

I. INTRODUCTION

The following report presents a discussion of the methods and results of a Phase I Archaeological Survey that was conducted for the BR 159 James Street over Christina River (hereafter referred to as BR 159) project, which is located in the Town of Newport, Christiana Hundred, New Castle County, Delaware (**Figures 1-3**).

The purpose of the Phase I archaeological survey was to locate and identify any archaeological resources within the project's Area of Potential Effect (APE).

The Phase I Archaeological Survey for the BR 159 project was conducted by McCormick Taylor, Inc. during August and September 2012 for the Delaware Department of Transportation (DelDOT) in compliance with the National Historic Preservation Act of 1966, Section 106, as amended; Implementing Regulations 36 CFR Part 800; the Federal Highway Act of 1966, as amended; Section 101(b)(4) of the National Environmental Policy Act (NEPA) of 1969, Section 1(3) and 2(b) of Executive Order 11593; Section 4(f) of the Department of Transportation Act of 1966. Funding for the Phase I Archaeological Survey of the BR 159 project was provided by the DelDOT and the Federal Highway Administration (FHWA).

All technical work and the documentation of this work was conducted in compliance with the guidelines, protocols, mandates, and requirements as set forth in:

- The Delaware State Historic Preservation Office's (DE SHPO) *Guidelines for Architectural and Archaeological Surveys in Delaware* (1993),
- the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (FR 48:44716-44742) (Sept. 1983); and
- the Advisory Council on Historic Preservation Implementing Regulations 36 CFR Part 800 -- Historic Properties (as amended).

All work was conducted by, or performed under the direct supervision of, persons that meet the *Secretary of the Interior's Professional Qualifications and Standards (36 CFR Part 61) for Archaeology, Architectural History, and History*.

A concurrent Historic Structures Survey was conducted for the BR 159 project. The methods and results of the Historic Structures Survey is presented in a separate document (Clouse and Richmond 2012).

A. Project Description and Need

The BR 159 project proposes to replace the existing c. 1929 bascule bridge (BR 159) with a fixed bridge span. BR 159 conveys S. James Street across the Christina River to New Castle Hundred (**Figures 1-3**).

The northern terminus of the project corridor is located in the Town of Newport/Christiana Hundred approximately 170 feet north of the S. James Street/Water Street intersection. The southern terminus of the project corridor is located approximately 295 feet (~90m) south of the Christina River in New Castle Hundred. The project segment of S. James Street in Newport is approximately 330 linear feet (~101m). The shore-to-shore width of the Christina River at the S. James Street crossing is approximately 200 feet (61m).

The existing c. 1929 bascule bridge no longer functions as a movable bridge. Over the past eight decades, the bridge has been subjected to various episodes of repair and rehabilitation to prolong its functionality. Major alterations were performed in 1967, when the bridge was fixed in place, and in 1985, when the operating machinery and operator's house of the bridge were removed. The c. 1929 bridge is recorded with the DE SHPO as CRS #N-4294 and was determined not eligible for the National Register of Historic Places individually due to loss of integrity (Lichtenstein Consulting Engineers, Inc. 2000).

Recent inspection and structural engineering assessments have concluded that the existing structure can no longer sustain temporary repairs. Rehabilitation efforts would be deemed replacement because every structural component needs to be addressed.

The proposed bridge replacement project will be constructed approximately five feet east of the existing bridge. The project entails construction of a new 3-span structure with a pre-stressed concrete spread box beam superstructure composite with an 8" reinforced concrete deck. Substructures consist of cast-in-place concrete abutments and piers founded on pile foundations. The new bridge deck will have a 28' curb-to-curb width, a separate 10' bicycle/pedestrian way, an 8.5' minimum vertical navigational (at mean high water) clearance, and a 75' minimum horizontal navigational clearance.

The construction efforts will also involve approach/roadway work needed to accommodate alignment shifts, as well as relocation/adjustment of existing utilities, which include a subsurface gas line. Details pertaining to the bridge parapet, scupper needs, sidewalk installation, lighting, scour, approach drainage work, and other enhancements have not yet been fully investigated.

The existing bridge will remain open to maintain traffic flow across the river during the construction of the new bridge. Upon completion of the new bridge, the existing c. 1929 bridge and its approaches will be removed.

B. Establishment of Area of Potential Effect (APE) and Archaeological Survey Area

The archeological survey area for this project was established based on the project's anticipated Area of Potential Effect (APE) and in consultation with the DeIDOT.

Pursuant to Federal Regulations for the "Protection of Historic Properties", 36 CFR Part 800.16(d), the Area of Potential Effect (APE) is defined as "the geographical area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking".

The project's Limits of Construction (LOC) has been established as the project APE since the LOC encompasses all project areas (i.e. existing and Proposed right-of-ways, temporary and permanent easements, staging areas; and clear zone) where subsurface disturbances could occur. The project's horizontal and vertical LOC are defined as the bounds of the project APE. The project APE (and LOC) encompasses 2.449 acres (0.991 ha) (**Figures 1-4**).

Project reviews and consultation with DeIDOT determined that approximately 0.396 acres (0.16 ha) had the potential for archaeological resources, and thus, required controlled subsurface archaeological testing (**Figures 1-3**). This acreage, designated the archaeological survey area, is confined to an undeveloped, vacant, riverfront lot on the Newport side of the Christina River. The lot is located south of Water Street on the northbound (east) side of S. James Street. The lot includes tax parcel NCC 20-003.00-084 (~2.00 ac.) and part of the existing SR 141 right-of-way. Tax parcel NCC 20-003.00-084 is the southeast corner property of the Water Street/S. James Street intersection.

The portions of the project APE south of the Christina River, as well as the portions of the project APE along southbound (west) S. James Street and north of Water Street in Newport, were dismissed from testing. These portions of the project APE, approximately 2.053 acres, were determined to have virtually no to low probability for archaeological sites due to the extent of prior large-scale modern and historic ground disturbances.

C. Phase I Archaeological Survey Goals

As noted earlier, the purpose of the survey was to determine the presence/absence of archaeological resources within the project APE. In accordance with DeIDOT- and DE SHPO-established procedures, McCormick Taylor conducted a controlled, Phase I archaeological survey that was designed to physically locate and identify any archaeological sites within the designated archaeological survey area. The primary goals of the Phase I archaeological survey were to:

- conduct systematic documentary research that could be used to develop a comprehensive archaeological overview of the archaeological survey area and to interpret the archaeological sensitivity of the survey area.
- identify and develop an inventory of known cultural resources, archaeological and historic architectural, in and around the broader archaeological project APE;
- conduct a systematic subsurface archaeological field study of the archaeological survey area to physically locate and delineate any archaeological resources that may constitute a site.
- assist the DelDOT with preparing project recommendations and documentation in accordance with Section 106 compliance requirements.

D. Report Structure

This report contains the following sections: Environmental Setting (II), Regional Prehistory (III), Regional History (IV); Background Research (V), Research Design and Methodology (VI), Excavation Results (VII), and Conclusions and Recommendations (VIII). The technical narrative is followed by References Cited and three appendices (**Appendix I, II, and III**). **Appendix I** contains representative historic photographs of the survey area and the broader project APE. **Appendix II** contains an Artifact Catalog by Provenience. **Appendix III** presents completed survey forms for the Boys-Hilyard Site and the Delaware Canoe Club Boat House Site, which are two components of a newly identified site that was located by the survey detailed in this report.

The project's research team consisted of two key McCormick Taylor archaeologists. Barbara Silber served at the team's Principal Investigator with Macon Coleman as Project Archaeologist. Archival research was a collaborative effort that involved the aforementioned individuals and the Lead Architectural Historians of the concurrent BR 159 Historic Structures Survey, Jerry Clouse and Charles Richmond. Additional field, research, and documentation support was provided by Steve Truono and Jason Forbes. Field and technical project guidance was provided by DelDOT project liaisons David Clarke, Kevin Cunningham, and Michael Hahn.

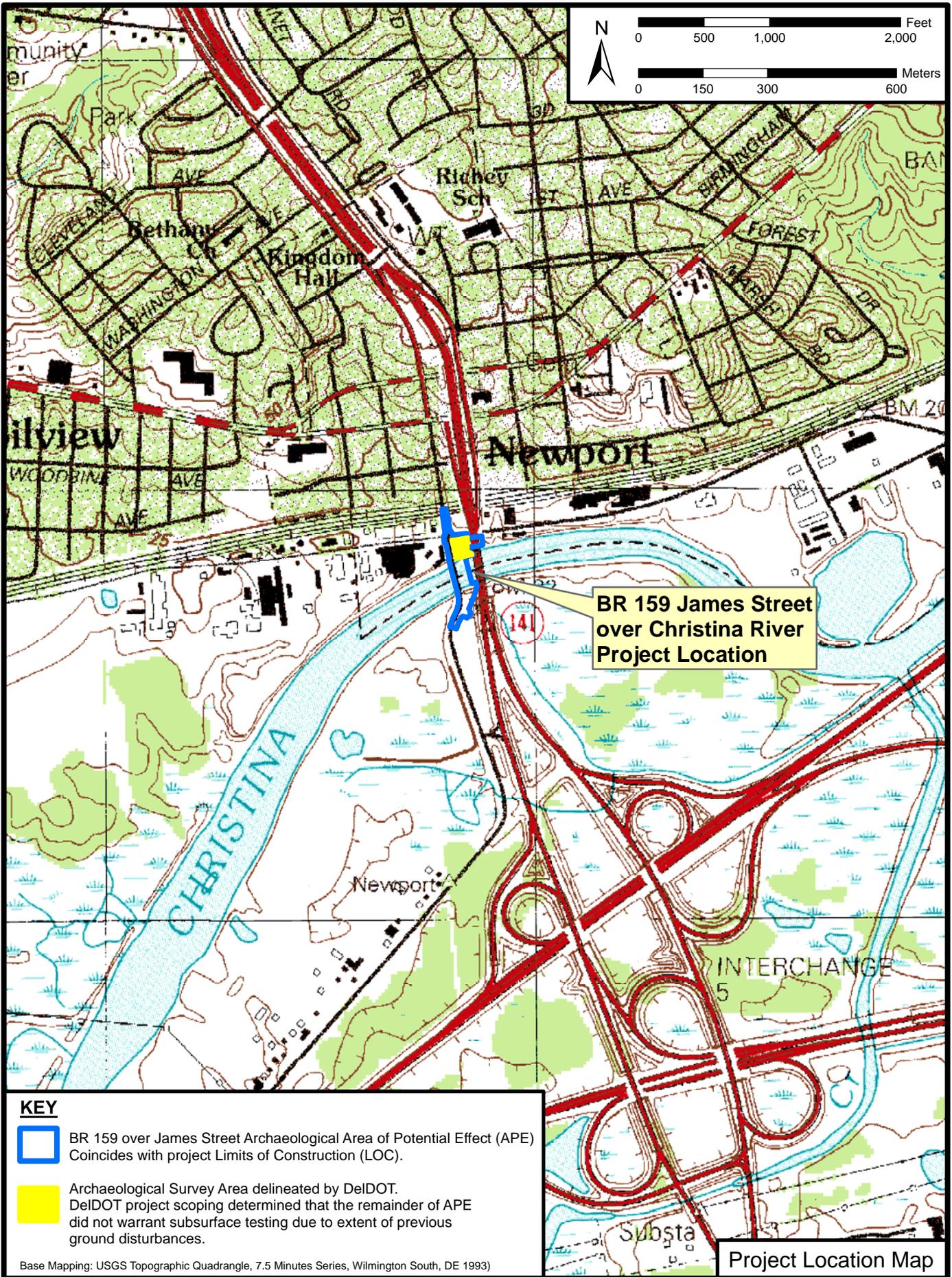
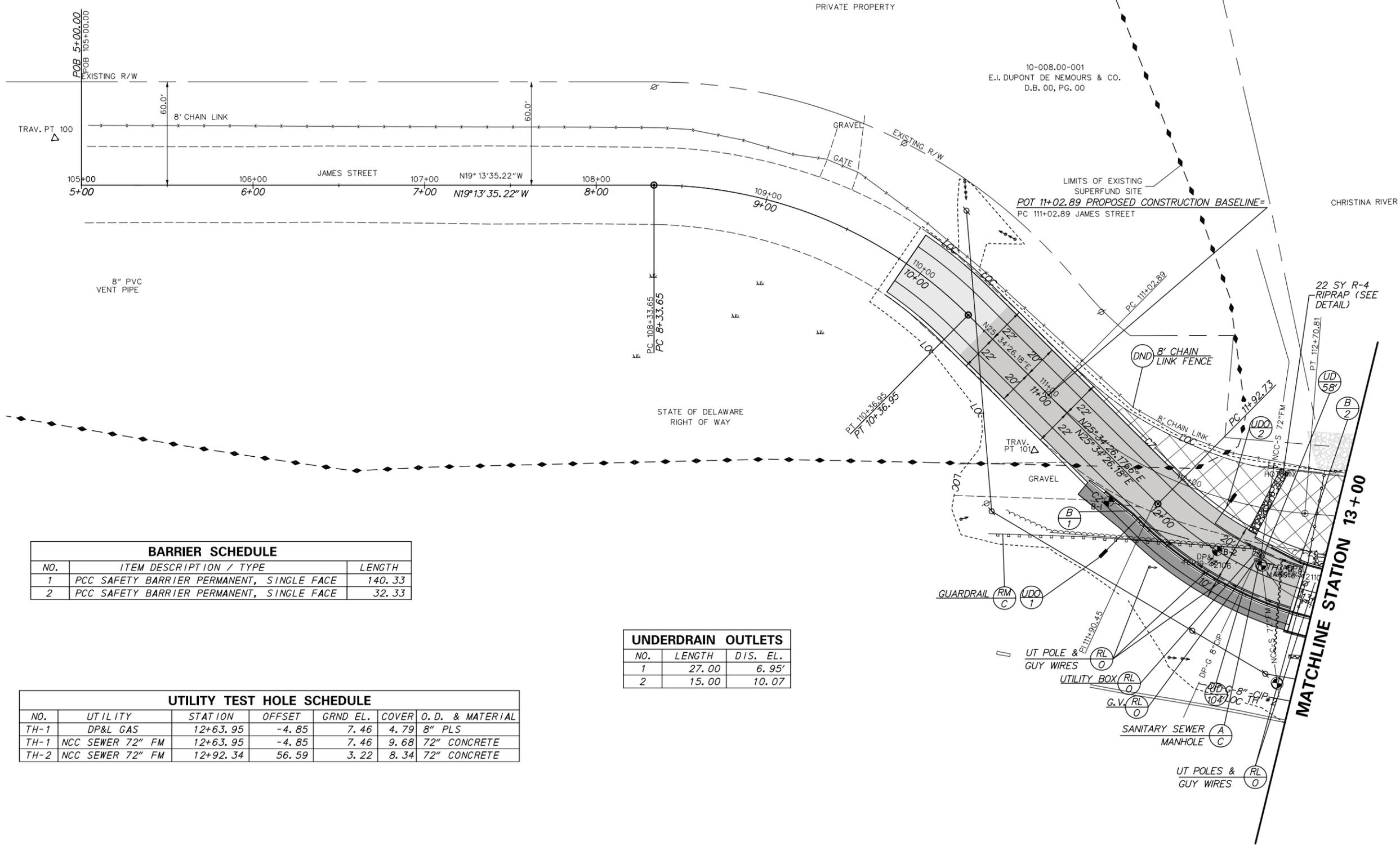


FIGURE 1

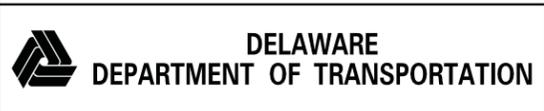


BARRIER SCHEDULE		
NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	PCC SAFETY BARRIER PERMANENT, SINGLE FACE	140.33
2	PCC SAFETY BARRIER PERMANENT, SINGLE FACE	32.33

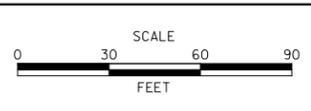
UNDERDRAIN OUTLETS		
NO.	LENGTH	DIS. EL.
1	27.00	6.95'
2	15.00	10.07

UTILITY TEST HOLE SCHEDULE						
NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O. D. & MATERIAL
TH-1	DP&L GAS	12+63.95	-4.85	7.46	4.79	8" PLS
TH-1	NCC SEWER 72" FM	12+63.95	-4.85	7.46	9.68	72" CONCRETE
TH-2	NCC SEWER 72" FM	12+92.34	56.59	3.22	8.34	72" CONCRETE

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ADDENDUMS / REVISIONS	



**BR 1-159 ON JAMES STREET
OVER CHRISTINA RIVER**

CONTRACT T201207101	BRIDGE NO. 1-159
COUNTY NEW CASTLE	DESIGNED BY: JUK/LB
	CHECKED BY: MAA

CONSTRUCTION PLAN
FIGURE 3a

CP-01
SHEET NO. 8
TOTAL SHTS. 73

BARRIER SCHEDULE		
NO.	ITEM DESCRIPTION / TYPE	LENGTH
3	PCC SAFETY BARRIER PERMANENT, SINGLE FACE	13.33
4	PCC SAFETY BARRIER PERMANENT, SINGLE FACE	13.33

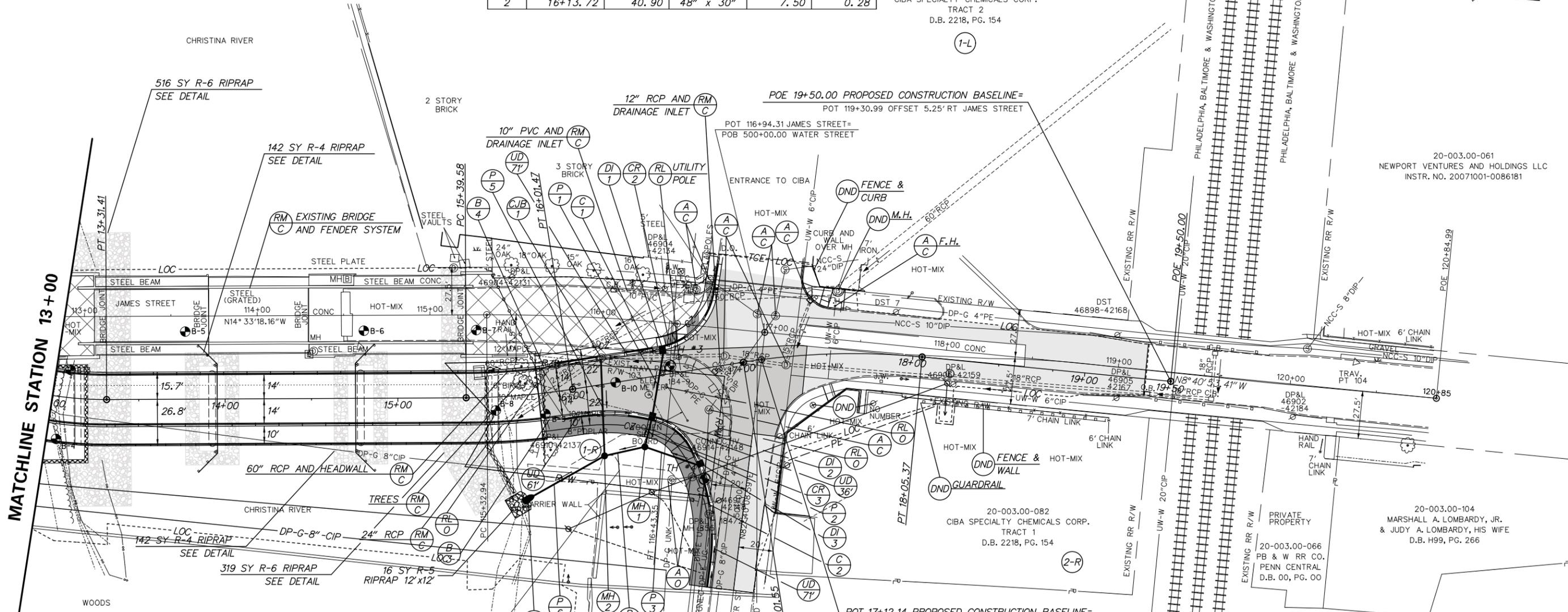
FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
1	24" RCP	0.0063	NO

UTILITY TEST HOLE SCHEDULE						
NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O. D. & MATERIAL
TH-3	DP&L GAS	16+59.18	-4.59	10.36	2.41	4" PE
TH-4	DP&L ELECTRIC	16+68.84	63.02	9.54	3.06	1" CONDUITS (3)
TH-4	DP&L GAS	16+68.84	63.02	9.54	3.78	4" STEEL
TH-4	DP&L GAS	16+68.84	63.02	9.54	4.30	4" STEEL
TH-4	NCC SANITARY	16+68.84	63.02	9.54	9.81	24" IRON

MANHOLE SCHEDULE					
NO.	STATION	OFFSET	TYPE/SIZE	T. G. EL.	INV. EL.
1	16+37.61	39.40	48" x 30"	7.50	3.90
2	16+13.72	40.90	48" x 30"	7.50	0.28

20-003.00-083
CIBA SPECIALTY CHEMICALS CORP.
TRACT 2
D.B. 2218, PG. 154

(1-L)



CONVERT MH TO JUNCTION BOX SCHEDULE				
NO.	STATION	OFFSET	T. C. EL.	INV. EL.
1	16+20.60	-15.30	9.00	0.64

CURB SCHEDULE		
NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	INTEGRAL PCC CURB & GUTTER TYPE 1-8	124.00
2	INTEGRAL PCC CURB & GUTTER TYPE 1-8	167.00

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T. G. EL.	INV. EL.
1	16+56.25	-15.01	48" x 30"	1	10.84	7.34
2	16+44.30	23.42	48" x 30"	1	11.08	4.18
3	16+67.60	54.00	48" x 30"	1	9.87	5.21

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
1	18" RCP	IV	38.00	0.010	7.34	6.96
2	18" RCP	IV	18.00	0.010	4.18	4.00
3	15" RCP	IV	32.00	0.030	5.21	4.25
4	18" RCP	IV	24.00	0.010	3.90	3.66
5	24" RCP	IV	55.00	0.0063	0.64	0.29
6	24" RCP	IV	45.00	0.0063	0.28	0.00