substructure
" " " " Main Bridge
" " " " Approach Superstructure
" " " " Main Bridge
" " " " Toll House & Facilities
" " " " Approach Highway
Advertising Bid and Award Approach Substructure
" " " " Main Substructure
" " " " Superstructure
" " " " Approach Highway
" " " " Toll House & Facilities

Construction Substructure
Approach (West)
Piers 11 & 12
Piers 9 & 14
Piers 5 & 16
Piers 6 & 15
Piers 7 & 17
Piers 8 & 18
Piers 10 & 20
Piers 1, 2, 3 & 4
East Abutment
Cleaning Up and Moving Out
Construction Superstructure
Approval of Shop Drawings
Fabrication
Erection
Painting
Fenders
Flooring
Approach Highway
Toll House and Equipment

1939

1940

May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
July
Aug.
Sept.
Oct.
Nov.
Dec.
Jan.
Feb.
Mar.
Apr.
May
June
CHESAPEAKE BAY BRIDGE
SANDY POINT-KENT ISLAND SITE
CHANNEL SPAN
NOTE: Ground elevations shown on plan.

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.
CHESAPEAKE BAY BRIDGE
BETWEEN ANNE ARUNDEL CO., MD & QUEEN ANNE CO., MD.
GENERAL PLAN & ELEVATION

SCALE 1"=50'
NOTE: -

The 60.75 ft. & 61.5 ft. Beam Spans, 100 ft. Girder Spans, 250 ft. Deck Truss Spans & Embankment at East End of Bridge are similar to those at Beginning of Bridge as shown on this sheet.

GROUND ELEVATIONS SHOWN ON E. BRIDGE
MAIN SPAN
NOTE—Profile of adopted line is indicated by heavy black lining. Exceptions of below were indicated by thin black lining. Profile of adopted line was indicated by broken lines where the bank elevation of the water line was above the grade of the road. All borings have been projected to the adopted line and are shown in detail for clarity representation of soil conditions.
TYPICAL CROSS SECTION—DECK TRUSS SPANS
FOR 250 FT, 500 FT SPANS

TYPICAL CROSS SECTION—DECK GIRDER SPANS
FOR 600 FT SPANS

TYPICAL CROSS SECTION—BEAM SPANS
FOR 600 FT, 615 FT SPANS

TYPICAL CROSS SECTION—DECK TRUSS SPANS
FOR 250 FT, 500 FT SPANS

TYPICAL CROSS SECTION—EVENKMENT

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD

CHESAPEAKE BAY BRIDGE
BETWEEN ANNE ARUNDEL COUNTY AND QUEEN ANNE'S COUNTY
SANDY POINT—WEST ISLAND SITE

SECTIONS

SCALE 1" = 10' CONTACT

MADE BY J.G. GENOVESE CO., BALTIMORE
DRAWN BY J.G. GENOVESE CO., BALTIMORE
CHECKED BY J.G. GENOVESE CO., BALTIMORE

SHEFF. No. 9 OF 10
TYPICAL CROSS SECTION - DECK CANTILEVERS
FOR 450 FT, 480 FT, & 500 FT SPANS

TYPICAL CROSS SECTION - MAIN SPAN

STATE OF MARYLAND
STATE ROADS COMMISSION

CHELSEAPEAKE BAY BRIDGE
BETWEEN BALTIMORE, MARYLAND & OCEAN CITY, MARYLAND

SECTIONS

REFERENCE

SCALE 1/8"=1'-0"

DRAWN BY J.J.GEMINIO
AMENDED
TRADED BY J.J.GEMINIO
CHECKED BY J.J.GEMINIO
APPROVED

SHEET NO. 75 OF 100
STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.
CHESTAPEAKE BAY BRIDGE
BETWEEN HANOVER, TALBOT & QUEEN ANNE COUNTIES
DANDY POINT-MOUNT ISLAND SITE
PIERS

Plan, Elevation, Profile

Main Piers
Nos. 13 & 14

Concrete Pile Bents

Section A-A

Scale: 2'-0" = 1'-0"
PROPOSED HIGHWAY BRIDGE

CHESAPEAKE BAY

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.

PREPROPOSAL DRAWING

NANCOL POINT

Specifications, materials, see drawing "A".

STATE OF MARYLAND
STATE ROADS COMMISSION
BALTIMORE, MD.

PREPROPOSAL DRAWING

CHESAPEAKE BAY
NANCOL POINT

Specifications, materials, see drawing "A".
12 Panels @ 50'-0" - 600'-0" c-c of Hangers

SUSPENDEDSPAN  Mark Plane 20" Saloon (Not marked Center)