INDIVIDUAL PROPERTY/DISTRICT
MARYLAND HISTORICAL TRUST
INTERNAL NR-ELIGIBILITY REVIEW FORM

Property/District Name: Bridge CE108 Liberty Grove Rd Survey Number: CE-1488

Project: Proposed bridge replacement Agency: F/coe

Site visit by MHT Staff: X no ___ yes Name _____ Date _____

Eligibility recommended _____ Eligibility **not** recommended X

Criteria: ___A ___B ___C ___D Considerations: ___A ___B ___C ___D ___E ___F ___G ___None

Justification for decision: (Use continuation sheet if necessary and attach map)

Constructed during a road building campaign in Cecil County, the Liberty Grove Road Bridge is a concrete girder beam dating from 1919. The bridge consists of two spans of five beams supported by a single pier. The condition of the concrete structure is severely deteriorated. The accompanying report by P.A.C. Spero & Company demonstrates why the bridge is not eligible under Criteria A,B, and C. This office concurred with this determination.

Documentation on the property/district is presented in: Maryland Inventory Form

Prepared by: P.A.C. Spero & Company

Lauren Bowlin — Nov. 19, 1996
Reviewer, Office of Preservation Services — Date

NR program concurrence: ✓ yes ___ no ___ not applicable

Peter E. Pinto — 11/21/96
Reviewer, NR program — Date

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Survey No. CE-1488

MARYLAND COMPREHENSIVE HISTORIC PRESERVATION PLAN DATA - HISTORIC CONTEXT

I. Geographic Region:

X	Eastern Shore	(all Eastern Shore counties, and Cecil)
	Western Shore	(Anne Arundel, Calvert, Charles, Prince George's and St. Mary's)
	Piedmont	(Baltimore City, Baltimore, Carroll, Frederick, Harford, Howard, Montgomery)
	Western Maryland	(Allegany, Garrett and Washington)

II. Chronological/Developmental Periods:

	Paleo-Indian	10000-7500 B.C.
	Early Archaic	7500-6000 B.C.
	Middle Archaic	6000-4000 B.C.
	Late Archaic	4000-2000 B.C.
	Early Woodland	2000-500 B.C.
	Middle Woodland	500 B.C. - A.D. 900
	Late Woodland/Archaic	A.D. 900-1600
	Contact and Settlement	A.D. 1570-1750
	Rural Agrarian Intensification	A.D. 1680-1815
	Agricultural-Industrial Transition	A.D. 1815-1870
X	Industrial/Urban Dominance	A.D. 1870-1930
	Modern Period	A.D. 1930-Present
	Unknown Period (___ prehistoric	___ historic)

III. Prehistoric Period Themes:

	Subsistence
	Settlement
	Political
	Demographic
	Religion
	Technology
	Environmental Adaptation

IV. Historic Period Themes:

	Agriculture
	Architecture, Landscape Architecture, and Community Planning
	Economic (Commercial and Industrial)
	Government/Law
	Military
	Religion
	Social/Educational/Cultural
X	Transportation

V. Resource Type:

Category: structure

Historic Environment: rural

Historic Function(s) and Use(s): vehicular bridge

Known Design Source: _____

CE-1488

Maryland Comprehensive Historic Preservation Plan Data Sheet

Bridge CE108, Liberty Grove Road over Basin Run; CE-1488
Liberty Grove Road over Basin Run, south of Liberty Grove, Cecil County, MD

Historic Context:

MARYLAND COMPREHENSIVE PRESERVATION PLAN DATA

Geographic Organization:

Piedmont

Chronological/Developmental Period Theme (s):

Industrial/Urban Dominance A.D. 1870-1930

Prehistoric/Historic Period Theme(s):

Transportation

RESOURCE TYPE:

Category (see Section 3 of survey form):

Structure; Public Ownership; Public Acquisition - Not applicable; Occupied; Accessible - yes: unrestricted; Transportation

Historic Environment (urban, suburban, village, or rural):

Rural

Historic Function(s) and Use(s):

Transportation - bridge

Known Design Source (write none if unknown):

None

MARYLAND INVENTORY OF HISTORIC BRIDGES
HISTORIC BRIDGE INVENTORY
MARYLAND STATE HIGHWAY ADMINISTRATION/
MARYLAND HISTORICAL TRUST

MHT No. CE-1488

SHA Bridge No. CE-108 **Bridge name** Liberty Grove Bridge

LOCATION:

Street/Road name and number [facility carried] Liberty Grove Road over Basin Run

City/town Liberty Grove **Vicinity** X

County Cecil

This bridge projects over: Road____ **Railway**_____ **Water** X **Land** ____

Ownership: State **County** X **Municipal** _____ **Other** _____

HISTORIC STATUS:

Is the bridge located within a designated historic district? Yes X **No** __

National Register-listed district ____ **National Register-determined-eligible district** __
Locally-designated district _____ **Other** Survey District

Name of district Liberty Grove Survey District (CE-1186) Cecil County, MD

BRIDGE TYPE:

Timber Bridge _____:
Beam Bridge _____ **Truss -Covered** ___ **Trestle** ____ **Timber-And-Concrete** ___

Stone Arch Bridge _____

Metal Truss Bridge _____

Movable Bridge ____:
Swing _____ **Bascule Single Leaf** __ **Bascule Multiple Leaf** _____
Vertical Lift _____ **Retractile**_____ **Pontoon** _____

Metal Girder_____:
Rolled Girder _____ **Rolled Girder Concrete Encased** _____
Plate Girder _____ **Plate Girder Concrete Encased** _____

Metal Suspension _____

Metal Arch _____

Metal Cantilever _____

Concrete ___ :
Concrete Arch_____ **Concrete Slab** __ **Concrete Beam** X **Rigid Frame**

Other _____ **Type Name** _____

CE-1488

DESCRIPTION:
Setting: Urban _____ **Small town** _____ **Rural** X

Describe Setting:

Bridge CE108 carries Liberty Grove Road over Basin Run approximately ten miles north of Port Deposit in Cecil County, Maryland. Liberty Grove Road runs generally north south from Port Deposit to Conowingo over the western flowing Basin Run. The area has limited development, most of which dates to the nineteenth and early twentieth century. The basin run valley is still heavily forested and overgrown. The bridge is south of the village of Liberty Grove. No boundaries were set for the survey district of Liberty Grove (CE1186), however the bridge is to the south and west of the properties listed within the survey.

Describe Superstructure and Substructure:

CE108 is a double span fifty-five foot six inch concrete beam bridge. Each span is twenty-seven feet nine inches long. Specifically this bridge is a continuous deck girder span, comprising five beams. A continuous span differs structurally from a simply-supported span in its appearance and in the distribution of stresses in the girders. The girders of a continuous span continue over the piers while the girders of a simply-supported span break at each pier. Bridge CE108 consists of five beams extending over two spans supported by a single pier. The spans are separated by a pier that is approximately three feet wide by five foot high. Each span has five concrete beams. Each beam is approximately three feet high by twenty-seven feet long by eighteen inches wide. The abutments are similar in dimensions. They are approximately five feet five inches high by twenty one feet long by three feet wide. The southern wingwalls are much smaller that those to the north. The southeastern wall is twelve feet by five feet and the southwestern wall is sixteen feet long by five feet high. The northern walls are much higher and longer. To the northeast the concrete wall is fifty feet long and eight feet high. To the northwest, the wall is forty six feet long by eight feet high.

The deck is twenty one feet seven inches wide. An eight inch concrete deck slab carries a six inch earth fill and a four inch bituminous surface. The full depth of the deck is severely spalled over the pier and on its underside. In late 1980s a steel plate was added to the pier for additional support and protection from deterioration. The galvanized steel plate is one half an inch thick and forty eight inches wide. The deck is bordered by solid paneled parapets. The parapets were poured in place at the time of construction. Each section is two feet ten inches by one foot. The parapet cap is one foot four inches wide.

According to an inspection report completed in 1995 and field visits in September 1996, Bridge CE108 has severe deterioration of its members. The concrete deck is in only fair condition. The parapets caps on both the eastern and western elevations have large sections of exposed rebar and scour on both the interior and exterior faces. The full depth of the deck has severely spalled sections. These spalls are causing water damage and efflorescence through the whole of the deck. The joint between the pier and the deck is delaminated with exposed and corroding reinforcing bars.

There is moderate spalling along the tip of the southeast and southwest wingwalls. There is a large vertical crack measuring approximately three feet by three feet near the connection of the southeast wingwall and the northern abutment. In addition there is a large diagonal crack measuring approximately four feet by two feet at the connection of southwest wingwall and the northern

abutment. The tops of both southern wingwalls have moderate spalling. The northern abutment itself has a moderate vertical crack and spalling below the beam wells.

The pier is heavily spalled at the joint between the pier cap and the deck. Prior to the installation of a steel plate, workers added additional concrete and bituminous wearing material to seal the joint. The deterioration has continued and large cracks and holes are present underneath the steel plate. In addition there is a large one and half inch deep spall along the southern face of the pier which is approximately three feet by three feet. The channel flow has been compromised. The stream only flows through the northern span. This has further affected the sections of scour on both the interior face of the northern abutment and the pier. Each of which have areas of scour measuring approximately three feet deep.

Joints between the pier and the deck, the parapets and the deck, the abutments and the wing walls, and the abutments and the deck are all compromised. Scour, efflorescence, and delamination are present in all joints.

Discuss Major Alterations:

Cecil County inspection files and conversations with County Engineers confirm that in the late 1980s a steel plate was added to the bridge. This was not added because of deterioration in the roadbed. The connection joint between the two concrete spans at the beam was failing. A section measuring three feet by eighteen feet was cut and repairs were made to the center of the bridge. Presently this is still a major concern. In addition the parapets, beams, pier and abutments have all received patching to prevent further delamination. Evidence of scour protection has occurred.

HISTORY:

WHEN was the bridge built 1919
This date is: Actual X **Estimated** _____
Source of date: Plaque ____ **Design plans** ___ **County bridge files/inspection form** ____
Other (specify): Report of the State Roads Commission of Maryland 1916-1919

WHY was the bridge built?

The region of Northwestern Cecil County began development as early as the mid-eighteenth century. The hills surrounding the Susquehanna and its tributaries were used for their raw materials. The waterways were used for both transportation and power sources. At the turn of the nineteenth century there were some one hundred and nine mills in Cecil County. Mill towns of various sizes developed up around these centers of industry. Two such towns developed along Basin Run. The larger was Rowlandsville which is directly downstream from the much smaller, Liberty Grove. Rowlandsville developed around the McCullough Iron Company which produced both pig iron and galvanized iron. Liberty Grove's mills processed the area's corn and wheat. A road which paralleled Basin Run connected the two communities was built in the second half of the nineteenth century. Following the Civil War the Philadelphia, Wilmington and Baltimore Railroad Company finished laying track through northwest Cecil County. The track connected Liberty Grove and Rowlandsville and proceeded on to Conowingo. The railroad line made the little mill town of Liberty Grove into a regular stop which eventually included residences, a school, a post office, and two canneries. By

the beginning of the twentieth century this region of Cecil County was serviced by railroads and small feeder roads but was not connected with the rest of the county through a unified highway system.

In 1904 legislation was passed providing funds for state-sponsored improvement and construction of roads. The legislature to created the Maryland State Roads Commission in 1908. The New Commission was part of the national "Goods Roads Movement". Five million dollars was appropriated for additional state-sponsored road projects. The 1904 State Aid Law and subsequent appropriations were first administered by the Maryland Geological and Economical Survey until it was turned over to the State Roads Commission in June of 1910. Fifty per cent of the cost of road construction was paid by the state, while the county commissioners would take on was forty per cent, and ten per cent was assumed by adjoining property owners. Planning for the road would be completed by the State Roads Commission, the contract and design would be handled by the County Commissioners, and the on site supervision would fall back to the state. At the end of construction the project would be handed over to the county.

The roads of Cecil County were in poor to fair condition at the time of the creation of the State Roads Commission. An extensive survey by the Maryland Geological Survey in 1898 documented 91 miles of roads in the county. At the turn of the century the county's major transportation routes were the Philadelphia, Wilmington, and Baltimore Railroad and the Chesapeake and Delaware Canal and their supporting service routes. The majority of bridges were small either made of stone, iron, or timber. The large structures were attributed to the railroad or canal. However, since one of the founders of the Goods Roads Movement, Governor Austin Crothers, was a native of the county, Cecil saw some progress early one. One of the first two contracts lets by the Commission was for construction of road between Oakwood and Porter Bridge in the northwest tip of Cecil County.

Between 1916 and 1924, under State Aid funds Liberty Grove Road was constructed. This road would connect the village of Liberty Grove with Port Deposit, one of the county's main population hubs. In 1919 under contract 4576-A , the County Commissioners of Cecil County received State Aid funds for a double span concrete girder on Rock Run/Liberty Grove Road over Basin Run. This road was built on a new alignment through the northwestern section of Cecil County.

WHO was the designer?

The designer of State Aid project was usually the State Roads Commissioner's residential (or district) engineer.

WHO was the builder?

It is unknown who actually built the bridge.

WHY was the bridge altered?

The bridge was altered to relieve the deterioration of the joint between the pier and the deck. There was structural deficiencies at the joint. The alteration was done to correct the problem.

Was this bridge built as part of an organized bridge-building campaign?

No, this bridge was built as part of a road building effort. It was not part of the effort to replace one lane structures, or to increase load capacities to military sections of Cecil County. The bridge was built to service the new road.

SURVEYOR/HISTORIAN ANALYSIS:

This bridge may have National Register significance for its association with:
A - Events __X__ B- Person _____
C- Engineering/architectural character __X__

Was the bridge constructed in response to significant events in Maryland or local history?

CE108 was built as part of Cecil County's effort to connect rural lateral roads with main line post roads during the early years of road construction within the state of Maryland. The construction of lateral roads was ongoing within ever county of the state.

When the bridge was built and/or given a major alteration, did it have a significant impact on the growth and development of the area?

No, Liberty Grove and the surrounding region were already well established and had adequate transportation services through the railroad. However, even with the coming of the automobile and the roads that came with it, the region was in decline. The use of larger mills in the ports of Philadelphia and Baltimore at the turn of the century and first three decades of the twentieth century began the process of decline for the small mills in Cecil County.

Is the bridge located in an area which may be eligible for historic designation and would the bridge add to or detract from the historic/visual character of the potential district?

Bridge CE108 is located south of the village of Liberty Grove. The area of Liberty Grove was originally designated as a survey district in 1980 with no established boundaries. To the south of the bridge is the town of Rowlandsville and extant remains of a nineteenth century railroad. The Liberty Grove district identified six to seven nineteenth century structures which could make up a district. Most of these buildings were to the north and east of the bridge. Only one of which has a view of the bridge. However, since the time of the original survey some of the structures have had significant changes which could place their integrity in jeopardy. If the structures were to be defined as a district the bridge would not be a contributing element. The period of significance for the Liberty Grove, and Rowlandsville area would be during the nineteenth century milling expansion of Cecil County. Although a new road was built to connect Liberty Grove and Port Deposit, it really did not effect the areas economy substantially.

Is the bridge a significant example of its type?

Liberty Grove Road over Basin Run has been considered under Criterion C, as a structure which embodies distinctive characteristics of a type, period or method of construction. It was evaluated as an example of Maryland's design methods prior to the use standardization in 1923. However, P.A.C. Spero feels that the bridge's integrity has been compromised due to its present condition.

Bridge CE108 (CE-1488) is in very poor condition. Members of both the superstructure and substructure are deteriorated, with cracking, spall and section loss. Joints are opening up with a separation of the major concrete sections.

According to an inspection report completed in 1995 and field visits in September 1996, Bridge CE108 (CE-1488) has severe deterioration of its members. The concrete deck is in only fair condition. The parapet caps on both the eastern and western elevations have large sections of exposed rebar and scour on both the interior and exterior faces. The full depth of the deck has severely spalled sections. These spalls are causing water damage and efflorescence through the whole of the deck. The joint between the pier and the deck is delaminated with exposed and corroding reinforcing bars.

There is moderate spalling along the tip of the southeast and southwest wingwalls. There is a large vertical crack measuring approximately three feet by three feet near the connection of the southeast wingwall and the northern abutment. In addition there is a large diagonal crack measuring approximately four feet by two feet at the connection of southwest wingwall and the northern abutment. The tops of both southern wingwalls have moderate spalling. The northern abutment itself has a moderate vertical crack and spalling below the beam wells.

The pier is heavily spalled at the joint between the pier cap and the deck. Prior to the installation of a steel plate, workers added additional concrete and bituminous wearing material to seal the joint. The deterioration has continued and large cracks are present underneath the steel plate. In addition the is a large one and half inch deep spall along the southern face of the pier wall which is approximately three feet by three feet. The channel flow has been compromised. The stream only flows through the northern span. This has further affected the sections of scour on both the interior face of the northern abutment and the pier, each of which have areas of scour measuring approximately three feet.

The girders within Bridge CE108 (CE-1488) are losing strength. All beams exhibit heavy delamination throughout with large sectional loss along the bottom of each. There is exposure of there enforcement bars on all beams. Beam No 1 (beams are numbered from east to west) has horizontal crack which extends the entire length of the continuous span. In addition the are deep vertical cracks over the pier on both beams 1 and 5. Their present condition and continuing deterioration compromise the integrity of the bridge.

The parapets on both sides on the bridge are not supporting members. They are not load bearing and rest upon the slab. These parapets are considered CDE's to concrete beam bridges. These parapets represent designs used by state and local designers prior to establishment of standards. They do not exhibit the characteristics of a Luten patent which many designers copied prior to parapet standardization in 1923. These parapets are simple. No incisions where used at the time of their construction. They served their purpose and were not designed to be aesthetically pleasing. The problem with Bridge CE 108 (CE-1488) is the present condition of the parapets. The enclosed photographs shows the deteriorated condition of the northern parapets. The expansion joints are

falling out, the majority of the deck joints are spalling, the coping on both sides of the bridge have spalling, and the missing concrete at the expansion joints is causing shifting. Their present condition and continuing deterioration affect the integrity of this bridge.

Does the bridge retain integrity of important elements described in Context Addendum?

No, this bridge does not retain integrity of its character defining elements. Although the original deck, abutments, pier, parapets, and longitudinal beams remain, they are in an extremely deteriorated state. In many areas the joints are compromised.

Is the bridge a significant example of the work of a manufacturer, designer, and/or engineer?

No, this bridge is not a significant example of work by the State Roads Commission. The bridge was built to cross a stream as part of road building project. This structure no longer represents the craftsmanship and technology of the early twentieth century. The lack of integrity at the joints and the alterations to correct the problem have destroy the work of the original builders. In addition, this bridge reflects no architectural characteristics of the State Road Commission's early efforts to standardize designs. As early as 1904, the Commission was copying Luten design patents in the parapets for their bridge replacement projects. No attention was paid to ornamentation or architectural feel. The bridge was simply built out of the best available material at the time to standards needed for the crossing.

Should the bridge be given further study before an evaluation of its significance is made?

No, the bridge should be given further study. However, Liberty Grove and its surrounding mill towns should receive further research and possibly receive a thematic nomination.

BIBLIOGRAPHY:

County inspection/bridge files X **SHA inspection/bridge files**
Other (list):

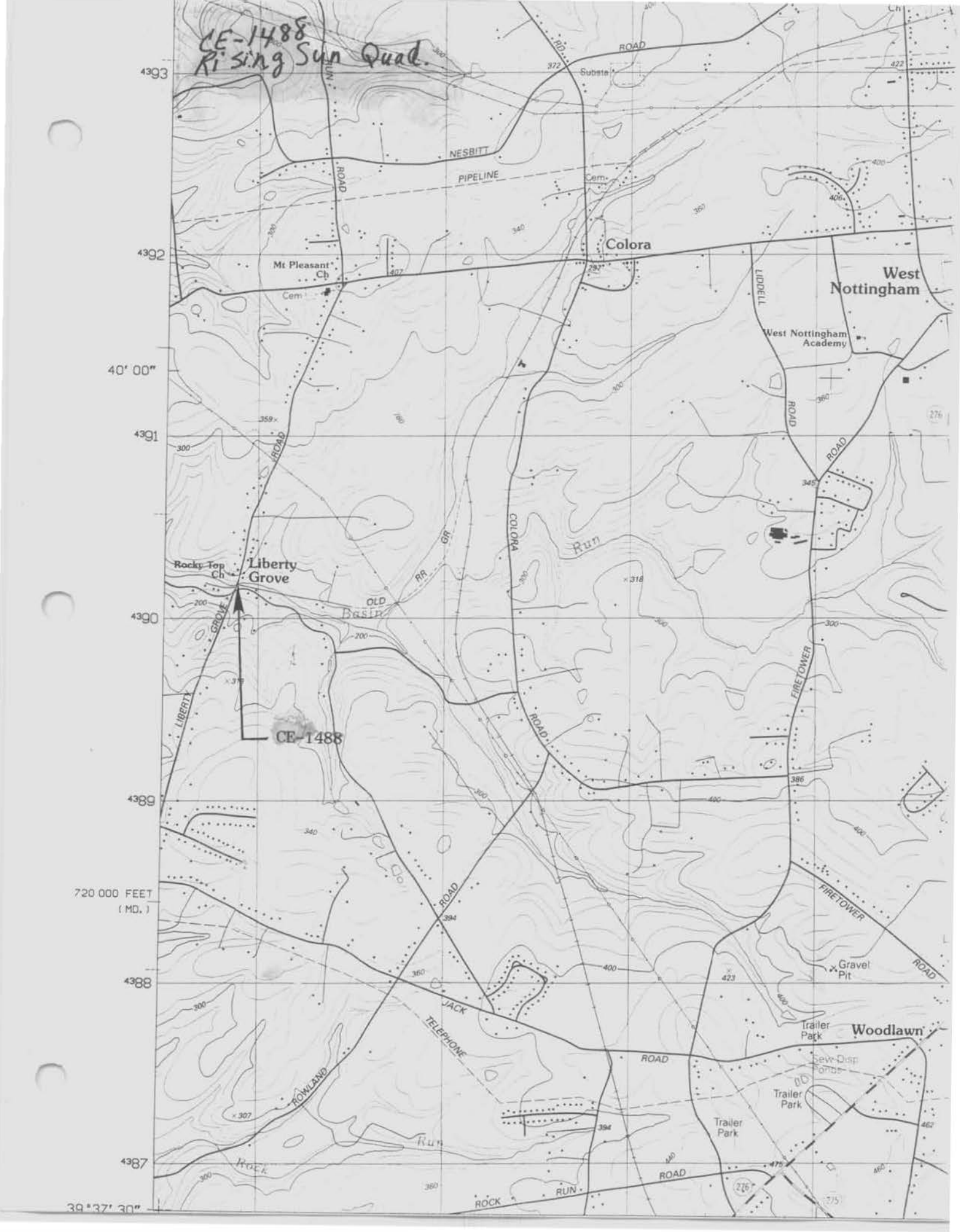
Report of State Roads Commission of Maryland 1898-1924

Records of Cecil County Historical Society

At the Head of the Bay: A Cultural and Architectural History of Cecil County, MD

SURVEYOR:

Date bridge recorded September 1996
Name of surveyor Stacie Yvonne Webb
Organization/Address P.A.C. Spero & Co., 40 W. Chesapeake Avenue, Suite 412, Baltimore, Maryland 21204
Phone number 410-296-1635 **FAX number** 410-296-1670


CE-1488
Rising Sun Quad.
ROAD
Substa
NESBITT
PIPELINE
Cem
Colora
Mt Pleasant Ch
Cem
West Nottingham
West Nottingham Academy
LIDDELL
ROAD
ROAD
ROAD
COLORA
ROAD
Run
Rocky Top Ch
Liberty Grove
OLD
Basin
RR
GR
GROVE
LIBERTY
CE-1488
FIRETOWER
ROAD
FIRETOWER
ROAD
Gravel Pit
Trailer Park
Woodlawn
Sew Disp Ponds
Trailer Park
Trailer Park
JACK
TELEPHONE
ROAD
ROWLAND
Run
ROCK
ROAD
ROCK
RUN
4393
4392
40' 00"
4391
4390
4389
720 000 FEET
(MD.)
4388
4387
39°37' 30"

1 CE 1488
2 Liberty Grove Road Bridge
3 Cecil County
4 Superior Webb
5 Superior Miller 1970
6 PAC Spero and Company Baltimore MD 21204
7 Liberty Grove Road over Basin Run
Western Elevation
8 1 of 5

CE 1488

1. Liberty Grove Road Bridge

2. Cecil County

3. Stacie Webb

4. September [illegible]

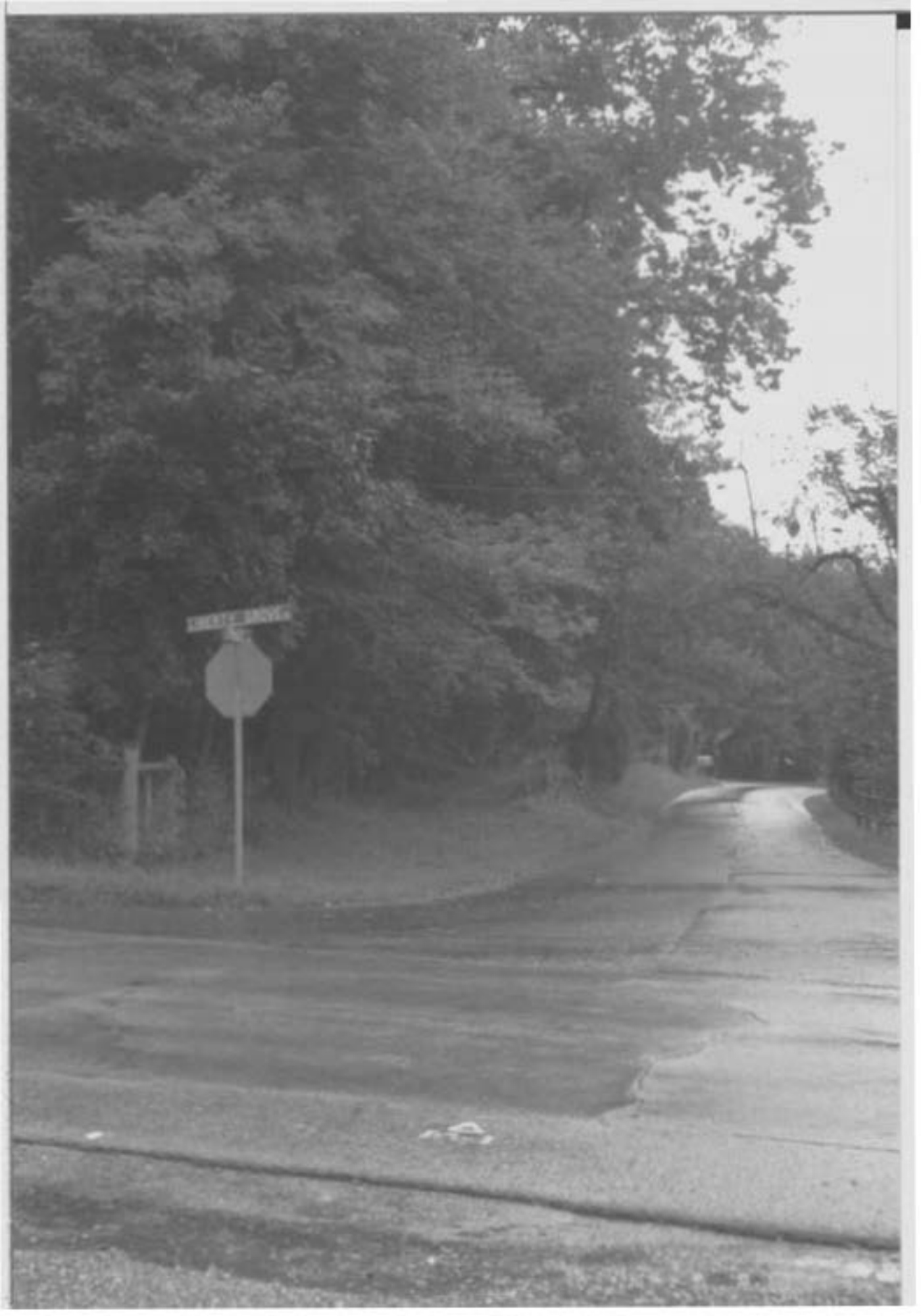
5. PAC Hero and Company [illegible]

6. Liberty Grove Road over Bush River Pier [illegible] Elevation

7. 2 of 5

GUNS-TO-
FOREVER

1. CE 1488
2. Liberty Grove Road Bridge
3. Cecil County
4. Mario Webb
5. September 1996
6. P.A.C. Spero Company Towson MD 21204
7. Liberty Grove Road over Basin Run. Parapets. Northeast
8. 3 of 3



1. CE 1-78
2. Liberty Grove Road Bridge
3. Cecil County
4. Stacie Webb
5. September 1996
6. P.A.C. Spero - Company Towson Md 21204
7. Liberty Grove Road over Basin Run
North Bridge, Abandoned RR
8. 4 of 5

CE 1488
Liberty Grove Road Bridge
Cecil County
Stacie Webb
September 1996
P.A.C. Spero Company Towson MD 21204
Liberty Grove Road over Basin Run
Northeast